

The Collaborative Research Centre – Template

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0.1.0

Abstract

This is the documentation for all the files which are needed to prepare a proposal and CV section for a proposal of the Funding Line by the DFG.

Why is there a dedicated documentation? “Documentation must be regarded as an integral part of the process of design and coding. A good programming language will encourage and assist the programmer to write clear, self-documenting code, and even perhaps to develop and display a pleasant style of writing.” Hoare 1973, p. 195

This bundle has been last worked on and modified using **LuaHBTeX, Version 1.24.0 (TeX Live 2026)** [2026-08-03@00-58-19].

Contents

1	dfg-crc – Collaborative Research Centre proposal class	4
1.1	Requirements	4
1.2	Installation	4
1.3	Start the program from the repository	4
1.4	Template validation workflow	5
1.5	Updating a separate proposal repository	5
1.6	Repository boundary	5
1.7	Structure of the files and folders	5
1.8	Generated project templates	5
1.9	Minimal metadata relationship	6
1.10	Information retrieval command overview	6
1.10.1	<i>General database access</i>	6
1.10.2	<i>People, institutions, and projects</i>	6
1.10.3	<i>Person statistics</i>	7
1.10.4	<i>Funding and staff totals</i>	7
1.10.5	<i>Existing direct-cost support in section 2.1.1</i>	8
1.11	Open-access markers in bibliography entries	8
1.12	Troubleshooting	8
1.13	Maintainer release checklist	8
1.14	Support	9
1.15	License	9
1.16	CHANGELOG	9
1.16.1	<i>2026-08-03 version 0.1.0</i>	9
1.16.2	<i>2026-08-02 version 0.0.53</i>	9
1.16.3	<i>2026-08-02 version 0.0.52</i>	9
1.16.4	<i>2026-08-02 version 0.0.51</i>	9
1.16.5	<i>2026-08-02 version 0.0.50</i>	9
1.16.6	<i>2026-08-02 version 0.0.49</i>	9
1.16.7	<i>2026-08-01 version 0.0.48</i>	9
1.16.8	<i>2026-08-01 version 0.0.47</i>	9
1.16.9	<i>2026-08-01 version 0.0.46</i>	10
1.16.10	<i>2026-08-01 version 0.0.45</i>	10
1.16.11	<i>2026-08-01 version 0.0.44</i>	10
1.16.12	<i>2026-08-01 version 0.0.43</i>	10
1.16.13	<i>2026-08-01 version 0.0.42</i>	10
1.16.14	<i>2026-08-01 version 0.0.41</i>	10
1.16.15	<i>2026-08-01 version 0.0.40</i>	10
1.16.16	<i>2026-08-01 version 0.0.39</i>	10
1.16.17	<i>2026-08-01 version 0.0.38</i>	10
1.16.18	<i>2026-08-01 version 0.0.37</i>	10
1.16.19	<i>2026-08-01 version 0.0.36</i>	10
1.16.20	<i>2026-08-01 version 0.0.35</i>	10
1.16.21	<i>2026-08-01 version 0.0.34</i>	10
1.16.22	<i>2026-07-30 version 0.0.33</i>	10

1.16.23	2026-07-30 version 0.0.32	10
1.16.24	2026-07-30 version 0.0.31	11
1.16.25	2026-07-30 version 0.0.30	11
1.16.26	2026-07-20 version 0.0.29	11
1.16.27	2026-07-18 version 0.0.28	11
1.16.28	2026-07-17 version 0.0.27	11
1.16.29	2026-07-16 version 0.0.26	11
1.16.30	2026-07-14 version 0.0.25	11
1.16.31	2026-07-14 version 0.0.24	11
1.16.32	2026-07-03 version 0.0.23	11
1.16.33	2026-06-24 version 0.0.22	12
1.16.34	2026-06-23 version 0.0.21	12
1.16.35	2026-06-22 version 0.0.20	12
1.16.36	2026-06-15 version 0.0.19	12
1.16.37	2026-06-11 version 0.0.18	12
1.16.38	2026-06-10 version 0.0.17	12
1.16.39	2026-06-08 version 0.0.16	12
1.16.40	2026-05-29 version 0.0.15dev	12
1.16.41	2026-05-29 version 0.0.14	12
1.16.42	2026-05-25 version 0.0.13	12
1.16.43	2026-05-23 version 0.0.12	12
1.16.44	2026-05-23 version 0.0.11	12
1.16.45	2026-05-13 version 0.0.10	12
1.16.46	2026-05-12 version 0.0.9	12
1.16.47	2026-05-10 version 0.0.7	12
1.16.48	2026-05-07 version 0.0.6	12
1.16.49	2026-05-04 version 0.0.5	12
1.16.50	2026-05-01 version 0.0.4	12
1.16.51	2026-03-11 version 0.0.3	12
1.16.52	2026-03-11 version 0.0.3	12
1.16.53	2026-02-14 version 0.0.2	13
1.16.54	2026-01-05 version 0.0.1	13
1.17	LICENCE	13
2	User documentation	14
2.1	Compiling and generated files	14
2.2	Troubleshooting	14
2.3	Release workflow for maintainers	14
2.4	Metadata, databases and keysets	15
2.4.1	Keyset <i>person</i>	15
2.4.2	Database entries for a <i>cv</i>	16
2.4.3	Keyset <i>project</i>	18
2.4.4	Keyset <i>institution</i>	20
2.4.5	Keyset <i>affiliation</i>	20
2.4.6	Keyset <i>funding</i>	21
2.4.7	Keyset <i>staff</i> : requested-funding roster	23
2.4.8	Adding information to a database	25
2.4.9	Retrieving and handling information from a database	26
2.5	Filling tables from the template	32
2.6	Adjustments and Customizations	34
2.6.1	Documentclass options	34
2.6.2	Change default settings	35
2.7	Providing further commands	38
2.7.1	Aims and Workpackages	38
2.7.2	Thumbindex	39
2.7.3	Boxes	40
2.7.4	Title page and affiliation helpers	40
2.7.5	ORCiD	42
2.8	Best Practises and Suggestions	42
2.8.1	Figures	42

2.9	Bibliography/Publication	42
2.9.1	<i>Equal contribution</i>	42
2.9.2	<i>Shared last authorship</i>	43
2.9.3	<i>Emphasizing authors</i>	44
2.9.4	<i>Providing publication information</i>	44
3	Code Documentation	45
3.1	Documentclass	45
3.1.1	<i>Message catalogue</i>	45
3.1.2	<i>Documentclass Options</i>	49
3.1.3	<i>Class options (dfg/class key family)</i>	49
3.2	Conditional execution based on class options	50
3.2.1	<i>Colour palette</i>	51
3.2.2	<i>Customisation key family (dfg/custom)</i>	52
3.2.3	<i>Colour binding at document start</i>	56
3.2.4	<i>Project-body list environments</i>	58
3.2.5	<i>Page style (headers and footers)</i>	59
3.2.6	<i>Heading fonts (KOMA-Script customisation)</i>	60
3.2.7	<i>ORCID display commands</i>	61
3.2.8	<i>siunitx configuration</i>	63
3.2.9	<i>tabularray setup and table themes</i>	63
3.2.10	<i>Custom table definition</i>	63
3.2.11	<i>Shared authorship annotations</i>	68
3.2.12	<i>\changeSettings</i>	73
3.2.13	<i>Thumb index implementation</i>	74
3.2.14	<i>Bold-author mechanism</i>	76
3.2.15	<i>Database infrastructure and key families</i>	77
3.2.16	<i>Core data-access commands</i>	89
3.2.17	<i>Table and list dispatch (\printTable, \printList)</i>	104
3.2.18	<i>Data tables</i>	105
3.2.19	<i>Boxes</i>	187
3.2.20	<i>New Commands</i>	189
3.2.21	<i>Gantt chart rendering</i>	215
3.2.22	<i>TOC entry and work-package helpers</i>	218
3.3	CV / Curriculum Vitae	218
3.3.1	<i>CV commands</i>	218
3.4	Main file	226
3.5	Bibliography Files	227
3.5.1	<i>Main Bibliography File</i>	227
3.5.2	<i>Bibliography Strings</i>	227
3.6	Customization File	227
3.7	DFG salary and animal-housing defaults	228
3.8	Metadata File	229
3.9	Title Page (Proposal specific)	237
3.10	Content Files (Proposal specific)	239
3.11	Complete continuing-project example	246
3.12	Complete new-project example	250
3.13	Second continuing-project example	254
3.14	Complete ending-project example	257
3.15	Complete continuing service-project example	258
3.16	Complete integrated research training group example	261
3.17	Complete central administrative-project example	264
3.18	Backmatter File	268
3.19	Project collaboration plot test	268
3.20	Existing direct-cost overview test	270
	Index	277

Current release: **0.1.0 (2026-08-03)**.

The `dfg-crc` LuaLaTeX class provides the proposal and CV structure for a German Research Foundation (DFG) Collaborative Research Centre (CRC). It uses structured metadata to generate project heads, staff and funding tables, project lists, collaboration plots, Gantt charts, and proposal-wide totals.

This is an independent, unofficial template. It is not published, endorsed, or maintained by the DFG; applicants remain responsible for checking the current DFG forms and programme rules.

The supplied proposal template is designed for five calendar years and supports one or more applicant universities. The project types `research`, `service`, `mgk`, and `admin` are supported; see the documentation for the corresponding metadata and generated sections.

It is appreciated when in the colophon of your proposal a reference to this template and its author is given.

1.1 Requirements

The class requires LuaLaTeX and a LaTeX kernel dated 2022-06-01 or newer. Biber is required for bibliographies. The default setup uses Noto Serif, Roboto, and the example images supplied by the `mwe` bundle. A full TeX Live¹ installation is recommended and contains the class's runtime dependencies.

Repository: <https://gitlab.git.nrw/rpdm/projects-and-services/dfg-crc-template>

Issue tracker: <https://gitlab.git.nrw/rpdm/projects-and-services/dfg-crc-template/-/issues>

1.2 Installation

TeX Live and MiKTeX installations obtained after the first CTAN release can install `dfg-crc` through their normal package managers. To install from the CTAN source archive manually, run:

```
luatex crc-proposal-documentation-and-code.ins
```

This generates `dfg-crc.cls`. Move it into a directory searched by TeX, or keep it beside the proposal's main `.tex` file. The complete generated example proposal is maintained in the repository and can be extracted with `make files`.

1.3 Start the program from the repository

For a first local compile, generate the derived files and then compile the proposal and CV examples from the `local/` folder.

```
make files
cd local
latexmk -lualatex crc-proposal.tex
latexmk -lualatex crc-cv.tex
```

The class is designed for LuaLaTeX. Use `lualatex` or `latexmk -lualatex`; do not call LaTeX with a capital L. Useful make targets:

`make files`: extracts `dfg-crc.cls` and the local template files from the documented source. `make update-class TARGET_DIR=/path/to/proposal-worktree`: regenerates and copies only `dfg-crc.cls` into a separate Git worktree. `make test`: compiles the generated template test document. `make test-direct-costs`: compiles the focused two-pass regression for DFG table 2.1.1. `make proposal-example`: compiles the generated local proposal example. `make cv-example`: compiles the generated local CV example. `make check`: runs the test and compiles both examples. `make doc`: builds the implementation and user documentation. `make ctan-check`: builds the curated CTAN archive and verifies a clean installer extraction and minimal LuaLaTeX compile. `make ctan-validate`: runs the official online CTAN validator without submitting the archive.

For a focused project-text build, select the project with `\includeonly` and use these class options:

```
\documentclass[
  fastcompile-project=true,
  fastcompile-project-show-images=false,
  fastcompile-project-show-publications=false,
  english
]{dfg-crc}
```

¹<https://tug.org/texlive/>

`fastcompile-project` skips metadata loading, `\addEntry` execution, calculated project heads, generated tables/lists, Gantt charts, embedded graphics, and other front-matter work while retaining authored sections, paragraphs, aims, work packages, labels, and citation commands. Skipped generated tables and lists retain the same visible placeholder and log note as ordinary `fastcompile` builds. Set `fastcompile-project-show-images=true` to render images encountered in the selected project while retaining the other fast-mode reductions. Set `fastcompile-project-show-publications=true` when the selected project's publication headings, explicit `\nocite` entries, and bibliography should be included. Wrap optional metadata and front matter with `\dfgIfFastCompileProjectF{...}` so those files are not even read in this mode. With publications disabled, bibliography source files and stale `.bbl` data are also left unread; inline citations display their keys as lightweight drafting markers. Compile a document using these options with its own build command; the template Makefile deliberately operates only on the generated test and example documents in `local/`.

1.4 Template validation workflow

Run `make check` to regenerate the template files, compile the test document, and compile both local examples. Run `make all` to perform those checks and build the complete implementation and user documentation. These targets use only files maintained or generated by this repository.

GitLab CI runs the same compile-based checks for branches and merge requests. After a successful default-branch pipeline, GitLab Pages publishes the newest generated `local/crc-proposal.pdf`. The Pages site is rebuilt from an empty `public/` directory each time and therefore exposes only the latest dummy proposal, not an archive of earlier PDFs. CI job artifacts retain the current logs and example outputs temporarily for diagnosing failed pipelines.

1.5 Updating a separate proposal repository

Edit the maintained `.dtx` source, then install the regenerated class into a separately controlled proposal worktree:

```
make update-class TARGET_DIR=/path/to/proposal-worktree
```

The target verifies that `TARGET_DIR` is the root of a different Git worktree, copies only `dfg-crc.cls`, and shows its resulting Git status. It does not store the destination, inspect its remote, commit, or push. Review and commit the class update from inside that proposal repository.

1.6 Repository boundary

This repository is intentionally limited to the reusable proposal template. Project-specific source, synchronization configuration, credentials, remote identifiers, and private working copies must remain in separately controlled repositories or local worktrees and must not be added here as submodules.

1.7 Structure of the files and folders

The maintained source is `crc-proposal-documentation-and-code.dtx`. Generated files such as `local/dfg-crc.cls`, `local/test.tex`, `local/test-existing-funds-direct-costs.tex`, `local/test-project-collaboration.tex`, `README.md`, `CHANGELOG.md`, and the local example files are extracted from that source. Edit the `.dtx` for template or documentation changes, then regenerate the derived files with `make files` or by building the documentation.

1.8 Generated project templates

The generated `local/content/03_project.tex` is a small master file that loads separate, complete project examples. They are intended to be copied and adapted rather than reduced to a list of headings:

`03_project_A01.tex`: continuing research project (`project-status=C`).

`03_project_A02.tex`: new research project (`project-status=N`).

`03_project_B01.tex`: second continuing research-project example.

`03_project_B02.tex`: ending project (`project-status=E`), including the report bibliography, the three published-result categories, and the staff roster for the ending funding period.

`03_project_Q01.tex`: continuing service project.

`03_project_Q02.tex`: continuing Integrated Research Training Group (`project-type=mgk`), including existing funds, fellowships, and global funds.

`03_project_Q03.tex`: central administrative project with its dedicated documentation and funding structure.

Every example starts with `\printProjectHead{<id>}`. That command already generates the general-information heading, project title, project leaders, and the applicable contract and legal-information blocks from metadata. The source files therefore begin with the first status-specific authored heading: `Summary` for active projects and `Project history` for ending projects.

The generated proposal-wide example follows the February 2026 continuation template, including the ecological-sustainability section, separate coordinating and co-applicant universities, the current legal-issues wording, and one rector, chancellor, or president signature per applicant university.

`bib/`: all bibliography files. `content/`: all files which are part of the actual content of the proposal, e.g. all project textfiles. `figures`: folder contains all figures of the projects. `img`: folder can be used for logo files etc. `metadata`: if you collect all database entries in specific external files, they are placed in this folder (e.g. `dfg-metadata.tex`). `preamble`: all files for the proposal and CV setup, especially `dfg-customization.tex` for customized things or re-newed settings.

1.9 Minimal metadata relationship

Most commands resolve data by following ids through the small databases:

```
person.ref-institution-id -> institution.id
institution.ref-affiliation-id -> affiliation.id
project.collaborations -> project.id
```

For example, a person may list one or more institution ids in `ref-institution-id`. Each institution points to its parent affiliation via `ref-affiliation-id`. Once this relationship exists, commands such as `\dfgInstitutionList{<person-id>}` can print the institution and affiliation data without further manual wiring. Each institution can also provide an abbreviation; generated table cells use this compact label while descriptive lists and legends retain the full name.

The same relationship is reused by `RequestedFundingStaff`: when a staff row contains `ref-person-id`, its category and institution are taken from the person's position and `ref-institution-id` fields unless the staff row explicitly overrides them.

Project collaboration plots follow the comma-separated project ids stored in each project's `collaborations` field. Relations are undirected, so declaring the same pair in both project rows is harmless but unnecessary. Ending, reference-only, and list-excluded project rows remain available elsewhere but are omitted from these plots.

1.10 Information retrieval command overview

The following commands can be used directly in proposal text and tables. In the signatures below, square brackets are optional and braces are mandatory. The complete descriptions and examples are in `crc-proposal-documentation-and-code.pdf`.

1.10.1 General database access

Command `\getEntry with [database] {id} {field} [id-field]` prints one field from one database row.

Starred command `\getEntry* with [database] {id} {assignments} [id-field]` fetches several fields in one lookup and assigns them without printing. For example, fetch person MM with `\getEntry*[person]{MM}` and pass the third argument `{\theFirstName=firstname,\theLastName=lastname}`.

Command `\compareEntry with [database] {id} {field} {value} {true} {false}` chooses text or code according to a field comparison.

1.10.2 People, institutions, and projects

Commands `\getName` and `\getFullName* with {person-id}` print the last name or full name; the star adds the academic degree.

Command `\getPI* with {person-id-list} [text]` prints a linked PI reference; the star includes first names.

Command `\getORCiD with [database] {person-id}` prints a linked, formatted ORCiD from a person row.

Command `\getORCiDValue with [database] {person-id}` stores the unformatted ORCiD in `\theORCiDValue`.

Command `\dfgInstitutionList with [database] {person-id} [options]` prints institutions and parent affiliations assigned to a person.

Command `\getPersonInformation with [database] {person-id-list}` prints complete formatted PI/contact-information blocks.

Command `\getPIsWithRole with [database] {role} [options]` prints formatted current-period people carrying a given role.

Command `\getPIProject* with {person-id-list}` prints each PI with their assigned projects; the star includes first names.

Command `\getProjectPI* with {project-id-list}` prints each project with its assigned PIs; the star includes first names. By default, the shared first `\getProject` or `\getProjectPI` reference to a project within one section includes its PIs; later references print only the project. Set `projectPIOncePerSection=false` in `\changeSettings` to repeat the PI names.

Command `\getPIofProject with [properties] {project-id} [delimiter]` prints selected PI name properties for one project.

Command `\getProject with {project-id-list} [text]` prints a linked project reference. Optional text replaces the displayed project number while retaining its link target and is best used with a single project. A reference-only project is marked and deliberately left unlinked. Multiple projects are joined with commas and a final and in prose, but use compact slash separators inside table cells, for example A02/B01. With the default

`projectPIOOncePerSection=true`, this command shares `\getProjectPI`'s first-reference PI expansion and per-section state.

Command `\getProjectCount` with `[area]` prints the active, list-considered project count; omit `area` for all projects. Any explicit or ID-derived `project-area` value is accepted.

Command `\printPlot{{ProjectCollaboration}{A01}}` prints the default collaboration heatmap for A01. Add `[layout=arc]` after `{ProjectCollaboration}` for the compact arc layout. The optional `project-area` field creates rows dynamically and falls back to the first character of the project ID. Configure proposal-wide colors with `collaborationAreaColors` and `collaborationAreaPalette` in `\changeSettings`, or use the per-plot `area-colors` and `area-palette` options. Gantt charts use the same dispatcher as `\printPlot{{Gantt}{A01}}`.

Command `\dfgResearchAreasList` with `{code}` prints a DFG research-area code and its description.

Commands `\getAim` and `\getWP` with `[project-id]` `{id-list}` cross-references to project aims or work packages; the current project is the default.

1.10.3 Person statistics

Command `\getPositionGenderPhaseAmount` with `[database]` `{position}` `{gender}` `{period}` prints the number of people for one position/gender/period tuple.

Command `\getPositionPhaseTotal` with `[database]` `{position}` `{period}` prints the all-gender total for a position and funding period.

Command `\getGenderPhaseTotal` with `[database]` `{gender}` `{period}` prints the all-position total for a gender and funding period.

Command `\getPositionGenderPhasePercentage` with `[database]` `{position}` `{gender}` `{period}` prints the rounded integer percentage within one position.

Command `\getGenderPhasePercentage` with `[database]` `{gender}` `{period}` prints the rounded integer percentage across all counted positions.

1.10.4 Funding and staff totals

The similarly named funding commands have different scopes: names ending in `RequestedFunding` use the proposal-wide overview by default, while names ending in `RequestedFunds` use project-level funding rows and require a project id.

Command `\getCountRequestedStaff` with `[project]` `{year}` `{category}` prints the requested staff quantity for a category, optionally restricted to a project.

Command `\getSumRequestedFunding` with `[database]` `{year}` `{type}` prints the proposal-wide total for one funding type and one year; `{all}` as the year totals all five years.

Command `\getTotalSumRequestedFunding` with `[database]` `{year}` `{type}` prints the proposal-wide total with `{all}` as the type available for a grand total.

Command `\getSumPreviousRequestedFunding` with `[database]` `{year}` `{fields}` prints the previous-period total for one year row, or all rows with `{all}` as the year.

Command `\getSumRequestedFunds` with `[database]` `{project}` `{type}` `{sum-fields}` prints the project total for one funding type and one or several sum-yearN fields.

Command `\getTotalSumRequestedFunds` with `[database]` `{project}` `{sum-fields}` prints the project total across all funding types for the supplied sum-yearN fields.

Command `\getSumRequestedFundsInstrumentation` with `[project]` `{sum-fields}` prints the instrumentation total, proposal-wide or for the optional project.

Command `\getSumRequestedFundingDirectCosts` with `[database]` `{year}` `{group}` prints the direct-cost total for applicant, participant, other-funds, or all. Its default database is the auxiliary-file-backed `RequestedAndExistingFundingDirectCostsOverview`, and its displayed result is a full euro amount without decimal places.

Command `\getSumExistingFunds` with `[database]` `{project}` `{sum-fields}` prints the existing direct-cost funding for a project and the supplied year fields.

Typical calls are:

<code>\getProjectCount[A]</code>	<i>% active A projects</i>
<code>\getSumRequestedFunding{all}{staff}</code>	<i>% proposal-wide staff total</i>
<code>\getTotalSumRequestedFunding{all}{all}</code>	<i>% proposal-wide grand total</i>
<code>\getSumRequestedFunds{A02}{staff}{sum-year 1}</code>	<i>% A02 staff total, year 1</i>
<code>\getTotalSumRequestedFunds{A02}{sum-year 1}</code>	<i>% A02 grand total, year 1</i>

Funding entries, including requested instrumentation, use EUR as their input unit. Their tables state `Figures in EUR` and display whole euro amounts with thousands separators. The non-aggregated `existingInstrumentation/cost` field instead uses thousands of EUR and its table states `Figures in thousands`; one decimal place is retained when supplied. Explicitly fractional animal-housing rates also retain decimals, while the other monetary columns in that table remain whole euros.

1.10.5 Existing direct-cost support in section 2.1.1

Declare institutional and other existing direct-cost support once, next to the corresponding project table:

```
\addEntry[funding]{RequestedAndExistingFundingDirectCosts}{
  ref-project-id      = {B06},
  ref-affiliation-id  = {aff1},
  financed-by        = {Faculty core support},
  sum = {
    year1 = {5000},
    year2 = {5000},
    year3 = {5000},
    year4 = {5000},
    year5 = {5000}
  }
}
```

The sums are stored and displayed in euros. Table 2.1.1 therefore prints 5000 as 5,000; monetary values are rounded to the nearest euro for display and never acquire a redundant decimal part. An affiliation listed in `meta/crc.ref-affiliation-id` contributes to the applicant-university column; another affiliation contributes to the other-participating-institutions column; and the special value `other-funds` contributes to Other funds. `financed-by` is the human-readable funding-source description and does not select the aggregate column.

The declarations may remain in project files even though section 2.1.1 comes earlier. They are restored into a separate overview database through the LaTeX auxiliary files. A normal multipass build such as `latexmk` is therefore required after adding or changing a row; no duplicate chapter-2 declaration is needed.

1.11 Open-access markers in bibliography entries

The class loads `biblatex-ext-oa` so bibliography entries can show open-access markers in final documents. The DOI API integration is only available with LuaLaTeX. With LuaTeX 1.17.0 or newer, the socket library must also be enabled on the command line, for example with `lualatex -socket`. Provide the contact address required by the API in the customization file:

```
\changeSettings{
  doiAPIMail = researcher@example.org
}
```

The class enables DOI lookups only when `final=true`, `doiAPIMail` is not empty, and `LuaSocket` is available. Otherwise it retains manual open-access annotations without making network requests.

If the API-based open-access request does not work for a publication, add the manual fallback annotation to the relevant `.bib` entry:

```
options      = {openaccess=auto},
doi+an:default = {=openaccess},
```

1.12 Troubleshooting

Use `latexmk -lualatex ...` or `lualatex ....`. The command LaTeX asks TeX for a format named `LaTeX.fmt` and will usually fail.

If you see `Not allowed in LR mode`, check whether vertical material such as `\vspace`, `\addvspace`, or a paragraph break was inserted inside a table cell that only accepts horizontal material. Prefer the documented commands and options instead of adding raw vertical spacing in table cells.

Unknown database name means the requested database has not been loaded or the database name was misspelled. Check the relevant file in `metadata/` and make sure it is input by the document class.

Missing-key or empty-value warnings mean the row exists, but the requested field is empty. This is intentional for fields where the template needs to alert you, such as missing ORCID values.

If a change has no visible effect, check which `dfg-crc.cls` is being used. Regenerate the class and local examples with `make files`, then compile the relevant example again.

1.13 Maintainer release checklist

1. Update `\dfgVersion`, `\dfgVersionDate`, the README release line, changelog, and `dfg-crc.pkg` in one commit.
2. Build the documentation and the CTAN archive, then run the portable installer and minimal-class smoke test:

```
make ctan-check
```

3. Run at least one proposal/CV smoke build from `local/`:

```
cd local
latexmk -lualatex -g -halt-on-error crc-cv.tex
```

4. Before a public release, run the complete template check:

```
make check
```

5. Optionally run the official online validator with `make ctan-validate`.

6. Review `git status -short`, `git diff -check`, and the archive file list before committing and tagging the exact release version.

1.14 Support

The current maintainer is Lukas C. Bossert².

1.15 License

This material is subject to the LaTeX Project Public License 1.3c or later. The work has the LPPL maintenance status *maintained*. See `LICENCE.md` for the complete notice.

1.16 CHANGELOG

1.16.1 2026-08-03 version 0.1.0

harden dynamic collaboration plots and project-area counts, preserve deterministic row and edge order, keep inactive nodes white, and add configurable colors for arbitrary project areas suppress redundant zero decimal parts in numeric and EUR output while preserving explicitly fractional values populate the section 2.1.1 direct-cost overview from project-local existing-funds declarations, classify applicant affiliations from the CRC metadata, present aggregated monetary table values as full integer euros with the note “Figures in EUR”, retain informational existing-instrumentation costs as “Figures in thousands”, and preserve decimals for those costs and explicit animal-housing rates restore siunitx model alignment in guarded tagged numeric columns and use compact slash-separated project references inside table cells while retaining natural-language joins in prose prepare the first CTAN release with a portable installer, synchronized release metadata, explicit LPPL 1.3c licensing, reproducible archive and clean-install checks, and CI release artifacts

1.16.2 2026-08-02 version 0.0.53

generate collaboration heatmap and arc-diagram rows dynamically from project areas, support optional project-area metadata with ID-prefix fallback, cycle colors for additional areas, and document the resulting behavior

1.16.3 2026-08-02 version 0.0.52

release the complete project-template, funding-calculation, TOC, and converter updates, including half-year staff-cost calculation, compact project TOC numbers, complete active-project examples, and focused regression coverage

1.16.4 2026-08-02 version 0.0.51

generate a self-contained project-collaboration regression file from the DTX, extend the dummy proposal metadata with explicit collaboration, list, ending, and reference-only cases, show both collaboration plot calls in the dummy project chapter, and document the collaboration metadata relationship and dispatcher syntax keep project numbers compact in the table of contents so section titles retain their normal indentation apply half-year factors to automatically calculated staff costs in years 1 and 5, test the resulting four-year salary total across five funding columns, and show both automatic and explicit staff-cost entries in every active generated project example and converted project template

1.16.5 2026-08-02 version 0.0.50

add compact project-collaboration heatmaps and equal-peak arc diagrams with labeled nodes, tight project-area rules, ending/reference-only filtering, and hvFloat captions, a common plot dispatcher for collaboration and Gantt graphics, mirrored marginal leaders, and safe expansion of funding-source metadata

1.16.6 2026-08-02 version 0.0.49

keep table marginalia fixed to their row anchors, place them safely in the outer margin, and format their sums consistently

1.16.7 2026-08-01 version 0.0.48

add running marginal totals to the central funding overview tables and keep marginal annotations inside the page

1.16.8 2026-08-01 version 0.0.47

omit redundant zero decimal parts from monetary values in the requested-funding project table

²<mailto:bossert@itc.rwth-aachen.de>

1.16.9 2026-08-01 version 0.0.46

forward the xparse no-value sentinel correctly so `\getProjectPI` works in focused project builds

1.16.10 2026-08-01 version 0.0.45

make `\getProject` share the first-reference PI expansion and per-section state of `\getProjectPI` when `|projectPI-OncePerSection=true|`

1.16.11 2026-08-01 version 0.0.44

move the two alternating provenance-label levels closer together

1.16.12 2026-08-01 version 0.0.43

omit an empty staff academic degree cleanly instead of displaying and warning about a missing value

1.16.13 2026-08-01 version 0.0.42

keep alternating provenance labels strictly zero-width, zero-height, and zero-depth so they never alter prose line spacing or table-row height

1.16.14 2026-08-01 version 0.0.41

distinguish multiple unnamed staff vacancies by their role metadata when checking requested-funding rosters for duplicates

1.16.15 2026-08-01 version 0.0.40

alternate successive provenance tags across two vertical levels and reserve table-cell headroom so rules do not obscure the labels make the CI build portable to minimal runners that do not provide an external `|time|` command

1.16.16 2026-08-01 version 0.0.39

show project PIs only on the first `\getProjectPI` reference to each project per section by default, with a configurable opt-out

1.16.17 2026-08-01 version 0.0.38

join comma-separated project references from `\getProject` as a natural-language list

1.16.18 2026-08-01 version 0.0.37

add compile-based GitLab CI validation and a latest-only Pages deployment of the local dummy proposal extract generated files with plain LuaTeX so clean CI clones need neither a pre-generated installer nor a full documentation build

1.16.19 2026-08-01 version 0.0.36

mark reference-only projects with an asterisk and a local legend in generated tables and lists while retaining the explicit prose wording

1.16.20 2026-08-01 version 0.0.35

restore provenance tags for direct database values and calculated results, with independently suppressible table-cell tags

1.16.21 2026-08-01 version 0.0.34

show the standard skipped-item notice for generated tables and lists in focused project builds apply the same fast-mode notice to direct `\OverviewExistingStaffTable` calls support comma-separated applicant affiliations in title-page metadata, funding totals, section labels, and existing-staff headings reuse a referenced person's category and organisation in staff rows when no row-level override is supplied use `|positionText|` consistently for the staff roster while retaining `|position|` as a compatibility alias add institution abbreviations and use them as compact labels in generated tables while retaining full names in legends render work-package names only at the top level and start sub-workpackage prose without an extra space

1.16.22 2026-07-30 version 0.0.33

add orthogonal `|consider-for-lists|` and `|reference-only|` project controls exclude non-considered projects from generated project aggregates and active-project counts add cached `\getProjectCount` totals for all active projects and the A, B, and Q areas mark reference-only projects as former projects without creating broken project-section links add a consolidated information-retrieval command reference to the documentation and proposal README

1.16.23 2026-07-30 version 0.0.32

rename the focused-project switches to `|fastcompile-project-show-images|` and `|fastcompile-project-show-publications|` apply the selected graphics draft state explicitly after `|graphicx|` loads so image toggling is reliable enable real project images in the active focused-project proposal configuration

1.16.24 2026-07-30 version 0.0.31

keep sub-workpackage names bold and join their following prose into the same paragraph add an opt-in `|fastcompile-project-images|` switch for rendering project figures during focused drafting identify fast project drafts with a running project header and a hook-based page watermark

1.16.25 2026-07-30 version 0.0.30

add a dedicated `|fastcompile-project|` text-drafting mode that skips metadata databases, calculated project headers, and auxiliary funding restoration add an independent `|project-publications|` switch for project publication headings, nocite lists, bibliographies, reports, and result lists use draft graphics, hyperlinks, and microtypography in project-fast mode while retaining authored project prose, sections, labels, aims, and work packages provide database-free fallbacks for project/person references and silence per-item skip output in project-fast builds make final-mode precedence effective before metadata and package setup, and add public fast-project/publication conditionals avoid registering bibliography sources or reading stale bbl data when project-fast publication output is disabled add no-Data-Hub fast project make targets for publication-free and publication-enabled drafting

1.16.26 2026-07-20 version 0.0.29

add an empty-page-style project-overview backmatter page to the generated proposal template improve DOCX conversion of project placeholders and general work-package and subwork-package structures seed converted project files with requested-staff examples and float barriers around publication and diversity sections keep Gantt charts directly after the work packages with strict `|h|` placement and a following float barrier move salary and animal-housing rates into validated `|changeSettings|` keys and remove the separate generated `|dfg-salaries.tex|` file add configurable CRC and affiliation logo paths and retain the former salary and housing commands as expandable compatibility accessors map W2/W3 professorial funding to the shared configurable rate clarify requested-staff applicability rules, validate DFG categories, and use visible no-value backgrounds without alternating row colors separate research and non-research staff groups with a conditional horizontal rule while retaining one row-spanning label per group print resolved existing-staff surnames in bold and format job-description lead-ins as number, academic degree, first name, and last name replace an empty requested-instrumentation overview table with a funding-period-specific explanatory sentence make proposal CI builds reproducible with pinned images, a single Data Hub refresh job, parallel smoke checks, and clean authoritative builds keep live DOI lookups opt-in and preserve generated Data Hub file timestamps when their contents are unchanged support unnamed staff vacancies with `|lastname={TBA}|` without requiring a synthetic first name or academic degree make generated-class Flymake diagnostics useful by suppressing ChkTeX's `expl3/Lua` false positives and fixing the remaining typography warnings remove the unused `|l3keys2e|` dependency and replace `|pdftexcmds|` timing with the kernel-native `expl3` timer

1.16.27 2026-07-18 version 0.0.28

add the DFG project-level RequestedFundingStaff roster with four official staff groups, continuous numbering, institution/affiliation legends, and job descriptions extend the existing staff key family with validated roster metadata and resilient missing-reference diagnostics calculate omitted yearly staff sums from DFG salary constants, percentage, and quantity while retaining explicit sums as overrides document the roster schema, table call, automatic staff-cost formula, and a complete four-group example polish the staff roster typography and spacing and resolve institutions with their parent-affiliation legend render roster categories as personnel categories such as Prof, PhD, and Research rather than salary-table descriptions extract a focused regression test for the staff roster and automatic salary totals as local/test.tex reuse existing RequestedFundingStaff rows for the chapter-2 overview of existing staff, grouped by DFG category and affiliation fix the CV smoke-build target to use the generated `crc-cv.tex` filename

1.16.28 2026-07-17 version 0.0.27

replace repeated requested-funding database sums with incremental LaTeX3 property-list indexes reduce each project funding table from five filtered database traversals to one preserve the optional conversion-missing bibliography when generating release classes document the funding-cache architecture, correctness guarantees, and complete-proposal benchmark

1.16.29 2026-07-16 version 0.0.26

add project-local report references and result lists for quality-assured publications, other results, and patents

1.16.30 2026-07-14 version 0.0.25

configure biblatex styles and additional options separately for CV and proposal documents load bibliography customization before biblatex so style settings take effect

1.16.31 2026-07-14 version 0.0.24

emphasize bibliography aliases for every PI assigned to a project

1.16.32 2026-07-03 version 0.0.23

collect all institutions from comma-separated PI institution references in the participating institutions list

1.16.33 2026-06-24 version 0.0.22

rename documentclass for compatibility reason to dfg-crc.cls

1.16.34 2026-06-23 version 0.0.21

reuse the standard institution-list formatter in the project leaders table

1.16.35 2026-06-22 version 0.0.20

add more vertical spacing between multiple institutions in standard institution lists avoid a leading institution-list line break when the institution name is empty expand user documentation for institution metadata, compilation, generated files, and release steps enable open-access markers in biblatex output and document manual BibTeX fallback annotations enable LuaTeX socket support in makefile builds for DOI API lookup load open-access bibliography markers only for final documents

1.16.36 2026-06-15 version 0.0.19

align optional CV table layout with mandatory CV entries add and document CRC/TRR reference commands

1.16.37 2026-06-11 version 0.0.18

extend documentation for PI and project helper commands make documentation examples more coherent and concrete fix typos and stale yes/no key documentation

1.16.38 2026-06-10 version 0.0.17

small functional fix for cv, adding missing spaces change font of section headers in cv

1.16.39 2026-06-08 version 0.0.16

put the test for existing cv-database at proper position, so there is no error when calling dfgCV directly.

1.16.40 2026-05-29 version 0.0.15dev

cv: test for empty start and end

1.16.41 2026-05-29 version 0.0.14

rename all 'true/false' to 'yes/no' since xlsx cannot handle it.

1.16.42 2026-05-25 version 0.0.13

fix dfgTOCprojectPart now properly working with bookmarks.

1.16.43 2026-05-23 version 0.0.12

calculate overview of requested instrumentation and staff from the various projects. no dedicated database is needed.

1.16.44 2026-05-23 version 0.0.11

change symbol of last shared authorship, so it is easier to differentiate. Fallback if there is no cv for a PI of current funding period. Add a version information on the titlepage.

1.16.45 2026-05-13 version 0.0.10

adjusting addEntry when cv-bool active.

1.16.46 2026-05-12 version 0.0.9

renaming -name- to -positionText- for being streamlined.

1.16.47 2026-05-10 version 0.0.7

improving bibliography stuff for cv section

1.16.48 2026-05-07 version 0.0.6

various optimizations regarding runtime creating tables

1.16.49 2026-05-04 version 0.0.5

a lot of refactoring to speed up compiling tables, putting PI information into tcolorboxes for better handling (raster)

1.16.50 2026-05-01 version 0.0.4

working on more efficient code like reducing database queries.

1.16.51 2026-03-11 version 0.0.3

documentation extended

1.16.52 2026-03-11 version 0.0.3

documentation extended

1.16.53 2026-02-14 version 0.0.2

intensive documentation more funding tables added

1.16.54 2026-01-05 version 0.0.1

initial setup

1.17 LICENCE

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This work has the LPPL maintenance status “maintained”.

The Current Maintainer of this work is Lukas C. Bossert.

This work consists of the source file `crc-proposal-documentation-and-code.dtx`, the installer `crc-proposal-documentation-and-code.ins`, the documentation files `README.md`, `CHANGELOG.md`, and `LICENCE.md`, and the derived files `dfg-crc.cls` and `dfg-crc.pdf`.

2 User documentation

In this section we provide all the relevant information for the writer to use the template properly and understand its various customizations and implementations of features.

There are certain mechanisms that will throw warnings or infos. You can and should read them in the terminal or `.log`-file. If your editor is not providing an aggregated collection you can see a condensed overview using the commandline code:

Command to retrieve all important log-messages

```
cat <filename>.log | grep 'Package dfg'
```

2.1 Compiling and generated files

The maintained source of this bundle is `crc-proposal-documentation-and-code.dtx`. Files such as `local/dfg-crc.cls`, `README.md`, `CHANGELOG.md`, and the example files in `local/` are generated from that source. For template or documentation changes, edit the `.dtx` file and regenerate the derived files.

For a first local compile, use LuaLaTeX through `latexmk`:

First local compile

```
make files
cd local
latexmk -lualatex crc-proposal.tex
latexmk -lualatex crc-cv.tex
```

The class expects LuaLaTeX. Calling LaTeX with a capital L asks TeX for a format file named `LaTeX.fmt`; use `lualatex` or `latexmk -lualatex` instead.

If a change has no visible effect, check which generated class file is being loaded. Regenerate the class and local examples with `make files`, then compile the relevant example again.

2.2 Troubleshooting

Unknown database name The database has not been loaded, or the database name was misspelled. Check the relevant metadata file and whether it is input by the class.

Missing or empty key warnings The row exists, but the requested field is empty. This is intentional where the template needs to alert the user, for example for missing ORCID values.

Not allowed in LR mode Vertical material such as `\vspace`, `\addvspace`, or a paragraph break was inserted in a table place that only accepts horizontal material. Prefer the documented table and list commands, or use options such as `narrow` for compact table output.

Stale output Regenerate the class with `make files`, and check whether the document uses the generated class from `local/`.

2.3 Release workflow for maintainers

For a new release, update `\dfgVersion` and `\dfgVersionDate` at the top of `crc-proposal-documentation-and-code.dtx`, the release line in the README block, the changelog, and `dfg-crc.pkg`. Keep these values in one release commit.

Release and CTAN checks

```
make ctan-check
make check
% Optional online validation without submission:
make ctan-validate
```

The first command builds the manual and the curated output `ctan/dfg-crc.zip`, verifies its exact allow-list, extracts it in a clean temporary directory, runs the portable installer, and compiles a minimal document against the resulting class. The online target validates but does not submit the archive. Before committing, inspect `git status -short`, run `git diff -check`, and review the ZIP file list.

2.4 Metadata, databases and keysets

The core of this template is to work as often and as many times as possible with metadata. All the metadata is written to one or many databases that can be sorted, filtered etc. and passed to the respective tables.

We are collecting information from the database using `datatool`^{→CTAN}.

In the template there are some required information that belong to tables or are generally needed. Therefore we provide some predefined databases names and their respective keysets.

Databases We have these databases that are used and picked up by several commands by default:

meta All the metainformation about the proposal

person Everything that is related to a person

project Anything that is related to a project

institution Info about an institution, that is linked to:

affiliation storing info about the affiliation

There are also more databases created on the fly but mainly used for project specific purposes. The examples below use one coherent sample dataset: MM and KM are persons, A01 is a project, IAIS is an institution, and RWTH is the related affiliation.

2.4.1 Keyset **person**

Example keyset to describe a person-entity.

```
\addEntry→P.25{person}{
  id→P.25          = {MM},
  firstname→P.25    = {Max S.},
  lastname→P.25     = {Mustermann},
  academicdegree→P.25 = {Prof. Dr. rer. nat.},
  gender→P.26       = {m},
  ref-institution-id→P.26 = {IAIS},
  ref-project-id→P.26  = {A01},
  role→P.26         = {PI, spokesperson},
  position→P.26      = {prof-W3},
  positionText→P.26   = {Professor of Microbial Systems},
  period→P.26        = {1},
  name-alias→P.16    = {{Max Mustermann},{M. S. Mustermann}},
  orcid→P.16        = {0000-0002-3555-7218},
  email           = {max.mustermann@example.edu},
  phone→P.16        = {+49 241 80 12345},
  url             = {https://example.edu/mm},
  doctorateYear→P.16 = {1995},
  doctorate→P.16    = {Dr. rer. nat.},
  financed-by→P.16   = {RWTH},
  topic→P.16        = {Host--microbiome interactions},
  category→P.24      = {prof},
  dateDefense→P.17  = {1995},
  periodStart→P.17  = {2025},
  periodEnd→P.17    = {2029},
  contract-information→P.16 = {
    C1→P.16 = {yes},
    C2→P.16 = {no},
    C3→P.16 = {no},
    C4→P.16 = {yes},
  }
}
```

There are several keys you can and should use regarding a person. They are described further done as an example on how to use `\addEntry`^{→P.25} etc.

email=*<string>*

Provide the email-address of the person.

url=*<url>*

URL of the persons academic/professional homepage (e.g. institute).

phone= $\langle string \rangle$

Provide the phone number of the person.

financed-by= $\langle string \rangle$

Describe the source of funding for the person's e.g. position etc.

topic= $\langle string \rangle$

Especially for the early career researchers describe their topic of research.

category=groupLeader|prof|postDoc|medDoc|PhD|research|
nonResearch|student|assistant

`category`^{P.24} is used in various databases. Mostly it is used to state the category of the person, but it is also used then for the early career researchers.

contract-information= $\langle key-values \rangle$

Provide information about the person's contractual situation. The $\langle key-value \rangle$ is further specified with C1, C2, C2a, C2b, C3, C3a, C4, C4a.

C1=yes|no

This key collects the answer to *Is the employment of the project leader(s) at the institution(s) indicated contractually secured for the duration of the proposed funding period?*

C2=yes|no

This key collects the answer to *Do any of the above mentioned persons hold fixed-term positions?*

C2a= $\langle YYYY-MM-DD \rangle$

If key C2 has been answered with $\langle yes \rangle$, this question *End date of fixed-term contract:* $\langle YYYY-MM-DD \rangle$ requires $\langle YYYY-MM-DD \rangle$ as answer, too.

C2b= $\langle YYYY-MM-DD \rangle$

If key C2 has been answered with $\langle yes \rangle$, this question *Further employment is planned until* $\langle YYYY-MM-DD \rangle$ requires $\langle YYYY-MM-DD \rangle$ as answer, too.

C3=yes|no

This key collects the answer to *Will one or more of the above-mentioned persons retire during the proposed funding period?*

C3a= $\langle YYYY-MM-DD \rangle$

If key C3 has been answered with $\langle yes \rangle$, this question *anticipated retirement date:* $\langle YYYY-MM-DD \rangle$ requires $\langle YYYY-MM-DD \rangle$ as answer, too.

C4=yes|no

This key collects the answer to *Funding for the position(s) of the project leader(s) at the institution(s) indicated is covered by core support (state funds or similar):*

C4a= $\langle string \rangle$

If key C4 has been answered with $\langle no \rangle$, this key provides type and source of funding.

Following keys are mainly used for the CV-section but are closely tight to the person:

orcid= $\langle 0000-0000-0000-0000 \rangle$

The individual string with the ORCID. This value is also required for `\getORCID`^{P.42}.

name-alias= $\langle string \rangle$

More versions of the person's name. The various aliases for `name-alias` are also described under `\addboldnames`^{P.44}.

doctorateYear= $\langle YYYY \rangle$

doctorate= $\langle string \rangle$

degree-programme= $\langle string \rangle$

Providing information about the doctorate.

2.4.2 Database entries for a cv

The header of the CV section is (partly) based on the information you parse to the document using the `\addEntry`^{P.25} command with the keyset **person**: Keys like `name-alias`, `orcid`, `doctorate`, `degree-programme`, `url`^{P.15} are used especially for the CV-section.

Let's assume we have a person with the following information:

Partly person-entity dataset focussing on its CV-entry.

```
\addEntry→P.25{person}{
  id→P.25           = {MM},
  firstname→P.25      = {Max S.},
  lastname→P.25       = {Mustermann},
  academicdegree→P.25 = {Prof. Dr. rer. nat.},
  role→P.26          = {PI},
  \ldots
  name-alias          = {{Maxi Mustermann},{Maximilian Mustermann}},
  orcid                = {0000-0002-3555-7218},
  doctorateYear        = {1995},
  doctorate            = {Dr. rer. nat.},
  degree-programme     = {Biology},
  url→P.15           = {https://example.edu/mm},
}
```

This set of information is unique to a person and therefore only needs to be parsed once.

In the cv we need more dedicated information about the person. This is done with a separate keyset so it will not clutter the person-entry too much. You can have multiple of the following entries below for a person. Most important stages should be indicated with `cv-type=mandatory`. If you state `cv-type=supplement` you only need to use the key description, same goes for `cv-type=activities` which will then be in a different section, and last `cv-type=supervision`. There are more sections with further information about the PI. All the information go to the database `<cv>`.

ref-person-id=`<id>`

Use the `<id>` of the person to whom this entry belongs to.

description=`<string>`

Further description of the current entry.

cv-type=`mandatory|supplement|activities|supervision|distinction|other`

Specifying the type of one CV entry with additional information. Each CV of a person needs to have a `<mandatory>` entry (as part of *Qualification and Career*).

periodStart=`{<date>}`

(starting date)

periodEnd=`{<date>}`

(ending date)

dateDefense=`{<date>}`

(date of the defense of the thesis)

Specifying the time span of an event. The `<date>` should be given in an IS8601-form.

Some information comes from the block described above, but for the *Stages* you need to describe them separately using the keys `ref-person-id→P.24`, `cv-type`, `periodStart`, `periodEnd`, `name→P.26`, `position→P.26`, `positionText→P.26`, `description→P.24`, `ref-institution-id→P.26`.

Example dataset-entry for a mandatory person-cv-entity.

```
\addEntry→P.25{cv}{
  ref-person-id→P.24      = {MM},
  cv-type              = {mandatory},
  periodStart          = {1995},
  periodEnd            = {1998},
  position→P.26          = {prof-W3},
  positionText→P.26      = {Professor of Microbial Systems},
  description→P.24       = {Established an independent research group on host--microbiome i
  ref-institution-id→P.26 = {IAIS},
}
```

For each stage on the career path repeat the `\addEntry{<cv>}{< ..., type=mandatory, ...>}`-block.

There are five more blocks to which a researcher can provide information. For each block and for each entry within one block you need to create an entry.

supplement: Supplementary Career Information
 activities: Activities in the Research System
 supervision: Supervision of Researchers in Early Career Phases
 distinction: Academic Distinctions
 other: Other Information

Here is a more concrete example

Example dataset-entry for a common CV-entity

```
\addEntry→P.25{cv}{
  ref-person-id→P.24      = {MM},
  cv-type→P.17           = {supplement},
  description→P.24        = {Member of the university research council since 2024.},
}
```

\dfgCV{*<person-id>*}

Print the complete CV for one person. The command expects a dedicated `cv-<person-id>` database and combines the header, mandatory career stages, optional CV sections, selected publications, and the data privacy statement.

\dfgCVsection[*<database>*]

Print the CVs for all PIs in the current funding period. The *<database>* defaults to `person`; persons are sorted by lastname and firstname before their CVs are printed with `\dfgCV`.

2.4.3 Keyset **project**

Following keys are required to describe a project.

Example dataset-entry to describe a project-entity.

```
\addEntry→P.25{project}{
  id→P.25      = {A01},
  number→P.26   = {A01},
  name→P.26     = {Microbial metabolism in barrier tissues},
  project-type   = {research},
  project-status→P.19 = {N},
  project-area→P.19   = {A},
  consider-for-lists→P.19 = {true},
  reference-only→P.19 = {false},
  research-area→P.19 = {1.11-01,1.11-03},
  ref-person-id→P.24 = {MM,KM},
  collaborations→P.19 = {A02,B01,Q01},
  legal-issues→P.19 = {
    L1→P.19      = {yes},
    L1a→P.19     = {yes},
    L2→P.19      = {no},
    L2a→P.19     = {},
    L3→P.19      = {yes},
    L4→P.19      = {no},
    L5→P.20      = {no},
    L5a→P.20     = {},
    L6→P.20      = {no},
    L7→P.20      = {no},
    L7a→P.20     = {},
  }
}
```

Other required keys are `id→P.25`, `name→P.26`, `number→P.26`, `ref-person-id→P.24`.

project-type=research|service|mgk|admin

Hereby you specify the type of the project. *<research>* stands for a classical research project, *<service>* is service project, *<mgk>* is an integrated graduate college, *<admin>* is an administrative project.

project-status=N|E|C

Define the status of the project, where $\langle N \rangle$ means a *new* project, $\langle E \rangle$ stands for *ending* and $\langle C \rangle$ for *continuing* project. The generated local proposal contains complete, separate source examples for all three statuses. Continuing projects use “Project progress to date”, new projects use “Research rationale”, and ending projects use the shorter “Project history”, “Published project results”, and “Funding” structure. In every case `\printProjectHead`^{P.32} supplies the preceding general-information section from metadata.

project-area= $\langle area-id \rangle$

Assign the project to a collaboration-plot area such as A, B, or Q. Any number of area identifiers is supported. If the key is omitted or empty, the first character of the project ID is used for compatibility with existing metadata (for example, A01 belongs to area A).

consider-for-lists=true|false

Control whether the project participates in automatically generated project lists, project overview tables, research-area aggregates, and project counts. The default is `true`. Setting this key to `false` does not remove the database row, so the project remains available to explicit reference commands such as `\getProject`^{P.29}.

reference-only=true|false

Declare that the project exists only so historical or external project ids can be referenced. The default is `false`. A reference-only project is printed without a hyperlink because it has no project section that could provide a link target. In prose it receives the explicit “former project” indicator. Generated tables and lists instead append a compact superscript asterisk and add a local “Former project” legend when at least one such project occurs. This key is independent of `consider-for-lists`: an ending project with a real project section can be excluded from lists without becoming reference-only.

research-area= $\langle ticklist \rangle$

Collect all research areas (according to the DFG list) in a comma-separated structure.

collaborations= $\langle project-id-list \rangle$

List the other CRC projects collaborating with this project. Collaborations are treated as undirected and duplicate declarations are collapsed, so the reverse relation does not need to be repeated. The project collaboration plot reads its edges from this field and its nodes from the same `project` database. Its default heatmap shows all active projects and highlights the focus project and its direct collaborators. The optional arc layout uses the same active projects on one axis. Ending, reference-only, and `consider-for-lists=false` projects are omitted, as are edges to those intentionally excluded nodes. All arcs reach one common peak height, so their horizontal span does not imply collaboration strength or weight. Project identifiers are printed inside the nodes, and in the arc layout each project-area rule spans its complete contiguous group of nodes.

legal-issues= $\langle further\ key-values \rangle$

Provide information about the project’s legal issues. The $\langle key-value \rangle$ is further specified with L1, L1a, L2, L2a, L3, L4, L5^{P.20}, L5a^{P.20}, L6^{P.20}, L7^{P.20}, L7a^{P.20}.

L1=yes|no

This key records whether the project requires compliance with discipline-specific research ethics guidelines.

L1a=yes|no

If key **L1** has been answered with $\langle yes \rangle$, this statement records whether a statement from the responsible ethics committee is required and will be obtained before funding starts.

L2=yes|no

This key collects the answer to *clinical trials*

L2a=yes|no

If key **L2** has been answered with $\langle yes \rangle$, this statement *A copy of the studies’ registration is included with the proposal* requires an answer, too.

L3=yes|no

This key collects the answer to *experiments involving vertebrates*

L4=yes|no

This key collects the answer to *experiments involving recombinant DNA*

L5=yes|no

This key collects the answer to *research involving human embryonic stem cells*

L5a=yes|no

If key **L5**^{→P.20} has been answered with ⟨yes⟩, this statement *Legal authorization has been obtained* requires an answer, too.

L6=yes|no

This key collects the answer to *research concerning the Convention on Biological Diversity*

L7=yes|no

This key collects the answer to *investigations involving dual use research of concern*

L7a=yes|no

If key **L7** has been answered with ⟨yes⟩, this statement *A copy of the statement by the institution's research ethics committee is included with the proposal* requires an answer, too.

2.4.4 Keyset **institution**

An institution describes the organisational unit a person belongs to, for example an institute, department, centre, or clinic. It is linked to its parent affiliation through `ref-affiliation-id`^{→P.26}. The `abbreviation`^{→P.21} is the compact, reader-facing label used in generated table cells; the internal `id`^{→P.25} is never intended as display text. Full institution lists and legends continue to use `name`^{→P.26}. For compatibility, a missing `abbreviation`^{→P.21} falls back to `name`^{→P.26}. The `name`^{→P.26} key may be left empty when the affiliation itself is the relevant institution-level text; in that case institution-list commands start with the affiliation name.

Example dataset-entry to describe an institution-entity.

```
\addEntry→P.25{institution}{
  id→P.25 = {IAIS},
  name→P.26 = {Institute for Applied Immunology and Systems Biology},
  abbreviation→P.21 = {IAIS},
  ref-affiliation-id→P.26 = {RWTH},
}
```

Institution without a separate institution name.

```
\addEntry→P.25{institution}{
  id→P.25 = {RWTH-main},
  name→P.26 = {},
  abbreviation→P.21 = {RWTH},
  ref-affiliation-id→P.26 = {RWTH},
}
```

Person with multiple institutions.

```
\addEntry→P.25{person}{
  id→P.25 = {MM},
  firstname→P.25 = {Maria},
  lastname→P.25 = {Muster},
  ref-institution-id→P.26 = {IAIS, RWTH-main},
}
```

In standard institution lists, multiple institutions are printed as separate paragraphs with a small vertical gap. In narrow mode, they are joined inline with semicolons. The `abbreviation` option selects institution abbreviations (with a full-name fallback); generated compact tables enable this option automatically.

2.4.5 Keyset **affiliation**

Following keys are required to describe an affiliation.

Example dataset-entry to describe an affiliation-entity.

```
\addEntry→P.25{affiliation}{
  id→P.25           = {RWTH},
  name→P.26          = {Rheinisch-Westfälische Technische Hochschule Aachen},
  abbreviation→P.21   = {RWTH Aachen University},
  addressStreet→P.21 = {Templergraben 55},
  addressZIP→P.21    = {52062},
  location→P.21      = {Aachen},
  country→P.21       = {Germany}
}
```

abbreviation=*(string)*

In addition to **name**^{→P.26} provide an abbreviated version of this affiliation.

addressStreet=*(string)*

Specify the street of the affiliation.

addressZIP=*(string)*

Specify the ZIP code of the affiliation.

location=*(string)*

Specify the location (city) of the affiliation.

country=*(string)*

Specify the country the affiliation is located at.

2.4.6 Keyset funding

Each row represents one funding line. For a staff row, the class can derive the annual amount from the declared personnel category, percentage, and yearly quantity. For other funding types, annual values continue to be supplied with **sum**^{→P.22}.

Complete dataset for a funding entity. Not all keys are always required.

```
\addEntry→P.25[funding]{RequestedFunding}{
  id→P.25           = {A01-staff-prof},
  ref-project-id→P.26 = {A01},
  ref-affiliation-id→P.26 = {RWTH},
  financed-by→P.16    = {DFG},
  funding-type→P.22   = {staff},
  percentage→P.22     = {100},
  category→P.24       = {prof},
  quantity→P.22       = {
    { year1 = {1} },
    { year2 = {1} },
    { year3 = {1} },
    { year4 = {1} },
    { year5 = {1} },
  },
  sum→P.22 = {
    { year1 = {1000} },
    { year2 = {1000} },
    { year3 = {1000} },
    { year4 = {1000} },
    { year5 = {1000} },
  },
  year→P.23          = {2026},
  applicant→P.23      = {5000},
  participant→P.23    = {2000},
}
```

```

other-funds→P.23      = {0},
staff→P.23           = {5000},
costs→P.23          = {1200},
instrumentation→P.23 = {0},
fellowships→P.23    = {0},
globalfunds→P.23    = {0}
}

```

Not all of the above mentioned keys are necessary for each funding table. We will provide examples for the various funding databases and their required keysets.

funding-type=staff|costs|fellowships|globalfunds|
instrumentation

Define the type of this funding according to the predefined set. This is important since different features are activated depending on the value of this key.

percentage=*<number>*

This is only relevant when **funding-type** is set to staff. State the percentage of a full position, for example 100 for a full position or 65 for a 65% position. Integer and decimal values are accepted by the automatic calculation.

category=groupLeader|prof|prof-W2|prof-W3|postDoc|medDoc|
PhD|research|nonResearch|student|assistant

This is only relevant when **funding-type** is set to staff. Describe the kind of the required person. Depending on this *<category>* the matching salary@... setting is used. The categories prof, prof-W2, and prof-W3 all use salary@prof^{→P.36}; the other category names correspond directly to their setting names below.

quantity=*<key=value>*

This is a key that enables further *<key-values>* with a predefined subset year1 through year5. State how many positions of the category^{→P.24} are required in each year. Decimal quantities are supported, for example year1={0.5} for half a position.

sum=*<key=value>*

This is a key that enables further *<key-values>* with a predefined subset for the individual years. State the sum for a person for a certain category^{→P.24}. For funding-type=staff this key is optional: every omitted yearly sum is calculated from the salary setting for category^{→P.24}, percentage, and that year's quantity. Because the five-year CRC period starts and ends with a half-year, automatically calculated amounts for year1 and year5 receive an additional factor of 0.5; year2 through year4 use the complete annual rate. The result is rounded to the nearest euro. An explicit yearly sum remains an override, so existing declarations and exceptional personnel costs keep their stated value.

For every omitted staff sum, the class applies

$$\text{round} \left(\text{salary}(\text{category}) \times \frac{\text{percentage}}{100} \times \text{quantity}(\text{year}) \times \text{period-factor}(\text{year}), 0 \right).$$

Here, period-factor = 0.5 for year1 and year5 and 1 for year2-year4. Thus the two half-years together count as one complete salary year. The calculation is performed when the row is added and the result is stored in the normal sum-year1 through sum-year5 fields. Funding tables therefore use calculated and explicitly supplied amounts in exactly the same way. A missing salary setting, percentage, or valid quantity produces a warning instead of silently inventing an amount.

Staff funding with automatically calculated sums.

```

\addEntry→P.25[funding]{RequestedFunding}{
  ref-project-id→P.26 = {A01},
  funding-type      = {staff},
  category→P.24     = {PhD},
  percentage        = {65},
  quantity          = {
    year1 = {1}, year2 = {1}, year3 = {1},

```

```

        year4 = {1}, year5 = {1}
    }
}

```

year= $\langle integer \rangle$

State the year as integer. Actually only relevant in combination with `applicant`, `participant`, `other-funds`, `staff`, `costs`, `instrumentation`, `fellowships`, `globalfunds`.

applicant= $\langle integer \rangle$

State the sum of direct costs for the applicant institution.

participant= $\langle integer \rangle$

State the sum of direct costs for any other participating (i.e. not-applicant) institution.

other-funds= $\langle integer \rangle$

State the sum of direct costs when neither the applicant nor a participating institution is covering the costs.

staff= $\langle integer \rangle$

State the $\langle sum \rangle$ of staff for the previous funding phase. This is a fixed sum and therefore not necessary to calculate the sum like we do with `category`^{→P.24} etc.

costs= $\langle integer \rangle$

State the $\langle sum \rangle$ of direct costs for the previous funding phase. This is a fixed sum and therefore not necessary to calculate the sum like we do with `category`^{→P.24} etc.

instrumentation= $\langle integer \rangle$

State the $\langle sum \rangle$ of instrumentation for the previous funding phase. This is a fixed sum and therefore not necessary to calculate the sum like we do with `category`^{→P.24} etc.

fellowships= $\langle integer \rangle$

State the $\langle sum \rangle$ of staff for the previous funding phase. This is a fixed sum and therefore not necessary to calculate the sum like we do with `category`^{→P.24} etc.

globalfunds= $\langle integer \rangle$

State the $\langle sum \rangle$ of globalfunds for the previous funding phase. This is a fixed sum and therefore not necessary to calculate the sum like we do with `category`^{→P.24} etc.

2.4.7 Keyset **staff**: requested-funding roster

The `staff` key family also supplies the project-level roster required by the DFG section “Requested funding for staff”. These records use the fixed database `RequestedFundingStaff` and are independent of the monetary `RequestedFunding` rows above. The public output call is `\printTable`^{→P.32} `{ {RequestedFundingStaff} {A01} }`.

Complete staff-roster declaration.

```

\addEntry→P.25[staff]{RequestedFundingStaff}{
  ref-project-id→P.26      = {A01},
  funding-status→P.24    = {existing},
  staff-type→P.24        = {research},
  ref-person-id→P.24     = {MM},
  field-of-research→P.24 = {Microbiology},
  commitment→P.24       = {8},
  funding-source→P.24    = {State funds},
  description→P.24      = {
    Leads the experimental work and supervises the research staff.
  }
}

```

ref-project-id=*<project-id>*

Required. Selects the project for which the roster row is printed. The value must match the project argument in the table call. For example, a row with `ref-project-id={A01}` is selected when A01 is passed as the project argument to `\printTable`^{→P.32}.

funding-status=existing|requested

staff-type=research|nonResearch

These two required keys select one of the four official DFG groups. Empty subgroups are omitted and declaration order is retained within each group. In a project with `project-status=E`, `funding-status=requested` denotes staff funded with approved grant money in the ending funding period; the table changes that group label and its job-description heading automatically.

ref-person-id=*<string>*

firstname=*<string>*

lastname=*<string>*

academic-degree=*<string>*

positionText=*<string>*

A resolvable `ref-person-id` obtains the name, academic degree, position, category, and organisation from the central person fields `firstname`, `lastname`, `academicdegree`, `positionText`, `position`, `ref-institution-id`, and the compatibility fallback `ref-affiliation-id`. Any explicitly supplied roster field overrides the central value. An empty or omitted `academic-degree` is silently left out of both the roster and the job-description heading. For an unnamed vacancy, use `lastname={TBA}`; `firstname` may then also be omitted, and both the roster and the job-description lead-in print a clean “TBA” marker. Multiple unnamed vacancies are distinguished by their category, position, field of research, and institution when duplicate records are checked. Either a person reference or at least a last name is required. For existing staff resolved through `ref-person-id`, the lastname is printed in bold in the roster. The former roster key `position` remains accepted as a compatibility alias for `positionText`.

field-of-research=*<string>*

funding-source=*<string>*

description=*<string>*

`field-of-research` supplies its table cell for every roster row. `funding-source` applies only to existing staff; the corresponding cell for requested staff is marked as not applicable. `description` supplies the numbered text below the table and accepts ordinary paragraph material, citations, and other LaTeX commands. Each description starts with its number followed by academic degree, first name, and last name. Missing applicable values are highlighted and reported in the log.

ref-institution-id=*<id-list>*

Resolve one or more comma-separated institution ids through the central `institution` database. Each institution’s `abbreviation`^{→P.21} is printed in the department/institution column; the full `name`^{→P.26} is retained in the automatically generated legend together with its parent affiliation. Parent-affiliation abbreviations are checked and explained in first-use order. This key may be omitted when a resolvable `ref-person-id` already supplies `person.ref-institution-id`; a value on the staff row acts as an explicit override.

department=*<string>*

Compatibility override for unstructured declarations. When present, this text is printed directly and takes precedence over institution lookup. New declarations should normally use `ref-institution-id`^{→P.26}.

ref-affiliation-id=*<affiliation-id>*

Compatibility fallback used only when neither `department` nor `ref-institution-id`^{→P.26} is supplied. It prints the affiliation abbreviation and adds the affiliation to the legend. New declarations should use `ref-institution-id`^{→P.26} so the organisational unit and its parent affiliation remain separate structured data.

commitment=*<number>*

Project commitment in hours per week for existing staff. The value may be a non-negative integer or decimal; no artificial upper limit is imposed. For requested staff the table cell is marked as not applicable.

category=prof|groupLeader|postDoc|medDoc|PhD|research|
nonResearch|student|assistant|prof-W2|prof-W3

Required for requested staff unless it can be inherited from `person.position` through `ref-person-id`. Only keys registered in `\g__dfg_dfg_category_names_prop` are accepted, and the table expands each key to the

label stored in that property; for example, `postDoc` prints “Postdoctoral researcher”. Existing staff inherit the category for the chapter-2 overview when possible, but may still supply an explicit override; their `Category` cell in the project-level roster is marked as not applicable.

The table traverses `RequestedFundingStaff` only once for the selected project, then assigns continuous sequence numbers in display order. The same numbers are reused below the table for the two job-description blocks. Missing values, unresolved references, and exact duplicate identities produce warnings and visible placeholders without stopping compilation.

Reuse in chapter 2: overview of existing staff The same declarations also populate the proposal-wide table in section 2.1.2; no separate totals database is needed. The call is `\printTable→P.32{OverviewExistingStaff}`. It selects only rows with `funding-status={existing}`, counts one person per distinct parent affiliation, and groups the values into the seven categories prescribed by the DFG form. The mappings are `prof`, `prof-W2`, and `prof-W3` to Professors, `groupLeader` to Junior research group leaders, `postDoc` to Postdoctoral researchers, `PhD` to Doctoral researchers, `research` and `medDoc` to Other research staff, `nonResearch` to Non-research staff, and `student` and `assistant` to Student and graduate assistants.

The applicant affiliation or affiliations are read as a comma-separated list from `meta.ref-affiliation-id` and printed first; other affiliations are obtained from each row’s `ref-institution-id`. The group heading says `enquoteapplicant university` for one id and `enquoteapplicant universities` for several ids, spanning all corresponding columns. Multiple institutions belonging to the same affiliation count that person only once in that affiliation column. Since the project declarations normally occur after chapter 2, the class transfers the rows through the `.aux` file. The normal multi-pass `latexmk` build therefore fills the table automatically on the next pass.

2.4.8 Adding information to a database

`\addEntry` [`⟨key-set⟩`] {`⟨database⟩`} {`⟨key=value⟩`}

Adds an entry to the database `⟨database⟩` with the defined values from `⟨key=value⟩`.

You can omit the key-set-definition if the name of the database is the same as of the key-set, like for `⟨person⟩`. Here is an example how to add some information about a person into the respective database:

Small example of how to add data to a database. Here `⟨person⟩` is the database *and* the keyset.

```
\addEntry{person}{
  id      =MM,
  firstname =Manfred,
  lastname  =Mustermann
}
```

Internally there is a new row added to the mentioned database (`person`). In case the database has not yet existed it will create it on the fly.

For other databases you can proceed as this:

Small example of how to add data to a database. Here `⟨VIP⟩` is the database *while* using the keyset of `⟨person⟩`.

```
\addEntry[person]{VIP}{
  id      =person1,
  firstname =Kim,
  lastname  =Muster
}
```

In this case the person is stored in the database `VIP` (for whatever reason this is important).

Following keys are available for the `⟨person⟩`-keyset.

`id`=`⟨unique string⟩`

Any kind of a unique string that serves as an id, especially for commands like `\getEntry→P.28`. Almost all databases require this key.

`firstname`=`⟨string⟩`

`lastname`=`⟨string⟩`

`academicdegree`=`⟨string⟩`

gender=f|m|d
period=1|2|3 (multi choice!!)
role=PI|spokesperson|manager|steering-committee-member|rector
position=PhD|postDoc|groupLeader|research|nonResearch|student|prof|prof-W2|prof-W3
positionText= $\langle string \rangle$ (Specifying the position of the person, current or in the CV-section for the respective period.)
 Personal and individual *required* information about a person.

ref-institution-id= $\langle string \rangle$
ref-affiliation-id= $\langle string \rangle$
ref-project-id= $\langle string \rangle$
 Referencing to an external database with its dedicated $\langle id \rangle$. **Note:** When you reference using **ref-institution-id**, there is no need to explicitly reference the affiliation with **ref-affiliation-id**.

The institution data is resolved through a two-step relationship. A person stores one or more institution ids in **ref-institution-id**; each institution stores the id of its parent affiliation in **ref-affiliation-id**. Commands such as `\dfgInstitutionListP.41` therefore follow this chain:

`person.ref-institution-id  $\longrightarrow$  institution.id  $\longrightarrow$  institution.ref-affiliation-id  $\longrightarrow$  affiliation.id.`

The affiliation id usually does not need to be duplicated in the person entry.

For the database *meta* there are also dedicated keys. The database *meta* contains specific information on the meta-level about the CRC. For the *meta* row with `id=crc`, **ref-affiliation-id** accepts one or more comma-separated affiliation ids, for example {aff1, aff2}. These are the applicant or coordinating universities. Their names and locations are resolved in declaration order for the title page and related prose; applicant funding totals include every listed id. Besides `idP.25`, **ref-affiliation-id** there are these dedicated keys:

name= $\langle string \rangle$ (applicable to other keysets, too.)
nameAddon= $\langle string \rangle$
number= $\langle integer \rangle$
fundingPeriodNumeral=1|2|3
fundedSince= $\langle YYYY \rangle$
fundingYears= $\langle YYYY1, YYYY2, YYYY3, YYYY4, YYYY5 \rangle$
fundingYearsPrevious= $\langle YYYY1, YYYY2, YYYY3, YYYY4, YYYY5 \rangle$ (applicable to 2nd and 3rd phases)
 Specify the core information of a CRC. The key **fundingPeriodNumeral** corresponds to **period**.

2.4.9 Retrieving and handling information from a database

Information retrieval command overview The following overview groups the public commands by the information they produce. Square-bracket arguments are optional; brace arguments are mandatory. The detailed descriptions below explain formatting, warnings, and fast-compilation behaviour.

General database access

`\getEntry [ $\langle database \rangle$ ] { $\langle id \rangle$ } { $\langle field \rangle$ } [ $\langle id-field \rangle$ ]` prints one field from one row.
`\getEntry* [ $\langle database \rangle$ ] { $\langle id \rangle$ } { $\langle assignments \rangle$ } [ $\langle id-field \rangle$ ]` retrieves several fields in one row lookup and assigns them to macros without printing.
`\compareEntry [ $\langle database \rangle$ ] { $\langle id \rangle$ } { $\langle field \rangle$ } { $\langle value \rangle$ } { $\langle true \rangle$ } { $\langle false \rangle$ }` selects content according to a field comparison.

People, institutions, and projects

`\getName, \getFullName { $\langle person-id \rangle$ }` prints a person's lastname or full name; the starred full-name form adds the academic degree.
`\getPI *{ $\langle person-id-list \rangle$ } [ $\langle text \rangle$ ]` prints linked PI references; the star includes firstnames.
`\getORCID, \getORCIDvalue [ $\langle database \rangle$ ] { $\langle person-id \rangle$ }`: the first prints a linked, formatted ORCID; the second stores the raw value in `\theORCIDvalue` for later formatting.
`\dfgInstitutionList [ $\langle database \rangle$ ] { $\langle person-id \rangle$ } [ $\langle options \rangle$ ]` prints a person's institutions and their parent affiliations.
`\getPersonInformation [ $\langle database \rangle$ ] { $\langle person-id-list \rangle$ }` prints complete PI/contact blocks.
`\getPIsWithRole [ $\langle database \rangle$ ] { $\langle role \rangle$ } [ $\langle raster-options \rangle$ ]` prints current-period people carrying the requested role.
`\getPIProject, \getProjectPI *{ $\langle id-list \rangle$ }` prints people with their assigned projects, or projects with their assigned people; the starred forms include firstnames.
`\getPIOfProject [ $\langle properties \rangle$ ] { $\langle project-id \rangle$ } [ $\langle delimiter \rangle$ ]` prints selected PI name properties for one project.

`\getProject {<project-id-list>} [<text>]` prints project references. Optional `<text>` replaces the displayed project number while retaining the link target and is best used with a single project. With `projectPIOOncePerSection→P.35=true`, it shares `\getProjectPI`'s first-reference PI expansion and state. A reference-only project is deliberately not linked. It is marked as “former project” in prose; inside `\printTable` and `\printList` output it receives an asterisk and the generated item receives a local legend.

`\getProjectCount [<area>]` prints the number of active, list-considered projects. Omit the area for the total, or pass A, B, or Q.

`\dfgResearchAreasList {<code>}` prints a DFG research-area code and its description.

`\getAim, \getWP [<project-id>] {<id-list>}` cross-references one or more project aims or work packages; the project id defaults to the current project.

Person statistics

`\getPositionGenderPhaseAmount [<database>] {<position>} {<gender>} {<period>}` prints the count for one position/gender/period tuple.

`\getPositionPhaseTotal [<database>] {<position>} {<period>}` prints the all-gender total.

`\getGenderPhaseTotal [<database>] {<gender>} {<period>}` prints the all-position total.

`\getPositionGenderPhasePercentage [<database>] {<position>} {<gender>} {<period>}` prints the rounded integer percentage value within a position.

`\getGenderPhasePercentage [<database>] {<gender>} {<period>}` prints the rounded integer percentage value across all counted positions.

Funding and staff totals

The near-identical funding names encode two different scopes. Commands using the singular name `RequestedFunding` use the proposal-wide `RequestedFundingOverview` database by default. Commands using the plural name `RequestedFunds` use the project-level `RequestedFunding` database and therefore require a project id. In the signatures below, `<sum-fields>` means one or more fields such as `sum-year1` through `sum-year5`.

`\getCountRequestedStaff [<project>] {<year>} {<category>}` prints the requested staff quantity, optionally restricted to one project.

`\getSumRequestedFunding [<database>] {<year>} {<type>}` prints the proposal-wide total for one funding type; use `year=all` for all five years.

`\getTotalSumRequestedFunding [<database>] {<year>} {<type>}` has the same proposal-wide scope and additionally accepts `type=all` for the grand total.

`\getSumPreviousRequestedFunding [<database>] {<year>} {<fields>}` totals the selected columns in the previous-period database; `year=all` includes every row.

`\getSumRequestedFunds [<database>] {<project>} {<type>} {<sum-fields>}` prints a project total for one funding type.

`\getTotalSumRequestedFunds [<database>] {<project>} {<sum-fields>}` prints a project total across all funding types.

`\getSumRequestedFundsInstrumentation [<project>] {<sum-fields>}` prints the proposal-wide instrumentation total or restricts it to the optional project.

`\getSumRequestedFundingDirectCosts [<database>] {<year>} {<group>}` totals direct costs for applicant, participant, other-funds, or all.

`\getSumExistingFunds [<database>] {<project>} {<sum-fields>}` prints existing direct-cost funding for one project.

For example:

Common project-count and funding queries.

```
\getProjectCount[A]                % active A projects
\getSumRequestedFunding{all}{staff} % proposal-wide staff total
\getTotalSumRequestedFunding{all}{all} % proposal-wide grand total
\getSumRequestedFunds{A02}{staff}{sum-year1} % A02 staff total, year 1
\getTotalSumRequestedFunds{A02}{sum-year1} % A02 grand total, year 1
```

You can get any kind of information back from any database using `\getEntry`:

`\getEntry` [*<database>*] {*<value of id>*} {*<column>*} [*<alternative id-field>*]

Retrieve and typeset the value of *<column>* from the row whose id-cell equals *<value of id>*.

The optional *<database>* argument selects the `datatool`^{CTAN} database to query; it defaults to `\tmpLocalDB`, which is set by the surrounding context (typically by the table-generating command). The optional *<alternative id-field>* argument names the column that holds the row identifier and defaults to `id`; supply a different name when the row is keyed on something other than the standard id column (for example `ref-project-id` or `number`).

The retrieved value is wrapped in `\dfgShowTag` before being typeset, so when the `showtags`^{P.34} class option is active the output is annotated with a small overlay marker showing the originating database, id, and column. When the option is inactive, the value is typeset plain.

The command performs several checks and emits a warning to the log when something is wrong: a `database-name-not-given` warning if *<database>* is empty, a `database-not-found` warning if no database with the given name exists, and a `missing-key` warning if the row exists but the requested cell is empty or undefined. The last warning is suppressed during `tabularray`^{CTAN}'s measuring phase to avoid duplicate log entries.

When the `fastcompile-project` class option is active, the lookup is skipped entirely and the row identifier is typeset as a quiet grey placeholder. Starred multi-field lookups initialise their destination macros to empty values without touching a database.

Examples:

```
% fetch the lastname of person 42 from the |person| database
\getEntry[person]{42}{lastname}

% fetch the title of the project with number "A1"
\getEntry[project]{A1}{name}[number]

% inside a context where \tmpLocalDB is set to "person":
\getEntry{42}{firstname}
```

When several columns from the same row are needed, prefer the starred form `\getEntry*`, which performs only a single row lookup.

`\getEntry*` [*<database>*] {*<value of id>*} {*<assignments>*} [*<alternative id-field>*]

Starred variant of `\getEntry`. Retrieves multiple columns from the same row in a single lookup and assigns each value to the macro named on the left-hand side of the assignment.

The *<assignments>* argument is a comma-separated list of *<macro>*=*<column>* pairs. For each pair, the value of *<column>* for the row whose id-cell equals *<value of id>* is stored in *<macro>*. Unlike the unstarred form, this variant does not print anything and does not wrap results in `\dfgShowTag` – the caller is responsible for formatting the retrieved values.

Missing fields trigger the same `missing-key` warning as the unstarred form (suppressed during `tabularray`'s measuring phase).

Example:

```
\getEntry*[person]{42}{
  \theFirst = firstname,
  \theLast  = lastname,
  \theDegree = academicdegree
```

```
}
\theDegree\space\theFirst\space\theLast
```

This is preferable over multiple `\getEntry` calls when several fields from the same row are needed: the row is located once instead of once per field.

`\tmpLocalDB{<database>}`

Define the database locally (e.g. within a group) so you don't need to repeat it as `[<database>]` for e.g. `\getEntry`^{P.28}.

Here is a concrete example how to do it. It will give you the last name of the person (database `person`) that has the id `MM`.

Example how to get data from the database `<person>`.

```
\getEntry[person]{MM}{lastname}
```

You can omit `[<person>]` in this case if `\tmpLocalDB` is defined.

Omit locally the database because it has been defined before.

```
\def\tmpLocalDB{person}
\getEntry{MM}{lastname}
```

To quickly get a name of a person there is a dedicated command:

`\getName{<id>}`

Get last name of person that has the `<id>`. This sets the database to `person`.

`\getFullName*{<id>}`

`\getFullName{<id>}`

Get the full name of the person with the `<id>`. The starred version adds the academic title in front.

`\getPI*{<id-list>}`

`\getPI{<id-list>}`

`\getPI{<id-list>}[<text>]`

Reference one or multiple PIs from the `person` database. The `<id-list>` is a comma-separated list of person ids. By default the command prints the lastname; the starred version also prints the firstname. With the optional `<text>` argument, `<text>` is printed instead, but the hyperlink still points to the PI.

The printed name is typeset bold, coloured with `referencePI`, and linked to the corresponding person's row in `\printTable{ProjectLeaders}`. Each row of that table provides the destination `pi:<id>`.

Reference one or multiple PIs.

```
\getPI{MM}
\getPI*{MM,KM}
\getPI{MM}[the spokesperson]
```

`\getProject{<id-list>}[<text>]`

Reference one or multiple projects from the `project` database. The `<id-list>` is a comma-separated list of project ids. By default the command prints the project number; with the optional `<text>` argument, `<text>` is printed instead, but the hyperlink still points to the project. In CV mode the command prints the same text without a hyperlink. Projects declared with `reference-only`^{P.19}=`true` are never hyperlinked; instead, "former project" is appended to make the missing project section explicit.

The printed project reference is typeset bold and coloured according to the first letter of the project id. Multiple project references are joined as a natural-language list with commas and a final "and". With `projectPIOncePerSection`^{P.35} the command behaves like the unstarred `\getProjectPI`^{P.31}: the first reference to each project in a section includes its PIs and later references use the compact project form. Generated tables and lists remain compact.

Reference one or multiple projects.

```
\getProject{A01}  
\getProject{A01,B02}  
\getProject{A01,B02,Q01}  
\getProject{A01}[the first project]
```

\getProjectCount [*area*]

Print the number of active projects. A project is active when its `project-status`^{→P.19} is C or N and `consider-for-lists`^{→P.19} is true and `reference-only`^{→P.19} is false. With no optional argument all active projects are counted. Any explicit `project-area`^{→P.19} value may be supplied to restrict the result; where that metadata is absent, the first character of the project ID is used. All area totals are computed together on first use and cached for subsequent calls.

Count active projects.

```
\getProjectCount  
\getProjectCount[A]  
\getProjectCount[B]  
\getProjectCount[Q]
```

\CRC{*crc-number*}

\CRC*{*crc-number*}

\CRC* [*crc-title*] {*crc-number*}

Print a CRC reference. For the current CRC, identified by the `number`^{→P.26} field of the `meta` entry with id `crc`, the unstarred command prints the short form stored in `\thisCRC`; the starred command prints the long form with the CRC title.

For a different CRC number, the unstarred command prints only the short reference, while the starred form prints a long reference. If *crc-title* is given, it is used as the title of the external CRC; otherwise the command falls back to the CRC number.

\TRR{*trr-number*}

\TRR*{*trr-number*}

\TRR* [*trr-title*] {*trr-number*}

Print a CRC/TRR reference. The command follows the same rules as `\CRC`, but uses “CRC/TRR” as the printed programme type.

Reference current and external CRCs.

```
\CRC{1382}  
\CRC*{1382}  
\CRC{999}  
\CRC*[External CRC title]{999}  
\TRR{999}  
\TRR*[External CRC/TRR title]{999}
```

\getPIProject*{*person-id-list*}

\getPIProject{*person-id-list*}

Print one or multiple PIs together with their assigned projects. The *person-id-list* is a comma-separated list of ids from the person database. For each PI, the command reads `ref-project-id`^{→P.26} from the person entry and prints the referenced projects in parentheses using `\getProject`.

The starred version prints firstnames in addition to lastnames.

Print PIs with their projects.

```
\getPIProject {MM, KM}  
\getPIProject * {MM, KM}
```

\getProjectPI * { *project-id-list* }

\getProjectPI { *project-id-list* }

Print one or multiple projects together with their assigned PIs. The *project-id-list* is a comma-separated list of ids from the `project` database. For each project, the command reads `ref-person-id`^{P.24} from the project entry and prints the referenced PIs in parentheses using `\getPI`^{P.29}.

If a project id is identical to the current project established by `\printProjectHead`^{P.32}, only the project itself is printed, just as with `\getProject`^{P.29}; its PIs are omitted. In a list containing several projects, this exception applies only to the matching project.

By default, PI names are shown only for the first `\getProject`^{P.29} or `\getProjectPI` reference to each project within a section. Both commands share the same remembered state, and a new section resets it. Generated tables and lists remain compact. Set `projectPIOOncePerSection`^{P.35}=false with `\changeSettings`^{P.35} to make `\getProject`^{P.29} always compact and `\getProjectPI` always expanded.

The starred version prints firstnames in addition to lastnames.

Print projects with their PIs.

```
\getProjectPI {A01, B02}  
\getProjectPI * {A01, B02}
```

\getPIofProject [*properties*] { *project-id* } [*delimiter*]

Print the PIs assigned to a project. The command reads `ref-person-id`^{P.24} from the project entry and then prints selected person fields from the `person` database. The optional *properties* argument is a comma-separated list of fields to print and defaults to `lastname`. Typical values are `academicdegree`, `firstname`, and `lastname`. The optional *delimiter* separates multiple PIs and defaults to `\, /\, .`

Print the PIs of a project.

```
\getPIofProject {A01}  
\getPIofProject [firstname, lastname] {A01} [, ]
```

\getPIsWithRole [*database*] { *role* } [*raster-options*]

Print all persons from *database* with the given *role* in PI boxes. The database defaults to `person`. Only persons belonging to the current funding period are shown. The optional *raster-options* are passed to the underlying `tcolorbox`^{CTAN} raster.

Print all PIs with a given role.

```
\getPIsWithRole {spokesperson} [raster columns=1]  
\getPIsWithRole {steering-committee-member}
```

We can also compare values from a database against anything. This might be more relevant for some use in the backend, but who knows if this becomes handy.

\compareEntry [*database*] { *id* } { *field* } { *value* } { *true* } { *false* }

Compare an entry with the *id* of *database* against *value* and show either *true* or *false*.

For example if you want to have different results when the last name of the person with the id is MM.

Compare a database entry against something.

```
\compareEntry[person]{MM}{lastname}{Mustermann}  
{Yes, the name is Mustermann.}  
{No, the name is not Mustermann.}
```

Or here is some concrete and real world example. We check if a person is coming from the affiliation RWTH. If the person comes from the RWTH, then we display the longname, if not, leave it empty.

```
\compareEntry→P. 31[MM]{ref-affiliation-id}{RWTH}  
{Rheinisch-Westfälische Technische Hochschule}  
{}
```

2.5 Filling tables from the template

In this section we provide some insights how to fill the tables with the required information.

\printTable [*options*] {*name*}

Print one of the predefined template tables. The *name* is the table base name without the suffix Table; for example ProjectLeaders calls \ProjectLeadersTable. If *name* is a braced list, the first item is used as the table base name and the remaining items are passed as arguments to that table command.

\printList [*options*] {*name*}

Print one of the predefined template lists. The *name* is the list base name without the suffix List; for example ParticipatingInstitutions calls \ParticipatingInstitutionsList. The optional *options* are passed to the generated list command.

\printPlot {*plot specification*}

Print one of the predefined vector plots. As for \printTable, a braced list uses its first item as the plot base name and passes the remaining items as arguments. Plot-specific key-values follow the plot name; an optional final argument adds caption text. For example, \printPlot{{ProjectCollaboration}{B06}} calls the project collaboration heatmap focused on B06, while \printPlot{{Gantt}{B06}} prints B06's Gantt chart. Select the compact arc layout with \printPlot{{ProjectCollaboration}[layout=arc]{B06}[Caption text]}. Heatmap columns use a shared dynamic box width based on the project area with the most projects, and inactive no-collaboration projects have white backgrounds. Project areas are read from the optional project-area field of each project entry; if it is absent, the first character of the project ID is used. Rows are created for every distinct area, ordered by area and project ID. The familiar A, B, and Q colors are retained; other areas use a rotating palette. Override individual colors with area-colors={C=orange,D=violet} or replace the fallback palette with area-palette={teal,brown,magenta} in the plot options. Use collaborationAreaColors^{→P. 35} and collaborationAreaPalette^{→P. 35} in \changeSettings^{→P. 35} to apply the same customization to every collaboration plot.

Print predefined tables, lists, and plots.

```
\printTable{ProjectLeaders}  
\printList{ParticipatingInstitutions}  
\printTable{{Projects}{A}{Microbiota and metabolic pathways}}  
\printTable{{RequestedFunding}{A01}}  
\printPlot{{ProjectCollaboration}{A01}}  
\printPlot{{Gantt}{A01}}
```

\printProjectHead {*project-id*}

Start the section for one project. The command sets the current project, creates the project heading, resets project-local counters, starts a bibliography refsection, prints the project leaders, and prepares the project-specific thumbindex and headers. Active research and service projects also receive the DFG research-areas heading from their

efKeyresearch-area metadata; ending, MGK, and administrative projects do not. For every person id in the project's comma-separated `ref-person-id`^{→P.24} value, all names stored in `name-alias`^{→P.16} are registered as emphasized bibliography names. An empty alias value is ignored.

With `fastcompile-project`^{→P.34}, the current-project state, counters, labels, a compact running header containing the project ID, and the optional bibliography refsection are prepared. A light hook-based draft watermark is added to every shipped page; the calculated heading, project-leader cards, contract information, legal-issues table, thumb index, and table-of-contents entry are omitted.

`\printProjectTail`

Finish the current project section. The command closes the bibliography refsection, resets bold bibliography names, restores the table-of-contents depth, and starts a new page. In `fastcompile-project`^{→P.34}, it only closes the optional publication refsection and does not force a page break.

`\projectPublicationsHeading`

Print the standard project-publications subsection heading only when `fastcompile-project-show-publications`^{→P.34} is enabled.

`\projectNocite` { *<entry keys>* }

Add project publication entries with `\nocite` only when `fastcompile-project-show-publications`^{→P.34} is enabled.

`\printProjectBibliography` [*<biblatex options>*]

Print a project bibliography only when `fastcompile-project-show-publications`^{→P.34} is enabled. Use these three project-specific commands together so disabling publication output also removes its heading and explicit bibliography work.

`\printProjectResults` { *<key-value list>* }

Print the three result categories required for an ending project. The keys `quality-assured`, `other`, and `patents` each accept a comma-separated list of bibliography entry keys. Use the literal value `none` when a category produced no results. An omitted or empty key retains a drafting instruction instead, so an unfinished list is not accidentally reported as empty.

Every non-empty category is placed in a separate biblatex reference segment within the reference section opened by `\printProjectHead`. Consequently, category membership is local to the current project. The command also places any pending floats before the result lists.

The combined result-key list is written to the project's auxiliary file. On the next normal $\LaTeX$ pass, a `projectReport` bibliography uses this list to omit report citations that are printed later as project results. This follows the usual biblatex compilation cycle and does not require the entry keys to be duplicated in the report.

```
\begin{projectReport}
  <environment content>
\end{projectReport}
```

Isolate all citations in the project report in their own reference segment and print that segment's bibliography at the end of the environment. Any entries assigned to `\printProjectResults` for the same project are omitted, because they are printed in the later result lists. Place the environment immediately after the report subsection heading and label.

Print the published results of an ending project.

```
\subsection{Report}
\begin{projectReport}
  Report text with a general source \cite{general-source} and a project
  result \cite{article-key}.
\end{projectReport}

\subsection{Published project results}
\printProjectResults{
  quality-assured = {article-key,book-key},
  other           = {dataset-key,software-key},
  patents         = none
}
```

`\dfgTOCprojectPart`{ $\langle letter \rangle$ }[$\langle label \rangle$]{ $\langle title \rangle$ }

Add a project-area heading to the table of contents. The $\langle letter \rangle$ identifies the project area, $\langle label \rangle$ defaults to Project area, and $\langle title \rangle$ is the text printed after the area label.

Wrap a project section.

```
\dfgTOCprojectPart{A}{Microbiota and metabolic pathways}
\printProjectHead{A01}
\ldots
\printProjectTail
```

2.6 Adjustments and Customizations

2.6.1 Documentclass options

`\documentclass`{ $\langle key=value \rangle$ }

Adjust on a metalevel various options (e.g. `showmarginalia`, `fastcompile`, `fastcompile-project`, `fastcompile-project-show-images`, `fastcompile-project-show-publications`, `showtags`, `showtags-tables`, `skip10pub`, `cv`^{P.35}, `final`^{P.35}, `colorscheme`^{P.35}) for the whole document. Not so much content wise but rather organisational.

`showmarginalia`=true|false (initially false.)

Show further information in the marginpar area, esp. total sum in funding tables.

`fastcompile`=true|false (initially false.)

Skip generated tables and lists, role-card grids, Gantt charts, and the CV publication block. Metadata and ordinary database-backed references remain available, making this the less aggressive compatibility mode.

`fastcompile-project`=true|false (initially false.)

Compile authored project text with minimal calculated framing. This mode implies `fastcompile`, does not load metadata files or execute `\addEntry`, replaces the calculated project head with state-only setup, disables title/front-matter helpers when wrapped with `\dfgIfFastCompileProjectF`, and uses draft links. Graphics also default to draft placeholders unless `fastcompile-project-show-images` is enabled. Database references fall back to their IDs so prose remains readable. Generated tables and lists retain the same visible skipped-item notice as `fastcompile`.

`fastcompile-project-show-images`=true|false (initially false.)

Render images encountered in the selected project while `fastcompile-project` is active. The metadata, calculated headings, generated tables and other fast-mode reductions remain disabled. With the default value, `graphicx` stays in draft mode and displays image placeholders instead.

`fastcompile-project-show-publications`=true|false (initially false.)

Show or suppress project publication headings, explicit project `\nocite` lists, project bibliographies, report references, and ending-project result lists while `fastcompile-project` is active. Ordinary and final builds always enable publication output. When this option is false in focused project mode, inline citation commands render compact bibliography-key markers without requesting biber.

`showtags`=true|false (initially false.)

Annotate direct database values with their database, row identifier, and field, and calculated values with a concise calculation and source-database label. Successive labels alternate between two vertical levels to keep adjacent annotations legible. Both `fastcompile` and `fastcompile-project` force this option to false.

`showtags-tables`=true|false (initially true.)

Allow provenance tags inside generated table cells when `showtags` is enabled. Set this to false to retain tags in prose and other output while keeping tables uncluttered. It has no effect when `showtags` is disabled.

`skip10pub`= $\langle true/false \rangle$ (initially false.)

Especially in the CV part, it might take longer to compile the reference list with the 10 most important publications. With this set to $\langle true \rangle$ the reference list will be skipped.

colorscheme=*rgb|cmyk* (initially *cmyk*.)

Set the colorscheme according to your needs. For a PDF that is meant for only being displayed on a screen, go with *<rgb>*, for a printed version choose *<cmyk>*.

cv=*true|false* (initially *false*.)

In the document which prints the CVs, set this option to *<true>*, since it will show additional/needed text and modifications.

final=*true|false* (initially *false*.)

When your proposal has been finalised and is ready to be submitted, set this option to *<true>* for the final compilation. The capitalized alias *Final* is accepted for compatibility. This option has consequences for *showmarginalia*^{→P.34}, *showtags*^{→P.34}, *fastcompile*^{→P.34}, *fastcompile-project*^{→P.34}, *skip10pub*^{→P.34}, *fastcompile-project-show-publications*^{→P.34}, *colorscheme*, and open-access markers in the bibliography. Open-access DOI API lookup is enabled only in final documents when *doiAPIMail* is non-empty and *LuaSocket* is available.

Example configuration for documentclass mit *final*-flag

```
\documentclass[
  final           =true,
  % sets to false:
  showmarginalia→P.34 =false,
  showtags→P.34      =false,
  fastcompile→P.34    =false,
  fastcompile-project→P.34 =false,
  skip10pub→P.34      =false,
  fastcompile-project-show-publications→P.34 =true,
  colorscheme     =cmyk
]{dfg-crc}
```

2.6.2 Change default settings

In the preamble/*dfg-customization.tex* you can overwrite the default settings of this documentclass.

\changeSettings{*<key=value>*}

Customize fonts, logo paths, colors, *thumbindex*^{→P.36}, and other class defaults. The former *\changeSetting* spelling remains available as a compatibility alias.

The following keys are to be set or changed in *\changeSettings*:

crcLogoPath=*<file path>* (initially *example-image-a*)

affiliationLogoPath=*<file path>* (initially *example-image-b*)

Select the image files used by *\crcLogo* and *\affiliationLogo*. As with *\includegraphics*, the file extension may be omitted.

doiAPIMail=*<email address>* (initially empty)

Set the contact address required by the DOI API used for automatic open-access markers. Network lookup remains disabled unless this value is non-empty, the document uses *final=true*, and *LuaLaTeX* has socket support.

projectPIOncePerSection=*true|false* (initially *true*)

Show the PIs attached to a project only on that project's first shared *\getProject*^{→P.29} or *\getProjectPI*^{→P.31} reference in each section. Later references use the compact project form. Set this to *false* to keep *\getProject*^{→P.29} compact and repeat the PI names at every *\getProjectPI*^{→P.31} reference. References to the current project and references in generated tables and lists always remain compact.

collaborationAreaColors=*<color list>* (initially *A=projectA, B=projectB, Q=projectQ*)

collaborationAreaPalette=*<color list>* (initially a rotating seven-color palette)

Set collaboration-area colors once for every collaboration plot. *collaborationAreaColors* is a key-value mapping such as *{A=projectA, B=projectB, C=orange}*. Areas absent from that mapping receive colors from *collaborationAreaPalette* in deterministic area order. The corresponding area-colors and area-palette plot options override these settings for one *\printPlot*^{→P.39} call.

salary@prof= $\langle$ euros per year $\rangle$ (initially 123600)
salary@groupLeader= $\langle$ euros per year $\rangle$ (initially 102300)
salary@postDoc= $\langle$ euros per year $\rangle$ (initially 88200)
salary@medDoc= $\langle$ euros per year $\rangle$ (initially 111000)
salary@PhD= $\langle$ euros per year $\rangle$ (initially 81600)
salary@research= $\langle$ euros per year $\rangle$ (initially 67200)
salary@nonResearch= $\langle$ euros per year $\rangle$ (initially 60000)
salary@student= $\langle$ euros per year $\rangle$ (initially 1)
salary@assistant= $\langle$ euros per year $\rangle$ (initially 1)

Set the annual salary rates used to calculate requested staff funding when a funding entry omits its explicit yearly sums. The professorial rate is shared by the `prof`, `prof-W2`, and `prof-W3` categories.

animalHousing@mouse= $\langle$ euros per animal and week $\rangle$ (initially 0.75)
animalHousing@mouseGnotobiotic= $\langle$ euros per animal and week $\rangle$ (initially 3.9)
animalHousing@rat= $\langle$ euros per animal and week $\rangle$ (initially 1.4)

Set the weekly animal-housing rates used by the upkeep-of-laboratory-animals table. All salary and animal-housing settings accept integer or decimal numbers.

thumbindex=true|false (initially true)

Shows a thumbindex in the outer margin. This can be customized further.

Customize further all about the thumbindex. Modification done in `dfg-customization.tex`.

thumbindex@pattern= $\langle$ int $\rangle$ (initially 10)

Define how long the pattern of the `thumbindex` is until it starts again from the top of the page.

thumbindex@topmargin= $\langle$ dim $\rangle$ (initially 3cm)

thumbindex@bottommargin= $\langle$ dim $\rangle$ (initially 3cm)

Define the distance from the $\langle$ topmargin $\rangle$ or the $\langle$ bottommargin $\rangle$ for the position of the first or last thumbindex.

thumbindex@width= $\langle$ dim $\rangle$ (initially 1.2cm)

Define the $\langle$ width $\rangle$ of a thumbindex.

thumbindex@font= $\langle$ ticklist $\rangle$ (initially `\bfseries\Huge`)

Define the $\langle$ font $\rangle$ style of the text in the thumbindex.

color@thumbindex@bg= $\langle$ colorname $\rangle$ (initially black)

color@thumbindex@font= $\langle$ colorname $\rangle$ (initially white)

Define the color of the thumbindex: like the background color ($\langle$ bg $\rangle$) or the color of the $\langle$ font $\rangle$

You can adjust any color in this template. In case you want to reuse a custom color of e.g. your corporate design, set this up first:

```
\definecolor{my-blue}{RGB}{0,84,159}
```

Afterwards you can use `my-blue` to any of the colors below.

color@reference@boldAuthor= $\langle$ colorname $\rangle$ (initially black)

Define the color of emphasized authors, esp. in the various project sections.

color@table@headingsBG= $\langle$ colorname $\rangle$ (initially blue-50)

Define the background color of a table header (i.e. first row).

color@table@headingsBGalt= $\langle$ colorname $\rangle$ (initially blue-25)

Define an alternative background color of a table header (i.e. for subdividing row).

color@table@headingsFont= $\langle$ colorname $\rangle$ (initially black)

Define the color for the font in the header rows.

color@table@rows= $\langle$ colorname $\rangle$ (initially black-10)

Define the color for alternating rows.

color@table@rows = $\langle\text{colorname}\rangle$	(initially black-25)
Define the color for inner table lines	
color@table@rows = $\langle\text{colorname}\rangle$	(initially black)
Define the color for outer table lines	
color@table@noValue = $\langle\text{colorname}\rangle$	(initially black-10)
Define the color for cells that are supposed to contain no value.	
color@table@firstColumn = $\langle\text{colorname}\rangle$	(initially black-10)
Define the color for the first column. This is currently not supported.	
color@table@firstColumn = $\langle\text{colorname}\rangle$	(initially black)
Depending on the color of the table heading, we need to modify the color of the hyperlink since it can be the same as the colorlink from hyperref ^{→CTAN} .	
color@table@firstColumn = $\langle\text{colorname}\rangle$	(initially black)
Depending on the color of the table heading, we need to modify the color of the hyperlink since it can be the same as the colorlink from hyperref ^{→CTAN} .	
color@tags@font = $\langle\text{colorname}\rangle$	(initially red-100)
color@tags@line = $\langle\text{colorname}\rangle$	(initially black-50)
Adjust the color of $\langle\text{font}\rangle$ or $\langle\text{line}\rangle$ when showmarginalia ^{→P.34} is activated.	
color@item@i = $\langle\text{colorname}\rangle$	(initially black)
Depending on the color of the table heading, we need to modify the color of the hyperlink since it can be the same as the colorlink from hyperref ^{→CTAN} .	
color@font@alternative = $\langle\text{colorname}\rangle$	(initially black-50)
Define the alternative color for headline fonts, especially in the CV section, cv ^{→P.35} .	
color@gantt@frame = $\langle\text{colorname}\rangle$	(initially white)
color@gantt@default = $\langle\text{colorname}\rangle$	(initially blue-25)
color@gantt@alternative = $\langle\text{colorname}\rangle$	(initially green-25)
color@gantt@crosshatch = $\langle\text{colorname}\rangle$	(initially black-10)
color@gantt@important = $\langle\text{colorname}\rangle$	(initially red)
color@gantt@stripe-one = $\langle\text{colorname}\rangle$	(initially blue-25)
color@gantt@stripe-two = $\langle\text{colorname}\rangle$	(initially green-25)
Adjust the colors for the various styles of the gantt chart in the project section. The style striped is a alternating combination of color@gantt@stripe-one and color@gantt@stripe-two .	
biblatexstyleCV = $\langle\text{style}\rangle$	(initially ext-numeric-comp)
biblatexstyleFeatureCV = $\langle\text{clist}\rangle$	(initially sorting=none)
biblatexstyleProposal = $\langle\text{style}\rangle$	(initially ext-authoryear-ecomp)
biblatexstyleFeatureProposal = $\langle\text{clist}\rangle$	(initially dashed=false)
Adjust the citation and bibliography style separately for standalone CVs and proposals. The feature values are comma-separated additional biblatex package options. Options shared by both modes, including <code>backend=biber</code> , <code>autocite=inline</code> , <code>defernumbers=true</code> , <code>giveninits=true</code> , the citation-name limits, and <code>maxbibnames=99</code> , are supplied by the class. The class selects the CV pair when the document-class option cv ^{→P.35} is true and the proposal pair otherwise. The legacy keys <code>biblatexstyle</code> and <code>biblatexstyleFeature</code> remain available; each applies its value to both modes.	

Configure CV and proposal bibliographies independently.

```
\changeSettings{
  biblatexstyleCV           = ext-numeric-comp,
  biblatexstyleFeatureCV    = {sorting=none},
  biblatexstyleProposal     = ext-authoryear-ecomp,
  biblatexstyleFeatureProposal = {dashed=false},
}
```

emphasizeAuthors=true|false (initially true.)

Emphasize the authors in a e.g. project section when they are authors of a referenced publication.

font=*<name>* (initially Noto Serif)

sansfont=*<name>* (initially Roboto Light)

Define the main font and the sansserif font.

fontspec=*<name>* (initially none)

sansfontspec=*<name>* (initially ItalicFont=Roboto-LightItalic,
BoldFont=Roboto-Medium,
BoldItalicFont=Roboto-Medium-Italic)

Customize font and sansserif font features.

2.7 Providing further commands

2.7.1 Aims and Workpackages

For writing aims and workpackages we provide some special commands and features, including a gantt-chart.

```
\begin{aims}  
  <environment content>  
\end{aims}
```

Environment to be used in a project section to summarize in a condensed way the aims of the project.

\addAim{*<label>*}

Add an aim within the **aims** environment. You can refer to this aim by using **\getAim**{*<label>*}.

Example use of \addAim

```
\begin{aims}  
  \addAim{A} Establish the first central objective of the project.  
  \addAim{B} Develop the second central objective of the project.  
  \addAim{C} Validate the results in the final objective.  
\end{aims}  
  
In \getAim{A,B,C} we define the project objectives.
```

\getAim{*<label>*}

Refer to an aim with the {*<label>*} in the **aims** environment. You can refer to multiple aims, too: **\getAim**{A, B, C}. The default is referencing the aims of the same project. You can also refer to an aim of a different project: **\getAim**[*<project-id>*]{*<label>*}.

```
\begin{workpackages}  
  <environment content>  
\end{workpackages}
```

Environment to be used in a project section when workpackages are written. This environment contains all descriptions of the workpackages that are introduced by **\addWP**.

\addWP{*<label>*}{*<key=values>*}

Add a workpackage with the {*<label>*} to the list. Further specifications are done using *name*^{→P.26}, *description*^{→P.24} (text is used for the Gantt chart printed with **\printPlot**^{→P.39}), *periodStart*^{→P.17}, *periodEnd*^{→P.17}, *style*^{→P.39}. At the top level, the *name*^{→P.26} value is printed as the bold work-package heading. Sub-workpackages do not print a *name*^{→P.26}; their authored prose starts directly after the list label. Immediate source whitespace, including a blank line after **\addWP**, is consumed without inserting another space.

Example use of \addWP

```
\begin{workpackages}  
  \addWP{wp1}{  
    name      = First workpackage,
```

```

description = {The first workpackage for the Gantt chart},
periodStart = 1,
periodEnd   = 6,
style       = alternative,
}

```

Here you describe the first workpackage in detail.

```

\addWP{wp2}{
  name      = Second workpackage,
  description = {The second workpackage for the Gantt chart},
  periodStart = 7,
  periodEnd   = 12,
  style       = important,
}
\end{workpackages}
In \getWP{wp1,wp2} we describe the project plan.

```

Furthermore you can adjust the color of referencing an aim. By default it is the same color as `color@reference@boldAuthor` but if you would like to change it, add `\colorlet{referenceAim}{\langle your-color \rangle}` to the begin of your document.

\getWP {*label*}

Refer to a workpackage with the {*label*} in the `workpackages`^{P.38} environment. You can refer to multiple workpackages, too: `\getWP{wp2, wp3, wp4}`.

The default is referencing the workpackage of the same project. You can also refer to a workpackage of a different project: `\getWP[\langle project-id \rangle]{\langle label \rangle}`.

While some keys have been described already, here is what is missing so far:

style=alternative|crosshatch|important|striped (initially: default)

Define the style of the bar of this workpackage in the gantt-chart.

For customizing the colors of the various styles have a look at: `color@gantt@default`^{P.37}, `color@gantt@alternative`^{P.37}, `color@gantt@crosshatch`^{P.37}, `color@gantt@important`^{P.37}, `color@gantt@stripe-one`^{P.37} and `color@gantt@stripe-two`^{P.37}.

\printPlot {*plot specification*}

Print a generated plot through the common dispatcher. Use `\printPlot{{Gantt}}{A01}}` for a project's Gantt chart and `\printPlot{{ProjectCollaboration}}{A01}}` for its collaboration heatmap. The heatmap is the default; select the low arc diagram with `layout=arc` in the optional argument immediately after {*ProjectCollaboration*}. The aliases `heatmap` and `arc-diagram` are also accepted as bare keys. Every arc reaches the same peak height; its span identifies the connected project but does not encode a weight. Project identifiers are printed inside the arc nodes, immediately above rules spanning their complete project areas. Both plot types accept additional caption text after the project id, for example `\printPlot{{ProjectCollaboration}}[layout=arc]{A01}{Additional caption text}`. Without additional caption text, the caption occupies the outer margin and the plot retains the complete text width, as does the default Gantt chart. In the heatmap, the largest project area determines one shared dynamic box width; the measured width of the longest area label determines where its grid starts, and all columns fill the remaining text width. Projects without a collaboration are retained with a white background in both layouts. Rows are ordered deterministically by project-area and project ID. Use `area-colors={C=orange,D=violet}` for explicit mappings or `area-palette={teal,brown,magenta}` to customize colors assigned to all otherwise unmapped areas.

\printGantt {*project-id*} [*additional caption*]

Compatibility alias for the former public spelling. New documents should use `\printPlot{{Gantt}}{A01}}` or `\printPlot{{Gantt}}{A01}[Additional caption text]`.

2.7.2 Thumbindex

In your document you can use the following commands for displaying or switching off a thumbindex *locally*.

\printThumbIndex [*color*] {*string*}

Define locally the *color* of the thumbindex and what to be displayed (*string*). Be aware that you may need to execute this command before a `\clearpage` etc.

\printThumbIndexOff

From the next page on the thumbindex is switched off.

2.7.3 Boxes

```
\begin{dfgBoxEnv} [⟨further specifications⟩]  
  ⟨environment content⟩  
\end{dfgBoxEnv}
```

Box environment to be used for highlighting things To be used in `content.tex`.

```
\begin{dfgSummaryBox} [⟨further specifications, e.g. 'title=NN'⟩]  
  ⟨environment content⟩  
\end{dfgSummaryBox}
```

Box environment to be used for e.g. summaries that are lists. Use `\item` for bulletpoints. To be used in `content.tex`

Example use of a summary box

```
\begin{dfgSummaryBox}[title={Spotlights: Moving Forward}]  
  \item New focus areas in the new funding period  
  \item Best research ever  
\end{dfgSummaryBox}
```

\dfgBox [⟨further specifications⟩]

Box environment to be used for anything. To be used anywhere in the text.

Example of a minimal box

```
\dfgBox[title={Important aspect}]  
{Be aware of researcher's results.}
```

2.7.4 Title page and affiliation helpers

\dfgApplicantAffiliationsTF {⟨singular⟩} {⟨plural⟩}

Use `⟨singular⟩` when `meta.ref-affiliation-id` contains one applicant affiliation and `⟨plural⟩` when it contains several. The title page, applicant-university section heading, bylaws, and declarations use this helper for their grammar. `\theCRCAffiliation` and `\theCRCAffiliationLocation` contain the complete human-readable name and location lists. The first id is the coordinating university and is exposed as `\theCRCCoordinatingAffiliation`; any remaining ids are exposed as `\theCRCOtherApplicantAffiliations`, matching the two separate fields on the DFG title page.

\crcLogo [⟨graphics-options⟩]

Print the CRC logo. The optional `⟨graphics-options⟩` are passed to `\includegraphics`. The actual file is configured with `crcLogoPath`^{→P.35} through `\changeSettings` and remains available as `\crcLogoPath`.

\affiliationLogo [⟨graphics-options⟩]

Print the affiliation logo. The optional `⟨graphics-options⟩` are passed to `\includegraphics`. The actual file is configured with `affiliationLogoPath`^{→P.35} through `\changeSettings` and remains available as `\affiliationLogoPath`.

\Hrule [⟨key=value⟩]

Print a configurable horizontal rule. The available keys are `color`, `above`, `below`, and `thickness`.

\printSignature [⟨database⟩] {⟨id-description-pairs⟩}

Print one signature block for each `{⟨id⟩}{⟨description⟩}` pair. The `⟨database⟩` defaults to `person`. Inside `⟨description⟩`, `\theAffiliationOfRoleID` contains the person's affiliation id and can be used for further database lookups.

\printSignaturesWithRole [⟨database⟩] {⟨role⟩} {⟨description⟩}

Print a signature block for every current-period person with `⟨role⟩`. This is used for the rector, chancellor, or president of every applicant university, so a proposal with several applicants does not require a hard-coded list of person ids. Inside `⟨description⟩`, `\theAffiliationOfRoleID` refers to the affiliation of the current signatory.

Print signature blocks.

```
\printSignature{
  {spokesperson}{(Spokesperson of \crc)}
  {rector}{(Rector of \getEntry[affiliation]{\theAffiliationOfRoleID}{name})}
}
```

`\dfgInstitutionList` [*database*] {*person-id*} [*options*]

Print the institutions assigned to a person. The *database* defaults to *person*. The command reads *ref-institution-id*^{→P.26} from the person entry and then resolves the referenced entries in the institution and affiliation databases. Options are *abbreviation*, *narrow*, *noaddress*, *nozip*, and *nolocation*. In the standard layout, every institution prints the institution name, affiliation name, street, ZIP code, location, and country when these values are available. If a person references more than one institution, the entries are separated by a paragraph break with a small vertical gap. If an institution row has an empty *name*^{→P.26}, the output starts directly with the affiliation name.

abbreviation Use the institution's *abbreviation*^{→P.21} instead of its full *name*^{→P.26}. If the abbreviation is absent, the full name is used for compatibility.

narrow Print a compact inline form. Fields inside one institution are separated by commas and multiple institutions by semicolons. This is useful in narrow CV/table cells.

noaddress Omit the street address.

nozip Omit the ZIP code.

nolocation Omit the location and country.

Print institutions for a person.

```
\dfgInstitutionList{MM}
\dfgInstitutionList{MM}[abbreviation,noaddress,nolocation,nozip,narrow]
```

Minimal metadata for institution-list output.

```
\addEntry→P.25{affiliation}{
  id→P.25           = {RWTH},
  name→P.26         = {RWTH Aachen University},
  addressStreet→P.21 = {Templergraben 55},
  addressZIP→P.21   = {52062},
  location→P.21     = {Aachen},
  country→P.21      = {Germany},
}
\addEntry→P.25{institution}{
  id→P.25 = {IAIS},
  name→P.26 = {Institute for Applied Immunology and Systems Biology},
  abbreviation→P.21 = {IAIS},
  ref-affiliation-id→P.26 = {RWTH},
}
\addEntry→P.25{person}{
  id→P.25 = {MM},
  ref-institution-id→P.26 = {IAIS},
}
```

One person with multiple institutions.

```
\addEntry→P.25{person}{
  id→P.25 = {MM},
  ref-institution-id→P.26 = {IAIS,RWTH-main},
}
```

```
\dfgInstitutionList{MM}
\dfgInstitutionList{MM}[abbreviation,narrow,noaddress,nozip,nolocation]
```

\checkFile{<file>}

Input <file> if it exists. If the file is missing, compilation continues and a warning is written to the log. This is used for optional metadata, customization, and content files.

2.7.5 ORCID

The ORCID is foremost used in the CV section and stated in the entry of a person. So there is no need for a manual insertion of it. However you can do so using one of two following commands.

\ORCID{<number>}

Display the ORCID with the given <number>. Adding the ORCID logo in front.

\getORCID{<id>}

Display the ORCID of the person with the given <id>. If there is no orcid-entry in the database for this person, then a warning will be thrown and you can read about in the .log-file.

2.8 Best Practises and Suggestions

2.8.1 Figures

For inserting figures we highly recommend to use the command from the package hvfloat.

\hvFloat* [<options>]+{<floattype>}{<floatingobject>}[<shortcaption>]{<longcaption>}{<label>}

```
\hvFloat[% optional arguments
    capPos    =bottom,
    floatPos  =!t
]
{figure} % defining the environment
{\includegraphics[width=\linewidth]{X01-figure-01}} % figure
[FAIR]% shortcaption
{The FAIR-principles} % long caption
{fig:X01-figure-01} % label
```

2.9 Bibliography/Publication

2.9.1 Equal contribution

In some cases it is very important to state that two or more authors have contributed equally to a publication. Take the following publication as example:

Schneider, K.M.*, C. Elfers*, A. Ghallab, C.V. Schneider, E.J.C. Galvez, A. Mohs, W. Gui, L.S. Candels, T.H. Wirtz, S. Zuehlke, M. Spiteller, M. Myllys, A. Roulet, A. Ouzerdine, B. Lelouvier, K. Kilic, L. Liao, A. Nier, E. Latz, I. Bergheim, C.A. Thaiss, J.G. Hengstler, T. Strowig, and C. Trautwein. 2020. Intestinal Dysbiosis Amplifies Acetaminophen-Induced Acute Liver Injury. Cell. Mol. Gastroenterol. Hepatol. 11(4):909-933. *equal contribution

The first authors have equal contribution. In the bibtex-entry add two lines:

```
author+an      = {1=equal;2=equal},
addendum       = equal,
```

With author+an you annotate the authors, the numbers refer to the position of the author in the authors's list. The complete entry of the mentioned example looks like:

```

@article{schneider2020a,
  author      = {Schneider, Kai Markus and Elfers, Carsten and Ghallab,
                  Ahmed and Schneider, Carolin Victoria and Galvez, Eric J.C.
                  and Mohs, Antje and Gui, Wenfang and Candels, Lena Susanna and
                  Wirtz, Theresa Hildegard and Zuehlke, Sebastian and Spiteller,
                  Michael and Myllys, Maiju and Roulet, Alain and Ouzerdine,
                  Amirouche and Lelouvier, Benjamin and Kilic, Konrad and Liao,
                  Lijun and Nier, Anika and Latz, Eicke and Bergheim, Ina and
                  Thaiss, Christoph A. and Hengstler, Jan G. and Strowig, Till
                  and Trautwein, Christian},
  author+an   = {1=equal;2=equal},
  date        = 2020,
  title       = {Intestinal Dysbiosis Amplifies Acetaminophen-Induced Acute
                  Liver Injury},
  volume      = 11,
  pages       = {909--933},
  language    = {pt},
  journal     = {Cellular and Molecular Gastroenterology and Hepatology},
  doi         = {10.1016/j.jcmgh.2020.11.002},
  number      = 4,
  source      = {Crossref},
  url         = {https://doi.org/10.1016/j.jcmgh.2020.11.002},
  publisher   = {Elsevier BV},
  issn        = {2352-345X},
  date        = 2021,
  addendum   = equal,
}

```

2.9.2 Shared last authorship

Very similar to the equal contribution-part there is also a way to specify authors who shared last authorship.

In the bibtex-entry add *two* lines:

```

author+an      = {1=sharedLast;2=sharedLast},
addendum       = sharedLast,

```

Here is a complete example.

```

@Article{roessner2021a,
  Author      = {Roessner, P.M. and Cid, L.Llao and Lupar, E. and Roider,
                  T. and Bordas, M. and Schiffllers, C. and Arseni, L. and
                  Gaupel, A.C. and Kilpert, F. and Krottschel, M. and
                  Arnold, S.J. and Sellner, L. and Colomer, D. and
                  Stilgenbauer, S. and Dietrich, S. and Lichter, P. and
                  Izcue, A. and Seiffert, M.},
  Date        = {2021},
  author+an   = {17=sharedLast;18=sharedLast},
  Addendum    = sharedLast,
  Keywords    = {MM-A},
  Title       = {{EOMES} and {IL}-10 regulate antitumor activity of T
                  regulatory type 1 {CD4(+)} T cells in chronic lymphocytic
                  leukemia},
  Volume      = {35},
  Pages       = {2311--2324},
  Language    = {en},
  JournalTitle = {Leukemia}
}

```

```
}
```

2.9.3 Emphasizing authors

You can have certain authors in bold letters in your bibliography section to highlight e.g. the core people of the proposal.

Notice: This feature is automatically triggered (unless switched off, see `emphasizeAuthors`^{→P.38}) for the CV section (see 2.4.2). We explain its function for additional use.

To add a person to the (sectioned) bibliography use `\addboldnames`.

`\addboldnames` `{\langle nn \rangle, \langle nn \rangle, \langle nn \rangle}`

Displaying authors in an emphasized way.

Notice that for each variation of a person's name you have to add one set of `\langle nn \rangle`. For example you have an author with different spellings in your `.bib`-file, you have to list all of them to get them in bold letters (or adjust the entries in your `.bib`-file).

```
\addboldnames{
  {Max Mustermann},
  {M. Mustermann},
  {Mustermann, Max H.},
  {Mustermann, Max Heinrich}
}
```

After a (sectioned) bibliography and you do not want to display the before defined authors in bold letters anymore, you can use `\resetboldnames`:

`\resetboldnames`

Switch off showing the under `\addboldnames` defined names.

In case you do not need to have authors in bold letters you can disable the feature modification done in `dfg-customization.tex`.

2.9.4 Providing publication information

Providing the most relevant publications is done through the referenced `.bib`-file. Within a bibtex-entry you need to add a keyword with certain values to it preceded with the ID of the person.

- A: Category A – Articles in peer-reviewed journals, contributions to peer-reviewed conferences or to anthology volumes, and book publications
- B: Category B – Any other form of published results

For example:

```
@article{...,
          keywords = {<ID>-A},
}
```

Of course several people can use the same reference for this section:

```
@article{...,
          keywords = {<ID1>-A, <ID2>-B, <ID3>-A},
}
```

Open-access markers are handled by `biblatex-ext-oa`. If the API-based open-access request does not work for a publication, add the fallback annotation directly to the relevant `.bib` entry:

```
@article{...,
    options          = {openaccess=auto},
    doi+an:default   = {=openaccess},
}
```

3 Code Documentation

The following part is meant for developers. Don't worry if you might not understand parts of the code. We try to use as much $\LaTeX$ 3 as possible for a more granular data handling.

3.1 Documentclass

The class requires the June 2022 LaTeX kernel, whose native `\ProcessKeyOptions` interface processes class options through expl3 key families. `\ProvidesExplClass` declares the class to the kernel and simultaneously activates the expl3 (LaTeX3) syntax, so every line from here onwards may use the `:`, `_` and `@@` conventions of the L3 programming layer.

The `<version>` and `<date>` values come from the single definition at the very top of the `.dtx` file (`\def\dfgVersion` etc.), so a version bump only ever needs to be made in one place.

```
1 \NeedsTeXFormat{LaTeX2e}[2022-06-01]
2 \ProvidesExplClass
3 {dfg-crc}
4 {\dfgVersionDate}
5 {\dfgVersion}
6 {Create DFG Collaborative Research Centre proposals and CVs}
```

3.1.1 Message catalogue

All user-visible diagnostics are declared here once using `\msg_new:nnn` from the L3 message system. Centralising them serves several purposes:

- 1) The exact wording of every log line can be reviewed and updated in one place without searching through the entire code.
- 2) They are bound to the `dfg` module name, so a user can grep the `.log` with `grep "Package dfg"` to see a condensed overview.
- 3) Using the L3 message system instead of raw `\PackageWarning` gives consistent formatting, the fileline context via `\msg_line_context:`, and the ability to suppress or redirect messages at a global level with `\msg_redirect_module:nnn`.

The engine check fails early with a direct instruction instead of letting `fontspec` or a later `\directlua` call produce a less helpful error. The next message is emitted when an optional input file (e.g. a metadata or preamble fragment) cannot be found on the search path. Compilation is not aborted, but the user is strongly warned.

```
7 \msg_new:nnn { dfg } { unsupported-engine }
8 {
9   The~dfg-crc~class~requires~LuaLaTeX.^~J
10  Compile~this~document~with~lualatex~or~latexmk~lualatex.
11 }
12 \sys_if_engine luatex:F
13 { \msg_fatal:nn { dfg } { unsupported-engine } }
14
15 \msg_new:nnn { dfg } { file-not-found }
16 { File~'#1'~not~found.^~J
17   ~You~can~proceed~without~it~
18   but~it~is~not~recommended.
19 }
```

database-not-found Emitted by `\getEntry`^{P.28}, `\compareEntry`^{P.31} and each table command when the database name passed by the user does not exist in the `datatool` register. The most common cause is a typo in the database name, or calling a retrieval command before the corresponding `\addEntry`^{P.25} block has been processed.

```
20 \msg_new:nnn { dfg } { database-not-found }
21 { Unknown~ database~ name:~ #1^^J^^J
22   Database~'#1'~not~found~\msg_line_context::~
23   Either~you~have~misspelled~it~or~
24   ~the~database~has~not~yet~been~created.
25 }
```

database-name-not-given Fired when the optional `<database>` argument of `\getEntry`^{P.28} is empty because `\tmpLocalDB` has not been set and no explicit database name was supplied. The message text suggests two remedies: set `\tmpLocalDB` at the top of a section, or pass the database name inline.

```
26 \msg_new:nnn { dfg } { database-name-not-given }
27 { Missing~ database~ name~ for~ entry:~ #1^^J ^^J
28   You~forgot~to~pass~a~database~name~\msg_line_context:~.~
29   You~can~provide~a~name~with~ e.g.~ '\def\tmpLocalDB{<database>}'
30   ~or~within~entries~like~
31   '\getEntry[<database>]{<id>}{<field>}'
32 }
```

biblatex-ext-oa-doiapi-unavailable Warns when biblatex-ext-oa's DOI API integration cannot be enabled because `socket.http` is not available in the current LuaTeX run. The package is still loaded, so manual BibTeX annotations continue to work.

```
33 \msg_new:nnn { dfg } { biblatex-ext-oa-doiapi-unavailable }
34 { biblatex-ext-oa~ DOI~ API~ lookup~ disabled:~ LuaSocket~ module~
35   'socket.http'~ is~ not~ available~ in~ this~ LuaTeX~ run.~
36   Compile~ with~ '--socket'~ to~ enable~ DOI~ API~ requests.~
37   Open-access~ markers~ still~ work~ from~ manual~ BibTeX~ annotations.
38 }
```

biblatex-ext-oa-doiapi-email-missing DOI lookups require a real contact address. An empty default keeps network access opt-in and prevents all users of the class from sharing a placeholder or maintainer address.

```
39 \msg_new:nnn { dfg } { biblatex-ext-oa-doiapi-email-missing }
40 { biblatex-ext-oa~ DOI~ API~ lookup~ disabled:~ no~contact~address~was~set.^^J
41   Set~'\doiAPIMail=<address>'~with~\string\changeSettings~to~enable~lookups.
42   Open-access~markers~still~work~from~manual~BibTeX~annotations.
43 }
```

missing-orcid Triggered specifically by `\getORCID`^{P.42} when the `orcid` field is absent or empty for the requested person. The message body reproduces the exact `\addEntry`^{P.25} snippet the user needs to fill in, lowering the barrier to fixing the data.

```
44 \msg_new:nnn { dfg } { missing-orcid }
45 {DB:~'#1';~ID:~'#2';~null/empty:~'#orcid'.~^^J^^J
46   The~ORCID~for~the~person~with~the~ID~'#2'~has~not~been~given.~
47   You~asked~for~it~\msg_line_context:~^^J
48   If~the~person~has~an~ORCID, ~go~to~where~you~have~written~^^J
49   \addEntry{#1}{^^J
50     id   =#2, ^^J
51     orcid=<INSERT~ORCID~HERE>^^J
52   }
53 }
```

missing-key Generic warning for any database field that is null or empty when `\getEntry`^{P.28} tries to retrieve it. The check is deliberately suppressed during the tabularray cell-measuring pass (`\lTblrMeasuringBool` is true) to prevent each cell from generating duplicate log entries — tabularray renders each cell twice for width calculation before the final output pass.

```
54 \msg_new:nnn { dfg } { missing-key }
55 {DB:~'#1';~ID:~'#2';~null/empty:~'#3'.^^J^^J
56   In~ the~ database~ '#1', the~ key~ '#3'~ which~ belongs~ to~ the~ ID~ '#2'~
57   is~ either~ null/not~ given~ or~ simply~ empty.^^J
58   You~ asked~ for~ it~ \msg_line_context:~ }
```

item-skipped / `\dfgItemSkipped` Tables built from the datatool databases are the most expensive part of each compilation run because they involve full database queries. When either `fastcompile` mode is active, generated table/list commands call `\dfgItemSkipped` instead of rendering the real content. This prints a red placeholder in the PDF and issues an `item-skipped` note to the log. The colour red is overridden to white when `final=true`, so the placeholder is invisible in a submission build.

```
59 \msg_new:nnn { dfg } { item-skipped }
60 {Item~ #1~ skipped~ (compile-time).^^J
61   To~ see~ the~ item,~ disable~ fast~ compilation^^J
62   in~ the~ documentclass~options.^^J
63   The~ item~ is~ \msg_line_context:~ }
64 \NewDocumentCommand{\dfgItemSkipped}{m}{%
65   \msg_note:nne {dfg}{item-skipped}{ #1 }
66   \group_begin:
```

```

67 \color{error}
68 Item~ \emph{\normalcolor#1}~ skipped~ due~ to~ faster~ compilation.~\\
69 \bool_if:NTF \l_@@_class_fastcompile_project_bool
70 { To~ see~ the~ item,~ set~ \texttt{fastcompile-project=false}~(default)~ }
71 { To~ see~ the~ item,~ set~ \texttt{fastcompile=false}~(default)~ }
72 in~ the~ documentclass-options.
73 \group_end:
74 }

```

research-area-not-found The property list `\g_@@_dfg_research_areas_prop` contains every DFG research area code from the official classification list. When a code stored in the `project` database does not appear in that map the formatted label cannot be generated and this warning is raised. The raw code is still printed so the proposal remains compilable.

```

75 \msg_new:nnn { dfg } { research-area-not-found }
76 { Unknown~ research~ area:~ #1^^J^^J
77 Doublecheck~ the~ research~ area~ in~ the~ database:~^^J
78 \addEntry{project}{^^J
79   research-area~ =~ {#1}~^^J
80 }
81 }

```

item-not-matched Raised as a generic fall-through in `\str_case:VnF` dispatchers where a string value is not matched by any of the expected branches.

```

82 \msg_new:nnn { dfg } { item-not-matched }
83 { The~ string~ '#1'~does~not~match.~^^J^^J
84 Doublecheck~ your~input!~^^J
85 The~ item~ is~ \msg_line_context:
86 }

```

unknown-key and invalid-value These two messages are the default handlers wired into the `unknown .code:n` and `\meta{choice} / unknown .code:n` slots of every `\keys_define:nn` block. They give the user immediate feedback in the log whenever a key name is misspelled or a value is outside the permitted set, instead of silently ignoring the input or producing a cryptic low-level TeX error.

```

87 \msg_new:nnn { dfg } { unknown-key }
88 {
89 Key~ '\l_keys_path_str'~ is~ unknown~ and~ being~ ignored.~^^J^^J
90 You~passed~the~value~'#1'~ to~ that~ key.~^^J
91 Doublecheck~for~spelling~errors.~^^J
92 The~ item~ is~ \msg_line_context:
93 }

```

Warning issued when a key receives a value outside its set of permitted alternatives. This message is the standard fallback for keys defined with the `l3keys` ^{CTAN} `.choices:nn` property when their `/unknown` handler delegates to the dispatcher `\person_questions_invalid:n`. The two arguments are the rejected value and a comma-separated list of the values that would have been accepted. The full key path is taken from `\l_keys_path_str`, so the warning identifies not only the offending value but also which key was being set when the error occurred – useful when the same value name (such as `yes` or `1`) is plausible for several keys but only valid for some of them. The warning does not stop processing; the database entry is simply not created for the rejected value, and subsequent keys in the same `\addEntry` ^{P.25} call continue to be parsed.

```

94 \msg_new:nnn { dfg } { invalid-value }
95 {
96 Invalid~value~'#1'~for~key~'\l_keys_path_str'.~^^J^^J
97 Allowed~values~are:~'#2'.~^^J
98 The~ item~ is~ \msg_line_context:
99 }
100 \msg_new:nnn { dfg } { invalid-project-count-area }
101 {
102 No~active,~list~considered~projects~were~found~for~area~'#1'~in~
103 \string\getProjectCount;~printing~0.
104 }
105 \msg_new:nnn { dfg } { collaboration-focus-not-found }
106 {
107 Cannot~draw~the~project~collaboration~plot:~focus~project~'#1'~is~not~an~
108 eligible~row~of~the~project~database.
109 }
110 \msg_new:nnn { dfg } { collaboration-target-not-found }

```

```

111 {
112   Ignoring~collaboration~'#1--#2':~project~'#2'~is~not~an~eligible~row~of~
113   the~project~database.
114 }

```

Warning issued when a date-typed key receives a value that does not match the ISO-8601 calendar-date shape YYYY-MM-DD. Used by the contract-information helper `\dfg_contract_date:nn` for the fields `C2a`^{P.16}, `C2b`^{P.16}, and `C3a`^{P.16}, all of which are expected to hold dates. The two arguments are the field name and the offending value. The check is purely structural: it verifies that the value consists of four digits, a hyphen, two digits, a hyphen, and two digits, but it does not validate the resulting date as a real calendar entry (so 2025-13-45 passes the format check). When the warning fires, the supplied value is still recorded in the database so the typeset output makes the malformed entry visible; this trades log-cleanliness for ease of locating the source of the problem in the rendered document.

```

115 \msg_new:nnn { dfg } { invalid-date }
116 { Field~'#1'~has~value~'#2'~which~is~not~a~valid~ISO-8601~date~(YYYY-MM-DD). }

```

Requested-funding staff diagnostics The staff roster is deliberately permissive at output time: incomplete or unresolved records remain visible in the document while these messages make the underlying metadata problem searchable in the log.

```

117 \msg_new:nnn { dfg } { requested-staff-no-data }
118 { No~RequestedFundingStaff~data~have~been~provided~for~project~'#1'. }
119 \msg_new:nnn { dfg } { requested-staff-required }
120 { RequestedFundingStaff~entry~is~missing~required~metadata:~#1. }
121 \msg_new:nnn { dfg } { requested-staff-missing-field }
122 { Project~'#1':~requested-funding~staff~#2~is~missing. }
123 \msg_new:nnn { dfg } { requested-staff-unresolved-person }
124 { Project~'#1':~person~reference~'#2'~cannot~be~resolved. }
125 \msg_new:nnn { dfg } { requested-staff-unresolved-institution }
126 { Project~'#1':~institution~reference~'#2'~cannot~be~resolved. }
127 \msg_new:nnn { dfg } { requested-staff-unresolved-affiliation }
128 { Project~'#1':~affiliation~reference~'#2'~cannot~be~resolved. }
129 \msg_new:nnn { dfg } { requested-staff-missing-abbreviation }
130 { Affiliation~'#1'~has~no~abbreviation;~its~full~name~is~used. }
131 \msg_new:nnn { dfg } { requested-staff-duplicate }
132 { Duplicate~RequestedFundingStaff~entry~for~#1. }
133 \msg_new:nnn { dfg } { funding-staff-cost-unavailable }
134 { Automatic~staff~cost~calculation~is~not~available~for~#1. }
135 \msg_new:nnn { dfg } { existing-staff-no-data }
136 { No~existing~staff~rows~were~found~in~database~'#1'. }
137 \msg_new:nnn { dfg } { existing-staff-no-organisation }
138 { Existing~staff~entry~'#1'~cannot~be~assigned~to~an~affiliation. }

```

`\StartTimer` A simple pair of profiling helpers for measuring how long a stretch of L^AT_EX code takes to execute. Wrap the code under investigation between `\StartTimer` and `\StopTimer{<label>}`; the elapsed time in milliseconds is written to the terminal and the `.log` file, prefixed with the supplied `<label>` so several measurements in one run can be told apart.

Typical use:

```

\StartTimer
\ParticipatingInstitutionsList[count]
\StopTimer{ParticipatingInstitutionsList}

```

producing a line such as

```
TIMING ParticipatingInstitutionsList: 115 ms
```

in the log.

Only one measurement can be in progress at any one time, since the start time is held in a single shared integer variable. For nested or overlapping measurements, define additional counters or switch to the labelled-timer variant.

The implementation uses the kernel-native `expl3` function `\sys_timer:`, which abstracts over the engine-specific timer and avoids an additional package dependency.

```
139 \int_new:N \l_@@_timer_int
```

Storage for the start timestamp. We use an `int` rather than a `tl` so the later subtraction in `\int_eval:n` is unambiguous.

```

140 \NewDocumentCommand { \StartTimer } { }
141 {
142   \bool_if:NF \l_@@_class_fastcompile_project_bool
143   { \int_set:Nn \l_@@_timer_int { \sys_timer: } }
144 }

```

`\sys_timer`: expands to the time since job start in *scaled seconds* – units of 1/65536 s. We capture that raw value here and convert to milliseconds only at reporting time, to keep the start-up overhead minimal.

```

145 \NewDocumentCommand { \StopTimer } { m }
146 {
147   \bool_if:NF \l_@@_class_fastcompile_project_bool
148   {
149     \iow_term:x
150     {
151       TIMING~#1:~
152       \int_eval:n
153       { ( \sys_timer: - \l_@@_timer_int ) * 1000 / 65536 }
154       \c_space_tl ms
155     }
156   }
157 }

```

The arithmetic computes elapsed scaled-seconds first, then multiplies by 1000 before dividing by 65536. Doing the multiplication first preserves precision: a naive $(\text{now} - \text{start}) / 65536 * 1000$ would truncate sub-second measurements to zero. The result is an integer count of milliseconds, accurate to roughly ± 1 ms.

`\iow_term:x` writes to the terminal *and* the log, fully expanding its argument once – which is what makes `\int_eval:n` produce a literal number rather than the unevaluated expression. `\c_space_tl` inserts a real space between the number and the `ms` unit; a literal space there would be consumed by `expl3`’s tokenisation rules.

Note that the reported time is wall-clock and includes any `\typeout`, file I/O, or shell-escape work performed inside the timed block. For tight measurements of pure computation, silence debugging output during the run, and take the second of two consecutive timings to avoid first-run effects such as font caching or `.aux` reads.

3.1.2 Documentclass Options

We have very few global options we use from the KOMAscript. But you can use any known option of the KOMAscript `scrbook`.

```

158 \PassOptionsToClass{
159   fontsize =10pt,
160   twoside  =true,
161   headings =optiontoheadandtoc,
162   parskip  =half-,
163   numbers  =noenddot,
164   toc      =indentunnumbered
165 }{scrbook}

```

3.1.3 Class options (dfg/class key family)

All class-level toggles live in the `dfg/class` key family and are processed via `\ProcessKeyOptions`. They control the two major compilation modes (`fastcompile`^{→P.34}, `fastcompile-project`^{→P.34}, `final`^{→P.35}) plus several debugging and output flags.

The general design principle is that every flag defaults to `false` or to a safe, submission-ready value. Authors enable the helpers they need during drafting and simply remove them (or set `final=true`) before submitting. Setting `final=true` enforces this by hard-resetting all drafting flags to `false` automatically.

```

166 \keys_define:nn { dfg / class }
167 {

```

`final`^{→P.35}: Set to `true` immediately before submission. It forces `cmyk` colour model (required for print), silently sets `fastcompile=false`, `showtags=false`, `showmarginalia=false` and `skip10pub=false`, and turns the draft-green placeholder colour to white so it is invisible in the output.

```

168 final      .bool_set:N = \l_@@_class_final_bool,
169 final      .initial:n  = false,
170 Final      .meta:n     = { final = #1 },
171 Final      .default:n  = true,

```

`fastcompile`^{→P.34}: When `true`, generated tables and lists are replaced by a placeholder. It also suppresses role-card grids, the Gantt chart, and the ten-publications CV block while retaining metadata-backed prose references. Automatically disabled when `final=true`.

```

172 fastcompile .bool_set:N = \l_@@_class_fastcompile_bool,
173 fastcompile .initial:n  = false,

```

`fastcompile-project`^{→P.34}: Aggressive project-text drafting mode. It implies `fastcompile`^{→P.34}, but additionally prevents metadata rows from being loaded or restored, replaces calculated project headings with a state-only setup, uses

draft rendering for graphics and links, and provides literal fallbacks for database-backed references. Authored sections, paragraphs, aims, work packages, labels, and inline citations remain. Automatically disabled when `final=true`.

```
174 fastcompile-project .bool_set:N = \l_@@_class_fastcompile_project_bool,
175 fastcompile-project .initial:n = false,
```

`fastcompile-project-show-images`^{→P.34}: Opt back into real image rendering while aggressive project drafting is active. It has no effect on ordinary builds, where graphics are rendered normally. Final mode resets it to `false` together with the other drafting controls.

```
176 fastcompile-project-show-images .bool_set:N = \l_@@_class_fastcompile_project_show_images_bool,
177 fastcompile-project-show-images .initial:n = false,
```

`fastcompile-project-show-publications`^{→P.34}: Controls the standard project publication heading, explicit project \nocite lists, project bibliographies, project-report references, and ending-project result lists during focused project drafting. Ordinary and final builds force it to `true`.

```
178 fastcompile-project-show-publications .bool_set:N = \l_@@_class_fastcompile_project_show_publications_
179 fastcompile-project-show-publications .initial:n = false,
```

`showtags`^{→P.34}: Enables provenance overlays for direct database values and concise source labels for calculated values. Both fast-compilation modes and final mode disable it after option processing.

```
180 showtags .bool_set:N = \l_@@_class_showtags_bool,
181 showtags .initial:n = false,
```

`showtags-tables`^{→P.34}: Controls only provenance overlays rendered in table cells. It defaults to `true`, but remains inert unless `showtags`^{→P.34} is enabled. Keeping it separate lets authors debug prose without widening or visually overloading dense generated tables.

```
182 showtags-tables .bool_set:N = \l_@@_class_showtags_tables_bool,
183 showtags-tables .initial:n = true,
```

`showmarginalia`^{→P.34}: Enables marginal notes that display running subtotals alongside the funding tables. Useful for cross-checking calculated sums during data entry. Disabled by `final=true`.

```
184 showmarginalia .bool_set:N = \l_@@_class_showmarginalia_bool,
185 showmarginalia .initial:n = false,
```

`skip10pub`^{→P.34}: Suppresses the mandatory ten-publication block in each CV section. Because each bibliography list requires a full biber run and can take several seconds per PI, skipping it during early drafting significantly reduces compilation time. Automatically disabled by `final=true`.

```
186 skip10pub .bool_set:N = \l_@@_class_skipTENpublications_bool,
187 skip10pub .initial:n = false,
```

`colorscheme`^{→P.35}: Passed directly to `\selectcolormodel` at `\AtBeginDocument`. Use `cmYk` for press-quality PDF output (DFG submission default) or `RGB` for on-screen review. Overridden to `cmYk` when `final=true`.

```
188 colorscheme .tl_set:N = \l_@@_class_color_model_tl,
189 colorscheme .initial:n = cmYk,
```

`cv`^{→P.35}: Set to `true` in the standalone CV document (`crc-cv.tex`). When `true`, the class adjusts heading styles and suppresses proposal-specific front matter so the output is a self-contained curriculum vitae suitable for DFG submission.

```
190 cv .bool_set:N = \l_@@_class_cv_bool,
191 cv .initial:n = false,
192 unknown .code:n = { \PassOptionsToClass{\CurrentOption}{scrbook} },
193 }
```

3.2 Conditional execution based on class options

The class option `cv` toggles whether the document is rendered as a CV (curriculum vitae) supplement. Internally this is stored in the expl3 boolean `\l_@@_class_cv_bool`. Since end-user document files should not be required to wrap conditional content in `\ExplSyntaxOn/\ExplSyntaxOff`, the following three commands expose the switch through a conventional L^AT_EX interface.

```
\dfgIfCV \dfgIfCV{<true code>}{<false code>}
```

Executes `<true code>` if the `cv` option is active, otherwise `<false code>`. Use this when both branches need to produce content, for instance to switch between a full bibliography and a short selected-publications list:

```
\dfgIfCV{\printbibliography[heading=none]}\printshortbib}
```

```
\dfgIfCVT \dfgIfCVT{<true code>}
```

Shorthand for the common case where only the true branch matters. Typical use is gating a section that exists only in the CV variant:

```
\dfgIfCVT{\par\textcolor{tableHeadingsFont}{Appendix:~Research~profiles}}
```

Equivalent to `\dfgIfCV{<true code>}{ }` but avoids the empty second argument and reads more naturally in document source.

`\dfgIfCVF{<false code>}`

Mirror image of `\dfgIfCVT`: executes *<false code>* only when the `cv` option is *not* active. Useful for content that belongs in the main proposal but should be suppressed in the CV variant.

None of these commands evaluates its arguments unless the relevant branch is taken, so wrapping expensive or side-effecting code is safe. All three are defined with `\NewDocumentCommand`, so their arguments are read as standard mandatory braced groups and may contain verbatim material only where the underlying typesetting context permits.

```

194 \NewDocumentCommand \dfgIfCV { +m +m }
195   { \bool_if:NTF \l_@@_class_cv_bool {#1} {#2} }
196 \NewDocumentCommand \dfgIfCVT { +m }
197   { \bool_if:NT \l_@@_class_cv_bool {#1} }
198 \NewDocumentCommand \dfgIfCVF { +m }
199   { \bool_if:NF \l_@@_class_cv_bool {#1} }
200
201 \NewDocumentCommand \dfgIfFinalF { +m }
202   { \bool_if:NF \l_@@_class_final_bool {#1} }
203 \NewDocumentCommand \dfgIfFastCompileProject { +m +m }
204   { \bool_if:NTF \l_@@_class_fastcompile_project_bool {#1} {#2} }
205 \NewDocumentCommand \dfgIfFastCompileProjectT { +m }
206   { \bool_if:NT \l_@@_class_fastcompile_project_bool {#1} }
207 \NewDocumentCommand \dfgIfFastCompileProjectF { +m }
208   { \bool_if:NF \l_@@_class_fastcompile_project_bool {#1} }
209 \NewDocumentCommand \dfgIfProjectPublications { +m +m }
210   { \bool_if:NTF \l_@@_class_fastcompile_project_show_publications_bool {#1} {#2} }

```

Unknown options are forwarded by the key handler above, so ordinary KOMA-Script options remain available without processing the class options a second time. Finally process and execute all options and key-values.

```

211 \ProcessKeyOptions[ dfg / class ]
212 % Resolve mode precedence before any package, customisation, metadata, or
213 % auxiliary-file work can observe the drafting booleans.
214 \bool_if:NTF \l_@@_class_final_bool
215 {
216   \bool_set_false:N \l_@@_class_fastcompile_bool
217   \bool_set_false:N \l_@@_class_fastcompile_project_bool
218   \bool_set_false:N \l_@@_class_fastcompile_project_show_images_bool
219   \bool_set_false:N \l_@@_class_showtags_bool
220   \bool_set_false:N \l_@@_class_showmarginalia_bool
221   \bool_set_false:N \l_@@_class_skipTENpublications_bool
222   \bool_set_true:N \l_@@_class_fastcompile_project_show_publications_bool
223 }
224 {
225   \bool_if:NTF \l_@@_class_fastcompile_project_bool
226   {
227     \bool_set_true:N \l_@@_class_fastcompile_bool
228     \bool_set_false:N \l_@@_class_showtags_bool
229     \bool_set_false:N \l_@@_class_showmarginalia_bool
230     \bool_set_true:N \l_@@_class_skipTENpublications_bool
231     \PassOptionsToPackage{draft}{hyperref}
232     \PassOptionsToPackage{draft}{microtype}
233   }
234   { \bool_set_true:N \l_@@_class_fastcompile_project_show_publications_bool }
235   \bool_if:NT \l_@@_class_fastcompile_bool
236     { \bool_set_false:N \l_@@_class_showtags_bool }
237 }
238 \LoadClass{scrbook}
239 \PassOptionsToPackage{table}{xcolor} % getting rid of errors and conflicts.
240 \RequirePackage{xcolor}

```

3.2.1 Colour palette

All colours follow the RWTH Aachen corporate-identity palette and are defined in all four models at once (cmyk/RGB/HTML/gray) using `xcolor`'s multiple-model syntax. This allows the same symbolic name to be used regardless of the active colour model chosen via `colorscheme=`.

Each hue comes in five tints named `-100` (full) through `-10` (near white), matching the official RWTH tint steps. This naming scheme is intentional: table headers, zebra stripes and box backgrounds are all specified in terms of these

canonical names (e.g. blue-50, black-10), so a complete rebranding only requires changing the definitions here.

The ORCID brand green is also declared here since it is used by \orcidIcon throughout the document.

```

241 \definecolor{blue-100}{cmyk/RGB/HTML/gray}{1,.50,0,0/0,84,159/00549F/1}% primary
242 \definecolor{blue-75}{cmyk/RGB/HTML/gray}{.75,.38,0,0/64,127,183/407FB7/.75}%
243 \definecolor{blue-50}{cmyk/RGB/HTML/gray}{.45,.14,0,0/142,186,229/8EBAE5/.5}% secondary
244 \definecolor{blue-25}{cmyk/RGB/HTML/gray}{.23,.07,0,0/199,221,242/C7DDF2/.25}%
245 \definecolor{blue-10}{cmyk/RGB/HTML/gray}{.09,.03,0,0/232,241,250/E8F1FA/.1}%
246
247 \definecolor{black-100}{cmyk/RGB/HTML}{0,0,0,1/0,0,0/000000}%
248 \definecolor{black-75}{cmyk/RGB/HTML}{0,0,0,.75/100,101,103/646567}%
249 \definecolor{black-50}{cmyk/RGB/HTML}{0,0,0,.5/156,158,159/9C9E9F}%
250 \definecolor{black-25}{cmyk/RGB/HTML}{0,0,0,.25/207,209,210/CFD1D2}%
251 \definecolor{black-10}{cmyk/RGB/HTML}{0,0,0,.1/236,237,237/ECEDED}%
252
253 \definecolor{green-100}{cmyk/RGB/HTML}{.7,0,1,0/87,171,39/57AB27}%
254 \definecolor{green-75}{cmyk/RGB/HTML}{.52,0,.75,0/141,192,96/8DC060}%
255 \definecolor{green-50}{cmyk/RGB/HTML}{.35,0,.5,0/184,214,152/B8D698}%
256 \definecolor{green-25}{cmyk/RGB/HTML}{.18,0,.25,0/221,235,206/DDEBCE}%
257 \definecolor{green-10}{cmyk/RGB/HTML}{.07,0,.1,0/242,247,236/F2F7EC}%
258
259 \definecolor{red-100}{cmyk/RGB/HTML}{.15,1,1,0/204,7,30/CC071E}%
260 \definecolor{red-75}{cmyk/RGB/HTML}{.11,.75,.75,0/216,92,65/D85C41}%
261 \definecolor{red-50}{cmyk/RGB/HTML}{.8,.5,.5,0/230,150,121/E69679}%
262 \definecolor{red-25}{cmyk/RGB/HTML}{.4,.25,.25,0/243,205,187/F3CDBB}%
263 \definecolor{red-10}{cmyk/RGB/HTML}{.2,.1,.1,0/250,235,227/FAEBE3}%
264
265 \definecolor{bordeaux-100}{cmyk/RGB/HTML}{.25,1,.70,.20/161,16,53/A11035}%
266 \definecolor{bordeaux-75}{cmyk/RGB/HTML}{.19,.75,.52,15/182,82,86/B65256}%
267 \definecolor{bordeaux-50}{cmyk/RGB/HTML}{.13,.5,.35,.1/205,139,135/CD8B87}%
268 \definecolor{bordeaux-25}{cmyk/RGB/HTML}{.06,.25,.18,.05/229,197,192/E5C5C0}%
269 \definecolor{bordeaux-10}{cmyk/RGB/HTML}{.03,.1,.07,.02/245,232,229/F5E8E5}%
270
271 \definecolor{orcid}{cmyk/RGB}{0.15,0.00,0.59,0.20/174,205,84}

```

Let's start with the common section on packages etc.

3.2.2 Customisation key family (dfg/custom)

We provide as much as possible all settings to customize to your desire and needs. The customization is done with key-values, which we set up below.

```

272 \keys_define:nn { dfg / custom }
273 {
274   % You can pass any font you like (and |fontspec| will understand or is known to
275   % your system). But since the DFG is requiring Arial, we set this as default.
276   font .tl_set:N = \l_@@_custom_font_tl,
277   fontspec .tl_set:N = \l_@@_custom_fontspec_tl,
278   font .initial:n = Noto Serif,
279   sansfont .tl_set:N = \l_@@_custom_sansfont_tl,
280   sansfontspec .tl_set:N = \l_@@_custom_sansfontspec_tl,
281   sansfont .initial:n = Roboto Light,
282   sansfontspec .initial:n = {
283     ItalicFont=Roboto-LightItalic,
284     BoldFont=Roboto-Medium,
285     BoldItalicFont=Roboto-Medium-Italic},
286   % \paragraph{Logo paths}
287   crcLogoPath .tl_set:N = \l_@@_custom_crc_logo_path_tl,
288   crcLogoPath .initial:n = example-image-a,
289   affiliationLogoPath .tl_set:N = \l_@@_custom_affiliation_logo_path_tl,
290   affiliationLogoPath .initial:n = example-image-b,
291   % \paragraph{Project-reference repetition}
292   projectPIOncePerSection .bool_set:N =
293     \l_@@_custom_project_pi_once_per_section_bool,
294   projectPIOncePerSection .initial:n = true,
295   % Collaboration-plot area colors can be set once for the complete proposal.
296   % Per-plot area-colors and area-palette options may override these defaults.
297   collaborationAreaColors .tl_set:N =
298     \l_@@_custom_collaboration_area_colors_tl,

```

```

299 collaborationAreaColors      .initial:n =
300   { A=projectA, B=projectB, Q=projectQ!75!black },
301 collaborationAreaPalette     .code:n =
302   {
303     \clist_if_empty:nF {#1}
304     { \tl_set:Nn \l_@@_custom_collaboration_area_palette_tl {#1} }
305   },
306 collaborationAreaPalette     .initial:n =
307   { orange!80!black, violet!75!black, teal!70!black,
308     brown!75!black, magenta!70!black, cyan!70!black, lime!60!black },
309 % \paragraph{DFG salary and animal-housing rates}
310 salary@prof                  .fp_set:N = \l_@@_custom_salary_prof_fp,
311 salary@prof                  .initial:n = 123600,
312 salary@groupLeader           .fp_set:N = \l_@@_custom_salary_group_leader_fp,
313 salary@groupLeader           .initial:n = 102300,
314 salary@postDoc                .fp_set:N = \l_@@_custom_salary_postdoc_fp,
315 salary@postDoc                .initial:n = 88200,
316 salary@medDoc                 .fp_set:N = \l_@@_custom_salary_meddoc_fp,
317 salary@medDoc                 .initial:n = 111000,
318 salary@PhD                    .fp_set:N = \l_@@_custom_salary_phd_fp,
319 salary@PhD                    .initial:n = 81600,
320 salary@research               .fp_set:N = \l_@@_custom_salary_research_fp,
321 salary@research               .initial:n = 67200,
322 salary@nonResearch            .fp_set:N = \l_@@_custom_salary_nonresearch_fp,
323 salary@nonResearch            .initial:n = 60000,
324 salary@student               .fp_set:N = \l_@@_custom_salary_student_fp,
325 salary@student               .initial:n = 1,
326 salary@assistant              .fp_set:N = \l_@@_custom_salary_assistant_fp,
327 salary@assistant              .initial:n = 1,
328 animalHousing@mouse           .fp_set:N = \l_@@_custom_animal_mouse_fp,
329 animalHousing@mouse           .initial:n = 0.75,
330 animalHousing@mouseGnotobiotic .fp_set:N =
331   \l_@@_custom_animal_mouse_gnotobiotic_fp,
332 animalHousing@mouseGnotobiotic .initial:n = 3.9,
333 animalHousing@rat              .fp_set:N = \l_@@_custom_animal_rat_fp,
334 animalHousing@rat              .initial:n = 1.4,
335 % \paragraph{Thumb-index keys}
336 % These keys control the decorative side tab on the outer margin.
337 % The index divides the page height (minus the two margin values) into
338 % \meta{pattern} equal-height slots. Each call to \cs{printThumbIndex}
339 % advances the slot counter; when it reaches \meta{pattern} it wraps,
340 % creating a repeating stripe aiding chapter navigation.
341 %
342 thumbindex                    .bool_set:N = \l_@@_custom_thumbindex_bool,
343 thumbindex                    .initial:n = true,
344 %
345 thumbindex@pattern             .int_set:N = \l_@@_custom_thumbindexpattern_int,
346 thumbindex@pattern             .initial:n = 10,
347 %
348 thumbindex@topmargin           .dim_set:N = \l_@@_custom_thumbindex_topmargin_dim,
349 thumbindex@topmargin           .initial:n = 3cm,
350 %
351 thumbindex@bottommargin        .dim_set:N = \l_@@_custom_thumbindex_bottommargin_dim,
352 thumbindex@bottommargin        .initial:n = 3cm,
353 %
354 thumbindex@width               .dim_set:N = \l_@@_custom_thumbindex_width_dim,
355 thumbindex@width               .initial:n = 1.2cm,
356 %
357 thumbindex@font                .tl_set:N = \l_@@_custom_thumbindex_font_tl,
358 thumbindex@font                .initial:n = \bfseries\Huge,
359 % \paragraph{Bibliography keys}
360 % |emphasizeAuthors|: when |true| (default), a bold-name mechanism is
361 % activated that marks every PI's name in bold across all bibliography
362 % and citation lists – the DFG-required visual distinction for CRC PIs.
363 % CV and proposal bibliography styles and features are stored separately.
364 %

```

```

365 doiAPIMail .tl_set:N = \l_@@_custom_doi_api_mail_tl,
366 doiAPIMail .initial:n = {},
367 %
368 emphasizeAuthors .bool_set:N = \l_@@_custom_emphasize_authors_bool,
369 emphasizeAuthors .initial:n = true,
370 %
371 biblatexstyleCV .tl_set:N = \l_@@_custom_biblatexstyle_cv_tl,
372 biblatexstyleCV .initial:n = ext-numeric-comp,
373 biblatexstyleFeatureCV .tl_set:N = \l_@@_custom_biblatexfeatures_cv_tl,
374 biblatexstyleFeatureCV .initial:n = {sorting=none},
375 biblatexstyleProposal .tl_set:N = \l_@@_custom_biblatexstyle_proposal_tl,
376 biblatexstyleProposal .initial:n = ext-authoryear-ecomp,
377 biblatexstyleFeatureProposal .tl_set:N = \l_@@_custom_biblatexfeatures_proposal_tl,
378 biblatexstyleFeatureProposal .initial:n = {dashed=false},
379 % Compatibility: the former keys apply the supplied value to both modes.
380 biblatexstyle .code:n =
381 {
382   \tl_set:Nn \l_@@_custom_biblatexstyle_cv_tl {#1}
383   \tl_set:Nn \l_@@_custom_biblatexstyle_proposal_tl {#1}
384 },
385 biblatexstyleFeature .code:n =
386 {
387   \tl_set:Nn \l_@@_custom_biblatexfeatures_cv_tl {#1}
388   \tl_set:Nn \l_@@_custom_biblatexfeatures_proposal_tl {#1}
389 },
390 % \paragraph{Colour keys}
391 % All colour keys store a colour \emph{name} referencing an already-defined
392 % xcolor colour (e.g. \color{blue-50}, \color{black-10}). Actual \cs{colorlet}
393 % bindings happen in \cs{AtBeginDocument} so preamble overrides are
394 % processed first. Groups: \color@gantt@* for the five bar styles;
395 % \color@table@* for all table chrome; \color@thumbindex@* for the
396 % thumb tab; \color@tags@* for the showtags debug annotations.
397 %
398 \color@reference@boldAuthor .tl_set:N = \l_@@_custom_referenceBoldAuthor_tl,
399 \color@reference@boldAuthor .initial:n = black,
400
401 \color@gantt@frame .tl_set:N = \l_@@_custom_gantt_frame_tl,
402 \color@gantt@frame .initial:n = {white},
403 \color@gantt@default .tl_set:N = \l_@@_custom_gantt_default_tl,
404 \color@gantt@default .initial:n = {blue-25},
405 \color@gantt@alternative .tl_set:N = \l_@@_custom_gantt_alternative_tl,
406 \color@gantt@alternative .initial:n = {green-25},
407 \color@gantt@crosshatch .tl_set:N = \l_@@_custom_gantt_crosshatch_tl,
408 \color@gantt@crosshatch .initial:n = {black-10},
409 \color@gantt@important .tl_set:N = \l_@@_custom_gantt_important_tl,
410 \color@gantt@important .initial:n = {red},
411 \color@gantt@stripe-one .tl_set:N = \l_@@_custom_gantt_stripe_one_tl,
412 \color@gantt@stripe-one .initial:n = {blue-25},
413 \color@gantt@stripe-two .tl_set:N = \l_@@_custom_gantt_stripe_two_tl,
414 \color@gantt@stripe-two .initial:n = {green-25},
415
416 \color@table@headingsBG .tl_set:N = \l_@@_custom_tableHeadingsBG_tl,
417 \color@table@headingsBG .initial:n = blue-50,
418 \color@table@headingsBGalt .tl_set:N = \l_@@_custom_tableHeadingsBGalt_tl,
419 \color@table@headingsBGalt .initial:n = black-25,
420 \color@table@headingsFont .tl_set:N = \l_@@_custom_tableHeadingsFont_tl,
421 \color@table@headingsFont .initial:n = black,
422 \color@table@rows .tl_set:N = \l_@@_custom_tableRows_tl,
423 \color@table@rows .initial:n = black-10,
424 \color@table@lines .tl_set:N = \l_@@_custom_tableLines_tl,
425 \color@table@lines .initial:n = black-10,
426 \color@table@outerLines .tl_set:N = \l_@@_custom_tableOuterLines_tl,
427 \color@table@outerLines .initial:n = black,
428 \color@table@noValue .tl_set:N = \l_@@_custom_tableNoValue_tl,
429 \color@table@noValue .initial:n = black-10,
430 \color@table@firstColumn .tl_set:N = \l_@@_custom_tableFirstColumn_tl,

```

```

431 color@table@firstColumn .initial:n = black,
432 color@table@link .tl_set:N = \l_@@_custom_tableLink_tl,
433 color@table@link .initial:n = black,
434 color@table@contFootHead .tl_set:N = \l_@@_custom_tableContFootHead_tl,
435 color@table@contFootHead .initial:n = black,
436 color@table@caption .tl_set:N = \l_@@_custom_tableCaption_tl,
437 color@table@caption .initial:n = black,
438 color@thumbindex@bg .tl_set:N = \l_@@_custom_thumbIndexBG_tl,
439 color@thumbindex@bg .initial:n = black,
440 color@thumbindex@font .tl_set:N = \l_@@_custom_thumbIndexFont_tl,
441 color@thumbindex@font .initial:n = white,
442 color@tags@font .tl_set:N = \l_@@_custom_colorTagsFont_tl,
443 color@tags@font .initial:n = red-100,
444 color@tags@line .tl_set:N = \l_@@_custom_colorTagsLine_tl,
445 color@tags@line .initial:n = black-50,
446 % The alternative font color which is used e.g. for the CV headline.
447 color@font@alternative .tl_set:N = \l_@@_custom_colorfontalternative_tl,
448 color@font@alternative .initial:n = black-50,
449
450 color@item@i .tl_set:N = \l_@@_custom_color_item_i_tl,
451 color@item@i .initial:n = black,
452 % That's it with the key-values.
453 }

```

Bibliography package options must be fixed before biblatex is loaded. Consequently the customization file is read here, after all custom keys have been declared but before package loading. It is not read a second time at the end of the class.

```

454 \NewDocumentCommand{\changeSettings}{m}
455 { \keys_set:nn { dfg / custom } {#1} }
456 % Compatibility alias for proposals created before the command was pluralised.
457 \NewDocumentCommand{\changeSetting}{m}
458 { \changeSettings{#1} }
459 % Compatibility accessors retained for the funding and animal-cost code.
460 \NewExpandableDocumentCommand{\dfgSalaryProf}{}
461 { \fp_use:N \l_@@_custom_salary_prof_fp }
462 \NewExpandableDocumentCommand{\dfgSalaryGroupLeader}{}
463 { \fp_use:N \l_@@_custom_salary_group_leader_fp }
464 \NewExpandableDocumentCommand{\dfgSalaryPostDoc}{}
465 { \fp_use:N \l_@@_custom_salary_postdoc_fp }
466 \NewExpandableDocumentCommand{\dfgSalaryMedDoc}{}
467 { \fp_use:N \l_@@_custom_salary_meddoc_fp }
468 \NewExpandableDocumentCommand{\dfgSalaryPhD}{}
469 { \fp_use:N \l_@@_custom_salary_phd_fp }
470 \NewExpandableDocumentCommand{\dfgSalaryResearch}{}
471 { \fp_use:N \l_@@_custom_salary_research_fp }
472 \NewExpandableDocumentCommand{\dfgSalaryNonResearch}{}
473 { \fp_use:N \l_@@_custom_salary_nonresearch_fp }
474 \NewExpandableDocumentCommand{\dfgSalaryStudent}{}
475 { \fp_use:N \l_@@_custom_salary_student_fp }
476 \NewExpandableDocumentCommand{\dfgSalaryAssistant}{}
477 { \fp_use:N \l_@@_custom_salary_assistant_fp }
478 \NewExpandableDocumentCommand{\dfgMouseHousing}{}
479 { \fp_use:N \l_@@_custom_animal_mouse_fp }
480 \NewExpandableDocumentCommand{\dfgMouseHousingGnotobiotic}{}
481 { \fp_use:N \l_@@_custom_animal_mouse_gnotobiotic_fp }
482 \NewExpandableDocumentCommand{\dfgRatHousing}{}
483 { \fp_use:N \l_@@_custom_animal_rat_fp }
484 \file_if_exist:nTF {preamble/dfg-customization.tex}
485 { \ExplSyntaxOff \input{preamble/dfg-customization.tex} \ExplSyntaxOn }
486 { \msg_warning:nnn { dfg } { file-not-found } {preamble/dfg-customization.tex} }
487 \bool_if:NT \l_@@_class_fastcompile_project_bool
488 {
489 \bool_set_false:N \l_@@_custom_thumbindex_bool
490 \bool_set_false:N \l_@@_custom_emphasize_authors_bool
491 }

```

3.2.3 Colour binding at document start

The `\AtBeginDocument` hooks below transform the stored colour *names* from the `dfg/custom` key family into live `\colorlet` aliases that the rest of the document uses. Deferring this to `\AtBeginDocument` means the user's `\changeSettings` calls in `dfg-customization.tex` are already in force when the bindings run.

The second `\AtBeginDocument` block handles final-mode side effects: it resets all drafting flags (both fast modes, tags, marginalia, skip-pubs) to false, enables project publications, forces the colour model to `cmymk`, and switches the `color@final@white-or-green` alias from green to white so that any placeholder boxes are invisible in the submitted PDF.

Packages are loaded in an order that avoids common conflicts: `xcolor` is loaded first (with the `table` option forwarded beforehand) because almost every other package depends on it. `tabularray` and its `siunitx` library are set up before `hyperref`; reversing this order breaks `tblr`'s PDF bookmark integration. `hyperref` and `cleveref` are always loaded last (standard LaTeX best practice).

The page geometry mirrors the DFG layout requirements: A4 paper, 25 mm inner and top margins, 30 mm outer margin, a 20 mm footer zone, and a 15 mm note column inside the outer marginal area for the `showmarginalia` running subtotals. On verso pages, the notes switch to the left margin so that they retain the same distance from the paper edge. `includefoot` prevents the footer from overlapping the body text.

```
492 \RequirePackage{multicol}
493 % Defensive definition against lineno/multicol conflict
494 \AtBeginDocument{%
495   \@ifpackageloaded{lineno}{%
496     \providecommand*{\@LN@col}[1]{\relax}%
497   }{}%
498 }
499 \RequirePackage{babel}
500 \RequirePackage{geometry}
501 \geometry{
502   a4paper,
503   % includefoot,
504   top          =30mm,
505   bottom       =30mm,
506   left         =20mm,
507   right        =30mm,
508   marginparsep =5mm,
509   marginparwidth =20mm,
510   % showframe
511 }
```

We provide a color which is used during the writing process. Since there are several steps that are calculated on the fly we want to be able to see if they match any criteria or if there has been a wrongly inserted number. The following colors can be overwritten in the `dfg-customization.tex`-file. Therefor we load them just before the document starts.

```
512 \AtBeginDocument{
513   \selectcolormodel{\tl_use:N \l_@@_class_color_model_tl}
514   \colorlet{color@item@i}{\l_@@_custom_color_item_i_tl}
515   \colorlet{color@tags@font}{\l_@@_custom_colorTagsFont_tl}
516   \colorlet{color@tags@line}{\l_@@_custom_colorTagsLine_tl}
517   \colorlet{color@font@alternative}{\l_@@_custom_colorfontalternative_tl}
518   \colorlet{color@reference@boldAuthor}{\l_@@_custom_referenceBoldAuthor_tl}
519   \colorlet{tableHeadingsBG}{\l_@@_custom_tableHeadingsBG_tl}
520   \colorlet{tableHeadingsBGalt}{\l_@@_custom_tableHeadingsBGalt_tl}
521   \colorlet{tableHeadingsFont}{\l_@@_custom_tableHeadingsFont_tl}
522   \colorlet{tableRows}{\l_@@_custom_tableRows_tl}
523   \colorlet{tableLines}{\l_@@_custom_tableLines_tl}
524   \colorlet{tableOuterLines}{\l_@@_custom_tableOuterLines_tl}
525   \colorlet{tableNoValue}{\l_@@_custom_tableNoValue_tl}
526   \colorlet{tableFirstColumn}{\l_@@_custom_tableFirstColumn_tl}
527   \colorlet{tableLink}{\l_@@_custom_tableLink_tl}
528   \colorlet{tableContFootHead}{\l_@@_custom_tableContFootHead_tl}
529   \colorlet{tableCaption}{\l_@@_custom_tableCaption_tl}
530   \colorlet{thumbIndexBG}{\l_@@_custom_thumbIndexBG_tl}
531   \colorlet{thumbIndexFont}{\l_@@_custom_thumbIndexFont_tl}
532   % all for the gantt chart
533   \colorlet{color@gantt@default}{\l_@@_custom_gantt_default_tl}
534   \colorlet{color@gantt@alternative}{\l_@@_custom_gantt_alternative_tl}
535   \colorlet{color@gantt@frame}{\l_@@_custom_gantt_frame_tl}
536   \colorlet{color@gantt@crosshatch}{\l_@@_custom_gantt_crosshatch_tl}
```

```

537 \colorlet{color@gantt@important}{\l_@@_custom_gantt_important_tl}
538 \colorlet{color@gantt@stripe-one}{\l_@@_custom_gantt_stripe_one_tl}
539 \colorlet{color@gantt@stripe-two}{\l_@@_custom_gantt_stripe_two_tl}
540
541 % NOTE: The aliases below shadow LaTeX/xcolor standard colour names
542 % (black, red, green). Any subsequently loaded package relying on the
543 % standard red=RGB(255,0,0) will receive bordeaux-100 instead.
544 % Consider using dfg-prefixed aliases if you load additional packages.
545 \colorlet{black}{black-100}
546 \colorlet{blue}{blue-100}
547 \colorlet{blueLight}{blue-50}
548 \colorlet{green}{green-100}
549 \colorlet{greenLight}{green-50}
550 \colorlet{red}{bordeaux-100}
551 \colorlet{redLight}{bordeaux-50}
552 \colorlet{grey}{black-50}
553 \colorlet{greyLight}{black-10}
554
555 \colorlet{projectA}{blue}
556 \colorlet{projectB}{green}
557 \colorlet{projectQ}{grey}
558 \colorlet{error}{red}
559 \colorlet{referencePI}{color@reference@boldAuthor}
560 \colorlet{referenceWP}{color@reference@boldAuthor}
561 \colorlet{referenceAim}{color@reference@boldAuthor}
562 % Now closing the AtBeginDocument-part:
563 }

```

Once you set the flag `final` the color (green) is replaced by white so it is ready for submission without indicating the doublechecking aspect. If it stays red you should not proceed to submit the proposal.

```

564 \AtBeginDocument{
565   \bool_if:NTF \l_@@_class_final_bool
566   {
567     \colorlet{color@final@white-or-green}{white}
568     \bool_set_false:N \l_@@_class_showmarginalia_bool
569     \bool_set_false:N \l_@@_class_showtags_bool
570     \bool_set_false:N \l_@@_class_fastcompile_bool
571     \bool_set_false:N \l_@@_class_fastcompile_project_bool
572     \bool_set_false:N \l_@@_class_fastcompile_project_show_images_bool
573     \bool_set_false:N \l_@@_class_skipTENpublications_bool
574     \bool_set_true:N \l_@@_class_fastcompile_project_show_publications_bool
575     \selectcolormodel{cmyk}
576   }
577   {
578     \colorlet{color@final@white-or-green}{green}
579   }
580 }

581 \RequirePackage{xspace}
582 \RequirePackage{etoolbox}
583
584 \RequirePackage{ragged2e}
585 \raggedbottom

```

We are getting rid of having the chapter number added to the figure number, same goes for tables.

```

586 \counterwithout{figure}{chapter}
587 \counterwithout{table}{chapter}

588 \RequirePackage{qrcode}
589 \RequirePackage{graphicx}
590 \RequirePackage{mwe}% provides the default example-image-a/b logo placeholders
591 % Set the graphics mode after loading \pkg{graphicx}. This explicitly clears
592 % a previously inherited draft setting when project images are requested and
593 % makes repeated false/true drafting builds deterministic.
594 \bool_if:NT \l_@@_class_fastcompile_project_bool
595 {
596   \bool_if:NTF \l_@@_class_fastcompile_project_show_images_bool
597   { \setkeys{Gin}{draft=false} }

```

```

598     { \setkeys{Gin}{draft=true} }
599 }
600 \graphicspath{
601   {figures/}
602   {img/}
603 }
604 \RequirePackage{fontspec}
605 \AtBeginDocument{
606   \setmainfont{\tl_use:N \l_@@_custom_font_tl}[
607     \tl_use:N \l_@@_custom_fontspec_tl
608   ]
609   \setsansfont{\tl_use:N \l_@@_custom_sansfont_tl}[
610     \tl_use:N \l_@@_custom_sansfontspec_tl
611   ]
612 }
613
614 \RequirePackage{fontawesome5}
615 \RequirePackage{microtype}
616 \RequirePackage{enumitem}
617 % customizing bulletpoints
618 \newcommand{\dfgArrowHead}{\faCaretRight}
619 \newcommand{\dfgBulletPoint}{\faCaretRight}
620 \newcommand{\dfgTargetPoint}{\faBullseye}
621 \newcommand{\dfgDefaultPoint}{\faCaretRight}
622 \setlist[enumerate]{nosep}
623 \setlist[description]{
624   %leftmargin=*,
625   leftmargin=*
626 }
627 \setlist[itemize]{
628   nosep,
629   label={\textcolor{color@item@i}{\dfgDefaultPoint}},
630 }
631 \newlist{contractinformation}{itemize}{2}
632 \setlist[contractinformation,1]{
633   nosep,
634   leftmargin=*,
635   label={\textcolor{color@item@i}{\dfgBulletPoint}},
636 }
637 \setlist[contractinformation,2]{
638   nosep,
639   leftmargin=*,
640   label={\textcolor{color@item@i}{\dfgDefaultPoint}},
641 }

```

3.2.4 Project-body list environments

workpackages A custom `enumitem` list with `WP\`, `\arabic*`: labels at level 1 and `WP\`, `\meta{parent}\alph*`: at level 2. The `resume` option at level 1 means the work-package counter continues across multiple projects in the same document, giving each WP a globally unique number for cross-references. Labels are set via `cleveref` with the prefix `\bfseries\color{referenceWP}WP`.

aims A special `enumerate` list that automatically wraps its contents in a `\dfgBoxEnv` frame (the blue highlighted aims box). The `before` hook also temporarily sets all reference colours to the table heading font colour so that `PI/WP/Aim` cross-references inside the aims box are visually consistent with the box style. The `after` hook closes the box.

```

642 \newlist{workpackages}{enumerate}{3}
643 \setlist[workpackages,1]{
644   % wide=\parindent,
645   leftmargin=0cm,
646   labelindent=*,
647   % leftmargin=*,
648   % labelindent=-3em,
649   % font=\normalfont,
650   % first=\bfseries,
651   topsep=3pt,
652   font=\bfseries,

```

```

653 % nosep,
654 label={WP\, \arabic*:.},
655 ref = {\arabic*},
656 resume
657 }
658
659 \setlist[workpackages,2]{
660   ref={\theworkpackagesi\alph*},
661   %wide=\parindent,
662   leftmargin=0cm,
663   labelindent=*,
664   % font=\normalfont,
665   % first=\bfseries,
666   topsep=0pt,
667   font=\bfseries,
668   % nosep,
669   label={WP\, \theworkpackagesi\alph*:.}
670 }

```

bylaws A three-level enumitem list styled for the bylaws section of the CRC charter. Level 1 uses `$\arabic*` paragraph signs; level 2 uses `\thebylawsi.\arabic*` for sub-paragraphs. Both levels are set `nosep` to conserve vertical space.

```

671
672 \newlist{bylaws}{enumerate}{3}
673 \setlist[bylaws]{leftmargin=*}
674 \setlist[bylaws,1]{
675   font=\bfseries,
676   first=\bfseries,
677   % after=\normalfont,
678   label={\arabic*},
679   % itemsep=.5\baselineskip,
680   nosep
681 }
682 \setlist[bylaws,2]{
683   first=\normalfont,
684   label={\thebylawsi.\arabic*},
685   labelindent=0em,
686 }

```

A list for the aims within the projects

```

687 \newcommand{\addAim}[1]{\item\label{\l__tmp_current_project_tl-aim-#1}}
688 \newlist{aims}{enumerate}{1}
689 \setlist[aims,1]{
690   before={\begin{dfgBoxEnv}%
691     [%watermark text={Aims in }
692   ]
693   \colorlet{referencePI}{tableHeadingsFont}
694   \colorlet{referenceWP}{tableHeadingsFont}
695   \colorlet{referenceAim}{tableHeadingsFont}},
696   after={\end{dfgBoxEnv}},
697   wide=\parindent,
698   % font=\normalfont,
699   % first=\bfseries,
700   topsep=3pt,
701   font=\bfseries,
702   % nosep,
703   label={Aim~ \arabic*:.},
704   ref = {\arabic*},
705   % resume
706 }

```

3.2.5 Page style (headers and footers)

The page style uses `sclayer-scrpage` with a minimal layout: The outer footer shows the page number in bold sans-serif. The inner footer shows the CRC logo (`\crcLogo`) at 0.5 cm height — this places the logo on every page of the proposal for visual identification without cluttering the headers. Both header and footer use `\markcase=noupper`

so section titles are not forced to uppercase in running heads. `\footheight` is set explicitly to suppress the `scrlayer-scrpage` warning about an undersized footer layer.

```
707 \RequirePackage[
708   %headsepline=.5pt,
709   markcase=noupper,
710   %footsepline,
711   autooneside=false, % use left and right marks with a onesided document
712   %automark, % set \leftmark and \rightmark automatically by \section and \subsection
713   draft=false,
714 ]{scrlayer-scrpage}
```

First we clear any presettings so we can apply our own style.

```
715 \clearmainofpairofpagestyles
716 \pagestyle{scrheadings}
717 \setlength{\footheight}{17.5264pt}
718 \renewcommand{\chaptermarkformat}{}
719 \renewcommand{\sectionmarkformat}{}
720 \foot*{\pagemark}%Clear the outer foot
721 \ifoot*{\crlLogo[height=0.5cm]}%pagemark in the center only on plain pages
722 \addtokomafont{pagehead}{\normalfont\sffamily}
723 \addtokomafont{pagefoot}{\bfseries}
724 % Mark every shipped page of an aggressive project draft without adding a
725 % package-level watermark dependency. The native background hook keeps the
726 % mark behind authored text and is registered only after final-mode precedence
727 % has been resolved.
728 \bool_if:NT \l_@@_class_fastcompile_project_bool
729 {
730   \AddToHook{shipout/background}[dfg/fastcompile-project-watermark]
731   {
732     \put(0.5\paperwidth,-0.5\paperheight)
733     {
734       \makebox(0,0)
735       {
736         \rotatebox{45}
737         {
738           \textcolor{black!7}
739           {
740             \sffamily\bfseries\fontsize{42}{50}\selectfont
741             FAST~COMPILE~~~DRAFT
742           }
743         }
744       }
745     }
746   }
747 }
```

Remodelling the footnotes for more pleasant display

```
748 \deffootnote{0em}{0em}{\thefootnotemark\hskip .5em}
749 \renewcommand{\footnoterule}{%
750   % \kern -4.5pt
751   % \hrule width \textwidth height 0.5pt
752   % \kern 4pt
753 }
```

3.2.6 Heading fonts (KOMA-Script customisation)

All heading sizes and weights are re-declared here to achieve a compact, dense layout that conserves space on the tightly page-budgeted DFG forms: `disposition` is reset to `\normalfont` (KOMA default is bold) so all heading levels start from the same base. Chapter headings (section dividers) are set at 20 pt bold to stand out without the very large spacing of `\Huge`. Section, subsection and subsubsection headings all share 12 pt bold/normal weight, creating a hierarchy that relies on bold vs. normal rather than size to distinguish levels. The TOC is configured to omit chapter page numbers (they would be meaningless given the DFG form structure) and to show section entries with a dash-style page separator. Project TOC entries deliberately use only their compact project number, so the fixed number column remains narrow and ordinary section titles are not pushed unnecessarily far to the right.

```
754 \setkomafont{title}{\Huge\bfseries}
755 % \setkomafont{disposition}{\normalfont}
756 \setkomafont{disposition}{\normalfont\sffamily\bfseries}
```

```

757 \setkomafont{descriptionlabel}{\normalfont\bfseries}
758 %\setkomafont{chapter}{\huge\bfseries}
759 %\setkomafont{section}{\normalsize\bfseries}
760 %\setkomafont{subsection}{\normalsize}
761 %\setkomafont{subsubsection}{\normalsize}
762 \setkomafont{chapter}{\fontsize{20}{10}\selectfont\bfseries}
763 \setkomafont{section}{\fontsize{12}{10}\selectfont\bfseries}
764 \setkomafont{subsection}{\fontsize{12}{10}\selectfont}
765 \setkomafont{subsubsection}{\fontsize{12}{10}\selectfont}
766 \setkomafont{footnotenummer}{\normalfont\sfamily}
767 \setkomafont{pageheadfoot}{\normalfont\footnotesize\sfamily}

```

Adjusting the style for the table of contents. First we want to have the normalfont for the chapter entries

```

768 \addtokomafont{chapterentry}{\normalfont}

769 \RedeclareSectionCommands[
770   font=\usekomafont{subsection},
771   % before skip=1pt,
772   % after skip=.5pt
773 ]{subsubsection}
774
775 \RedeclareSectionCommands[
776   tocraggedpagenumber,
777   toclinefill=\tocpageseparator,
778   tocindent=0em,
779   tocnumwidth=4em,
780   tocpagumberbox=\tocpagumberbox,% <- added
781   % tocpagumberformat=\textsf,
782   before skip= 0ex,
783   after skip= 0.01ex
784 ]{section, subsection, subsubsection}
785
786 \RedeclareSectionCommands[
787   tocbefore skip=2ex,
788   tocentryformat=\bfseries\large,
789 ]{section}
790
791 \newcommand\tocgobble[1]{}% <- added
792 \newcommand\tocpageseparator{\normalsize\bfseries\,\mbox{\color{\l_@@_custom_tableLines_tl}---}
793 \,\,}
794 \newcommand\tocpagumberbox[1]{\mbox{\#1}}% <- added
795 % no page number for chapters in TOC
796 \RedeclareSectionCommands[
797   tocraggedpagenumber,
798   toclinefill          =\tocgobble,
799   tocindent             =0em,
800   tocnumwidth           =4em,
801   tocpagumberbox        =\tocgobble,% <- added
802   % tocpagumberformat   =\textsf,
803   before skip           = 0ex,
804   after skip            =0.1ex,
805   tocentryformat        =\bfseries\Large\sfamily,
806 ]{chapter}

```

the depth of chapter is configurable, so using this is instead of a absolute number is recommended

```

806 \setcounter{secnumdepth}{\subsectionocdepth}
807 \setcounter{tocdepth}{\subsectionocdepth}

```

3.2.7 ORCiD display commands

Two commands render ORCiD identifiers:

`\ORCiD{<0000-0000-0000-0000>}` Inline use: renders the ORCiD icon followed by the ID as a hyperlink. Intended for manual insertion in text.

`\getORCiD[<db>]{<id>}` Database-driven use: looks up the `orcid` field from the person database for the given person ID and renders `\ORCiD` automatically. If the field is missing, a `missing-orcid` warning is raised instead of silently omitting the identifier. The warning is suppressed during the `tabularray` measuring pass (`\TblrMeasuringBool`) to avoid duplicates.

The ORCID brand green (orcid colour) is defined in the colour palette section above. The icon uses the academicons \aiOrcid glyph.

```

808 \RequirePackage{pifont}
809 \RequirePackage{academicons}
810 % =====
811 % ORCID-Befehle
812 % =====
813
814 % Speicher für den per Datenbank gefundenen ORCID-Wert
815 \providecommand{\theORCIDValue}{}
816
817 % --- Icon -----
818 \NewDocumentCommand{\orcidIcon}{}
819 {{\sffamily\textcolor{orcid}{\aiOrcid}}}
820
821 % --- Reine Wert-Abfrage (ohne Ausgabe) -----
822 % Holt nur den ORCID-Wert aus der Datenbank in \theORCIDValue.
823 % Nützlich, wenn der Wert ohnehin schon per Multi-Fetch geladen wurde
824 % oder wenn man später formatieren will.
825 \NewDocumentCommand{\getORCIDValue}{O{person} m}
826 {%
827   % #1: Datenbank, default ist person
828   % #2: id der Person
829   \bool_if:NTF \l_@@_class_fastcompile_project_bool
830   { \cs_set:Npn \theORCIDValue { } }
831   { \DTLgetvalueforkey{\theORCIDValue}{orcid}{#1}{id}{#2} }%
832 }
833
834 % --- Formatierung eines bereits geladenen ORCID-Werts -----
835 % Erwartet, dass \theORCIDValue gesetzt ist (z.B. via \getORCIDValue oder
836 % per \getEntry*{...}{id}{\theORCIDValue=orcid, ...}).
837 \NewDocumentCommand{\formatORCID}{O{person} m}
838 {%
839   % #1: Datenbank (für Warnungen / Tag-Overlay)
840   % #2: id der Person (für Warnungen / Tag-Overlay)
841   \DTLifnulloreempty{\theORCIDValue}
842   {%
843     \bool_if:NF \lTblrMeasuringBool
844     { \msg_warning:nnee {dfg}{missing-orcid}{#1}{#2} }%
845     \mbox{~} % if no orcid present
846   }
847   {%
848     \orcidIcon\,%
849     \dfgShowTag{#2}{orcid}
850     {\href{https://orcid.org/\theORCIDValue}{\theORCIDValue}}[#1]%
851   }%
852 }
853
854 % --- Komfort-Befehl: Fetch + Format in einem Aufruf -----
855 % Gleiche API wie der ursprüngliche \getORCID, damit bestehende Aufrufe
856 % weiterhin funktionieren.
857 \NewDocumentCommand{\getORCID}{O{person} m}
858 {%
859   % #1: Datenbank, default ist person
860   % #2: id der Person
861   \bool_if:NF \l_@@_class_fastcompile_project_bool
862   {
863     \getORCIDValue[#1]{#2}%
864     \formatORCID[#1]{#2}%
865   }
866 }
867
868 % --- Inline-Variante mit literaler ORCID -----
869 % Für direkte Angaben ohne Datenbank-Lookup.
870 \NewDocumentCommand{\ORCID}{m}
871 {{\raisebox{-1pt}{\orcidIcon}\,\href{https://orcid.org/#1}{#1}}}
```

3.2.8 siunitx configuration

siunitx options must be forwarded with `\PassOptionsToPackage` *before* the package is implicitly loaded by `\UseTblrLibrary{siunitx}`, otherwise they arrive too late.

Key choices: `group-minimum-digits=4`: numbers with 4+ digits get a thousands separator (so 88200 formats as 88,200 EUR). `group-separator={,}`: European style comma separator. `table-auto-round=true`: silently rounds values to fit the table-format without requiring `\num` wrappers everywhere. `drop-zero-decimal=true`: suppresses redundant decimal zeros in numeric and EUR cells while retaining genuinely fractional values such as explicit animal-housing rates. `mode=match`: inherits the surrounding text font, so numbers in tables match the `\footnotesize` row font automatically. `text-family-to-math=true`, `text-series-to-math=true`: pass the current font family and series into math mode, keeping bold/italic numbers consistent with their surrounding text.

```
872 \PassOptionsToPackage{
873   mode = match,
874   propagate-math-font = true,
875   % reset-math-version = false,
876   % reset-text-family = false,
877   % reset-text-series = false,
878   % reset-text-shape = false,
879   text-family-to-math = true,
880   text-series-to-math = true,
881   tight-spacing = true,
882   group-minimum-digits = 4, % --> 1.234 instead of 1234
883   group-separator = {,}, % for "12.345" instead of "12 345" %
884   table-format = 6,
885   table-alignment-mode = format,
886   table-auto-round = true,
887   drop-zero-decimal = true,
888   locale =UK,
889   input-decimal-markers = {.,},
890   output-decimal-marker = {.,},
891   input-ignore={,},
892   parse-numbers = true
893 }{siunitx}
```

This is the package for our tables and we are using quite a bunch of additional libraries.

```
894 \RequirePackage{tabularray}
895 \UseTblrLibrary{booktabs}
896 \UseTblrLibrary{diagbox}
897 \UseTblrLibrary{siunitx}
898 \UseTblrLibrary{counter}
899 \UseTblrLibrary{functional}
```

3.2.9 tabularray setup and table themes

tabularray renders each cell *twice*: once in a hidden measuring pass to determine column widths, and once for final output. This means every database query, numeric calculation or warning inside a cell body would be executed twice. The global boolean `\g_@@_tblr_inside_bool` (toggled via environment hooks) lets code detect the measuring pass so it can skip expensive side effects (e.g. the missing-key warning is suppressed when `\lTblrMeasuringBool` is true).

```
900 \bool_new:N \g_@@_tblr_inside_bool
901 % -- Hook into the beginning and ending of the tblr environment -----
902 \AddToHook{env/tblr/begin}{\bool_set_true:N \g_@@_tblr_inside_bool}
903 \AddToHook{env/tblr/end}{\bool_set_false:N \g_@@_tblr_inside_bool}
```

3.2.10 Custom table definition

Base Table Theme Defines the shared templates and outer settings used by all table themes.

```
904 \SetTblrOuter[tblr]{label=none,entry=none}
905 % For long tables:
906 \cs_new_protected:Npn \mytblr_basecode: {
907   % Continuous head/footer templates (use ~ for spaces)
908   \DeclareTblrTemplate {conthead-text}{default}{%
909     \normalfont\color{tableContFootHead}%
910     \sffamily\footnotesize%
911     \ldots~continuing~from~previous~page.%
912   }
913   \DeclareTblrTemplate {contfoot-text}{default}{%
914     \normalfont\color{tableContFootHead}%
915     \sffamily\footnotesize%
916     \ldots~continuing~from~previous~page.%
917   }
```

```

914 \normalfont\color{tableContFootHead}%
915 \sffamily\footnotesize%
916 Continue~on~the~following~page~\ldots%
917 }
918 % Caption continuation uses conthead
919 \DeclareTblrTemplate {capcont}{default}{%
920 \UseTblrTemplate{conthead-text}{default}%
921 }
922 % Left-align tables
923 \RenewDocumentCommand \TblrAlignLeft {} {\RaggedRight}%
924 % Common outer settings
925 }

```

Table themes Three named tblr themes are provided. All inherit the shared `\mytblr_basecode`: `helper` (continuous head/footer templates, left alignment) via a direct call at theme definition time.

plain: minimal two-rule + alternating-row look used for simple supplementary tables (e.g. the direct-costs breakdown).

```

926 \NewTblrTheme{plain}{
927 \mytblr_basecode:
928 % plain-only inner tweaks:
929 \SetTblrInner{
930 rows = {font=\footnotesize},
931 % Keep row metrics independent of descenders such as p, q, f.
932 stretch = 1,
933 rowsep = .667pt,
934 row{even}={bg=tableRows},
935 width=\linewidth,
936 hline{1,Z}={1pt,fg=tableOuterLines},
937 }
938 }

```

main: the full-featured style used by all DFG data tables. Adds a styled first-row header (blue background, bold sans-serif text), a midrule below row 1, caption fonts, and row continuation labels for long tables that span multiple pages.

```

939 \RenewDocumentCommand \TblrAlignLeft {} {\RaggedRight}
940 \NewTblrTheme{main}{
941 \mytblr_basecode:
942 % main-only styles & inner grid:
943 \SetTblrStyle{caption-tag}{font=\bfseries\footnotesize\sffamily,tableCaption}
944 \SetTblrStyle{caption-text}{tableCaption,\footnotesize}
945 \SetTblrInner{%
946 row{odd}={bg=tableRows},
947 width=\linewidth,
948 hline{1,Z}={1pt,fg=tableOuterLines},
949 rowhead = 1,
950 rows = {font=\footnotesize},
951 width = \textwidth,
952 hline{1,Z} = {
953 1pt,
954 fg=tableOuterLines
955 },
956 hline{2} = {1pt,fg=tableOuterLines}, % midrule
957 % Keep row metrics independent of descenders such as p, q, f.
958 stretch = .8,
959 rowsep = .500pt,
960 row{1} = {
961 bg = tableHeadingsBG,
962 fg = tableHeadingsFont,
963 font = \footnotesize\bfseries,
964 halign = {c},
965 valign = {t},
966 guard
967 },
968 }%
969 % \SetTblrInner{
970 % rows={ht=.5\baselineskip},
971 % rowsep = 0pt,
972 % }

```

```
973 }
```

requestedFundingStaff: caption styling for the staff roster without a table-wide row background. This lets the roster mark individual non-applicable cells with the `tableNoValue` background.

```
974 \NewTblrTheme{requestedFundingStaff}{
975   \mytblr_basecode:
976   \SetTblrStyle{caption-tag}{font=\bfseries\footnotesize\sfamily,tableCaption}
977   \SetTblrStyle{caption-text}{tableCaption,\footnotesize}
978 }
```

a table environment for generic tables

```
979 \NewDocumentEnvironment{TableEnv}{m o m m }
980 {
981   % #1: colspec
982   % #2: further options
983   % #3: caption
984   % #4: label
985   \vspace*{-1.5\baselineskip}%
986   \DefTblrTemplate{firsthead}{default}%
987   {\addtocounter{table}{-1}}%
988   \captionof{table}{\InsertTblrText{entry}}%
989   {\InsertTblrText{caption}\vspace*{-2em}}}%
990   \begin{tblr}{%
991     % expand=\tblrbody,
992     theme=main,
993     label   ={\#4},
994     caption={\#3},
995     long
996   }{%
997     colspec ={\#1},
998     row{2-Z}={font=\RaggedRight},
999     rowhead = 1, %<- first row is head
1000     #2 %<- in case we need further adjustments
1001   }
1002 }
1003 {\end{tblr}}
```

at the final part of projects the costs must be listed more granular. this commands provides an easy to use table environment.

```
1004 \NewDocumentEnvironment{FundingDirectCostsTable}{O{}}
1005 {\textbf{\sfamily#1}\
1006   % \nobreak\mbox{~}\vspace{-3.25em}\nobreak
1007   \begin{tblr}{%
1008     theme=plain, label=none, entry=none}{
1009     rows={font=\footnotesize},
1010     colspec={
1011       X[t]
1012       t{.5cm,halign={right}}
1013       Q[t,si={table-format=9}]
1014     },
1015   }
1016 }
1017 {\end{tblr}}
1018
1019 \RequirePackage{caption}
1020 \captionsetup{%
1021   % format=llapx,
1022   hypcap=false,
1023   format=plain,
1024   singlelinecheck=off,
1025   labelsep={colon}, % saving space
1026   %justification=RaggedRight,
1027   font={small,sf},
1028   labelfont={
1029     sf,
1030     bf, % bold face
1031   }
}
```

```

1032 }
1033 \RequirePackage{pgfgantt}
1034 \RequirePackage{placeins}
1035 \RequirePackage{hvfloater} % load after tabularray!!
1036 \hvfloaterSet{capPos=bottom,capVPos=top,floatPos=!hb}% this are the default values.
1037 \RequirePackage{marginalia}
1038 \marginaliasetup{
1039   xsep=0pt,
1040   width=15mm,
1041   style=\raggedleft\footnotesize,
1042   pos=auto,
1043 }
1044 \bool_if:NTF \l_@@_class_cv_bool
1045 {
1046   \tl_set_eq:NN \l_@@_custom_biblatexstyle_active_tl
1047     \l_@@_custom_biblatexstyle_cv_tl
1048   \tl_set_eq:NN \l_@@_custom_biblatexfeatures_active_tl
1049     \l_@@_custom_biblatexfeatures_cv_tl
1050 }
1051 {
1052   \tl_set_eq:NN \l_@@_custom_biblatexstyle_active_tl
1053     \l_@@_custom_biblatexstyle_proposal_tl
1054   \tl_set_eq:NN \l_@@_custom_biblatexfeatures_active_tl
1055     \l_@@_custom_biblatexfeatures_proposal_tl
1056 }
1057 \RequirePackage[
1058   backend=biber,
1059   % using the most common style and also saving space.
1060   % style=ext-numeric, % taken from biblatex-ext
1061   % just in case we want to switch the style.
1062   % style=ext-alphabetic,
1063   %style=ext-authornumber-eomp,
1064   style=\l_@@_custom_biblatexstyle_active_tl,
1065   %introcite=label,
1066   autocite=inline,
1067   defernumbers=true, % reset numbered bibliography for each chapter
1068   giveninits=true, % abbreviate the first names
1069   maxcitenames=1,
1070   mincitenames=1,
1071   maxbibnames=99, % show up to 6 authors of an bib entry (et al. thereafter)
1072   %nohashothers=true,
1073   %uniquelist=true,
1074   %uniquename=allfull,
1075   %labeldatepartes=true
1076   \l_@@_custom_biblatexfeatures_active_tl
1077 ]{biblatex}

```

In final documents, biblatex-ext-oa can mark open-access publications directly in the bibliography. Draft documents do not load the package, so they avoid DOI API checks and related warnings. The DOI API backend is useful, but biblatex-ext-oa-doiapi and the doiapi option can only be used with LuaLaTeX. With LuaTeX binaries from version 1.17.0 onwards, the LuaSocket module `socket.http` is exposed only when LuaTeX is started with the command-line option `--socket`. If we always passed `doiapi=true` in final mode, a normal final compile without `--socket` would abort while loading biblatex-ext-oa-doiapi.

After a user opts in with a contact address, the guard asks LuaTeX whether `require("socket.http")` succeeds. The result is written back into the temporary expl3 string `\l_tmpa_str` as the literal text `true` or `false`. The Lua code is written without TeX-relevant whitespace, because expl3 ignores spaces while tokenising this part of the class source; semicolons keep the Lua syntax unambiguous after docstrip has generated the `.cls` file.

Automatic lookup is enabled only when LuaSocket is available and the user has supplied a non-empty `doiAPIMail`^{→P.35}. The address is passed to `\SetDOIAPIMail`; the class never sends a placeholder or maintainer address on behalf of its users. If either prerequisite is missing, the class emits a specific warning and loads biblatex-ext-oa with `doiapi=false` so manual BibTeX annotations such as `doi+an:default = {openaccess}` continue to work.

The TikZ symbol package draws the open-access symbols. The `oanet` symbol is the open-access symbol from open-access.net (<https://open-access.net/>), logo by Medien + Design, Center for Digital Systems, Competence Center for E-Learning and Multimedia, Freie Universität Berlin, CC BY 4.0 (<https://creativecommons.org/licenses/by/4.0/>).

```

1078 \cs_new_protected:Npn \l_@@_biblatex_oa_load_without_api:

```

```

1079 {
1080   \RequirePackage[
1081     doiapi=false,
1082     symbolpackage=tikz,
1083     symbol=oanet]{biblatex-ext-oa}
1084 }
1085
1086 \bool_if:NT \l_@@_class_final_bool
1087 {
1088   \tl_if_blank:VTF \l_@@_custom_doi_api_mail_tl
1089   {
1090     \msg_info:nn { dfg } { biblatex-ext-oa-doiapi-email-missing }
1091     \@@_biblatex_oa_load_without_api:
1092   }
1093   {
1094     \str_set:Nx \l_tmpa_str
1095     {
1096       \directlua
1097       {if(pcall(require,"socket.http"))then;tex.sprint("true");else;tex.sprint("false");end}
1098     }
1099     \str_if_eq:VnTF \l_tmpa_str { true }
1100     {
1101       \RequirePackage[
1102         doiapi=true,
1103         symbolpackage=tikz,
1104         symbol=oanet]{biblatex-ext-oa}
1105       \ExecuteBibliographyOptions{openaccess=doiapi}
1106       \exp_args:NV \SetDOIAPIMail \l_@@_custom_doi_api_mail_tl
1107     }
1108     {
1109       \msg_warning:nn { dfg } { biblatex-ext-oa-doiapi-unavailable }
1110       \@@_biblatex_oa_load_without_api:
1111     }
1112   }
1113 }
1114 \renewcommand*{\bibfont}{\small}
1115 % A project-text build with publication processing disabled must not require a
1116 % matching biber run merely to keep inline source references readable. Replace
1117 % the common single-citation commands with quiet key markers; enabling
1118 % |fastcompile-project-show-publications| restores biblatex's normal commands unchanged.
1119 \bool_if:nTF
1120 {
1121   \l_@@_class_fastcompile_project_bool
1122   && ! \l_@@_class_fastcompile_project_show_publications_bool
1123 }
1124 {
1125   % Do not register bibliography data sources or parse a stale full-build
1126   % .bbl. Keep biblatex's ordinary initialisation and refsection setup, but
1127   % replace its data-file stage with the minimum empty-section state.
1128   \cs_set_protected:Npn \blx@bblfile
1129   {
1130     \blx@secinit
1131     \blx@generate@bbl@mdfivesum@notfound
1132     \global\togglefalse{blx@bbldone}
1133     \csnumgdef{blx@labelnumber@the\c@refsection}{0}
1134   }
1135   \NewDocumentCommand{\dfgFastCitation}{m}
1136   { {\color{black-50}\scriptsize\ttfamily [#1]} }
1137   \RenewDocumentCommand{\autocite}{s o o m}
1138   { \dfgFastCitation{#4} }
1139   \RenewDocumentCommand{\cite}{s o o m}
1140   { \dfgFastCitation{#4} }
1141   \RenewDocumentCommand{\parencite}{s o o m}
1142   { \dfgFastCitation{#4} }
1143   \RenewDocumentCommand{\textcite}{s o o m}
1144   { \dfgFastCitation{#4} }

```

```

1145 \RenewDocumentCommand{\footcite}{s o o m}
1146 { \dfgFastCitation{#4} }
1147 \RenewDocumentCommand{\smartcite}{s o o m}
1148 { \dfgFastCitation{#4} }
1149 \RenewDocumentCommand{\nocite}{m} { }
1150 % Ignore citation requests restored from auxiliary files produced by a full
1151 % proposal build. The fast source commands above do not write replacements.
1152 \cs_set_protected:Npn \abx@aux@cite #1#2 { }
1153 \cs_set_protected:Npn \abx@aux@segm #1#2#3 { }
1154 \cs_set_protected:Npn \abx@aux@nocite #1#2 { }
1155 % This mode deliberately has no bibliography work, so do not advertise a
1156 % biber rerun in the end-of-document logreq record.
1157 \AtEndDocument
1158 {
1159 \global\let\blx@rerun@biber\relax
1160 \global\togglefalse{blx@runbiber}
1161 }
1162 }
1163 {
1164 \addbibresource{bib/dfg-base.bib}
1165 % The conversion workflow stores bibliography entries that still need
1166 % review separately. Load that file when present without requiring it for
1167 % normal template installations.
1168 \IfFileExists{bib/conversion-missing.bib}
1169 {\addbibresource{bib/conversion-missing.bib}}
1170 {}
1171 \addbibresource{bib/dfg-strings.bib}
1172 }

```

The `\AtEveryBibitem` hook strips fields that are irrelevant for a funding proposal (URL, month, note, ISSN/ISBN, language) from every entry, keeping the reference list compact. These fields are cleared during output only; the `.bib` source files are unchanged.

```

1173 \AtEveryBibitem{
1174 \clearfield{url}
1175 \clearfield{month}
1176 \clearfield{note}
1177 \clearfield{issn}
1178 \clearfield{isbn}
1179 \clearlist{language}}

```

3.2.11 Shared authorship annotations

The `annotate` field in `.bib` entries supports two special values: `equal` (for equal-first-author contributions) and `sharedlast` (for shared last authorship). When present, `\mkbibnamefamily` appends an asterisk `*` after the family name via `\addendumasterisk`. The asterisk is only printed inside bibliography environments (`\ifbibliography`), not in inline citations.

Use in `.bib`: `add addendum = equal` or `addendum = sharedlast` (no `{}`) to the affected author's annotation field.

```

1180 \newcommand{\addendumasterisk}{\ifbibliography{*}}
1181 \newcommand{\addendumhashtag}{\ifbibliography{\textsuperscript{\#}}}
1182 % There is also the possibility that authors share the last authorship.
1183 % with the bib-string 'lastShared' we can get it work.
1184 \renewcommand*{\mkbibnamefamily}[1]{%
1185 \ifitemannotation{equal} % first check for equal contribution
1186 {#1\addendumasterisk}% add a * for those authors
1187 {
1188 % Then we check for "shared last authorship"
1189 \ifitemannotation{sharedlast}%
1190 {#1\addendumhashtag}% adding a symbol
1191 {#1}% do nothing for any one else.
1192 }}
1193 % \subsubsection{datatool: database backend}
1194 %
1195 % \pkg{datatool} provides the |DTL*| commands that are the actual in-memory
1196 % database engine behind the keyset-based metadata system. \pkg{csquotes}
1197 % is loaded just before it because \cs{blockquote} is used in the

```

```

1198 % documentation abstract and the class patches \cs{mkccitation} to suppress
1199 % the extra parentheses that csquotes adds around \cs{autocite} results.
1200 \RequirePackage{csquotes}
1201 \renewcommand{\mkccitation}[1]{ (#1)}
1202 \RequirePackage{datatool}

```

loading tikz at least for the thumb index.

```

1203 \RequirePackage{tikz}
1204 \ExplSyntaxOff
1205 \usetikzlibrary{calc}
1206 \usetikzlibrary{shapes.misc}
1207 \usetikzlibrary{patterns,patterns.meta}
1208 \ExplSyntaxOn

```

loading these two packages last

```

1209 \RequirePackage{hyperref}
1210 \RequirePackage{cleveref}
1211 \crefname{workpackagesi}{\bfseries\color{referenceWP}WP}{\bfseries\color{referenceWP}WPs}
1212 \creflabelformat{workpackagesi}{\color{referenceWP}#2\color{referenceWP}\bfseries#1\color{referenceWP}#}
1213 \crefname{workpackagesii}{\bfseries\color{referenceWP}WP}{\bfseries\color{referenceWP}WPs}
1214 \creflabelformat{workpackagesii}{\color{referenceWP}#2\bfseries\color{referenceWP}#1\color{referenceWP}#}
1215
1216 \crefname{aimsi}{\bfseries\color{referenceAim}Aim}{\bfseries\color{referenceAim}Aims}
1217 \creflabelformat{aimsi}{\color{referenceAim}#2\color{referenceAim}\bfseries#1\color{referenceAim}#3}
1218
1219
1220
1221 % \subsubsection{Preamble end: global metadata extraction and hyperref}
1222 %
1223 % The \cs{AfterEndPreamble} hook fires after all user preamble code
1224 % (including |dfg-customization.tex| and all \cs{addEntry} calls) but
1225 % before \cs{begin}|{document}|. This is the earliest point at which
1226 % the |meta| database is guaranteed to be fully populated.
1227 %
1228 % The block extracts the five core CRC fields into named macros
1229 % (\cs{theCRCName}, \cs{theCRCNumber}, \cs{theCRCaffiliation}, etc.)
1230 % that are used in headers, footers, and the hyperref PDF metadata. It
1231 % treats |meta.ref-affiliation-id| as a comma-separated list: the public
1232 % affiliation macros contain human-readable name and location lists, while
1233 % \cs{theApplicantID} retains the normalized id list for database filters. It
1234 % also derives \cs{theFundingPeriodNumeralPrevious} by subtracting 1 from
1235 % \cs{theFundingPeriodNumeral}, which is used in the gender equality tables
1236 % to reference the previous funding period.
1237 %
1238 % The \cs{hypersetup} call here (rather than in the preamble) avoids
1239 % needing the user to duplicate CRC metadata in a separate hypersetup block.
1240 \clist_new:N \l_@@_applicant_affiliation_id_clist
1241 \seq_new:N \l_@@_applicant_affiliation_name_seq
1242 \seq_new:N \l_@@_applicant_affiliation_location_seq
1243 \seq_new:N \l_@@_other_applicant_affiliation_name_seq
1244 \tl_new:N \l_@@_applicant_affiliation_name_tl
1245 \tl_new:N \l_@@_applicant_affiliation_location_tl
1246
1247 \cs_new_protected:Npn \@@_set_applicant_affiliation_metadata:
1248 {
1249   \DTLifnullloempty{\theApplicantID}
1250   { \clist_clear:N \l_@@_applicant_affiliation_id_clist }
1251   {
1252     \clist_set:Nx \l_@@_applicant_affiliation_id_clist
1253     { \theApplicantID }
1254     \clist_remove_duplicates:N \l_@@_applicant_affiliation_id_clist
1255   }
1256   \tl_set:Nx \l_tmpa_tl
1257   { \clist_use:Nn \l_@@_applicant_affiliation_id_clist {,} }
1258   \cs_set:Npx \theApplicantID { \exp_not:V \l_tmpa_tl }
1259   \cs_set_eq:NN \theAffiliationValue \theApplicantID
1260   \seq_clear:N \l_@@_applicant_affiliation_name_seq

```

```

1261 \seq_clear:N \l_@@_applicant_affiliation_location_seq
1262 \clist_map_inline:Nn \l_@@_applicant_affiliation_id_clist
1263 {
1264   \DTLifdbexists{affiliation}
1265   {
1266     \DTLgetvalueforkey{\l_@@_applicant_affiliation_name_tl}
1267     {name}{affiliation}{id}{##1}
1268     \DTLgetvalueforkey{\l_@@_applicant_affiliation_location_tl}
1269     {location}{affiliation}{id}{##1}
1270   }
1271   {
1272     \tl_set:Nn \l_@@_applicant_affiliation_name_tl {##1}
1273     \tl_clear:N \l_@@_applicant_affiliation_location_tl
1274   }
1275   \DTLifnulloreempty{\l_@@_applicant_affiliation_name_tl}
1276   { \tl_set:Nn \l_@@_applicant_affiliation_name_tl {##1} }
1277   { }
1278   \tl_set:Ne \l_tmpb_tl
1279   {
1280     \exp_not:N \dfgShowTag{##1}{name}
1281     {\exp_not:V \l_@@_applicant_affiliation_name_tl}[affiliation]
1282   }
1283   \seq_put_right:NV \l_@@_applicant_affiliation_name_seq \l_tmpb_tl
1284   \DTLifnulloreempty{\l_@@_applicant_affiliation_location_tl}
1285   { }
1286   {
1287     \seq_if_in:NVF \l_@@_applicant_affiliation_location_seq
1288     \l_@@_applicant_affiliation_location_tl
1289     {
1290       \tl_set:Ne \l_tmpb_tl
1291       {
1292         \exp_not:N \dfgShowTag{##1}{location}
1293         {\exp_not:V \l_@@_applicant_affiliation_location_tl}
1294         [affiliation]
1295       }
1296       \seq_put_right:NV \l_@@_applicant_affiliation_location_seq
1297       \l_tmpb_tl
1298     }
1299   }
1300 }
1301 \cs_set:Npn \theCRCAffiliation
1302 {
1303   \seq_use:Nnnn \l_@@_applicant_affiliation_name_seq
1304   {~and~} {,~} {,~and~}
1305 }
1306 \cs_set:Npn \theCRCAffiliationLocation
1307 {
1308   \seq_use:Nnnn \l_@@_applicant_affiliation_location_seq
1309   {~and~} {,~} {,~and~}
1310 }
1311 \seq_set_eq:NN \l_@@_other_applicant_affiliation_name_seq
1312 \l_@@_applicant_affiliation_name_seq
1313 \seq_pop_left:NnF \l_@@_other_applicant_affiliation_name_seq \l_tmpa_tl
1314 { \tl_clear:N \l_tmpa_tl }
1315 \cs_set:Npn \theCRCCoordinatingAffiliation
1316 { \seq_item:Nn \l_@@_applicant_affiliation_name_seq {1} }
1317 \cs_set:Npn \theCROtherApplicantAffiliations
1318 {
1319   \seq_use:Nnnn \l_@@_other_applicant_affiliation_name_seq
1320   {~and~} {,~} {,~and~}
1321 }
1322 }
1323
1324 \NewExpandableDocumentCommand{\dfgApplicantAffiliationsTF}{m m}
1325 {
1326   \int_compare:nNnTF

```

```

1327     { \clist_count:N \l_@@_applicant_affiliation_id_clist } > {1}
1328     {#2}
1329     {#1}
1330 }
1331
1332 \NewExpandableDocumentCommand{\dfgOtherApplicantAffiliationsTF}{m m}
1333 {
1334     \int_compare:nNnTF
1335     { \clist_count:N \l_@@_applicant_affiliation_id_clist } > {2}
1336     {#2}
1337     {#1}
1338 }
1339
1340 \NewDocumentCommand{\dfgCRCName}{}
1341 { \dfgShowTag{crc}{name}{\theCRCName}[meta] }
1342 \NewDocumentCommand{\dfgCRCNameAddon}{}
1343 { \dfgShowTag{crc}{nameAddon}{\theCRCNameAddon}[meta] }
1344 \NewDocumentCommand{\dfgCRCNumber}{}
1345 { \dfgShowTag{crc}{number}{\theCRCNumber}[meta] }
1346 \NewDocumentCommand{\dfgFundingPeriodText}{}
1347 { \dfgShowTag{crc}{fundingPeriodText}{\theFundingPeriodText}[meta] }
1348 \NewDocumentCommand{\dfgFundingPeriodNumeral}{}
1349 { \dfgShowTag{crc}{fundingPeriodNumeral}{\theFundingPeriodNumeral}[meta] }
1350 \NewDocumentCommand{\dfgFundingYear}{m}
1351 {
1352     \dfgShowTag{crc}{fundingYear#1}
1353     {
1354         \int_case:nnF {#1}
1355         {
1356             {1}{\tmpYearOne}
1357             {2}{\tmpYearTwo}
1358             {3}{\tmpYearThree}
1359             {4}{\tmpYearFour}
1360             {5}{\tmpYearFive}
1361         }
1362         {#1}
1363     } [meta]
1364 }
1365 \NewDocumentCommand{\dfgFundingYearPrevious}{m}
1366 {
1367     \dfgShowTag{crc}{fundingYearPrevious#1}
1368     {
1369         \int_case:nnF {#1}
1370         {
1371             {1}{\tmpYearPreviousOne}
1372             {2}{\tmpYearPreviousTwo}
1373             {3}{\tmpYearPreviousThree}
1374             {4}{\tmpYearPreviousFour}
1375             {5}{\tmpYearPreviousFive}
1376         }
1377         {#1}
1378     } [meta]
1379 }
1380
1381 \AfterEndPreamble{
1382     \bool_if:NNTF \l_@@_class_fastcompile_project_bool
1383     {
1384         \clist_clear:N \l_@@_applicant_affiliation_id_clist
1385         \cs_set:Npn \theApplicantID { }
1386         \cs_set:Npn \theCRCName { CRC~project~draft }
1387         \cs_set:Npn \theCRCNameAddon { }
1388         \cs_set:Npn \theCRCNumber { draft }
1389         \cs_set:Npn \theFundingPeriodNumeral { 1 }
1390         \cs_set:Npn \theFundingPeriodText { draft }
1391         \cs_set:Npn \theAffiliationValue { }
1392         \cs_set:Npn \theCRCAffiliation { }

```

```

1393 \cs_set:Npn \theCRCAffiliationLocation { }
1394 \cs_set:Npn \theCRCCoordinatingAffiliation { }
1395 \cs_set:Npn \theCRCOtherApplicantAffiliations{ }
1396 \cs_set:Npn \tmpYearOne { Year~1 }
1397 \cs_set:Npn \tmpYearTwo { Year~2 }
1398 \cs_set:Npn \tmpYearThree { Year~3 }
1399 \cs_set:Npn \tmpYearFour { Year~4 }
1400 \cs_set:Npn \tmpYearFive { Year~5 }
1401 \cs_set:Npn \tmpYearPreviousOne { Previous~year~1 }
1402 \cs_set:Npn \tmpYearPreviousTwo { Previous~year~2 }
1403 \cs_set:Npn \tmpYearPreviousThree { Previous~year~3 }
1404 \cs_set:Npn \tmpYearPreviousFour { Previous~year~4 }
1405 \cs_set:Npn \tmpYearPreviousFive { Previous~year~5 }
1406 }
1407 {
1408 \DTLgetvalueforkey{\theApplicantID}{ref-affiliation-id}{meta}{id}{crc}
1409 \DTLgetvalueforkey{\theCRCName}{name}{meta}{id}{crc}% getting Title of CRC
1410 \DTLgetvalueforkey{\theCRCNameAddon}{nameAddon}{meta}{id}{crc}% getting name addon of CRC
1411 \DTLgetvalueforkey{\theCRCNumber}{number}{meta}{id}{crc}% getting number of CRC
1412 \DTLgetvalueforkey{\theFundingPeriodNumeral}{fundingPeriodNumeral}{meta}{id}{crc}% getting period of
1413 \DTLgetvalueforkey{\theFundingPeriodText}{fundingPeriodText}{meta}{id}{crc}% getting period of CRC
1414 \@@_set_applicant_affiliation_metadata:
1415 \DTLgetvalueforkey{\tmpYearOne} {fundingYear1}{meta}{id}{crc}%
1416 \DTLgetvalueforkey{\tmpYearTwo} {fundingYear2}{meta}{id}{crc}%
1417 \DTLgetvalueforkey{\tmpYearThree}{fundingYear3}{meta}{id}{crc}%
1418 \DTLgetvalueforkey{\tmpYearFour} {fundingYear4}{meta}{id}{crc}%
1419 \DTLgetvalueforkey{\tmpYearFive} {fundingYear5}{meta}{id}{crc}%
1420
1421 \DTLgetvalueforkey{\tmpYearPreviousOne} {fundingYearPrevious1}{meta}{id}{crc}%
1422 \DTLgetvalueforkey{\tmpYearPreviousTwo} {fundingYearPrevious2}{meta}{id}{crc}%
1423 \DTLgetvalueforkey{\tmpYearPreviousThree}{fundingYearPrevious3}{meta}{id}{crc}%
1424 \DTLgetvalueforkey{\tmpYearPreviousFour} {fundingYearPrevious4}{meta}{id}{crc}%
1425 \DTLgetvalueforkey{\tmpYearPreviousFive} {fundingYearPrevious5}{meta}{id}{crc}%
1426 }
1427
1428
1429 \providecommand{\thisCRC}
1430 {CRC\,\texorpdfstring
1431 {\dfgShowTag{crc}{number}}{\theCRCNumber}[meta]}
1432 {\theCRCNumber}\xspace}
1433 % Shared implementation for the user-level \CRC and \TRR commands.
1434 % #1 is the star boolean, #2 the optional title, #3 the printed programme
1435 % type, and #4 the CRC/TRR number to print and compare with the current CRC.
1436 % Current CRCs use \thisCRC in the unstarred form; starred current references
1437 % include the CRC title from the metadata unless an explicit title is given.
1438 % External CRCs/TRRs always print the requested number and add the optional
1439 % title when one is supplied.
1440 \cs_new_protected:Npn \@@_crc_print:nnnn #1 #2 #3 #4
1441 {
1442 \tl_if_eq:VnTF \theCRCNumber {#4}
1443 {
1444 \IfBooleanTF{#1}
1445 {
1446 #3\, #4
1447 \IfValueTF{#2}
1448 { \ \textit{#2} }
1449 { \ \textit{\dfgShowTag{crc}{name}}{\theCRCName}[meta]} }
1450 }
1451 {
1452 \thisCRC
1453 \IfValueTF{#2}
1454 { \ \textit{#2} }
1455 }
1456 }
1457 {
1458 #3\, #4

```

```

1459         \IfValueT{#2}
1460         { \ \textit{#2} }
1461     }
1462 }
1463
1464 % User-level wrappers around \@_crc_print:nnnn. They differ only in the
1465 % printed programme type.
1466 \NewDocumentCommand{\CRC}{s o m}
1467 {
1468     \@_crc_print:nnnn {#1} {#2} {CRC} {#3}
1469 }
1470
1471 \NewDocumentCommand{\TRR}{s o m}
1472 {
1473     \@_crc_print:nnnn {#1} {#2} {CRC/TRR} {#3}
1474 }
1475 %\DTLgetvalueforkey{\theNameSpokespersonPosition}{position}{VIP}{specialRole}{spokesperson}% getting
1476 %\DTLgetvalueforkey{\theNameSpokespersonName}{name}{VIP}{specialRole}{spokesperson}% getting Title o
1477 %\DTLgetvalueforkey{\theNameSpokespersonNameFirst}{nameFirst}{VIP}{specialRole}{spokesperson}% getti
1478 \newcommand{\theFundingPeriodNumeralPrevious}{%
1479     \number\numexpr\theFundingPeriodNumeral-1\relax%
1480 }
1481 % hyperref options
1482 \hypersetup{
1483     % unicode = true,
1484     pdftitle = {\theCRCName.\space\theCRCNameAddon}, % - title (PDF meta)
1485     pdfsubject = {\crc}, % - subject (PDF meta)
1486     pdfauthor = {CRC\,\theCRCNumber~ \theCRCName}, % - author (PDF meta)
1487     % pdfauthortitle = {\theNameSpokespersonPosition},
1488     % pdfcopyright = {Copyright (c) \thisCRC All rights reserved.},
1489     pdfhighlight = /N,
1490     pdfdisplaydoctitle = true,
1491     pdflang = {en},
1492     % pdfcaptionwriter = {\theNameSpokespersonNameFirst \theNameSpokespersonName},
1493     % pdfencoding = auto,
1494     pdfproducer = {LuaLaTeX},
1495     % pdflicenseurl = {http://creativecommons.org/licenses/by-nc-nd/4.0/},
1496     % plainpages = false, % -
1497     colorlinks = true, % -Colours links instead of ugly boxes
1498     urlcolor = blue, %Colour for external hyperlinks
1499     linkcolor = black,%rwthBlue, %Colour of internal links
1500     citecolor = black, %Colour of citations
1501     % linkbordercolor=rwthRed,
1502     linktoc = page,
1503     pdfborder = {0 0 0}, % -
1504     breaklinks = true, % - allow line break inside links
1505     bookmarksnumbered = true, %
1506     bookmarksopenlevel = 1,
1507     bookmarksopen = true, %
1508     bookmarksdepth = 3,
1509     % final = true, % = true, nur bei web-Dokument!! (wichtig!!)
1510     % hypertexnames = false,
1511     % pageanchor=false,
1512     %https://tex.stackexchange.com/questions/623377/how-to-increase-the-setting-dest-names-size-
1513     using-lualatex-on-tl-2021
1514 }

```

3.2.12 \changeSettings

`\changeSettings{⟨key=value,...⟩}` is the public command used to customise the document class beyond its defaults. It delegates directly to `\keys_set:nn{dfg/custom}{\meta{key=value,...}}`.

It should be called inside `preamble/dfg-customization.tex` so that all customisations are centralised. Examples:

Typical changeSettings call

```
% \changeSettings{
%   font = Arial,
%   crcLogoPath = img/logo-crc,
%   affiliationLogoPath = img/logo-affiliation,
%   doiAPIMail = researcher@example.org,
%   projectPIOncePerSection = true,
%   collaborationAreaColors = {A=projectA,B=projectB,Q=projectQ},
%   collaborationAreaPalette = {orange,violet,teal,brown},
%   salary@postDoc = 90000,
%   animalHousing@mouse = 0.80,
%   thumbindex = false,
%   biblalexstyleCV = ext-numeric-comp,
%   biblalexstyleFeatureCV = {sorting=none},
%   biblalexstyleProposal = ext-authoryear-ecom,
%   biblalexstyleFeatureProposal = {dashed=false},
%   color@table@rows = blue-10,
% }
%
```

The command is defined before biblalex is loaded so bibliography package options from the customization file take effect in time.

3.2.13 Thumb index implementation

The thumb index is a series of colour tabs printed on the outer margin of each page to help readers navigate between chapters or project sections. Each tab occupies one slot in a vertical grid that repeats with a period equal to `thumbindex@pattern` (default: 10).

Geometry calculation: `\thumb_compute_height`: calculates the slot height as $(\text{cs}\{\text{paperheight}\} - \text{topmargin} - \text{bottommargin}) / \text{pattern}$. This is called once at class load time and whenever the customisation keys change via `\changeSettings`.

Placement: `\thumb_place_node:nnn` draws an absolutely-positioned TikZ node on the current page using `remember picture, overlay`. The anchor is placed at $(\text{current page.north west/east}) - (0, \text{topmargin} + \text{height})$. The node style `thumb` is a rounded rectangle with the right-side arc set to 0pt (flat edge against the page boundary) and the left side fully rounded.

Call pattern: `\printThumbIndex[⟨colour⟩]{⟨label⟩}` increments the slot counter, wrapping at `pattern`, then injects the node into both the header and footer layers via `\lehead/\lohead` so the tab appears on the page regardless of which `sclayer-scrpage` style is active. The optional colour argument allows project-specific hues (typically the `projectA`, `projectB`, `projectQ` aliases).

`\printThumbIndexOff` clears the header/footer layers to suppress the tab on pages where no thumb index is desired (e.g. the bibliography).

```
1515 \int_new:N \l_thumb_index_int
1516 \int_zero:N \l_thumb_index_int
```

the height of the thumb index changes depending on other numbers and is hereforth calculated and we have to execute it once.

```
1517 \dim_new:N \l_thumb_height_dim
1518 \cs_new_protected:Npn \thumb_compute_height:
1519 {
1520   % (\paperheight - top - bottom) / pattern
1521   \dim_set:Nn \l_thumb_height_dim
1522   {
1523     ( \paperheight
1524     - \l_@@_custom_thumbindex_topmargin_dim
1525     - \l_@@_custom_thumbindex_bottommargin_dim )
1526     / \l_@@_custom_thumbindexpattern_int
1527   }
1528 }
1529 \thumb_compute_height:
```

defining now the layout of the thumb index. Be aware of the stripped spaces in the LaTeX3 environment.

```
1530 \tikzset
1531 {
```

```

1532 thumb/.style=
1533 {
1534     fill    = thumbIndexBG ,          % colour may be changed later
1535     text    = thumbIndexFont,
1536     minimum~ height = \dim_use:N \l_thumb_height_dim,
1537     text~ width  = \dim_use:N \l_@@_custom_thumbindex_width_dim,
1538     outer~ xsep   = 0em,
1539     font       = \tl_use:N \l_@@_custom_thumbindex_font_tl,
1540     inner~ xsep   = 2em,
1541 }
1542 }

```

we need a couple of helper commands though. The <even/odd> macros are now tiny wrappers around a single protected function that does the arithmetic in expl3.

```

1543 \cs_new_protected:Npn \thumb_place_node:nnn #1#2#3
1544 {
1545     % #1 = west|east      (anchor direction)
1546     % #2 = left|right    (text alignment)
1547     % #3 = node contents
1548     \begin{tikzpicture}[remember~ picture,overlay]
1549         \node[
1550             thumb,
1551             align    =#2,
1552             anchor   =#1,
1553             rounded~ rectangle,
1554             rounded~ rectangle~ #1~ arc=0pt
1555         ]
1556         % -----
1557         % absolute position = (current page.north <west/east>) -
1558         %                      (0 , vertical offset)
1559         % The whole thing must be inside $ ... $.
1560         % -----
1561         at
1562         ($ (current~page.north~ #1)~ --
1563           (0,\dim_eval:n{
1564             \l_@@_custom_thumbindex_topmargin_dim
1565             + \l_thumb_height_dim * (\l_thumb_index_int - 1)
1566           }) $)
1567         {#3};
1568     \end{tikzpicture}
1569 }
1570
1571 \NewDocumentCommand{\evenpageletterthumb}{m}
1572 { \thumb_place_node:nnn {west}{left}{#1} }
1573 \NewDocumentCommand{\oddpagelatterthumb}{m}
1574 { \thumb_place_node:nnn {east}{right}{#1} }

```

Now the key command `\printThumbIndex`.

```

1575 \NewDocumentCommand{\printThumbIndex}{ O{thumbIndexBG} m }
1576 {
1577     % #1 (optional) - colour definition used when no project is given
1578     % #2 (mandatory) - the letter (or any material) to be printed
1579
1580     \bool_if:NT \l_@@_custom_thumbindex_bool
1581     {
1582         \colorlet{thumbIndexBG}{#1}
1583
1584         % ---- reset index if we have reached the bottom of the column ----
1585         \int_compare:nNtT { \l_thumb_index_int } = { \l_@@_custom_thumbindexpattern_int }
1586         { \int_zero:N \l_thumb_index_int }
1587
1588         % ---- step to the *next* position -----
1589         \int_incr:N \l_thumb_index_int
1590
1591         % ---- actually place the thumb on the current page -----
1592         % (the same node is put into both the header and the foot, so it
1593         % appears on the page no matter which page-style you use)

```

```

1594 \lehead[\evenpageletterthumb{#2}]{\evenpageletterthumb{#2}}
1595 \lohead[\oddpagelatterthumb{#2}]{\oddpagelatterthumb{#2}}
1596 }
1597 }
1598 \NewDocumentCommand{\printThumbIndexOff}{}
1599 {
1600 \lehead[]{}
1601 \lohead[]{}
1602 }

```

3.2.14 Bold-author mechanism

The DFG requires that the names of all CRC project leaders are printed in bold in every bibliography list so reviewers can immediately identify the investigators' output. This is technically non-trivial because biblatex does not natively support singling out individual author names.

The implementation uses a hash-based approach:

- 1) For each PI, `\addboldnames`^{→P.44} is called with their name as it appears in the .bib file (and all common aliases via `name-alias`^{→P.16}). Each name is written as a `\@misc` dataonly entry to an auxiliary .bib file.
- 2) During the `\AfterPreamble` pass, the cite command `\nhblx@getmethehash` processes each entry and extracts its biblatex internal hash (a fingerprint stable across style changes) into the list `\nhblx@boldhashes`.
- 3) The name wrapper `boldifhashinlist` applies `\mkboldifhashinlist` to every printed author name; if the author's hash appears in the list, the name is wrapped in `\mkbibbold` and coloured with `color@reference@boldAuthor`.

The mechanism is only activated when `emphasizeAuthors=true` (the default). Fallback no-op definitions of `\addboldnames`^{→P.44} and `\resetboldnames`^{→P.44} are provided via `\providecommand` so that content files compile correctly even if the feature is disabled.

`\addboldnames`^{→P.44} should be called in the preamble of both the proposal document and the standalone CV document, typically inside `preamble/dfg-customization.tex`. For displaying certain authors in bold letters, `emphasizeAuthors`^{→P.38} (for the switch) and `\addboldnames`^{→P.44} (for the addition of authors).

```

1603 \int_new:N \g_@@_boldnames_int
1604 \iow_new:N \g_@@_boldnames_iow
1605 \prop_new:N \g_@@_boldnames_hashes_prop
1606 \tl_new:N \l_@@_boldnames_name_tl
1607
1608 \bool_if:NT \l_@@_custom_emphasize_authors_bool
1609 {
1610 % ----- Auxiliary .bib file -----
1611
1612 \tl_const:Nn \c_@@_boldnames_bibfile_tl { bib/\jobname-boldAuthors.bib }
1613 \iow_open:Nn \g_@@_boldnames_iow { \c_@@_boldnames_bibfile_tl }
1614 \iow_now:Nn \g_@@_boldnames_iow { @comment{Auto-generated~file} }
1615 \AtEndDocument { \iow_close:N \g_@@_boldnames_iow }
1616 \addbibresource{\c_@@_boldnames_bibfile_tl}
1617
1618 % ----- Writing a single name -----
1619 %
1620 % We need:
1621 % - the entry KEY (nhblx@name@<N>) fully expanded
1622 % - the AUTHOR field written verbatim (so \"a etc. survive)
1623 %
1624 % \iow_now:Nn → no expansion
1625 % \iow_now:Nx → full expansion (breaks accents in names)
1626 % \iow_now:Nn + \exp_not:n on the name = best of both via \iow_now:Nx
1627
1628 \cs_new_protected:Npn \@@_boldnames_write:n #1
1629 {
1630 \int_gincr:N \g_@@_boldnames_int
1631 % Stash the name so it survives the x-expansion intact.
1632 \tl_set:Nn \l_@@_boldnames_name_tl { #1 }
1633 \iow_now:Nx \g_@@_boldnames_iow
1634 {
1635 @misc{nhblx@name@\int_use:N \g_@@_boldnames_int,
1636 author~::~{\exp_not:V \l_@@_boldnames_name_tl},
1637 options~::~{dataonly=true},
1638 }
1639 }

```

```

1640 % Schedule hash extraction after biblatex has loaded the entry.
1641 \exp_args:Nx \AfterPreamble
1642 {
1643   \exp_not:N \hbox_set:Nn \exp_not:N \l_tmpa_box
1644   { \exp_not:N \nhblx@getmethehash
1645     { \nhblx@name@ \int_use:N \g_@@_boldnames_int } }
1646   }
1647 }
1648
1649 % ----- User-level commands -----
1650
1651 \NewDocumentCommand \addboldnames { m }
1652 { \clist_map_function:nN { #1 } \@@_boldnames_write:n }
1653
1654 \NewDocumentCommand \resetboldnames { }
1655 { \prop_gc_clear:N \g_@@_boldnames_hashes_prop }
1656
1657 % ----- biblatex glue -----
1658
1659 \DeclareNameFormat{nhblx@hashextract}
1660 {
1661   \prop_gput:Nen \g_@@_boldnames_hashes_prop { \thefield{hash} } { }
1662 }
1663
1664 \DeclareCiteCommand{\nhblx@getmethehash}
1665 {}{}{\printnames[nhblx@hashextract][1-999]{author} }{}{}
1666
1667 \cs_new_protected:Npn \@@_boldnames_mark:n #1
1668 {
1669   \prop_if_in:NneTF \g_@@_boldnames_hashes_prop { \thefield{hash} }
1670   { \mkbibbold { \textcolor{color@reference@boldAuthor} { #1 } } }
1671   { #1 }
1672 }
1673
1674 \cs_set_eq:NN \mkboldifhashinlist \@@_boldnames_mark:n
1675
1676 \DeclareNameWrapperFormat{boldifhashinlist}
1677 { \renewcommand*{\mkbibcompletename}{\mkboldifhashinlist} #1 }
1678
1679 \DeclareNameWrapperAlias{sortname}{default}
1680 \DeclareNameWrapperAlias{default}{boldifhashinlist}
1681 }
1682

```

We need the fallback of the commands in case the functionality isn't used at all.

```

1683 \providecommand { \addboldnames } [1] { }
1684 \providecommand { \resetboldnames } { }

```

3.2.15 Database infrastructure and key families

All structured data in the proposal (people, projects, institutions, funding entries, ...) is stored in datatool databases at compile time. Each database is created lazily: `\addEntry`^{P.25} checks whether the named database already exists and creates it if not, eliminating the need for explicit initialisation calls.

The central mechanism relies on the L3 variable `\l_@@_database_name_tl`, which holds the name of the currently-active database while a `\keys_set:n` call is in progress. Every `.code:n` handler in a keyset calls `\DTLnewdbentry` with that variable as the database name, so no explicit database name is needed inside the keyset definition itself.

The token list is reset in each call to `\addEntry`^{P.25} and is wrapped in a `\group_begin:/end:` pair to prevent it from leaking across independent `\addEntry`^{P.25} calls.

Input validation strategy Choice-valued keys (e.g. `gender`^{P.26}, `project-type`^{P.18}) use `.choices:n` with an unknown `.code:n` handler wired to the `dfg/invalid-value` message. Free-text keys accept any input. Required keys are marked with `.value\_required:n = true` so that omitting them produces an immediate error rather than a silent empty database field.

```

1685 \tl_new:N \l_@@_database_name_tl

```

Keyset meta The meta database holds exactly one row with `id=crc` that describes the CRC itself. Its fields are read in `\AfterEndPreamble` to populate the global macros used in headers, footers, and PDF metadata (`\theCRCname`, `\theCRCnumber`, `\theCRCAffiliation`, etc.).

The `fundingYears`^{P.26} and `fundingYearsPrevious`^{P.26} keys accept a comma-separated list of calendar years (one per funding year) and expand them into individually named fields `fundingYear1...fundingYear5`, which are used e.g. as column headers in the Gantt chart title row.

`fundingPeriodNumeral`^{P.26} (1, 2 or 3) drives all period-filtered queries: only personnel with a matching period entry are included in the project leader table and the gender equality analysis.

```

1686 \keys_define:nn { meta }{
1687   id                .code:n      = \DTLnewdbentry{\l_@@_database_name_tl}{id}{#1},
1688   id                .value_required:n = true,
1689   name              .code:n      = \DTLnewdbentry{\l_@@_database_name_tl}{name}{#1},
1690   nameAddon         .code:n      = \DTLnewdbentry{\l_@@_database_name_tl}{nameAddon}{#1},
1691   number            .code:n      = \DTLnewdbentry{\l_@@_database_name_tl}{number}{#1},
1692   fundingPeriodNumeral .choices:nn = { 1 , 2 , 3 }
1693   {
1694     % store the numeral itself
1695     \DTLnewdbentry{\l_@@_database_name_tl}{fundingPeriodNumeral}{#1}
1696     % map numeral → text without a property list
1697     \int_case:nnF {#1}
1698     {
1699       { 1 } { \DTLnewdbentry{\l_@@_database_name_tl}{fundingPeriodText}{first} }
1700       { 2 } { \DTLnewdbentry{\l_@@_database_name_tl}{fundingPeriodText}{second} }
1701       { 3 } { \DTLnewdbentry{\l_@@_database_name_tl}{fundingPeriodText}{third} }
1702     }
1703     {
1704       % fallback (should not happen because of the .choices clause)
1705       \msg_warning:nnnn { staff } { invalid-value }
1706       { #1 } { 1 , 2 , 3 }
1707     }
1708   },
1709   fundingPeriodNumeral / unknown .code:n =
1710   {
1711     \msg_warning:nnnn { staff } { invalid-value }
1712     { #1 } { 1 , 2 , 3 }
1713   },
1714   fundedSince        .code:n      = \DTLnewdbentry{\l_@@_database_name_tl}{fundedSince}{#1},
1715   fundingYears       .code:n      =
1716   {
1717     \seq_set_from_clist:Nn \l_meta_funding_years_seq {#1}
1718     %--- create the individual entries -----
1719     \int_zero_new:N \l_tmpa_int
1720     \seq_map_inline:Nn \l_meta_funding_years_seq
1721     {
1722       \int_incr:N \l_tmpa_int
1723       \DTLnewdbentry
1724       {\l_@@_database_name_tl}
1725       {fundingYear\int_use:N \l_tmpa_int}
1726       {##1}
1727     }
1728   },
1729   fundingYearsPrevious .code:n      =
1730   {
1731     \seq_set_from_clist:Nn \l_meta_funding_years_previous_seq {#1}
1732
1733     %--- create the individual entries -----
1734     \int_zero_new:N \l_tmpa_int
1735     \seq_map_inline:Nn \l_meta_funding_years_previous_seq
1736     {
1737       \int_incr:N \l_tmpa_int
1738       \DTLnewdbentry
1739       {\l_@@_database_name_tl}
1740       {fundingYearPrevious\int_use:N \l_tmpa_int}
1741       {##1}
1742     }

```

```

1743     },
1744     ref-affiliation-id .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{ref-affiliation-id}{#1},
1745 }

```

Keyset GenderEquality This keyset is used to populate the `\GenderEqualityStaffTable` and `\GenderEqualityProjectLe`. Each row stores one position-level target for the upcoming funding period alongside the previous period's objective for comparison.

The live counts (current numbers of female/male/diverse staff per position and period) are *computed* at render time from the person database — they are not entered manually. Only the percentage-female objective values need to be provided here.

```

1746 \keys_define:nn { GenderEquality }{
1747     position .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{position}{#1},
1748     previous-objective-percentage-female .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{previous-
objective-percentage-female}{#1},
1749     status-quo-number-female .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{status-
quo-number-female}{#1},
1750     status-quo-percentage-female .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{status-
quo-percentage-female }{#1},
1751     future-objective-percentage-female .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{future-
objective-percentage-female}{#1},
1752 }

```

Multi-value helper: `\__dfg_set_filtered_clist:Nnn` Several keys (role, period) accept comma-separated lists rather than a single choice. The private helper `\__dfg_set_filtered_clist:Nnn{\meta{result}}{\meta{valid}}{\}` iterates over the input list, drops any item that is not in the valid list (and emits an `invalid-value` warning for it), and stores the cleaned result in a `clist` variable. This is used instead of `.choices:nn` because the standard choices handler only accepts a single value.

```

1753 \clist_new:N \l_@@_person_tmp_period_clist
1754 \clist_new:N \l_@@_person_tmp_role_clist
1755 \clist_new:N \l_@@_keys_tmp_clist
1756 \cs_new_protected:Npn \_@@_set_filtered_clist:Nnn #1#2#3
1757 {
1758     % #1: clist variable in which valid values are stored
1759     % #2: clist of valid values
1760     % #3: clist of given values
1761     % function assumes none of the values contain braces or '#' tokens
1762     \clist_set:Nn \l_@@_keys_tmp_clist {#2}
1763     \clist_clear:N #1
1764     \clist_map_inline:nn {#3}
1765     {
1766         \clist_if_in:NnTF \l_@@_keys_tmp_clist {##1}
1767         { \clist_put_right:Nn #1 {##1} }
1768         { \msg_warning:nnnn { dfg } { invalid-value } {#3} {#2} }
1769     }
1770 }

```

Keyset project One row per CRC sub-project. The `id`^{→P.25} is the short project letter (e.g. A01); `number`^{→P.26} is the DFG-assigned project number; `name`^{→P.26} is the full project title. `project-type`^{→P.18} and `project-status`^{→P.19} control how the project appears in tables and are choice-validated.

The `research-area`^{→P.19} key is a tick-list of DFG classification codes in the form 1.11-01 (see the property list in Section ??). Multiple codes are passed as a brace-grouped comma list.

The `ref-person-id`^{→P.24} and `collaborations`^{→P.19} values are comma lists. Whitespace surrounding individual IDs is ignored and the canonical, space-free list is stored in the database. Thus `{clavel, vonBergen, just}` and `{clavel, vonBergen, just}` are equivalent for every later consumer. The optional `project-area` key controls the area row in collaboration plots. When omitted, the first character of the project ID is used as a fallback.

The `legal-issues`^{→P.19} sub-keyset mirrors the questions from the DFG online portal's project-information form (L1^{→P.19}–L7^{→P.20}). Nested key-value parsing is triggered via a single `legal-issues={...}` block.

```

1771 \cs_new_protected:Npn \_@@_new_clist_dbentry:nnn #1#2#3
1772 {
1773     \clist_set:Nn \l_tmpa_clist {#3}
1774     \exp_args:NnnV \DTLnewdbentry {#1} {#2} \l_tmpa_clist
1775 }
1776
1777 \bool_new:N \l_@@_project_consider_for_lists_bool
1778 \bool_new:N \l_@@_project_reference_only_bool

```

```

1779 \bool_new:N \g_@@_project_count_ready_bool
1780
1781 \keys_define:nn { project }{
1782   id .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{id}{#1},
1783   id .value_required:n = true,
1784   number .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{number}{#1},
1785   number .value_required:n = true,
1786   name .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{name}{#1},
1787   project-type .choices:nn = { research, service, mgk, admin } {\DTLnewdbentry{\l_@@_da
type}{#1}},
1788   project-type / unknown .code:n = {\msg_warning:nnnn { dfg } { invalid-value } { #1 }{rese
1789   project-type .value_required:n = true,
1790   project-status .choices:nn = { N, E, C } {\DTLnewdbentry{\l_@@_database_name_tl}{proje
status}{#1}},
1791   project-status / unknown .code:n = {\msg_warning:nnnn { dfg } { invalid-value } { #1 }{N, E,
1792   project-status .value_required:n = true,
1793   consider-for-lists .choices:nn = { true, false }
1794     { \str_if_eq:nnTF {#1} {true}
1795       { \bool_set_true:N \l_@@_project_consider_for_lists_bool }
1796       { \bool_set_false:N \l_@@_project_consider_for_lists_bool } },
1797   consider-for-lists / unknown .code:n =
1798     { \msg_warning:nnnn { dfg } { invalid-value } { #1 } {true, false} },
1799   consider-for-lists .value_required:n = true,
1800   reference-only .choices:nn = { true, false }
1801     { \str_if_eq:nnTF {#1} {true}
1802       { \bool_set_true:N \l_@@_project_reference_only_bool }
1803       { \bool_set_false:N \l_@@_project_reference_only_bool } },
1804   reference-only / unknown .code:n =
1805     { \msg_warning:nnnn { dfg } { invalid-value } { #1 } {true, false} },
1806   reference-only .value_required:n = true,
1807   research-area .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{research-
area}{#1},
1808   project-area .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{project-
area}{#1},
1809   ref-person-id .code:n =
1810     \@@_new_clist_dbentry:nnn {\l_@@_database_name_tl} {ref-person-id} {#1},
1811   collaborations .code:n =
1812     \@@_new_clist_dbentry:nnn {\l_@@_database_name_tl} {collaborations} {#1},
1813   legal-issues .code:n = { \keys_set:nn { project / legal-issues } { #1 } }
1814 }

```

The `legal-issues` key in a project entry accepts a sub-keyset that maps each legal-issue question to a value. The questions fall into two groups, which are handled differently:

Main questions ($L1 \rightarrow P.19$, $L2 \rightarrow P.19$, $L3 \rightarrow P.19$, $L4 \rightarrow P.19$, $L5 \rightarrow P.20$, $L6 \rightarrow P.20$, $L7 \rightarrow P.20$) Each must be answered with exactly yes or no. Any other value triggers a warning via `\person_questions_invalid:n`, and no database entry is created.

Sub-questions ($L1a \rightarrow P.19$, $L2a \rightarrow P.19$, $L5a \rightarrow P.20$, $L7a \rightarrow P.20$) These are conditional follow-ups whose answer only matters when the corresponding main question was answered with yes. Sub-questions accept yes, no, or an empty value. An empty value records an empty cell in the database, which the typesetting code treats as “not answered” and consequently does not render in the legal-issues table.

The asymmetry exists because forcing every sub-question to be answered would require authors to fill in irrelevant follow-ups whenever the parent question is no – for example, providing an answer to “has legal authorization been obtained” for a project that does not involve human embryonic stem cells in the first place. Allowing an empty value lets the data file mirror the structure of the questionnaire: only the relevant cells need to be filled in.

Internally, the main questions use the `13keysCTAN.choices:nn` property, which natively rejects values outside the allowed set. The sub-questions cannot use `.choices:nn` directly because that property does not accept the empty string as a choice; they instead dispatch through the helper `\dfg_legal_subq:nn`, which inspects the supplied value and creates a database entry when the value is yes, no, or empty, and warns otherwise.

Example of a complete `legal-issues` block in a project entry:

Example entries for legal-issues

```
% legal-issues = {
%   L1 = {yes},
%   L1a = {yes},          % L1 was true, follow-up answered
%   L2 = {no},
%   L2a = {},             % L2 was false, follow-up irrelevant
%   L3 = {yes},
%   L4 = {no},
%   L5 = {no},
%   L5a = {},
%   L6 = {yes},
%   L7 = {yes},
%   L7a = {yes}
% }
%
```

The empty values for $L2a \rightarrow P.19$ and $L5a \rightarrow P.20$ are valid: they correspond to follow-ups whose parent question was answered no, so no follow-up information is required or rendered.

```
1815 \keys_define:nn { project / legal-issues }
1816 {
1817   % main questions: must be yes/no
1818   L1 .choices:nn = { yes, no } { \DTLnewdbentry{\l_@@_database_name_tl}{L1} {#1} },
1819   L2 .choices:nn = { yes, no } { \DTLnewdbentry{\l_@@_database_name_tl}{L2} {#1} },
1820   L3 .choices:nn = { yes, no } { \DTLnewdbentry{\l_@@_database_name_tl}{L3} {#1} },
1821   L4 .choices:nn = { yes, no } { \DTLnewdbentry{\l_@@_database_name_tl}{L4} {#1} },
1822   L5 .choices:nn = { yes, no } { \DTLnewdbentry{\l_@@_database_name_tl}{L5} {#1} },
1823   L6 .choices:nn = { yes, no } { \DTLnewdbentry{\l_@@_database_name_tl}{L6} {#1} },
1824   L7 .choices:nn = { yes, no } { \DTLnewdbentry{\l_@@_database_name_tl}{L7} {#1} },
1825   %
1826   % sub-questions: yes / no / empty all allowed
1827   L1a .code:n = { \dfg_legal_subq:nn {L1a} {#1} },
1828   L2a .code:n = { \dfg_legal_subq:nn {L2a} {#1} },
1829   L5a .code:n = { \dfg_legal_subq:nn {L5a} {#1} },
1830   L7a .code:n = { \dfg_legal_subq:nn {L7a} {#1} },
1831   %
1832   % unknown handlers (only need them for the binary keys)
1833   L1 / unknown .code:n = { \person_questions_invalid:n {#1} },
1834   L2 / unknown .code:n = { \person_questions_invalid:n {#1} },
1835   L3 / unknown .code:n = { \person_questions_invalid:n {#1} },
1836   L4 / unknown .code:n = { \person_questions_invalid:n {#1} },
1837   L5 / unknown .code:n = { \person_questions_invalid:n {#1} },
1838   L6 / unknown .code:n = { \person_questions_invalid:n {#1} },
1839   L7 / unknown .code:n = { \person_questions_invalid:n {#1} },
1840 }
1841
1842 % Sub-question handler: accepts yes, no, or empty.
1843 \cs_new_protected:Npn \dfg_legal_subq:nn #1#2
1844 {
1845   \tl_if_blank:nTF {#2}
1846   { \DTLnewdbentry{\l_@@_database_name_tl}{#1}{} }
1847   {
1848     \str_case:nnF {#2}
1849     {
1850       { yes } { \DTLnewdbentry{\l_@@_database_name_tl}{#1}{yes} }
1851       { no } { \DTLnewdbentry{\l_@@_database_name_tl}{#1}{no} }
1852     }
1853     { \person_questions_invalid:n {#2} }
1854   }
1855 }
```

Keyset person The `person` database is the central personnel registry for the proposal. Every PI, manager, steering committee member and early-career researcher who appears in any table must have a row here.

Key semantics: `role`^{P.26}: A filterable comma list of roles. The supported values (PI, spokesperson, manager, steering-committee-member, rector) are validated against a fixed list using the multi-value helper so that multiple roles per person are permitted. `position`^{P.26}: A single choice describing the employment category (prof-W2, prof-W3, postDoc, PhD, etc.). Used in the gender equality and staff cost tables. `period`^{P.26}: Comma list of funding periods (1, 2, 3) in which this person is active. All period-filtered queries (e.g. the project-leaders table) use this field. `name-alias`^{P.16}: Brace-grouped list of name variants as the author name appears in .bib files. These are passed to `\addboldnames` so all spelling variants are highlighted consistently. `contract-information`^{P.16}: Sub-keyset (`C1`^{P.16}–`C4a`^{P.16}) for the four employment-contract questions required in the DFG project header. Internally stored as fields Q1–Q4a.

```

1856 \keys_define:nn { person }{
1857   unknown .code:n = { \msg_warning:nnn { dfg } { unknown-key } {#1}},
1858   unknown .default:V = \c_novalue_tl,
1859   id .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{id}{#1},
1860   id .value_required:n = true,
1861   firstname .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{firstname}{#1},
1862   firstname .value_required:n = true,
1863   lastname .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{lastname}{#1},
1864   lastname .value_required:n = true,
1865   academicdegree .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{academicdegree}{#1},
1866   gender .choices:nn = { m , f , d } {\DTLnewdbentry{\l_@@_database_name_tl}{gender}{#1}},
1867   gender / unknown .code:n = {\msg_warning:nnnn { dfg } { invalid-value } { #1 } { m,f,d }},
1868   gender .value_required:n = true,
1869   ref-affiliation-id .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{ref-affiliation-id}{#1},
1870   ref-institution-id .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{ref-institution-id}{#1},
1871   ref-project-id .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{ref-project-id}{#1},

```

With `role`^{P.26} we want to differentiate between various people so we easily can get the necessary person into the right table. Roles can be e.g. PI, service etc.

```

1872 role .code:n = {\_@@_set_filtered_clist:Nnn \l_@@_person_tmp_role_clist {
1873   PI,~ spokesperson,~ manager,~ steering-committee-member,~ rector
1874 } {#1}}
1875 \exp_args:Nne \DTLnewdbentry{\l_@@_database_name_tl}{role}
1876 { \clist_use:N \l_@@_person_tmp_role_clist}},

```

`position` is also bound to a value list

```

1877 position .choices:nn = {
1878   PhD, postDoc, groupLeader, research,
1879   nonResearch, student, prof,
1880   prof-W2, prof-W3 }
1881 {\DTLnewdbentry{\l_@@_database_name_tl}{position}{#1}},
1882 position / unknown .code:n = {\msg_warning:nnnn { dfg } { invalid-value } { #1 } {
1883   PhD,~ postDoc,~ groupLeader,~ research,~
1884   nonResearch,~ student,~ prof,~ prof-W2,~ prof-W3 }},
1885 positionText .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{positionText}{#1},

```

we need to figure out in which funding period the person was active.

```

1886 period .code:n = {
1887   \_@@_set_filtered_clist:Nnn \l_@@_person_tmp_period_clist { 1, 2, 3 } {#1}
1888   \exp_args:Nne \DTLnewdbentry{\l_@@_database_name_tl}{period}
1889   { \clist_use:N \l_@@_person_tmp_period_clist }
1890 },

```

The following keys are used for the CV section (additionally `position`). We start with `name-alias` which is used to get the author's name in bold letters into the publications list. Write all aliases of the author according to their appearance in the .bib-file. Encapsulate each with one pair of {}.

```

1891 name-alias .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{name-alias}{#1}},
1892 orcid .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{orcid}{#1},
1893 email .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{email}{#1},
1894 phone .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{phone}{#1},
1895 url .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{url}{#1},
1896 doctorateYear .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{doctorateYear}{#1},
1897 doctorate .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{doctorate}{#1},
1898 degree-programme .code:n =
1899 \DTLnewdbentry{\l_@@_database_name_tl}{degree-programme}{#1},

```

Following part is for the early career researchers

```

1900 financed-by .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{financed-by}{#1},

```

```

1901 topic .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{topic}{#1},
1902 category .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{category}{#1},
1903 dateDefense .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{dateDefense}{#1},
1904 periodStart .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{periodStart}{#1},
1905 periodEnd .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{periodEnd}{#1},

```

For the PI we need to have information regarding their contract situation. Those questions are asked in the Header section of each project.

```

1906 contract-information .code:n = { \keys_set:nn { person / contract-information } { #1 } }
1907 }

```

Helper: `\person_questions_invalid:n` Small private helper used as the unknown `.code:n` handler for every boolean choice key in the `contract-information` and `project/legal-issues` key families. It fires `dfg/invalid-value` with the allowed set hard-coded to `yes, no`.

```

1908 \cs_new_protected:Npn \person_questions_invalid:n #1
1909 { \msg_warning:nnnn { dfg } { invalid-value } {#1} { yes , no } }
1910
1911
1912 \keys_define:nn { person / contract-information }
1913 {
1914   %--- yes/no questions -----
1915   C1 .choices:nn = { yes , no }
1916     { \DTLnewdbentry{\l_@@_database_name_tl}{C1}{#1} },
1917   C1 / unknown .code:n = { \person_questions_invalid:n {#1} },
1918
1919   C2 .choices:nn = { yes , no }
1920     { \DTLnewdbentry{\l_@@_database_name_tl}{C2}{#1} },
1921   C2 / unknown .code:n = { \person_questions_invalid:n {#1} },
1922
1923   C3 .choices:nn = { yes , no }
1924     { \DTLnewdbentry{\l_@@_database_name_tl}{C3}{#1} },
1925   C3 / unknown .code:n = { \person_questions_invalid:n {#1} },
1926
1927   C4 .choices:nn = { yes , no }
1928     { \DTLnewdbentry{\l_@@_database_name_tl}{C4}{#1} },
1929   C4 / unknown .code:n = { \person_questions_invalid:n {#1} },
1930
1931   %--- free-form follow-ups (may be empty) -----
1932   C2a .code:n = { \dfg_contract_date:nn {C2a} {#1} },
1933   C2b .code:n = { \dfg_contract_date:nn {C2b} {#1} },
1934   C3a .code:n = { \dfg_contract_date:nn {C3a} {#1} },
1935   C4a .code:n = { \dfg_contract_text:nn {C4a} {#1} },
1936 }
1937
1938 % Date follow-up: allows empty or ISO-8601 (YYYY-MM-DD).
1939 \cs_new_protected:Npn \dfg_contract_date:nn #1#2
1940 {
1941   \tl_if_blank:nTF {#2}
1942   { \DTLnewdbentry{\l_@@_database_name_tl}{#1}{} }
1943   {
1944     \dfg_is_iso_date:nTF {#2}
1945     { \DTLnewdbentry{\l_@@_database_name_tl}{#1}{#2} }
1946     {
1947       \msg_warning:nnnn { dfg } { invalid-date } {#1} {#2}
1948       \DTLnewdbentry{\l_@@_database_name_tl}{#1}{#2}
1949     }
1950   }
1951 }
1952
1953 % Plain-text follow-up: allows empty or any string.
1954 \cs_new_protected:Npn \dfg_contract_text:nn #1#2
1955 {
1956   \DTLnewdbentry{\l_@@_database_name_tl}{#1}{#2}
1957 }
1958
1959 % Format check: YYYY-MM-DD where Y/M/D are digits.
1960 % Doesn't validate calendar correctness (e.g. Feb 30) -- just shape.

```

```

1961 \prg_new_protected_conditional:Npnn \dfg_is_iso_date:n #1 { TF , T , F }
1962 {
1963   \regex_match:nnTF { \A \d{4} - \d{2} - \d{2} \Z } {#1}
1964   { \prg_return_true: }
1965   { \prg_return_false: }
1966 }

```

Keyset `cv` The `cv` database holds supplementary career information for each PI beyond what is already stored in the person row. Multiple entries per person are permitted; each entry is identified by `ref-person-id` and a `cv-type`^{P.17} that governs where in the printed CV the item appears.

```

1967 \keys_define:nn { cv }{
1968   id .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{id}{#1},
1969   ref-person-id.code:n = \DTLnewdbentry{\l_@@_database_name_tl}{ref-person-id}{#1},
1970   cv-type .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{type}{#1},
1971   cv-type .choices:nn = {mandatory, supplement,
1972     activities, supervision,
1973     distinction, other }
1974   { \DTLnewdbentry{\l_@@_database_name_tl}{type}{#1}},
1975   % Backward-compatibility alias for the former misspelling.
1976   cv-type / distinction .code:n = { \DTLnewdbentry{\l_@@_database_name_tl}{type}{distinction}},
1977   cv-type / unknown .code:n = { \msg_warning:nnnn { dfg } { invalid-value } { #1 } {
1978     mandatory,~ supplement,~
1979     activities,~ supervision,~
1980     distinction,~ other }},
1981   positionText .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{positionText}{#1},
1982   position .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{position}{#1},
1983   ref-institution-id .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{ref-institution-id}{#1},
1984   description .code:n =
1985     \DTLnewdbentry{\l_@@_database_name_tl}{description}{#1},
1986   periodStart .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{periodStart}{#1},
1987   periodEnd .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{periodEnd}{#1},
1988 }

```

Keysets `affiliation` and `institution` The template distinguishes between two levels of organisational unit: *affiliation*: A *university* or equivalent top-level organisation, described by its full name, abbreviation, and postal address. Referenced from person rows via `ref-affiliation-id`. *institution*: A *department, institute or centre* within an affiliation (e.g. IT Center RWTH Aachen). Referenced from person rows via `ref-institution-id` and from affiliation via `ref-affiliation-id`.

This two-level model allows the same address block to be reused across multiple people without duplicating data, and the same university to appear under different institute names for different projects.

```

1989 \keys_define:nn { affiliation }
1990 {
1991   id .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{id}{#1},
1992   id .value_required:n = true,
1993   name .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{name}{#1},
1994   abbreviation .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{abbreviation}{#1},
1995   addressStreet .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{addressStreet}{#1},
1996   addressZIP .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{addressZIP}{#1},
1997   location .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{location}{#1},
1998   country .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{country}{#1},
1999 }
2000 \keys_define:nn { institution }
2001 {
2002   id .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{id}{#1},
2003   id .value_required:n = true,
2004   name .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{name}{#1},
2005   abbreviation .code:n =
2006     \DTLnewdbentry{\l_@@_database_name_tl}{abbreviation}{#1},
2007   ref-affiliation-id .code:n =
2008     \DTLnewdbentry{\l_@@_database_name_tl}{ref-affiliation-id}{#1},
2009 }
2010
2011 % Resolve the compact reader-facing institution label once. Older metadata
2012 % without an abbreviation remains usable by falling back to the full name.
2013 \tl_new:N \l_@@_institution_label_field_tl
2014 \cs_new_protected:Npn \@@_institution_abbreviation_or_name:nN #1#2

```

```

2015 {
2016   \tl_clear:N #2
2017   \tl_set:Nn \l_@@_institution_label_field_tl { abbreviation }
2018   \datatool_if_has_key:nnTF { institution } { abbreviation }
2019   {
2020     \DTLgetvalueforkey{#2}{abbreviation}{institution}{id}{#1}
2021   }
2022   { }
2023   \DTLifnulloreempty{#2}
2024   {
2025     \tl_set:Nn \l_@@_institution_label_field_tl { name }
2026     \DTLgetvalueforkey{#2}{name}{institution}{id}{#1}
2027   }
2028   { }
2029 }

```

Keyset *funding* One funding row represents a single requested-funding line item, such as one FTE of PhD salary across five years, or a one-off equipment purchase. The same keyset is also used for *existing* and *previous* funding entries in the relevant tables.

funding-type: [staff](#)^{→P.23}: Personnel costs. Activates the restricted category validation (only staff-position names are accepted). *costs*^{→P.23}: Direct project costs (consumables, travel, etc.). *fellowships*^{→P.23}: Stipend payments. *globalfunds*^{→P.23}: Funds requested at the CRC level (coordination). *instrumentation*^{→P.23}: Equipment purchases.

quantity^{→P.22} and ***sum***^{→P.22}: both accept a funding/year sub-keyset {year1={n}, year2={n}, ...}. The token-list variable `\l_funding_sum_quantity_tl` is set to the key name (quantity or sum) before the sub-parse so the year\meta{n} handlers can construct the correct database field name (quantity-year1, sum-year2, etc.) without extra parameters.

```

2030 \str_new:N \l_@@_funding_tmp_type_str
2031 \tl_new:N \l_funding_sum_quantity_tl
2032 \keys_define:nn { funding / year }
2033 {
2034   year1 .code:n =
2035     {\DTLnewdbentry{\l_@@_database_name_tl}{\tl_use:N \l_funding_sum_quantity_tl-year1}{#1}},
2036   year2 .code:n =
2037     {\DTLnewdbentry{\l_@@_database_name_tl}{\tl_use:N \l_funding_sum_quantity_tl-year2}{#1}},
2038   year3 .code:n =
2039     {\DTLnewdbentry{\l_@@_database_name_tl}{\tl_use:N \l_funding_sum_quantity_tl-year3}{#1}},
2040   year4 .code:n =
2041     {\DTLnewdbentry{\l_@@_database_name_tl}{\tl_use:N \l_funding_sum_quantity_tl-year4}{#1}},
2042   year5 .code:n =
2043     {\DTLnewdbentry{\l_@@_database_name_tl}{\tl_use:N \l_funding_sum_quantity_tl-year5}{#1}},
2044 }
2045
2046 \keys_define:nn { funding }
2047 {
2048   id .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{id}{#1},
2049   id .value_required:n = true,
2050   ref-project-id .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{ref-project-id}{#1},
2051   ref-affiliation-id .code:n =
2052     \DTLnewdbentry{\l_@@_database_name_tl}{ref-affiliation-id}{#1},
2053   financed-by .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{financed-by}{#1},
2054   funding-type .choices:nn = {
2055     staff,~ costs,~ fellowships,~ globalfunds,~ instrumentation }
2056   {
2057     \str_set:Nn \l_@@_funding_tmp_type_str {#1}
2058     \DTLnewdbentry{\l_@@_database_name_tl}{type}{#1}
2059   },
2060   funding-type / unknown .code:n = {\msg_warning:nnnn { dfg } { invalid-value }{ #1 }{
2061     staff,~ costs,~ fellowships,~ globalfunds,~ instrumentation }},
2062   funding-type .value_required:n = true,
2063   percentage .code:n =
2064     \DTLnewdbentry{\l_@@_database_name_tl}{percentage}{#1},
2065   quantity .code:n = {
2066     \tl_set:Nn \l_funding_sum_quantity_tl {quantity}
2067     \keys_set:nn { funding / year } { #1 }
2068   },

```

```

2069     sum .code:n = {
2070         \tl_set:Nn \l_funding_sum_quantity_tl {sum}
2071         \keys_set:nn { funding / year } { #1 }
2072     },
2073     category .code:n =
2074     {
2075         \str_if_eq:VnTF \l_@@_funding_tmp_type_str { staff }
2076         {% staff → restricted choices
2077         \str_if_in:nnTF {groupLeader, prof , postDoc,medDoc,%
2078             PhD,research,nonResearch,student,assistant%
2079         }
2080         {#1}
2081         {
2082             \DTLnewdbentry{\l_@@_database_name_tl}{category}{#1}
2083         }
2084         {
2085             \msg_warning:nnnn { dfg } { invalid-value }{ #1 }
2086             {%
2087                 prof,~ groupLeader,~ postDoc,~ medDoc,~
2088                 PhD,~ research,~ nonResearch,~ student,~ assistant
2089             }
2090         }
2091     }
2092     {
2093         % non-staff → unrestricted
2094         \DTLnewdbentry{\l_@@_database_name_tl}{category}{#1}
2095     }
2096 },
2097 % following keys are especially for the previous fundings
2098 year .code:n = {\DTLnewdbentry{\l_@@_database_name_tl}{year}{#1}},
2099 applicant .code:n = {\DTLnewdbentry{\l_@@_database_name_tl}{applicant}{#1}},
2100 participant .code:n = {\DTLnewdbentry{\l_@@_database_name_tl}{participant}{#1}},
2101 other-funds .code:n = {\DTLnewdbentry{\l_@@_database_name_tl}{other-funds}{#1}},
2102 staff .code:n = {\DTLnewdbentry{\l_@@_database_name_tl}{staff}{#1}},
2103 costs .code:n = {\DTLnewdbentry{\l_@@_database_name_tl}{costs}{#1}},
2104 instrumentation .code:n = {\DTLnewdbentry{\l_@@_database_name_tl}{instrumentation}{#1}},
2105 fellowships .code:n = {\DTLnewdbentry{\l_@@_database_name_tl}{fellowships}{#1}},
2106 globalfunds .code:n = {\DTLnewdbentry{\l_@@_database_name_tl}{globalfunds}{#1}},
2107 }

```

A keyset for instrumentation. The flat `cost` field belongs to the informational `existingInstrumentation` list, is expressed in thousands of EUR, and is never included in funding totals. The nested `sum` fields are requested-funding amounts expressed in full EUR.

```

2108 \keys_define:nn { instrumentation }{
2109     ref-project-id .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{ref-project-id}{#1},
2110     quantity .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{quantity}{#1},
2111     instrument .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{instrument}{#1},
2112     company .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{company}{#1},
2113     year .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{year}{#1},
2114     cost .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{cost}{#1},
2115     financed-by .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{financed-by}{#1},
2116     description .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{description}{#1},
2117     sum .code:n = {
2118         \tl_set:Nn \l_funding_sum_quantity_tl {sum}
2119         \keys_set:nn { funding / year } { #1 }
2120     },
2121 }

```

Keyset `staff` The `staff` key family serves two related personnel data shapes. Its `year1`–`year5` subkeys store the head-count plan per position category for `\OverviewOfFundsRequestedForStaffTable`. The flat keys added below store the named and unnamed staff roster required by the DFG project template in the fixed `RequestedFundingStaff` database. All keys remain optional at the parser level so the older overview declarations continue to work unchanged; database-specific validation supplies useful warnings for roster entries.

The `position`^{→P.26} sub-keyset holds named keys for each staff category (`postDoc`, `PhD`, `research`, etc.); each key’s value is the number of FTEs for a specific year. `\l_staff_year_tl` is set to `year1`–`year5` before each sub-parse so the handlers can construct the correct field name (e.g. `postDoc-year2`) without extra parameters.

```

2122 \tl_new:N \l_staff_year_tl          % will hold "year1", "year2", ...
2123 \keys_define:nn { staff / position }{
2124   postDoc      .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{postDoc-\tl_use:N \l_staff_year_tl}{#1}
2125   PhD          .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{PhD-\tl_use:N \l_staff_year_tl}{#1},
2126   research     .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{research-\tl_use:N \l_staff_year_tl}{#1}
2127   nonResearch  .code:n = \DTLnewdbentry{\l_@@_database_name_tl}
2128   {nonResearch-\tl_use:N \l_staff_year_tl}{#1},
2129   student      .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{student-\tl_use:N \l_staff_year_tl}{#1}
2130 }
2131
2132 \cs_new_protected:Npn \@@_staff_set_category:n #1
2133 {
2134   \prop_if_in:NnTF \g_@@_dfg_category_names_prop {#1}
2135   { \DTLnewdbentry{\l_@@_database_name_tl}{category}{#1} }
2136   {
2137     \msg_warning:nnnn { dfg } { invalid-value } {#1}
2138     { a~key~registered~in~\token_to_str:N \g_@@_dfg_category_names_prop }
2139   }
2140 }
2141
2142 \keys_define:nn { staff }{
2143   unknown .code:n = { \msg_warning:nnn { dfg } { unknown-key } {#1} },
2144   unknown .default:V = \c_novalue_tl,
2145   ref-project-id .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{ref-project-id}{#1},
2146   funding-status .choices:nn = { existing, requested }
2147   { \DTLnewdbentry{\l_@@_database_name_tl}{funding-status}{#1} },
2148   funding-status / unknown .code:n =
2149   { \msg_warning:nnnn { dfg } { invalid-value } {#1} { existing,~requested } },
2150   staff-type .choices:nn = { research, nonResearch }
2151   { \DTLnewdbentry{\l_@@_database_name_tl}{staff-type}{#1} },
2152   staff-type / unknown .code:n =
2153   { \msg_warning:nnnn { dfg } { invalid-value } {#1} { research,~nonResearch } },
2154   ref-person-id .code:n =
2155   \DTLnewdbentry{\l_@@_database_name_tl}{ref-person-id}{#1},
2156   firstname .code:n =
2157   \DTLnewdbentry{\l_@@_database_name_tl}{firstname}{#1},
2158   lastname .code:n =
2159   \DTLnewdbentry{\l_@@_database_name_tl}{lastname}{#1},
2160   academic-degree .code:n =
2161   \DTLnewdbentry{\l_@@_database_name_tl}{academic-degree}{#1},
2162   positionText .code:n =
2163   \DTLnewdbentry{\l_@@_database_name_tl}{positionText}{#1},
2164   position .code:n =
2165   \DTLnewdbentry{\l_@@_database_name_tl}{positionText}{#1},
2166   field-of-research .code:n =
2167   \DTLnewdbentry{\l_@@_database_name_tl}{field-of-research}{#1},
2168   ref-institution-id .code:n =
2169   \DTLnewdbentry{\l_@@_database_name_tl}{ref-institution-id}{#1},
2170   ref-affiliation-id .code:n =
2171   \DTLnewdbentry{\l_@@_database_name_tl}{ref-affiliation-id}{#1},
2172   department .code:n =
2173   \DTLnewdbentry{\l_@@_database_name_tl}{department}{#1},
2174   commitment .code:n =
2175   {
2176     \regex_match:nnTF { \A \d+ (?: \. \d+ )? \Z }
2177     {#1}
2178     { \DTLnewdbentry{\l_@@_database_name_tl}{commitment}{#1} }
2179     { \msg_warning:nnnn { dfg } { invalid-value } {#1}
2180       { non-negative~integer~or~decimal } }
2181   },
2182   category .code:n = \@@_staff_set_category:n {#1},
2183   funding-source .code:n =
2184   \DTLnewdbentry{\l_@@_database_name_tl}{funding-source}{#1},
2185   description .code:n =
2186   \DTLnewdbentry{\l_@@_database_name_tl}{description}{#1},
2187   year1 .code:n = {

```

```

2188     \tl_set:Nn \l_staff_year_tl {year1}
2189     \keys_set:nn { staff / position } { #1 }
2190 },
2191 year2 .code:n = {
2192     \tl_set:Nn \l_staff_year_tl {year2}
2193     \keys_set:nn { staff / position } { #1 }
2194 },
2195 year3 .code:n = {
2196     \tl_set:Nn \l_staff_year_tl {year3}
2197     \keys_set:nn { staff / position } { #1 }
2198 },
2199 year4 .code:n = {
2200     \tl_set:Nn \l_staff_year_tl {year4}
2201     \keys_set:nn { staff / position } { #1 }
2202 },
2203 year5 .code:n = {
2204     \tl_set:Nn \l_staff_year_tl {year5}
2205     \keys_set:nn { staff / position } { #1 }
2206 },
2207 }
2208
2209 % Pre-create every roster column once. Datatool can otherwise report an
2210 % unknown column when an optional key is omitted by every row in the database.
2211 \bool_new:N \g_@@_requested_funding_staff_schema_ready_bool
2212 \cs_new_protected:Npn \@@_requested_funding_staff_ensure_schema:
2213 {
2214     \bool_if:NF \g_@@_requested_funding_staff_schema_ready_bool
2215     {
2216         \clist_map_inline:nn
2217         {
2218             ref-project-id, funding-status, staff-type, ref-person-id,
2219             firstname, lastname, academic-degree, positionText, field-of-research,
2220             ref-institution-id, ref-affiliation-id, department, commitment, category,
2221             funding-source, description
2222         }
2223         {
2224             \DTLifhaskey { RequestedFundingStaff } {##1}
2225             { }
2226             { \DTLaddcolumn { RequestedFundingStaff } {##1} }
2227         }
2228         \bool_gset_true:N \g_@@_requested_funding_staff_schema_ready_bool
2229     }
2230 }
2231
2232 \tl_new:N \l_@@_requested_funding_staff_validate_project_tl
2233 \tl_new:N \l_@@_requested_funding_staff_validate_status_tl
2234 \tl_new:N \l_@@_requested_funding_staff_validate_type_tl
2235 \tl_new:N \l_@@_requested_funding_staff_validate_person_tl
2236 \tl_new:N \l_@@_requested_funding_staff_validate_lastname_tl
2237 \keys_define:nn { dfg / requested-funding-staff-validation }
2238 {
2239     ref-project-id .tl_set:N =
2240     \l_@@_requested_funding_staff_validate_project_tl,
2241     funding-status .tl_set:N =
2242     \l_@@_requested_funding_staff_validate_status_tl,
2243     staff-type .tl_set:N =
2244     \l_@@_requested_funding_staff_validate_type_tl,
2245     ref-person-id .tl_set:N =
2246     \l_@@_requested_funding_staff_validate_person_tl,
2247     lastname .tl_set:N =
2248     \l_@@_requested_funding_staff_validate_lastname_tl,
2249     unknown .code:n = { }
2250 }
2251
2252 \cs_new_protected:Npn \@@_requested_funding_staff_validate:n #1
2253 {

```

```

2254 \tl_clear:N \l_@@_requested_funding_staff_validate_project_tl
2255 \tl_clear:N \l_@@_requested_funding_staff_validate_status_tl
2256 \tl_clear:N \l_@@_requested_funding_staff_validate_type_tl
2257 \tl_clear:N \l_@@_requested_funding_staff_validate_person_tl
2258 \tl_clear:N \l_@@_requested_funding_staff_validate_lastname_tl
2259 \keys_set:nn { dfg / requested-funding-staff-validation } {#1}
2260 \tl_if_blank:VT \l_@@_requested_funding_staff_validate_project_tl
2261 { \msg_warning:nnn { dfg } { requested-staff-required }
2262   { ref-project-id } }
2263 \tl_if_blank:VT \l_@@_requested_funding_staff_validate_status_tl
2264 { \msg_warning:nnn { dfg } { requested-staff-required }
2265   { funding-status } }
2266 \tl_if_blank:VT \l_@@_requested_funding_staff_validate_type_tl
2267 { \msg_warning:nnn { dfg } { requested-staff-required }
2268   { staff-type } }
2269 \bool_lazy_all:nT
2270 {
2271   { \tl_if_blank_p:V \l_@@_requested_funding_staff_validate_person_tl }
2272   { \tl_if_blank_p:V \l_@@_requested_funding_staff_validate_lastname_tl }
2273 }
2274 { \msg_warning:nnn { dfg } { requested-staff-required }
2275   { ref-person-id~or~lastname } }
2276 }

```

A keyset for the upkeep of laboratory animals.

```

2277 \keys_define:nn { UpkeepLaboratoryAnimals }{
2278   ref-project-id .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{ref-project-id}{#1},
2279   species .choices:nn = { mouse, mouse-gnotobiotic, rat }
2280   { \DTLnewdbentry{\l_@@_database_name_tl}{species}{#1}},
2281   species / unknown .code:n = { \msg_warning:nnnn { dfg } { invalid-value } { #1 } {
2282     smouse, ~ mouse-gnotobiotic, ~ rat } },
2283   species .value_required:n = true,
2284   quantity .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{quantity}{#1},
2285   weeks-kept .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{weeks-kept}{#1},
2286   purchasing-costs .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{purchasing-costs}{#1},
2287   requested-funds .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{requested-funds}{#1},
2288   existing-funds .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{existing-funds}{#1},
2289 }

```

Keyset gantt Each row in a `gantt-\meta{project}` database describes one Gantt bar. Bars share their `id`^{P.25} with the corresponding work-package label, so `\addWP` automatically creates a matching Gantt entry when called.

`periodStart`^{P.17} and `periodEnd`^{P.17} are quarter numbers (1–16 for a standard 5-year CRC period). Setting both to the same value suppresses the bar, allowing a work-package item to exist in the list without occupying space in the chart.

`style`^{P.39} selects one of five visual styles for the bar. Unknown styles fall back to `default` with a warning, so the chart always compiles.

```

2290 \keys_define:nn { gantt }{
2291   id .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{id}{#1},
2292   id .value_required:n = true,
2293   name .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{name}{#1},
2294   description .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{description}{#1},
2295   periodStart .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{periodStart}{#1},
2296   periodEnd .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{periodEnd}{#1},
2297   style .choices:nn = { crosshatch, striped, important, alternative, default }
2298   { \DTLnewdbentry{\l_@@_database_name_tl}{style}{#1}},
2299   style / unknown .code:n = {
2300     \msg_warning:nnnn { dfg } { invalid-value } { #1
2301     } { crosshatch, striped, important, alternative, default }
2302     \DTLnewdbentry{\l_@@_database_name_tl}{style}{default}
2303   },
2304 }

```

3.2.16 Core data-access commands

The following commands form the primary user-facing API for reading and writing the datatool databases. Together with the keyset definitions above they provide a strongly-typed, validated interface that prevents malformed data from silently entering the proposal.

`\dfgShowTag` and `\dfgShowCalculatedTag` Direct values use `db:id:field`; aggregates use the concise form `calc:command [db]`. Successive labels alternate between two vertical levels. The complete marker has zero width, height, and depth in both prose and tables, so annotations cannot change line spacing or table-row height. When `showtags=tables` ^{P.34} is false, the wrapper returns its value unchanged while a `tblr` cell is being rendered. The begin-document specialisation keeps the normal `showtags=false` path as cheap as the unannotated output.

```

2305 \NewDocumentCommand{\dfgShowTag}{ m m m o }
2306 {%
2307   % #1: id
2308   % #2: field of database
2309   % #3: value from database field
2310   % #4: custom field (optional, e.g. database name)
2311   \bool_if:NTF \l_@@_class_showtags_bool
2312   { \texorpdfstring{\@@_show_tag_direct:nnnn {#1}{#2}{#3}{#4}}{#3} }
2313   {#3}%
2314 }
2315
2316 \NewDocumentCommand{\dfgShowCalculatedTag}{ m m +m }
2317 {%
2318   % #1: calculation command or label
2319   % #2: contributing database(s)
2320   % #3: calculated value
2321   \bool_if:NTF \l_@@_class_showtags_bool
2322   { \texorpdfstring{\@@_show_tag_value:nn { calc:#1~[#2] } {#3}}{#3} }
2323   {#3}%
2324 }
2325
2326 \cs_new_protected:Npn \@@_show_tag_direct:nnnn #1#2#3#4
2327 {
2328   \IfNoValueTF{#4}
2329   { \@@_show_tag_value:nn { #1:#2 } {#3} }
2330   { \@@_show_tag_value:nn { #4:#1:#2 } {#3} }
2331 }
2332
2333 \cs_new_protected:Npn \@@_show_tag_value:nn #1#2
2334 {
2335   \bool_if:NTF
2336   { \g_@@_tblr_inside_bool && ! \l_@@_class_showtags_tables_bool }
2337   {#2}
2338   { \@@_show_tag_overlay:nn {#1}{#2} }
2339 }
2340
2341 \bool_new:N \g_@@_show_tag_upper_bool
2342 \bool_new:N \l_@@_show_tag_leftward_bool
2343 \dim_new:N \l_@@_show_tag_raise_dim
2344
2345 \cs_new_protected:Npn \@@_show_tag_overlay:nn #1#2
2346 {
2347   % #1: preformatted provenance label
2348   % #2: displayed value
2349   \group_begin:
2350     \bool_if:NTF \g_@@_show_tag_upper_bool
2351     { \dim_set:Nn \l_@@_show_tag_raise_dim { 1.30em } }
2352     { \dim_set:Nn \l_@@_show_tag_raise_dim { .9em } }
2353     \bool_gset_inverse:N \g_@@_show_tag_upper_bool
2354     \leavevmode
2355     \smash{%
2356       \vbox to \z@ {%
2357         \vss
2358         \color{color@tags@line}%
2359         \bool_if:NTF \l_@@_show_tag_leftward_bool
2360         {%
2361           \llap{%
2362             \raise \l_@@_show_tag_raise_dim \hbox{%
2363               \fontsize{4}{0}\selectfont
2364               \ttfamily

```

```

2365         #1\,%
2366     }%
2367     \vrule
2368 }%
2369 }
2370 {%
2371     \rlap{%
2372         \vrule
2373         \raise \l_@@_show_tag_raise_dim \hbox{%
2374             \fontsize{4}{0}\selectfont
2375             \ttfamily
2376             \,%
2377             #1%
2378         }%
2379     }%
2380 }%
2381 }%
2382 }%
2383     \textcolor{color@tags@font}{#2}%
2384 \group_end:
2385 }
2386
2387 % Aggregated monetary tables use full euro amounts. Guarded tagged cells must
2388 % invoke \cs{TblrNum} explicitly so they still use the current column's
2389 % |table-format| for a common SI field width; outside tables \cs{num} provides
2390 % ordinary inline output. Marginalia temporarily clear the table-context
2391 % boolean and therefore remain unpadding. The informational
2392 % existing-instrumentation cost and the animal-housing rate are formatted
2393 % separately because their source units and precision differ from aggregated
2394 % funding values.
2395 \cs_new_protected:Npn \@@_show_table_number:n #1
2396 {
2397     \bool_if:NTF \g_@@_tblr_inside_bool
2398     { \TblrNum{#1} }
2399     { \num{#1} }
2400 }
2401
2402 \cs_new_protected:Npn \@@_show_eur:n #1
2403 {
2404     \bool_if:NTF \g_@@_tblr_inside_bool
2405     { \TblrNum{#1} }
2406     {
2407         \num[
2408             round-mode = places,
2409             round-precision = 0
2410         ]{#1}
2411     }
2412 }
2413
2414 % Existing-instrumentation costs are supplied in thousands of EUR and are not
2415 % included in any funding aggregate. Match the DFG table's one-decimal
2416 % precision while still suppressing a redundant trailing zero.
2417 \cs_new_protected:Npn \@@_show_existing_instrumentation_cost:n #1
2418 {
2419     \bool_if:NTF \g_@@_tblr_inside_bool
2420     { \TblrNum{#1} }
2421     {
2422         \num[
2423             round-mode = places,
2424             round-precision = 1
2425         ]{#1}
2426     }
2427 }
2428
2429 \cs_new_protected:Npn \@@_show_calculated_number:nnN #1#2#3
2430 {

```

```

2431 \dfgShowCalculatedTag{#1}{#2}
2432 { \exp_args:NV \@@_show_eur:n #3 }
2433 }
2434
2435 \AtBeginDocument{%
2436 \bool_if:NTF \l_@@_class_showtags_bool
2437 {%
2438 \RenewDocumentCommand{\dfgShowTag}{ m m m o }
2439 { \texorpdfstring{\@@_show_tag_direct:nnnn {#1}{#2}{#3}{#4}}{#3} }%
2440 \RenewDocumentCommand{\dfgShowCalculatedTag}{ m m +m }
2441 { \texorpdfstring{\@@_show_tag_value:nn { calc:#1~[#2] } {#3}}{#3} }%
2442 }
2443 {%
2444 \RenewDocumentCommand{\dfgShowTag}{ m m m o }
2445 {#3}%
2446 \RenewDocumentCommand{\dfgShowCalculatedTag}{ m m +m }
2447 {#3}%
2448 }%
2449 }
2450

```

`\addEntry` `\addEntry` [*<keys>*] {*<database>*} {*<key-values>*} Adds a new row to the database named *<database>*, populated by setting the keys defined under the key-path *<keys>* from *<key-values>*. If *<keys>* is omitted, it defaults to the database name (*<database>*).

The `cv` database receives special treatment: entries are only recorded when the boolean `\l_dfg_class_cv_bool` is true (i.e. when a CV is actually being produced). Otherwise the entry is skipped and a warning is issued, so that bibliography-style CV entries can be left in the source unconditionally without polluting non-CV builds.

The internal helper `\__dfg_add_entry:nnn` performs the actual insertion and is shared between both branches to avoid code duplication.

Funding declarations for `RequestedFunding` may occur in project files, after the proposal-wide overview tables have already been printed. Such entries are additionally written to the current LaTeX auxiliary file and restored on the following run into `RequestedFundingOverview`. Entries encountered before `\begin{document}` are copied into that overview database immediately. Consequently the declarations remain next to their project text, while overview tables have access to the complete data set after the usual additional LaTeX run. A separate database prevents the restored rows from duplicating the live rows used by the project tables. The same forward-data mechanism copies `RequestedFundingStaff` declarations to `RequestedFundingStaffOverview` and `RequestedAndExistingFundingDirectCosts` declarations to `RequestedAndExistingFundingDirectCostsOverview`. Chapter 2 can therefore aggregate the existing staff and institutional direct-cost support declared later in the individual project chapters without a second user-maintained database.

Funding aggregate indexes The funding databases remain the authoritative row store. In addition, every funding declaration updates two LaTeX3 property lists: one for monetary sums grouped by database, project, funding type, and year field; and one for staff quantities grouped by database, project, category, and year field. Each index also stores the corresponding all-project and all-type aggregate where applicable.

Both live declarations and rows restored from auxiliary files pass through the same registration function. The indexes therefore remain correct as later project files add entries; there is no one-shot cache to invalidate. Summary cells perform a property lookup instead of traversing the growing database. Detailed project tables still read their source rows, but collect all five funding types in one project-filtered traversal rather than five.

Complete-proposal benchmark The 149-page complete proposal was measured on 2026-07-17 with LuaHBTeX from TeX Live 2026. Times below are for one final LuaLaTeX pass and compare the same proposal data before and after the aggregate-index refactor. Absolute values depend on the machine and document contents; the important result is that lookup time no longer grows through repeated full database sums.

Operation	Before	After	Reduction
Staff overview	135.745 s	6.975 s	94.9 %
Instrumentation overview	5.239 s	0.636 s	87.9 %
21 requested-funding tables	90.444 s	28.831 s	68.1 %
19 existing-funding tables	23.277 s	6.605 s	71.6 %
Combined	254.705 s	43.047 s	83.1 %

This saves approximately 211.7 seconds per LuaLaTeX pass. The monitored three-pass `make complete-proposal` release build completed in 33 minutes 21 seconds, so the funding changes account for approximately 10 minutes 35 seconds of avoided work across that build.

```

2451 \cs_new_protected:Npn \l_@@_add_entry:nnn #1#2#3
2452 {
2453   % #1: keys      #2: database      #3: key-values
2454   \group_begin:
2455   \tl_set:Nn \l_@@_database_name_tl {#2}
2456   \DTLifdbexists {#2}
2457   { }
2458   { \DTLaction [ name = \l_@@_database_name_tl ] { new } }
2459   \bool_lazy_all:nT
2460   {
2461     { \str_if_eq_p:nn {#1} { staff } }
2462     { \str_if_eq_p:nn {#2} { RequestedFundingStaff } }
2463   }
2464   {
2465     \l_@@_requested_funding_staff_ensure_schema:
2466     \l_@@_requested_funding_staff_validate:n {#3}
2467   }
2468   \DTLaction [ name = \l_@@_database_name_tl ] { new~row }
2469   \str_if_eq:nnT {#1} { project }
2470   {
2471     \bool_set_true:N \l_@@_project_consider_for_lists_bool
2472     \bool_set_false:N \l_@@_project_reference_only_bool
2473   }
2474   \exp_args:Ne \keys_set:nn {#1} {#3}
2475   \str_if_eq:nnT {#1} { project }
2476   {
2477     \bool_if:NTF \l_@@_project_consider_for_lists_bool
2478     { \DTLnewdbentry{\l_@@_database_name_tl}{consider-for-lists}{true} }
2479     { \DTLnewdbentry{\l_@@_database_name_tl}{consider-for-lists}{false} }
2480     \bool_if:NTF \l_@@_project_reference_only_bool
2481     { \DTLnewdbentry{\l_@@_database_name_tl}{reference-only}{true} }
2482     { \DTLnewdbentry{\l_@@_database_name_tl}{reference-only}{false} }
2483     \bool_gset_false:N \g_@@_project_count_ready_bool
2484   }
2485   \bool_lazy_all:nT
2486   {
2487     { \str_if_eq_p:nn {#1} { funding } }
2488     { \str_if_eq_p:Vn \l_@@_funding_tmp_type_str { staff } }
2489   }
2490   { \l_@@_funding_complete_staff_sums:n {#3} }
2491   \group_end:
2492 }
2493
2494 % Funding tables repeatedly ask for the same sums, sometimes hundreds of
2495 % times while tabularray measures a table. Keep the datatool databases as
2496 % the row store, but maintain compact aggregate indexes alongside them.
2497 % The key layout is
2498 %
2499 %   database / project-or-__ALL__ / type-or-__ALL__ / field
2500 %
2501 % for monetary sums and
2502 %
2503 %   database / project-or-__ALL__ / category / quantity-field
2504 %
2505 % for requested staff quantities. Values are added when an entry is
2506 % declared, so a lookup never has to traverse a datatool database and the
2507 % index cannot become stale when later project files add more rows.
2508 \prop_new:N \g_@@_funding_sum_prop
2509 \prop_new:N \g_@@_funding_staff_quantity_prop
2510 \fp_new:N \l_@@_funding_cache_fp
2511 \tl_new:N \l_@@_funding_cache_key_tl
2512 \tl_new:N \l_@@_funding_cache_value_tl
2513 \tl_new:N \l_@@_funding_cache_project_tl
2514 \tl_new:N \l_@@_funding_cache_type_tl
2515 \tl_new:N \l_@@_funding_cache_category_tl
2516 \tl_new:N \l_@@_funding_cache_percentage_tl

```

```

2517 \tl_new:N \l_@@_funding_salary_command_tl
2518 \tl_new:N \l_@@_funding_salary_value_tl
2519 \tl_new:N \l_@@_funding_cache_sum_one_tl
2520 \tl_new:N \l_@@_funding_cache_sum_two_tl
2521 \tl_new:N \l_@@_funding_cache_sum_three_tl
2522 \tl_new:N \l_@@_funding_cache_sum_four_tl
2523 \tl_new:N \l_@@_funding_cache_sum_five_tl
2524 \tl_new:N \l_@@_funding_cache_quantity_one_tl
2525 \tl_new:N \l_@@_funding_cache_quantity_two_tl
2526 \tl_new:N \l_@@_funding_cache_quantity_three_tl
2527 \tl_new:N \l_@@_funding_cache_quantity_four_tl
2528 \tl_new:N \l_@@_funding_cache_quantity_five_tl
2529 \bool_new:N \l_@@_funding_calculation_store_bool
2530 \bool_new:N \l_@@_funding_calculation_ready_bool
2531 \bool_new:N \l_@@_funding_calculation_needed_bool
2532
2533 \prop_new:N \g_@@_funding_salary_commands_prop
2534 \prop_gset_from_keyval:Nn \g_@@_funding_salary_commands_prop
2535 {
2536   prof = dfgSalaryProf,
2537   groupLeader = dfgSalaryGroupLeader,
2538   postDoc = dfgSalaryPostDoc,
2539   medDoc = dfgSalaryMedDoc,
2540   PhD = dfgSalaryPhD,
2541   research = dfgSalaryResearch,
2542   nonResearch = dfgSalaryNonResearch,
2543   student = dfgSalaryStudent,
2544   assistant = dfgSalaryAssistant,
2545   prof-W2 = dfgSalaryProf,
2546   prof-W3 = dfgSalaryProf
2547 }
2548
2549 \keys_define:nn { dfg / funding-cache / sum }
2550 {
2551   year1 .tl_set:N = \l_@@_funding_cache_sum_one_tl,
2552   year2 .tl_set:N = \l_@@_funding_cache_sum_two_tl,
2553   year3 .tl_set:N = \l_@@_funding_cache_sum_three_tl,
2554   year4 .tl_set:N = \l_@@_funding_cache_sum_four_tl,
2555   year5 .tl_set:N = \l_@@_funding_cache_sum_five_tl,
2556   unknown .code:n = { }
2557 }
2558
2559 \keys_define:nn { dfg / funding-cache / quantity }
2560 {
2561   year1 .tl_set:N = \l_@@_funding_cache_quantity_one_tl,
2562   year2 .tl_set:N = \l_@@_funding_cache_quantity_two_tl,
2563   year3 .tl_set:N = \l_@@_funding_cache_quantity_three_tl,
2564   year4 .tl_set:N = \l_@@_funding_cache_quantity_four_tl,
2565   year5 .tl_set:N = \l_@@_funding_cache_quantity_five_tl,
2566   unknown .code:n = { }
2567 }
2568
2569 \keys_define:nn { dfg / funding-cache }
2570 {
2571   ref-project-id .tl_set:N = \l_@@_funding_cache_project_tl,
2572   funding-type .tl_set:N = \l_@@_funding_cache_type_tl,
2573   category .tl_set:N = \l_@@_funding_cache_category_tl,
2574   percentage .tl_set:N = \l_@@_funding_cache_percentage_tl,
2575   sum .code:n =
2576     { \keys_set:nn { dfg / funding-cache / sum } {#1} },
2577   quantity .code:n =
2578     { \keys_set:nn { dfg / funding-cache / quantity } {#1} },
2579   unknown .code:n = { }
2580 }
2581
2582 \cs_new_protected:Npn \@@_funding_capture:n #1

```

```

2583 {
2584   \tl_clear:N \l_@@_funding_cache_project_tl
2585   \tl_clear:N \l_@@_funding_cache_type_tl
2586   \tl_clear:N \l_@@_funding_cache_category_tl
2587   \tl_clear:N \l_@@_funding_cache_percentage_tl
2588   \tl_clear:N \l_@@_funding_cache_sum_one_tl
2589   \tl_clear:N \l_@@_funding_cache_sum_two_tl
2590   \tl_clear:N \l_@@_funding_cache_sum_three_tl
2591   \tl_clear:N \l_@@_funding_cache_sum_four_tl
2592   \tl_clear:N \l_@@_funding_cache_sum_five_tl
2593   \tl_clear:N \l_@@_funding_cache_quantity_one_tl
2594   \tl_clear:N \l_@@_funding_cache_quantity_two_tl
2595   \tl_clear:N \l_@@_funding_cache_quantity_three_tl
2596   \tl_clear:N \l_@@_funding_cache_quantity_four_tl
2597   \tl_clear:N \l_@@_funding_cache_quantity_five_tl
2598   \keys_set:nn { dfg / funding-cache } {#1}
2599 }
2600
2601 \cs_new_protected:Npn \@@_funding_calculation_needed:NN #1#2
2602 {
2603   \bool_lazy_all:nT
2604   {
2605     { \tl_if_blank_p:V #1 }
2606     { ! \tl_if_blank_p:V #2 }
2607   }
2608   { \bool_set_true:N \l_@@_funding_calculation_needed_bool }
2609 }
2610
2611 \cs_new_protected:Npn \@@_funding_calculate_one:NNnn #1#2#3#4
2612 {
2613   % #1 sum tl, #2 quantity tl, #3 database field, #4 period factor
2614   \bool_lazy_all:nT
2615   {
2616     { \tl_if_blank_p:V #1 }
2617     { ! \tl_if_blank_p:V #2 }
2618     { \bool_if_p:N \l_@@_funding_calculation_ready_bool }
2619   }
2620   {
2621     \exp_args:NnV \regex_match:nnTF
2622     { \A \d+ (?: \. \d+ )? \Z } #2
2623     {
2624       \tl_set:Nx #1
2625       {
2626         \fp_eval:n
2627         {
2628           round(
2629             \l_@@_funding_salary_value_tl
2630             * \l_@@_funding_cache_percentage_tl / 100
2631             * #2
2632             * #4,
2633             0
2634           )
2635         }
2636       }
2637       \bool_if:NT \l_@@_funding_calculation_store_bool
2638       {
2639         \exp_args:Nnne \DTLnewdbentry
2640         { \l_@@_database_name_tl } {#3} { \tl_use:N #1 }
2641       }
2642     }
2643     {
2644       \bool_if:NT \l_@@_funding_calculation_store_bool
2645       {
2646         \msg_warning:nne { dfg } { funding-staff-cost-unavailable }
2647         { project~'\l_@@_funding_cache_project_tl',~#3:~invalid~quantity~'#2' }
2648       }
2649     }
2650   }

```

```

2649     }
2650 }
2651 }
2652
2653 \cs_new_protected:Npn \l_@@_funding_calculate_staff_sums:
2654 {
2655   \str_if_eq:VnT \l_@@_funding_cache_type_tl { staff }
2656   {
2657     \bool_set_false:N \l_@@_funding_calculation_needed_bool
2658     \@@_funding_calculation_needed:NN
2659       \l_@@_funding_cache_sum_one_tl \l_@@_funding_cache_quantity_one_tl
2660     \@@_funding_calculation_needed:NN
2661       \l_@@_funding_cache_sum_two_tl \l_@@_funding_cache_quantity_two_tl
2662     \@@_funding_calculation_needed:NN
2663       \l_@@_funding_cache_sum_three_tl \l_@@_funding_cache_quantity_three_tl
2664     \@@_funding_calculation_needed:NN
2665       \l_@@_funding_cache_sum_four_tl \l_@@_funding_cache_quantity_four_tl
2666     \@@_funding_calculation_needed:NN
2667       \l_@@_funding_cache_sum_five_tl \l_@@_funding_cache_quantity_five_tl
2668     \bool_if:NT \l_@@_funding_calculation_needed_bool
2669     {
2670       \bool_set_true:N \l_@@_funding_calculation_ready_bool
2671       \prop_get:NVNTF \g_@@_funding_salary_commands_prop
2672         \l_@@_funding_cache_category_tl \l_@@_funding_salary_command_tl
2673       {
2674         \cs_if_exist:cTF { \l_@@_funding_salary_command_tl }
2675         { \tl_set:Nx \l_@@_funding_salary_value_tl
2676           { \use:c { \l_@@_funding_salary_command_tl } } }
2677         { \bool_set_false:N \l_@@_funding_calculation_ready_bool }
2678       }
2679       { \bool_set_false:N \l_@@_funding_calculation_ready_bool }
2680       \exp_args:NnV \regex_match:nnF
2681         { \A \d+ (?: \. \d+ )? \Z }
2682       \l_@@_funding_cache_percentage_tl
2683       { \bool_set_false:N \l_@@_funding_calculation_ready_bool }
2684       \exp_args:NnV \regex_match:nnF
2685         { \A \d+ (?: \. \d+ )? \Z }
2686       \l_@@_funding_salary_value_tl
2687       { \bool_set_false:N \l_@@_funding_calculation_ready_bool }
2688       \bool_lazy_all:nT
2689       {
2690         { \bool_if_p:N \l_@@_funding_calculation_store_bool }
2691         { ! \bool_if_p:N \l_@@_funding_calculation_ready_bool }
2692       }
2693       {
2694         \msg_warning:nne { dfg } { funding-staff-cost-unavailable }
2695         {
2696           project~'\l_@@_funding_cache_project_tl',~category~
2697             '\l_@@_funding_cache_category_tl',~percentage~
2698             '\l_@@_funding_cache_percentage_tl'
2699         }
2700       }
2701       \@@_funding_calculate_one:NNnn
2702         \l_@@_funding_cache_sum_one_tl
2703         \l_@@_funding_cache_quantity_one_tl { sum-year1 } { 0.5 }
2704       \@@_funding_calculate_one:NNnn
2705         \l_@@_funding_cache_sum_two_tl
2706         \l_@@_funding_cache_quantity_two_tl { sum-year2 } { 1 }
2707       \@@_funding_calculate_one:NNnn
2708         \l_@@_funding_cache_sum_three_tl
2709         \l_@@_funding_cache_quantity_three_tl { sum-year3 } { 1 }
2710       \@@_funding_calculate_one:NNnn
2711         \l_@@_funding_cache_sum_four_tl
2712         \l_@@_funding_cache_quantity_four_tl { sum-year4 } { 1 }
2713       \@@_funding_calculate_one:NNnn
2714         \l_@@_funding_cache_sum_five_tl

```

```

2715         \l_@@_funding_cache_quantity_five_tl { sum-year5 } { 0.5 }
2716     }
2717 }
2718 }
2719
2720 \cs_new_protected:Npn \@@_funding_complete_staff_sums:n #1
2721 {
2722     \bool_set_true:N \l_@@_funding_calculation_store_bool
2723     \@@_funding_capture:n {#1}
2724     \@@_funding_calculate_staff_sums:
2725 }
2726
2727 \cs_new_protected:Npn \@@_funding_cache_add:Nnn #1#2#3
2728 {
2729     \tl_set:Nx \l_@@_funding_cache_key_tl {#2}
2730     \tl_set:Nx \l_@@_funding_cache_value_tl {#3}
2731     \tl_if_blank:VF \l_@@_funding_cache_value_tl
2732     {
2733         \prop_get:NVNTF #1
2734         \l_@@_funding_cache_key_tl \l_@@_funding_cache_value_tl
2735         {
2736             \fp_set:Nn \l_@@_funding_cache_fp
2737             { \l_@@_funding_cache_value_tl + (#3) }
2738         }
2739         { \fp_set:Nn \l_@@_funding_cache_fp {#3} }
2740         \prop_gput:NVx #1 \l_@@_funding_cache_key_tl
2741         { \fp_to_decimal:N \l_@@_funding_cache_fp }
2742     }
2743 }
2744
2745 \cs_new_protected:Npn \@@_funding_cache_sum_year:nnn #1#2#3
2746 {
2747     % #1 database, #2 field, #3 value
2748     \tl_if_blank:VF \l_@@_funding_cache_type_tl
2749     {
2750         \@@_funding_cache_add:Nnn \g_@@_funding_sum_prop
2751         {#1/\l_@@_funding_cache_project_tl/
2752         \l_@@_funding_cache_type_tl/#2} {#3}
2753         \@@_funding_cache_add:Nnn \g_@@_funding_sum_prop
2754         {#1/___ALL___/\l_@@_funding_cache_type_tl/#2} {#3}
2755     }
2756     \@@_funding_cache_add:Nnn \g_@@_funding_sum_prop
2757     {#1/\l_@@_funding_cache_project_tl/___ALL___/#2} {#3}
2758     \@@_funding_cache_add:Nnn \g_@@_funding_sum_prop
2759     {#1/___ALL___/___ALL___/#2} {#3}
2760 }
2761
2762 \cs_new_protected:Npn \@@_funding_cache_quantity_year:nnn #1#2#3
2763 {
2764     % #1 database, #2 field, #3 value
2765     \@@_funding_cache_add:Nnn \g_@@_funding_staff_quantity_prop
2766     {#1/\l_@@_funding_cache_project_tl/
2767     \l_@@_funding_cache_category_tl/#2} {#3}
2768     \@@_funding_cache_add:Nnn \g_@@_funding_staff_quantity_prop
2769     {#1/___ALL___/\l_@@_funding_cache_category_tl/#2} {#3}
2770 }
2771
2772 \cs_new_protected:Npn \@@_funding_cache_entry:nn #1#2
2773 {
2774     \group_begin:
2775     \bool_set_false:N \l_@@_funding_calculation_store_bool
2776     \@@_funding_capture:n {#2}
2777     \@@_funding_calculate_staff_sums:
2778     \tl_if_blank:VF \l_@@_funding_cache_project_tl
2779     {
2780         \@@_funding_cache_sum_year:nnn {#1} {sum-year1}

```

```

2781     {\l_@@_funding_cache_sum_one_tl}
2782     \@@_funding_cache_sum_year:nnn {#1} {sum-year2}
2783     {\l_@@_funding_cache_sum_two_tl}
2784     \@@_funding_cache_sum_year:nnn {#1} {sum-year3}
2785     {\l_@@_funding_cache_sum_three_tl}
2786     \@@_funding_cache_sum_year:nnn {#1} {sum-year4}
2787     {\l_@@_funding_cache_sum_four_tl}
2788     \@@_funding_cache_sum_year:nnn {#1} {sum-year5}
2789     {\l_@@_funding_cache_sum_five_tl}
2790     \str_if_eq:VnT \l_@@_funding_cache_type_tl {staff}
2791     {
2792       \tl_if_blank:VF \l_@@_funding_cache_category_tl
2793       {
2794         \@@_funding_cache_quantity_year:nnn {#1} {quantity-year1}
2795         {\l_@@_funding_cache_quantity_one_tl}
2796         \@@_funding_cache_quantity_year:nnn {#1} {quantity-year2}
2797         {\l_@@_funding_cache_quantity_two_tl}
2798         \@@_funding_cache_quantity_year:nnn {#1} {quantity-year3}
2799         {\l_@@_funding_cache_quantity_three_tl}
2800         \@@_funding_cache_quantity_year:nnn {#1} {quantity-year4}
2801         {\l_@@_funding_cache_quantity_four_tl}
2802         \@@_funding_cache_quantity_year:nnn {#1} {quantity-year5}
2803         {\l_@@_funding_cache_quantity_five_tl}
2804       }
2805     }
2806   }
2807   \group_end:
2808 }
2809
2810 \cs_new_protected:Npn \@@_funding_sum_set:Nnnnn #1#2#3#4#5
2811 {
2812   % #1 result, #2 database, #3 project, #4 type, #5 field list
2813   \fp_zero:N \l_@@_funding_cache_fp
2814   \clist_map_inline:nn {#5}
2815   {
2816     \tl_set:Nx \l_@@_funding_cache_key_tl {#2/#3/#4/#1}
2817     \prop_get:NVNT \g_@@_funding_sum_prop
2818     \l_@@_funding_cache_key_tl \l_@@_funding_cache_value_tl
2819     {
2820       \fp_add:Nn \l_@@_funding_cache_fp
2821       { \l_@@_funding_cache_value_tl }
2822     }
2823   }
2824   \tl_set:Nx #1 { \fp_to_decimal:N \l_@@_funding_cache_fp }
2825 }
2826
2827 \bool_new:N \g_@@_document_started_bool
2828
2829 \AtBeginDocument
2830 { \bool_gset_true:N \g_@@_document_started_bool }
2831
2832 % This command is deliberately public and free of expl3 punctuation because
2833 % it is written to, and subsequently read from, LaTeX .aux files.
2834 \NewDocumentCommand \dfgRestoreRequestedFunding { +m }
2835 {
2836   \bool_if:NF \l_@@_class_fastcompile_project_bool
2837   {
2838     \@@_add_entry:nnn { funding } { RequestedFundingOverview } {#1}
2839     \@@_funding_cache_entry:nn { RequestedFundingOverview } {#1}
2840   }
2841 }
2842
2843 % This public command is written to the auxiliary file. Keep its name free of
2844 % expl3 punctuation so LaTeX can read it before the document body starts.
2845 \cs_new_protected:Npn \@@_requested_funding_staff_overview_ensure_schema:
2846 {

```

```

2847 \DTLifdbexists { RequestedFundingStaffOverview }
2848 { }
2849 { \DTLaction [ name = RequestedFundingStaffOverview ] { new } }
2850 \clist_map_inline:nn
2851 {
2852   ref-project-id, funding-status, staff-type, ref-person-id,
2853   firstname, lastname, academic-degree, positionText, field-of-research,
2854   ref-institution-id, ref-affiliation-id, department, commitment, category,
2855   funding-source, description
2856 }
2857 {
2858   \DTLifhaskey { RequestedFundingStaffOverview } {##1}
2859   { }
2860   { \DTLaddcolumn { RequestedFundingStaffOverview } {##1} }
2861 }
2862 }
2863
2864 \NewDocumentCommand \dfgRestoreRequestedFundingStaff { +m }
2865 {
2866   \bool_if:NF \l_@@_class_fastcompile_project_bool
2867   {
2868     \@@_requested_funding_staff_overview_ensure_schema:
2869     \@@_add_entry:nnn { staff } { RequestedFundingStaffOverview } {#1}
2870   }
2871 }
2872
2873 \bool_if:NF \l_@@_class_fastcompile_project_bool
2874 { \@@_requested_funding_staff_overview_ensure_schema: }
2875
2876 % Existing direct-cost rows are normally declared in the individual project
2877 % descriptions, after section 2.1.1 has already been typeset. Mirror them to
2878 % a dedicated overview database so that the project table keeps using its live
2879 % rows without counting the restored rows twice.
2880 \cs_new_protected:Npn
2881   \@@_requested_and_existing_direct_costs_overview_ensure_schema:
2882   {
2883     \DTLifdbexists { RequestedAndExistingFundingDirectCostsOverview }
2884     { }
2885     { \DTLaction [ name = RequestedAndExistingFundingDirectCostsOverview ] { new } }
2886     \clist_map_inline:nn
2887     {
2888       ref-project-id, ref-affiliation-id, financed-by,
2889       sum-year1, sum-year2, sum-year3, sum-year4, sum-year5
2890     }
2891     {
2892       \DTLifhaskey { RequestedAndExistingFundingDirectCostsOverview } {##1}
2893       { }
2894       { \DTLaddcolumn { RequestedAndExistingFundingDirectCostsOverview } {##1} }
2895     }
2896   }
2897
2898 % This public command is written to the auxiliary file. Its name deliberately
2899 % contains no expl3 punctuation so that LaTeX can read it at the start of the
2900 % following run.
2901 \NewDocumentCommand \dfgRestoreRequestedAndExistingFundingDirectCosts { +m }
2902 {
2903   \bool_if:NF \l_@@_class_fastcompile_project_bool
2904   {
2905     \@@_requested_and_existing_direct_costs_overview_ensure_schema:
2906     \@@_add_entry:nnn { funding }
2907     { RequestedAndExistingFundingDirectCostsOverview } {#1}
2908   }
2909 }
2910
2911 \bool_if:NF \l_@@_class_fastcompile_project_bool
2912 { \@@_requested_and_existing_direct_costs_overview_ensure_schema: }

```

```

2913
2914 % Keep the overview tables usable on the first run, before any project-local
2915 % entries have reached the auxiliary files. A newly created database has no
2916 % columns, so establish the RequestedFunding schema explicitly: otherwise
2917 % sorting or filtering an empty overview raises ''No sort columns'' and
2918 % ''Unknown column key'' errors. No placeholder row is required.
2919 \bool_if:NF \l_@@_class_fastcompile_project_bool
2920 {
2921   \DTLifdbexists { RequestedFundingOverview }
2922   { }
2923   {
2924     \DTLaction [ name = RequestedFundingOverview ] { new }
2925     \DTLaddcolumn { RequestedFundingOverview } { ref-project-id }
2926     \DTLaddcolumn { RequestedFundingOverview } { type }
2927     \DTLaddcolumn { RequestedFundingOverview } { category }
2928     \DTLaddcolumn { RequestedFundingOverview } { percentage }
2929     \DTLaddcolumn { RequestedFundingOverview } { quantity-year1 }
2930     \DTLaddcolumn { RequestedFundingOverview } { quantity-year2 }
2931     \DTLaddcolumn { RequestedFundingOverview } { quantity-year3 }
2932     \DTLaddcolumn { RequestedFundingOverview } { quantity-year4 }
2933     \DTLaddcolumn { RequestedFundingOverview } { quantity-year5 }
2934     \DTLaddcolumn { RequestedFundingOverview } { sum-year1 }
2935     \DTLaddcolumn { RequestedFundingOverview } { sum-year2 }
2936     \DTLaddcolumn { RequestedFundingOverview } { sum-year3 }
2937     \DTLaddcolumn { RequestedFundingOverview } { sum-year4 }
2938     \DTLaddcolumn { RequestedFundingOverview } { sum-year5 }
2939   }
2940 }
2941
2942 \cs_new_protected:Npn \@@_cache_requested_funding:n #1
2943 {
2944   \bool_if:NTF \g_@@_document_started_bool
2945   {
2946     \iow_now:Nx \@auxout
2947     {
2948       \token_to_str:N \dfgRestoreRequestedFunding
2949       { \exp_not:n {#1} }
2950     }
2951   }
2952   { \dfgRestoreRequestedFunding{#1} }
2953 }
2954
2955 \cs_new_protected:Npn \@@_cache_requested_funding_staff:n #1
2956 {
2957   \bool_if:NTF \g_@@_document_started_bool
2958   {
2959     \iow_now:Nx \@auxout
2960     {
2961       \token_to_str:N \dfgRestoreRequestedFundingStaff
2962       { \exp_not:n {#1} }
2963     }
2964   }
2965   { \dfgRestoreRequestedFundingStaff{#1} }
2966 }
2967
2968 \cs_new_protected:Npn
2969   \@@_cache_requested_and_existing_direct_costs:n #1
2970 {
2971   \bool_if:NTF \g_@@_document_started_bool
2972   {
2973     \iow_now:Nx \@auxout
2974     {
2975       \token_to_str:N \dfgRestoreRequestedAndExistingFundingDirectCosts
2976       { \exp_not:n {#1} }
2977     }
2978   }

```

```

2979 { \dfgRestoreRequestedAndExistingFundingDirectCosts{#1} }
2980 }
2981
2982 \NewDocumentCommand \addEntry { O{} m m }
2983 {
2984   \bool_if:NF \l_@@_class_fastcompile_project_bool
2985   {
2986     \tl_if_eq:nnTF {#1} { cv }
2987     { \bool_if:NTF \l_@@_class_cv_bool
2988     { \@@_add_entry:nnn {#1} {#2} {#3} }
2989     { \msg_warning:nnn { dfg } { cv-entry-omitted } {#2} } }
2990     {% default behaviour: use #2 as family if #1 is empty
2991     \tl_if_empty:nTF {#1}
2992     { \@@_add_entry:nnn {#2} {#2} {#3} }
2993     {
2994       \@@_add_entry:nnn {#1} {#2} {#3}
2995       \str_if_eq:nnT {#1} { funding }
2996       { \@@_funding_cache_entry:nn {#2} {#3} }
2997       \bool_lazy_all:nT
2998       {
2999         { \str_if_eq_p:nn {#1} { funding } }
3000         { \str_if_eq_p:nn {#2} { RequestedFunding } }
3001       }
3002       { \@@_cache_requested_funding:n {#3} }
3003       \bool_lazy_all:nT
3004       {
3005         { \str_if_eq_p:nn {#1} { staff } }
3006         { \str_if_eq_p:nn {#2} { RequestedFundingStaff } }
3007       }
3008       { \@@_cache_requested_funding_staff:n {#3} }
3009       \bool_lazy_all:nT
3010       {
3011         { \str_if_eq_p:nn {#1} { funding } }
3012         { \str_if_eq_p:nn {#2} { RequestedAndExistingFundingDirectCosts } }
3013       }
3014       { \@@_cache_requested_and_existing_direct_costs:n {#3} }
3015     }
3016   }
3017 }
3018 }

```

Issued by `\addEntry` when an entry is targeted at the `cv` database but no CV is being produced (`\l_dfg_class_cv_bool` is false). The omitted entry's key-value data is included in the message to aid debugging.

```

3019 \msg_new:nnn { dfg } { cv-entry-omitted }
3020 {
3021   CV~entry~omitted:~no~CV~is~being~created.^^J
3022   Entry~data:~'#1'.
3023 }

```

There is a shortcut to define a database for e.g. a whole command to avoid all the time to write something like `\getEntry [⟨person⟩] {⟨MM⟩} {⟨lastname⟩}`. So you can define `\tmpLocalDB` with the database name.

```

3024 \str_set:Nn \tmpLocalDB {}

```

`\getEntry`^{P.28} The primary read command: `\getEntry [⟨db⟩] {⟨id-value⟩} {⟨field⟩} [⟨id-field⟩]`.

- 1) #1: Database name (default: `\tmpLocalDB`).
- 2) #2: The value to look up in the `id-field` column.
- 3) #3: The field whose value is to be returned.
- 4) #4: The name of the ID column (default: `id`); change this to look up rows by a field other than the primary key.

The guard logic runs in order: If `fastcompile-project`^{P.34}=`true`, replace the output with a literal identifier placeholder to skip the query entirely. If #1 is empty (`\tmpLocalDB` not set), warn and abort. If the database does not exist, warn and abort. Retrieve the value; if null/empty, warn (but only outside the tabularray measuring pass to avoid duplicate messages). Output via `\dfgShowTag` so that `showtags`^{P.34} annotations are applied automatically.

PDF-bookmark note (FIXME): When #3 contains LaTeX commands, the value may produce garbage in PDF bookmarks. Wrapping the output in `\texorpdfstring` would fix this but requires knowing at definition time what

the field contains, which is not possible. A workaround is to use `\texorpdfstring` at the call site for fields that appear in section headings.

```

3025 %\getEntry [<DB>]{<id-value>}{<field>}                [<id-column>]
3026 %   single field, prints with \dfgShowTag wrapping
3027 %
3028 %\getEntry* [<DB>]{<id-value>}{<assignments>}          [<id-column>]
3029 %   multi-field, assigns to macros, no printing
3030 \NewDocumentCommand \dfgFastReference { m }
3031 { { \color{black-50}\ttfamily #1 } }
3032
3033 \cs_new_protected:Npn \@@_fast_clear_assignment:w #1 = #2 \q_stop
3034 { \cs_set:Npn #1 { } }
3035
3036 \cs_new_protected:Npn \@@_fast_clear_assignments:n #1
3037 {
3038   \clist_map_inline:nn {#1}
3039   { \@@_fast_clear_assignment:w ##1 \q_stop }
3040 }
3041
3042 \NewDocumentCommand{\getEntry}{s O{\tmpLocalDB} m m O{id}}
3043 {%
3044   \bool_if:NTF \l_@@_class_fastcompile_project_bool
3045   {
3046     \IfBooleanTF{#1}
3047     { \@@_fast_clear_assignments:n {#4} }
3048     { \dfgFastReference{#3} }
3049   }
3050   {
3051     \IfBooleanTF{#1}
3052     { \@@_get_entry_multi:nnnn {#2}{#3}{#4}{#5} }
3053     { \@@_get_entry_single:nnnn {#2}{#3}{#4}{#5} }%
3054   }
3055 }
3056
3057 % --- single-field (your existing behaviour, lightly cleaned) -----
3058 \cs_new_protected:Nn \@@_get_entry_single:nnnn
3059 {
3060   % #1 db, #2 id-value, #3 field, #4 id-column
3061   \tl_if_blank:nTF {#1}
3062   { \msg_warning:nne {dfg}{database-name-not-given}{#2-/#3} }
3063   {%
3064     \DTLifdbexists{#1}
3065     {%
3066       \DTLgetvalueforkey{\thevalue}{#3}{#1}{#4}{#2}%
3067       \DTLifnulllorempty{\thevalue}
3068       {%
3069         \bool_if:NF \lTblrMeasuringBool
3070         { \msg_warning:nneee {dfg}{missing-key}{#1}{#2}{#3} }%
3071       }
3072       { \dfgShowTag{#2}{#3}{\thevalue}[#1] }%
3073     }
3074     { \msg_warning:nne {dfg}{database-not-found}{#1} }%
3075   }%
3076 }
3077
3078 % --- multi-field: hoists checks out of per-field loop -----
3079 \cs_new_protected:Nn \@@_get_entry_multi:nnnn
3080 {
3081   \tl_if_blank:nTF {#1}
3082   { \msg_warning:nne {dfg}{database-name-not-given}{#2-/-multi} }
3083   {%
3084     \tl_set:Nx \l_tmpa_tl {#1}%
3085     \tl_set:Nx \l_tmpb_tl {#2}%
3086     \DTLifdbexists{\l_tmpa_tl}
3087     {%
3088       % \typeout{DEBUG:~about~to~assign~from~\l_tmpa_tl~for~id~\l_tmpb_tl}%

```

```

3089     \use:x
3090     {
3091         \exp_not:N \DTLassignfirstmatch
3092         { \exp_not:V \l_tmpa_tl }
3093         { \exp_not:n {#4} }
3094         { \exp_not:V \l_tmpb_tl }
3095         { \exp_not:n {#3} }
3096     }%
3097     % \typeout{DEBUG:~done.~theLastName~==~\theLastName}%
3098     }
3099     { \msg_warning:nne {dfg}{database-not-found}{\l_tmpa_tl} }%
3100 }%
3101 }
3102
3103 \cs_new_protected:Npn \@@_check_empty:w #1 = #2 \q_stop #3#4
3104 {
3105     % #1: target macro tokens, #2: field name, #3: db, #4: id
3106     \exp_args:NV \DTLifnullorempty #1
3107     { \msg_warning:nnee {dfg}{missing-key}{#3}{#4}{#2} }
3108     { }%
3109 }
3110
3111 \cs_new_protected:Nn \@@_check_empty:nnn
3112 {
3113     % #1 db, #2 id, #3 single "\macro = field" pair
3114     \@@_check_empty:w #3 \q_stop {#1}{#2}%
3115 }
3116

```

Sometimes you need to get the last name of a person in the text. Here is how to do it, `\getName`^{→P.29}.

```

3117 \NewDocumentCommand{\getName}{m}{\getEntry[person]{#1}{lastname}}

```

Sometimes you need to get the full name of a person in the text. Here is how to do it, `\getFullName`^{→P.29}.

```

3118 \NewDocumentCommand{\getFullName}{s m}
3119 {%
3120     \bool_if:NTF \l_@@_class_fastcompile_project_bool
3121     { \dfgFastReference{#2} }
3122     {
3123         % #1: starred -> include academic degree
3124         % #2: person id
3125         \getEntry*[person]{#2}{
3126             \theAcademicDegree = academicdegree,
3127             \theFirstName      = firstname,
3128             \theLastName       = lastname
3129         }%
3130         \IfBooleanT{#1}
3131         {
3132             \DTLifnullorempty{\theAcademicDegree}{}
3133             { \dfgShowTag{#2}{academicdegree}{\theAcademicDegree}[person]\space }
3134         }%
3135         \dfgShowTag{#2}{firstname}{\theFirstName}[person]\space
3136         \dfgShowTag{#2}{lastname}{\theLastName}[person]
3137     }
3138 }

```

`\compareEntry`^{→P.31} `\compareEntry`^{→P.31} [`<db>`] {`<id>`} {`<field>`} {`<value>`} {`<true>`} {`<false>`} reads `<field>` from the row with the given `<id>` and executes `<yes>` if it matches `<value>`, otherwise `<no>`. It is used throughout the tables to branch on e.g. project type or status without repeating the full `\DTLgetvalueforkey/\if` pattern.

The internal implementation `\dfg_compare_entry:nnnnnn` runs the same three guard checks as `\getEntry`^{→P.28} (empty DB name, non-existent DB), then uses `\exp_args:Nx` to fully expand `\thevalue` before the `\tl_if_eq:nnTF` test, ensuring that stored macro values are resolved correctly.

```

3139 \cs_new_protected:Npn \dfg_compare_entry:nnnnnn #1#2#3#4#5#6
3140 {
3141     \bool_if:NTF \l_@@_class_fastcompile_project_bool
3142     {#6}
3143     {
3144         \tl_if_blank:nTF {#1}

```

```

3145 { \msg_warning:nnn { dfg } { database-name-not-given } {#1} }
3146 {
3147   \DTLifdbexists{#1}
3148   {
3149     \DTLgetvalueforkey{\thevalue}{#3}{#1}{id}{#2}%
3150     \str_if_eq:eeTF { \thevalue } {#4}
3151     {#5}
3152     {#6}
3153   }
3154   { \msg_warning:nnn { dfg } { database-not-found } {#1} }
3155 }
3156 }
3157 }
3158
3159 \NewDocumentCommand \compareEntry { O{\tmpLocalDB} m m m m m }
3160 {
3161   \dfg_compare_entry:nnnnnn {#1}{#2}{#3}{#4}{#5}{#6}
3162 }

```

3.2.17 Table and list dispatch (\printTable, \printList)

Rather than requiring the user to call `\ProjectLeadersTable`, `\OverviewOfFundsRequestedForStaffTable`, etc. directly, two thin dispatchers are provided: `\printTable[<opts>]{<name>}` and `\printList[<opts>]{<name>}`.

They synthesise the command name by appending `Table` or `List` to the *<name>* argument (using `\cs:w...\cs_end:`), then pass the optional argument through if present. This pattern means new tables can be added to the class without any change to user-facing call sites.

Both commands check `fastcompile` first and emit a `\dfgItemSkipped` placeholder instead of running the real command when compilation speed is prioritised. During real rendering they also establish the compact former-project context: reference-only projects receive an asterisk, and a local legend is added only if at least one such project was encountered. A `\rowNumber` counter is reset before each table for use in zebra-stripe logic inside individual table implementations.

```

3163
3164 \tl_new:N \l_tblr_body_tl           % token list that will hold the rows
3165
3166 \bool_new:N \l_@@_former_project_compact_bool
3167 \bool_new:N \g_@@_former_project_seen_bool
3168
3169 \cs_new_protected:Npn \@@_former_project_note:
3170 {
3171   \par\smallskip
3172   \noindent
3173   {\normalfont\normalcolor\footnotesize
3174     \textsuperscript{*}\,Former~project}\par
3175 }
3176
3177 \cs_new_protected:Npn \@@_former_project_context:n #1
3178 {
3179   \bool_set_true:N \l_@@_former_project_compact_bool
3180   % Table cells and list implementations introduce their own groups, so the
3181   % occurrence flag must be latched globally for the duration of this context.
3182   \bool_gset_false:N \g_@@_former_project_seen_bool
3183   #1
3184   \bool_if:NT \g_@@_former_project_seen_bool
3185     { \@@_former_project_note: }
3186   \bool_set_false:N \l_@@_former_project_compact_bool
3187   \bool_gset_false:N \g_@@_former_project_seen_bool
3188 }
3189
3190 \cs_new_protected:Npn \@@_print_thing:nnnn #1#2#3#4 {
3191   \bool_if:NTF \l_@@_class_fastcompile_bool
3192     { \@@_print_thing_skipped:nn {#1} {#3} }
3193     {%
3194       \@@_former_project_context:n
3195       {
3196         #4%
3197         \StartTimer

```

```

3198     \@@_print_thing_call:nnn {#1} {#2} {#3}%
3199     \StopTimer { \@@_print_thing_label:n {#3} }%
3200   }
3201 }
3202 }
3203
3204 \cs_new_protected:Npn \@@_print_thing_call:nnn #1#2#3 {
3205   \tl_if_head_is_group:nTF {#3}
3206   { \@@_print_thing_split:nnw {#1} {#2} #3 \empty \q_stop }
3207   { \cs:w #3 #1 \cs_end: #2 }
3208 }
3209
3210 \cs_new_protected:Npn \@@_print_thing_split:nnw #1#2#3#4 \q_stop {
3211   \cs:w #3 #1 \cs_end: #2 #4
3212 }
3213
3214 \cs_new:Npn \@@_print_thing_label:n #1 {
3215   \tl_if_head_is_group:nTF {#1}
3216   { \@@_print_thing_label_aux:w #1 \empty \q_stop }
3217   { #1 }
3218 }
3219
3220 \cs_new:Npn \@@_print_thing_label_aux:w #1#2 \q_stop {
3221   #1 \tl_if_blank:nF {#2} { - \@@_print_thing_label_tail:n {#2} }
3222 }
3223
3224 \cs_new:Npn \@@_print_thing_label_tail:n #1 {
3225   \tl_if_head_eq_charcode:nTF {#1} [
3226     { \@@_print_thing_label_skip_optional:w #1 \q_stop }
3227     { \tl_head:n {#1} }
3228 }
3229
3230 \cs_new:Npn \@@_print_thing_label_skip_optional:w [#1]#2 \q_stop {
3231   \tl_head:n {#2}
3232 }
3233
3234 \cs_new_protected:Npn \@@_print_thing_skipped:nn #1#2 {
3235   \dfgItemSkipped { \@@_print_thing_label:n {#2} #1 }
3236 }
3237
3238 \NewDocumentCommand{\printTable}{ o +m }{%
3239   \IfNoValueTF {#1}
3240   { \@@_print_thing:nnnn { Table } { } {#2} { \setcounter{rowNumber}{0} } }
3241   { \@@_print_thing:nnnn { Table } { [#1] } {#2} { \setcounter{rowNumber}{0} } }%
3242 }
3243
3244 \NewDocumentCommand{\printList}{ o +m }{%
3245   \IfNoValueTF {#1}
3246   { \@@_print_thing:nnnn { List } { } {#2} { } }
3247   { \@@_print_thing:nnnn { List } { [#1] } {#2} { } }%
3248 }
3249
3250 \NewDocumentCommand{\printPlot}{ o +m }{%
3251   \IfNoValueTF {#1}
3252   { \@@_print_thing:nnnn { Plot } { } {#2} { } }
3253   { \@@_print_thing:nnnn { Plot } { [#1] } {#2} { } }%
3254 }
3255
3256 \newcounter{rowNumber}

```

3.2.18 Data tables

All tables follow the same three-phase pattern: **Body accumulation:** A `\DTLforeach*` loop iterates over the relevant database (filtered and sorted as required) and appends one `tblr` row to the token list `\l_tblr_body_tl` via `\tl_gput_right:Nx`. Using a global token list and `:Nx` (full expansion) ensures that database values are resolved at loop time rather than at `tblr` rendering time. **Table opening:** `\begin{tblr}` with the main theme, `expand=\l_tblr_body_tl`, `long` (for page-breaking), and a column spec tailored to the specific table. **Header**

row + body: A literal first row provides column headings; \l_tblr_body_t1 follows as the data rows.

ProjectLeadersTable Lists all PIs who are active in the current funding period (\theFundingPeriodNumeral), sorted by last name. The filter applies two conditions simultaneously: **period**^{→P.26} must contain the current numeral and **role**^{→P.26} must contain PI. The first cell of every row defines the hyperlink destination **pi**: <id> used by \getPI.

```

3257
3258 % Use the same institution formatter as the CV section. The public
3259 % \dfgInstitutionList macro maps institution ids through \_@@_one_institution:n
3260 % and uses \par\medskip between multiple institutions in the standard layout.
3261 \NewDocumentCommand{\dfgPLInstitutionList}{m}{%
3262   \dfgInstitutionList{#1}[abbreviation]%
3263 }
3264
3265 \int_new:N \l_@@_pl_iter_int
3266
3267 % Keep the hyperref command protected while tabularray expands the assembled
3268 % table body. It is executed only when the corresponding name cell is typeset.
3269 \cs_new_protected:Npn \@@_pi_target:n #1
3270 { \hypertarget{pi:#1}{} }
3271
3272 \NewDocumentCommand{\ProjectLeadersTable}{}{%
3273   \def\tblrbody{}%
3274
3275   \StartTimer
3276   \DTLsort*{lastname}{person}%
3277   \StopTimer{ProjectLeaderTable-sort}
3278
3279   \int_zero:N \l_@@_pl_iter_int
3280
3281   \StartTimer
3282   \DTLforeach*[
3283     \DTLisinlist{\theFundingPeriodNumeral}{\period}
3284     \and
3285     \DTLisinlist{PI}{\role}
3286   ]{person}{
3287     \id          = id,
3288     \role        = role,
3289     \lastname    = lastname,
3290     \firstname   = firstname,
3291     \academicdegree = academicdegree,
3292     \period      = period,
3293     \refProjectId = ref-project-id,
3294     \refInstitutionId = ref-institution-id,
3295     \doctorateYear = doctorateYear,
3296     \gender      = gender
3297   }{%
3298     \int_incr:N \l_@@_pl_iter_int
3299     \protected@edef\tblrbody{\tblrbody
3300       {\noexpand\@@_pi_target:n{\id}%
3301         {\noexpand{\color{referencePI}}\bfseries
3302           \noexpand\dfgShowTag{\id}{lastname}{\lastname}[person]},~
3303           \noexpand\dfgShowTag{\id}{firstname}{\firstname}[person]}
3304         \noexpand\
3305           \noexpand\dfgShowTag{\id}{academicdegree}{\academicdegree}[person]}
3306         \noexpand& \noexpand\dfgShowTag{\id}{gender}{\gender}[person]
3307         \noexpand& \noexpand\dfgShowTag{\id}{doctorateYear}{\doctorateYear}[person]
3308         \noexpand& {\noexpand\dfgPLInstitutionList{\id}}
3309         \noexpand& \noexpand\getProject{\refProjectId}
3310         \noexpand\
3311       }%
3312     }
3313   \StopTimer{PL-loop}
3314   \iow_term:x { PL-iterations:~ \int_use:N \l_@@_pl_iter_int }
3315
3316   \StartTimer
3317   \begin{tblr}[

```

```

3318     theme = main,
3319     expand = \tblrbody,
3320     long
3321 ]{
3322     colspec = {t{3.5cm}t{1cm}t{1.6cm}X[t]t{1.3cm}},
3323     column{1} = { fg = referencePI, haln = l },
3324     column{2} = { haln = c },
3325     column{3} = { haln = c },
3326     column{4} = { haln = l },
3327     column{5} = { haln = c },
3328     rowhead = 1,
3329     row{1} = {
3330         bg = tableHeadingsBG,
3331         fg = tableHeadingsFont,
3332         font = \footnotesize\bfseries,
3333         haln = c,
3334         valn = t,
3335         guard
3336     },
3337 }
3338 Project~ leader
3339 & Gender
3340 & {Doctorate \\\ obtained~ in}
3341 & {Home~ institution, \\\ location}
3342 & Project(s) \\\
3343 \tblrbody
3344 \end{tblr}
3345 \StopTimer{PL-render}
3346 }

```

After the list of the PIs we need to have an aggregated list of the participating institutions.

```

3347 \prop_new:N \l_@@_inst_to_aff_prop
3348 \prop_new:N \l_@@_inst_name_prop
3349 \prop_new:N \l_@@_inst_seen_prop
3350 \prop_new:N \l_@@_aff_seen_prop
3351 \prop_new:N \l_@@_aff_to_insts_prop % values are seq names (tl)
3352 \prop_new:N \l_@@_aff_name_prop
3353 \seq_new:N \l_@@_affiliations_seq
3354 \seq_new:N \l_@@_aff_sort_seq
3355 \seq_new:N \l_@@_inst_sort_seq
3356 \tl_new:N \l_@@_output_tl
3357 \tl_new:N \l_@@_aff_label_tl
3358 \int_new:N \l_@@_seq_counter_int
3359 \cs_generate_variant:Nn \seq_set_from_clist:Nn { Ne , NV }
3360
3361 % Append an institution name to the per-affiliation seq.
3362 % Lazily creates the seq on first use and stores its name in the prop.
3363 \cs_new_protected:Npn \@@_append_inst:nn #1#2 {
3364     \prop_get:NnNTF \l_@@_aff_to_insts_prop {#1} \l_tmpd_tl
3365     {%
3366         % \l_tmpd_tl now holds the seq's csname; append to it
3367         \seq_put_right:cn { \l_tmpd_tl } {#2}%
3368     }
3369     {%
3370         \int_incr:N \l_@@_seq_counter_int
3371         \tl_set:Nx \l_tmpd_tl
3372         { \l_@@_inst_seq \int_use:N \l_@@_seq_counter_int _seq }%
3373         \seq_new:c { \l_tmpd_tl }%
3374         \seq_put_right:cn { \l_tmpd_tl } {#2}%
3375         \prop_put:NnV \l_@@_aff_to_insts_prop {#1} \l_tmpd_tl
3376     }
3377 }
3378 \cs_generate_variant:Nn \@@_append_inst:nn { VV }
3379
3380 \cs_new_protected:Npn \@@_collect_pi_institution:n #1
3381 {
3382     \tl_if_blank:nF {#1}

```

```

3383 {
3384 \prop_if_in:NnF \l_@@_inst_seen_prop {#1}
3385 {%
3386 \prop_put:Nnn \l_@@_inst_seen_prop {#1} {1}%
3387 \prop_get:NnNT \l_@@_inst_to_aff_prop {#1} \l_tmpb_tl
3388 {%
3389 \prop_get:NnNT \l_@@_inst_name_prop {#1} \l_tmpe_tl
3390 {
3391 \tl_set:Ne \l_tmpe_tl
3392 {
3393 \exp_not:N \dfgShowTag {#1}{name}
3394 {\exp_not:V \l_tmpe_tl}[institution]
3395 }
3396 \@@_append_inst:VV \l_tmpb_tl \l_tmpe_tl
3397 }%
3398 \prop_if_in:NVF \l_@@_aff_seen_prop \l_tmpb_tl
3399 {%
3400 \prop_put:NVn \l_@@_aff_seen_prop \l_tmpb_tl {1}%
3401 \seq_put_right:NV \l_@@_affiliations_seq \l_tmpb_tl
3402 }%
3403 }%
3404 }%
3405 }
3406 }
3407
3408 \NewDocumentCommand{\ParticipatingInstitutionsList}{ O{count} }
3409 {%
3410 % #1: alpha: affiliations are ordered alphabetically
3411 % #1: count: by count
3412 \prop_clear:N \l_@@_inst_to_aff_prop
3413 \prop_clear:N \l_@@_inst_name_prop
3414 \prop_clear:N \l_@@_inst_seen_prop
3415 \prop_clear:N \l_@@_aff_seen_prop
3416 \prop_clear:N \l_@@_aff_to_insts_prop
3417 \seq_clear:N \l_@@_affiliations_seq
3418 \tl_clear:N \l_@@_output_tl
3419 \int_zero:N \l_@@_seq_counter_int
3420
3421 % --- 1. One pass over institution: id -> aff-id, id -> name -----
3422 \DTLforeach*{institution}{
3423 \l_tmpe_tl = id,
3424 \l_tmpb_tl = ref-affiliation-id,
3425 \l_tmpe_tl = name
3426 }{%
3427 \prop_put:NVV \l_@@_inst_to_aff_prop \l_tmpe_tl \l_tmpb_tl
3428 \prop_put:NVV \l_@@_inst_name_prop \l_tmpe_tl \l_tmpe_tl
3429 }
3430
3431 % --- 2. One pass over person: collect active PI institutions -----
3432 \DTLforeach*[
3433 \DTLisinlist{\theFundingPeriodNumeral}{\pPeriod} \and
3434 \DTLisinlist{PI}{\pRole}
3435 ]{person}{ \l_tmpe_tl = ref-institution-id , \pPeriod=period, \pRole=role }{%
3436 \seq_set_from_clist:NV \l_tmpe_seq \l_tmpe_tl
3437 \seq_map_inline:Nn \l_tmpe_seq
3438 { \@@_collect_pi_institution:n {##1} }%
3439 }
3440
3441 % --- 3a. Precompute affiliation display names -----
3442 \prop_clear:N \l_@@_aff_name_prop
3443 \seq_map_inline:Nn \l_@@_affiliations_seq {%
3444 \getEntry*[affiliation]{##1}{ \l_tmpe_tl = name }%
3445 \prop_put:NnV \l_@@_aff_name_prop {##1} \l_tmpe_tl
3446 }
3447
3448 % --- 3b. Sort affiliations according to requested order -----

```

```

3449 \str_case:nnF {#1}
3450 {
3451   { alpha }
3452   {%
3453     \seq_sort:Nn \l_@@_affiliations_seq
3454     {%
3455       \prop_get:NnN \l_@@_aff_name_prop {##1} \l_tmpa_tl
3456       \prop_get:NnN \l_@@_aff_name_prop {##2} \l_tmpb_tl
3457       \str_compare:eNeTF { \l_tmpa_tl } < { \l_tmpb_tl }
3458       { \sort_return_same: }
3459       { \sort_return_swapped: }%
3460     }%
3461   }
3462   { count }
3463   {%
3464     \seq_sort:Nn \l_@@_affiliations_seq
3465     {%
3466       \prop_get:NnN \l_@@_aff_to_insts_prop {##1} \l_tmpc_tl
3467       \prop_get:NnN \l_@@_aff_to_insts_prop {##2} \l_tmpd_tl
3468       \int_compare:nNnTF
3469       { \seq_count:c { \l_tmpc_tl } } > { \seq_count:c { \l_tmpd_tl } }
3470       { \sort_return_same: }
3471       {%
3472         \int_compare:nNnTF
3473         { \seq_count:c { \l_tmpc_tl } } < { \seq_count:c { \l_tmpd_tl } }
3474         { \sort_return_swapped: }
3475         {%
3476           % equal counts → alphabetical tiebreak
3477           \prop_get:NnN \l_@@_aff_name_prop {##1} \l_tmpa_tl
3478           \prop_get:NnN \l_@@_aff_name_prop {##2} \l_tmpb_tl
3479           \str_compare:eNeTF { \l_tmpa_tl } < { \l_tmpb_tl }
3480           { \sort_return_same: }
3481           { \sort_return_swapped: }%
3482         }%
3483       }%
3484     }%
3485   }
3486 }
3487 {%
3488   \msg_warning:nnn { @@ } { unknown-order }
3489   { Unknown~order~' #1';~using~'alpha'. }%
3490   \seq_sort:Nn \l_@@_affiliations_seq
3491   {%
3492     \prop_get:NnN \l_@@_aff_name_prop {##1} \l_tmpa_tl
3493     \prop_get:NnN \l_@@_aff_name_prop {##2} \l_tmpb_tl
3494     \str_compare:eNeTF { \l_tmpa_tl } < { \l_tmpb_tl }
3495     { \sort_return_same: }
3496     { \sort_return_swapped: }%
3497   }%
3498 }
3499
3500 % --- 4. Emit output -----
3501 \bool_set_true:N \l_tmpa_bool
3502 \seq_map_inline:Nn \l_@@_affiliations_seq {%
3503   \bool_if:NTF \l_tmpa_bool
3504   { \bool_set_false:N \l_tmpa_bool }
3505   { \tl_put_right:Nn \l_@@_output_tl {\par} }%
3506   \getEntry*[affiliation]{##1}{
3507     \theAffName      = name,
3508     \theAffLocation = location
3509   }%
3510   \prop_get:NnN \l_@@_aff_to_insts_prop {##1} \l_tmpd_tl
3511   \seq_set_eq:Nc \l_@@_inst_sort_seq { \l_tmpd_tl }%
3512   \seq_sort:Nn \l_@@_inst_sort_seq
3513   {%
3514     \str_compare:nNnTF {####1} < {####2}

```

```

3515     { \sort_return_same: }
3516     { \sort_return_swapped: }%
3517 }%
3518 \tl_set:Nx \l_@@_aff_label_tl { \seq_use:Nn \l_@@_inst_sort_seq {\} }%
3519 \tl_put_right:Nx \l_@@_output_tl {%
3520   { \exp_not:N \usekomafont{subsubsection}
3521     \exp_not:N \dfgShowTag {##1}{name}
3522     {\exp_not:N \theAffName}[affiliation]
3523     \exp_not:n {\space()
3524       \exp_not:N \dfgShowTag {##1}{location}
3525       {\exp_not:N \theAffLocation}[affiliation]
3526       \exp_not:n {\}} }%
3527   \exp_not:N \l_@@_aff_label_tl \exp_not:n {\}}%
3528 }%
3529 }
3530 \tl_use:N \l_@@_output_tl
3531 }
3532

```

Very similar to the table for the PIs we need one table for the projects. First we start with a helper command to get for each referenced person the required data.

```

3533 \NewDocumentCommand{\getPersonInformation}{O{person} m}
3534 {%
3535   % #1: database
3536   % #2: comma-separated list of person ids
3537   \def\tmpLocalDB{#1}%
3538   \seq_clear:N \l_tmpa_seq
3539   \seq_set_from_clist:Ne \l_tmpa_seq {#2}%
3540   \bool_if:NTF \l_@@_project_one_Pi_bool
3541   {%
3542     % Single-PI mode: no boxing, just emit each entry inline
3543     \bool_set_true:N \l_tmpa_bool
3544     \seq_map_inline:Nn \l_tmpa_seq
3545     {%
3546       \bool_if:NTF \l_tmpa_bool
3547       { \bool_set_false:N \l_tmpa_bool }
3548       { ~ }%
3549       \__getperson_one:n {##1}%
3550     }%
3551   }
3552   {%
3553     % Multi-PI mode: lay out as a 2-column raster
3554     \begin{tcbrafter}[
3555       raster~ columns=2,
3556       raster~ equal~ height=rows,
3557       raster~ column~ skip=4pt,
3558       raster~ row~ skip=10pt,
3559       Pibox
3560     ]
3561     \seq_map_inline:Nn \l_tmpa_seq
3562     {%
3563       \__getperson_one:n {##1}%
3564     }%
3565     \end{tcbrafter}
3566   }%
3567 }
3568
3569 \cs_new_protected:Npn \__getperson_one:n #1
3570 {%
3571   \getEntry*[\tmpLocalDB]{#1}{
3572     \theFirstName      = firstname,
3573     \theLastName       = lastname,
3574     \theAcademicDegree = academicdegree,
3575     \thePhone          = phone,
3576     \theEmail          = email,
3577     \theInstitution    = ref-institution-id,
3578     \theORCID          = orcid

```

```

3579 }%
3580 \begin{tcolorbox}[Pibox,title={
3581     \dfgShowTag{#1}{firstname}{\theFirstName}[\tmpLocalDB]\space
3582     \color{referencePI}\bfseries
3583     \dfgShowTag{#1}{lastname}{\theLastName}[\tmpLocalDB]
3584     \normalfont\normalcolor,\newline
3585     \dfgShowTag{#1}{academicdegree}{\theAcademicDegree}[\tmpLocalDB]]]
3586 \ifdefempty{\theORCID}{\mbox{~}\!\!\!.75\baselineskip}}{\getORCID{#1}\!\}
3587 \ifdefempty{\theInstitution}{\dfrInstitutionList{#1}\newline}
3588 \ifdefempty{\thePhone}{\}
3589 {\faPhone\space\dfgShowTag{#1}{phone}{\thePhone}[\tmpLocalDB]\!\}
3590 \ifdefempty{\theEmail}{\}
3591 {\faEnvelope\space\dfgShowTag{#1}{email}{\theEmail}[\tmpLocalDB]}
3592 \end{tcolorbox}
3593 }
3594
3595 % =====
3596 % Vorbereitung: kompakte Projects-Table-Daten pro Person
3597 % =====
3598
3599 % --- Allokationen, ausserhalb jeder Funktion -----
3600 \prop_new:N \g_@@_proj_pi_prop
3601 \bool_new:N \g_@@_proj_pi_built_bool
3602 \prop_new:N \g_@@_aff_narrow_prop
3603 \prop_new:N \g_@@_inst_narrow_prop
3604
3605
3606 % Helper für die Render-Zeit-Formatierung
3607 \NewDocumentCommand{\dfgPIformat}{mmm}{%
3608 % #1 = person id, #2 = firstname, #3 = lastname
3609 \dfgShowTag{#1}{firstname}{#2}[person]\space
3610 {\color{referencePI}\bfseries
3611 \dfgShowTag{#1}{lastname}{#3}[person],}\space
3612 }
3613
3614 % Vorbereitung: speichere nur die Tokens, NICHT \color & \bfseries direkt
3615 \cs_new_protected:Npn \@@_proj_pi_build: {
3616 \bool_if:NF \g_@@_proj_pi_built_bool {
3617 \bool_gset_true:N \g_@@_proj_pi_built_bool
3618
3619 % Pass 1+2: Institution-Strings vorberechnen (wie vorher)
3620 \prop_new:N \l_@@_aff_narrow_prop
3621 \DTLforeach*{affiliation}{
3622 \l_tmpa_tl = id,
3623 \l_tmpb_tl = name
3624 }{%
3625 \prop_put:NVV \l_@@_aff_narrow_prop \l_tmpa_tl \l_tmpb_tl
3626 }
3627
3628 \prop_new:N \l_@@_inst_narrow_prop
3629 \DTLforeach*{institution}{
3630 \l_tmpa_tl = id,
3631 \l_tmpb_tl = name,
3632 \l_tmpc_tl = ref-affiliation-id
3633 }{%
3634 \@@_institution_abbreviation_or_name:nN
3635 { \l_tmpa_tl } \l_tmpf_tl
3636 \prop_get:NVNT \l_@@_aff_narrow_prop \l_tmpc_tl \l_tmpd_tl {%
3637 \tl_set:Nx \l_tmpe_tl
3638 {
3639 \exp_not:N \dfgShowTag
3640 {\exp_not:N \l_tmpa_tl}
3641 {\exp_not:N \l_@@_institution_label_field_tl}
3642 {\exp_not:N \l_tmpf_tl}[institution]
3643 ,~
3644 \exp_not:N \dfgShowTag

```

```

3645         {\exp_not:V \l_tmpe_tl}{name}
3646         {\exp_not:V \l_tmpe_tl}{affiliation]
3647     }
3648     \prop_put:NVV \l_@@_inst_narrow_prop \l_tmpe_tl \l_tmpe_tl
3649 }
3650 }
3651
3652 % Pass 3: per Person die ganze Zelle vorberechnen, mit \dfgPIformat
3653 \DTLforeach*{person}{
3654     \l_tmpe_tl = id,
3655     \l_tmpe_tl = firstname,
3656     \l_tmpe_tl = lastname,
3657     \l_tmpe_tl = ref-institution-id
3658 }{%
3659     \tl_clear:N \l_tmpe_tl
3660     \tl_put_right:Nx \l_tmpe_tl {%
3661         \exp_not:N \dfgPIformat
3662         { \exp_not:V \l_tmpe_tl }
3663         { \exp_not:V \l_tmpe_tl }
3664         { \exp_not:V \l_tmpe_tl }%
3665     }%
3666     % Institutions, separator ";"
3667     \seq_set_from_clist:NV \l_tmpe_seq \l_tmpe_tl
3668     \bool_set_true:N \l_tmpe_bool
3669     \seq_map_inline:Nn \l_tmpe_seq {%
3670         \bool_if:NTF \l_tmpe_bool
3671         { \bool_set_false:N \l_tmpe_bool }
3672         { \tl_put_right:Nn \l_tmpe_tl { ;~ } }%
3673     }
3674     \prop_get:NnNT \l_@@_inst_narrow_prop {##1} \l_tmpe_tl
3675     { \tl_put_right:NV \l_tmpe_tl \l_tmpe_tl }%
3676 }
3677 }
3678 }
3679 }
3680
3681 % Schneller Drop-in
3682 \NewDocumentCommand{\dfgFastPIinProjectsTable}{m}{%
3683     \l_@@_proj_pi_build:
3684     \seq_set_from_clist:Nn \l_tmpe_seq {##1}%
3685     \bool_set_true:N \l_tmpe_bool
3686     \seq_map_inline:Nn \l_tmpe_seq {%
3687         \bool_if:NTF \l_tmpe_bool
3688         { \bool_set_false:N \l_tmpe_bool }
3689         { \newline }%
3690     }
3691     \prop_get:NnNT \l_@@_proj_pi_prop {##1} \l_tmpe_tl
3692     { \tl_use:N \l_tmpe_tl }%
3693 }
3694
3695 \NewDocumentCommand{\dfgPIinProjectsTable}{O{person} m}
3696 {%
3697     % #1: database
3698     % #2: comma-separated list of person ids
3699     \def\tmpLocalDB{##1}%
3700     \seq_clear:N \l_tmpe_seq
3701     \seq_set_from_clist:Nn \l_tmpe_seq {##2}%
3702     \bool_set_true:N \l_tmpe_bool
3703     \seq_map_inline:Nn \l_tmpe_seq
3704     {%
3705         \bool_if:NTF \l_tmpe_bool
3706         { \bool_set_false:N \l_tmpe_bool }
3707         { \newline }%
3708     }
3709     \__pi_in_projects_one:n {##1}%
3710 }%

```

```

3711
3712 \cs_new_protected:Npn \__pi_in_projects_one:n #1
3713 {%
3714   \getEntry*[\tmpLocalDB]{#1}{
3715     \theAcademicDegree = academicdegree,
3716     \theFirstName = firstname,
3717     \theLastName = lastname
3718   }%
3719   \group_begin:
3720   %%\theAcademicDegree\space%
3721   \dfgShowTag{#1}{firstname}{\theFirstName}[\tmpLocalDB]\space
3722   \color{referencePI}\bfseries
3723   \dfgShowTag{#1}{lastname}{\theLastName}[\tmpLocalDB], \space
3724   \normalfont\normalcolor
3725   \dfgInstitutionList{#1}[abbreviation,noaddress,nolocation,nozip,narrow]%
3726   \group_end:
3727 }
3728 \NewDocumentCommand{\ProjectsTable}{mm}
3729 {%
3730   \def\tblrbody{}%
3731   \clist_clear:N \l_@@_research_area_clist
3732   \tl_clear:N \l_tmpa_tl
3733   \clist_clear:N \l_tmpa_clist
3734   \seq_clear:N \l_tmpb_seq
3735   \seq_clear:N \l_tmpa_seq
3736
3737   \StartTimer
3738   \DTLsort{number}{project}%
3739   \StopTimer{Proj-#1-sort}
3740
3741   \int_zero:N \l_tmpa_int
3742
3743   \StartTimer
3744   \DTLforeach*[
3745     \DTLisPrefix{\pNumber}{#1}
3746     \and
3747     \not\DTLisseq{\pConsiderForLists}{false}
3748   ]{project}{
3749     \pID = id,
3750     \pNumber = number,
3751     \pName = name,
3752     \pStatus = project-status,
3753     \pType = project-type,
3754     \pConsiderForLists = consider-for-lists,
3755     \l_tmpa_clist = research-area,
3756     \pRefPersonId = ref-person-id
3757   }{%
3758     \int_incr:N \l_tmpa_int
3759     % --- reset ALL flags each iteration -----
3760     \bool_set_false:N \l_@@_project_type_research_bool
3761     \bool_set_false:N \l_@@_project_type_service_bool
3762     \bool_set_false:N \l_@@_project_type_mgk_bool
3763     \bool_set_false:N \l_@@_project_type_admin_bool
3764
3765     \bool_set_false:N \l_@@_project_status_N_bool
3766     \bool_set_false:N \l_@@_project_status_E_bool
3767     \bool_set_false:N \l_@@_project_status_C_bool
3768
3769
3770     \str_case:Nn {\pStatus}
3771     {
3772       {N}{ \bool_set_true:N \l_@@_project_status_N_bool }
3773       {E}{ \bool_set_true:N \l_@@_project_status_E_bool }
3774       {C}{ \bool_set_true:N \l_@@_project_status_C_bool }
3775     }
3776

```

```

3777 \str_case:Vn {\pType}{
3778   {research}{ \bool_set_true:N \l_@@_project_type_research_bool }
3779   {service} { \bool_set_true:N \l_@@_project_type_service_bool }
3780   {mgk}      { \bool_set_true:N \l_@@_project_type_mgk_bool }
3781   {admin}    { \bool_set_true:N \l_@@_project_type_admin_bool }
3782 }
3783
3784 \bool_if:nT
3785 { \l_@@_project_type_research_bool && ! \l_@@_project_status_E_bool }
3786 {%
3787   \clist_sort:Nn \l_tmpa_clist
3788   { \fp_compare:nTF {##1 < ##2} {\sort_return_swapped:} {\sort_return_same:} }%
3789   \seq_set_from_clist:NN \l_tmpa_seq \l_tmpa_clist
3790   \seq_set_map:Nnn \l_tmpb_seq \l_tmpa_seq
3791   {%
3792     \prop_if_in:NnTF \g_@@_dfg_research_areas_prop {##1}
3793     { ##1 }
3794     { \textcolor{error}{\textbf{##1}} }%
3795   }%
3796 }
3797
3798 \protected@edef\tblrbody{\tblrbody
3799   \noexpand\getProject{\pID}
3800   & {\noexpand\dfgShowTag{\pID}{project-status}{\pStatus}[project]}
3801   & \noexpand\dfgShowTag{\pID}{name}{\pName}[project]
3802   &
3803   \bool_if:nT
3804   { \l_@@_project_type_research_bool && ! \l_@@_project_status_E_bool }
3805   { {\noexpand\dfgShowTag{\pID}{research-area}
3806     { \seq_use:Nn \l_tmpb_seq {\}}[project] } }
3807   & \dfgFastPIinProjectsTable{\pRefPersonId}
3808   \\
3809 }%
3810 }
3811 \StopTimer{Proj-#1-loop}
3812 \iow_term:x { Proj-#1-iterations:~ \int_use:N \l_tmpa_int }
3813
3814 \StartTimer
3815 \begin{tblr}[
3816   theme = main,
3817   expand = \tblrbody,
3818   caption = {Project~area~#1~---~#2},
3819   long
3820 ]{
3821   colspec = {t{1.1cm}t{0.7cm}X[t]t{1.2cm}X[t]},
3822   rowhead = 1,
3823   column{2,4} = {halign=c},
3824   column{1} = {font=\Large\bfseries, fg=tableFirstColumn},
3825   column{3,5} = {font=\footnotesize\raggedright},
3826   row{1} = {
3827     bg = tableHeadingsBG,
3828     fg = tableHeadingsFont,
3829     font = \footnotesize\bfseries,
3830     halign = c,
3831     valign = t,
3832     guard
3833   },
3834 }
3835 Project
3836 & {Status}
3837 & Title
3838 & {\mbox{Research} \hfill \area}
3839 & Project\space leader(s),\space institute(s),\space location(s) \hfill \\
3840 \tblrbody
3841 \end{tblr}
3842 \StopTimer{Proj-#1-render}

```

3843 }

Project overview table `\projectOverviewTable` produces the compact project list used on the proposal’s final page. Current and new projects remain in project-number order; ending projects (status E) are moved to the end. The status marker is omitted for current projects and printed after the project number for all other statuses.

Project-leader names are resolved while the table body is assembled. This avoids repeating database lookups during `tabularray`’s measuring and rendering passes. All three headings use the canonical dark blue at a larger size; the cell-specific rule ensures that the first heading (“Project”) is not overridden by the first-column styling. The final-page source can therefore remain deliberately small: `\pagestyle{empty}` followed by `\printTable{projectOverview}`.

```

3844 \tl_new:N \l_@@_project_overview_body_tl
3845 \tl_new:N \l_@@_project_overview_ending_body_tl
3846 \tl_new:N \l_@@_project_overview_id_tl
3847 \tl_new:N \l_@@_project_overview_number_tl
3848 \tl_new:N \l_@@_project_overview_name_tl
3849 \tl_new:N \l_@@_project_overview_status_tl
3850 \tl_new:N \l_@@_project_overview_consider_for_lists_tl
3851 \tl_new:N \l_@@_project_overview_person_ids_tl
3852 \tl_new:N \l_@@_project_overview_leaders_tl
3853 \tl_new:N \l_@@_project_overview_project_cell_tl
3854 \seq_new:N \l_@@_project_overview_person_seq
3855
3856 \cs_new_protected:Npn \@@_project_overview_set_leaders:n #1
3857 {
3858   \tl_clear:N \l_@@_project_overview_leaders_tl
3859   \seq_set_from_clist:Nn \l_@@_project_overview_person_seq {#1}
3860   \seq_map_indexed_inline:Nn \l_@@_project_overview_person_seq
3861   {
3862     \DTLgetvalueforkey{\l_tmpa_tl}{firstname}{person}{id}{##2}
3863     \DTLgetvalueforkey{\l_tmpb_tl}{lastname}{person}{id}{##2}
3864     \int_compare:nNtT {##1} > {1}
3865     { \tl_put_right:Nn \l_@@_project_overview_leaders_tl { \newline } }
3866     \tl_if_blank:VF \l_tmpa_tl
3867     {
3868       \tl_put_right:Ne \l_@@_project_overview_leaders_tl
3869       {
3870         \exp_not:N \dfgShowTag {##2}{firstname}
3871         {\exp_not:N \l_tmpa_tl}[person]
3872         \exp_not:N \space
3873       }
3874     }
3875     \tl_put_right:Ne \l_@@_project_overview_leaders_tl
3876     {
3877       \exp_not:N \hyperlink { pi:\exp_not:n {##2} }
3878       {
3879         \exp_not:N \textbf
3880         {
3881           \exp_not:N \color { referencePI }
3882           \exp_not:N \dfgShowTag {##2}{lastname}
3883           {\exp_not:N \l_tmpb_tl}[person]
3884         }
3885       }
3886     }
3887   }
3888 }
3889
3890 \cs_new_protected:Npn \@@_project_overview_append_row:N #1
3891 {
3892   \exp_args:NV \@@_project_overview_set_leaders:n
3893   \l_@@_project_overview_person_ids_tl
3894   \tl_set:Ne \l_@@_project_overview_project_cell_tl
3895   {
3896     \exp_not:N \getProject
3897     { \exp_not:N \l_@@_project_overview_id_tl }
3898   }
3899   \str_if_eq:VnF \l_@@_project_overview_status_tl { C }
3900   {

```

```

3901 \tl_if_blank:VF \l_@@_project_overview_status_tl
3902 {
3903   \tl_put_right:Ne \l_@@_project_overview_project_cell_tl
3904   {
3905     \exp_not:N \,
3906     \exp_not:N \dfgShowTag
3907     {\exp_not:V \l_@@_project_overview_id_tl}{project-status}
3908     {\exp_not:V \l_@@_project_overview_status_tl}[project]
3909   }
3910 }
3911 }
3912 \tl_put_right:Ne #1
3913 {
3914   { \exp_not:V \l_@@_project_overview_project_cell_tl }
3915   & {
3916     \exp_not:N \dfgShowTag
3917     {\exp_not:V \l_@@_project_overview_id_tl}{name}
3918     {\exp_not:V \l_@@_project_overview_name_tl}[project]
3919   }
3920   & { \exp_not:V \l_@@_project_overview_leaders_tl }
3921   \exp_not:N \\\
3922 }
3923 }
3924
3925 \cs_new_protected:Npn \l_@@_project_overview_collect:
3926 {
3927   \DTLsort{number}{project}
3928   \DTLforeach*{project}
3929   {
3930     \l_@@_project_overview_id_tl = id,
3931     \l_@@_project_overview_number_tl = number,
3932     \l_@@_project_overview_name_tl = name,
3933     \l_@@_project_overview_status_tl = project-status,
3934     \l_@@_project_overview_consider_for_lists_tl = consider-for-lists,
3935     \l_@@_project_overview_person_ids_tl = ref-person-id
3936   }
3937   {
3938     \str_if_eq:VnF \l_@@_project_overview_consider_for_lists_tl { false }
3939     {
3940       \str_if_eq:VnTF \l_@@_project_overview_status_tl { E }
3941       { \l_@@_project_overview_append_row:N \l_@@_project_overview_ending_body_tl }
3942       { \l_@@_project_overview_append_row:N \l_@@_project_overview_body_tl }
3943     }
3944   }
3945   \tl_put_right:NV \l_@@_project_overview_body_tl
3946   \l_@@_project_overview_ending_body_tl
3947 }
3948
3949 \cs_new_protected:Npn \l_@@_project_overview_typeset:
3950 {
3951   \par\vspace*{-5\baselineskip}
3952   \begin{center}
3953     \crlLogo[height=1cm]
3954   \end{center}
3955   \enlargethispage{3\baselineskip}
3956   \begin{tblr}[
3957     theme = main,
3958     expand = \l_@@_project_overview_body_tl
3959   ]{
3960     vspan = even,
3961     rowsep = 1pt,
3962     rows = {ht=2\baselineskip, valign=m},
3963     colspec = {m{1.5cm}X[m]m{4cm}},
3964     rowhead = 1,
3965     column{1} = {font=\Large\bfseries, fg=tableFirstColumn},
3966     column{2,3} = {font=\raggedright},

```

```

3967     row{1} = {font=\large\bfseries,fg=tableHeadingsFont},
3968 }
3969 Project
3970 & Title
3971 & Project\space leader(s) \\
3972 \l_@@_project_overview_body_tl
3973 \end{tblr}
3974 }
3975
3976 \NewDocumentCommand{\projectOverviewTable}{}
3977 {
3978   \group_begin:
3979   \DTLifdbexists{project}
3980   {
3981     \tl_clear:N \l_@@_project_overview_body_tl
3982     \tl_clear:N \l_@@_project_overview_ending_body_tl
3983     \@@_project_overview_collect:
3984     \@@_project_overview_typeset:
3985   }
3986   { \msg_warning:nnn { dfg } { database-not-found } { project } }
3987   \group_end:
3988 }

```

We turn now to the part to get the research areas aggregated.

```

3989 \clist_new:N \l_@@_research_area_clist % new clist name
3990 \clist_new:N \l_@@_research_area_final_clist % new clist name
3991 \NewDocumentCommand{\ResearchAreasFromProjectsList}{o}{
3992   % #1: IDs of project to be excluded
3993   \clist_clear:N \l_@@_research_area_clist
3994   \tl_clear:N \l_tmpa_tl
3995
3996   \DTLforeach[
3997     % exclude mentioned projects (for whatsoever reason)
3998     \not\DTLisinlist{\pNumber}{#1}% 1st condition
3999     \and
4000     \not\DTLiseq{\pConsiderForLists}{false}
4001   ]
4002   {project}{%
4003     \pNumber      =number,
4004     \pType        =project-type,
4005     \pConsiderForLists=consider-for-lists,
4006     \l_tmpa_tl    =research-area%
4007   }{%
4008     % Quite heavy but it works to skip the research area for non-research projects
4009     \bool_set_false:N \l_@@_project_type_research_bool
4010     \bool_set_false:N \l_@@_project_type_service_bool
4011     \bool_set_false:N \l_@@_project_type_mgk_bool
4012     \bool_set_false:N \l_@@_project_type_admin_bool
4013
4014     \str_case:Nn {\pType}{
4015       {research}{ \bool_set_true:N \l_@@_project_type_research_bool }
4016       {service} { \bool_set_true:N \l_@@_project_type_service_bool }
4017       {mgk}     { \bool_set_true:N \l_@@_project_type_mgk_bool }
4018       {admin}   { \bool_set_true:N \l_@@_project_type_admin_bool }
4019     }
4020     \bool_lazy_any:nT {{ \l_@@_project_type_research_bool}}
4021     {\clist_put_right:NV \l_@@_research_area_clist { \l_tmpa_tl }}%
4022   }
4023   \clist_remove_duplicates:N \l_@@_research_area_clist
4024   % sorting and faking that the numbers are floats.... HACK
4025   \clist_sort:Nn \l_@@_research_area_clist
4026   { \fp_compare:nTF { ##1 < ##2 } { \sort_return_swapped: } { \sort_return_same: } }
4027
4028   \clist_map_inline:Nn \l_@@_research_area_clist {
4029     \clist_put_right:NV \l_@@_research_area_final_clist { \dfgResearchAreasList{##1}}
4030   }
4031 }

```

```

4032 \dfgShowCalculatedTag{ResearchAreasFromProjectsList}{project}
4033 {
4034   \clist_use:Nnnn \l_@@_research_area_final_clist {,~}{,~}{,~and~}%
4035   .%final dot.
4036 }
4037 }
4038 % \subsubsection{DFG research area classification}
4039 % \label{sec:research-areas}
4040 % The DFG publishes an official hierarchical subject classification list;
4041 % a project must declare which areas its work belongs to. The global
4042 % property list \cs{g\_@@\_dfg\_research\_areas\_prop} maps every
4043 % classification code (e.g.\ |2.11-01|) to its English label.
4044 %
4045 % Usage: supply one or more codes as a comma-separated value in the
4046 % |research-area| key of an \refCom{addEntry}|{project}| block.
4047 % \cs{printResearchAreas} then looks up and formats them as a
4048 % natural-language list.
4049 %
4050 % \textbf{Sorting note:} the codes are numeric strings with a hyphen
4051 % (|2.11-01|), which cannot be compared as plain integers. The sort
4052 % in \cs{printResearchAreas} uses \cs{fp\_compare:nTF} after stripping
4053 % the hyphen suffix - a known workaround for the absence of a
4054 % lexicographic sort in expl3 for this mixed format.
4055 \prop_new:N \g_@@_dfg_research_areas_prop
4056 \prop_gset_from_keyval:Nn \g_@@_dfg_research_areas_prop
4057 {
4058   1.11-01 = {Prehistory~and~World~Archaeology},
4059   1.11-02 = {Greek~and~Latin~Philology},
4060   1.11-03 = {Ancient~History},
4061   1.11-04 = {Classical,~Roman,~Christian~and~Islamic~Archaeology},
4062   1.11-05 = {Egyptology~and~Ancient~Near~Eastern~Studies},
4063
4064   1.12-01 = {Medieval~History},
4065   1.12-02 = {Early~Modern~History},
4066   1.12-03 = {Modern~and~Contemporary~History},
4067   1.12-04 = {History~of~Science},
4068
4069   1.13-01 = {Art~History},
4070   1.13-02 = {Musicology},
4071   1.13-03 = {Theatre~and~Media~Studies},
4072
4073   1.14-01 = {General~and~Comparative~Linguistics,~Experimental~Linguistics,~Typology,~Non-European~Lan},
4074   1.14-02 = {Individual~Linguistics,~Historical~Linguistics},
4075   1.14-03 = {Applied~Linguistics,~Computational~Linguistics},
4076
4077   1.15-01 = {German~Medieval~Studies~(Medieval~German~Literature)},
4078   1.15-02 = {German~Literary~and~Cultural~Studies~(Modern~German~Literature)},
4079   1.15-03 = {European~and~American~Literary~and~Cultural~Studies},
4080   1.15-04 = {General~and~Comparative~Literary~Studies;~Cultural~Studies},
4081
4082   1.16-01 = {Social~and~Cultural~Anthropology~and~Ethnology},
4083   1.16-02 = {Asian~Studies},
4084   1.16-03 = {African,~American~and~Oceania~Studies},
4085   1.16-04 = {Islamic~Studies,~Arabian~Studies,~Semitic~Studies},
4086   1.16-05 = {Religious~Studies~and~Jewish~Studies},
4087
4088   1.17-01 = {Protestant~Theology},
4089   1.17-02 = {Roman~Catholic~Theology},
4090
4091   1.18-01 = {History~of~Philosophy},
4092   1.18-02 = {Theoretical~Philosophy},
4093   1.18-03 = {Practical~Philosophy},
4094
4095   1.21-01 = {General~Education~and~History~of~Education},
4096   1.21-02 = {General~and~Domain~Specific~Teaching~and~Learning},
4097   1.21-03 = {Education~Systems~and~Educational~Institutions},

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4098 1.21-04 = {Educational~Research~on~Socialisation,~Welfare~and~Professionalism},
4099
4100 1.22-01 = {General,~Cognitive~and~Mathematical~Psychology},
4101 1.22-02 = {Biological~Psychology~and~Cognitive~Neuroscience},
4102 1.22-03 = {Developmental~and~Educational~Psychology},
4103 1.22-04 = {Social~Psychology,~Industrial~and~Organisational~Psychology},
4104 1.22-05 = {Personality~Psychology,~Clinical~and~Medical~Psychology,~Methodology},
4105
4106 1.23-01 = {Sociological~Theory},
4107 1.23-02 = {Empirical~Social~Research},
4108 1.23-03 = {Communication~Sciences},
4109 1.23-04 = {Political~Science},
4110
4111 1.24-01 = {Economic~Theory},
4112 1.24-02 = {Economic~Policy,~Applied~Economics},
4113 1.24-03 = {Accounting~and~Finance},
4114 1.24-04 = {Management~and~Marketing},
4115 1.24-05 = {Operations~Management~and~Computer~Science~for~Business~Administration},
4116 1.24-06 = {Statistics~and~Econometrics},
4117 1.24-07 = {Economic~and~Social~History},
4118
4119 1.25-01 = {Principles~of~Law~and~Jurisprudence},
4120 1.25-02 = {Private~Law},
4121 1.25-03 = {Public~Law},
4122 1.25-04 = {Criminal~Law},
4123 1.25-05 = {Criminology},
4124
4125 2.11-01 = {Biochemistry},
4126 2.11-02 = {Biophysics},
4127 2.11-03 = {Cell~Biology},
4128 2.11-04 = {Structural~Biology},
4129 2.11-05 = {General~Genetics~and~Functional~Genome~Biology},
4130 2.11-06 = {Developmental~Biology},
4131 2.11-07 = {Bioinformatics~and~Theoretical~Biology},
4132
4133 2.12-01 = {Evolution~and~Systematics~of~Plants~and~Fungi},
4134 2.12-02 = {Ecology~and~Biodiversity~of~Plants~and~Ecosystems},
4135 2.12-03 = {Organismic~Interactions,~Chemical~Ecology~and~Microbiomes~of~Plant~Systems},
4136 2.12-04 = {Plant~Physiology},
4137 2.12-05 = {Plant~Biochemistry~and~Biophysics},
4138 2.12-06 = {Plant~Cell~and~Developmental~Biology},
4139 2.12-07 = {Plant~Genetics~and~Genomics},
4140
4141 2.13-01 = {Systematics~and~Morphology~(Zoology)},
4142 2.13-02 = {Evolution,~Anthropology},
4143 2.13-03 = {Ecology~and~Biodiversity~of~Animals~and~Ecosystems,~Organismic~Interactions},
4144 2.13-04 = {Sensory~and~Behavioural~Biology},
4145 2.13-05 = {Animal~Physiology~and~Biochemistry},
4146 2.13-06 = {Evolutionary~Cell~and~Developmental~Biology~(Zoology)},
4147
4148 2.21-01 = {Metabolism,~Biochemistry~and~Genetics~of~Microorganisms},
4149 2.21-02 = {Microbial~Ecology~and~Applied~Microbiology},
4150 2.21-03 = {Medical~Microbiology~and~Mycology,~Hygiene,~Molecular~Infection~Biology},
4151 2.21-04 = {Virology},
4152 2.21-05 = {Immunology},
4153 2.21-06 = {Parasitology~and~Biology~of~Tropical~Infectious~Disease~Pathogens},
4154
4155 2.22-01 = {Epidemiology~and~Medical~Biometry~/~Statistics},
4156 2.22-02 = {Public~Health,~Healthcare~Research,~Social~and~Occupational~Medicine},
4157 2.22-03 = {Human~Genetics},
4158 2.22-04 = {Anatomy~and~Physiology},
4159 2.22-05 = {Nutritional~Sciences},
4160 2.22-06 = {Pathology},
4161 2.22-07 = {Medical~Informatics~and~Medical~Bioinformatics},
4162 2.22-08 = {Pharmacy},
4163 2.22-09 = {Pharmacology},

```

4164 2.22-10 = {Toxicology, ~Laboratory~Medicine},
 4165 2.22-11 = {Anaesthesiology},
 4166 2.22-12 = {Cardiology, ~Angiology},
 4167 2.22-13 = {Pneumology, ~Thoracic~Surgery},
 4168 2.22-14 = {Hematology, ~Oncology},
 4169 2.22-15 = {Gastroenterology},
 4170 2.22-16 = {Nephrology},
 4171 2.22-17 = {Endocrinology, ~Diabetology, ~Metabolism},
 4172 2.22-18 = {Rheumatology},
 4173 2.22-19 = {Dermatology},
 4174 2.22-20 = {Pediatric~and~Adolescent~Medicine},
 4175 2.22-21 = {Gynaecology~and~Obstetrics},
 4176 2.22-22 = {Clinical~Immunology~and~Allergology},
 4177 2.22-23 = {Reproductive~Medicine, ~Urology},
 4178 2.22-24 = {Biogerontology~and~Geriatric~Medicine},
 4179 2.22-25 = {General~and~Visceral~Surgery},
 4180 2.22-26 = {Cardiac~and~Vascular~Surgery},
 4181 2.22-27 = {Orthopaedics, ~Traumatology, ~Reconstructive~Surgery},
 4182 2.22-28 = {Dentistry, ~Oral~Surgery},
 4183 2.22-29 = {Otolaryngology, ~Phoniatrics~and~Audiology},
 4184 2.22-30 = {Radiology},
 4185 2.22-31 = {Clinical~Infectiology~and~Tropical~Medicine},
 4186 2.22-32 = {Medical~Physics, ~Biomedical~Technology},
 4187 2.22-33 = {Nuclear~Medicine, ~Radiotherapy, ~Radiobiology},
 4188
 4189 2.23-01 = {Developmental~Neurobiology},
 4190 2.23-02 = {Molecular~Biology~and~Physiology~of~Neurons~and~Glial~Cells},
 4191 2.23-03 = {Experimental~and~Theoretical~Network~Neuroscience},
 4192 2.23-04 = {Cognitive, ~Systems~and~Behavioural~Neurobiology},
 4193 2.23-05 = {Experimental~Models~for~the~Understanding~of~Nervous~System~Diseases},
 4194 2.23-06 = {Molecular~and~Cellular~Neurology~and~Neuropathology},
 4195 2.23-07 = {Clinical~Neurology; ~Neurosurgery~and~Neuroradiology},
 4196 2.23-08 = {Human~Cognitive~and~Systems~Neuroscience},
 4197 2.23-09 = {Biological~Psychiatry},
 4198 2.23-10 = {Clinical~Psychiatry, ~Psychotherapy, ~Child~and~Adolescent~Psychiatry},
 4199 2.23-11 = {Ophthalmology},
 4200
 4201 2.31-01 = {Soil~Sciences},
 4202 2.31-02 = {Plant~Breeding~and~Plant~Pathology},
 4203 2.31-03 = {Plant~Cultivation, ~Plant~Nutrition, ~Agricultural~Technology},
 4204 2.31-04 = {Ecology~of~Land~Use},
 4205 2.31-05 = {Agricultural~Economics, ~Agricultural~Policy, ~Agricultural~Sociology},
 4206 2.31-06 = {Forestry},
 4207 2.31-07 = {Animal~Breeding, ~Animal~Nutrition, ~Animal~Husbandry},
 4208
 4209 3.11-01 = {Inorganic~Molecular~Chemistry~~~Synthesis~and~Characterisation},
 4210 3.11-02 = {Organic~Molecular~Chemistry~~~Synthesis~and~Characterisation},
 4211
 4212 3.12-01 = {Solid~State~and~Surface~Chemistry, ~Material~Synthesis},
 4213 3.12-02 = {Physical~Chemistry~of~Solids~and~Surfaces, ~Material~Characterisation},
 4214
 4215 3.13-01 = {Physical~Chemistry~of~Molecules, ~Liquids~and~Interfaces, ~Biophysical~Chemistry},
 4216
 4217 3.14-01 = {Analytical~Chemistry},
 4218
 4219 3.15-01 = {Biological~and~Biomimetic~Chemistry},
 4220 3.15-02 = {Food~Chemistry},
 4221
 4222 3.16-01 = {Preparatory~and~Physical~Chemistry~of~Polymers},
 4223 3.16-02 = {Experimental~and~Theoretical~Physics~of~Polymers},
 4224 3.16-03 = {Polymer~Materials},
 4225
 4226 3.17-01 = {Theoretical~Chemistry:~Electron~Structure, ~Dynamics, ~Simulation},
 4227 3.17-02 = {Theoretical~Chemistry:~Molecules, ~Materials, ~Surfaces},
 4228
 4229 3.21-01 = {Experimental~Condensed~Matter~Physics},

```

4230 3.21-02 = {Theoretical~Condensed~Matter~Physics},
4231
4232 3.22-01 = {Statistical~Physics,~Nonlinear~Dynamics,~Complex~Systems,~Soft~and~Fluid~Matter,~Biologic
4233
4234 3.23-01 = {Optics,~Quantum~Optics~and~Physics~of~Atoms,~Molecules~and~Plasmas},
4235
4236 3.24-01 = {Nuclear~and~Elementary~Particle~Physics,~Quantum~Mechanics,~Relativity,~Fields},
4237
4238 3.25-01 = {Astrophysics~and~Astronomy},
4239
4240 3.31-01 = {Mathematics},
4241
4242 3.41-01 = {Atmospheric~Science},
4243 3.41-02 = {Oceanography},
4244
4245 3.42-01 = {Geology},
4246 3.42-02 = {Palaeontology},
4247
4248 3.43-01 = {Geophysics},
4249 3.43-02 = {Geodesy,~Photogrammetry,~Remote~Sensing,~Geoinformatics,~Cartography},
4250
4251 3.44-01 = {Mineralogy,~Petrology~and~Geochemistry},
4252
4253 3.45-01 = {Physical~Geography},
4254 3.45-02 = {Human~Geography},
4255
4256 3.46-01 = {Hydrogeology,~Hydrology,~Limnology,~Urban~Water~Management,~Water~Chemistry,~Integrated~W
4257
4258 4.11-01 = {Metal~Cutting~and~Abrasive~Manufacturing~Engineering},
4259 4.11-02 = {Primary~Shaping~and~Reshaping~Technology,~Additive~Manufacturing},
4260 4.11-03 = {Joining~and~Separation~Technology},
4261 4.11-04 = {Plastics~Engineering},
4262 4.11-05 = {Production~Systems,~Operations~Management,~Quality~Management~and~Factory~Planning},
4263 4.11-06 = {Production~Automation~and~Assembly~Technology},
4264
4265 4.12-01 = {Engineering~Design,~Machine~Elements,~Product~Development},
4266 4.12-02 = {Mechanics},
4267 4.12-03 = {Lightweight~Construction,~Textile~Technology},
4268 4.12-04 = {Acoustics},
4269
4270 4.21-01 = {Chemical~and~Thermal~Process~Engineering},
4271 4.21-02 = {Technical~Chemistry},
4272 4.21-03 = {Mechanical~Process~Engineering},
4273 4.21-04 = {Biological~Process~Engineering},
4274 4.21-05 = {Systems~Process~Engineering},
4275
4276 4.22-01 = {Energy~Process~Engineering},
4277 4.22-02 = {Technical~Thermodynamics},
4278 4.22-03 = {Fluid~Mechanics},
4279 4.22-04 = {Hydraulic~and~Turbo~Engines~and~Piston~Engines},
4280
4281 4.31-01 = {Metallurgical,~Thermal~and~Thermomechanical~Treatment~of~Materials},
4282 4.31-02 = {Materials~in~Sintering~Processes~and~Generative~Manufacturing~Processes},
4283 4.31-03 = {Coating~and~Surface~Technology},
4284 4.31-04 = {Mechanical~Properties~of~Metallic~Materials~and~their~Microstructural~Origins},
4285 4.31-05 = {Glass,~Ceramics~and~Derived~Composites},
4286 4.31-06 = {Polymeric~and~Biogenic~Materials~and~Derived~Composites},
4287
4288 4.32-01 = {Synthesis~and~Properties~of~Functional~Materials},
4289 4.32-02 = {Biomaterials},
4290 4.32-03 = {Thermodynamics~and~Kinetics~as~well~as~Properties~of~Phases~and~Microstructure~of~Materia
4291 4.32-04 = {Computer~Aided~Design~of~Materials~and~Simulation~of~Materials~Behaviour~from~Atomic~to~M
4292
4293 4.41-01 = {Automation,~Mechatronics,~Control~Systems,~Intelligent~Technical~Systems,~Robotics},
4294 4.41-02 = {Measurement~Systems},
4295 4.41-03 = {Microsystems},

```

```

4296 4.41-04 = {Traffic~and~Transport~Systems,~Intelligent~and~Automated~Traffic},
4297 4.41-05 = {Human~Factors,~Ergonomics,~Human-Machine~Systems},
4298 4.41-06 = {Biomedical~Systems~Technology},
4299
4300 4.42-01 = {Electronic~Semiconductors,~Components~and~Circuits,~Integrated~Systems,~Sensor~Technology},
4301 4.42-02 = {Communication~Technology~and~Networks,~High-Frequency~Technology~and~Photonic~Systems,~Si},
4302 4.42-03 = {Electrical~Energy~Systems,~Power~Management,~Power~Electronics,~Electrical~Machines~and~D},
4303 4.42-04 = {Hardware~Systems~and~Architectures~for~Information~Technology~and~Artificial~Intelligence},
4304
4305 4.43-01 = {Theoretical~Computer~Science},
4306 4.43-02 = {Software~Engineering~and~Programming~Languages},
4307 4.43-03 = {Security~and~Dependability,~Operating,~Communication~and~Distributed~Systems},
4308 4.43-04 = {Artificial~Intelligence~and~Machine~Learning~Methods},
4309 4.43-05 = {Image~and~Language~Processing,~Computer~Graphics~and~Visualisation,~Human~Computer~Intera},
4310 4.43-06 = {Data~Management,~Data-Intensive~Systems,~Computer~Science~Methods~in~Business~Informatics},
4311 4.43-07 = {Computer~Architecture,~Embedded~and~Massively~Parallel~Systems},
4312
4313 4.51-01 = {Architecture,~Building~and~Construction~History,~Construction~Research,~Sustainable~Build},
4314 4.51-02 = {Urbanism,~Spatial~Planning,~Transportation~and~Infrastructure~Planning,~Landscape~Plannin},
4315 4.51-03 = {Construction~Material~Sciences,~Chemistry,~Building~Physics},
4316 4.51-04 = {Structural~Engineering,~Building~Informatics~and~Construction~Operation},
4317 4.51-05 = {Applied~Mechanics,~Statics~and~Dynamics},
4318 4.51-06 = {Geotechnics,~Hydraulic~Engineering},
4319
4320 }
4321
4322 \NewDocumentCommand{\dfgResearchAreasList}{m}{
4323   % #1: area-list
4324   \prop_if_in:NnTF \g_@@_dfg_research_areas_prop {#1}
4325   {
4326     % key exists → fetch the description and typeset it
4327     \prop_get:NnN \g_@@_dfg_research_areas_prop {#1} \l_tmpa_tl
4328     \textbf{#1}:~\l_tmpa_tl
4329   }
4330   {
4331     % key missing → same fallback as your original macro
4332     \textcolor{error}{\textbf{#1}:~ research~ area~ not~ found}
4333     \msg_warning:nne { dfg } { research-area-not-found }{#1}
4334   }
4335 }

```

We turn to the early career phases

```

4336 \str_new:N \l_@@_row_color_str
4337 \NewDocumentCommand{\EarlyCareerResearchersTable}{ O{EarlyCareerResearcher} }{%
4338   \def\dfgLocalDB{#1}
4339   \DTLifdbexists{\dfgLocalDB}{%
4340     \DTLsort*{ref-project-id,lastname}{\dfgLocalDB}%
4341     \def\tblbody{}%
4342     \DTLforeach*{\dfgLocalDB}{%
4343       \pRefProjectID=ref-project-id,%
4344       \pLastname=lastname,%
4345       \pFirstname=firstname,%
4346       \pFinancedBy=financed-by,%
4347       \pTopic=topic,%
4348       \pCategory=category,%
4349       \pPeriodStart=periodStart,%
4350       \pPeriodEnd=periodEnd%
4351     }{
4352       \str_case:en {\pCategory}{
4353         {MD}{\str_set:Nn \l_@@_row_color_str {green!10} }
4354         {PhD}{\str_set:Nn \l_@@_row_color_str {blue!10} }
4355       }
4356       \DTLgetvalueforkey{\theProjectNumber}{number}{project}{id}{\pRefProjectID}
4357       \protected@edef\tblbody{\tblbody
4358         \SetRow{\l_@@_row_color_str}
4359         \datatool_if_null:NTF {\theProjectNumber}{\pRefProjectID}{\getProject{\pRefProjectID}}
4360         & \noexpand\dfgShowTag{\pRefProjectID/\pLastname}{lastname}

```

```

4361         {\pLastname}[\dfigLocalDB],~
4362         \noexpand\dfigShowTag{\pRefProjectID/\pLastname}{firstname}
4363         {\pFirstname}[\dfigLocalDB]
4364         & \noexpand\dfigShowTag{\pRefProjectID/\pLastname}{financed-by}
4365         {\pFinancedBy}[\dfigLocalDB]
4366         & \noexpand\dfigShowTag{\pRefProjectID/\pLastname}{topic}
4367         {\pTopic}[\dfigLocalDB]
4368     &
4369     {
4370         \ifdefempty{\pPeriodEnd}{since~}{~}
4371         \noexpand\dfigShowTag{\pRefProjectID/\pLastname}{periodStart}
4372         {\pPeriodStart}[\dfigLocalDB]
4373         \ifdefempty{\pPeriodEnd}{}{--\
4374         \noexpand\dfigShowTag{\pRefProjectID/\pLastname}{periodEnd}
4375         {\pPeriodEnd}[\dfigLocalDB]}~}
4376     \\\
4377     }~}
4378 \begin{tblr}{%
4379     theme=main,
4380     expand=\tblrbody,
4381     remark{Note}={Row~colours~indicate~category~of~doctoral~candidates:~
4382         \textcolor{blue}{Dr.\,rer.\,nat.},~
4383         \textcolor{green}{Dr.\,med.}.~
4384         \textbf{RS}~==~Rising~Star.~
4385         Doctoral~candidates~with~highlighted~names~have~obtained~the~doctoral~degree.~
4386         MD~denotes~medical~students~supported~by~DFG~stipends~for~up~to~6~months.
4387     },
4388     long
4389 }{
4390     colspec = {t{.8cm}t{3cm}t{1.2cm}X[t]t{1.8cm}},
4391     rowhead = 1,
4392     column{1} = {
4393         font={\bfseries},
4394         fg = {tableFirstColumn}
4395     },
4396     % row{even}={bg=tableRows},
4397     column{4} = {font={\footnotesize\itshape}},
4398     row{1} = {
4399         bg          = tableHeadingsBG,
4400         fg          = tableHeadingsFont,
4401         font        = \footnotesize\bfseries,
4402         valign      = {t},
4403         align       = {c},
4404         guard       = {t},
4405     },
4406 }
4407 Project %
4408 & Surname,~ first~ name %
4409 & {Type~ of~          \\ funding} %
4410 & Topic %
4411 & Duration \\
4412 \tblrbody
4413 \end{tblr}}
4414 {
4415     Database~ \texttt{#1}~ missing.
4416     \msg_warning:nne { dfg } { database-not-found }{ #1 }
4417 }
4418 }

```

Following now the section about diversity and equity. Before that there is a command to get proper position names based on a property list.

```

4419
4420 \prop_new:N \g_@@_dfg_position_names_prop
4421 \prop_gset_from_keyval:Nn \g_@@_dfg_position_names_prop
4422 {
4423     PhD          = {Doctoral~researchers},
4424     postDoc      = {Postdoctoral~researchers},

```

```

4425   groupLeader = {Research~ group~ leaders,~
4426     junior~ research~ group~ leaders,~
4427     junior~ professors},
4428   research     = {Other~ research~ staff},
4429   nonResearch  = {Non-research~ staff},
4430   student      = {Student~ and~ graduate~ assistants},
4431   prof         = {Professors},
4432   prof-W2      = {Professors~ W2/C3},
4433   prof-W3      = {Professors~ W3/C4}
4434 }
4435 \prop_new:N \g_@@_dfg_category_names_prop
4436 \prop_gset_from_keyval:Nn \g_@@_dfg_category_names_prop
4437 {
4438   PhD          = {Doctoral~researcher},
4439   postDoc      = {Postdoctoral~researcher},
4440   medDoc       = {Medical~doctoral~researcher},
4441   groupLeader  = {(Jr.)~ Research~ group~ leader},
4442   research     = {Other~ research~ staff},
4443   nonResearch  = {Non-research~ staff},
4444   student      = {Student/graduate~ assistant},
4445   assistant    = {Research~assistant},
4446   prof         = {Professor},
4447   prof-W2      = {Professor~ (W2/C3)},
4448   prof-W3      = {Professor~ (W3/C4)},
4449 }
4450 \cs_generate_variant:Nn \prop_if_in:NnTF { NeTF }
4451
4452 \NewDocumentCommand{\dfgPositionName}{m}{%
4453   \prop_if_in:NeTF \g_@@_dfg_position_names_prop {#1}
4454   {
4455     \prop_get:NeN \g_@@_dfg_position_names_prop {#1} \l_tmpa_tl
4456     \l_tmpa_tl
4457   }
4458   {
4459     \textcolor{error}{mismatch:~#1}
4460     \msg_warning:nne { dfg } { item-not-matched }{ #1 }
4461   }
4462 }
4463 \NewDocumentCommand{\dfgCategoryName}{m}{%
4464   \prop_if_in:NeTF \g_@@_dfg_category_names_prop {#1}
4465   {
4466     \prop_get:NeN \g_@@_dfg_category_names_prop {#1} \l_tmpa_tl
4467     \l_tmpa_tl
4468   }
4469   {
4470     \textcolor{error}{mismatch:~#1}
4471     \msg_warning:nne { dfg } { item-not-matched }{ #1 }
4472   }
4473 }
4474 \NewDocumentCommand{\GenderEqualityStaffTable}{ O{GenderEqualityStaff} }{%
4475   \def\dfgLocalDB{#1}
4476   \DTLifdbexists{\dfgLocalDB}{%
4477     \tl_clear:N \l_tblr_body_tl
4478     \DTLforeach*[
4479       \DTLiseq{PhD}{\pPosition}
4480       \OR
4481       \DTLiseq{postDoc}{\pPosition}
4482     ]{\dfgLocalDB}{%
4483       \pPosition=position,%
4484       \pPrevObjPctFemale=previous-objective-percentage-female,%
4485       \pStatusQuoNumFemale=status-quo-number-female,%
4486       \pStatusQuoPctFemale=status-quo-percentage-female,%
4487       \pFutureObjPctFemale=future-objective-percentage-female%
4488     }{
4489       \tl_gput_right:Nx \l_tblr_body_tl
4490       {

```

```

4491 \dfgShowTag{\pPosition}{position}
4492 {\dfgPositionName{\pPosition}}[\dfgLocalDB] &
4493 \dfgShowTag{\pPosition}{previous-objective-percentage-female}
4494 {\pPrevObjPctFemale}[\dfgLocalDB] &
4495 \dfgShowTag{\pPosition}{status-quo-number-female}
4496 {\pStatusQuoNumFemale}[\dfgLocalDB] &
4497 \dfgShowTag{\pPosition}{status-quo-percentage-female}
4498 {\pStatusQuoPctFemale}[\dfgLocalDB] &
4499 \dfgShowTag{\pPosition}{future-objective-percentage-female}
4500 {\pFutureObjPctFemale}[\dfgLocalDB] \\
4501 }
4502 }
4503 \begin{tblr}{%
4504 theme=main,
4505 note{a}={Reference~ date:~ proposal~ for~ \dfgFundingPeriodText\space~ funding~ period},
4506 expand=\l_tblr_body_tl,
4507 long
4508 }{
4509 vspan=even,
4510 %row{Z}= {font={\footnotesize\bfseries}},
4511 colspec = {
4512 X[m] % position
4513 m{2cm} % proportion
4514 m{2cm} % number
4515 m{2cm} % female
4516 m{3cm}
4517 },
4518 hspan=minimal, % !!!!! https://tex.stackexchange.com/a/637391/98739
4519 vline{3} = {3-3}{1pt,solid,fg={tableLines}},
4520 vline{5} = {1-3}{1pt,solid,fg={tableLines}},
4521 hline{4} = {1pt,solid,fg={tableLines}},
4522 % hline{Y} = {1pt,solid,fg={tableOuterLines}},
4523 hline{2} = {wd=0pt},
4524 rowhead = 3,
4525 column{2-5}={halign={c}},
4526 % column{1} = {font={\bfseries}},
4527 % fg = {rwthBlue}},
4528 row{2-3}={
4529 guard,
4530 valign={t},
4531 font={\footnotesize\bfseries},
4532 fg={tableHeadingsFont},
4533 bg={white}},
4534 }
4535 \SetCell[r=3]{c} % empty
4536 & \SetCell[c=3]{c} Second~ funding~ period %
4537 & %
4538 & %
4539 & Third~ funding~ period \\
4540 % empty
4541 & {Objective~ [\unit{\percent}]}
4542 & \SetCell[c=2]{c}{Status~ Quo\TblrNote{a}}
4543 &
4544 & {Objective~ [\unit{\percent}]} \\
4545 % empty
4546 & % empty
4547 & Number
4548 & [\unit{\percent}]
4549 & f \\
4550 \tl_use:N \l_tblr_body_tl
4551 % Total
4552 % & % objective
4553 % & % number
4554 % & % percentage
4555 % & % objective \\
4556 \end{tblr}}

```

```

4557 {
4558     Database~ \texttt{#1}~ missing.
4559     \msg_warning:nne { dfg } { database-not-found }{ #1 }
4560 }
4561 }

4562 \int_new:N \l_@@_count_int
4563 \int_new:N \l_@@_total_int
4564 \int_new:N \l_@@_tmp_int
4565 \int_new:N \l_@@_tmp_total_int
4566 \int_new:N \l_@@_tmp_position_int
4567 \int_new:N \l_@@_tmp_gender_int
4568 \int_new:N \l_@@_percent_int

```

Cached counting infrastructure: A single pass over the `person` database fills a property list with one count per (position, gender, phase) triple. All user-facing commands then read from this prop list in $O(1)$ instead of doing a fresh full-table scan per call. This replaces 100 full database walks per gender table with 1.

```

4569 \prop_new:N \g_@@_counts_prop
4570 \tl_new:N \l_@@_count_key_tl
4571 \tl_new:N \l_@@_count_phase_tl
4572 \tl_new:N \l_@@_count_db_tl

```

Compute counts for ALL (position, gender) combinations in one pass. Stores them in `\g_@@_counts_prop` with key "`<position>.<gender>`". `\dfg_compute_counts:nn {<db>} {<phase>}`.

```

4573 \cs_new_protected:Npn \dfg_compute_counts:nn #1#2
4574 {
4575     % Skip if already computed for this (db, phase).
4576     \tl_set:Nx \l_tmpa_tl { #1 | #2 }
4577     \tl_if_eq:NNF \l_tmpa_tl \l_@@_count_phase_tl
4578     {
4579         \tl_set:Nx \l_@@_count_phase_tl { #1 | #2 }
4580         \prop_gc_clear:N \g_@@_counts_prop
4581         \DTLforeach*[
4582             \DTLisinlist{#2}{\pPeriod}
4583             \and
4584             \DTLisinlist{PI}{\pRole}
4585         ]{#1}{
4586             \pPosition = position,
4587             \pGender    = gender,
4588             \pPeriod    = period,
4589             \pRole      = role
4590         }{
4591             \tl_set:Nx \l_@@_count_key_tl { \pPosition | \pGender }
4592             \prop_get:NVNTF \g_@@_counts_prop \l_@@_count_key_tl \l_tmpb_tl
4593             {
4594                 \int_set:Nn \l_@@_count_int { \l_tmpb_tl + 1 }
4595                 \prop_gput:NVx \g_@@_counts_prop \l_@@_count_key_tl
4596                 { \int_use:N \l_@@_count_int }
4597             }
4598         }
4599         \prop_gput:NVn \g_@@_counts_prop \l_@@_count_key_tl { 1 }
4600     }
4601 }
4602 }
4603 }
4604 % O(1) lookup. Returns 0 for unknown keys.
4605 % \dfg_count_lookup:nn {<position>} {<gender>} -> integer literal
4606 \cs_new:Npn \dfg_count_lookup:nn #1#2
4607 {
4608     \prop_if_in:NnTF \g_@@_counts_prop { #1 | #2 }
4609     { \prop_item:Nn \g_@@_counts_prop { #1 | #2 } }
4610     { 0 }
4611 }
4612 }
4613 % Set <int> to count for (position, gender) - uses cache.
4614 % \dfg_count_position_set:Nnnnn <int> {<db>} {<position>} {<gender>} {<phase>}
4615 \cs_new_protected:Npn \dfg_count_position_set:Nnnnn #1#2#3#4#5

```

```

4616 {
4617   \prop_if_in:NnTF \g_@@_dfg_position_names_prop {#3}
4618   {
4619     \dfg_compute_counts:nn {#2} {#5}
4620     \int_set:Nn #1 { \dfg_count_lookup:nn {#3} {#4} }
4621   }
4622   {
4623     \textcolor{error}{mismatch:~#3}
4624     \msg_warning:nne { dfg } { item-not-matched }{ #3 }
4625   }
4626 }
4627
4628 % Sum across all genders for one position.
4629 % \dfg_total_position_set:Nnnn <int> {<db>} {<position>} {<phase>}
4630 \cs_new_protected:Npn \dfg_total_position_set:Nnnn #1#2#3#4
4631 {
4632   \dfg_compute_counts:nn {#2} {#4}
4633   \int_set:Nn #1
4634   {
4635     \dfg_count_lookup:nn {#3} {f}
4636     + \dfg_count_lookup:nn {#3} {m}
4637     + \dfg_count_lookup:nn {#3} {d}
4638   }
4639 }
4640
4641 % Sum across all positions for one gender.
4642 % \dfg_total_gender_set:Nnnn <int> {<db>} {<gender>} {<phase>}
4643 \cs_new_protected:Npn \dfg_total_gender_set:Nnnn #1#2#3#4
4644 {
4645   \dfg_compute_counts:nn {#2} {#4}
4646   \int_set:Nn #1
4647   {
4648     \dfg_count_lookup:nn {postDoc} {#3}
4649     + \dfg_count_lookup:nn {groupLeader} {#3}
4650     + \dfg_count_lookup:nn {prof-W2} {#3}
4651     + \dfg_count_lookup:nn {prof-W3} {#3}
4652   }
4653 }
4654
4655 % Grand total across all positions and genders.
4656 % \dfg_total_position_gender_set:Nnn <int> {<db>} {<phase>}
4657 \cs_new_protected:Npn \dfg_total_position_gender_set:Nnn #1#2#3
4658 {
4659   \dfg_compute_counts:nn {#2} {#3}
4660   \int_zero:N #1
4661   \clist_map_inline:nn {postDoc, groupLeader, prof-W2, prof-W3}
4662   {
4663     \clist_map_inline:nn { f , m , d }
4664     {
4665       \int_add:Nn #1 { \dfg_count_lookup:nn {##1} {###1} }
4666     }
4667   }
4668 }

```

You can get the count of PIs of a certain position, gender and funding phase.

```

4669 \NewDocumentCommand{\getPositionGenderPhaseAmount}{ O{person} m m m }
4670 {
4671   % #1: database
4672   % #2: position
4673   % #3: gender
4674   % #4: phase
4675   \dfg_count_position_set:Nnnnn \l_@@_tmp_int {#1} {#2} {#3} {#4}
4676   \dfgShowCalculatedTag{\getPositionGenderPhaseAmount}{#1}
4677   { \int_use:N \l_@@_tmp_int }
4678 }

```

This command sums up a certain gender column based on a funding phase.

```

4679 \NewDocumentCommand{\getPositionPhaseTotal}{ O{person} m m }
4680 {
4681   % #1: database
4682   % #2: position
4683   % #3: phase
4684
4685   \dfg_total_position_set:Nnnn \l_@@_total_int {#1} {#2} {#3}
4686
4687   % no macro supplied → print the total
4688   \dfgShowCalculatedTag{getPositionPhaseTotal}{#1}
4689   { \int_use:N \l_@@_total_int }
4690 }

```

This command sums up a certain gender column based on a funding phase.

```

4691 \NewDocumentCommand{\getGenderPhaseTotal}{ O{person} m m }
4692 {
4693   % #1: database
4694   % #2: gender
4695   % #3: phase
4696   \dfg_total_gender_set:Nnnn \l_@@_total_int {#1} {#2} {#3}
4697
4698   % no macro supplied → print the total
4699   \dfgShowCalculatedTag{getGenderPhaseTotal}{#1}
4700   { \int_use:N \l_@@_total_int }
4701 }

```

This will get you the percentage of a certain position, gender and phase. Mainly for the table below, but can be used anywhere.

```

4702 \NewDocumentCommand{\getPositionGenderPhasePercentage}{ O{person} m m m }
4703 {
4704   % #1: database
4705   % #2: position
4706   % #3: gender
4707   % #4: phase
4708
4709   \dfg_total_position_set:Nnnn \l_@@_total_int {#1} {#2} {#4}
4710
4711   % --- number of the requested gender -----
4712   \dfg_count_position_set:Nnnnn \l_@@_tmp_int {#1}{#2}{#3}{#4}
4713
4714   % --- avoid division by zero -----
4715   \dfgShowCalculatedTag{getPositionGenderPhasePercentage}{#1}
4716   {
4717     \int_compare:nNnTF { \l_@@_total_int } = { 0 }
4718     { 0 }
4719     {
4720       % --- integer percentage (rounded) -----
4721       \int_set:Nn \l_@@_percent_int
4722       { \fp_eval:n { round( 100 * \l_@@_tmp_int / \l_@@_total_int ) } }
4723
4724       % print the integer together with the percent sign
4725       \int_use:N \l_@@_percent_int
4726     }
4727   }
4728 }

```

The following command is meant to get the overall percentage of a certain gender. It goes into the final total row of the table, but it also can be used elsewhere with any funding phase you want.

```

4729 \NewDocumentCommand{\getGenderPhasePercentage}{ O{person} m m }
4730 {
4731   % #1: database
4732   % #2: gender
4733   % #3: phase
4734
4735   \int_zero:N \l_@@_percent_int
4736   \int_zero:N \l_@@_tmp_int
4737   \int_zero:N \l_@@_tmp_total_int

```

```

4738
4739 \dfg_total_position_gender_set:Nnn \l_@@_tmp_total_int {#1} {#3}
4740
4741
4742 % % --- number of the requested gender -----
4743 \dfg_total_gender_set:Nnnn \l_@@_tmp_gender_int {#1}{#2}{#3}
4744
4745 % --- avoid division by zero -----
4746 \dfgShowCalculatedTag{getGenderPhasePercentage}{#1}
4747 {
4748   \int_compare:nNnTF { \l_@@_tmp_total_int } = { 0 }
4749   { 0 }
4750   {
4751     % --- integer percentage (rounded) -----
4752     \int_set:Nn \l_@@_percent_int
4753     { \fp_eval:n { round( 100 * \l_@@_tmp_gender_int / \l_@@_tmp_total_int ) } }
4754
4755     % print the integer together with the percent sign
4756     \int_use:N \l_@@_percent_int
4757   }
4758 }
4759 % \par Gender: #2--
4760 % Phase: #3--
4761 % Count: \int_use:N \l_@@_tmp_gender_int --
4762 % Count Total:\int_use:N \l_@@_tmp_total_int\par-----
4763 }

```

Finally the table which is mostly calculated automatically based on the person-database.

```

4764 \NewDocumentCommand{\GenderEqualityProjectLeadersTable}{ O{GenderEqualityProjectLeaders} }{%
4765   \def\dfgLocalDB{#1}
4766   \DTLifdbexists{\dfgLocalDB}{%
4767     % --- prime the count cache once for this table's phase -----
4768     \dfg_compute_counts:nn {person} {\theFundingPeriodNumeralPrevious}%
4769     \tl_clear:N \l_tblr_body_tl
4770     \DTLforeach*[
4771       % just making absolutely sure we only have the data sets we need.
4772       \DTLiseq{postDoc}{\pPosition}
4773       \OR
4774       \DTLiseq{groupLeader}{\pPosition}
4775       \OR
4776       \DTLiseq{prof-W2}{\pPosition}
4777       \OR
4778       \DTLiseq{prof-W3}{\pPosition}
4779     ]{\dfgLocalDB}{%
4780       \pPosition=position,%
4781       \pPrevObjPctFemale=previous-objective-percentage-female,%
4782       \pFutureObjPctFemale=future-objective-percentage-female%
4783     }{
4784
4785     \tl_gput_right:Nx \l_tblr_body_tl
4786     {
4787       \dfgShowTag{\pPosition}{position}
4788       {\dfgPositionName{\pPosition}}[\dfgLocalDB] % position
4789       & \dfgShowTag{\pPosition}{previous-objective-percentage-female}
4790       {\pPrevObjPctFemale}[\dfgLocalDB] % objective
4791       & \getPositionGenderPhaseAmount{\pPosition}{f}{\theFundingPeriodNumeralPrevious} % f number
4792       & \getPositionGenderPhaseAmount{\pPosition}{m}{\theFundingPeriodNumeralPrevious} % m number
4793       & \getPositionGenderPhaseAmount{\pPosition}{d}{\theFundingPeriodNumeralPrevious} % d number
4794       & \getPositionGenderPhasePercentage{\pPosition}{f}{\theFundingPeriodNumeralPrevious} % f percenta
4795       & \getPositionGenderPhasePercentage{\pPosition}{m}{\theFundingPeriodNumeralPrevious} % m percenta
4796       & \getPositionGenderPhasePercentage{\pPosition}{d}{\theFundingPeriodNumeralPrevious} % d percenta
4797       & \dfgShowTag{\pPosition}{future-objective-percentage-female}
4798       {\pFutureObjPctFemale}[\dfgLocalDB] % f objective
4799       \\
4800     }
4801   }
4802   \begin{tblr}[%

```

```

4803 theme=main,
4804 note{a}={Reference~ date:~ proposal~ for~ third~ funding~ period},
4805 expand=\l_tblr_body_tl,
4806 long
4807 ]{
4808 vline{3} = {3-4}{1pt,solid,tableLines},
4809 vline{6} = {4-4}{1pt,solid,tableLines},
4810 vline{9} = {1-4}{1pt,solid,tableLines},
4811 vspan=even,
4812 colspec = {
4813 X[m] % position
4814 m{2cm} % objective
4815 m{0.4cm} % f
4816 m{0.4cm} % m
4817 m{0.4cm} % d
4818 m{0.4cm} % f
4819 m{0.4cm} % m
4820 m{0.4cm} % d
4821 m{3cm} % objective
4822 },
4823 hspan=minimal, % !!!!! https://tex.stackexchange.com/a/637391/98739
4824 row{Z}= {font={\footnotesize\bfseries}},
4825 hline{5} = {1pt,solid,tableLines},
4826 hline{Y} = {1pt,solid,fg={tableOuterLines}},
4827 hline{2} = {wd=0pt},
4828 row{odd}={bg=white},
4829 row{even}={bg=tableRows},
4830 row{1-4}={bg=tableHeadingsBG},
4831 rowhead = 3,
4832 column{2-9}={halign={c}},
4833 % column{1} = {font={\bfseries}},
4834 % fg = {rwthBlue}},
4835 row{2-4} = {
4836 guard,
4837 valign={t},
4838 font={\footnotesize\bfseries},
4839 fg={tableHeadingsFont},
4840 bg={white}},
4841 }
4842 \SetCell[r=4]{c} % empty
4843 & \SetCell[c=6]{c} Second~ funding~ period %
4844 & %
4845 & %
4846 & %
4847 & %
4848 & %
4849 & %
4850 & Third~ funding~ period \\
4851 % empty
4852 & {Objective~ [\unit{\percent}]}
4853 & \SetCell[c=6]{c} Status~ Quo\TblrNote{a}
4854 &
4855 &
4856 &
4857 &
4858 &
4859 & {Objective~ [\unit{\percent}]} \\
4860 % empty
4861 & % empty
4862 & \SetCell[c=3]{c} Number
4863 &
4864 &
4865 & \SetCell[c=3]{c} [\unit{\percent}]
4866 &
4867 &
4868 & \\

```

```

4869 % empty
4870 & % empty
4871 & f
4872 & m
4873 & d
4874 & f
4875 & m
4876 & d
4877 & f \\
4878 % \tl_use:N
4879 \l_tblr_body_tl
4880 Total\printMarginalia{
4881   Total~ no.:~
4882   \dfg_total_position_gender_set:Nnn \l_@@_tmp_total_int
4883   {person} % database
4884   {\theFundingPeriodNumeralPrevious} % phase
4885   \num{\int_use:N \l_@@_tmp_total_int}
4886
4887 }
4888 & % objective
4889 & \getGenderPhaseTotal{f}{\theFundingPeriodNumeralPrevious} % number f
4890 & \getGenderPhaseTotal{m}{\theFundingPeriodNumeralPrevious} % number m
4891 & \getGenderPhaseTotal{d}{\theFundingPeriodNumeralPrevious} % number d
4892 & \getGenderPhasePercentage{f}{\theFundingPeriodNumeralPrevious} % percentage f
4893 & \getGenderPhasePercentage{m}{\theFundingPeriodNumeralPrevious} % percentage m
4894 & \getGenderPhasePercentage{d}{\theFundingPeriodNumeralPrevious} % percentage d
4895 & \\
4896 \end{tblr}}
4897 {
4898   Database~ \texttt{#1}~ missing.
4899   \msg_warning:nne { dfg } { database-not-found }{ #1 }
4900 }
4901 }

```

We continue with the list of existing instrumentation

```

4902 \NewDocumentCommand{\ExistingInstrumentationTable}{ O{existingInstrumentation} }{%
4903   \def\dfgLocalDB{#1}
4904   \def\tblrbody{}
4905   \DTLifdbexists{\dfgLocalDB}{%
4906     \DTLforeach*{\dfgLocalDB}{%
4907       \instProject=ref-project-id,%
4908       \instInstrument=instrument,%
4909       \instCompany=company,%
4910       \instQuantity=quantity,%
4911       \instYear=year,%
4912       \instCost=cost,%
4913       \instSource=financed-by%
4914     }{%
4915       \protected@edef\tblrbody{\tblrbody
4916         \getProject{\instProject}
4917         & \ifdefempty{\instQuantity}{}{
4918           \noexpand\dfgShowTag{\instProject/\instInstrument}{quantity}
4919           {\instQuantity}[\dfgLocalDB]\,\times\,,
4920           \noexpand\dfgShowTag{\instProject/\instInstrument}{instrument}
4921           {\instInstrument}[\dfgLocalDB]
4922           \ifdefempty{\instCompany}{}{\space (
4923             \noexpand\dfgShowTag{\instProject/\instInstrument}{company}
4924             {\instCompany}[\dfgLocalDB]}
4925           & \noexpand\dfgShowTag{\instProject/\instInstrument}{year}
4926           {\instYear}[\dfgLocalDB]
4927           & \noexpand\dfgShowTag{\instProject/\instInstrument}{cost}
4928           {\noexpand\@@_show_existing_instrumentation_cost:n{\instCost}}[\dfgLocalDB]
4929           & \noexpand\dfgShowTag{\instProject/\instInstrument}{financed-by}
4930           {\instSource}[\dfgLocalDB]
4931         }
4932       }%
4933       \begin{tblr}{%

```

```

4934     theme=main,
4935     expand=\tblrbody,
4936     long,
4937     note{a}={Figures~ in~ thousands},
4938     ]{%
4939         %rowsep=1pt,
4940         vspan=even,
4941         colspec = {X[-.8,m]X[4.5,m]X[m]X[-1,c,si={table-format=4.1}]X[1.7,m]},
4942         rowhead = 1,
4943         column{3}={halign={c}},
4944         column{4}={halign={r},guard},
4945         column{5}={halign={l}},
4946         % cell{1}{4}={valign={m}},
4947         cell{1}{1-5} = {cmd={\hypersetup{linkcolor=tableLink}}},
4948         row{1}={valign=t, halign={c},guard},
4949         % row{1} = {font={\bfseries},fg={white}}
4950     }
4951     Project %
4952     & Description~ of~ instrumentation %
4953     & {Year~ of~ \\\ purchase}
4954     & \SetCell{c}{\{Cost~ of~ \\\ purchase\}}\TblrNote{a}
4955     & {Source~ of~ \\\ funding} \\\
4956     \tblrbody
4957 \end{tblr}
4958 }
4959 {
4960 Database~ \texttt{#1}~ missing.
4961 \msg_warning:nne { dfg } { database-not-found }{ #1 }
4962 a }
4963 }

```

We turn to the laboratory animals

```

4964 \NewDocumentCommand{\UpkeepLaboratoryAnimalsTable}{O{UpkeepLaboratoryAnimals}}{%
4965 \def\tmpLocalDB{#1}%
4966 \DTLifdbexists{\tmpLocalDB}{%
4967 \DTLsort{ref-project-id}{\tmpLocalDB}%
4968 \DTLsumcolumn{\tmpLocalDB}{quantity}{\totalQuantity}%
4969 \DTLsumcolumn{\tmpLocalDB}{requested-funds}{\totalRequestedFunds}%
4970 \DTLsumcolumn{\tmpLocalDB}{existing-funds}{\totalExistingFunds}%
4971 \DTLconverttodecimal{\totalRequestedFunds}{\totalRequestedFunds}%
4972 \DTLconverttodecimal{\totalExistingFunds}{\totalExistingFunds}%
4973 \def\tblrbody{}%
4974 \def\totalMouseQuantity{}%
4975 \def\totalRatQuantity{}%
4976 \DTLforeach*{\tmpLocalDB}{%
4977 \pProject=ref-project-id,%
4978 \pSpecies=species,%
4979 \pQuantity=quantity,
4980 \pWeeksKept=weeks-kept,%
4981 \pPurchasingCosts=purchasing-costs,%
4982 \pRequestedFunds=requested-funds,%
4983 \pExistingFunds=existing-funds%
4984 }{
4985 \str_case:en {\pSpecies}{
4986
4987 {mouse}{%
4988 \protected@edef\crcSpecies{Mouse}%
4989 \protected@edef\crcHousingCosts{\dfgMouseHousing}%
4990 \DTLgadd{\totalMouseQuantity}{\totalMouseQuantity}{\pQuantity}}%
4991 {mouse-gnotobiotic}{%
4992 \protected@edef\crcSpecies{Mouse~ {\footnotesize(gnotobiotic)}}%
4993 \protected@edef\crcHousingCosts{\dfgMouseHousingGnotobiotic}%
4994 \DTLgadd{\totalMouseQuantity}{\totalMouseQuantity}{\pQuantity}}%
4995 {rat}{%
4996 \protected@edef\crcSpecies{Rat}%
4997 \protected@edef\crcHousingCosts{\dfgRatHousing}%
4998 \DTLgadd{\totalRatQuantity}{\totalRatQuantity}{\pQuantity}}

```

```

4999     }
5000     \protected@edef\tblrbody{\tblrbody
5001     \getProject{\pProject}
5002     & \noexpand\dfgShowTag{\pProject/\pSpecies}{species}
5003     {\crcSpecies}[\tmpLocalDB]
5004     & \noexpand\dfgShowTag{\pProject/\pSpecies}{quantity}
5005     {\noexpand\@_show_table_number:n{\pQuantity}}[\tmpLocalDB]
5006     & \noexpand\dfgShowTag{\pProject/\pSpecies}{weeks-kept}
5007     {\noexpand\@_show_table_number:n{\pWeeksKept}}[\tmpLocalDB]
5008     & \noexpand\dfgShowCalculatedTag{animalHousingRate}
5009     {settings,\tmpLocalDB}
5010     {\noexpand\@_show_table_number:n{\crcHousingCosts}}
5011     & \noexpand\dfgShowTag{\pProject/\pSpecies}{purchasing-costs}
5012     {\noexpand\@_show_eur:n{\pPurchasingCosts}}[\tmpLocalDB]
5013     & \noexpand\dfgShowTag{\pProject/\pSpecies}{requested-funds}
5014     {\noexpand\@_show_eur:n{\pRequestedFunds}}[\tmpLocalDB]
5015     & \noexpand\dfgShowTag{\pProject/\pSpecies}{existing-funds}
5016     {\noexpand\@_show_eur:n{\pExistingFunds}}[\tmpLocalDB] \\\
5017     } % \DTLconverttodecimal{\totalMouseQuantity}{\totalMouseQuantity}%
5018     }%
5019     \begin{tblr}[%
5020     theme=main,
5021     expand=\tblrbody,
5022     long,
5023     note{a}={Figures~ in~ EUR},
5024     ]{%
5025     vspan=even,
5026     colspec={*{1}{Q[1]}
5027     *{1}{X[2,1]}
5028     *{2}{X[1.3,c,si={table-format=3}]}
5029     *{1}{X[-1,c,si={table-format=2.2,table-auto-round=false}]}
5030     *{1}{X[-1,c,si={table-format=5}]}
5031     *{2}{X[-1,c,si={table-format=6}]}
5032     },
5033     rowhead={1},
5034     column{3-8}={guard},
5035     %rowfoot = 1,
5036     hline{Y}={%
5037     wd=1pt,
5038     tableLines},
5039     row{Z}={%
5040     bg=white,
5041     fg=black,
5042     font=\footnotesize\bfseries,
5043     halign={c},
5044     valign={t}},
5045     % cell{Y}{3}={halign={l}},
5046     row{1}={%
5047     guard,
5048     halign={c},
5049     cmd={\hypersetup{linkcolor=tableLink}},
5050     },
5051     }
5052     Project
5053     & Species
5054     & Quantity
5055     & {Average~
5056     & {Housing~ costs~
5057     & {Purchasing~
5058     & {Requested~
5059     & {Existing~
5060     \tblrbody
5061     Total
5062     &
5063     & \SetCell{halign={l},font={\bfseries\footnotesize}}
5064     {Mice:~\dfgShowCalculatedTag{UpkeepLaboratoryAnimalsTable}}{\tmpLocalDB}

```

```

\\number~ of~\\we
\\per~ animal~\\p
\\costs~ \\per~ a
\\funds\TblrNote{
\\funds\TblrNote{

```

```

5065         {\totalMouseQuantity}
5066         \Rats:~\dfgShowCalculatedTag{UpkeepLaboratoryAnimalsTable}{\tmpLocalDB}
5067         {\totalRatQuantity}}
5068     & \SetCell{tableNoValue}
5069     & \SetCell{tableNoValue}
5070     & \SetCell{tableNoValue}
5071     & \dfgShowCalculatedTag{UpkeepLaboratoryAnimalsTable}{\tmpLocalDB}
5072     {\@@_show_eur:n{\totalRequestedFunds}}
5073     & \dfgShowCalculatedTag{UpkeepLaboratoryAnimalsTable}{\tmpLocalDB}
5074     {\@@_show_eur:n{\totalExistingFunds}}
5075 \end{tblr}}
5076 {
5077 Database~ \texttt{#1}~ missing.
5078 \msg_warning:nne { dfg } { database-not-found }{ #1 }
5079 }
5080 }
5081 \newcommand{\dfgRotate}[1]{\rotatebox{90}{\dfgPositionName{#1}}}

```

`\getCountRequestedStaff` with aggregate indexing Funding declarations update a property-list index when they are read. Consequently this command only performs one property lookup; it never traverses a datatool database. This matters especially for `tabularray`, which evaluates table cells more than once while measuring and typesetting them. Missing tuples and explicit zero values both print the faded multiplication sign used elsewhere in funding tables, preserving the display of the former database sum.

`\getCountRequestedStaff`[*⟨project⟩*]{*⟨year⟩*}{*⟨category⟩*}

Sum of the requested staff quantity-year(*year*) values in the currently selected requested-funding database, normally `RequestedFunding`, filtered by *⟨category⟩* and (when *⟨project⟩* is given) by *⟨project⟩*. Display follows the usual table conventions: an absent or zero sum prints a faded `\texttt{times}`, and any other value prints verbatim.

```

5082 \tl_new:N \l_@@_requested_staff_database_tl
5083 \tl_set:Nn \l_@@_requested_staff_database_tl { RequestedFunding }
5084
5085 \NewDocumentCommand{\getCountRequestedStaff}{omm}{%
5086   \tl_set:Nx \l_@@_funding_cache_key_tl
5087   {
5088     \IfNoValueTF{#1}
5089     {\tl_use:N \l_@@_requested_staff_database_tl/
5090      __ALL__/#3/quantity-year#2}
5091     {\tl_use:N \l_@@_requested_staff_database_tl/
5092      #1/#3/quantity-year#2}
5093   }
5094   \dfgShowCalculatedTag{getCountRequestedStaff}
5095   {\l_@@_requested_staff_database_tl}
5096   {
5097     \prop_get:NVNTF \g_@@_funding_staff_quantity_prop
5098     \l_@@_funding_cache_key_tl \l_@@_funding_cache_value_tl
5099     {
5100       \fp_compare:nNnTF {\l_@@_funding_cache_value_tl} = {0}
5101       {\textcolor{tableNoValue!60!black}{\texttt{times}}}
5102       {\l_@@_funding_cache_value_tl}
5103     }
5104     {\textcolor{tableNoValue!60!black}{\texttt{times}}}
5105   }
5106 }

```

`\OverviewExistingStaffTable`^{→P.135} The chapter-2 overview reuses the project-level staff roster instead of maintaining a second set of totals. Only records with `funding-status=existing` are counted. Each record contributes one person to every distinct parent affiliation reached through its `ref-institution-id` list; when that field is absent, both organisation and category are inherited through `ref-person-id` from the central person row. Multiple institutions at the same affiliation are counted once. The comma-separated applicant affiliations come from `meta` and occupy the first numeric columns. The heading is singular for one applicant affiliation and plural for several. Other affiliations are added in first-use order.

Because project declarations normally occur after chapter 2, the default database is `RequestedFundingStaffOverview`, restored from the preceding LaTeX run's auxiliary file. Passing `RequestedFundingStaff` explicitly is useful in focused tests or documents that load all rows before the table.

The DFG overview has seven fixed category rows. The more detailed roster categories `medDoc` and `assistant` are folded into `enquoteOther` research staff and `enquoteStudent` and graduate assistants, respectively.

\OverviewExistingStaffTable [*<database>*]

Print the DFG `enquoteOverview` of existing staff. The optional database defaults to `RequestedFundingStaffOverview`. Use the public call `\printTable` ^{P.32} `{OverviewExistingStaff}` in chapter 2. Direct calls also emit the standard skipped-item notice instead of querying unavailable metadata when either fast-compilation mode is active.

```

5107 \seq_new:N \l_@@_oes_affiliation_seq
5108 \prop_new:N \l_@@_oes_affiliation_name_prop
5109 \prop_new:N \l_@@_oes_affiliation_abbreviation_prop
5110 \prop_new:N \l_@@_oes_count_prop
5111 \prop_new:N \l_@@_oes_row_affiliation_seen_prop
5112 \tl_new:N \l_@@_oes_applicant_affiliation_tl
5113 \tl_new:N \l_@@_oes_person_tl
5114 \tl_new:N \l_@@_oes_category_tl
5115 \tl_new:N \l_@@_oes_institutions_tl
5116 \tl_new:N \l_@@_oes_affiliation_tl
5117 \tl_new:N \l_@@_oes_candidate_affiliation_tl
5118 \tl_new:N \l_@@_oes_registered_affiliation_tl
5119 \tl_new:N \l_@@_oes_affiliation_name_tl
5120 \tl_new:N \l_@@_oes_affiliation_abbreviation_tl
5121 \tl_new:N \l_@@_oes_lookup_key_tl
5122 \tl_new:N \l_@@_oes_database_tl
5123 \tl_new:N \l_@@_oes_table_body_tl
5124 \tl_new:N \l_@@_oes_colspec_tl
5125 \int_new:N \l_@@_oes_affiliation_count_int
5126 \int_new:N \l_@@_oes_applicant_affiliation_count_int
5127 \int_new:N \l_@@_oes_other_affiliation_count_int
5128 \int_new:N \l_@@_oes_record_count_int
5129 \clist_new:N \l_@@_oes_applicant_affiliation_clist
5130
5131 \cs_new_protected:Npn \l_@@_oes_resolve_person_fallbacks:
5132 {
5133   \tl_if_blank:VF \l_@@_oes_person_tl
5134   {
5135     \DTLifdbexists{person}
5136     {
5137       \DTLgetvalueforkey{\l_tmpa_tl}{id}{person}{id}
5138       {\l_@@_oes_person_tl}
5139       \DTLifnulloreempty{\l_tmpa_tl}
5140       {
5141         \msg_warning:nnee { dfg } { requested-staff-unresolved-person }
5142         { \pOESProject } { \l_@@_oes_person_tl }
5143       }
5144     }
5145     \tl_if_blank:VT \l_@@_oes_category_tl
5146     {
5147       \DTLgetvalueforkey{\l_tmpa_tl}{position}{person}{id}
5148       {\l_@@_oes_person_tl}
5149       \DTLifnulloreempty{\l_tmpa_tl}
5150       { }
5151       { \tl_set:NV \l_@@_oes_category_tl \l_tmpa_tl }
5152     }
5153     \bool_lazy_all:nT
5154     {
5155       { \tl_if_blank_p:V \l_@@_oes_institutions_tl }
5156       { \tl_if_blank_p:V \l_@@_oes_affiliation_tl }
5157     }
5158     {
5159       \DTLgetvalueforkey{\l_tmpa_tl}{ref-institution-id}{person}{id}
5160       {\l_@@_oes_person_tl}
5161       \DTLifnulloreempty{\l_tmpa_tl}
5162       { }
5163       { \tl_set:NV \l_@@_oes_institutions_tl \l_tmpa_tl }
5164     }
5165     \tl_if_blank:VT \l_@@_oes_institutions_tl

```

```

5165         {
5166             \DTLgetvalueforkey{\l_tmpa_tl}{ref-affiliation-id}{person}{id}
5167             {\l_@@_oes_person_tl}
5168             \DTLifnullorempty{\l_tmpa_tl}
5169             { }
5170             { \tl_set:NV \l_@@_oes_affiliation_tl \l_tmpa_tl }
5171         }
5172     }
5173 }
5174 }
5175 {
5176     \msg_warning:nnee { dfg } { requested-staff-unresolved-person }
5177     { \pOESProject } { \l_@@_oes_person_tl }
5178 }
5179 }
5180 }
5181
5182 \cs_new_protected:Npn \l_@@_oes_register_affiliation:n #1
5183 {
5184     \tl_set:Nx \l_@@_oes_registered_affiliation_tl {#1}
5185     \tl_trim_spaces:N \l_@@_oes_registered_affiliation_tl
5186     \tl_if_blank:VF \l_@@_oes_registered_affiliation_tl
5187     {
5188         \seq_if_in:NVF \l_@@_oes_affiliation_seq
5189         \l_@@_oes_registered_affiliation_tl
5190         {
5191             \tl_clear:N \l_@@_oes_affiliation_name_tl
5192             \tl_clear:N \l_@@_oes_affiliation_abbreviation_tl
5193             \DTLifdbexists{affiliation}
5194             {
5195                 \DTLgetvalueforkey{\l_@@_oes_affiliation_name_tl}
5196                 {name}{affiliation}{id}{\l_@@_oes_registered_affiliation_tl}
5197                 \DTLifnullorempty{\l_@@_oes_affiliation_name_tl}
5198                 {
5199                     \msg_warning:nnee { dfg } { requested-staff-unresolved-affiliation }
5200                     { OverviewExistingStaff }
5201                     { \l_@@_oes_registered_affiliation_tl }
5202                     \tl_set:NV \l_@@_oes_affiliation_name_tl
5203                     \l_@@_oes_registered_affiliation_tl
5204                     \tl_set:NV \l_@@_oes_affiliation_abbreviation_tl
5205                     \l_@@_oes_registered_affiliation_tl
5206                 }
5207             }
5208             \DTLgetvalueforkey{\l_@@_oes_affiliation_abbreviation_tl}
5209             {abbreviation}{affiliation}{id}
5210             {\l_@@_oes_registered_affiliation_tl}
5211             \DTLifnullorempty{\l_@@_oes_affiliation_abbreviation_tl}
5212             {
5213                 \msg_warning:nne { dfg } { requested-staff-missing-abbreviation }
5214                 { \l_@@_oes_registered_affiliation_tl }
5215                 \tl_set:NV \l_@@_oes_affiliation_abbreviation_tl
5216                 \l_@@_oes_affiliation_name_tl
5217             }
5218             { }
5219         }
5220     }
5221     {
5222         \msg_warning:nnee { dfg } { requested-staff-unresolved-affiliation }
5223         { OverviewExistingStaff }
5224         { \l_@@_oes_registered_affiliation_tl }
5225         \tl_set:NV \l_@@_oes_affiliation_name_tl
5226         \l_@@_oes_registered_affiliation_tl
5227         \tl_set:NV \l_@@_oes_affiliation_abbreviation_tl
5228         \l_@@_oes_registered_affiliation_tl
5229     }
5230     \seq_put_right:NV \l_@@_oes_affiliation_seq

```

```

5231     \l_@@_oes_registered_affiliation_tl
5232     \prop_put:NVV \l_@@_oes_affiliation_name_prop
5233     \l_@@_oes_registered_affiliation_tl \l_@@_oes_affiliation_name_tl
5234     \prop_put:NVV \l_@@_oes_affiliation_abbreviation_prop
5235     \l_@@_oes_registered_affiliation_tl
5236     \l_@@_oes_affiliation_abbreviation_tl
5237   }
5238 }
5239 }
5240
5241 \cs_new_protected:Npn \@@_oes_count_affiliation:n #1
5242 {
5243   \tl_set:Ne \l_@@_oes_candidate_affiliation_tl {#1}
5244   \tl_trim_spaces:N \l_@@_oes_candidate_affiliation_tl
5245   \tl_if_blank:VF \l_@@_oes_candidate_affiliation_tl
5246   {
5247     \prop_if_in:NVF \l_@@_oes_row_affiliation_seen_prop
5248       \l_@@_oes_candidate_affiliation_tl
5249     {
5250       \prop_put:NVN \l_@@_oes_row_affiliation_seen_prop
5251         \l_@@_oes_candidate_affiliation_tl {1}
5252       \@@_oes_register_affiliation:n
5253         { \l_@@_oes_candidate_affiliation_tl }
5254       \tl_set:Nx \l_tmpb_tl
5255         { \l_@@_oes_category_tl / \l_@@_oes_candidate_affiliation_tl }
5256       \prop_get:NVNTF \l_@@_oes_count_prop \l_tmpb_tl \l_tmpc_tl
5257       { \int_set:Nn \l_tmpa_int { \l_tmpc_tl + 1 } }
5258       { \int_set:Nn \l_tmpa_int { 1 } }
5259       \prop_put:NVx \l_@@_oes_count_prop \l_tmpb_tl
5260       { \int_use:N \l_tmpa_int }
5261     }
5262   }
5263 }
5264
5265 \cs_new_protected:Npn \@@_oes_collect_current:
5266 {
5267   \DTLifnullloempty{\pOESPerson}
5268   { \tl_clear:N \l_@@_oes_person_tl }
5269   { \tl_set:Ne \l_@@_oes_person_tl {\pOESPerson} }
5270   \DTLifnullloempty{\pOESCategory}
5271   { \tl_clear:N \l_@@_oes_category_tl }
5272   { \tl_set:Ne \l_@@_oes_category_tl {\pOESCategory} }
5273   \DTLifnullloempty{\pOESInstitutions}
5274   { \tl_clear:N \l_@@_oes_institutions_tl }
5275   { \tl_set:Ne \l_@@_oes_institutions_tl {\pOESInstitutions} }
5276   \DTLifnullloempty{\pOESAffiliation}
5277   { \tl_clear:N \l_@@_oes_affiliation_tl }
5278   { \tl_set:Ne \l_@@_oes_affiliation_tl {\pOESAffiliation} }
5279   \@@_oes_resolve_person_fallbacks:
5280   \str_case:VnF \l_@@_oes_category_tl
5281   {
5282     { prof }           { \tl_set:Nn \l_@@_oes_category_tl { prof } }
5283     { prof-W2 }        { \tl_set:Nn \l_@@_oes_category_tl { prof } }
5284     { prof-W3 }        { \tl_set:Nn \l_@@_oes_category_tl { prof } }
5285     { groupLeader }    { \tl_set:Nn \l_@@_oes_category_tl { groupLeader } }
5286     { postDoc }        { \tl_set:Nn \l_@@_oes_category_tl { postDoc } }
5287     { PhD }            { \tl_set:Nn \l_@@_oes_category_tl { PhD } }
5288     { medDoc }         { \tl_set:Nn \l_@@_oes_category_tl { research } }
5289     { research }       { \tl_set:Nn \l_@@_oes_category_tl { research } }
5290     { nonResearch }    { \tl_set:Nn \l_@@_oes_category_tl { nonResearch } }
5291     { student }        { \tl_set:Nn \l_@@_oes_category_tl { student } }
5292     { assistant }      { \tl_set:Nn \l_@@_oes_category_tl { student } }
5293   }
5294   { \tl_clear:N \l_@@_oes_category_tl }
5295   \tl_if_blank:VF \l_@@_oes_category_tl
5296   {

```

```

5297 \int_incr:N \l_@@_oes_record_count_int
5298 \prop_clear:N \l_@@_oes_row_affiliation_seen_prop
5299 \tl_if_blank:VTF \l_@@_oes_institutions_tl
5300 {
5301   \tl_if_blank:VTF \l_@@_oes_affiliation_tl
5302   {
5303     \msg_warning:nne { dfg } { existing-staff-no-organisation }
5304     { \pOESProject / \pOESLastname }
5305   }
5306   { \@@_oes_count_affiliation:n { \l_@@_oes_affiliation_tl } }
5307 }
5308 {
5309   \clist_set:NV \l_tmpa_clist \l_@@_oes_institutions_tl
5310   \clist_map_inline:Nn \l_tmpa_clist
5311   {
5312     \tl_clear:N \l_tmpa_tl
5313     \DTLifdbexists{institution}
5314     {
5315       \DTLgetvalueforkey{\l_tmpa_tl}
5316       {ref-affiliation-id}{institution}{id}{##1}
5317     }
5318     { }
5319     \DTLifnulloreempty{\l_tmpa_tl}
5320     {
5321       \msg_warning:nnee { dfg } { requested-staff-unresolved-institution }
5322       { OverviewExistingStaff } {##1}
5323     }
5324     { \@@_oes_count_affiliation:n { \l_tmpa_tl } }
5325   }
5326 }
5327 }
5328 }
5329
5330 \cs_new_protected:Npn \@@_oes_append_empty_cells:n #1
5331 {
5332   \int_step_inline:nn {#1}
5333   { \tl_put_right:Nn \l_@@_oes_table_body_tl { & } }
5334 }
5335
5336 \cs_new_protected:Npn \@@_oes_append_category:nn #1#2
5337 {
5338   \tl_put_right:Nn \l_@@_oes_table_body_tl {#2}
5339   \seq_map_inline:Nn \l_@@_oes_affiliation_seq
5340   {
5341     \tl_set:Ne \l_@@_oes_lookup_key_tl { #1 / ##1 }
5342     \prop_get:NVNTF \l_@@_oes_count_prop
5343     \l_@@_oes_lookup_key_tl \l_tmpc_tl
5344     {
5345       \tl_put_right:Ne \l_@@_oes_table_body_tl
5346       {
5347         & \exp_not:N \dfgShowCalculatedTag{OverviewExistingStaffTable}
5348         { \exp_not:N \l_@@_oes_database_tl, person, institution, affiliation }
5349         { \exp_not:N \l_tmpc_tl }
5350       }
5351     }
5352     {
5353       \tl_put_right:Ne \l_@@_oes_table_body_tl
5354       {
5355         & \exp_not:N \dfgShowCalculatedTag{OverviewExistingStaffTable}
5356         { \exp_not:N \l_@@_oes_database_tl, person, institution, affiliation } {0}
5357       }
5358     }
5359   }
5360   \tl_put_right:Nn \l_@@_oes_table_body_tl { \\ }
5361 }
5362

```

```

5363 \cs_new_protected:Npn \l_@@_oes_build_table_body:
5364 {
5365   \int_set:Nn \l_@@_oes_affiliation_count_int
5366     { \seq_count:N \l_@@_oes_affiliation_seq }
5367   \int_set:Nn \l_@@_oes_other_affiliation_count_int
5368     {
5369     \l_@@_oes_affiliation_count_int
5370     - \l_@@_oes_applicant_affiliation_count_int
5371     }
5372   \tl_set:Nx \l_@@_oes_colspec_tl
5373     {
5374     X[4,1]~*{\int_use:N \l_@@_oes_affiliation_count_int}{X[1,c]}
5375     }
5376   \tl_clear:N \l_@@_oes_table_body_tl
5377   \tl_put_right:Nx \l_@@_oes_table_body_tl
5378     {
5379     \exp_not:N \SetCell [r=3] {c,m} Category
5380     & \exp_not:N \SetCell
5381     [c=\int_use:N \l_@@_oes_affiliation_count_int] {c,m}
5382     {Number~of~persons}
5383     }
5384   \@@_oes_append_empty_cells:n
5385     { \l_@@_oes_affiliation_count_int - 1 }
5386   \tl_put_right:Nn \l_@@_oes_table_body_tl { \\ & }
5387   \int_compare:nNnTF
5388     { \l_@@_oes_applicant_affiliation_count_int } = {1}
5389     {
5390     \tl_put_right:Nn \l_@@_oes_table_body_tl
5391     { \SetCell{c,m} {at~the~applicant\\university} }
5392     }
5393     {
5394     \tl_put_right:Nx \l_@@_oes_table_body_tl
5395     {
5396     \exp_not:N \SetCell
5397     [c=\int_use:N \l_@@_oes_applicant_affiliation_count_int] {c,m}
5398     {at~the~applicant\\universities}
5399     }
5400     \@@_oes_append_empty_cells:n
5401     { \l_@@_oes_applicant_affiliation_count_int - 1 }
5402     }
5403   \int_compare:nNnT { \l_@@_oes_other_affiliation_count_int } > {0}
5404     {
5405     \tl_put_right:Nx \l_@@_oes_table_body_tl
5406     {
5407     & \exp_not:N \SetCell
5408     [c=\int_use:N \l_@@_oes_other_affiliation_count_int] {c,m}
5409     {at~other~participating\\institutions}
5410     }
5411     \@@_oes_append_empty_cells:n
5412     { \l_@@_oes_other_affiliation_count_int - 1 }
5413     }
5414   \tl_put_right:Nn \l_@@_oes_table_body_tl { \\ }
5415   \tl_put_right:Nn \l_@@_oes_table_body_tl { & }
5416   \seq_map_indexed_inline:Nn \l_@@_oes_affiliation_seq
5417     {
5418     \int_compare:nNnF {##1} = {1}
5419     { \tl_put_right:Nn \l_@@_oes_table_body_tl { & } }
5420     \tl_set:Nn \l_tmpa_tl {##2}
5421     \prop_get:NVN \l_@@_oes_affiliation_abbreviation_prop
5422     \l_tmpa_tl \l_tmpb_tl
5423     \tl_put_right:Ne \l_@@_oes_table_body_tl
5424     {
5425     \exp_not:N \dfgShowCalculatedTag{affiliationLabel}{affiliation}
5426     {\exp_not:N \l_tmpb_tl}
5427     }
5428   }

```

```

5429 \tl_put_right:Nn \l_@@_oes_table_body_tl { \ }
5430 \@@_oes_append_category:nn { prof } { Professors }
5431 \@@_oes_append_category:nn { groupLeader }
5432 { Junior~research~group~leaders }
5433 \@@_oes_append_category:nn { postDoc } { Postdoctoral~researchers }
5434 \@@_oes_append_category:nn { PhD } { Doctoral~researchers }
5435 \@@_oes_append_category:nn { research } { Other~research~staff }
5436 \@@_oes_append_category:nn { nonResearch } { Non-research~staff }
5437 \@@_oes_append_category:nn { student }
5438 { Student~and~graduate~assistants }
5439 }
5440
5441 \cs_new_protected:Npn \@@_oes_print_legend:
5442 {
5443 \vspace*{-1.5\baselineskip}%
5444 %\par\noindent
5445 \group_begin:
5446 \footnotesize\textbf{Affiliations:}\space
5447 \seq_map_indexed_inline:Nn \l_@@_oes_affiliation_seq
5448 {
5449 \int_compare:nNf {##1} = {1} {;\space}
5450 \tl_set:Nn \l_tmpa_tl {##2}
5451 \prop_get:NVN \l_@@_oes_affiliation_abbreviation_prop
5452 \l_tmpa_tl \l_tmpb_tl
5453 \prop_get:NVN \l_@@_oes_affiliation_name_prop
5454 \l_tmpa_tl \l_tmppc_tl
5455 \textbf{\dfgShowCalculatedTag{affiliationLabel}{affiliation}
5456 {\l_tmpb_tl}}:~
5457 \dfgShowTag{##2}{name}{\l_tmppc_tl}{affiliation}
5458 }
5459 .\par
5460 \group_end:
5461 }
5462
5463 \cs_new_protected:Npn \@@_oes_typeset:n #1
5464 {
5465 \begin{tblr}[
5466 theme=main,
5467 long,
5468 expand=\l_@@_oes_table_body_tl
5469 ]{
5470 colspec={#1},
5471 rowhead=3,
5472 rows={valign=m},
5473 column{2-Z}={halign=c},
5474 row{1-3}={font=\footnotesize\bfseries,
5475 fg=tableHeadingsFont,bg=tableHeadingsBG},
5476 hline{4}={wd=1pt,tableLines},
5477 vline{2}={wd=.75pt,tableLines}
5478 }
5479 \l_@@_oes_table_body_tl
5480 \end{tblr}
5481 }
5482
5483 \cs_new_protected:Npn \@@_overview_existing_staff:n #1
5484 {
5485 \group_begin:
5486 \tl_set:Nn \l_@@_oes_database_tl {#1}
5487 \seq_clear:N \l_@@_oes_affiliation_seq
5488 \prop_clear:N \l_@@_oes_affiliation_name_prop
5489 \prop_clear:N \l_@@_oes_affiliation_abbreviation_prop
5490 \prop_clear:N \l_@@_oes_count_prop
5491 \int_zero:N \l_@@_oes_record_count_int
5492 \tl_clear:N \l_@@_oes_applicant_affiliation_tl
5493 \DTLifdbexists{meta}
5494 {

```

```

5495     \DTLgetvalueforkey{\l_@@_oes_applicant_affiliation_tl}
5496     {ref-affiliation-id}{meta}{id}{crc}
5497 }
5498 { }
5499 \DTLifnulllorempty{\l_@@_oes_applicant_affiliation_tl}
5500 { \tl_set:Nn \l_@@_oes_applicant_affiliation_tl { applicant } }
5501 { }
5502 \clist_set:NV \l_@@_oes_applicant_affiliation_clist
5503 \l_@@_oes_applicant_affiliation_tl
5504 \clist_map_inline:Nn \l_@@_oes_applicant_affiliation_clist
5505 { \@@_oes_register_affiliation:n {##1} }
5506 \int_set:Nn \l_@@_oes_applicant_affiliation_count_int
5507 { \seq_count:N \l_@@_oes_affiliation_seq }
5508 \DTLifdbexists{#1}
5509 {
5510     \DTLforeach*{#1}
5511     {
5512         \pOESProject=ref-project-id,
5513         \pOESStatus=funding-status,
5514         \pOESLastname=lastname,
5515         \pOESPerson=ref-person-id,
5516         \pOESCategory=category,
5517         \pOESInstitutions=ref-institution-id,
5518         \pOESAffiliation=ref-affiliation-id
5519     }
5520     {
5521         \DTLifnulllorempty{\pOESStatus}
5522         { }
5523         {
5524             \tl_set:Nc \l_tmpa_tl { \pOESStatus }
5525             \str_if_eq:VnT \l_tmpa_tl { existing }
5526             { \@@_oes_collect_current: }
5527         }
5528     }
5529 }
5530 { \msg_warning:nnn { dfg } { database-not-found } {#1} }
5531 \int_compare:nNnT { \l_@@_oes_record_count_int } = {0}
5532 { \msg_warning:nnn { dfg } { existing-staff-no-data } {#1} }
5533 \@@_oes_build_table_body:
5534 \exp_args:NV \@@_oes_typeset:n \l_@@_oes_colspec_tl
5535 \@@_oes_print_legend:
5536 \group_end:
5537 }
5538
5539 \NewDocumentCommand{\OverviewExistingStaffTable}
5540 { O{RequestedFundingStaffOverview} }
5541 {
5542     \bool_if:NTF \l_@@_class_fastcompile_bool
5543     { \dfgItemSkipped{OverviewExistingStaffTable} }
5544     { \@@_overview_existing_staff:n {#1} }
5545 }

```

`\OverviewOfFundsRequestedForStaffTable` Each body row is assembled by `\tl_put_right:Nx` into `\l_tblr_body_tl` and contains twenty-five `\getCountRequestedStaff`^{P.134} calls (five years × five categories) plus the leading `\getProject{<project>}`; the foot row issues another twenty-five calls for the column totals.

No indexing logic appears here: `\addEntry`^{P.25} maintains the aggregate property list and `\getCountRequestedStaff`^{P.134} encapsulates its lookup. The speed-up therefore applies transparently to every other consumer of the macro as well (marginalia, individual project tables, etc.).

`\OverviewOfFundsRequestedForStaffTable` [*<database>*]

Emit the overview of requested staff funding. *<database>* defaults to `RequestedFundingOverview`, which combines funding declared before the document with project-local declarations restored from the preceding run’s auxiliary files. The table contains five year bands of five category columns (postDoc, PhD, research, nonResearch, student), one body row per project, and a “Total” foot row.

```

5546 \NewDocumentCommand{\OverviewOfFundsRequestedForStaffTable}{ O{RequestedFundingOverview} }{%

```

```

5547 \def\tmpLocalDB{#1}
5548 \tl_set:Nn \l_@@_requested_staff_database_tl {#1}
5549 \DTLifdbexists{\tmpLocalDB}{%
5550 \tl_clear:N \l_tblr_body_tl
5551 \DTLsort{number}{project}
5552 \DTLforeach* [
5553 \not\DTLiseq{\tmpProjectStatus}{E}
5554 \and
5555 \not\DTLiseq{\tmpProjectConsiderForLists}{false}
5556 ]{project}{%
5557 \pProject = number,
5558 \tmpProjectStatus = project-status,
5559 \tmpProjectType = project-type,
5560 \tmpProjectConsiderForLists = consider-for-lists,
5561 }{%
5562 \tl_put_right:Nx \l_tblr_body_tl
5563 {
5564 \getProject{\pProject}
5565 & \getCountRequestedStaff[\pProject]{1}{postDoc}
5566 & \getCountRequestedStaff[\pProject]{1}{PhD}
5567 & \getCountRequestedStaff[\pProject]{1}{research}
5568 & \getCountRequestedStaff[\pProject]{1}{nonResearch}
5569 & \getCountRequestedStaff[\pProject]{1}{student}
5570
5571 & \getCountRequestedStaff[\pProject]{2}{postDoc}
5572 & \getCountRequestedStaff[\pProject]{2}{PhD}
5573 & \getCountRequestedStaff[\pProject]{2}{research}
5574 & \getCountRequestedStaff[\pProject]{2}{nonResearch}
5575 & \getCountRequestedStaff[\pProject]{2}{student}
5576
5577 & \getCountRequestedStaff[\pProject]{3}{postDoc}
5578 & \getCountRequestedStaff[\pProject]{3}{PhD}
5579 & \getCountRequestedStaff[\pProject]{3}{research}
5580 & \getCountRequestedStaff[\pProject]{3}{nonResearch}
5581 & \getCountRequestedStaff[\pProject]{3}{student}
5582
5583 & \getCountRequestedStaff[\pProject]{4}{postDoc}
5584 & \getCountRequestedStaff[\pProject]{4}{PhD}
5585 & \getCountRequestedStaff[\pProject]{4}{research}
5586 & \getCountRequestedStaff[\pProject]{4}{nonResearch}
5587 & \getCountRequestedStaff[\pProject]{4}{student}
5588
5589 & \getCountRequestedStaff[\pProject]{5}{postDoc}
5590 & \getCountRequestedStaff[\pProject]{5}{PhD}
5591 & \getCountRequestedStaff[\pProject]{5}{research}
5592 & \getCountRequestedStaff[\pProject]{5}{nonResearch}
5593 & \getCountRequestedStaff[\pProject]{5}{student} \\
5594 }
5595 }
5596
5597 \begin{tblr}{%
5598 theme=main,
5599 expand=\l_tblr_body_tl,
5600 long,
5601 }{%
5602 vspan=even,
5603 colspec = { *{1}{X[2,m]}
5604 *{24}{Q[c]}
5605 },
5606 rowhead = 2,
5607 colsep=4.5pt,
5608 vline{2,7,12,17,22}={tableLines,solid,wd=.75pt},
5609 vline{2,7,12,17,22}={3-Z}{tableLines,solid,wd=.75pt},
5610 hline{2}={wd=0pt},
5611 hline{3}={wd=1pt,tableLines},
5612 hline{Y}={wd=1pt,tableOuterLines},

```

```

5613     row{2} = {
5614         fg={tableHeadingsFont},
5615         bg={tableHeadingsBG},
5616         halign={c}
5617     },
5618     row{Z}= {font={\footnotesize\bfseries}}
5619 }
5620 &
5621 \SetCell[c=5]{c} \dfgFundingYear{1}
5622 & & & &
5623 \SetCell[c=5]{c} \dfgFundingYear{2}
5624 & & & &
5625 \SetCell[c=5]{c} \dfgFundingYear{3}
5626 & & & &
5627 \SetCell[c=5]{c} \dfgFundingYear{4}
5628 & & & &
5629 \SetCell[c=5]{c} \dfgFundingYear{5}
5630 & & &
5631 \\
5632 \rotatebox{90}{Project} %
5633 & \dfgRotate{postDoc}
5634 & \dfgRotate{PhD}
5635 & \dfgRotate{research}
5636 & \dfgRotate{nonResearch}
5637 & \dfgRotate{student}
5638 & \dfgRotate{postDoc}
5639 & \dfgRotate{PhD}
5640 & \dfgRotate{research}
5641 & \dfgRotate{nonResearch}
5642 & \dfgRotate{student}
5643 & \dfgRotate{postDoc}
5644 & \dfgRotate{PhD}
5645 & \dfgRotate{research}
5646 & \dfgRotate{nonResearch}
5647 & \dfgRotate{student}
5648 & \dfgRotate{postDoc}
5649 & \dfgRotate{PhD}
5650 & \dfgRotate{research}
5651 & \dfgRotate{nonResearch}
5652 & \dfgRotate{student}
5653 & \dfgRotate{postDoc}
5654 & \dfgRotate{PhD}
5655 & \dfgRotate{research}
5656 & \dfgRotate{nonResearch}
5657 & \dfgRotate{student}
5658 \\
5659 \l_tblr_body_t1
5660 Total
5661 & \getCountRequestedStaff{1}{postDoc}
5662 & \getCountRequestedStaff{1}{PhD}
5663 & \getCountRequestedStaff{1}{research}
5664 & \getCountRequestedStaff{1}{nonResearch}
5665 & \getCountRequestedStaff{1}{student}
5666 & \getCountRequestedStaff{2}{postDoc}
5667 & \getCountRequestedStaff{2}{PhD}
5668 & \getCountRequestedStaff{2}{research}
5669 & \getCountRequestedStaff{2}{nonResearch}
5670 & \getCountRequestedStaff{2}{student}
5671 & \getCountRequestedStaff{3}{postDoc}
5672 & \getCountRequestedStaff{3}{PhD}
5673 & \getCountRequestedStaff{3}{research}
5674 & \getCountRequestedStaff{3}{nonResearch}
5675 & \getCountRequestedStaff{3}{student}
5676 & \getCountRequestedStaff{4}{postDoc}
5677 & \getCountRequestedStaff{4}{PhD}
5678 & \getCountRequestedStaff{4}{research}

```

```

5679 & \getCountRequestedStaff{4}{nonResearch}
5680 & \getCountRequestedStaff{4}{student}
5681 & \getCountRequestedStaff{5}{postDoc}
5682 & \getCountRequestedStaff{5}{PhD}
5683 & \getCountRequestedStaff{5}{research}
5684 & \getCountRequestedStaff{5}{nonResearch}
5685 & \getCountRequestedStaff{5}{student}
5686 \end{tblr}
5687
5688 }
5689 {
5690 Database~ \texttt{#1}~ missing.
5691 \msg_warning:nne { dfg } { database-not-found }{ #1 }
5692 }
5693 \tl_set:Nn \l_@@_requested_staff_database_tl { RequestedFunding }
5694 }

5695 \NewDocumentCommand{\getSumRequestedFundsInstrumentation}{som}{
5696 % #2: project
5697 % #3: year
5698 \IfNoValueTF{#2}
5699 { \@@_funding_sum_set:Nnnnn \SumFundsRequestedInstrumentation
5700 {RequestedFundingOverview}{__ALL__}{instrumentation}{#3} }
5701 { \@@_funding_sum_set:Nnnnn \SumFundsRequestedInstrumentation
5702 {RequestedFundingOverview}{#2}{instrumentation}{#3} }
5703 \@@_show_calculated_number:nnN
5704 {getSumRequestedFundsInstrumentation}
5705 {RequestedFundingOverview}
5706 \SumFundsRequestedInstrumentation
5707 }

```

Requested instrumentation overview The overview filters its database for funding-type=instrumentation. When the filter yields no rows, the table is suppressed and a sentence names the proposed funding-period number instead. This also covers a freshly created overview database on the first compilation pass.

\OverviewFundsRequestedInstrumentationTable [*database*]

Print the requested-instrumentation overview from *database*, or state that no instrumentation funds are requested for the current funding period. The database defaults to RequestedFundingOverview.

```

5708 \NewDocumentCommand{\OverviewFundsRequestedInstrumentationTable} { O{RequestedFundingOverview} }{%
5709 \def\tmpLocalDB{#1}
5710 \DTLifdbexists{\tmpLocalDB}{%
5711 \tl_clear:N \l_tblr_body_tl
5712 \DTLsort{ref-project-id}{\tmpLocalDB}
5713 \DTLforeach*{\DTLiseq{\pFundingType}{instrumentation}}{\tmpLocalDB}{%
5714 \pProject=ref-project-id,
5715 \pFundingType=type,
5716 \pDescription=category,
5717 \pSumYearOne=sum-year1,
5718 \pSumYearTwo=sum-year2,
5719 \pSumYearThree=sum-year3,
5720 \pSumYearFour=sum-year4,
5721 \pSumYearFive=sum-year5
5722 }{%
5723 \tl_put_right:Nx \l_tblr_body_tl
5724 {
5725 \getProject{\pProject}
5726 \printMarginalia{
5727 \getSumRequestedFundsInstrumentation[\pProject]{%
5728 sum-year1,
5729 sum-year2,
5730 sum-year3,
5731 sum-year4,
5732 sum-year5
5733 }
5734 }
5735 & \dfgShowTag{\pProject}{category}{\pDescription}[\tmpLocalDB]

```

```

5736      & \dfgShowTag{\pProject}{sum-year1}
5737      {\exp_not:N \@@_show_eur:n {\pSumYearOne}}[\tmpLocalDB]
5738      & \dfgShowTag{\pProject}{sum-year2}
5739      {\exp_not:N \@@_show_eur:n {\pSumYearTwo}}[\tmpLocalDB]
5740      & \dfgShowTag{\pProject}{sum-year3}
5741      {\exp_not:N \@@_show_eur:n {\pSumYearThree}}[\tmpLocalDB]
5742      & \dfgShowTag{\pProject}{sum-year4}
5743      {\exp_not:N \@@_show_eur:n {\pSumYearFour}}[\tmpLocalDB]
5744      & \dfgShowTag{\pProject}{sum-year5}
5745      {\exp_not:N \@@_show_eur:n {\pSumYearFive}}[\tmpLocalDB] \\
5746  }
5747  }
5748  \tl_if_empty:VTF \l_tblr_body_tl
5749  {
5750    \par\noindent
5751    No~funds~for~instrumentation~are~requested~for~funding~period~
5752    \dfgFundingPeriodNumeral.
5753    \par
5754  }
5755  {
5756    \begin{tblr}{%
5757      theme=main,
5758      expand=\l_tblr_body_tl,
5759      long,
5760      remark{Note} = {Figures~ in~ EUR}
5761    }{%
5762      vspan=even,
5763      row{Z} = {guard,font={\footnotesize\bfseries}},
5764      colspec = {
5765        *{1}{X[-1,t]}
5766        *{1}{X[2,t]}
5767        *{5}{X[-1,c,si={table-format=8}]}
5768      },
5769      rowhead = 2,
5770      column{3-7}={guard},
5771      %colsep=4.5pt,
5772      hline{2}={wd=0pt},
5773      hline{3}={wd=1pt,tableOuterLines},
5774      hline{Y}={wd=1pt,tableOuterLines},
5775      row{2} = {
5776        fg={tableHeadingsFont},
5777        bg={tableHeadingsBG},
5778        halign={c},
5779        guard,
5780      },
5781    }
5782    Project
5783    & {Description~of                                \\ instrumentation}
5784    & \SetCell[c=5]{c,guard} Funds~ requested~ for
5785    &                                                                 % year 2
5786    &                                                                 % year 3
5787    &                                                                 % year 4
5788    &                                                                 % year 5
5789    \\
5790    &
5791    & \dfgFundingYear{1}
5792    & \dfgFundingYear{2}
5793    & \dfgFundingYear{3}
5794    & \dfgFundingYear{4}
5795    & \dfgFundingYear{5} \\
5796
5797    \l_tblr_body_tl
5798    \SetCell[c=2]{1}Total
5799    \printMarginalia{
5800      \getSumRequestedFundsInstrumentation{%
5801        sum-year1,

```

```

5802     sum-year2,
5803     sum-year3,
5804     sum-year4,
5805     sum-year5
5806   }
5807 }
5808 &
5809 & \getSumRequestedFundsInstrumentation{sum-year1}
5810 & \getSumRequestedFundsInstrumentation{sum-year2}
5811 & \getSumRequestedFundsInstrumentation{sum-year3}
5812 & \getSumRequestedFundsInstrumentation{sum-year4}
5813 & \getSumRequestedFundsInstrumentation{sum-year5}    \\
5814 \end{tblr}
5815 }
5816 }
5817 {
5818   Database~ \texttt{#1}~ missing.
5819   \msg_warning:nne { dfg } { database-not-found }{ #1 }
5820 }
5821 }
5822

```

Generic memoized \DTLsumforkeys

```

5823 \prop_new:N \g_@@_dtlsum_cache_prop

Memoized form WITH filter: \@@_dtlsum_filtered:nnnnN {db}{filter-key}{filter-value}{cols}{result-
cs} This computes \DTLsumforkeys[\DTLiseq{\pTmp}{value}][\pTmp=key]{db}{cols}{result}

5824
5825 \cs_new_protected:Npn \@@_dtlsum_filtered:nnnnN #1#2#3#4#5 {
5826   \tl_set:Nx \l_tmpa_tl
5827   { #1 || \tl_to_str:n {#2} || \tl_to_str:n {#3} || \tl_to_str:n {#4} }
5828   \prop_get:NVNTF \g_@@_dtlsum_cache_prop \l_tmpa_tl \l_tmpb_tl
5829   { \cs_set_eq:NN #5 \l_tmpb_tl }
5830   {%
5831     \DTLsumforkeys[\DTLiseq{\pCacheKey}{#3}][\pCacheKey=#2]{#1}{#4}{#5}%
5832     \prop_gput:NVV \g_@@_dtlsum_cache_prop \l_tmpa_tl #5
5833   }
5834 }
5835
5836 % Memoized form WITHOUT filter:
5837 %   \@@_dtlsum_all:nnN {db}{cols}{result-cs}
5838 \cs_new_protected:Npn \@@_dtlsum_all:nnN #1#2#3 {
5839   \tl_set:Nx \l_tmpa_tl
5840   { #1 || NOFILTER || \tl_to_str:n {#2} }
5841   \prop_get:NVNTF \g_@@_dtlsum_cache_prop \l_tmpa_tl \l_tmpb_tl
5842   { \cs_set_eq:NN #3 \l_tmpb_tl }
5843   {%
5844     \DTLsumforkeys{#1}{#2}{#3}%
5845     \prop_gput:NVV \g_@@_dtlsum_cache_prop \l_tmpa_tl #3
5846   }
5847 }
5848
5849 % =====
5850 % Drop-in replacements
5851 % =====
5852
5853 \providecommand{\SumPreviousRequestedFunding}{0}
5854 \providecommand{\SumRequestedFunding}{0}
5855
5856 \NewDocumentCommand{\getSumPreviousRequestedFunding}{O{PreviousRequestedFunding}mm}{%
5857   \DTLifdbexists{#1}{%
5858     \str_if_eq:nnTF {#2} {all}
5859     { \@@_dtlsum_all:nnN {#1} {#3} \SumPreviousRequestedFunding }
5860     { \@@_dtlsum_filtered:nnnnN {#1} {year} {#2} {#3} \SumPreviousRequestedFunding }%
5861     \@@_show_calculated_number:nnN
5862     {getSumPreviousRequestedFunding}{#1}
5863     \SumPreviousRequestedFunding

```

```

5864 }{%
5865 \texttt{\color{error}XXX}%
5866 \msg_warning:nne { dfg } { database-not-found } { #1 }%
5867 }%
5868 }
5869
5870 \NewDocumentCommand{\getSumRequestedFunding}{O{RequestedFundingOverview}mm}{%
5871 \DTLifdbexists{#1}{%
5872 \str_if_eq:nnTF {#2} {all}
5873 { \@@_funding_sum_set:Nnnnn \SumRequestedFunding {#1}
5874 {__ALL__}{#3}{sum-year1,sum-year2,sum-year3,sum-year4,sum-year5} }
5875 { \@@_funding_sum_set:Nnnnn \SumRequestedFunding {#1}
5876 {__ALL__}{#3}{sum-year#2} }%
5877 \@@_show_calculated_number:nnN
5878 {getSumRequestedFunding}{#1}
5879 \SumRequestedFunding
5880 }{%
5881 \texttt{\color{error}XXX}%
5882 \msg_warning:nne { dfg } { database-not-found } { #1 }%
5883 }%
5884 }
5885
5886 \NewDocumentCommand{\getTotalSumRequestedFunding}{O{RequestedFundingOverview}mm}{%
5887 \DTLifdbexists{#1}{%
5888 \tl_set:Nn \l_tmpa_tl {#3}
5889 \str_if_eq:nnT {#3} {all} { \tl_set:Nn \l_tmpa_tl {__ALL__} }
5890 \str_if_eq:nnTF {#2} {all}
5891 { \@@_funding_sum_set:Nnnnn \SumRequestedFunding {#1}
5892 {__ALL__}{\l_tmpa_tl}
5893 {sum-year1,sum-year2,sum-year3,sum-year4,sum-year5} }
5894 { \@@_funding_sum_set:Nnnnn \SumRequestedFunding {#1}
5895 {__ALL__}{\l_tmpa_tl}{sum-year#2} }%
5896 \@@_show_calculated_number:nnN
5897 {getTotalSumRequestedFunding}{#1}
5898 \SumRequestedFunding
5899 }{%
5900 \texttt{\color{error}XXX}%
5901 \msg_warning:nne { dfg } { database-not-found } { #1 }%
5902 }%
5903 }
5904
5905 \NewDocumentCommand{\PreviousAndCurrentRequestedFundingTable}{O{PreviousRequestedFunding}}
5906 {
5907 \def\tmpLocalDB{#1}
5908 \begin{tblr}{%
5909 theme=main,
5910 expand=\l_tblr_body_tl,
5911 long,
5912 remark{Note} = {Figures~ in~ EUR}
5913 ]{%
5914 row{8,Z} = {guard,font={\footnotesize\bfseries}},
5915 colspec = {
5916 *{1}{t{3.5cm}}@{}
5917 *{6}{X[-1,c,si={table-format=8}]}
5918 },
5919 rowhead = 2,
5920 column{2-7}={guard},
5921 %colsep=4.5pt,
5922 hline{2}={wd=0pt},
5923 hline{3}={wd=1pt,tableOuterLines},
5924 % hline{Y}={wd=1pt,tableOuterLines},
5925 row{1,2} = {
5926 fg={tableHeadingsFont},
5927 bg={tableHeadingsBG},
5928 valign={c},
5929 guard,

```

```

5930         },
5931     }
5932     \SetCell[r=2]{b}{Financial~year/           \\funding~period}
5933     & \SetCell[c=5]{c} Funding~ for           % staff
5934     &                                           % costs
5935     &                                           % instrumentation
5936     &                                           % fellowships
5937     &                                           % globalfunds
5938     & \SetCell[r=2]{b} Total                 \\
5939     &
5940     Staff
5941     & Direct~ costs
5942     & Instrumentation
5943     & Fellowships
5944     & Globalfunds
5945     &                                           \\
5946     \dfgFundingYearPrevious{1}
5947     \printMarginalia{%
5948         \getSumPreviousRequestedFunding{1}{%
5949             staff, costs, instrumentation, fellowships, globalfunds}%
5950     }
5951     & \getSumPreviousRequestedFunding{1}{staff}           % staff
5952     & \getSumPreviousRequestedFunding{1}{costs}           % costs
5953     & \getSumPreviousRequestedFunding{1}{instrumentation} % instrumentation
5954     & \getSumPreviousRequestedFunding{1}{fellowships}     % fellowships
5955     & \getSumPreviousRequestedFunding{1}{globalfunds}     % globalfunds
5956     &
5957     \getSumPreviousRequestedFunding{1}{staff, costs, instrumentation,
5958         fellowships, globalfunds}
5959     \\ % Total
5960
5961     \dfgFundingYearPrevious{2}
5962     \printMarginalia{%
5963         \getSumPreviousRequestedFunding{2}{%
5964             staff, costs, instrumentation, fellowships, globalfunds}%
5965     }
5966     & \getSumPreviousRequestedFunding{2}{staff}           % staff
5967     & \getSumPreviousRequestedFunding{2}{costs}           % costs
5968     & \getSumPreviousRequestedFunding{2}{instrumentation} % instrumentation
5969     & \getSumPreviousRequestedFunding{2}{fellowships}     % fellowships
5970     & \getSumPreviousRequestedFunding{2}{globalfunds}     % globalfunds
5971     &
5972     \getSumPreviousRequestedFunding{2}{staff, costs, instrumentation,
5973         fellowships, globalfunds}
5974     \\ % Total
5975     \dfgFundingYearPrevious{3}
5976     \printMarginalia{%
5977         \getSumPreviousRequestedFunding{3}{%
5978             staff, costs, instrumentation, fellowships, globalfunds}%
5979     }
5980     & \getSumPreviousRequestedFunding{3}{staff}           % staff
5981     & \getSumPreviousRequestedFunding{3}{costs}           % costs
5982     & \getSumPreviousRequestedFunding{3}{instrumentation} % instrumentation
5983     & \getSumPreviousRequestedFunding{3}{fellowships}     % fellowships
5984     & \getSumPreviousRequestedFunding{3}{globalfunds}     % globalfunds
5985     &
5986     \getSumPreviousRequestedFunding{3}{staff, costs, instrumentation,
5987         fellowships, globalfunds}
5988     \\ % Total
5989
5990     \dfgFundingYearPrevious{4}
5991     \printMarginalia{%
5992         \getSumPreviousRequestedFunding{4}{%
5993             staff, costs, instrumentation, fellowships, globalfunds}%
5994     }
5995     & \getSumPreviousRequestedFunding{4}{staff}           % staff

```

```

5996      & \getSumPreviousRequestedFunding{4}{costs}           % costs
5997      & \getSumPreviousRequestedFunding{4}{instrumentation} % instrumentation
5998      & \getSumPreviousRequestedFunding{4}{fellowships}     % fellowships
5999      & \getSumPreviousRequestedFunding{4}{globalfunds}     % globalfunds
6000      &
6001      \getSumPreviousRequestedFunding{4}{staff, costs, instrumentation,
6002      fellowships, globalfunds}
6003      \\ % Total
6004
6005      \dfgFundingYearPrevious{5}
6006      \printMarginalia{%
6007      \getSumPreviousRequestedFunding{5}{%
6008      staff, costs, instrumentation, fellowships, globalfunds}%
6009      }
6010      & \getSumPreviousRequestedFunding{5}{staff}           % staff
6011      & \getSumPreviousRequestedFunding{5}{costs}           % costs
6012      & \getSumPreviousRequestedFunding{5}{instrumentation} % instrumentation
6013      & \getSumPreviousRequestedFunding{5}{fellowships}     % fellowships
6014      & \getSumPreviousRequestedFunding{5}{globalfunds}     % globalfunds
6015      &
6016      \getSumPreviousRequestedFunding{5}{staff, costs, instrumentation,
6017      fellowships, globalfunds}
6018      \\ % Total
6019      \SetHline{-}{tableOuterLines, 0.5pt}
6020      \SetRow{belowsep=5pt}
6021      Ending~Funding~period
6022      \printMarginalia{%
6023      \getSumPreviousRequestedFunding{all}{%
6024      staff, costs, instrumentation, fellowships, globalfunds}%
6025      }
6026      & \getSumPreviousRequestedFunding{all}{staff}         % staff
6027      & \getSumPreviousRequestedFunding{all}{costs}         % costs
6028      & \getSumPreviousRequestedFunding{all}{instrumentation} % instrumentation
6029      & \getSumPreviousRequestedFunding{all}{fellowships}   % fellowships
6030      & \getSumPreviousRequestedFunding{all}{globalfunds}   % globalfunds
6031      &
6032      \getSumPreviousRequestedFunding{all}{staff, costs, instrumentation,
6033      fellowships, globalfunds}
6034      \\ % Total
6035
6036      \SetHline{-}{tableOuterLines, 1pt}
6037      \dfgFundingYear{1}
6038      \printMarginalia{\getTotalSumRequestedFunding{1}{all}}
6039      & \getSumRequestedFunding{1}{staff}
6040      & \getSumRequestedFunding{1}{costs}
6041      & \getSumRequestedFunding{1}{instrumentation}
6042      & \getSumRequestedFunding{1}{fellowships}
6043      & \getSumRequestedFunding{1}{globalfunds}
6044      & \getTotalSumRequestedFunding{1}{all}
6045      \\
6046      \dfgFundingYear{2}
6047      \printMarginalia{\getTotalSumRequestedFunding{2}{all}}
6048      & \getSumRequestedFunding{2}{staff}
6049      & \getSumRequestedFunding{2}{costs}
6050      & \getSumRequestedFunding{2}{instrumentation}
6051      & \getSumRequestedFunding{2}{fellowships}
6052      & \getSumRequestedFunding{2}{globalfunds}
6053      & \getTotalSumRequestedFunding{2}{all}
6054      \\
6055
6056      \dfgFundingYear{3}
6057      \printMarginalia{\getTotalSumRequestedFunding{3}{all}}
6058      & \getSumRequestedFunding{3}{staff}
6059      & \getSumRequestedFunding{3}{costs}
6060      & \getSumRequestedFunding{3}{instrumentation}
6061      & \getSumRequestedFunding{3}{fellowships}

```

```

6062      & \getSumRequestedFunding{3}{globalfunds}
6063      & \getTotalSumRequestedFunding{3}{all}
6064      \\
6065      \dfgFundingYear{4}
6066      \printMarginalia{\getTotalSumRequestedFunding{4}{all}}
6067      & \getSumRequestedFunding{4}{staff}
6068      & \getSumRequestedFunding{4}{costs}
6069      & \getSumRequestedFunding{4}{instrumentation}
6070      & \getSumRequestedFunding{4}{fellowships}
6071      & \getSumRequestedFunding{4}{globalfunds}
6072      & \getTotalSumRequestedFunding{4}{all}
6073      \\
6074      \dfgFundingYear{5}
6075      \printMarginalia{\getTotalSumRequestedFunding{5}{all}}
6076      & \getSumRequestedFunding{5}{staff}
6077      & \getSumRequestedFunding{5}{costs}
6078      & \getSumRequestedFunding{5}{instrumentation}
6079      & \getSumRequestedFunding{5}{fellowships}
6080      & \getSumRequestedFunding{5}{globalfunds}
6081      & \getTotalSumRequestedFunding{5}{all}
6082      \\
6083
6084      \SetHline{-}{tableOuterLines,0.5pt}
6085      New~ Funding~period
6086      \printMarginalia{\getTotalSumRequestedFunding{all}{all}}
6087      & \getTotalSumRequestedFunding{all}{staff} % staff
6088      & \getTotalSumRequestedFunding{all}{costs} % costs
6089      & \getTotalSumRequestedFunding{all}{instrumentation} % instrumentation
6090      & \getTotalSumRequestedFunding{all}{fellowships} % fellowships
6091      & \getTotalSumRequestedFunding{all}{globalfunds} % globalfunds
6092      &
6093      \getTotalSumRequestedFunding{all}{all}
6094      \\ % Total
6095      \end{tblr}
6096  }

```

Section 2.1.1 reuses the project-level existing-funds declarations. Both the stored values and the overview display use full euros. The shared euro formatter adds thousands separators and rounds display values to whole euros (for example, 5000 is printed as 5, 000).

`ref-affiliation-id` determines the column: every id listed in `meta/crc.ref-affiliation-id` is applicant core support, the sentinel `other-funds` selects other funding sources, and every other affiliation id is treated as another participating institution. The descriptive `financed-by` value does not perform this classification.

```

6097 \cs_new_protected:Npn
6098   \@@_get_sum_previous_requested_funding_eur:nnn #1#2#3
6099 {
6100   \DTLifdbexists{#1}
6101   {
6102     \str_if_eq:nnTF {#2} {all}
6103     { \@@_dtlsum_all:nnN {#1} {#3} \SumPreviousRequestedFunding }
6104     { \@@_dtlsum_filtered:nnnnN
6105       {#1} {year} {#2} {#3} \SumPreviousRequestedFunding }
6106     \@@_show_calculated_number:nnN
6107     {getSumPreviousRequestedFunding}{#1}
6108     \SumPreviousRequestedFunding
6109   }
6110   {
6111     \texttt{\color{error}XXX}
6112     \msg_warning:nne { dfg } { database-not-found } {#1}
6113   }
6114 }
6115
6116 \NewDocumentCommand{\getSumRequestedFundingDirectCosts}{
6117   O{RequestedAndExistingFundingDirectCostsOverview}
6118   m m }
6119 {
6120   % #1: database

```

```

6121 % #2: year
6122 % #3: affiliation
6123
6124 \str_if_eq:nnTF {#2}{all}
6125 {
6126   \str_case:nn {#3}
6127   {
6128     {applicant} {\DTLsumforkeys[\DTLisinlist{\pAffiliation}{\theApplicantID}]
6129       [\pAffiliation=ref-affiliation-id]{#1}
6130       {sum-year1,sum-year2,sum-year3,sum-year4,sum-year5}
6131       {\SumRequestedFundingDirectCosts}}
6132
6133     {participant}{
6134       \DTLsumforkeys[
6135       \not\DTLisinlist{\pAffiliation}{\theApplicantID}
6136       \and
6137       \not\DTLiseq{\pAffiliation}{other-funds}
6138       ]
6139       [\pAffiliation=ref-affiliation-id]{#1}
6140       {sum-year1,sum-year2,sum-year3,sum-year4,sum-year5}
6141       {\SumRequestedFundingDirectCosts}}
6142
6143     {other-funds}{\DTLsumforkeys[\DTLiseq{\pAffiliation}{other-funds}]
6144       [\pAffiliation=ref-affiliation-id]{#1}
6145       {sum-year1,sum-year2,sum-year3,sum-year4,sum-year5}
6146       {\SumRequestedFundingDirectCosts}}
6147
6148     {all}{\DTLsumforkeys{#1}
6149       {sum-year1,sum-year2,sum-year3,sum-year4,sum-year5}
6150       {\SumRequestedFundingDirectCosts}}
6151   }}
6152 {
6153   \str_case:nn {#3}
6154   {
6155     {applicant} {\DTLsumforkeys[\DTLisinlist{\pAffiliation}{\theApplicantID}]
6156       [\pAffiliation=ref-affiliation-id]{#1}
6157       {sum-year#2}
6158       {\SumRequestedFundingDirectCosts}}
6159
6160     {participant}{
6161       \DTLsumforkeys[
6162       \not\DTLisinlist{\pAffiliation}{\theApplicantID}
6163       \and
6164       \not\DTLiseq{\pAffiliation}{other-funds}
6165       ]
6166       [\pAffiliation=ref-affiliation-id]{#1}
6167       {sum-year#2}
6168       {\SumRequestedFundingDirectCosts}}
6169
6170     {other-funds}{\DTLsumforkeys[\DTLiseq{\pAffiliation}{other-funds}]
6171       [\pAffiliation=ref-affiliation-id]{#1}
6172       {sum-year#2}
6173       {\SumRequestedFundingDirectCosts}}
6174
6175     {all}{\DTLsumforkeys{#1}
6176       {sum-year#2}
6177       {\SumRequestedFundingDirectCosts}}
6178   }}
6179
6180
6181 \@@_show_calculated_number:nnN
6182   {getSumRequestedFundingDirectCosts}{#1}
6183   \SumRequestedFundingDirectCosts
6184 }
6185
6186 \NewDocumentCommand{\ExistingFundsDirectCostsTable}

```

```

6187 {O{RequestedAndExistingFundingDirectCostsOverview}}
6188 {
6189 \DTLifdbexists{#1}{
6190 \begin{tblr}{%
6191 theme=main,
6192 % expand=\l_tblr_body_tl,
6193 long,
6194 remark{Note} = {Figures~ in~ EUR}
6195 ]{%
6196 row{7,Z} = {guard,font={\footnotesize\bfseries}},
6197 colspec = {
6198 *{1}{t{3.5cm}}
6199 *{4}{X[-1,c,si={table-format=9}]}
6200 },
6201 % rowhead = 1,
6202 column{2-5}={guard},
6203 %colsep=4.5pt,
6204 % hline{3}={wd=1pt,tableOuterLines},
6205 % hline{Y}={wd=1pt,tableOuterLines},
6206 row{1} = {
6207 fg={tableHeadingsFont},
6208 bg={tableHeadingsBG},
6209 halign={c},
6210 guard,
6211 },
6212 }
6213 {Financial~year/
6214 & {Core~ support~ provided~
6215 \dfgApplicantAffiliationsTF{university}{universities}}
6216
6217 & {Core~ support~ provided~
6218 other~ participating~ institutions}
6219 & Other~ funds
6220 & Total
6221
6222 \dfgFundingYearPrevious{1}
6223 \printMarginalia{%
6224 \@@_get_sum_previous_requested_funding_eur:nnn
6225 {PreviousExistingFundsDirectCosts}{1}{%
6226 applicant,participant,other-funds}%
6227 }
6228 & {\@@_get_sum_previous_requested_funding_eur:nnn
6229 {PreviousExistingFundsDirectCosts}{1}{applicant}}
6230 & {\@@_get_sum_previous_requested_funding_eur:nnn
6231 {PreviousExistingFundsDirectCosts}{1}{participant}}
6232 & {\@@_get_sum_previous_requested_funding_eur:nnn
6233 {PreviousExistingFundsDirectCosts}{1}{other-funds}}
6234 &
6235 {\@@_get_sum_previous_requested_funding_eur:nnn
6236 {PreviousExistingFundsDirectCosts}{1}{
6237 applicant,
6238 participant,
6239 other-funds}}
6240
6241 \dfgFundingYearPrevious{2}
6242 \printMarginalia{%
6243 \@@_get_sum_previous_requested_funding_eur:nnn
6244 {PreviousExistingFundsDirectCosts}{2}{%
6245 applicant,participant,other-funds}%
6246 }
6247 & {\@@_get_sum_previous_requested_funding_eur:nnn
6248 {PreviousExistingFundsDirectCosts}{2}{applicant}}
6249 & {\@@_get_sum_previous_requested_funding_eur:nnn
6250 {PreviousExistingFundsDirectCosts}{2}{participant}}
6251 & {\@@_get_sum_previous_requested_funding_eur:nnn
6252 {PreviousExistingFundsDirectCosts}{2}{other-funds}}

```

\\funding~
\\by~ appli

\\by~

\\

```

6253 & {\@@_get_sum_previous_requested_funding_eur:nnn
6254 {PreviousExistingFundsDirectCosts}{2}{
6255 applicant,
6256 participant,
6257 other-funds}} \\
6258
6259 \dfgFundingYearPrevious{3}
6260 \printMarginalia{%
6261 \@@_get_sum_previous_requested_funding_eur:nnn
6262 {PreviousExistingFundsDirectCosts}{3}{%
6263 applicant,participant,other-funds}%
6264 }
6265 & {\@@_get_sum_previous_requested_funding_eur:nnn
6266 {PreviousExistingFundsDirectCosts}{3}{applicant}}
6267 & {\@@_get_sum_previous_requested_funding_eur:nnn
6268 {PreviousExistingFundsDirectCosts}{3}{participant}}
6269 & {\@@_get_sum_previous_requested_funding_eur:nnn
6270 {PreviousExistingFundsDirectCosts}{3}{other-funds}}
6271 & {\@@_get_sum_previous_requested_funding_eur:nnn
6272 {PreviousExistingFundsDirectCosts}{3}{
6273 applicant,
6274 participant,
6275 other-funds}} \\
6276
6277 \dfgFundingYearPrevious{4}
6278 \printMarginalia{%
6279 \@@_get_sum_previous_requested_funding_eur:nnn
6280 {PreviousExistingFundsDirectCosts}{4}{%
6281 applicant,participant,other-funds}%
6282 }
6283 & {\@@_get_sum_previous_requested_funding_eur:nnn
6284 {PreviousExistingFundsDirectCosts}{4}{applicant}}
6285 & {\@@_get_sum_previous_requested_funding_eur:nnn
6286 {PreviousExistingFundsDirectCosts}{4}{participant}}
6287 & {\@@_get_sum_previous_requested_funding_eur:nnn
6288 {PreviousExistingFundsDirectCosts}{4}{other-funds}}
6289 & {\@@_get_sum_previous_requested_funding_eur:nnn
6290 {PreviousExistingFundsDirectCosts}{4}{
6291 applicant,
6292 participant,
6293 other-funds}} \\
6294
6295 \dfgFundingYearPrevious{5}
6296 \printMarginalia{%
6297 \@@_get_sum_previous_requested_funding_eur:nnn
6298 {PreviousExistingFundsDirectCosts}{5}{%
6299 applicant,participant,other-funds}%
6300 }
6301 & {\@@_get_sum_previous_requested_funding_eur:nnn
6302 {PreviousExistingFundsDirectCosts}{5}{applicant}}
6303 & {\@@_get_sum_previous_requested_funding_eur:nnn
6304 {PreviousExistingFundsDirectCosts}{5}{participant}}
6305 & {\@@_get_sum_previous_requested_funding_eur:nnn
6306 {PreviousExistingFundsDirectCosts}{5}{other-funds}}
6307 & {\@@_get_sum_previous_requested_funding_eur:nnn
6308 {PreviousExistingFundsDirectCosts}{5}{
6309 applicant,
6310 participant,
6311 other-funds}} \\
6312
6313 \SetHline{-}{tableOuterLines,0.5pt}
6314 \SetRow{belowsep=5pt}
6315 Ending~Funding~period
6316 \printMarginalia{%
6317 \@@_get_sum_previous_requested_funding_eur:nnn
6318 {PreviousExistingFundsDirectCosts}{all}{%

```

```

6319         applicant,participant,other-funds}%
6320     }
6321     & {\@@_get_sum_previous_requested_funding_eur:nnn
6322         {PreviousExistingFundsDirectCosts}{all}{applicant}}
6323     & {\@@_get_sum_previous_requested_funding_eur:nnn
6324         {PreviousExistingFundsDirectCosts}{all}{participant}}
6325     & {\@@_get_sum_previous_requested_funding_eur:nnn
6326         {PreviousExistingFundsDirectCosts}{all}{other-funds}}
6327     & {\@@_get_sum_previous_requested_funding_eur:nnn
6328         {PreviousExistingFundsDirectCosts}{all}{
6329         applicant,
6330         participant,
6331         other-funds}}
6332
6333     \SetHline{-}{tableOuterLines,1pt}
6334     \dfgFundingYear{1}
6335         \printMarginalia{\getSumRequestedFundingDirectCosts[#1]{1}{all}}
6336         & \getSumRequestedFundingDirectCosts[#1]{1}{applicant}
6337         & \getSumRequestedFundingDirectCosts[#1]{1}{participant}
6338         & \getSumRequestedFundingDirectCosts[#1]{1}{other-funds}
6339         & \getSumRequestedFundingDirectCosts[#1]{1}{all}
6340     \dfgFundingYear{2}
6341         \printMarginalia{\getSumRequestedFundingDirectCosts[#1]{2}{all}}
6342         & \getSumRequestedFundingDirectCosts[#1]{2}{applicant}
6343         & \getSumRequestedFundingDirectCosts[#1]{2}{participant}
6344         & \getSumRequestedFundingDirectCosts[#1]{2}{other-funds}
6345         & \getSumRequestedFundingDirectCosts[#1]{2}{all}
6346     \dfgFundingYear{3}
6347         \printMarginalia{\getSumRequestedFundingDirectCosts[#1]{3}{all}}
6348         & \getSumRequestedFundingDirectCosts[#1]{3}{applicant}
6349         & \getSumRequestedFundingDirectCosts[#1]{3}{participant}
6350         & \getSumRequestedFundingDirectCosts[#1]{3}{other-funds}
6351         & \getSumRequestedFundingDirectCosts[#1]{3}{all}
6352     \dfgFundingYear{4}
6353         \printMarginalia{\getSumRequestedFundingDirectCosts[#1]{4}{all}}
6354         & \getSumRequestedFundingDirectCosts[#1]{4}{applicant}
6355         & \getSumRequestedFundingDirectCosts[#1]{4}{participant}
6356         & \getSumRequestedFundingDirectCosts[#1]{4}{other-funds}
6357         & \getSumRequestedFundingDirectCosts[#1]{4}{all}
6358     \dfgFundingYear{5}
6359         \printMarginalia{\getSumRequestedFundingDirectCosts[#1]{5}{all}}
6360         & \getSumRequestedFundingDirectCosts[#1]{5}{applicant}
6361         & \getSumRequestedFundingDirectCosts[#1]{5}{participant}
6362         & \getSumRequestedFundingDirectCosts[#1]{5}{other-funds}
6363         & \getSumRequestedFundingDirectCosts[#1]{5}{all}
6364
6365
6366     \SetHline{-}{tableOuterLines,0.5pt}
6367     New~ Funding~period
6368         \printMarginalia{\getSumRequestedFundingDirectCosts[#1]{all}{all}}
6369         & \getSumRequestedFundingDirectCosts[#1]{all}{applicant}
6370         & \getSumRequestedFundingDirectCosts[#1]{all}{participant}
6371         & \getSumRequestedFundingDirectCosts[#1]{all}{other-funds}
6372         & \getSumRequestedFundingDirectCosts[#1]{all}{all}
6373     \end{tblr}
6374 }{
6375     \msg_warning:nne { dfg } { database-not-found }{ #1 }
6376 }
6377 }

```

The core part is definitely all about the projects.

```

6378 \clist_new:N \l_tmp_research_area_clist
6379 \bool_new:N \l_@@_project_one_PI_bool
6380 \bool_new:N \g_@@_fast_project_started_bool
6381
6382 \NewDocumentCommand{\printProjectHead}{m}
6383 {%

```

```

6384 \bool_if:NTF \l_@@_class_fastcompile_project_bool
6385 {
6386   \bool_if:NF \g_@@_fast_project_started_bool
6387   {
6388     \setcounter{page}{1}% Ignore page checkpoints restored by excluded files.
6389     \bool_gset_true:N \g_@@_fast_project_started_bool
6390   }
6391   \def\tmpLocalDB{project}%
6392   \setcounter{section}{0}%
6393   \setcounter{figure}{0}%
6394   \setcounter{table}{0}%
6395   \setcounter{secnumdepth}{2}%
6396   \restartlist{workpackages}%
6397   \tl_set:Nn \l__tmp_current_project_tl {#1}%
6398   \cs_set:Npn \tmpProjectNumber {#1}%
6399   \cs_set:Npn \tmpProjectTitle { }%
6400   \cs_set:Npn \tmpProjectStatus { }%
6401   \cs_set:Npn \tmpProjectType { }%
6402   \cs_set:Npn \tmpProjectResearchArea { }%
6403   \cs_set:Npn \tmpProjectPIids { }%
6404   \bool_set_true:N \l_@@_project_one_PI_bool
6405   \renewcommand*{\thesection} {\arabic{section}}%
6406   \renewcommand*{\thesubsection} {\thesection.\arabic{subsection}}%
6407   \renewcommand*{\thesubsubsection} {\thesubsection.\arabic{subsubsection}}%
6408   \renewcommand*{\thefigure} {\arabic{figure}}%
6409   \renewcommand*{\thetable} {\arabic{table}}%
6410   \renewcommand*{\theHpart} {\thepart.#1}%
6411   \renewcommand*{\theHchapter} {\thechapter.#1}%
6412   \renewcommand*{\theHsection} {\thesection.#1}%
6413   \renewcommand*{\theHsubsection} {\thesubsection.#1}%
6414   \renewcommand*{\theHsubsubsection} {\thesubsubsection.#1}%
6415   \renewcommand*{\theHfigure} {\thefigure.#1}%
6416   \renewcommand*{\theHtable} {\thetable.#1}%
6417   \renewcommand*{\theHfootnote} {\thefootnote.#1}%
6418   \head*{\textbf{Project~#1}\enspace\enspace FAST~COMPILE~~~DRAFT}%
6419   \printThumbIndexOff
6420   \bool_if:NT \l_@@_class_fastcompile_project_show_publications_bool
6421   {
6422     \@@_project_results_prepare:n {#1}%
6423     \citereset
6424     \begin{refsection}
6425   }
6426 }
6427 {
6428 % #1: project id
6429 \cleardoublepage
6430 \phantomsection
6431 \def\tmpLocalDB{project}%
6432 \setcounter{section}{0}%
6433 \setcounter{figure}{0}%
6434 \setcounter{table}{0}%
6435 \setcounter{tocdepth}{0}%
6436 \restartlist{workpackages}%
6437 \tl_set:Nn \l__tmp_current_project_tl {#1}%
6438 \@@_project_results_prepare:n {#1}%
6439
6440 \renewcommand*{\theHpart} {\thepart.#1}%
6441 \renewcommand*{\theHchapter} {\thechapter.#1}%
6442 \renewcommand*{\theHsection} {\thesection.#1}%
6443 \renewcommand*{\theHsubsection} {\thesubsection.#1}%
6444 \renewcommand*{\theHsubsubsection} {\thesubsubsection.#1}%
6445 \renewcommand*{\theHfigure} {\thefigure.#1}%
6446 \renewcommand*{\theHtable} {\thetable.#1}%
6447 \renewcommand*{\theHfootnote} {\thefootnote.#1}%
6448
6449 % --- single row scan for all project columns we need -----

```

```

6450 \getEntry*[\tmpLocalDB]{#1}{
6451   \tmpProjectNumber      = number,
6452   \tmpProjectTitle       = name,
6453   \tmpProjectStatus      = project-status,
6454   \tmpProjectType        = project-type,
6455   \tmpProjectResearchArea = research-area,
6456   \tmpProjectPIids       = ref-person-id
6457 }%
6458
6459 % Register the bibliography aliases of every PI assigned to this project.
6460 % The mapping parameter is doubled because this loop occurs inside the
6461 % definition of \printProjectHead.
6462 \datatool_if_has_key:nnT { person } { name-alias }
6463 {
6464   \clist_map_inline:Nn \tmpProjectPIids
6465   {
6466     \DTLgetvalueforkey { \theAliases } { name-alias } { person } { id } { ##1 }
6467     \DTLifnullorempty { \theAliases }
6468     { }
6469     { \exp_args:No \addboldnames { \theAliases } }
6470   }
6471 }
6472
6473 % --- precompute the few derived booleans we actually use -----
6474 \int_compare:nNnTF { \clist_count:N \tmpProjectPIids } > {1}
6475 { \bool_set_false:N \l_@@_project_one_PI_bool }
6476 { \bool_set_true:N \l_@@_project_one_PI_bool }%
6477
6478 \citereset
6479 \hypertarget{project:#1}{}%
6480
6481 \use:x
6482 {
6483   \exp_not:N \printThumbIndex
6484   [ project \tl_head:n {#1} ]
6485   { \exp_not:n {#1} }
6486 }%
6487
6488 \thead{\getPIofProject{#1}[\space\cdot\space]%
6489   \space|\space
6490   \dfgShowTag{#1}{name}{\tmpProjectTitle}[project]}%
6491
6492
6493
6494 % --- toc entry -----
6495 \addtocentrydefault{section}{
6496   \texorpdfstring
6497   { \dfgShowTag{#1}{number}{\tmpProjectNumber}[project] }
6498   { \tmpProjectNumber }
6499   \str_if_eq:eeF {\tmpProjectStatus} {C}
6500   {
6501     \space
6502     \texorpdfstring
6503     { \dfgShowTag{#1}{project-status}{\tmpProjectStatus}[project] }
6504     { \tmpProjectStatus }
6505   }%
6506 }
6507 {
6508   \texorpdfstring{\dfgShowTag{#1}{name}{\tmpProjectTitle}[project]}{}%
6509 }%
6510 \setcounter{secnumdepth}{2}%
6511 \addtocontents{toc}{\protect\setcounter{tocdepth}{0}}%
6512 \hypersetup{bookmarksdepth=0}%
6513 \begin{refsection}
6514
6515 \section{%

```

```

6516 General~information~about~Project~%
6517 \texorpdfstring
6518 {
6519   \getProject{#1}%
6520   \str_if_eq:eeF {\tmpProjectStatus} {C}
6521   { \c_space_tl
6522     \dfgShowTag{#1}{project-status}{\tmpProjectStatus}[project] }%
6523   }
6524   {\tmpProjectNumber}%
6525 }
6526 \subsection{Project~title:~
6527 \texorpdfstring
6528   {\dfgShowTag{#1}{name}{\tmpProjectTitle}[project]}
6529   {\tmpProjectTitle}}
6530
6531 % --- research areas (for active research and service projects) -----
6532 \str_if_eq:eeF {\tmpProjectStatus} {E}
6533 {
6534   \bool_lazy_or:nnT
6535   { \str_if_eq_p:ee {\tmpProjectType} {research} }
6536   { \str_if_eq_p:ee {\tmpProjectType} {service} }
6537   {%
6538     \clist_clear:N \l_tmp_research_area_clist
6539     \clist_sort:Nn \tmpProjectResearchArea
6540     { \fp_compare:nTF {##1 < ##2} {\sort_return_swapped:} {\sort_return_same:} }%
6541     \clist_map_inline:Nn \tmpProjectResearchArea
6542     { \clist_put_right:Nn \l_tmp_research_area_clist { \dfgResearchAreasList{##1} } }%
6543     \subsection{Research~area
6544       \int_compare:nNnT { \clist_count:N \tmpProjectResearchArea } > {1}
6545       {s}
6546       :~
6547       \texorpdfstring
6548       {\dfgShowTag{#1}{research-area}
6549        {\clist_use:Nn \l_tmp_research_area_clist {,~}[project]}
6550        {\clist_use:Nn \l_tmp_research_area_clist {,~}}}%
6551     }
6552   }
6553
6554 \bool_if:NNTF \l_@@_project_one_PI_bool
6555 { \subsection{Project~leader} }
6556 { \subsection{Project~leaders} }
6557
6558 \getPersonInformation{\tmpProjectPIids}\par
6559 \vspace*{2em}
6560
6561 % --- contract information (skip for admin / ending) -----
6562 \bool_lazy_or:nnF
6563 { \str_if_eq_p:ee {\tmpProjectType} {admin} }
6564 { \str_if_eq_p:ee {\tmpProjectStatus} {E} }
6565 {%
6566   \begin{contractinformation}
6567     \clist_map_inline:nn {C1,C2,C3,C4}
6568     { \dfgPIcontractInformation{##1} }%
6569   \end{contractinformation}
6570 }
6571
6572 % --- legal issues (skip for admin / mgk / ending) -----
6573 \bool_lazy_any:nF
6574 {
6575   { \str_if_eq_p:ee {\tmpProjectType} {admin} }
6576   { \str_if_eq_p:ee {\tmpProjectType} {mgk} }
6577   { \str_if_eq_p:ee {\tmpProjectStatus} {E} }
6578 }
6579 {%
6580   \subsection{Legal~issues}%
6581   \def\tmpLocalDB{project}%

```

```

6582 This~project~includes\\
6583
6584 \tl_clear:N \l_mytblr_body_tl
6585 \tl_put_right:Ne \l_mytblr_body_tl
6586 { 1. & research~requiring~compliance~with~discipline-specific~research~ethics~guidelines. & \checkYesNo{L1}{yes}
6587 \compareEntry{#1}{L1}{yes}
6588 {
6589 \tl_put_right:Ne \l_mytblr_body_tl
6590 { & A~statement~from~the~responsible~ethics~committee~is~required~and~will~be~obtained~before~funding
6591 }
6592 {}%
6593 \tl_put_right:Ne \l_mytblr_body_tl
6594 { 2. & clinical~trials & \checkYesNo{L2} \\ }%
6595 \compareEntry{#1}{L2}{yes}
6596 {
6597 \tl_put_right:Ne \l_mytblr_body_tl
6598 { & A~copy~of~the~studies'~registration~is~included~with~the~proposal. & \checkYesNo{L2a} \\ }%
6599 }
6600 {}%
6601 \tl_put_right:Ne \l_mytblr_body_tl
6602 {
6603 3. & experiments~involving~vertebrates. & \checkYesNo{L3} \\
6604 4. & experiments~involving~recombinant~DNA. & \checkYesNo{L4} \\
6605 5. & research~involving~human~embryonic~stem~cells. & \checkYesNo{L5} \\
6606 }
6607 \compareEntry{#1}{L5}{yes}
6608 {
6609 \tl_put_right:Ne \l_mytblr_body_tl
6610 { & Legal~authorization~has~been~obtained. & \checkYesNo{L5a} \\ }%
6611 }
6612 {}%
6613 \tl_put_right:Ne \l_mytblr_body_tl
6614 {
6615 6. & research~concerning~the~Convention~on~Biological~Diversity. & \checkYesNo{L6} \\
6616 7. & investigations~involving~dual~use~research~of~concern. & \checkYesNo{L7} \\
6617 }
6618 \compareEntry{#1}{L7}{yes}
6619 {
6620 \tl_put_right:Ne \l_mytblr_body_tl
6621 { & A~copy~of~the~statement~by~the~institution's~research~ethics~committee~is~included~with~the~pr
6622 }
6623 {}%
6624 \begin{tblr}[
6625 theme = plain,
6626 expand = \l_mytblr_body_tl,
6627 ]{
6628 rowhead = 0,
6629 rowsep = 0pt,
6630 hline{2} = {0pt},
6631 rows = {bg=white, halign=l, font=\footnotesize},
6632 column{1} = {halign=r},
6633 colspec = {t{.25cm}X[t]t{.75cm}}
6634 }
6635 \tl_use:N \l_mytblr_body_tl
6636 \end{tblr}%
6637 }
6638 }
6639 }
6640 \NewDocumentCommand{\checkYesNo}{O{\tmpProjectNumber} m}
6641 {%
6642 \compareEntry{#1}% current project ID
6643 {#2}% which cell
6644 {yes}% if cell value is 'yes'
6645 {\dfgShowTag{#1}{#2}{\bfseries\color{green}\faCheck}\,yes}[project]]%
6646 {\dfgShowTag{#1}{#2}{\bfseries\color{red}\faTimes}\space no}[project]]%
6647 }

```

Another helper command to retrieve the information about a PI and his/her/their involvement within the project.

```

6648 % -----
6649 % PI contract information
6650 % -----
6651
6652 \seq_new:N \l_@@_contract_pi_ids_seq
6653 \seq_new:N \l_@@_contract_true_pi_ids_seq
6654 \seq_new:N \l_@@_contract_false_pi_ids_seq
6655 \clist_new:N \l_@@_contract_answers_clist
6656 \tl_new:N \l_@@_contract_answer_tl
6657 \tl_new:N \l_@@_contract_field_list_tl
6658
6659 \NewDocumentCommand{\dfgPIcontractInformation}{o m }
6660 {
6661   % #1: optional comma-separated PI ids
6662   % If omitted, use the current value of \tmpProjectPIids.
6663   % #2: question id, e.g. C1 / C2 / C3 / C4
6664   \IfNoValueTF {#1}
6665   {
6666     \@@_pi_contract_information:Vn \tmpProjectPIids {#2}
6667   }
6668   {
6669     \@@_pi_contract_information:nn {#1} {#2}
6670   }
6671 }
6672
6673 \cs_new_protected:Npn \@@_pi_contract_information:nn #1#2
6674 {
6675   % #1: comma-separated PI ids
6676   % #2: question id, e.g. C1 / C2 / C3 / C4
6677
6678   \def\tmpLocalDB{person}%
6679   \seq_set_from_clist:Nn \l_@@_contract_pi_ids_seq {#1}
6680
6681   \str_case:nn {#2}
6682   {
6683     {C1}
6684     {
6685       \item
6686       Is~the~employment~of~the~
6687       \bool_if:NTF \l_@@_project_one_PI_bool
6688       { project~leader~at~the~institution~ }
6689       { project~leaders~at~the~institutions~ }%
6690       indicated~contractually~secured~for~the~duration~of~
6691       the~proposed~funding~period?\space
6692       \@@_pi_contract_yes_no:n {#2}%
6693     }
6694
6695     {C2}
6696     {
6697       \item
6698       \bool_if:NTF \l_@@_project_one_PI_bool
6699       { Does~the~above~mentioned~person~hold~a~fixed-term~position? }
6700       { Do~any~of~the~above~mentioned~persons~hold~fixed-term~positions? }%
6701       \space
6702       \@@_pi_contract_yes_no:n {#2}%
6703
6704       \clist_if_in:NnT \l_@@_contract_answers_clist {yes}
6705       {
6706         \begin{contractinformation}
6707           \item End~date~of~fixed-term~contract:\space
6708           \@@_pi_contract_field_list:nN {C2a} \l_@@_contract_true_pi_ids_seq
6709
6710           \item Further~employment~is~planned~until:\space
6711           \@@_pi_contract_field_list:nN {C2b} \l_@@_contract_true_pi_ids_seq
6712         \end{contractinformation}

```

```

6713     }
6714 }
6715
6716 {C3}
6717 {
6718     \item
6719     \bool_if:NTF \l_@@_project_one_PI_bool
6720     { Will~the~above~mentioned~person~ }
6721     { Will~one~or~more~of~the~above~mentioned~persons~ }%
6722     retire~during~the~proposed~funding~period?\space
6723     \@@_pi_contract_yes_no:n {#2}%
6724
6725     \clist_if_in:NnT \l_@@_contract_answers_clist {yes}
6726     {
6727         \begin{contractinformation}
6728         \item Anticipated~retirement~date:\space
6729         \@@_pi_contract_field_list:nN {C3a} \l_@@_contract_true_pi_ids_seq
6730         \end{contractinformation}
6731     }
6732 }
6733
6734 {C4}
6735 {
6736     \item
6737     Funding~for~the~position~of~the~
6738     \bool_if:NTF \l_@@_project_one_PI_bool
6739     { project~leader~at~the~institution~ }
6740     { project~leaders~at~the~institutions~ }%
6741     indicated~is~covered~by~core~support~(state~funds~or~similar):\space
6742     \@@_pi_contract_yes_no:n {#2}%
6743
6744     \clist_if_in:NnT \l_@@_contract_answers_clist {no}
6745     {
6746         \begin{contractinformation}
6747         \item Type~and~source~of~funding:\space
6748         \@@_pi_contract_field_list:nN {C4a} \l_@@_contract_false_pi_ids_seq
6749         \end{contractinformation}
6750     }
6751 }
6752 }
6753 }
6754
6755 \cs_generate_variant:Nn \@@_pi_contract_information:nn { Vn }
6756
6757
6758 \cs_new_protected:Npn \@@_pi_contract_yes_no:n #1
6759 {
6760     % #1: question id, e.g. C1 / C2 / C3 / C4
6761
6762     \clist_clear:N \l_@@_contract_answers_clist
6763     \seq_clear:N \l_@@_contract_true_pi_ids_seq
6764     \seq_clear:N \l_@@_contract_false_pi_ids_seq
6765     \tl_clear:N \l_@@_contract_answer_tl
6766
6767     \bool_set_true:N \l_tmpa_bool
6768
6769     \seq_map_inline:Nn \l_@@_contract_pi_ids_seq
6770     {
6771         \bool_if:NTF \l_tmpa_bool
6772         { \bool_set_false:N \l_tmpa_bool }
6773         { \tl_put_right:Nn \l_@@_contract_answer_tl {,~} }%
6774
6775         \DTLgetvalueforkey{\theLastName}{lastname}{person}{id}{##1}%
6776
6777         \compareEntry{##1}{#1}{yes}
6778         {

```

```

6779     \tl_put_right:Nn \l_@@_contract_answer_tl
6780     { \dfgShowTag{##1}{#1}{\textbf{yes}}[person] }%
6781     \clist_put_right:Nn \l_@@_contract_answers_clist {true}%
6782     \seq_put_right:Nn \l_@@_contract_true_pi_ids_seq {##1}%
6783   }
6784   {
6785     \tl_put_right:Nn \l_@@_contract_answer_tl
6786     { \dfgShowTag{##1}{#1}{\textbf{no}}[person] }%
6787     \clist_put_right:Nn \l_@@_contract_answers_clist {false}%
6788     \seq_put_right:Nn \l_@@_contract_false_pi_ids_seq {##1}%
6789   }
6790
6791   \bool_if:NF \l_@@_project_one_PI_bool
6792   {
6793     \tl_put_right:Nx \l_@@_contract_answer_tl
6794     {
6795       \exp_not:n {~}()
6796       \exp_not:N \dfgShowTag{##1}{lastname}
6797       {\exp_not:V \theLastName}[person]
6798       \exp_not:n {}
6799     }%
6800   }
6801 }
6802
6803 \tl_use:N \l_@@_contract_answer_tl
6804 }
6805
6806
6807 \cs_new_protected:Npn \@@_pi_contract_field_list:nN #1#2
6808 {
6809   % #1: field id, e.g. C2a / C2b / C3a / C4a
6810   % #2: sequence variable containing the PI ids for which the field is relevant
6811
6812   \tl_clear:N \l_@@_contract_field_list_tl
6813   \bool_set_true:N \l_tmpa_bool
6814
6815   \seq_map_inline:Nn #2
6816   {
6817     \bool_if:NTF \l_tmpa_bool
6818     { \bool_set_false:N \l_tmpa_bool }
6819     { \tl_put_right:Nn \l_@@_contract_field_list_tl {,~} }%
6820
6821     \getEntry*[person]{##1}
6822     {
6823       \theFieldValue = #1,
6824       \theLastName   = lastname
6825     }%
6826
6827     \tl_put_right:Nx \l_@@_contract_field_list_tl
6828     {
6829       \exp_not:N \textbf
6830       {
6831         \exp_not:N \dfgShowTag{##1}{#1}
6832         {\exp_not:V \theFieldValue}[person]
6833       }
6834       \int_compare:nNnT { \seq_count:N #2 } > {1}
6835       {
6836         \exp_not:n {~}()
6837         \exp_not:N \dfgShowTag{##1}{lastname}
6838         {\exp_not:V \theLastName}[person]
6839         \exp_not:n {}
6840       }
6841     }%
6842   }
6843
6844   \tl_use:N \l_@@_contract_field_list_tl

```

```

6845 }
6846
6847
6848 \cs_new_protected:Npn \__pi_question_field_list:nn #1#2
6849 {%
6850   \tl_clear:N \l_tmpa_tl
6851   \bool_set_true:N \l_tmpa_bool    % first-iteration flag
6852   \seq_map_inline:Nn #2
6853   {%
6854     \bool_if:NTF \l_tmpa_bool
6855     { \bool_set_false:N \l_tmpa_bool }
6856     { \tl_put_right:Nn \l_tmpa_tl {,~} }%
6857     \getEntry*[person]{##1}{
6858       \theFieldValue = #1,
6859       \theLastName   = lastname
6860     }%
6861     \tl_put_right:Nx \l_tmpa_tl
6862     {
6863       \exp_not:N \textbf
6864       {
6865         \exp_not:N \dfgShowTag{##1}{#1}
6866         {\exp_not:N \theFieldValue}[person]
6867       }
6868       \int_compare:nNnT { \seq_count:N #2 } > {1}
6869       {
6870         \exp_not:n {\space()}
6871         \exp_not:N \dfgShowTag{##1}{lastname}
6872         {\exp_not:N \theLastName}[person]
6873         \exp_not:n {}
6874       }
6875     }%
6876   }%
6877   \tl_use:N \l_tmpa_tl
6878 }
6879
6880 \tl_new:N \l_@@_yes_names_tl
6881 \tl_new:N \l_@@_no_names_tl
6882
6883 \cs_new_protected:Npn \tmp_person_question_yes_no:n #1
6884 {%
6885   \clist_clear:N \l_tmpe_clist
6886   \seq_clear:N \l_tmpe_seq
6887   \seq_clear:N \l_tmpe_seq
6888   \tl_clear:N \l_tmpa_tl
6889   \bool_set_true:N \l_tmpa_bool    % first-iteration flag
6890   \seq_map_inline:Nn \l_tmpe_seq
6891   {%
6892     \bool_if:NTF \l_tmpa_bool
6893     { \bool_set_false:N \l_tmpa_bool }
6894     { \tl_put_right:Nn \l_tmpa_tl {,~} }%
6895     \DTLgetvalueforkey{\theLastName}{lastname}{person}{id}{##1}%
6896     \compareEntry{##1}{#1}{yes}
6897     {%
6898       \tl_put_right:Nn \l_tmpa_tl
6899       { \dfgShowTag{##1}{#1}{\textbf{yes}}[person] }%
6900       \clist_put_right:Nn \l_tmpe_clist {yes}%
6901       \seq_put_right:Nn \l_tmpe_seq {##1}%
6902     }
6903     {%
6904       \tl_put_right:Nn \l_tmpa_tl
6905       { \dfgShowTag{##1}{#1}{\textbf{no}}[person] }%
6906       \clist_put_right:Nn \l_tmpe_clist {false}%
6907       \seq_put_right:Nn \l_tmpe_seq {##1}%
6908     }%
6909     \bool_if:NF \l_@@_project_one_PI_bool
6910     {%

```

```

6911 \tl_put_right:Nx \l_tmpa_tl
6912 {
6913   \exp_not:n {\space{}}
6914   \exp_not:N \dfgShowTag{##1}{lastname}
6915   {\exp_not:V \theLastName}[person]
6916   \exp_not:n {} }
6917 }%
6918 }%
6919 }%
6920 \tl_use:N \l_tmpa_tl
6921 }

```

Ending projects report three distinct kinds of published results. Each populated list is cited in its own reference segment. The combined list is persisted in the auxiliary file so a preceding project-report bibliography can omit entries that are printed again in the result lists.

```

6922 \clist_new:N \l_@@_project_results_quality_assured_clist
6923 \clist_new:N \l_@@_project_results_other_clist
6924 \clist_new:N \l_@@_project_results_patents_clist
6925 \clist_new:N \l_@@_project_results_all_clist
6926 \clist_new:N \l_@@_project_results_excluded_clist
6927 \prop_new:N \g_@@_project_results_aux_prop
6928
6929 \NewDocumentCommand{\dfgProjectResultsAux}{mm}
6930 {
6931   \prop_gput:Nnn \g_@@_project_results_aux_prop {#1} {#2}
6932 }
6933
6934 \cs_new_protected:Npn \@@_project_results_prepare:n #1
6935 {
6936   \clist_clear:N \l_@@_project_results_excluded_clist
6937   \prop_get:NnNT \g_@@_project_results_aux_prop {#1} \l_tmpa_tl
6938   {
6939     \clist_set:NV \l_@@_project_results_excluded_clist \l_tmpa_tl
6940   }
6941 }
6942
6943 \cs_new_protected:Npn \@@_project_results_collect:N #1
6944 {
6945   \clist_map_inline:Nn #1
6946   {
6947     \str_if_eq:nnF {##1} {none}
6948     { \clist_put_right:Nn \l_@@_project_results_all_clist {##1} }
6949   }
6950 }
6951
6952 \cs_new_protected:Npn \@@_project_results_register:
6953 {
6954   \clist_clear:N \l_@@_project_results_all_clist
6955   \@@_project_results_collect:N \l_@@_project_results_quality_assured_clist
6956   \@@_project_results_collect:N \l_@@_project_results_other_clist
6957   \@@_project_results_collect:N \l_@@_project_results_patents_clist
6958   \clist_remove_duplicates:N \l_@@_project_results_all_clist
6959   \clist_set_eq:NN
6960   \l_@@_project_results_excluded_clist
6961   \l_@@_project_results_all_clist
6962   \iow_now:Ne \@auxout
6963   {
6964     \exp_not:N \dfgProjectResultsAux
6965     { \exp_not:V \l__tmp_current_project_tl }
6966     { \exp_not:V \l_@@_project_results_all_clist }
6967   }
6968 }
6969
6970 \cs_new_protected:Npn \@@_project_results_skip_if_listed:
6971 {
6972   \clist_map_inline:Nn \l_@@_project_results_excluded_clist

```

```

6973 {
6974   \str_if_eq:eeT {##1} { \strfield{entrykey} }
6975   {
6976     \skipentry
6977     \clist_map_break:
6978   }
6979 }
6980 }
6981
6982 \defbibcheck{dfg-project-report}
6983 { \@@_project_results_skip_if_listed: }
6984
6985 \defbibheading{dfg-project-report-references}
6986 { \subsubsection{References} }
6987
6988 \NewDocumentCommand{\projectPublicationsHeading}{}
6989 {
6990   \bool_if:NT \l_@@_class_fastcompile_project_show_publications_bool
6991   { \subsection{Project~and~subject~related~list~of~publications} }
6992 }
6993
6994 \NewDocumentCommand{\projectNocite}{m}
6995 {
6996   \bool_if:NT \l_@@_class_fastcompile_project_show_publications_bool
6997   { \nocite{#1} }
6998 }
6999
7000 \NewDocumentCommand{\printProjectBibliography}{o}
7001 {
7002   \bool_if:NT \l_@@_class_fastcompile_project_show_publications_bool
7003   {
7004     \IfNoValueTF{#1}
7005     { \printbibliography }
7006     { \printbibliography[#1] }
7007   }
7008 }
7009
7010 \NewDocumentEnvironment{projectReport}{}
7011 {
7012   \bool_if:NT \l_@@_class_fastcompile_project_show_publications_bool
7013   { \begin{refsegment} }
7014 }
7015 {
7016   \bool_if:NT \l_@@_class_fastcompile_project_show_publications_bool
7017   {
7018     \printbibliography[
7019       segment = \therefsegment,
7020       check   = dfg-project-report,
7021       heading = dfg-project-report-references
7022     ]
7023     \end{refsegment}
7024   }
7025 }
7026
7027 \keys_define:nn { dfg / project-results }
7028 {
7029   quality-assured .clist_set:N = \l_@@_project_results_quality_assured_clist,
7030   quality-assured .value_required:n = true,
7031   other .clist_set:N = \l_@@_project_results_other_clist,
7032   other .value_required:n = true,
7033   patents .clist_set:N = \l_@@_project_results_patents_clist,
7034   patents .value_required:n = true,
7035   unknown .code:n = { \msg_warning:nnn { dfg } { unknown-key } {#1} }
7036 }
7037
7038 \cs_new_protected:Npn \@@_project_results_print:Nn #1#2

```

```

7039 {
7040   \clist_if_empty:NTF #1
7041   {#2}
7042   {
7043     \str_if_eq:eeTF { \clist_use:Nn #1 {,} } { none }
7044     { None. }
7045     {
7046       \begin{refsegment}
7047         \exp_args:Ne \nocite { \clist_use:Nn #1 {,} }
7048         \printbibliography[segment=\therefsegment, heading=none]
7049       \end{refsegment}
7050     }
7051   }
7052 }
7053
7054 \NewDocumentCommand{\printProjectResults}{m}
7055 {
7056   \bool_if:NT \l_@@_class_fastcompile_project_show_publications_bool
7057   {
7058     \FloatBarrier
7059     \group_begin:
7060       \clist_clear:N \l_@@_project_results_quality_assured_clist
7061       \clist_clear:N \l_@@_project_results_other_clist
7062       \clist_clear:N \l_@@_project_results_patents_clist
7063       \keys_set:nn { dfg / project-results } {#1}
7064       \@@_project_results_register:
7065       \setbibpreamble{}
7066
7067       \subsubsection{Publications~with~scientific~quality~assurance}
7068       \@@_project_results_print:Nn
7069       \l_@@_project_results_quality_assured_clist
7070       { List~publications~with~scientific~quality~assurance. }
7071
7072       \subsubsection{Other~publications~and~published~results}
7073       \@@_project_results_print:Nn
7074       \l_@@_project_results_other_clist
7075       { List~datasets,~software,~preprints,~protocols,~or~other~relevant~
7076         published~results~that~are~not~included~above. }
7077
7078       \subsubsection{Patents}
7079       \@@_project_results_print:Nn
7080       \l_@@_project_results_patents_clist
7081       { List~patents~and~patent~applications,~or~state~that~none~resulted~
7082         from~the~project. }
7083     \group_end:
7084   }
7085 }
7086
7087 \NewDocumentCommand{\printProjectTail}{}{}{
7088   \bool_if:NTF \l_@@_class_fastcompile_project_bool
7089   {
7090     \bool_if:NT \l_@@_class_fastcompile_project_show_publications_bool
7091     {
7092       \end{refsection}
7093       \resetboldnames
7094     }
7095   {
7096     \end{refsection}
7097     \resetboldnames%
7098     \clearpage
7099     \addtocontents{toc}{\protect\setcounter{tocdepth}{1}}%
7100     \hypersetup{bookmarksdepth = 3}
7101     \colorlet{thumbIndexBG}{\l_@@_custom_thumbIndexBG_tl}
7102   }
7103 }

```

To get the interim sum printed in the margin area we use a custom command. Table rows are denser than the package's default collision distance, so these notes use fixed placement with no collision padding. This keeps every total on its row anchor instead of accumulating a downward displacement. The leader is placed before the value in the right margin and after the value in the left margin, keeping it adjacent to the table on both page sides. You can switch the notes off using the customization section.

```

7104 \NewDocumentCommand{\printMarginalia}{O{\hrulefill}m}
7105 {
7106   \bool_if:NT \l_@@_class_showmarginalia_bool
7107   {\bool_set_false:N \g_@@_tblr_inside_bool
7108   \bool_set_true:N \l_@@_show_tag_leftward_bool
7109   \marginalia[type=fixed,ysep=0pt]
7110   {
7111     \int_if_odd:nTF { \marginaliapage }
7112     { #1#2 }
7113     { #2#1 }
7114   }
7115   \bool_set_false:N \l_@@_show_tag_leftward_bool
7116   \bool_set_true:N \g_@@_tblr_inside_bool
7117   }
7118 }

7119 \tl_new:N \l__tmp_body_staff_tl
7120 \tl_new:N \l__tmp_body_costs_tl
7121 \tl_new:N \l__tmp_body_fellowships_tl
7122 \tl_new:N \l__tmp_body_globalfunds_tl
7123 \tl_new:N \l__tmp_body_instrumentation_tl
7124 \cs_new_protected:Npn \@@_requested_funding_append_nonstaff:N #1
7125 {
7126   \DTLaddall{\tmpHorizontalSum}{
7127     \pSumYearOne,
7128     \pSumYearTwo,
7129     \pSumYearThree,
7130     \pSumYearFour,
7131     \pSumYearFive
7132   }
7133   \tl_put_right:Ne #1
7134   {
7135     \dfgShowTag{\pProject/\pCategory}{category}{\pCategory}[\tmpLocalDB]
7136     \printMarginalia{\dfgShowCalculatedTag{RequestedFundingTable}{\tmpLocalDB}
7137     {\@@_show_eur:n{\tmpHorizontalSum}}}
7138     & \dfgShowTag{\pProject/\pCategory}{sum-year1}
7139     {\@@_show_eur:n{\pSumYearOne}}[\tmpLocalDB]
7140     & \dfgShowTag{\pProject/\pCategory}{sum-year2}
7141     {\@@_show_eur:n{\pSumYearTwo}}[\tmpLocalDB]
7142     & \dfgShowTag{\pProject/\pCategory}{sum-year3}
7143     {\@@_show_eur:n{\pSumYearThree}}[\tmpLocalDB]
7144     & \dfgShowTag{\pProject/\pCategory}{sum-year4}
7145     {\@@_show_eur:n{\pSumYearFour}}[\tmpLocalDB]
7146     & \dfgShowTag{\pProject/\pCategory}{sum-year5}
7147     {\@@_show_eur:n{\pSumYearFive}}[\tmpLocalDB] \\
7148   }
7149 }

7150 \NewDocumentCommand{\RequestedFundingTable}{m}
7151 {
7152   \group_begin:
7153   \sisetup{drop-zero-decimal=true}
7154   % #1: project
7155   \def\tmpLocalDB{RequestedFunding}%
7156   \DTLifdbexists{\tmpLocalDB}{%
7157     \tl_clear:N \l__tmp_body_staff_tl
7158     \tl_clear:N \l__tmp_body_costs_tl
7159     \tl_clear:N \l__tmp_body_fellowships_tl
7160     \tl_clear:N \l__tmp_body_globalfunds_tl
7161     \tl_clear:N \l__tmp_body_instrumentation_tl
7162     \tl_put_right:Nn \l__tmp_body_staff_tl {
7163

```

```

7164     \SetRow{tableHeadingsBGalt}
7165     \SetCell{font=\footnotesize\bfseries,halign=l}
7166     Staff
7167     & Qty & Sum
7168     & Qty & Sum
7169     & Qty & Sum
7170     & Qty & Sum
7171     & Qty & Sum \\
7172 }
7173
7174 \tl_put_right:Nn \l__tmp_body_costs_tl {
7175     \SetHline{-}{tableOuterLines,0.5pt}
7176     \SetRow{tableHeadingsBGalt}
7177     \SetCell{font=\footnotesize\bfseries,halign=l}
7178     Direct~ Costs
7179     & & Sum
7180     & & Sum
7181     & & Sum
7182     & & Sum
7183     & & Sum \\
7184 }
7185 \tl_put_right:Nn \l__tmp_body_fellowships_tl {
7186     \SetHline{-}{tableOuterLines,0.5pt}
7187     \SetRow{tableHeadingsBGalt}
7188     \SetCell{font=\footnotesize\bfseries,halign=l}
7189     Fellowships
7190     & & Sum
7191     & & Sum
7192     & & Sum
7193     & & Sum
7194     & & Sum \\
7195 }
7196 \tl_put_right:Nn \l__tmp_body_globalfunds_tl {
7197     \SetHline{-}{tableOuterLines,0.5pt}
7198     \SetRow{tableHeadingsBGalt}
7199     \SetCell{font=\footnotesize\bfseries,halign=l}
7200     Globalfunds
7201     & & Sum
7202     & & Sum
7203     & & Sum
7204     & & Sum
7205     & & Sum \\
7206 }
7207 \tl_put_right:Nn \l__tmp_body_instrumentation_tl {
7208     \SetHline{-}{tableOuterLines,0.5pt}
7209     \SetRow{tableHeadingsBGalt}
7210     \SetCell{font=\footnotesize\bfseries,halign=l}
7211     Instrumentation
7212     & & Sum
7213     & & Sum
7214     & & Sum
7215     & & Sum
7216     & & Sum \\
7217 }
7218
7219
7220 % One filtered traversal is enough: dispatch each matching row to the
7221 % token list for its funding type. The previous implementation traversed
7222 % the complete, growing database once for every type.
7223 \DTLforeach[\DTLiseq{#1}]{\pProject}{\tmpLocalDB}{
7224     \pProject           =ref-project-id,
7225     \pType              =type,
7226     \pCategory          =category,
7227     \pPercentage        =percentage,
7228     \pQuantityYearOne   =quantity-year1,
7229     \pQuantityYearTwo   =quantity-year2,

```

```

7230 \pQuantityYearThree =quantity-year3,
7231 \pQuantityYearFour =quantity-year4,
7232 \pQuantityYearFive =quantity-year5,
7233 \pSumYearOne =sum-year1,
7234 \pSumYearTwo =sum-year2,
7235 \pSumYearThree =sum-year3,
7236 \pSumYearFour =sum-year4,
7237 \pSumYearFive =sum-year5
7238 }{
7239
7240 \str_case:enF {\pType}
7241 {
7242 {staff} {
7243 \DTLladdall{\tmpHorizontalSum}{
7244 \pSumYearOne,
7245 \pSumYearTwo,
7246 \pSumYearThree,
7247 \pSumYearFour,
7248 \pSumYearFive
7249 }
7250 \tl_put_right:Ne \l__tmp_body_staff_tl
7251 {
7252
7253 \dfgShowTag{\pProject/\pCategory}{category}
7254 {\dfgCategoryName{\pCategory}}[\tmpLocalDB],~
7255 \dfgShowTag{\pProject/\pCategory}{percentage}
7256 {\qty{\pPercentage}{percent}}[\tmpLocalDB]
7257 \printMarginalia{\dfgShowCalculatedTag{RequestedFundingTable}
7258 {\tmpLocalDB}{\@@_show_eur:n{\tmpHorizontalSum}}}
7259 & \dfgShowTag{\pProject/\pCategory}{quantity-year1}
7260 {\@@_show_table_number:n{\pQuantityYearOne}}[\tmpLocalDB]
7261 & \dfgShowTag{\pProject/\pCategory}{sum-year1}
7262 {\@@_show_eur:n{\pSumYearOne}}[\tmpLocalDB]
7263 & \dfgShowTag{\pProject/\pCategory}{quantity-year2}
7264 {\@@_show_table_number:n{\pQuantityYearTwo}}[\tmpLocalDB] % year2
7265 & \dfgShowTag{\pProject/\pCategory}{sum-year2}
7266 {\@@_show_eur:n{\pSumYearTwo}}[\tmpLocalDB]
7267 & \dfgShowTag{\pProject/\pCategory}{quantity-year3}
7268 {\@@_show_table_number:n{\pQuantityYearThree}}[\tmpLocalDB] % year3
7269 & \dfgShowTag{\pProject/\pCategory}{sum-year3}
7270 {\@@_show_eur:n{\pSumYearThree}}[\tmpLocalDB]
7271 & \dfgShowTag{\pProject/\pCategory}{quantity-year4}
7272 {\@@_show_table_number:n{\pQuantityYearFour}}[\tmpLocalDB] % year4
7273 & \dfgShowTag{\pProject/\pCategory}{sum-year4}
7274 {\@@_show_eur:n{\pSumYearFour}}[\tmpLocalDB]
7275 & \dfgShowTag{\pProject/\pCategory}{quantity-year5}
7276 {\@@_show_table_number:n{\pQuantityYearFive}}[\tmpLocalDB] % year5
7277 & \dfgShowTag{\pProject/\pCategory}{sum-year5}
7278 {\@@_show_eur:n{\pSumYearFive}}[\tmpLocalDB]
7279 \\
7280 }
7281 }
7282 {costs}
7283 {\@@_requested_funding_append_nonstaff:N \l__tmp_body_costs_tl}
7284 {fellowships}
7285 {\@@_requested_funding_append_nonstaff:N \l__tmp_body_fellowships_tl}
7286 {globalfunds}
7287 {\@@_requested_funding_append_nonstaff:N \l__tmp_body_globalfunds_tl}
7288 {instrumentation}
7289 {\@@_requested_funding_append_nonstaff:N \l__tmp_body_instrumentation_tl}
7290 }
7291 { }
7292 }
7293 \tl_put_right:Ne \l__tmp_body_staff_tl
7294 {
7295 \SetRow{belowsep=5pt}

```

```

7296 \SetHline{-}{tableOuterLines,0.5pt}
7297 Total~
7298 \printMarginalia{%
7299 \getSumRequestedFunds{#1}{staff}
7300 {sum-year1,sum-year2,sum-year3,sum-year4,sum-year5}
7301 }
7302 & \SetCell{bg=tableNoValue}
7303 & \getSumRequestedFunds{#1}{staff}{sum-year1}
7304 & \SetCell{bg=tableNoValue}
7305 & \getSumRequestedFunds{#1}{staff}{sum-year2}
7306 & \SetCell{bg=tableNoValue}
7307 & \getSumRequestedFunds{#1}{staff}{sum-year3}
7308 & \SetCell{bg=tableNoValue}
7309 & \getSumRequestedFunds{#1}{staff}{sum-year4}
7310 & \SetCell{bg=tableNoValue}
7311 & \getSumRequestedFunds{#1}{staff}{sum-year5}
7312 \\
7313 }
7314
7315 \clist_map_inline:nn {
7316 costs,fellowships,globalfunds,instrumentation
7317 }{
7318
7319 \tl_put_right:ce { l__tmp_body_##1_tl }
7320 {
7321 \SetRow{belowsep=5pt}
7322 \SetHline{-}{tableLines,0.5pt}
7323 Total
7324 \printMarginalia{%
7325 \getSumRequestedFunds{#1}{##1}
7326 {sum-year1,sum-year2,sum-year3,sum-year4,sum-year5}
7327 }
7328 & &
7329 \getSumRequestedFunds{#1}{##1}{sum-year1}
7330 & &
7331 \getSumRequestedFunds{#1}{##1}{sum-year2}
7332 & &
7333 \getSumRequestedFunds{#1}{##1}{sum-year3}
7334 & &
7335 \getSumRequestedFunds{#1}{##1}{sum-year4}
7336 & &
7337 \getSumRequestedFunds{#1}{##1}{sum-year5}
7338 \\
7339 }}
7340
7341 % delete when zero
7342 \dfgCheckIfZeroShowCategory{#1}{staff}
7343 \dfgCheckIfZeroShowCategory{#1}{costs}
7344 \dfgCheckIfZeroShowCategory{#1}{fellowships}
7345 \dfgCheckIfZeroShowCategory{#1}{globalfunds}
7346 \dfgCheckIfZeroShowCategory{#1}{instrumentation}
7347
7348 \begin{tblr}[
7349 theme=main,
7350 long,
7351 expand=
7352 \l__tmp_body_staff_tl
7353 \l__tmp_body_costs_tl
7354 \l__tmp_body_fellowships_tl
7355 \l__tmp_body_globalfunds_tl
7356 \l__tmp_body_instrumentation_tl,
7357 remark{Note}={Figures~ in~ EUR},
7358 ]{
7359 colsep=3pt,
7360 colspec = {
7361 *{1}{X[3.1,t]}

```

```

7362     *{5}{
7363     @{}X[0.75,c,si={table-format=1}]
7364     @{}X[r,si={table-format=7}]
7365     }
7366     % *{1}{X[2,t]}
7367     % *{10}{@{}X[c, si={table-format=4}]}
7368     },
7369     rows = {bg=white},
7370     column{2-Z}={guard},
7371     row{1}= {bg=tableHeadingsBG},
7372     row{1,2}= {guard},
7373     }
7374 Funding~for
7375 & \SetCell[c=2]{c} \dfgFundingYear{1}
7376 &
7377 & \SetCell[c=2]{c} \dfgFundingYear{2}
7378 &
7379 & \SetCell[c=2]{c} \dfgFundingYear{3}
7380 &
7381 & \SetCell[c=2]{c} \dfgFundingYear{4}
7382 &
7383 & \SetCell[c=2]{c} \dfgFundingYear{5}
7384 &
7385
7386 \l__tmp_body_staff_tl
7387 \l__tmp_body_costs_tl
7388 \l__tmp_body_fellowships_tl
7389 \l__tmp_body_globalfunds_tl
7390 \l__tmp_body_instrumentation_tl
7391
7392 \SetHline{-}{tableOuterLines,.75pt}
7393 \SetCell{font=\bfseries\footnotesize}
7394 Total
7395 \printMarginalia{%
7396 \getTotalSumRequestedFunds{#1}
7397 {sum-year1,sum-year2,sum-year3,sum-year4,sum-year5}
7398 }
7399 &
7400 & \getTotalSumRequestedFunds{#1}{sum-year1}
7401 &
7402 & \getTotalSumRequestedFunds{#1}{sum-year2}
7403 &
7404 & \getTotalSumRequestedFunds{#1}{sum-year3}
7405 &
7406 & \getTotalSumRequestedFunds{#1}{sum-year4}
7407 &
7408 & \getTotalSumRequestedFunds{#1}{sum-year5} \\
7409 \end{tblr}
7410 }{
7411 Database~ \texttt{#1}~ missing.
7412 \msg_warning:nne { dfg } { database-not-found }{ #1 }
7413 }
7414 \group_end:
7415 }

```

`\RequestedFundingStaffTable` The DFG staff roster uses one database and one project-filtered traversal. Rows are first dispatched, in declaration order, to four sequences. The sequences are then rendered in the official order (existing research, existing non-research, requested research, requested non-research), which also assigns the continuous sequence numbers used by the descriptions. When both staff types occur within a funding-status block, a horizontal rule separates the research and non-research groups without repeating their row-spanning labels. Category values and the emphasized job-description headings are left aligned for easier scanning. Person, institution, and affiliation references are resolved during this assembly phase, before tabularray measures any cells. Thus neither measuring passes nor page breaks repeat Datatool queries.

`\RequestedFundingStaffTable` {*project*}

Print the official DFG requested-funding staff roster, the institution and parent-affiliation legend, and both appli-

cable job-description blocks for *<project>*. The data source is always RequestedFundingStaff. For an ending project (project-status=E), rows declared with funding-status=requested are automatically labelled as staff funded with approved grant money; this matches the terminology of the ending-project report while retaining the same two-value data model.

```

7416 \seq_new:N \l_@@_rfs_existing_research_seq
7417 \seq_new:N \l_@@_rfs_existing_nonresearch_seq
7418 \seq_new:N \l_@@_rfs_requested_research_seq
7419 \seq_new:N \l_@@_rfs_requested_nonresearch_seq
7420 \seq_new:N \l_@@_rfs_institution_seq
7421 \seq_new:N \l_@@_rfs_affiliation_seq
7422 \prop_new:N \l_@@_rfs_duplicate_prop
7423 \prop_new:N \l_@@_rfs_institution_name_prop
7424 \prop_new:N \l_@@_rfs_institution_abbreviation_prop
7425 \prop_new:N \l_@@_rfs_institution_affiliation_abbreviation_prop
7426 \prop_new:N \l_@@_rfs_affiliation_abbreviation_prop
7427 \prop_new:N \l_@@_rfs_affiliation_name_prop
7428 \tl_new:N \l_@@_rfs_table_body_tl
7429 \tl_new:N \l_@@_rfs_existing_descriptions_tl
7430 \tl_new:N \l_@@_rfs_requested_descriptions_tl
7431 \tl_new:N \l_@@_rfs_project_tl
7432 \tl_new:N \l_@@_rfs_project_status_tl
7433 \tl_new:N \l_@@_rfs_existing_group_label_tl
7434 \tl_new:N \l_@@_rfs_requested_group_label_tl
7435 \tl_new:N \l_@@_rfs_existing_description_heading_tl
7436 \tl_new:N \l_@@_rfs_requested_description_heading_tl
7437 \tl_new:N \l_@@_rfs_ref_person_tl
7438 \tl_new:N \l_@@_rfs_firstname_tl
7439 \tl_new:N \l_@@_rfs_lastname_tl
7440 \tl_new:N \l_@@_rfs_degree_tl
7441 \tl_new:N \l_@@_rfs_position_tl
7442 \tl_new:N \l_@@_rfs_field_tl
7443 \tl_new:N \l_@@_rfs_ref_institution_tl
7444 \tl_new:N \l_@@_rfs_ref_affiliation_tl
7445 \tl_new:N \l_@@_rfs_department_tl
7446 \tl_new:N \l_@@_rfs_funding_status_tl
7447 \tl_new:N \l_@@_rfs_commitment_tl
7448 \tl_new:N \l_@@_rfs_category_tl
7449 \tl_new:N \l_@@_rfs_funding_source_tl
7450 \tl_new:N \l_@@_rfs_description_tl
7451 \tl_new:N \l_@@_rfs_name_cell_tl
7452 \tl_new:N \l_@@_rfs_plain_name_tl
7453 \tl_new:N \l_@@_rfs_description_name_tl
7454 \tl_new:N \l_@@_rfs_field_cell_tl
7455 \tl_new:N \l_@@_rfs_department_cell_tl
7456 \tl_new:N \l_@@_rfs_commitment_cell_tl
7457 \tl_new:N \l_@@_rfs_category_cell_tl
7458 \tl_new:N \l_@@_rfs_funding_source_cell_tl
7459 \tl_new:N \l_@@_rfs_group_cell_tl
7460 \tl_new:N \l_@@_rfs_institution_name_tl
7461 \tl_new:N \l_@@_rfs_institution_abbreviation_tl
7462 \tl_new:N \l_@@_rfs_institution_affiliation_tl
7463 \tl_new:N \l_@@_rfs_affiliation_name_tl
7464 \tl_new:N \l_@@_rfs_affiliation_abbreviation_tl
7465 \int_new:N \l_@@_rfs_display_number_int
7466 \int_new:N \l_@@_rfs_record_count_int
7467 \bool_new:N \l_@@_rfs_person_resolved_bool
7468 \bool_new:N \l_@@_rfs_name_incomplete_bool
7469
7470 \keys_define:nn { dfg / requested-funding-staff-row }
7471 {
7472   ref-person-id .tl_set:N = \l_@@_rfs_ref_person_tl,
7473   firstname .tl_set:N = \l_@@_rfs_firstname_tl,
7474   lastname .tl_set:N = \l_@@_rfs_lastname_tl,
7475   academic-degree .tl_set:N = \l_@@_rfs_degree_tl,
7476   positionText .tl_set:N = \l_@@_rfs_position_tl,

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7477 position .tl_set:N = \l_@@_rfs_position_tl,
7478 field-of-research .tl_set:N = \l_@@_rfs_field_tl,
7479 ref-institution-id .tl_set:N = \l_@@_rfs_ref_institution_tl,
7480 ref-affiliation-id .tl_set:N = \l_@@_rfs_ref_affiliation_tl,
7481 department .tl_set:N = \l_@@_rfs_department_tl,
7482 funding-status .tl_set:N = \l_@@_rfs_funding_status_tl,
7483 commitment .tl_set:N = \l_@@_rfs_commitment_tl,
7484 category .tl_set:N = \l_@@_rfs_category_tl,
7485 funding-source .tl_set:N = \l_@@_rfs_funding_source_tl,
7486 description .tl_set:N = \l_@@_rfs_description_tl,
7487 unknown .code:n = { }
7488 }
7489
7490 \cs_new:Npn \@@_rfs_missing_text:
7491 { \textcolor{tableNoValue!55!black}{\emph{not~provided}}} }
7492
7493 \cs_new:Npn \@@_rfs_error_text:n #1
7494 { \textcolor{error}{\texttt{<?#1?>}}} }
7495
7496 \cs_new_protected:Npn \@@_rfs_warn_missing:n #1
7497 {
7498   \msg_warning:nnee { dfg } { requested-staff-missing-field }
7499   { \l_@@_rfs_project_tl }
7500   { no.~\int_use:N \l_@@_rfs_display_number_int \c_colon_str\space #1 }
7501 }
7502
7503 \cs_new_protected:Npn \@@_rfs_row_clear:
7504 {
7505   \tl_clear:N \l_@@_rfs_ref_person_tl
7506   \tl_clear:N \l_@@_rfs_firstname_tl
7507   \tl_clear:N \l_@@_rfs_lastname_tl
7508   \tl_clear:N \l_@@_rfs_degree_tl
7509   \tl_clear:N \l_@@_rfs_position_tl
7510   \tl_clear:N \l_@@_rfs_field_tl
7511   \tl_clear:N \l_@@_rfs_ref_institution_tl
7512   \tl_clear:N \l_@@_rfs_ref_affiliation_tl
7513   \tl_clear:N \l_@@_rfs_department_tl
7514   \tl_clear:N \l_@@_rfs_funding_status_tl
7515   \tl_clear:N \l_@@_rfs_commitment_tl
7516   \tl_clear:N \l_@@_rfs_category_tl
7517   \tl_clear:N \l_@@_rfs_funding_source_tl
7518   \tl_clear:N \l_@@_rfs_description_tl
7519 }
7520
7521 \cs_new_protected:Npn \@@_rfs_store:N #1
7522 {
7523   \seq_put_right:Ne #1
7524   {
7525     ref-person-id = { \exp_not:V \pRFSRefPerson },
7526     firstname = { \exp_not:V \pRFSFirstname },
7527     lastname = { \exp_not:V \pRFSLastname },
7528     academic-degree = { \exp_not:V \pRFSDegree },
7529     positionText = { \exp_not:V \pRFSPosition },
7530     field-of-research = { \exp_not:V \pRFSField },
7531     ref-institution-id = { \exp_not:V \pRFSRefInstitution },
7532     ref-affiliation-id = { \exp_not:V \pRFSRefAffiliation },
7533     department = { \exp_not:V \pRFSDepartment },
7534     funding-status = { \exp_not:V \pRFSFundingStatus },
7535     commitment = { \exp_not:V \pRFSCommitment },
7536     category = { \exp_not:V \pRFSCategory },
7537     funding-source = { \exp_not:V \pRFSFundingSource },
7538     description = { \exp_not:V \pRFSDescription }
7539   }
7540 }
7541
7542 \cs_new_protected:Npn \@@_rfs_collect_current:

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7543 {
7544     \clist_map_inline:nn
7545     {
7546         \pRFSRefPerson, \pRFSFirstname, \pRFSLastname, \pRFSDegree,
7547         \pRFSPosition, \pRFSField, \pRFSRefInstitution,
7548         \pRFSRefAffiliation, \pRFSDepartment, \pRFSCommitment,
7549         \pRFSCategory, \pRFSFundingSource, \pRFSDescription
7550     }
7551     { \DTLifnulllorempty{##1}{\cs_set:Npn ##1 {}}} }
7552     \tl_if_blank:VTF \pRFSRefPerson
7553     {
7554         \str_if_eq:VnTF \pRFSLastname { TBA }
7555         {
7556             \tl_set:Ne \l_tmpa_tl
7557             {
7558                 \exp_not:V \pRFSProject / \exp_not:V \pRFSFundingStatus /
7559                 \exp_not:V \pRFSStaffType / vacancy /
7560                 \exp_not:V \pRFSCategory / \exp_not:V \pRFSPosition /
7561                 \exp_not:V \pRFSField / \exp_not:V \pRFSRefInstitution /
7562                 \exp_not:V \pRFSDepartment
7563             }
7564         }
7565         {
7566             \tl_set:Ne \l_tmpa_tl
7567             {
7568                 \exp_not:V \pRFSProject / \exp_not:V \pRFSFundingStatus /
7569                 \exp_not:V \pRFSStaffType / name /
7570                 \exp_not:V \pRFSLastname / \exp_not:V \pRFSFirstname
7571             }
7572         }
7573     }
7574     {
7575         \tl_set:Ne \l_tmpa_tl
7576         {
7577             \exp_not:V \pRFSProject / \exp_not:V \pRFSFundingStatus /
7578             \exp_not:V \pRFSStaffType / person / \exp_not:V \pRFSRefPerson
7579         }
7580     }
7581     \prop_get:NVNTF \l_@@_rfs_duplicate_prop \l_tmpa_tl \l_tmpb_tl
7582     { \msg_warning:nne { dfg } { requested-staff-duplicate } { \l_tmpa_tl } }
7583     { \prop_put:NVN \l_@@_rfs_duplicate_prop \l_tmpa_tl { 1 } }
7584     \tl_set:Ne \l_tmpa_tl
7585     { \pRFSFundingStatus / \pRFSStaffType }
7586     \str_case:VnF \l_tmpa_tl
7587     {
7588         { existing/research }
7589         { \@@_rfs_store:N \l_@@_rfs_existing_research_seq }
7590         { existing/nonResearch }
7591         { \@@_rfs_store:N \l_@@_rfs_existing_nonresearch_seq }
7592         { requested/research }
7593         { \@@_rfs_store:N \l_@@_rfs_requested_research_seq }
7594         { requested/nonResearch }
7595         { \@@_rfs_store:N \l_@@_rfs_requested_nonresearch_seq }
7596     }
7597     { }
7598 }
7599
7600 \cs_new_protected:Npn \@@_rfs_use_fallback:NN #1#2
7601 {
7602     \tl_if_blank:VT #1
7603     { \DTLifnulllorempty{#2}{} { \tl_set:NV #1 #2 } }
7604 }
7605
7606 \cs_new_protected:Npn \@@_rfs_resolve_person:
7607 {
7608     \bool_set_false:N \l_@@_rfs_person_resolved_bool

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7609 \tl_if_blank:VF \l_@@_rfs_ref_person_tl
7610 {
7611   \DTLifdbexists{person}
7612   {
7613     \DTLgetvalueforkey{\l_tmpa_tl}{lastname}{person}{id}
7614     {\l_@@_rfs_ref_person_tl}
7615     \DTLifnulloreempty{\l_tmpa_tl}
7616     {
7617       \msg_warning:nnee { dfg } { requested-staff-unresolved-person }
7618       { \l_@@_rfs_project_tl } { \l_@@_rfs_ref_person_tl }
7619     }
7620     {
7621       \bool_set_true:N \l_@@_rfs_person_resolved_bool
7622       \@@_rfs_use_fallback:NN \l_@@_rfs_lastname_tl \l_tmpa_tl
7623       \DTLgetvalueforkey{\l_tmpa_tl}{firstname}{person}{id}
7624       {\l_@@_rfs_ref_person_tl}
7625       \@@_rfs_use_fallback:NN \l_@@_rfs_firstname_tl \l_tmpa_tl
7626       \DTLgetvalueforkey{\l_tmpa_tl}{academicdegree}{person}{id}
7627       {\l_@@_rfs_ref_person_tl}
7628       \@@_rfs_use_fallback:NN \l_@@_rfs_degree_tl \l_tmpa_tl
7629       \DTLgetvalueforkey{\l_tmpa_tl}{positionText}{person}{id}
7630       {\l_@@_rfs_ref_person_tl}
7631       \@@_rfs_use_fallback:NN \l_@@_rfs_position_tl \l_tmpa_tl
7632       \DTLgetvalueforkey{\l_tmpa_tl}{position}{person}{id}
7633       {\l_@@_rfs_ref_person_tl}
7634       \@@_rfs_use_fallback:NN \l_@@_rfs_category_tl \l_tmpa_tl
7635       \bool_lazy_all:nT
7636       {
7637         { \tl_if_blank_p:V \l_@@_rfs_department_tl }
7638         { \tl_if_blank_p:V \l_@@_rfs_ref_institution_tl }
7639         { \tl_if_blank_p:V \l_@@_rfs_ref_affiliation_tl }
7640       }
7641       {
7642         \DTLgetvalueforkey{\l_tmpa_tl}{ref-institution-id}{person}{id}
7643         {\l_@@_rfs_ref_person_tl}
7644         \@@_rfs_use_fallback:NN \l_@@_rfs_ref_institution_tl \l_tmpa_tl
7645         \tl_if_blank:VT \l_@@_rfs_ref_institution_tl
7646         {
7647           \DTLgetvalueforkey{\l_tmpa_tl}{ref-affiliation-id}{person}{id}
7648           {\l_@@_rfs_ref_person_tl}
7649           \@@_rfs_use_fallback:NN \l_@@_rfs_ref_affiliation_tl \l_tmpa_tl
7650         }
7651       }
7652     }
7653   }
7654   {
7655     \msg_warning:nnee { dfg } { requested-staff-unresolved-person }
7656     { \l_@@_rfs_project_tl } { \l_@@_rfs_ref_person_tl }
7657   }
7658 }
7659 }
7660
7661 \cs_new_protected:Npn \@@_rfs_register_affiliation:n #1
7662 {
7663   \tl_set:Ne \l_tmpa_tl {#1}
7664   \tl_clear:N \l_@@_rfs_affiliation_name_tl
7665   \tl_clear:N \l_@@_rfs_affiliation_abbreviation_tl
7666   \DTLifdbexists{affiliation}
7667   {
7668     \DTLgetvalueforkey{\l_@@_rfs_affiliation_name_tl}
7669     {name}{affiliation}{id}{\l_tmpa_tl}
7670     \DTLifnulloreempty{\l_@@_rfs_affiliation_name_tl}
7671     {
7672       \msg_warning:nnee { dfg } { requested-staff-unresolved-affiliation }
7673       { \l_@@_rfs_project_tl } { \l_tmpa_tl }
7674       \tl_clear:N \l_@@_rfs_affiliation_name_tl

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7675     }
7676     {
7677         \DTLgetvalueforkey{\l_@@_rfs_affiliation_abbreviation_tl}
7678         {abbreviation}{affiliation}{id}{\l_tmpa_tl}
7679         \DTLifnullorempty{\l_@@_rfs_affiliation_abbreviation_tl}
7680         {
7681             \msg_warning:nne { dfg } { requested-staff-missing-abbreviation }
7682             { \l_tmpa_tl }
7683             \tl_set:NV \l_@@_rfs_affiliation_abbreviation_tl
7684             \l_@@_rfs_affiliation_name_tl
7685         }
7686         { }
7687         \seq_if_in:NVF \l_@@_rfs_affiliation_seq \l_tmpa_tl
7688         {
7689             \seq_put_right:NV \l_@@_rfs_affiliation_seq \l_tmpa_tl
7690             \prop_put:NVV \l_@@_rfs_affiliation_abbreviation_prop
7691             \l_tmpa_tl \l_@@_rfs_affiliation_abbreviation_tl
7692             \prop_put:NVV \l_@@_rfs_affiliation_name_prop
7693             \l_tmpa_tl \l_@@_rfs_affiliation_name_tl
7694         }
7695     }
7696 }
7697 {
7698     \msg_warning:nnee { dfg } { requested-staff-unresolved-affiliation }
7699     { \l_@@_rfs_project_tl } { \l_tmpa_tl }
7700 }
7701 }
7702
7703 \cs_new_protected:Npn \@@_rfs_resolve_organisation:
7704 {
7705     \tl_if_blank:VT \l_@@_rfs_department_tl
7706     {
7707         \tl_if_blank:VTF \l_@@_rfs_ref_institution_tl
7708         {
7709             % Compatibility fallback for roster declarations written before the
7710             % institution-level key was introduced.
7711             \tl_if_blank:VTF \l_@@_rfs_ref_affiliation_tl
7712             {
7713                 \@@_rfs_warn_missing:n { department~or~ref-institution-id }
7714                 \tl_set:Nn \l_@@_rfs_department_tl
7715                 { \SetCell{bg=tableNoValue}\@@_rfs_missing_text: }
7716             }
7717             {
7718                 \@@_rfs_register_affiliation:n { \l_@@_rfs_ref_affiliation_tl }
7719                 \tl_if_blank:VTF \l_@@_rfs_affiliation_name_tl
7720                 {
7721                     \tl_set:Ne \l_@@_rfs_department_tl
7722                     {
7723                         \exp_not:N \SetCell { bg=tableNoValue }
7724                         \exp_not:N \@@_rfs_error_text:n
7725                         { \exp_not:N \l_@@_rfs_ref_affiliation_tl }
7726                     }
7727                 }
7728                 {
7729                     \tl_set:NV \l_@@_rfs_department_tl
7730                     \l_@@_rfs_affiliation_abbreviation_tl
7731                 }
7732             }
7733         }
7734     }
7735     \tl_clear:N \l_@@_rfs_department_tl
7736     \DTLifdbexists{institution}
7737     {
7738         \clist_set:NV \l_tmpa_clist \l_@@_rfs_ref_institution_tl
7739         \bool_set_true:N \l_tmpa_bool
7740         \clist_map_inline:Nn \l_tmpa_clist

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7741 {
7742     \bool_if:NTF \l_tmpa_bool
7743     { \bool_set_false:N \l_tmpa_bool }
7744     { \tl_put_right:Nn \l_@@_rfs_department_tl {,~} }
7745     \DTLgetvalueforkey{\l_@@_rfs_institution_affiliation_tl}
7746     {ref-affiliation-id}{institution}{id}{##1}
7747     \DTLifnulloreempty{\l_@@_rfs_institution_affiliation_tl}
7748     {
7749         \msg_warning:nnee { dfg } { requested-staff-unresolved-institution }
7750         { \l_@@_rfs_project_tl } {##1}
7751         \tl_put_right:Ne \l_@@_rfs_department_tl
7752         { \exp_not:N \@@_rfs_error_text:n { \exp_not:n {##1} } }
7753     }
7754     {
7755         \DTLgetvalueforkey{\l_@@_rfs_institution_name_tl}
7756         {name}{institution}{id}{##1}
7757         \@@_institution_abbreviation_or_name:nN
7758         {##1} \l_@@_rfs_institution_abbreviation_tl
7759         \@@_rfs_register_affiliation:n
7760         { \l_@@_rfs_institution_affiliation_tl }
7761         \DTLifnulloreempty{\l_@@_rfs_institution_name_tl}
7762         {
7763             \tl_set:NV \l_@@_rfs_institution_name_tl
7764             \l_@@_rfs_affiliation_name_tl
7765         }
7766         { }
7767         \DTLifnulloreempty{\l_@@_rfs_institution_abbreviation_tl}
7768         {
7769             \tl_set:NV \l_@@_rfs_institution_abbreviation_tl
7770             \l_@@_rfs_affiliation_abbreviation_tl
7771         }
7772         { }
7773         \tl_put_right:NV \l_@@_rfs_department_tl
7774         \l_@@_rfs_institution_abbreviation_tl
7775         \tl_set:Nn \l_tmpa_tl {##1}
7776         \seq_if_in:NVF \l_@@_rfs_institution_seq \l_tmpa_tl
7777         {
7778             \seq_put_right:NV \l_@@_rfs_institution_seq \l_tmpa_tl
7779             \prop_put:NVV \l_@@_rfs_institution_name_prop
7780             \l_tmpa_tl \l_@@_rfs_institution_name_tl
7781             \prop_put:NVV \l_@@_rfs_institution_abbreviation_prop
7782             \l_tmpa_tl \l_@@_rfs_institution_abbreviation_tl
7783             \prop_put:NVV
7784             \l_@@_rfs_institution_affiliation_abbreviation_prop
7785             \l_tmpa_tl \l_@@_rfs_affiliation_abbreviation_tl
7786         }
7787     }
7788 }
7789 }
7790 {
7791     \msg_warning:nnee { dfg } { requested-staff-unresolved-institution }
7792     { \l_@@_rfs_project_tl } { \l_@@_rfs_ref_institution_tl }
7793     \tl_set:Ne \l_@@_rfs_department_tl
7794     {
7795         \exp_not:N \SetCell { bg=tableNoValue }
7796         \exp_not:N \@@_rfs_error_text:n
7797         { \exp_not:N \l_@@_rfs_ref_institution_tl }
7798     }
7799 }
7800 }
7801 }
7802 }
7803
7804 \cs_new_protected:Npn \@@_rfs_make_cell:NnN #1#2#3
7805 {
7806     \tl_if_blank:VTF #1

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7807 {
7808     \@@_rfs_warn_missing:n {#2}
7809     \tl_set:Nn #3 { \SetCell{bg=tableNoValue}\@@_rfs_missing_text: }
7810 }
7811 { \tl_set:NV #3 #1 }
7812 }
7813
7814 \cs_new_protected:Npn \@@_rfs_make_name_cell:
7815 {
7816     \bool_set_false:N \l_@@_rfs_name_incomplete_bool
7817     \str_if_eq:VnTF \l_@@_rfs_lastname_tl { TBA }
7818     {
7819         \tl_if_blank:VT \l_@@_rfs_position_tl
7820         {
7821             \@@_rfs_warn_missing:n { position }
7822             \tl_set:Nn \l_@@_rfs_position_tl { \@@_rfs_missing_text: }
7823             \bool_set_true:N \l_@@_rfs_name_incomplete_bool
7824         }
7825         \tl_set:Nn \l_@@_rfs_plain_name_tl { TBA }
7826         \tl_set:Nn \l_@@_rfs_description_name_tl { TBA }
7827         \tl_set:Ne \l_tmpa_tl
7828         {
7829             TBA
7830             \exp_not:N \newline
7831             (\exp_not:V \l_@@_rfs_position_tl)
7832         }
7833     }
7834     {
7835         \tl_if_blank:VT \l_@@_rfs_lastname_tl
7836         {
7837             \@@_rfs_warn_missing:n { lastname~or~resolvable~ref-person-id }
7838             \tl_set:Nn \l_@@_rfs_lastname_tl { \@@_rfs_error_text:n {name} }
7839             \bool_set_true:N \l_@@_rfs_name_incomplete_bool
7840         }
7841         \tl_if_blank:VT \l_@@_rfs_firstname_tl
7842         {
7843             \@@_rfs_warn_missing:n { firstname }
7844             \tl_set:Nn \l_@@_rfs_firstname_tl { \@@_rfs_missing_text: }
7845             \bool_set_true:N \l_@@_rfs_name_incomplete_bool
7846         }
7847         \tl_if_blank:VT \l_@@_rfs_position_tl
7848         {
7849             \@@_rfs_warn_missing:n { position }
7850             \tl_set:Nn \l_@@_rfs_position_tl { \@@_rfs_missing_text: }
7851             \bool_set_true:N \l_@@_rfs_name_incomplete_bool
7852         }
7853         \tl_set:Ne \l_@@_rfs_plain_name_tl
7854         {
7855             \exp_not:V \l_@@_rfs_lastname_tl,\exp_not:N \space
7856             \exp_not:V \l_@@_rfs_firstname_tl
7857         }
7858         \tl_clear:N \l_@@_rfs_description_name_tl
7859         \tl_if_blank:VF \l_@@_rfs_degree_tl
7860         {
7861             \tl_put_right:Ne \l_@@_rfs_description_name_tl
7862             { \exp_not:V \l_@@_rfs_degree_tl \exp_not:N \space }
7863         }
7864         \tl_put_right:Ne \l_@@_rfs_description_name_tl
7865         {
7866             \exp_not:V \l_@@_rfs_firstname_tl \exp_not:N \space
7867             \exp_not:V \l_@@_rfs_lastname_tl
7868         }
7869         \tl_set:NV \l_tmpa_tl \l_@@_rfs_plain_name_tl
7870         \tl_if_blank:VF \l_@@_rfs_degree_tl
7871         {
7872             \tl_put_right:Ne \l_tmpa_tl

```

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7873         { ,\exp_not:N \space \exp_not:V \l_@@_rfs_degree_tl }
7874     }
7875     \tl_put_right:Ne \l_tmpa_tl
7876     {
7877         \exp_not:N \newline
7878         (\exp_not:V \l_@@_rfs_position_tl)
7879     }
7880     \bool_if:NT \l_@@_rfs_person_resolved_bool
7881     {
7882         \str_if_eq:VnT \l_@@_rfs_funding_status_tl { existing }
7883         {
7884             \tl_set:Ne \l_tmpa_tl
7885             {
7886                 \exp_not:N \textbf { \exp_not:V \l_@@_rfs_lastname_tl },
7887                 \exp_not:N \space \exp_not:V \l_@@_rfs_firstname_tl
7888             }
7889             \tl_if_blank:VF \l_@@_rfs_degree_tl
7890             {
7891                 \tl_put_right:Ne \l_tmpa_tl
7892                 { ,\exp_not:N \space \exp_not:V \l_@@_rfs_degree_tl }
7893             }
7894             \tl_put_right:Ne \l_tmpa_tl
7895             {
7896                 \exp_not:N \newline
7897                 (\exp_not:V \l_@@_rfs_position_tl)
7898             }
7899         }
7900     }
7901 }
7902 \bool_if:NF \l_@@_rfs_person_resolved_bool
7903 {
7904     \tl_if_blank:VF \l_@@_rfs_ref_person_tl
7905     {
7906         \bool_set_true:N \l_@@_rfs_name_incomplete_bool
7907         \tl_put_right:Ne \l_tmpa_tl
7908         {
7909             \exp_not:N \space
7910             \exp_not:N \@@_rfs_error_text:n
7911             { \exp_not:V \l_@@_rfs_ref_person_tl }
7912         }
7913     }
7914 }
7915 \tl_clear:N \l_@@_rfs_name_cell_tl
7916 \bool_if:NT \l_@@_rfs_name_incomplete_bool
7917 { \tl_put_right:Nn \l_@@_rfs_name_cell_tl { \SetCell{bg=tableNoValue} } }
7918 \bool_if:NTF \l_@@_rfs_person_resolved_bool
7919 {
7920     \tl_put_right:Ne \l_@@_rfs_name_cell_tl
7921     {
7922         \exp_not:N \hyperlink { pi:\exp_not:V \l_@@_rfs_ref_person_tl }
7923         {
7924             \exp_not:N \textcolor { referencePI }
7925             {
7926                 \exp_not:N \dfgShowCalculatedTag{RequestedFundingStaffTable}
7927                 {RequestedFundingStaff, person}
7928                 {\exp_not:V \l_tmpa_tl}
7929             }
7930         }
7931     }
7932 }
7933 {
7934     \tl_put_right:Ne \l_@@_rfs_name_cell_tl
7935     {
7936         \exp_not:N \dfgShowCalculatedTag{RequestedFundingStaffTable}
7937         {RequestedFundingStaff, person}
7938         {\exp_not:V \l_tmpa_tl}

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```

7939     }
7940 }
7941 }
7942
7943 \cs_new_protected:Npn \l_@@_rfs_render_row:nnnN #1#2#3#4
7944 {
7945   \int_incr:N \l_@@_rfs_display_number_int
7946   \l_@@_rfs_resolve_person:
7947   \l_@@_rfs_resolve_organisation:
7948   \l_@@_rfs_make_name_cell:
7949   \l_@@_rfs_make_cell:NnN \l_@@_rfs_field_tl
7950   { field-of-research } \l_@@_rfs_field_cell_tl
7951   \tl_if_blank:VF \l_@@_rfs_field_tl
7952   {
7953     \tl_set:Ne \l_@@_rfs_field_cell_tl
7954     {
7955       \exp_not:N \dfgShowTag
7956       {\exp_not:N \l_@@_rfs_project_tl/
7957        \int_use:N \l_@@_rfs_display_number_int}
7958       {field-of-research}{\exp_not:N \l_@@_rfs_field_cell_tl}
7959       [RequestedFundingStaff]
7960     }
7961   }
7962   \tl_set:NV \l_@@_rfs_department_cell_tl \l_@@_rfs_department_tl
7963   \tl_if_in:VnF \l_@@_rfs_department_cell_tl { \SetCell }
7964   {
7965     \tl_set:Ne \l_@@_rfs_department_cell_tl
7966     {
7967       \exp_not:N \dfgShowCalculatedTag{RequestedFundingStaffTable}
7968       {RequestedFundingStaff, person, institution, affiliation}
7969       {\exp_not:N \l_@@_rfs_department_cell_tl}
7970     }
7971   }
7972   \str_if_eq:VnTF \l_@@_rfs_funding_status_tl { requested }
7973   {
7974     \tl_set:Nn \l_@@_rfs_commitment_cell_tl
7975     { \SetCell{bg=tableNoValue} }
7976     \tl_set:Nn \l_@@_rfs_funding_source_cell_tl
7977     { \SetCell{bg=tableNoValue} }
7978   }
7979   {
7980     \l_@@_rfs_make_cell:NnN \l_@@_rfs_commitment_tl
7981     { commitment } \l_@@_rfs_commitment_cell_tl
7982     \l_@@_rfs_make_cell:NnN \l_@@_rfs_funding_source_tl
7983     { funding-source } \l_@@_rfs_funding_source_cell_tl
7984     \tl_if_blank:VF \l_@@_rfs_commitment_tl
7985     {
7986       \tl_set:Ne \l_@@_rfs_commitment_cell_tl
7987       {
7988         \exp_not:N \dfgShowTag
7989         {\exp_not:N \l_@@_rfs_project_tl/
7990          \int_use:N \l_@@_rfs_display_number_int}
7991         {commitment}{\exp_not:N \l_@@_rfs_commitment_cell_tl}
7992         [RequestedFundingStaff]
7993       }
7994     }
7995     \tl_if_blank:VF \l_@@_rfs_funding_source_tl
7996     {
7997       \tl_set:Ne \l_@@_rfs_funding_source_cell_tl
7998       {
7999         \exp_not:N \dfgShowTag
8000         {\exp_not:N \l_@@_rfs_project_tl/
8001          \int_use:N \l_@@_rfs_display_number_int}
8002         {funding-source}{\exp_not:N \l_@@_rfs_funding_source_cell_tl}
8003         [RequestedFundingStaff]
8004       }
8005     }

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```

8005     }
8006 }
8007 \str_if_eq:VnTF \l_@@_rfs_funding_status_tl { existing }
8008 {
8009     \tl_set:Nn \l_@@_rfs_category_cell_tl
8010         { \SetCell{bg=tableNoValue} }
8011 }
8012 {
8013     \tl_if_blank:VTF \l_@@_rfs_category_tl
8014     {
8015         \@@_rfs_warn_missing:n { category }
8016         \tl_set:Nn \l_@@_rfs_category_cell_tl
8017             { \SetCell{bg=tableNoValue}\@@_rfs_missing_text: }
8018     }
8019     {
8020         \prop_get:NVNTF \g_@@_dfg_category_names_prop
8021             \l_@@_rfs_category_tl \l_@@_rfs_category_cell_tl
8022         { }
8023         {
8024             \tl_set:Ne \l_@@_rfs_category_cell_tl
8025                 { \exp_not:N \@@_rfs_error_text:n { \exp_not:V \l_@@_rfs_category_tl } }
8026         }
8027     }
8028 }
8029 \tl_if_in:VnF \l_@@_rfs_category_cell_tl { \SetCell }
8030 {
8031     \tl_set:Ne \l_@@_rfs_category_cell_tl
8032     {
8033         \exp_not:N \dfgShowCalculatedTag{RequestedFundingStaffTable}
8034         {RequestedFundingStaff, person}
8035         { \exp_not:V \l_@@_rfs_category_cell_tl }
8036     }
8037 }
8038 \int_compare:nNnTF {#1} = {1}
8039 {
8040     \tl_set:Ne \l_@@_rfs_group_cell_tl
8041     {
8042         \exp_not:N \SetCell [ r=#2 ] { 1 }
8043         { \exp_not:n {#3} } &
8044     }
8045 }
8046 { \tl_set:Nn \l_@@_rfs_group_cell_tl { & } }
8047 \tl_put_right:Ne \l_@@_rfs_table_body_tl
8048 {
8049     \exp_not:V \l_@@_rfs_group_cell_tl
8050     \int_use:N \l_@@_rfs_display_number_int
8051     & \exp_not:V \l_@@_rfs_name_cell_tl
8052     & \exp_not:V \l_@@_rfs_field_cell_tl
8053     & \exp_not:V \l_@@_rfs_department_cell_tl
8054     & \exp_not:V \l_@@_rfs_commitment_cell_tl
8055     & \exp_not:V \l_@@_rfs_category_cell_tl
8056     & \exp_not:V \l_@@_rfs_funding_source_cell_tl
8057     \\
8058 }
8059 \tl_if_blank:VT \l_@@_rfs_description_tl
8060 {
8061     \@@_rfs_warn_missing:n { description }
8062     \tl_set:Nn \l_@@_rfs_description_tl
8063         { \textcolor{error}{Description~not~provided.} }
8064 }
8065 \tl_put_right:Ne #4
8066 {
8067     \par\noindent
8068     \exp_not:N \textbf
8069     { \int_use:N \l_@@_rfs_display_number_int.\space
8070       \exp_not:N \dfgShowCalculatedTag{RequestedFundingStaffTable}

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8071         {RequestedFundingStaff, person}
8072         {\exp_not:V \l_@@_rfs_description_name_tl} }
8073     \quad
8074     \exp_not:N \dfgShowTag
8075     {\exp_not:V \l_@@_rfs_project_tl/
8076      \int_use:N \l_@@_rfs_display_number_int}
8077     {description}{\exp_not:V \l_@@_rfs_description_tl}
8078     [RequestedFundingStaff]
8079     \par
8080 }
8081 }
8082
8083 \cs_new_protected:Npn \@@_rfs_render_group:NnN #1#2#3
8084 {
8085     \seq_map_indexed_inline:Nn #1
8086     {
8087         \@@_rfs_row_clear:
8088         \keys_set:nn { dfg / requested-funding-staff-row } {##2}
8089         \@@_rfs_render_row:nnnN {##1} { \seq_count:N #1 } {##2} #3
8090     }
8091 }
8092
8093 \cs_new_protected:Npn \@@_rfs_render_status:NNnN #1#2#3#4
8094 {
8095     \int_compare:nNnT { \seq_count:N #1 + \seq_count:N #2 } > {0}
8096     {
8097         \tl_put_right:Nn \l_@@_rfs_table_body_tl
8098         {
8099             \SetRow{bg=tableHeadingsBGalt,font=\footnotesize\bfseries}
8100             \SetCell[c=8]{l} #3 & & & & & & \\\*
8101         }
8102         \@@_rfs_render_group:NnN #1 { Research~staff } #4
8103         \seq_if_empty:NF #1
8104         {
8105             \seq_if_empty:NF #2
8106             {
8107                 \tl_put_right:Nn \l_@@_rfs_table_body_tl
8108                 { \SetHline{-}{tableOuterLines,0.5pt} }
8109             }
8110         }
8111         \@@_rfs_render_group:NnN #2 { Non-research~staff } #4
8112     }
8113 }
8114
8115 \cs_new_protected:Npn \@@_rfs_print_legend:
8116 {
8117     \bool_lazy_or:nnT
8118     { ! \seq_if_empty_p:N \l_@@_rfs_institution_seq }
8119     { ! \seq_if_empty_p:N \l_@@_rfs_affiliation_seq }
8120     {
8121         \par\smallskip\noindent
8122         \group_begin:
8123         \footnotesize
8124         \seq_if_empty:NF \l_@@_rfs_institution_seq
8125         {
8126             \textbf{Institutions:}\space
8127             \seq_map_indexed_inline:Nn \l_@@_rfs_institution_seq
8128             {
8129                 \int_compare:nNnF {##1} = {1} {;\space}
8130                 \tl_set:Nn \l_tmpa_tl {##2}
8131                 \prop_get:NVN \l_@@_rfs_institution_name_prop
8132                 \l_tmpa_tl \l_tmpb_tl
8133                 \prop_get:NVN \l_@@_rfs_institution_abbreviation_prop
8134                 \l_tmpa_tl \l_tmpd_tl
8135                 \prop_get:NVN \l_@@_rfs_institution_affiliation_abbreviation_prop
8136                 \l_tmpa_tl \l_tmpe_tl

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8137         \textbf{\dfgShowCalculatedTag{institutionLabel}{institution}}
8138         {\l_tmpd_tl}}:~
8139         \dfgShowTag{##2}{name}{\l_tmpb_tl}[institution]\space
8140         (\dfgShowCalculatedTag{affiliationLabel}{affiliation}
8141         {\l_tmpc_tl})
8142     }
8143     .\space
8144 }
8145 \seq_if_empty:NF \l_@@_rfs_affiliation_seq
8146 {
8147     \textbf{Affiliations:}\space
8148     \seq_map_indexed_inline:Nn \l_@@_rfs_affiliation_seq
8149     {
8150         \int_compare:nNnF {##1} = {1} {;\space}
8151         \tl_set:Nn \l_tmpa_tl {##2}
8152         \prop_get:NVN \l_@@_rfs_affiliation_abbreviation_prop
8153         \l_tmpa_tl \l_tmpb_tl
8154         \prop_get:NVN \l_@@_rfs_affiliation_name_prop
8155         \l_tmpa_tl \l_tmpc_tl
8156         \textbf{\dfgShowCalculatedTag{affiliationLabel}{affiliation}}
8157         {\l_tmpb_tl}}:~
8158         \dfgShowTag{##2}{name}{\l_tmpc_tl}[affiliation]
8159     }
8160     .
8161 }
8162 \par
8163 \group_end:
8164 }
8165 }
8166
8167 \cs_new_protected:Npn \l_@@_rfs_no_data:n #1
8168 {
8169     \msg_warning:nnn { dfg } { requested-staff-no-data } {#1}
8170     \par\noindent
8171     \textcolor{tableNoValue!55!black}
8172     {No~staff~data~have~been~provided~for~this~project.}
8173     \par
8174 }
8175
8176 \NewDocumentCommand{\RequestedFundingStaffTable}{m}
8177 {
8178     \group_begin:
8179     \tl_set:Nn \l_@@_rfs_project_tl {#1}
8180     \tl_clear:N \l_@@_rfs_project_status_tl
8181     \DTLifdbexists{project}
8182     {
8183         \DTLgetvalueforkey{\l_@@_rfs_project_status_tl}
8184         {project-status}{project}{id}{#1}
8185     }
8186     { }
8187     \str_if_eq:VnTF \l_@@_rfs_project_status_tl { E }
8188     {
8189         \tl_set:Nn \l_@@_rfs_existing_group_label_tl {Existing~staff}
8190         \tl_set:Nn \l_@@_rfs_requested_group_label_tl
8191         {Staff~funded~with~approved~grant~money}
8192         \tl_set:Nn \l_@@_rfs_existing_description_heading_tl
8193         {Job~descriptions~of~staff~(supported~through~existing~funds):}
8194         \tl_set:Nn \l_@@_rfs_requested_description_heading_tl
8195         {Job~descriptions~of~staff~(funded~with~approved~grant~money):}
8196     }
8197     {
8198         \tl_set:Nn \l_@@_rfs_existing_group_label_tl {Existing~staff}
8199         \tl_set:Nn \l_@@_rfs_requested_group_label_tl {Requested~staff}
8200         \tl_set:Nn \l_@@_rfs_existing_description_heading_tl
8201         {Job~descriptions~of~staff~for~the~proposed~funding~period~
8202         (supported~through~existing~funds):}

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8203 \tl_set:Nn \l_@@_rfs_requested_description_heading_tl
8204 {Job~descriptions~of~staff~for~the~proposed~funding~period~
8205 (requested~funds):}
8206 }
8207 \seq_clear:N \l_@@_rfs_existing_research_seq
8208 \seq_clear:N \l_@@_rfs_existing_nonresearch_seq
8209 \seq_clear:N \l_@@_rfs_requested_research_seq
8210 \seq_clear:N \l_@@_rfs_requested_nonresearch_seq
8211 \seq_clear:N \l_@@_rfs_institution_seq
8212 \seq_clear:N \l_@@_rfs_affiliation_seq
8213 \prop_clear:N \l_@@_rfs_duplicate_prop
8214 \prop_clear:N \l_@@_rfs_institution_name_prop
8215 \prop_clear:N \l_@@_rfs_institution_abbreviation_prop
8216 \prop_clear:N \l_@@_rfs_institution_affiliation_abbreviation_prop
8217 \prop_clear:N \l_@@_rfs_affiliation_abbreviation_prop
8218 \prop_clear:N \l_@@_rfs_affiliation_name_prop
8219 \tl_clear:N \l_@@_rfs_table_body_tl
8220 \tl_clear:N \l_@@_rfs_existing_descriptions_tl
8221 \tl_clear:N \l_@@_rfs_requested_descriptions_tl
8222 \DTLifdbexists{RequestedFundingStaff}
8223 {
8224 \DTLforeach[\DTLiseq{#1}]{\pRFSProject}}
8225 {RequestedFundingStaff}
8226 {
8227 \pRFSProject=ref-project-id,
8228 \pRFSFundingStatus=funding-status,
8229 \pRFSStaffType=staff-type,
8230 \pRFSRefPerson=ref-person-id,
8231 \pRFSFirstname=firstname,
8232 \pRFSLastname=lastname,
8233 \pRFSDegree=academic-degree,
8234 \pRFSPosition=positionText,
8235 \pRFSField=field-of-research,
8236 \pRFSRefInstitution=ref-institution-id,
8237 \pRFSRefAffiliation=ref-affiliation-id,
8238 \pRFSDepartment=department,
8239 \pRFSCommitment=commitment,
8240 \pRFSCategory=category,
8241 \pRFSFundingSource=funding-source,
8242 \pRFSDescription=description
8243 }
8244 { \l_@@_rfs_collect_current: }
8245 \int_set:Nn \l_@@_rfs_record_count_int
8246 {
8247 \seq_count:N \l_@@_rfs_existing_research_seq
8248 + \seq_count:N \l_@@_rfs_existing_nonresearch_seq
8249 + \seq_count:N \l_@@_rfs_requested_research_seq
8250 + \seq_count:N \l_@@_rfs_requested_nonresearch_seq
8251 }
8252 \int_compare:nNnTF { \l_@@_rfs_record_count_int } = {0}
8253 { \l_@@_rfs_no_data:n {#1} }
8254 {
8255 \int_zero:N \l_@@_rfs_display_number_int
8256 \l_@@_rfs_render_status:NNN
8257 \l_@@_rfs_existing_research_seq
8258 \l_@@_rfs_existing_nonresearch_seq
8259 {\tl_use:N \l_@@_rfs_existing_group_label_tl}
8260 \l_@@_rfs_existing_descriptions_tl
8261 \l_@@_rfs_render_status:NNN
8262 \l_@@_rfs_requested_research_seq
8263 \l_@@_rfs_requested_nonresearch_seq
8264 {\tl_use:N \l_@@_rfs_requested_group_label_tl}
8265 \l_@@_rfs_requested_descriptions_tl
8266 \begin{tblr}[
8267 theme=requestedFundingStaff,
8268 long,

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8269     postsep=0pt,
8270     expand=\l_@@_rfs_table_body_tl
8271   ]{
8272     colsep=2pt,
8273     width=\textwidth,
8274     hline{1,2}={1pt,fg=tableOuterLines},
8275     hline{2}={1pt,fg=tableOuterLines},
8276     stretch=.8,
8277     rowsep=.500pt,
8278     colspec={X[1.1,1]
8279               X[.42,c] % no
8280               X[2.18,1] % Name
8281               X[1.4,1] % field
8282               X[1.5,c] % department
8283               X[1.05,c] % proj com.
8284               X[1.1,c] % category
8285               X[.95,c] % funding
8286             },
8287     column{1}={font=\footnotesize\bfseries,valign=m},
8288     column{2}={halign=c},
8289     rows={font=\footnotesize,valign=t},
8290     rowhead=1,
8291     row{1}={bg=tableHeadingsBG,fg=tableHeadingsFont,
8292             font=\scriptsize\bfseries,guard},
8293     cell{1}{1-8}={halign=c,valign=m}
8294   }
8295   & {No.}
8296   & {Name,~academic\\degree,~position}
8297   & {Field~of\\research}
8298   & {Departm.~of\\(non-)univers.\\institution}
8299   & {Project\\commitm.~(h/wk)}
8300   & Category
8301   & {Funding\\source} \\
8302   \l_@@_rfs_table_body_tl
8303 \end{tblr}
8304 \@@_rfs_print_legend:
8305 \tl_if_empty:NF \l_@@_rfs_existing_descriptions_tl
8306 {
8307   \par\medskip\noindent
8308   {\tl_use:N \l_@@_rfs_existing_description_heading_tl}\par\nobreak
8309   {\normalfont\normalsize\setlength{\parskip}{0pt}
8310    \tl_use:N \l_@@_rfs_existing_descriptions_tl}
8311 }
8312 \tl_if_empty:NF \l_@@_rfs_requested_descriptions_tl
8313 {
8314   \par\medskip\noindent
8315   {\tl_use:N \l_@@_rfs_requested_description_heading_tl}\par\nobreak
8316   {\normalfont\normalsize\setlength{\parskip}{0pt}
8317    \tl_use:N \l_@@_rfs_requested_descriptions_tl}
8318 }
8319 }
8320 }
8321 { \@@_rfs_no_data:n {#1} }
8322 \group_end:
8323 }
8324
8325 \NewDocumentCommand{\getTotalSumRequestedFunds}{O{RequestedFunding}mm}{
8326   % #1: database
8327   % #2: project
8328   % #3: year
8329   \def\tmpLocalDB{#1}%
8330   \DTLifdbexists{\tmpLocalDB}{%
8331     \@@_funding_sum_set:Nnnnn \TotalSumRequestedFunds
8332     {#1}{#2}{__ALL__}{#3}
8333     \@@_show_calculated_number:nnN
8334     {\getTotalSumRequestedFunds}{#1}

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```

8335         \TotalSumRequestedFunds
8336     }{
8337         \texttt{\color{error}XXX}
8338         \msg_warning:nne { dfg } { database-not-found }{ #1 }
8339     }
8340 }
8341
8342
8343 \NewDocumentCommand{\getSumExistingFunds}{O{RequestedAndExistingFundingDirectCosts}mm}{
8344     % #1: database
8345     % #2: project
8346     % #3: year
8347     \def\tmpLocalDB{#1}%
8348     \DTLifdbexists{\tmpLocalDB}{
8349         \@_funding_sum_set:Nnnnn \SumExistingFunds
8350         {#1}{#2}{__ALL__}{#3}
8351
8352         \@_show_calculated_number:nnN
8353         {getSumExistingFunds}{#1}
8354         \SumExistingFunds
8355     }{
8356         \texttt{\color{error}XXX}
8357         \msg_warning:nne { dfg } { database-not-found }{ #1 }
8358     }
8359 }
8360
8361
8362 \providecommand{\SumRequestedFunds}{0}
8363
8364 \NewDocumentCommand{\getSumRequestedFunds}{O{RequestedFunding} m m m }{%
8365     \DTLifdbexists{#1}{%
8366         \@_funding_sum_set:Nnnnn \SumRequestedFunds {#1}{#2}{#3}{#4}%
8367         \@_show_calculated_number:nnN
8368         {getSumRequestedFunds}{#1}
8369         \SumRequestedFunds
8370     }{%
8371         \texttt{\color{error}XXX}%
8372         \msg_warning:nne { dfg } { database-not-found }{ #1 }%
8373     }%
8374 }
8375 \NewDocumentCommand{\dfgCheckIfZeroShowCategory}{O{RequestedFunding} m m }
8376 {
8377     % #1: database
8378     % #2: project
8379     % #3: category/type
8380     \def\tmpLocalDB{#1}
8381     \DTLifdbexists{\tmpLocalDB}{
8382         \@_funding_sum_set:Nnnnn \SumRequestedFunds {#1}{#2}{#3}
8383         {sum-year1,sum-year2,sum-year3,sum-year4,sum-year5}
8384         \fp_compare:nNnT { \SumRequestedFunds } = {0}
8385         { \tl_clear:c {l__tmp_body_#3_tl } }
8386     }
8387     {
8388         \msg_warning:nne { dfg } { database-not-found }{ #1 }
8389     }
8390 }

```

This is for Requested funding for direct costs for the new funding period and is partially data from new key-values and partially it has to be reused.

```

8391 \NewDocumentCommand{\RequestedAndExistingFundingDirectCostsTable}{m}
8392 {
8393     % #1: project
8394     \def\tmpLocalDB{RequestedAndExistingFundingDirectCosts}%
8395     \DTLifdbexists{\tmpLocalDB}{%
8396         \tl_clear:N \l__tmp_body_costs_tl
8397         \DTLforeach{\DTLiseq{\pProject}{#1}}{\tmpLocalDB}{

```

```

8398 \pProject=ref-project-id,
8399 \pAffiliation=ref-affiliation-id,
8400 \pFinancedBy=financed-by,
8401 \pSumYearOne=sum-year1,
8402 \pSumYearTwo=sum-year2,
8403 \pSumYearThree=sum-year3,
8404 \pSumYearFour=sum-year4,
8405 \pSumYearFive=sum-year5
8406 }{
8407 \DTLaddall{\tmpHorizontalSum}{
8408 \pSumYearOne,
8409 \pSumYearTwo,
8410 \pSumYearThree,
8411 \pSumYearFour,
8412 \pSumYearFive
8413 }
8414
8415 \tl_put_right:Ne \l__tmp_body_costs_tl
8416 {
8417 \str_if_eq:VnTF { \pAffiliation } { other-funds }
8418 { Other }
8419 { \getEntry[affiliation]{\pAffiliation}{name} : } ~
8420 existing~ funds~ from~
8421 % Freeze the database value without expanding commands such as \RWTH,
8422 % whose trailing \xspace must only run when the completed cell is typeset.
8423 \dfgShowTag{\pProject/\pAffiliation}{financed-by}
8424 {\exp_not:V \pFinancedBy}{\tmpLocalDB}
8425 \printMarginalia{\dfgShowCalculatedTag
8426 {RequestedAndExistingFundingDirectCostsTable}{\tmpLocalDB}
8427 {\@@_show_eur:n{\tmpHorizontalSum}}}
8428 & \dfgShowTag{\pProject/\pAffiliation}{sum-year1}
8429 {\@@_show_eur:n{\pSumYearOne}}{\tmpLocalDB}
8430 & \dfgShowTag{\pProject/\pAffiliation}{sum-year2}
8431 {\@@_show_eur:n{\pSumYearTwo}}{\tmpLocalDB}
8432 & \dfgShowTag{\pProject/\pAffiliation}{sum-year3}
8433 {\@@_show_eur:n{\pSumYearThree}}{\tmpLocalDB}
8434 & \dfgShowTag{\pProject/\pAffiliation}{sum-year4}
8435 {\@@_show_eur:n{\pSumYearFour}}{\tmpLocalDB}
8436 & \dfgShowTag{\pProject/\pAffiliation}{sum-year5}
8437 {\@@_show_eur:n{\pSumYearFive}}{\tmpLocalDB} \\
8438 }
8439 }
8440 \tl_put_right:Ne \l__tmp_body_costs_tl
8441 {
8442 \SetHline{-}{tableOuterLines,0.5pt}
8443 \SetRow{belowsep=5pt}
8444 Sum~ of~ existing~ funds
8445 \printMarginalia{%
8446 \getSumExistingFunds{#1}
8447 {sum-year1,sum-year2,sum-year3,sum-year4,sum-year5}
8448 }
8449 & \getSumExistingFunds{#1}{sum-year1}
8450 & \getSumExistingFunds{#1}{sum-year2}
8451 & \getSumExistingFunds{#1}{sum-year3}
8452 & \getSumExistingFunds{#1}{sum-year4}
8453 & \getSumExistingFunds{#1}{sum-year5} \\
8454 }
8455
8456 \begin{tblr}[
8457 theme=main,
8458 long,
8459 expand=
8460 \l__tmp_body_costs_tl,
8461 remark{Note}={Figures~ in~ EUR},
8462 ]{
8463 % colsep=3pt,

```

```

8464     colspec = {
8465         *{1}{X[4,t]}
8466         *{5}{
8467             @{}X[c,si={table-format=8}]
8468         }},
8469     rows = {bg=white},
8470     column{2-6}={guard},
8471     row{1}= {guard,bg=tableHeadingsBG},
8472     row{Y,Z}= {
8473         %bg=tableHeadingsBGalt,
8474         font={\footnotesize\bfseries}},
8475     }
8476
8477     & \dfgFundingYear{1}
8478     & \dfgFundingYear{2}
8479     & \dfgFundingYear{3}
8480     & \dfgFundingYear{4}
8481     & \dfgFundingYear{5} \\
8482
8483     \l__tmp_body_costs_tl
8484
8485     \SetHline{-}{tableOuterLines,.75pt}
8486     %\SetCell{font=\bfseries\footnotesize}
8487     Sum~ of~ requested~ funds
8488     \printMarginalia{%
8489         \getSumRequestedFunds{#1}{costs}
8490         {sum-year1,sum-year2,sum-year3,sum-year4,sum-year5}
8491     }
8492     & \getSumRequestedFunds{#1}{costs}{sum-year1}
8493     & \getSumRequestedFunds{#1}{costs}{sum-year2}
8494     & \getSumRequestedFunds{#1}{costs}{sum-year3}
8495     & \getSumRequestedFunds{#1}{costs}{sum-year4}
8496     & \getSumRequestedFunds{#1}{costs}{sum-year5} \\
8497     \end{tblr}
8498 }{
8499 Database~ \texttt{#1}~ missing.
8500 \msg_warning:nne { dfg } { database-not-found }{ #1 }
8501 }
8502 }

```

3.2.19 Boxes

```

8503 \RequirePackage[breakable,fitting,skins,most]{tcolorbox}
8504
8505 \tcbset{
8506     PIbox/.style={
8507         %enhanced, breakable,
8508         colback=white, colframe=white,
8509         coltitle=black,
8510         boxrule=0pt, %arc=2pt,
8511         before~ skip=0pt, after~ skip=7pt,
8512         before~ upper=\RaggedRight\small,
8513         boxsep=0pt,
8514         left=0pt, right=0pt, top=7pt, bottom=0pt,
8515     },
8516 }
8517
8518 \bool_if:NTF \l__@_class_final_bool
8519 {\newcommand{\dfgcomment}[2][]{}}
8520 {\NewTotalTColorBox{\dfgcomment}{O}{m}{
8521     {%
8522         nobeforeafter,
8523         colupper=black!50!white,
8524         coltitle=black!75!white,
8525         fonttitle=\fontsize{7}{9}\selectfont\bfseries,
8526         colback=black!5!white,
8527         colframe=black!15!white,

```

```

8528     width=\linewidth,
8529     % text height=4cm,
8530     breakable,
8531     enhanced,
8532     left=0pt, right=0pt,
8533     top=0pt, bottom=0pt,
8534     % text width=\linewidth,
8535     fontupper=\fontsize{7}{9}\selectfont,
8536     title={Anmerkung~der~DFG},
8537     #1
8538   }{#2}}

```

defining standard for boxes

```

8539 \tcbset{
8540   dfgStyle/.style={%
8541     enhanced~ jigsaw,
8542     colback      =white,
8543     colbacktitle =tableHeadingsBG,
8544     coltitle     =tableHeadingsFont,
8545     colframe     =tableOuterLines,
8546     %colupper    =tableHeadingsFont,
8547     fontupper    =\sffamily,
8548     fonttitle    =\bfseries,
8549     % after skip  =lem,
8550     before       ={\pagebreak[0]},
8551     after        ={\nopagebreak},
8552     % fonttitle  =\bfseries,
8553     %boxrule     =0.5pt,
8554     sharp~ corners,
8555     toprule      =1pt,
8556     rightrule    =0mm,
8557     leftrule     =0mm,
8558     % drop shadow =rwthGrey,
8559     %drop large lifted shadow,
8560     width        =\linewidth,
8561     bottomrule   =1pt,
8562     % draft,
8563     left         =2mm,
8564     bottom       =0mm,
8565     top          =0mm,
8566     capture      =minipage,
8567   }}
8568 \NewTotalTColorBox{\dfgBox}{ O{} m }
8569 {%
8570   dfgStyle,
8571   nobeforeafter,
8572   left=0pt, right=0pt,
8573   top=0pt, bottom=0pt,
8574   #1
8575 }{#2}

```

A handy box to aggregate important points, `dfgSummaryBox` ^{→ P.40}.

```

8576 \newtcolorbox{dfgSummaryBox}[1][{}{
8577   dfgStyle,
8578   top=1mm,
8579   left=1mm,
8580   bottom=1mm,
8581   before={\par},
8582   after={\par},
8583   before~ upper={\begin{itemize}[leftmargin=.5cm]%
8584     \renewcommand{\labelitemi}{\dfgTargetPoint}%
8585     \hypersetup{linkcolor=tableHeadingsFont}%
8586     \colorlet{referencePI}{tableHeadingsFont}
8587     \colorlet{referenceWP}{tableHeadingsFont}
8588     \colorlet{referenceAim}{tableHeadingsFont}
8589   },
8590   after~ upper={\end{itemize}},

```

```

8591 % height=2.5cm,
8592 fontupper=\rmfamily,
8593 % ----- title below.
8594 width=\linewidth,
8595 rounded~ corners,
8596 toprule=1pt,
8597 rightrule=1pt,
8598 leftrule=1pt,
8599 bottomrule=1pt,
8600 % attach boxed title to bottom center,
8601 boxed~ title~ style={empty,boxrule=1pt},
8602 varwidth~ boxed~ title=0.5\linewidth,
8603 #1
8604 }

```

Box for anything like the aims section.

```

8605 \newtcolorbox{dfgBoxEnv}[1][]{
8606   dfgStyle,
8607   % top=-1.5mm,
8608   % left=1mm,
8609   before={\par},
8610   #1
8611 }

```

3.2.20 New Commands

Providing further commands that can and will be used throughout the document

```

8612 \providecommand{\crc}{Collaborative~ Research~ Centre\space}
8613 \providecommand{\dfgLocation}{<Location>\space}
8614 \providecommand{\dfgDate}{2026-06-11\space} % date when proposal will be turned in
8615 \providecommand{\dfgTitle}{\enquote{\get{meta}{crc}{name}}\space}
8616 \providecommand{\InfoTeX}{LuaLaTeX~ (via~ Overleaf).}
8617
8618 % getting the main logo of the CRC
8619 % the filename needs to be adjusted or make this more generic.
8620 \providecommand{\crcLogoPath}{\tl_use:N \l_@@_custom_crc_logo_path_tl}
8621 \providecommand{\affiliationLogoPath}
8622   {\tl_use:N \l_@@_custom_affiliation_logo_path_tl}
8623
8624 \NewDocumentCommand{\crcLogo}{O{1cm}}{%
8625   \includegraphics[#1]{\crcLogoPath}}
8626
8627 % same for the affiliation.
8628 \NewDocumentCommand{\affiliationLogo}{O{1cm}}{%
8629   \includegraphics[#1]{\affiliationLogoPath}}
8630
8631 \keys_define:nn { hrule }
8632 {
8633   color      .tl_set:N   = \l__hrule_color_tl,
8634   color      .initial:n  = color@tags@line,
8635   above      .dim_set:N  = \l__hrule_above_dim,
8636   above      .initial:n  = 0pt,
8637   below      .dim_set:N  = \l__hrule_below_dim,
8638   below      .initial:n  = 0pt,
8639   thickness  .dim_set:N  = \l__hrule_thickness_dim,
8640   thickness  .initial:n  = 0.4pt,
8641 }
8642
8643 \ProvideDocumentCommand{\Hrule}{O{}}
8644 {%
8645   \group_begin:
8646   \keys_set:nn { hrule } {#1}%
8647   \par
8648   \addvspace{ \l__hrule_above_dim }%
8649   {\color{ \l__hrule_color_tl }\hrule height \l__hrule_thickness_dim}%
8650   \addvspace{ \l__hrule_below_dim }%
8651   \group_end:
8652 }

```

```

8653
8654 % remodeling for the titlepage where we use some center-environments
8655 \AtBeginEnvironment{center}{
8656   \vspace*{-2em}
8657 }
8658 \seq_new:N \l_@@_sig_pairs_seq
8659 \tl_new:N \l_@@_sig_id_tl
8660 \tl_new:N \l_@@_sig_desc_tl

\printSignature \printSignature[<db>]{ {<id>}{<desc>} {<id>}{<desc>} ... } - one signature block per {id}{desc}
pair. <db> defaults to person. Inside <desc> you may use \theAffiliationOfRoleID, which is set to the person's
ref-institution-id before the description is typeset.

8661 \NewDocumentCommand{\printSignature}{ O{person} m }
8662 {
8663   \bool_if:NF \l_@@_class_fastcompile_project_bool
8664   {
8665     \par
8666     \seq_set_split:Nnn \l_@@_sig_pairs_seq { } {#2}
8667     \int_compare:nNtT { \seq_count:N \l_@@_sig_pairs_seq } > { 0 }
8668     { \@@_signature_consume_pairs:n {#1} }
8669   }
8670 }
8671
8672 \tl_new:N \l_@@_signature_role_id_tl
8673 \tl_new:N \l_@@_signature_role_tl
8674 \tl_new:N \l_@@_signature_role_period_tl
8675
8676 \NewDocumentCommand{\printSignaturesWithRole}{ O{person} m m }
8677 {
8678   \bool_if:NF \l_@@_class_fastcompile_project_bool
8679   {
8680     \DTLifdbexists{#1}
8681     {
8682       \DTLforeach*[
8683         \DTLisinlist{\theFundingPeriodNumeral}{\l_@@_signature_role_period_tl}
8684         \and
8685         \DTLisinlist{#2}{\l_@@_signature_role_tl}
8686       ]{#1}{
8687         \l_@@_signature_role_id_tl = id,
8688         \l_@@_signature_role_tl = role,
8689         \l_@@_signature_role_period_tl = period
8690       }{
8691         \@@_signature_block:nnn
8692         {#1}{\l_@@_signature_role_id_tl}{#3}
8693       }
8694     }
8695     { \msg_warning:nne { dfg } { database-not-found } {#1} }
8696   }
8697 }

```

Pops {id}{desc} pairs off \l_@@_sig_pairs_seq until empty, typesetting one block per pair.

```

8698 \cs_new_protected:Npn \@@_signature_consume_pairs:n #1
8699 {
8700   \seq_pop_left:NN \l_@@_sig_pairs_seq \l_@@_sig_id_tl
8701   \seq_pop_left:NNTF \l_@@_sig_pairs_seq \l_@@_sig_desc_tl
8702   {
8703     \@@_signature_block:nVV {#1} \l_@@_sig_id_tl \l_@@_sig_desc_tl
8704     \seq_if_empty:NF \l_@@_sig_pairs_seq
8705     { \@@_signature_consume_pairs:n {#1} }
8706   }
8707   {
8708     \msg_warning:nnn { crc-proposal } { signature-odd-args } {#1}
8709   }
8710 }
8711 \msg_new:nnn { crc-proposal } { signature-odd-args }

```

```

8712 { \printSignature\ in\ db\ '#1':\ odd\ number\ of\ tokens,\ %
8713   expected\ {id}{desc}\ pairs. }

```

Typesets a single signature block for person #2 in db #1 with description #3. Sets \theAffiliationOfRoleID from the row's ref-institution-id before expanding #3.

```

8714 \cs_new_protected:Npn \@@_signature_block:nnn #1 #2 #3
8715 {
8716   \DTLgetvalueforkey{\theAffiliationOfRoleID}{ref-affiliation-id}{#1}{id}{#2}
8717   \DTLgetvalueforkey{\@@tmpDegree}{academicdegree}{#1}{id}{#2}
8718   \DTLgetvalueforkey{\@@tmpFirst}{firstname}{#1}{id}{#2}
8719   \DTLgetvalueforkey{\@@tmpLast}{lastname}{#1}{id}{#2}
8720   \begin{tblr}{
8721     width=\linewidth,
8722     colspec={@{}b{3cm}b{1cm}X[b]@{}},
8723   }
8724   {\theCRAffiliationLocation \ \ dfgDate} & & \faFileSignature
8725   \SetHline{3-3}{tableOuterLines,1pt}
8726                                     & & {
8727                                     \dfgShowTag{#2}{academicdegree}{\@@tmpDegr
8728                                     \textcolor{referencePI}{
8729                                     \dfgShowTag{#2}{firstname}{\@@tmpFirst}[#
8730                                     \dfgShowTag{#2}{lastname}{\@@tmpLast}[#1
8731                                     #3 } \ \
8732   \end{tblr}
8733   \par\bigskip
8734 }
8735 \cs_generate_variant:Nn \@@_signature_block:nnn { nVV }

```

If there are multiple institutions mentioned we want to have a list of all of them with their affiliation. We are getting the possible list of institutions into one command Loop over your list and build the sequence.1

```

8736 \bool_new:N \l_@@_narrow_bool
8737 \bool_new:N \l_@@_institution_abbreviation_bool
8738 \bool_new:N \l_@@_noaddr_bool
8739 \bool_new:N \l_@@_nozip_bool
8740 \bool_new:N \l_@@_noloc_bool
8741 \bool_new:N \l_@@_has_country_bool
8742 \seq_new:N \l_@@_inst_ids_seq
8743 \tl_new:N \l_@@_sep_tl
8744 \tl_new:N \l_@@_inst_sep_tl
8745
8746 \cs_generate_variant:Nn \seq_set_from_clist:Nn { NV }
8747
8748 \NewDocumentCommand{\dfgInstitutionList}{O{person} m o}
8749 {
8750   \bool_if:NTF \l_@@_class_fastcompile_project_bool
8751   { \dfgFastReference{#2} }
8752   {
8753     \DTLifdbexists{#1}{
8754       % --- parse options once -----
8755       \clist_if_in:nnTF {#3} {abbreviation}
8756       { \bool_set_true:N \l_@@_institution_abbreviation_bool }
8757       { \bool_set_false:N \l_@@_institution_abbreviation_bool }
8758       \clist_if_in:nnTF {#3} {narrow}
8759       { \bool_set_true:N \l_@@_narrow_bool
8760         \tl_set:Nn \l_@@_sep_tl {,\sim}
8761         \tl_set:Nn \l_@@_inst_sep_tl {;\sim} }
8762       { \bool_set_false:N \l_@@_narrow_bool
8763         \tl_set:Nn \l_@@_sep_tl {\newline}
8764         \tl_set:Nn \l_@@_inst_sep_tl {\par\medskip} }
8765       \clist_if_in:nnTF {#3} {noaddress}
8766       { \bool_set_true:N \l_@@_noaddr_bool }{ \bool_set_false:N \l_@@_noaddr_bool }
8767       \clist_if_in:nnTF {#3} {nozip}
8768       { \bool_set_true:N \l_@@_nozip_bool }{ \bool_set_false:N \l_@@_nozip_bool }
8769       \clist_if_in:nnTF {#3} {nolocation}
8770       { \bool_set_true:N \l_@@_noloc_bool }{ \bool_set_false:N \l_@@_noloc_bool }
8771       \datatool_if_has_key:nnTF {affiliation}{country}
8772       { \bool_set_true:N \l_@@_has_country_bool }

```

```

8773 { \bool_set_false:N \l_@@_has_country_bool }
8774
8775 % --- get list of institution ids for this person -----
8776 \DTLgetvalueforkey{\theInstitutionListValue}{ref-institution-id}{#1}{id}{#2}
8777 \seq_set_from_clist:NV \l_@@_inst_ids_seq \theInstitutionListValue
8778
8779 % --- iterate -----
8780 \bool_set_true:N \l_tmpa_bool
8781 \seq_map_inline:Nn \l_@@_inst_ids_seq
8782 {
8783   \bool_if:NTF \l_tmpa_bool
8784   { \bool_set_false:N \l_tmpa_bool }
8785   { \tl_use:N \l_@@_inst_sep_tl }
8786   \_@@_one_institution:n {##1}
8787 }
8788 }
8789 {
8790   Database~ \texttt{#1}~ missing.
8791   \msg_warning:nne { dfg } { database-not-found }{ #1 }
8792 }
8793 }
8794 }
8795
8796 \cs_new_protected:Npn \_@@_one_institution:n #1
8797 {
8798   \DTLifdbexists{institution}{ \DTLgetvalueforkey{\theAffiliationIDValue}{ref-affiliation-id}{institution}
8799
8800   \bool_if:NTF \l_@@_institution_abbreviation_bool
8801   {
8802     \_@@_institution_abbreviation_or_name:nN
8803     {#1} \l_tmpa_tl
8804     \cs_set:Npx \theInstitutionNameValue { \exp_not:V \l_tmpa_tl }
8805   }
8806   { \DTLgetvalueforkey{\theInstitutionNameValue}{name}{institution}{id}{#1} }
8807   \DTLifnullorempy{\theInstitutionNameValue}{}
8808   {
8809     \dfgShowTag{#1}{\l_@@_institution_label_field_tl}
8810     {\theInstitutionNameValue}[institution]
8811     \tl_use:N \l_@@_sep_tl
8812   }
8813
8814   \DTLgetvalueforkey{\theAffiliationNameValue}{name}{affiliation}{id}{\theAffiliationIDValue}
8815   \dfgShowTag{\theAffiliationIDValue}{name}
8816   {\theAffiliationNameValue}[affiliation]
8817
8818   \bool_if:NF \l_@@_noaddr_bool
8819   {
8820     \tl_use:N \l_@@_sep_tl
8821     \DTLgetvalueforkey{\theAffiliationStreetValue}{addressStreet}{affiliation}{id}{\theAffiliationIDValue}
8822     \dfgShowTag{\theAffiliationIDValue}{addressStreet}
8823     {\theAffiliationStreetValue}[affiliation]
8824   }
8825
8826   \bool_if:NF \l_@@_nozip_bool
8827   {
8828     ,~
8829     \DTLgetvalueforkey{\theAffiliationZIPValue}{addressZIP}{affiliation}{id}{\theAffiliationIDValue}
8830     \dfgShowTag{\theAffiliationIDValue}{addressZIP}
8831     {\theAffiliationZIPValue}[affiliation]
8832     \bool_if:NF \l_@@_noloc_bool { ~ }
8833   }
8834
8835   \bool_if:NF \l_@@_noloc_bool
8836   {
8837     \bool_if:NT \l_@@_nozip_bool { ,~ }
8838     \DTLgetvalueforkey{\theAffiliationLocationValue}{location}{affiliation}{id}{\theAffiliationIDValue}

```

```

8839     \dfgShowTag{\theAffiliationIDValue}{location}
8840     {\theAffiliationLocationValue}[affiliation]
8841     \bool_if:NT \l_@@_has_country_bool
8842     {
8843       \DTLgetvalueforkey{\theAffiliationCountryValue}{country}{affiliation}{id}{\theAffiliationIDValue}
8844       \DTLifnullorempty{\theAffiliationCountryValue}{}
8845       { ~(\dfgShowTag{\theAffiliationIDValue}{country}
8846         {\theAffiliationCountryValue}[affiliation]) }
8847     }
8848   }
8849 }
8850 {
8851   Database~ \texttt{institution}~ missing.
8852   \msg_warning:nne { dfg } { database-not-found }{ institution }
8853 }
8854 }

```

get all the PIs who have a certain role in the crc this can be e.g. 'spokesperson', 'steering-committee-member'. the optional argument is to specify the database, which is by default 'person'.

```

8855 \NewDocumentCommand{\getPIsWithRole}{O{person} m O{}}
8856 {%
8857   \bool_if:NTF \l_@@_class_fastcompile_bool
8858   { \dfgItemSkipped{dfgPIsWithRole:~#2} }
8859   {%
8860     \DTLifdbexists{#1}
8861     {
8862       \def\tmpLocalDB{#1}%
8863       \DTLsort*{lastname}{#1}%
8864       \begin{tcbrafter}[
8865         raster~ columns=3,
8866         raster~ equal~ height=rows,
8867         raster~ column~ skip=4pt,
8868         raster~ row~ skip=10pt,
8869         PIbox,
8870         #3
8871       ]
8872       \DTLforeach*{
8873         \DTLisinlist{\theFundingPeriodNumeral}{\period}
8874         \and
8875         \DTLisinlist{#2}{\role}
8876       ]{#1}{
8877         \id      = id,
8878         \role    = role,
8879         \period  = period
8880       }{%
8881         \__getperson_one:n {\id}%
8882       }%
8883       \end{tcbrafter}
8884     }
8885     {
8886       Database~ \texttt{#1}~ missing.
8887       \msg_warning:nne { dfg } { database-not-found }{ #1 }
8888     }
8889   }
8890 }

```

In the text you can reference to a PI with the following command. The name is highlighted and referenced.

```

8891 \NewDocumentCommand{\getPI}{s m o} {
8892   % #1: starred version -> firstname
8893   % #2: id of PI / person
8894   % #3: optional text, but reference linked to PI
8895   \bool_if:NTF \l_@@_class_fastcompile_project_bool
8896   { \IfNoValueTF{#3}{\dfgFastReference{#2}}{#3} }
8897   {
8898     \seq_clear:N \l_tmpa_seq
8899     \seq_set_from_clist:Nn \l_tmpa_seq {#2}%
8900     \seq_set_map:NNn \l_tmpb_seq \l_tmpa_seq {

```

```

8901 \exp_not:n {
8902 \group_begin:
8903 \DTLgetvalueforkey{\thePersonName}{lastname}{person}{id}{##1}
8904 \DTLgetvalueforkey{\thePersonFirstName}{firstname}{person}{id}{##1}
8905 \datatool_if_null:NTF {\thePersonName}
8906 { \getEntry{person}{##1}{lastname} %<- just to get the error message
8907 \textcolor{error}{\texttt{<?##1?>}}
8908 }
8909 {
8910 \color{referencePI}\bfseries
8911 \IfNoValueTF{#3}%
8912
8913 {\hyperlink{pi:##1}{\IfBooleanT{#1}
8914 {\dfgShowTag{##1}{firstname}{\thePersonFirstName}[person]\space}
8915 \dfgShowTag{##1}{lastname}{\thePersonName}[person]}}
8916 {\hyperlink{pi:##1}{#3}}}
8917 \group_end:
8918 }}
8919 \seq_use:Nn \l_tmpb_seq {\adnbthinspace/\addthinspace}%
8920 }
8921 }

```

Very similarly, we want to get a list of the projects.

```

8922 \NewDocumentCommand \getProjectColor { m }
8923 {
8924 \exp_args:Nx \color { project \tl_head:n { #1 } }
8925 }
8926 \tl_new:N \l_@@_project_reference_only_tl
8927
8928 \prg_new_protected_conditional:Npnn \@@_project_if_reference_only:n #1
8929 { T,F,TF }
8930 {
8931 \DTLgetvalueforkey{\l_@@_project_reference_only_tl}
8932 {reference-only}{project}{id}{#1}
8933 \str_if_eq:VnTF \l_@@_project_reference_only_tl { true }
8934 { \prg_return_true: }
8935 { \prg_return_false: }
8936 }
8937
8938 \cs_new_protected:Npn \@@_project_reference_only_indicator:
8939 {
8940 \bool_if:NTF \l_@@_former_project_compact_bool
8941 {
8942 \bool_gset_true:N \g_@@_former_project_seen_bool
8943 {\normalfont\normalcolor\textsuperscript{*}}
8944 }
8945 {
8946 \nobreakspace
8947 {\normalfont\normalcolor(former~project)}
8948 }
8949 }
8950
8951 % Project references read naturally in prose but need a compact delimiter in
8952 % narrow table cells. Keep the two container variants centralized so
8953 % \cs{getProject}, \cs{getProjectPI}, and focused-project fallbacks cannot
8954 % diverge.
8955 \cs_new_protected:Npn \@@_project_reference_seq_use:N #1
8956 {
8957 \bool_if:NTF \g_@@_tblr_inside_bool
8958 { \seq_use:Nn #1 {\adnbthinspace/\addthinspace} }
8959 { \seq_use:Nnnn #1 {~and~} {,~} {,~and~} }
8960 }
8961
8962 \cs_new_protected:Npn \@@_project_reference_clist_use:N #1
8963 {
8964 \bool_if:NTF \g_@@_tblr_inside_bool
8965 { \clist_use:Nn #1 {\adnbthinspace/\addthinspace} }

```

```

8966     { \clist_use:Nnnn #1 {~and~} {,~} {,~and~} }
8967 }
8968
8969 \cs_new_protected:Npn \@@_get_project_compact:nn #1#2 {
8970   % #1: id of project
8971   % #2: optional text, but reference linked to project
8972   \bool_if:NTF \l_@@_class_fastcompile_project_bool
8973   {
8974     \seq_set_from_clist:Nn \l_tmpa_seq {#1}
8975     \seq_set_map:Nnn \l_tmpb_seq \l_tmpa_seq
8976     {
8977       \exp_not:n
8978       { \IfNoValueTF{#2}{\dfgFastReference{##1}}{#2} }
8979     }
8980     \@@_project_reference_seq_use:N \l_tmpb_seq
8981   }
8982   {
8983     \seq_clear:N \l_tmpa_seq
8984     \seq_set_from_clist:Nn \l_tmpa_seq {#1}%
8985     \seq_set_map:Nnn \l_tmpb_seq \l_tmpa_seq {
8986       \exp_not:n {
8987         \group_begin:
8988         \DTLgetvalueforkey{\theProjectNumber}{number}{project}{id}{##1}
8989         \datatool_if_null:NTF {\theProjectNumber}
8990         { \getEntry{project}{##1}{number} %<- just to get the error message
8991           \textcolor{error}{\texttt{<?##1?>}}
8992         }{
8993           \bfseries%
8994           \getProjectColor{##1}%
8995           \@@_project_if_reference_only:nTF {##1}
8996           {
8997             \IfNoValueTF{#2}
8998             { \dfgShowTag{##1}{number}{\theProjectNumber}[project] }
8999             { #2 }%
9000             \@@_project_reference_only_indicator:
9001           }
9002           {
9003             \IfNoValueTF{#2}%
9004             {
9005               \bool_if:NTF \l_@@_class_cv_bool
9006               { \dfgShowTag{##1}{number}{\theProjectNumber}[project] }
9007               { \hyperlink{project:##1}
9008                 { \dfgShowTag{##1}{number}{\theProjectNumber}[project] } }
9009             }%
9010             {
9011               \bool_if:NTF \l_@@_class_cv_bool
9012               { #2 }
9013               { \hyperlink{project:##1}{#2} }
9014             }%
9015           }
9016         }
9017         \group_end:
9018       }%
9019       \@@_project_reference_seq_use:N \l_tmpb_seq
9020     }
9021   }
9022
9023 \NewDocumentCommand{\getProject}{m o}
9024 {
9025   \bool_if:NTF \l_@@_custom_project_pi_once_per_section_bool
9026   { \@@_get_project_with_people:nnn {\BooleanFalse} {#1} {#2} }
9027   { \@@_get_project_compact:nn {#1} {#2} }
9028 }
9029
9030 \int_new:N \g_@@_project_count_all_int
9031 \prop_new:N \g_@@_project_count_area_prop

```

```

9032 \tl_new:N \l_@@_project_count_id_tl
9033 \tl_new:N \l_@@_project_count_area_tl
9034 \tl_new:N \l_@@_project_count_status_tl
9035 \tl_new:N \l_@@_project_count_consider_for_lists_tl
9036 \tl_new:N \l_@@_project_count_reference_only_tl
9037
9038 \cs_new_protected:Npn \@@_project_count_increment:n #1
9039 {
9040   \int_gincr:N \g_@@_project_count_all_int
9041   \tl_set:Nx \l_tmpa_tl { \tl_upper_case:n {#1} }
9042   \prop_get:NVNTF \g_@@_project_count_area_prop
9043     \l_tmpa_tl \l_tmpb_tl
9044   {
9045     \prop_gput:Nvx \g_@@_project_count_area_prop \l_tmpa_tl
9046       { \int_eval:n { \l_tmpb_tl + 1 } }
9047   }
9048   { \prop_gput:Nvn \g_@@_project_count_area_prop \l_tmpa_tl { 1 } }
9049 }
9050
9051 \cs_new_protected:Npn \@@_project_count_build:
9052 {
9053   \int_gzero:N \g_@@_project_count_all_int
9054   \prop_gc_clear:N \g_@@_project_count_area_prop
9055   \DTLifdbexists{project}
9056   {
9057     \DTLifhaskey { project } { project-area }
9058     { }
9059     { \DTLaddcolumn { project } { project-area } }
9060   \DTLforeach*{project}
9061   {
9062     \l_@@_project_count_id_tl           = id,
9063     \l_@@_project_count_area_tl        = project-area,
9064     \l_@@_project_count_status_tl      = project-status,
9065     \l_@@_project_count_consider_for_lists_tl = consider-for-lists,
9066     \l_@@_project_count_reference_only_tl = reference-only
9067   }
9068   {
9069     \bool_lazy_all:nT
9070     {
9071       { \str_if_eq_p:Vn \l_@@_project_count_consider_for_lists_tl { true } }
9072       { \str_if_eq_p:Vn \l_@@_project_count_reference_only_tl { false } }
9073     }
9074     \bool_lazy_or_p:nn
9075     { \str_if_eq_p:Vn \l_@@_project_count_status_tl { C } }
9076     { \str_if_eq_p:Vn \l_@@_project_count_status_tl { N } }
9077   }
9078   }
9079   {
9080     \DTLifnulloreempty{\l_@@_project_count_area_tl}
9081     {
9082       \tl_set:Nx \l_@@_project_count_area_tl
9083         { \tl_head:V \l_@@_project_count_id_tl }
9084     }
9085     { }
9086     \tl_trim_spaces:N \l_@@_project_count_area_tl
9087     \exp_args:NV \@@_project_count_increment:n
9088       \l_@@_project_count_area_tl
9089   }
9090 }
9091 }
9092 { \msg_warning:nnn { dfg } { database-not-found } { project } }
9093 \bool_gset_true:N \g_@@_project_count_ready_bool
9094 }
9095
9096 \NewDocumentCommand{\getProjectCount}{o}
9097 {

```

```

9098 \bool_if:NF \g_@@_project_count_ready_bool
9099 { \@@_project_count_build: }
9100 \dfgShowCalculatedTag{getProjectCount}{project}
9101 {
9102   \IfNoValueTF{#1}
9103   { \int_use:N \g_@@_project_count_all_int }
9104   {
9105     \tl_set:Nx \l_tmpa_tl { \tl_upper_case:n {#1} }
9106     \prop_get:NVNTF \g_@@_project_count_area_prop
9107       \l_tmpa_tl \l_tmpb_tl
9108       { \tl_use:N \l_tmpb_tl }
9109     {
9110       \msg_warning:nnn { dfg } { invalid-project-count-area } {#1}
9111       0
9112     }
9113   }
9114 }
9115 }
9116 \clist_new:N \l_@@_person_project_clist
9117 \clist_new:N \l_@@_project_id_clist
9118 \clist_new:N \l_@@_project_number_clist
9119
9120 \NewDocumentCommand{\getPIProject}{s m}{
9121   \bool_if:NTF \l_@@_class_fastcompile_project_bool
9122   { \dfgFastReference{#2} }
9123   {
9124     %
9125     % • Argument #1 (optional *-star)
9126     %   - if present, the PI's *first name* is printed before the last name;
9127     %     if the star is omitted only the last name is printed.
9128     %
9129     % • Argument #2 (mandatory)
9130     %   - a comma-separated list of *person-IDs* (the field "id" in your
9131     %     "person" datatool table).
9132     %     Example: '\getPIProject*{perl,per2}'.
9133     %
9134     % What the macro does (high-level description)
9135     % -----
9136     % 1. Turns the comma list #2 into a clist: \l_@@_person_id_clist
9137     % 2. For **each** person-ID in that clist it builds an
9138     %    "author block" consisting of
9139     %    • a coloured, bold hyperlink to the PI's entry, and
9140     %    • the list of projects (formatted by \getProject) that are
9141     %      attached to that PI.
9142     % 3. All author blocks are collected in a second clist
9143     %    \l_@@_person_project_clist.
9144     % 4. Finally the blocks are printed in an *Oxford-comma* style
9145     %    using \clist_use:Nnnn.
9146     %
9147     % Internal containers (all declared elsewhere with \clist_new:N)
9148     % -----
9149     % \l_@@_person_id_clist           - list of the IDs passed in #2
9150     % \l_@@_person_project_clist      - the final list of "author blocks"
9151     % \l_@@_project_id_clist          - temporary clist that stores the raw
9152     %                                   CSV string returned by the DB field
9153     %                                   'ref-project-id' for the current PI.
9154     % \l_@@_project_number_clist      - coloured project numbers for the
9155     %                                   current PI (built by the inner loop).
9156     % \l_@@_project_id_clist (re-used) - holds the CSV string before it is
9157     %                                   split into \l_@@_project_id_clist.
9158     % \l_tmpa_clist                   - loop variable used by
9159     %                                   \clist_map_variable:NNn (holds a *single*
9160     %                                   project-ID during the inner loop).
9161     %
9162     % -----
9163     % Detailed walk-through of the code

```

```

9164 %-----
9165 %-----
9166 % 0. Initialise the containers
9167 %-----
9168 % #2 is a comma-separated list of person IDs → turn it into a clist
9169 \clist_set:Nn \l_@@_person_id_clist {#2}
9170 % containers that will be filled later
9171 \clist_clear:N \l_@@_person_project_clist
9172 \clist_clear:N \l_@@_project_id_clist % (used as a *scratch* clist)
9173
9174 %-----
9175 % 1. Outer loop - one iteration per PI
9176 %-----
9177 \clist_map_inline:Nn \l_@@_person_id_clist
9178 {
9179   %-----
9180   % a) Build the *author name* (hyperlinked, coloured,
9181   %      bold). We wrap everything in \exp_not:n so that the
9182   %      whole fragment is **not expanded now** - it will be
9183   %      expanded later when the final clist is printed.
9184   %-----
9185   \clist_put_right:Nn \l_@@_person_project_clist {
9186     \clist_clear:N \l_@@_project_number_clist
9187     \IfBooleanTF{#1}
9188     {\getPI*{#1}}
9189     {\getPI{#1}}
9190   %-----
9191   % b) Pull the raw CSV string that contains *all* project
9192   %      IDs belonging to this PI.
9193   %-----
9194   \DTLgetvalueforkey{\l_@@_project_id_clist}
9195   {ref-project-id}
9196   {person}{id}{#1}
9197
9198   %-----
9199   % c) Print the project list inside parentheses.
9200   %      The raw CSV string is *still* a token list; we turn it
9201   %      into a clist by using the special "variable" version of
9202   %      \clist_map_... which gives us a temporary clist variable
9203   %      (\l_tmpa_clist) that holds *one* project ID at a time.
9204   %-----
9205   \space(
9206   \clist_map_variable:Nnn \l_@@_project_id_clist \l_tmpa_clist {
9207     % #1 (here called \l_tmpa_clist) is a single project ID.
9208     % \getProject expands that ID to the coloured project number.
9209     \clist_put_right:Ne \l_@@_project_number_clist {
9210       \getProject{\l_tmpa_clist}
9211     }
9212   }
9213   % finally print the list of coloured project numbers, separated
9214   % by a thin space + comma
9215   \clist_use:Nn \l_@@_project_number_clist {\adnbthinspace/\addthinspace}
9216   )
9217   % end of \clist_put_right:Nn (one author block)
9218 } % end of outer \clist_map_inline:Nn
9219
9220 %-----
9221 % 2. Typeset the collected author blocks.
9222 %      \clist_use:Nnnn joins the items with
9223 %      "~and~" for the *last* separator,
9224 %      ",~" for the *middle* separators,
9225 %      ",~and~" for the *penultimate* separator
9226 %-----
9227 \clist_use:Nnnn \l_@@_person_project_clist {~and~} {,~} {,~and~}%
9228 }
9229 }

```

```

9230
9231 \clist_new:N \l_@@_person_clist
9232
9233 % Track which projects have already had their PI names expanded by either
9234 % \cs{getProject} or \cs{getProjectPI} in the current section. Chapter
9235 % boundaries also clear the state so references before the first section of a
9236 % new chapter cannot inherit the preceding section's state.
9237 \prop_new:N \g_@@_project_pi_seen_prop
9238 \cs_new_protected:Npn \@@_project_pi_seen_clear:
9239 { \prop_gclear:N \g_@@_project_pi_seen_prop }
9240 \AddToHook{cmd/chapter/before}[dfg/project-pi-once-per-section]
9241 { \@@_project_pi_seen_clear: }
9242 \AddToHook{cmd/section/before}[dfg/project-pi-once-per-section]
9243 { \@@_project_pi_seen_clear: }
9244
9245 % PI details are never appended to reference-only projects, the project
9246 % currently being typeset, or references inside generated tables and lists.
9247 % Otherwise the customization setting selects either the former always-expanded
9248 % \cs{getProjectPI} behaviour or one shared expansion per project and section.
9249 \prg_new_protected_conditional:Npnn \@@_project_pi_if_show_people:n #1
9250 { T,F,TF }
9251 {
9252   \@@_project_pi_if_reference_only:nTF {#1}
9253   { \prg_return_false: }
9254   {
9255     \tl_if_eq:VnTF \l__tmp_current_project_tl {#1}
9256     { \prg_return_false: }
9257     {
9258       \bool_if:nTF
9259       {
9260         \g_@@_tblr_inside_bool
9261         || \l_@@_former_project_compact_bool
9262       }
9263       { \prg_return_false: }
9264       {
9265         \bool_if:NTF \l_@@_custom_project_pi_once_per_section_bool
9266         {
9267           \prop_if_in:NnTF \g_@@_project_pi_seen_prop {#1}
9268           { \prg_return_false: }
9269           {
9270             \prop_gput:Nnn \g_@@_project_pi_seen_prop {#1} { }
9271             \prg_return_true:
9272           }
9273         }
9274         { \prg_return_true: }
9275       }
9276     }
9277   }
9278 }
9279
9280 \cs_new_protected:Npn \@@_get_project_with_people:nnn #1#2#3
9281 {
9282   \bool_if:NTF \l_@@_class_fastcompile_project_bool
9283   { \@@_get_project_compact:nn {#2} {#3} }
9284   {
9285     %-----
9286     % 0. Initialise the containers we are going to use.
9287     %-----
9288     % #2 is a comma-separated list of *project* IDs → turn it into a clist.
9289     \clist_set:Nn \l_@@_project_id_clist {#2}
9290     % These three clists will be filled during the loops.
9291     \clist_clear:N \l_@@_person_project_clist % final result: "project → PI list"
9292     \clist_clear:N \l_@@_person_id_clist % temporary list of PIs for one project
9293     \clist_clear:N \l_@@_person_clist % temporary list of formatted PI names
9294
9295     %-----

```

```

9296 % 1. Outer loop - one iteration per *project* ID.
9297 %-----
9298 \clist_map_inline:Nn \l_@@_project_id_clist
9299 {
9300 % ##1 = the current project ID
9301 %-----
9302 % a) Put the *project number* (coloured) at the beginning
9303 % of the block that will be stored in
9304 % \l_@@_person_project_clist.
9305 %-----
9306 \clist_put_right:Nn \l_@@_person_project_clist
9307 {%
9308 % Reset the per-project temporaries before we start filling them.
9309 \clist_clear:N \l_@@_person_clist
9310 \clist_clear:N \l_@@_person_id_clist
9311
9312 % The coloured project number (e.g. "\color{blue}{12}")
9313 \@@_get_project_compact:nn {##1} {#3}
9314
9315 % Reference-only projects and the current project remain compact. For
9316 % other projects, the customization setting determines whether PI names
9317 % are always shown or only on the first reference in this section.
9318 \@@_project_pi_if_show_people:nT {##1}
9319 {
9320 %-----
9321 % b) Retrieve the *raw* CSV string that contains all
9322 % person IDs attached to this project.
9323 %-----
9324 \DTLgetvalueforkey
9325 {\l_@@_person_id_clist} % ← will receive something like "perl,per3"
9326 {ref-person-id} % field name in the "project" table
9327 {project}{id}{##1} % look it up for the current project
9328
9329 %-----
9330 % c) Build the *list of PI names* for this project.
9331 % We use the "variable" version of \clist_map which
9332 % gives us a temporary clist variable (\l_tmpa_clist)
9333 % that holds a *single* person ID at each iteration.
9334 %-----
9335 \space(%
9336 \clist_map_variable:NNn \l_@@_person_id_clist \l_tmpa_clist
9337 {
9338 % \l_tmpa_clist now expands to one person ID.
9339 % We format it with \getPI (or \getPI* if the star was given).
9340 \clist_put_right:Ne \l_@@_person_clist
9341 {
9342 \IfBooleanTF{#1}
9343 {\getPI*{\l_tmpa_clist}}
9344 {\getPI{\l_tmpa_clist}}
9345 }
9346 }
9347 %-----
9348 % d) Print the formatted PI list, separating consecutive
9349 % names with a thin slash (the macro \adnbthinspace and
9350 % \addthinspace are assumed to be defined elsewhere).
9351 %-----
9352 \clist_use:Nn \l_@@_person_clist {\adnbthinspace/\addthinspace}
9353 ) % end of the parentheses that surround the PI list
9354 }
9355 } % end of \clist_put_right:Nn (one *project block*)
9356 } % end of outer \clist_map_inline:Nn
9357
9358 %-----
9359 % 2. Typeset the collected project blocks.
9360 % \clist_use:Nnn joins the items with
9361 % "~and~" for the *last* separator,

```

```

9362 %      ",~"      for the *middle* separators,
9363 %      ",~and~"   for the *penultimate* separator.
9364 %-----
9365 \l_@@_project_reference_clist_use:N \l_@@_person_project_clist
9366 }
9367 }
9368
9369 \NewDocumentCommand{\getProjectPI}{s m}
9370 {
9371   \exp_args:NnnV \l_@@_get_project_with_people:nnn
9372   {#1} {#2} \c_novalue_tl
9373 }

```

We also need a way to extract all PIs of a project.

```

9374 % \getPIofProject [<properties>]{<PROJECT>}[<delimiter>]
9375 \NewDocumentCommand{\getPIofProject}{O{lastname} m O{\,/\\,}}
9376 {
9377   % #1: list of keys to retrieve from the PIs info
9378   % #2: ID of PI
9379   % #3: delimiter
9380   \bool_if:NTF \l_@@_class_fastcompile_project_bool
9381   { \dfgFastReference{#2} }
9382   {
9383
9384     % #2 is a comma-separated list of *project* IDs → turn it into a clist.
9385     \clist_set:Nn \l_@@_project_id_clist {#2}
9386     % These three clists will be filled during the loops.
9387     \clist_clear:N \l_@@_person_project_clist % final result: "project → PI list"
9388     \clist_clear:N \l_@@_person_id_clist % temporary list of PIs for one project
9389     \clist_clear:N \l_@@_person_clist % temporary list of formatted PI names
9390
9391     \DTLgetvalueforkey
9392     {\l_@@_person_id_clist} % ← will receive something like "per1,per3"
9393     {ref-person-id} % field name in the "project" table
9394     {project}{id}{\clist_use:N \l_@@_project_id_clist} % look it
9395     % up for the current project
9396
9397     \clist_map_variable:Nnn \l_@@_person_id_clist \l_tmpa_clist
9398     {
9399       \DTLgetvalueforkey{\tmpPIacademicdegree}{academicdegree}{person}{id}{\l_tmpa_clist}%
9400       \DTLgetvalueforkey{\tmpPIfirstname}{firstname}{person}{id}{\l_tmpa_clist}%
9401       \DTLgetvalueforkey{\tmpPIlastname}{lastname}{person}{id}{\l_tmpa_clist}%
9402       % \clist_clear:N \l_@@_person_clist
9403       % % \l_tmpa_clist now expands to one person ID.
9404       % We format it with \getPI (or \getPI* if the star was given).
9405       \clist_put_right:Ne \l_@@_person_clist
9406       {
9407         \clist_if_in:nnT{#1}{academicdegree}
9408         {\dfgShowTag{\l_tmpa_clist}{academicdegree}{\tmpPIacademicdegree}[person]\adnbthinspace}
9409         \clist_if_in:nnT{#1}{firstname}
9410         {\dfgShowTag{\l_tmpa_clist}{firstname}{\tmpPIfirstname}[person]\space}
9411         \clist_if_in:nnT{#1}{lastname}
9412         {\dfgShowTag{\l_tmpa_clist}{lastname}{\tmpPIlastname}[person]}
9413       }
9414     } % end of \clist_put_right:Nn (one *project block*)
9415     \clist_use:Nn \l_@@_person_clist {#3}
9416   }
9417 } % end of \NewDocumentCommand

```

For referencing Aims we need to define a new macro.

```

9418 \clist_new:N \l_@@_aim_refs_clist
9419 \NewDocumentCommand{\getAim}{O{\l__tmp_current_project_tl} m}
9420 {
9421   % #1: current project
9422   % #2: id of aim(s)
9423   \clist_clear:N \l_@@_aim_refs_clist
9424   \clist_map_inline:nn { #2 }

```

```

9425 { \clist_put_right:Nn \l_@@_aim_refs_clist { #1-aim-##1 } }
9426 \exp_args:NV \cref \l_@@_aim_refs_clist
9427 }

```

For referencing Workpackages we need to define a new macro.

```

9428 \tl_new:N \l__tmp_current_project_tl
9429 \clist_new:N \l_@@_wp_refs_clist
9430 \NewDocumentCommand{\getWP}{O{\l__tmp_current_project_tl} m}
9431 {
9432   % #1: current project
9433   % #2: id of workpackage(s)
9434   \clist_clear:N \l_@@_wp_refs_clist
9435   \clist_map_inline:nn { #2 }
9436   { \clist_put_right:Nn \l_@@_wp_refs_clist { #1-wp-##1 } }
9437   \exp_args:NV \cref \l_@@_wp_refs_clist
9438 }

```

The following command must be called within the environment workpackages.

```

9439 \tl_new:N \l_@@_fast_workpackage_name_tl
9440 \keys_define:nn { dfg / fast-workpackage }
9441 {
9442   name .tl_set:N = \l_@@_fast_workpackage_name_tl,
9443   unknown .code:n = { }
9444 }
9445
9446 % A nested workpackage starts directly with its authored body; its list label
9447 % already supplies the required separation. Remove only the immediately
9448 % following spaces and paragraph tokens, without adding interword space. Later
9449 % paragraph breaks in the authored body remain untouched.
9450 \cs_new_protected:Npn \@@_start_subworkpackage_body:
9451 {
9452   \peek_meaning_remove_ignore_spaces:NTF \par
9453   { \@@_start_subworkpackage_body: }
9454   { \ignorespaces }
9455 }
9456
9457 \NewDocumentCommand{\addWP}{ m m }{
9458   % #1: workpackage-id
9459   % #2: key-set
9460   \bool_if:NTF \l_@@_class_fastcompile_project_bool
9461   {
9462     \tl_clear:N \l_@@_fast_workpackage_name_tl
9463     \keys_set:nn { dfg / fast-workpackage } {#2}
9464   }
9465   {
9466     \addEntry[gantt]{gantt-\l__tmp_current_project_tl}{id=#1,#2}
9467   }
9468   \str_if_eq:eeTF { \@enumctr } { workpackagesi }
9469   {
9470     \bool_if:NTF \l_@@_class_fastcompile_project_bool
9471     {
9472       \item \textbf{
9473         \tl_if_blank:VTF \l_@@_fast_workpackage_name_tl
9474         { WP~#1 }
9475         { \tl_use:N \l_@@_fast_workpackage_name_tl }
9476       }%
9477     }
9478     {
9479       \item \textbf{\getEntry[gantt-\l__tmp_current_project_tl]{#1}{name}}%
9480     }
9481   }
9482   { \item }
9483   \label{\l__tmp_current_project_tl-wp-#1}%
9484   \str_if_eq:eeF { \@enumctr } { workpackagesi }
9485   { \@@_start_subworkpackage_body: }
9486 }

```

Project collaborations are stored with each project as an undirected list. The default plot is a compact focus heatmap

containing every active project; the focus and its direct collaborators are highlighted. An arc layout uses the same ordered nodes, draws only the focus project's edges, and gives every edge the same peak height. It prints identifiers inside uniformly sized nodes and places full-width project-area rules directly below them. Heatmap rows and colors are generated dynamically from `project-area` (with the project-ID prefix as fallback); a rotating palette supports any number of areas. Boxes use a shared dynamic column width determined by the widest project area, so the grid fills the complete text block after its area labels. Both layouts are deterministic, are generated entirely with TikZ, and omit ending, reference-only, and list-excluded projects. The built-in area palette cycles when more areas are present than palette entries; existing A, B, and Q projects retain their familiar colors.

```

9487 \dim_new:N \l_@@_collaboration_plot_x_dim
9488 \dim_new:N \l_@@_collaboration_plot_y_dim
9489 \dim_new:N \l_@@_collaboration_plot_x_step_dim
9490 \dim_new:N \l_@@_collaboration_plot_box_width_dim
9491 \dim_new:N \l_@@_collaboration_plot_box_gap_dim
9492 \dim_new:N \l_@@_collaboration_plot_area_label_width_dim
9493 \dim_new:N \l_@@_collaboration_plot_content_start_dim
9494 \dim_new:N \l_@@_collaboration_plot_width_dim
9495 \dim_new:N \l_@@_collaboration_plot_arc_height_dim
9496 \box_new:N \l_@@_collaboration_plot_area_label_box
9497 \seq_new:N \l_@@_collaboration_plot_nodes_seq
9498 \seq_new:N \l_@@_collaboration_plot_areas_seq
9499 \seq_new:N \l_@@_collaboration_plot_area_palette_seq
9500 \seq_new:N \l_@@_collaboration_plot_edges_seq
9501 \prop_new:N \l_@@_collaboration_plot_all_status_prop
9502 \prop_new:N \l_@@_collaboration_plot_status_prop
9503 \prop_new:N \l_@@_collaboration_plot_lists_prop
9504 \prop_new:N \l_@@_collaboration_plot_edges_prop
9505 \prop_new:N \l_@@_collaboration_plot_visible_prop
9506 \prop_new:N \l_@@_collaboration_plot_area_prop
9507 \prop_new:N \l_@@_collaboration_plot_area_nodes_prop
9508 \prop_new:N \l_@@_collaboration_plot_area_color_prop
9509 \prop_new:N \l_@@_collaboration_plot_area_color_override_prop
9510 \tl_new:N \l_@@_collaboration_plot_focus_tl
9511 \tl_new:N \l_@@_collaboration_plot_layout_tl
9512 \tl_new:N \l_@@_collaboration_plot_id_tl
9513 \tl_new:N \l_@@_collaboration_plot_status_tl
9514 \tl_new:N \l_@@_collaboration_plot_consider_tl
9515 \tl_new:N \l_@@_collaboration_plot_reference_only_tl
9516 \tl_new:N \l_@@_collaboration_plot_collaborations_tl
9517 \tl_new:N \l_@@_collaboration_plot_area_tl
9518 \tl_new:N \l_@@_collaboration_plot_source_tl
9519 \tl_new:N \l_@@_collaboration_plot_target_tl
9520 \tl_new:N \l_@@_collaboration_plot_edge_tl
9521 \tl_new:N \l_@@_collaboration_plot_edge_left_tl
9522 \tl_new:N \l_@@_collaboration_plot_edge_right_tl
9523 \tl_new:N \l_@@_collaboration_plot_label_tl
9524 \tl_new:N \l_@@_collaboration_plot_color_tl
9525 \tl_new:N \l_@@_collaboration_plot_caption_tl
9526 \int_new:N \l_@@_collaboration_plot_group_index_int
9527 \int_new:N \l_@@_collaboration_plot_row_index_int
9528 \int_new:N \l_@@_collaboration_plot_node_count_int
9529 \int_new:N \l_@@_collaboration_plot_area_index_int
9530
9531 \cs_new_protected:Npn \l_@@_collaboration_plot_merge_area_colors:n #1
9532 {
9533   \prop_set_from_keyval:Nn \l_tmpa_prop {#1}
9534   \prop_map_inline:Nn \l_tmpa_prop
9535     { \prop_put:Nnn \l_@@_collaboration_plot_area_color_override_prop
9536       {##1} {##2} }
9537 }
9538
9539 \keys_define:nn { dfg / project-collaboration-plot }
9540 {
9541   layout .choice:,
9542   layout / heatmap .code:n =
9543     { \tl_set:Nn \l_@@_collaboration_plot_layout_tl { heatmap } },

```

```

9544 layout / arc .code:n =
9545   { \tl_set:Nn \l_@@_collaboration_plot_layout_tl { arc } },
9546 layout / arc-diagram .meta:n = { layout = arc },
9547 heatmap .meta:n = { layout = heatmap },
9548 arc .meta:n = { layout = arc },
9549 arc-diagram .meta:n = { layout = arc },
9550 area-colors .code:n =
9551   { \@@_collaboration_plot_merge_area_colors:n {#1} },
9552 area-colours .meta:n = { area-colors = {#1} },
9553 area-palette .code:n =
9554   {
9555     \clist_if_empty:nF {#1}
9556     { \seq_set_from_clist:Nn \l_@@_collaboration_plot_area_palette_seq {#1} }
9557   },
9558 caption .tl_set:N = \l_@@_collaboration_plot_caption_tl,
9559 unknown .code:n = { \msg_warning:nnn { dfg } { unknown-key } {#1} }
9560 }
9561
9562 \cs_new_protected:Npn \@@_collaboration_plot_collect_nodes:
9563 {
9564   \seq_clear:N \l_@@_collaboration_plot_nodes_seq
9565   \prop_clear:N \l_@@_collaboration_plot_all_status_prop
9566   \prop_clear:N \l_@@_collaboration_plot_status_prop
9567   \prop_clear:N \l_@@_collaboration_plot_lists_prop
9568   \prop_clear:N \l_@@_collaboration_plot_edges_prop
9569   \prop_clear:N \l_@@_collaboration_plot_area_prop
9570   % DATATOOL requires an iterated key to exist as a database column. Older
9571   % proposals do not have project-area yet, so create the optional column and
9572   % let the ID-prefix fallback below handle its empty values.
9573   \DTLifhaskey { project } { project-area }
9574   { }
9575   { \DTLaddcolumn { project } { project-area } }
9576   \DTLifhaskey { project } { collaborations }
9577   { }
9578   { \DTLaddcolumn { project } { collaborations } }
9579   \DTLforeach*{project}
9580   {
9581     \l_@@_collaboration_plot_id_tl = id,
9582     \l_@@_collaboration_plot_status_tl = project-status,
9583     \l_@@_collaboration_plot_consider_tl = consider-for-lists,
9584     \l_@@_collaboration_plot_reference_only_tl = reference-only,
9585     \l_@@_collaboration_plot_area_tl = project-area,
9586     \l_@@_collaboration_plot_collaborations_tl = collaborations
9587   }
9588   {
9589     \prop_put:NVV \l_@@_collaboration_plot_all_status_prop
9590       \l_@@_collaboration_plot_id_tl
9591       \l_@@_collaboration_plot_status_tl
9592     \bool_lazy_all:nT
9593     {
9594       { \str_if_eq_p:Vn \l_@@_collaboration_plot_consider_tl { true } }
9595       { \str_if_eq_p:Vn \l_@@_collaboration_plot_reference_only_tl { false } }
9596       {
9597         \bool_lazy_or_p:nn
9598         { \str_if_eq_p:Vn \l_@@_collaboration_plot_status_tl { C } }
9599         { \str_if_eq_p:Vn \l_@@_collaboration_plot_status_tl { N } }
9600       }
9601     }
9602     {
9603       \DTLifnulloreempty{\l_@@_collaboration_plot_collaborations_tl}
9604       { \tl_clear:N \l_@@_collaboration_plot_collaborations_tl }
9605       { }
9606       \seq_put_right:NV \l_@@_collaboration_plot_nodes_seq
9607         \l_@@_collaboration_plot_id_tl
9608       \DTLifnulloreempty{\l_@@_collaboration_plot_area_tl}
9609       { \tl_set:Nx \l_@@_collaboration_plot_area_tl

```

```

9610         { \tl_head:V \l_@@_collaboration_plot_id_tl } }
9611     { }
9612     \tl_trim_spaces:N \l_@@_collaboration_plot_area_tl
9613     \prop_put:NVV \l_@@_collaboration_plot_area_prop
9614         \l_@@_collaboration_plot_id_tl \l_@@_collaboration_plot_area_tl
9615     \prop_put:NVV \l_@@_collaboration_plot_status_prop
9616         \l_@@_collaboration_plot_id_tl
9617         \l_@@_collaboration_plot_status_tl
9618     \prop_put:NVV \l_@@_collaboration_plot_lists_prop
9619         \l_@@_collaboration_plot_id_tl
9620         \l_@@_collaboration_plot_collaborations_tl
9621 }
9622 }
9623 \seq_sort:Nn \l_@@_collaboration_plot_nodes_seq
9624 {
9625     \prop_get:NnN \l_@@_collaboration_plot_area_prop {##1} \l_tmpa_tl
9626     \prop_get:NnN \l_@@_collaboration_plot_area_prop {##2} \l_tmpb_tl
9627     \str_compare:eNeTF
9628         { \tl_use:N \l_tmpa_tl / ##1 }
9629         <
9630         { \tl_use:N \l_tmpb_tl / ##2 }
9631         { \sort_return_same: }
9632         { \sort_return_swapped: }
9633 }
9634 }
9635
9636 \cs_new_protected:Npn \@@_collaboration_plot_collect_edge:nn #1#2
9637 {
9638     \tl_set:Nn \l_@@_collaboration_plot_source_tl {#1}
9639     \tl_set:Nn \l_@@_collaboration_plot_target_tl {#2}
9640     \tl_trim_spaces:N \l_@@_collaboration_plot_source_tl
9641     \tl_trim_spaces:N \l_@@_collaboration_plot_target_tl
9642     \tl_if_blank:VF \l_@@_collaboration_plot_target_tl
9643     {
9644         \prop_if_in:NVTF \l_@@_collaboration_plot_status_prop
9645             \l_@@_collaboration_plot_target_tl
9646         {
9647             \str_if_eq:VVF
9648                 \l_@@_collaboration_plot_source_tl
9649                 \l_@@_collaboration_plot_target_tl
9650             {
9651                 \str_compare:eNeTF
9652                     { \tl_use:N \l_@@_collaboration_plot_source_tl }
9653                     <
9654                     { \tl_use:N \l_@@_collaboration_plot_target_tl }
9655                     {
9656                         \tl_set:Nx \l_@@_collaboration_plot_edge_tl
9657                             {
9658                                 \tl_use:N \l_@@_collaboration_plot_source_tl
9659                                 /\tl_use:N \l_@@_collaboration_plot_target_tl
9660                             }
9661                     }
9662                     {
9663                         \tl_set:Nx \l_@@_collaboration_plot_edge_tl
9664                             {
9665                                 \tl_use:N \l_@@_collaboration_plot_target_tl
9666                                 /\tl_use:N \l_@@_collaboration_plot_source_tl
9667                             }
9668                     }
9669                 \prop_put:NVn \l_@@_collaboration_plot_edges_prop
9670                     \l_@@_collaboration_plot_edge_tl { 1 }
9671             }
9672         }
9673     }
9674     \prop_if_in:NVF \l_@@_collaboration_plot_all_status_prop
9675         \l_@@_collaboration_plot_target_tl

```

```

9676     {
9677         \msg_warning:nnee { dfg } { collaboration-target-not-found }
9678         { \l_@@_collaboration_plot_source_tl }
9679         { \l_@@_collaboration_plot_target_tl }
9680     }
9681 }
9682 }
9683 }
9684
9685 \cs_new_protected:Npn \l_@@_collaboration_plot_collect_edges:
9686 {
9687     \seq_clear:N \l_@@_collaboration_plot_edges_seq
9688     \prop_map_inline:Nn \l_@@_collaboration_plot_lists_prop
9689     {
9690         \clist_map_inline:nn {##2}
9691         { \l_@@_collaboration_plot_collect_edge:nn {##1} {###1} }
9692     }
9693     \prop_map_inline:Nn \l_@@_collaboration_plot_edges_prop
9694     { \seq_put_right:Nn \l_@@_collaboration_plot_edges_seq {##1} }
9695     \seq_sort:Nn \l_@@_collaboration_plot_edges_seq
9696     {
9697         \str_compare:eNeTF {##1} < {##2}
9698         { \sort_return_same: }
9699         { \sort_return_swapped: }
9700     }
9701 }
9702
9703 \cs_new_protected:Npn \l_@@_collaboration_plot_unpack_edge:n #1
9704 {
9705     \seq_set_split:Nnn \l_tmpa_seq {/} {#1}
9706     \seq_pop_left:NN \l_tmpa_seq \l_@@_collaboration_plot_edge_left_tl
9707     \seq_pop_left:NN \l_tmpa_seq \l_@@_collaboration_plot_edge_right_tl
9708 }
9709
9710 \cs_new_protected:Npn \l_@@_collaboration_plot_prepare:
9711 {
9712     \prop_clear:N \l_@@_collaboration_plot_visible_prop
9713     \seq_clear:N \l_@@_collaboration_plot_areas_seq
9714     \prop_clear:N \l_@@_collaboration_plot_area_nodes_prop
9715     \prop_clear:N \l_@@_collaboration_plot_area_color_prop
9716     \int_zero:N \l_@@_collaboration_plot_area_index_int
9717     \prop_put:NvN \l_@@_collaboration_plot_visible_prop
9718     \l_@@_collaboration_plot_focus_tl { 1 }
9719     \seq_map_inline:Nn \l_@@_collaboration_plot_edges_seq
9720     {
9721         \l_@@_collaboration_plot_unpack_edge:n {##1}
9722         \bool_lazy_or:nnT
9723         {
9724             \str_if_eq_p:VV
9725             \l_@@_collaboration_plot_edge_left_tl
9726             \l_@@_collaboration_plot_focus_tl
9727         }
9728         {
9729             \str_if_eq_p:VV
9730             \l_@@_collaboration_plot_edge_right_tl
9731             \l_@@_collaboration_plot_focus_tl
9732         }
9733         {
9734             \prop_put:NvN \l_@@_collaboration_plot_visible_prop
9735             \l_@@_collaboration_plot_edge_left_tl { 1 }
9736             \prop_put:NvN \l_@@_collaboration_plot_visible_prop
9737             \l_@@_collaboration_plot_edge_right_tl { 1 }
9738         }
9739     }
9740     \seq_map_inline:Nn \l_@@_collaboration_plot_nodes_seq
9741     {

```

```

9742 \prop_get:NnN \l_@@_collaboration_plot_area_prop {##1}
9743 \l_@@_collaboration_plot_area_tl
9744 \prop_if_in:NVF \l_@@_collaboration_plot_area_nodes_prop
9745 \l_@@_collaboration_plot_area_tl
9746 {
9747   \seq_put_right:NV \l_@@_collaboration_plot_areas_seq
9748   \l_@@_collaboration_plot_area_tl
9749   \prop_get:NVNTF \l_@@_collaboration_plot_area_color_override_prop
9750   \l_@@_collaboration_plot_area_tl
9751   \l_@@_collaboration_plot_color_tl
9752   {
9753     \prop_put:NVV \l_@@_collaboration_plot_area_color_prop
9754     \l_@@_collaboration_plot_area_tl
9755     \l_@@_collaboration_plot_color_tl
9756   }
9757   {
9758     \int_incr:N \l_@@_collaboration_plot_area_index_int
9759     \int_set:Nn \l_tmpa_int
9760     {
9761       1 + \int_mod:nn
9762       { \l_@@_collaboration_plot_area_index_int - 1 }
9763       { \seq_count:N \l_@@_collaboration_plot_area_palette_seq }
9764     }
9765     \prop_put:NVx \l_@@_collaboration_plot_area_color_prop
9766     \l_@@_collaboration_plot_area_tl
9767     {
9768       \seq_item:Nn \l_@@_collaboration_plot_area_palette_seq
9769       { \l_tmpa_int }
9770     }
9771   }
9772   \prop_put:NVn \l_@@_collaboration_plot_area_nodes_prop
9773   \l_@@_collaboration_plot_area_tl { }
9774 }
9775 \prop_get:NVN \l_@@_collaboration_plot_area_nodes_prop
9776 \l_@@_collaboration_plot_area_tl \l_tmpa_tl
9777 \tl_if_blank:VTF \l_tmpa_tl
9778 { \tl_set:Nn \l_tmpa_tl {##1} }
9779 { \tl_put_right:Nn \l_tmpa_tl { , ##1 } }
9780 \prop_put:NVV \l_@@_collaboration_plot_area_nodes_prop
9781 \l_@@_collaboration_plot_area_tl \l_tmpa_tl
9782 }
9783 }
9784
9785 \cs_new_protected:Npn \@@_collaboration_plot_set_color:n #1
9786 {
9787   \tl_set:Nx \l_@@_collaboration_plot_label_tl {#1}
9788   \prop_get:NnNTF \l_@@_collaboration_plot_area_prop
9789   {#1} \l_@@_collaboration_plot_area_tl
9790   { \prop_get:NVN \l_@@_collaboration_plot_area_color_prop
9791     \l_@@_collaboration_plot_area_tl
9792     \l_@@_collaboration_plot_color_tl }
9793   { \tl_set:Nn \l_@@_collaboration_plot_color_tl { grey } }
9794 }
9795
9796 \cs_new_protected:Npn \@@_collaboration_plot_heatmap_cell:n #1
9797 {
9798   \@@_collaboration_plot_set_color:n {#1}
9799   \str_if_eq:VVTf
9800   \l_@@_collaboration_plot_focus_tl
9801   \l_@@_collaboration_plot_label_tl
9802   {
9803     \node[
9804       anchor=center,
9805       minimum~width=\dim_use:N \l_@@_collaboration_plot_box_width_dim,
9806       minimum~height=5.2mm,
9807       inner~sep=0pt,

```

```

9808         rounded~corners=1.4pt,
9809         draw=red!78!black,
9810         fill=red,
9811         text=white,
9812         font=\scriptsize\bfseries
9813     ] at
9814         (\dim_use:N \l_@@_collaboration_plot_x_dim,
9815          \dim_use:N \l_@@_collaboration_plot_y_dim)
9816     { \strut\tl_use:N \l_@@_collaboration_plot_label_tl };
9817 }
9818 {
9819     \prop_if_in:NVTF \l_@@_collaboration_plot_visible_prop
9820         \l_@@_collaboration_plot_label_tl
9821     {
9822         \node[
9823             anchor=center,
9824             minimum~width=\dim_use:N \l_@@_collaboration_plot_box_width_dim,
9825             minimum~height=5.2mm,
9826             inner~sep=0pt,
9827             rounded~corners=1.4pt,
9828             draw=\tl_use:N \l_@@_collaboration_plot_color_tl!48,
9829             fill=\tl_use:N \l_@@_collaboration_plot_color_tl!14,
9830             text=\tl_use:N \l_@@_collaboration_plot_color_tl,
9831             font=\scriptsize\bfseries
9832         ] at
9833             (\dim_use:N \l_@@_collaboration_plot_x_dim,
9834              \dim_use:N \l_@@_collaboration_plot_y_dim)
9835         { \strut\tl_use:N \l_@@_collaboration_plot_label_tl };
9836     }
9837     {
9838         \node[
9839             anchor=center,
9840             minimum~width=\dim_use:N \l_@@_collaboration_plot_box_width_dim,
9841             minimum~height=5.2mm,
9842             inner~sep=0pt,
9843             rounded~corners=1.4pt,
9844             draw=grey!22,
9845             fill=white,
9846             text=grey!70!black,
9847             font=\scriptsize
9848         ] at
9849             (\dim_use:N \l_@@_collaboration_plot_x_dim,
9850              \dim_use:N \l_@@_collaboration_plot_y_dim)
9851         { \strut\tl_use:N \l_@@_collaboration_plot_label_tl };
9852     }
9853 }
9854 }
9855
9856 \cs_new_protected:Npn \l_@@_collaboration_plot_heatmap_row:nnn #1#2#3
9857 {
9858     \clist_if_empty:nF {#1}
9859     {
9860         \int_incr:N \l_@@_collaboration_plot_row_index_int
9861         \dim_set:Nn \l_@@_collaboration_plot_y_dim
9862         {
9863             -7mm *
9864             \int_eval:n { \l_@@_collaboration_plot_row_index_int - 1 }
9865         }
9866         \node[
9867             anchor=west,
9868             inner~sep=0pt,
9869             font=\scriptsize\bfseries
9870         ] at
9871             (\dim_use:N \l_@@_collaboration_plot_area_label_width_dim,
9872              \dim_use:N \l_@@_collaboration_plot_y_dim)
9873         {Project~area~#3};

```

```

9874 \draw[draw=#2,line~width=.75pt,line~cap=round]
9875   (\dim_eval:n
9876     { \l_@@_collaboration_plot_area_label_width_dim + .8mm },
9877     \dim_use:N \l_@@_collaboration_plot_y_dim)
9878   --
9879   (\dim_eval:n
9880     { \l_@@_collaboration_plot_area_label_width_dim + 2.8mm },
9881     \dim_use:N \l_@@_collaboration_plot_y_dim);
9882 \int_zero:N \l_@@_collaboration_plot_group_index_int
9883 \clist_map_inline:nn {#1}
9884 {
9885   \int_incr:N \l_@@_collaboration_plot_group_index_int
9886   \dim_set:Nn \l_@@_collaboration_plot_x_dim
9887   {
9888     \l_@@_collaboration_plot_content_start_dim
9889     + \l_@@_collaboration_plot_box_width_dim / 2
9890     + \l_@@_collaboration_plot_x_step_dim *
9891     \int_eval:n { \l_@@_collaboration_plot_group_index_int - 1 }
9892   }
9893   \l_@@_collaboration_plot_heatmap_cell:n {##1}
9894 }
9895 }
9896 }
9897 \cs_generate_variant:Nn \l_@@_collaboration_plot_heatmap_row:nnn { V V n }
9898
9899 \cs_new_protected:Npn \l_@@_collaboration_plot_heatmap_picture:
9900 {
9901   % Use the widest project area as the shared column grid. Each column gets
9902   % a dynamic box width, and the final cell reaches the right edge of the
9903   % text block instead of leaving a large unused strip before the caption.
9904   \dim_zero:N \l_@@_collaboration_plot_area_label_width_dim
9905   \seq_map_inline:Nn \l_@@_collaboration_plot_areas_seq
9906   {
9907     \hbox_set:Nn \l_@@_collaboration_plot_area_label_box
9908       { \scriptsize\bfseries Project~area~##1 }
9909     \dim_compare:nNnT
9910       { \box_wd:N \l_@@_collaboration_plot_area_label_box }
9911       >
9912       { \l_@@_collaboration_plot_area_label_width_dim }
9913       {
9914         \dim_set:Nn \l_@@_collaboration_plot_area_label_width_dim
9915         { \box_wd:N \l_@@_collaboration_plot_area_label_box }
9916       }
9917   }
9918   \dim_set:Nn \l_@@_collaboration_plot_content_start_dim
9919     { \l_@@_collaboration_plot_area_label_width_dim + 4mm }
9920 \begin{tikzpicture}
9921   \int_zero:N \l_@@_collaboration_plot_node_count_int
9922   \seq_map_inline:Nn \l_@@_collaboration_plot_areas_seq
9923   {
9924     \prop_get:NnN \l_@@_collaboration_plot_area_nodes_prop {##1}
9925       \l_tmpa_tl
9926     \clist_set:NV \l_tmpa_clist \l_tmpa_tl
9927     \int_set:Nn \l_tmpa_int { \clist_count:N \l_tmpa_clist }
9928     \int_set:Nn \l_@@_collaboration_plot_node_count_int
9929       { \int_max:nn { \l_@@_collaboration_plot_node_count_int }
9930         { \l_tmpa_int } }
9931   }
9932   \dim_set:Nn \l_@@_collaboration_plot_box_gap_dim { 1mm }
9933   \int_compare:nNnTF
9934     { \l_@@_collaboration_plot_node_count_int } > { 0 }
9935     {
9936       \dim_set:Nn \l_@@_collaboration_plot_box_width_dim
9937       {
9938         ( \l_@@_collaboration_plot_width_dim
9939           - \l_@@_collaboration_plot_content_start_dim

```

```

9940         - \l_@@_collaboration_plot_box_gap_dim *
9941         \int_eval:n
9942         { \l_@@_collaboration_plot_node_count_int - 1 }
9943     ) / \l_@@_collaboration_plot_node_count_int
9944 }
9945 \dim_set:Nn \l_@@_collaboration_plot_x_step_dim
9946 {
9947     \l_@@_collaboration_plot_box_width_dim
9948     + \l_@@_collaboration_plot_box_gap_dim
9949 }
9950 }
9951 {
9952     \dim_zero:N \l_@@_collaboration_plot_box_width_dim
9953     \dim_zero:N \l_@@_collaboration_plot_x_step_dim
9954 }
9955 \int_zero:N \l_@@_collaboration_plot_row_index_int
9956 \seq_map_inline:Nn \l_@@_collaboration_plot_areas_seq
9957 {
9958     \prop_get:NnN \l_@@_collaboration_plot_area_nodes_prop {##1}
9959     \l_tmpa_tl
9960     \prop_get:NnN \l_@@_collaboration_plot_area_color_prop {##1}
9961     \l_@@_collaboration_plot_color_tl
9962     \@@_collaboration_plot_heatmap_row:VVn
9963     \l_tmpa_tl \l_@@_collaboration_plot_color_tl {##1}
9964 }
9965 \end{tikzpicture}
9966 }
9967
9968 \cs_new_protected:Npn \@@_collaboration_plot_arc_place_nodes:
9969 {
9970     \int_set:Nn \l_@@_collaboration_plot_node_count_int
9971     { \seq_count:N \l_@@_collaboration_plot_nodes_seq }
9972     \int_compare:nNnTF
9973     { \l_@@_collaboration_plot_node_count_int } > { 1 }
9974     {
9975         \dim_set:Nn \l_@@_collaboration_plot_x_step_dim
9976         {
9977             ( \linewidth - 16mm ) /
9978             \int_eval:n { \l_@@_collaboration_plot_node_count_int - 1 }
9979         }
9980     }
9981     { \dim_zero:N \l_@@_collaboration_plot_x_step_dim }
9982     \int_zero:N \l_@@_collaboration_plot_group_index_int
9983     \seq_map_inline:Nn \l_@@_collaboration_plot_nodes_seq
9984     {
9985         \dim_set:Nn \l_@@_collaboration_plot_x_dim
9986         {
9987             8mm + \l_@@_collaboration_plot_x_step_dim
9988             * \l_@@_collaboration_plot_group_index_int
9989         }
9990         \coordinate (dfg-collaboration-arc-##1) at
9991             (\dim_use:N \l_@@_collaboration_plot_x_dim,0);
9992         \int_incr:N \l_@@_collaboration_plot_group_index_int
9993     }
9994 }
9995
9996 \cs_new_protected:Npn \@@_collaboration_plot_draw_focus_arc:n #1
9997 {
9998     \@@_collaboration_plot_unpack_edge:n {##1}
9999     \tl_clear:N \l_@@_collaboration_plot_target_tl
10000     \str_if_eq:VVTf
10001     \l_@@_collaboration_plot_edge_left_tl
10002     \l_@@_collaboration_plot_focus_tl
10003     {
10004         \tl_set_eq:NN \l_@@_collaboration_plot_target_tl
10005         \l_@@_collaboration_plot_edge_right_tl

```

```

10006     }
10007     {
10008         \str_if_eq:VVT
10009         \l_@@_collaboration_plot_edge_right_tl
10010         \l_@@_collaboration_plot_focus_tl
10011         {
10012             \tl_set_eq:NN \l_@@_collaboration_plot_target_tl
10013             \l_@@_collaboration_plot_edge_left_tl
10014         }
10015     }
10016     \tl_if_blank:VF \l_@@_collaboration_plot_target_tl
10017     {
10018         \@@_collaboration_plot_set_color:n
10019         { \tl_use:N \l_@@_collaboration_plot_target_tl }
10020         \draw[
10021             draw=\tl_use:N \l_@@_collaboration_plot_color_tl,
10022             line~width=.75pt,
10023             opacity=.78,
10024             line~cap=round
10025         ]
10026         (dfg-collaboration-arc-\l_@@_collaboration_plot_focus_tl)
10027         .. controls
10028         ($ (dfg-collaboration-arc-\l_@@_collaboration_plot_focus_tl)
10029           + (0,\dim_use:N \l_@@_collaboration_plot_arc_height_dim) $)
10030         and
10031         ($ (dfg-collaboration-arc-\l_@@_collaboration_plot_target_tl)
10032           + (0,\dim_use:N \l_@@_collaboration_plot_arc_height_dim) $)
10033         ..
10034         (dfg-collaboration-arc-\l_@@_collaboration_plot_target_tl);
10035     }
10036 }
10037
10038 \cs_new_protected:Npn \@@_collaboration_plot_arc_node:n #1
10039 {
10040     \@@_collaboration_plot_set_color:n {#1}
10041     \str_if_eq:VVT
10042     \l_@@_collaboration_plot_focus_tl
10043     \l_@@_collaboration_plot_label_tl
10044     {
10045         \node[
10046             anchor=center,
10047             minimum~width=6mm,
10048             minimum~height=5mm,
10049             inner~sep=0pt,
10050             rounded~corners=1pt,
10051             draw=red!78!black,
10052             fill=red,
10053             text=white,
10054             font=\tiny\bfseries
10055         ] at (dfg-collaboration-arc-#1) {#1};
10056     }
10057     {
10058         \prop_if_in:NVTF \l_@@_collaboration_plot_visible_prop
10059         \l_@@_collaboration_plot_label_tl
10060         {
10061             \node[
10062                 anchor=center,
10063                 minimum~width=6mm,
10064                 minimum~height=5mm,
10065                 inner~sep=0pt,
10066                 rounded~corners=.8pt,
10067                 draw=\tl_use:N \l_@@_collaboration_plot_color_tl!48,
10068                 fill=\tl_use:N \l_@@_collaboration_plot_color_tl!14,
10069                 text=\tl_use:N \l_@@_collaboration_plot_color_tl,
10070                 font=\tiny\bfseries
10071             ] at (dfg-collaboration-arc-#1) {#1};

```

```

10072     }
10073     {
10074         \node[
10075             anchor=center,
10076             minimum~width=6mm,
10077             minimum~height=5mm,
10078             inner~sep=0pt,
10079             rounded~corners=.8pt,
10080             draw=grey!22,
10081             fill=white,
10082             text=grey!70!black,
10083             font=\tiny
10084         ] at (dfg-collaboration-arc-#1) {#1};
10085     }
10086 }
10087 }
10088
10089 \cs_new_protected:Npn \@@_collaboration_plot_arc_group:nnn #1#2#3
10090 {
10091     \clist_if_empty:nF {#1}
10092     {
10093         \tl_set:Nx \l_tmpa_tl { \clist_item:nn {#1} { 1 } }
10094         \tl_set:Nx \l_tmpb_tl { \clist_item:nn {#1} { -1 } }
10095         \draw[draw=#2,line~width=.75pt,line~cap=round]
10096             ($ (dfg-collaboration-arc-\l_tmpa_tl) + (-3mm,-3.5mm) $)
10097             --
10098             ($ (dfg-collaboration-arc-\l_tmpb_tl) + (3mm,-3.5mm) $)
10099             node[midway,below=.6mm,font=\scriptsize\bfseries] {#3};
10100     }
10101 }
10102 \cs_generate_variant:Nn \@@_collaboration_plot_arc_group:nnn { V V n }
10103
10104 \cs_new_protected:Npn \@@_collaboration_plot_arc_picture:
10105 {
10106     \begin{tikzpicture}
10107         \@@_collaboration_plot_arc_place_nodes:
10108         % Equal control-point heights give every symmetric cubic arc the same peak.
10109         \dim_set:Nn \l_@@_collaboration_plot_arc_height_dim { 12mm }
10110         \seq_map_inline:Nn \l_@@_collaboration_plot_edges_seq
10111             { \@@_collaboration_plot_draw_focus_arc:n {##1} }
10112         \seq_map_inline:Nn \l_@@_collaboration_plot_nodes_seq
10113             { \@@_collaboration_plot_arc_node:n {##1} }
10114         \seq_map_inline:Nn \l_@@_collaboration_plot_areas_seq
10115             {
10116                 \prop_get:NnN \l_@@_collaboration_plot_area_nodes_prop {##1}
10117                 \l_tmpa_tl
10118                 \prop_get:NnN \l_@@_collaboration_plot_area_color_prop {##1}
10119                 \l_@@_collaboration_plot_color_tl
10120                 \@@_collaboration_plot_arc_group:VVn
10121                 \l_tmpa_tl \l_@@_collaboration_plot_color_tl {##1}
10122             }
10123     \end{tikzpicture}
10124 }
10125
10126 \cs_new_protected:Npn \@@_collaboration_plot_picture:
10127 {
10128     \str_case:VnF \l_@@_collaboration_plot_layout_tl
10129     {
10130         { heatmap } { \@@_collaboration_plot_heatmap_picture: }
10131         { arc }      { \@@_collaboration_plot_arc_picture: }
10132     }
10133     { \@@_collaboration_plot_heatmap_picture: }
10134 }
10135
10136 % hvfloat positions a beside caption relative to the measured object width.
10137 % Give the default plot an explicit full text-width box (without scaling its TikZ

```

```

10138 % contents), so the outer caption starts in the margin even for a heatmap with
10139 % only a few project nodes or when the surrounding \linewidth is temporarily
10140 % narrower. This matches the geometry of the resized Gantt chart.
10141 \cs_new_protected:Npn \@@_collaboration_plot_wide_picture:
10142 {
10143   \makebox[\dim_use:N \l_@@_collaboration_plot_width_dim][l]
10144     {\@@_collaboration_plot_picture:}
10145 }
10146
10147 \NewDocumentCommand{\ProjectCollaborationPlot}{ O{} m o }
10148 {
10149   \group_begin:
10150   % Capture the normal body width before hvfloat's 'wide' option temporarily
10151   % changes layout dimensions while constructing the outer caption.
10152   \dim_set:Nn \l_@@_collaboration_plot_width_dim { \textwidth }
10153   \exp_args:NNV \prop_set_from_keyval:Nn
10154     \l_@@_collaboration_plot_area_color_override_prop
10155     \l_@@_custom_collaboration_area_colors_tl
10156   \exp_args:NNV \seq_set_from_clist:Nn
10157     \l_@@_collaboration_plot_area_palette_seq
10158     \l_@@_custom_collaboration_area_palette_tl
10159   \tl_clear:N \l_@@_collaboration_plot_caption_tl
10160   \keys_set:nn { dfg / project-collaboration-plot }
10161   {
10162     layout = heatmap,
10163     #1
10164   }
10165   \IfNoValueF{#3}
10166   { \tl_set:Nn \l_@@_collaboration_plot_caption_tl {#3} }
10167   \tl_set:Nn \l_@@_collaboration_plot_focus_tl {#2}
10168   \tl_trim_spaces:N \l_@@_collaboration_plot_focus_tl
10169   \DTLifdbexists{project}
10170   {
10171     \@@_collaboration_plot_collect_nodes:
10172     \prop_if_in:NVTF \l_@@_collaboration_plot_status_prop
10173       \l_@@_collaboration_plot_focus_tl
10174     {
10175       \@@_collaboration_plot_collect_edges:
10176       \@@_collaboration_plot_prepare:
10177       \tl_if_blank:VTF \l_@@_collaboration_plot_caption_tl
10178       {
10179         \hvFloat[
10180           capFormat={labelsep=newline},
10181           wide,
10182           floatPos=h,
10183           capPos=outer,
10184           capVPos=bottom,
10185           capWidth=n,
10186           floatCapSep=\marginparsep
10187         ]
10188         {figure}
10189         {\@@_collaboration_plot_wide_picture:}
10190         {Collaborations~of~\getProject{#2}.}
10191         {fig:project-collaboration-#2-
10192           \tl_use:N \l_@@_collaboration_plot_layout_tl}%
10193       }
10194     {
10195       \hvFloat[
10196         floatPos=h,
10197         capPos=bottom
10198       ]
10199       {figure}
10200       {\@@_collaboration_plot_picture:}
10201       {Collaborations~of~\getProject{#2}.~
10202         \tl_use:N \l_@@_collaboration_plot_caption_tl}
10203       {fig:project-collaboration-#2-

```

```

10204         \tl_use:N \l_@@_collaboration_plot_layout_tl}%
10205     }
10206 }
10207 {
10208     \msg_warning:nne { dfg } { collaboration-focus-not-found }
10209     { \l_@@_collaboration_plot_focus_tl }
10210     \textcolor{error}
10211     {Project~collaboration~plot:~unknown~project~'#2'.}
10212 }
10213 }
10214 { \msg_warning:nnn { dfg } { database-not-found } { project } }
10215 \group_end:
10216 }
10217
10218 % Since the workpackage is closely related to the Gantt chart we continue with
10219 % that. \cs{GanttPlot} is the plot dispatcher's target. The old
10220 % \cs{printGantt} spelling remains as a compatibility wrapper.
10221 \tl_new:N \l_@@_gantt_plot_caption_tl
10222 \keys_define:nn { dfg / gantt-plot }
10223 {
10224     caption .tl_set:N = \l_@@_gantt_plot_caption_tl,
10225     unknown .code:n = { \msg_warning:nnn { dfg } { unknown-key } {#1} }
10226 }
10227
10228 \NewDocumentCommand{\GanttPlot}{ O{} m o }
10229 {
10230     \group_begin:
10231     \tl_clear:N \l_@@_gantt_plot_caption_tl
10232     \keys_set:nn { dfg / gantt-plot } {#1}
10233     \IfNoValueF{#3}
10234     { \tl_set:Nn \l_@@_gantt_plot_caption_tl {#3} }
10235     \DTLifdbexists{gantt-#2}
10236     {
10237         \tl_if_blank:VTF \l_@@_gantt_plot_caption_tl
10238         {
10239             \hvFloat[
10240                 capFormat={labelsep=newline},
10241                 wide,
10242                 floatPos=h,
10243                 capPos=outer,
10244                 capVPos=bottom,
10245                 capWidth=.116,
10246                 floatCapSep=\marginparsep
10247             ]
10248             {figure}
10249             {\dfgGanttEnvironment{#2}}
10250             {Gantt~chart~of~\getProject{#2}.}
10251             {fig:gantt#2}%
10252         }
10253     }
10254     {
10255         \hvFloat[
10256             floatPos=h,
10257             capPos=bottom
10258         ]
10259         {figure}
10260         {\dfgGanttEnvironment{#2}}
10261         {Gantt~chart~of~\getProject{#2}.~
10262             \tl_use:N \l_@@_gantt_plot_caption_tl}
10263         {fig:gantt-#2}%
10264     }
10265     {
10266         Database~ \texttt{gantt-#2}~ missing.
10267         \msg_warning:nne { dfg } { database-not-found }{ gantt-#2 }
10268     }
10269     \group_end:

```

```

10270 }
10271
10272 \NewDocumentCommand{\printGantt}{m o }
10273 {
10274   \IfNoValueTF{#2}
10275   { \printPlot{{Gantt}}{#1}} }
10276   { \printPlot{{Gantt}}{#1}{#2}} }
10277 }

```

3.2.21 Gantt chart rendering

The Gantt chart for each project is assembled in two steps:

- 1) `\dfgGanttContent{<project>}`: iterates over the `gantt-meta{project}` database and generates one `\ganttbar` call per row. Rows where `periodStart = periodEnd` are silently skipped. The bar style is dispatched via `\str_case:VnF`: `crosshatch` uses a `pgfgantt` pattern fill; `striped` overlays two colours at 45° with `\postaction`; `alternative` and `important` use flat fills; the default is a solid `color@gantt@default` bar.
- 2) `\dfgGanttEnvironment{<project>}`: wraps the content in a `pgfgantt ganttchart` environment spanning 16 columns (quarters Q3 of year 0 through Q2 of year 5, matching the standard DFG 5-year period). The chart is scaled with `\resizebox` to fill the full text width.

`\printPlot{{Gantt}}{<project>}` is the preferred user-facing command; `\printGantt` remains a compatibility alias. The dispatcher calls `\GanttPlot`, which wraps the chart in an `hfloat` figure with an appropriate caption. The two `\hvFloat` calls differ only in layout: the default (no extra caption) uses a wide outer-margin caption layout; the variant with an extra caption uses a simpler bottom-caption layout. Both variants use the strict `h` position so the chart remains directly after the work packages; the following `\FloatBarrier` closes that project-plan block.

Quarter numbering: columns 1–2 correspond to Q3–Q4 of the calendar year preceding the funding start; columns 3–16 are Q1–Q4 of years 1–4; the final 16th column is Q1–Q2 of year 5. Bar start/end values in the Gantt database should use these numbers directly.

```

10278 \NewDocumentCommand{\dfgGanttContent}{m}{%
10279   \DTLforeach*{gantt-#1}{%
10280     \ganttWP=id,%
10281     \ganttName=name,%
10282     \ganttDescription=description,%
10283     \ganttPeriodStart=periodStart,%
10284     \ganttPeriodEnd=periodEnd,%
10285     \ganttPatternbar=style%
10286   }{\hypersetup{linkcolor=black}%
10287     % If we want to omit a bar in the plot,
10288     % you need to set periodStart and periodEnd
10289     % the same value.
10290     \ifdefstrequal{\ganttPeriodStart}{\ganttPeriodEnd}{}{%
10291       % if the values are different then there will be a bar.
10292     \def\ganttBarPlot{
10293       \sffamily
10294       \dfgShowTag{\ganttWP}{id}{\getWP{\ganttWP}}[gantt-#1]
10295       \ifdefempty{\ganttDescription}{%
10296         {~\dfgShowTag{\ganttWP}{description}{\ganttDescription}[gantt-#1]]}
10297       \str_case:VnF {\ganttPatternbar}
10298       {%
10299         {crosshatch}{\ganttbar[bar/.append~ style = {%
10300           pattern      = {crosshatch},
10301           pattern~ color = {color@gantt@crosshatch},
10302           draw          = {color@gantt@frame}
10303         }]{\ganttBarPlot}{\ganttPeriodStart}{\ganttPeriodEnd}}}%
10304         {striped}{\ganttbar[bar/.append~ style = {%
10305           fill          = {color@gantt@stripe-one},
10306           % the pattern needs to be applied after the filled color
10307           postaction    = {pattern={Lines[%
10308             angle=45,
10309             distance={12pt},
10310             line~ width=6pt}},
10311           pattern~ color= color@gantt@stripe-two},
10312           postaction    = {draw, semithick},
10313           draw          = {color@gantt@frame}

```

```

10316      }}{\ganttBarPlot}{\ganttPeriodStart}{\ganttPeriodEnd}}}%
10317
10318      {alternative}{\ganttbar[bar/.append~ style = {%
10319          fill          = {color@gantt@alternative},
10320          draw          = {color@gantt@frame}
10321      }}{\ganttBarPlot}{\ganttPeriodStart}{\ganttPeriodEnd}}}%
10322
10323      {important}{\ganttbar[bar/.append~ style = {%
10324          fill          = {color@gantt@important},
10325          draw          = {color@gantt@frame}
10326      }}{\ganttBarPlot}{\ganttPeriodStart}{\ganttPeriodEnd}}}%
10327  }
10328  { % default
10329      }}{\ganttbar[bar/.append~ style = {%
10330          fill          = {color@gantt@default},
10331          draw          = {color@gantt@frame}
10332      }}{\ganttBarPlot}{\ganttPeriodStart}{\ganttPeriodEnd}}}%
10333  }
10334  \DTLiflastrow{\ganttnewline}{\}\}%
10335  \hypersetup{linkcolor=blue}}
10336  }

```

The following macro makes it easier to debug the position of the bars.

```

10337  \newcommand{\dfgGanttShowQs}[2]{%
10338      \bool_if:NTF \l_@@_class_showtags_bool
10339      {\leavevmode\vbox to\z@{ {%
10340          \vss\color{color@tags@line}
10341          \rlap{\vrule\raise .9em%
10342              \hbox{ {%
10343                  \fontsize{4}{0}\selectfont%
10344                  \ttfamily\, #1:#2}}}}
10345          \textcolor{color@tags@font}{#1}}
10346      {#1}}
10347  }
10348  \NewDocumentCommand{\dfgGanttEnvironment}{m}{
10349      % #1 : Project ID
10350      \resizebox{\linewidth}{!}{
10351          \begin{ganttchart}[
10352              title~ height=.8,
10353              title/.append~ style={draw=none, fill=tableHeadingsBG},
10354              dfgTitleTopRule/.style={
10355                  title/.append~ style={
10356                      path~ picture={
10357                          \draw[draw=tableOuterLines,line~ width=2pt]
10358                              (path~ picture~ bounding~ box.north~ west) --
10359                              (path~ picture~ bounding~ box.north~ east);
10360                      }},
10361                  dfgTitleBottomRule/.style={
10362                      title/.append~ style={
10363                          path~ picture={
10364                              \draw[draw=tableOuterLines,line~ width=2pt]
10365                                  (path~ picture~ bounding~ box.south~ west) --
10366                                  (path~ picture~ bounding~ box.south~ east);
10367                          }},
10368                  dfgTitleBottomRightRule/.style={
10369                      title/.append~ style={
10370                          path~ picture={
10371                              \draw[draw=tableOuterLines,line~ width=2pt]
10372                                  (path~ picture~ bounding~ box.south~ west) --
10373                                  (path~ picture~ bounding~ box.south~ east);
10374                              \draw[draw=tableOuterLines,line~ width=2pt]
10375                                  (path~ picture~ bounding~ box.north~ east) --
10376                                  (path~ picture~ bounding~ box.south~ east);
10377                          }},
10378                  title~ label~ font={\bfseries\footnotesize\color{tableHeadingsFont}},
10379                  canvas/.style={
10380                      shape=rectangle,

```

```

10381     draw=none,
10382     fill=white,
10383     path~ picture={
10384         \draw[draw=tableOuterLines,line~ width=2pt]
10385             (path~ picture~ bounding~ box.north~ west) --
10386             (path~ picture~ bounding~ box.north~ east);
10387         \draw[draw=tableOuterLines,line~ width=2pt]
10388             (path~ picture~ bounding~ box.south~ west) --
10389             (path~ picture~ bounding~ box.south~ east);
10390     },
10391     x~ unit = \textwidth/16,
10392     y~ unit~ title=0.5cm,
10393     y~ unit~ chart=.5cm,
10394     vgrid={*1{tableLines,dashed}},
10395     %hgrid,
10396     % group label font=\bfseries\footnotesize,
10397     % milestone label font=\scriptsize,
10398     bar~ inline~ label~ node/.style={anchor=west},
10399     bar~ inline~ label~ anchor=west,
10400     bar~ label~ font={\scriptsize\color{tableHeadingsFont}},
10401     % title label font=\bfseries\scriptsize\color{white},
10402     % bar/.style={rounded~ corners=1mm},
10403     bar~ height=1,
10404     inline
10405     % NOTE: {1}{16} = 16 quarters = 5 years (2 + 4 + 4 + 4 + 2 quarters).
10406     % This is hardcoded. To adapt to a different funding period length,
10407     % update the ganttchart range, the \gantttitle blocks below,
10408     % and the fundingYears-related fields in the meta keyset.
10409     ]{1}{16}
10410     \gantttitle[dfgTitleTopRule]{\dfgFundingYear{1}}{2}
10411     \gantttitle[dfgTitleTopRule]{\dfgFundingYear{2}}{4}
10412     \gantttitle[dfgTitleTopRule]{\dfgFundingYear{3}}{4}
10413     \gantttitle[dfgTitleTopRule]{\dfgFundingYear{4}}{4}
10414     \gantttitle[dfgTitleTopRule]{\dfgFundingYear{5}}{2}\\
10415     %=====
10416     % \gantttitle{\crcTMPgantttShowQs{Q1}{1}}{1}
10417     % \gantttitle{\crcTMPgantttShowQs{Q2}{2}}{1}
10418     \gantttitle[dfgTitleBottomRule]{\dfgGanttShowQs{Q3}{1}}{1}
10419     \gantttitle[dfgTitleBottomRightRule]{\dfgGanttShowQs{Q4}{2}}{1}
10420     %=====
10421     \gantttitle[dfgTitleBottomRule]{\dfgGanttShowQs{Q1}{3}}{1}
10422     \gantttitle[dfgTitleBottomRule]{\dfgGanttShowQs{Q2}{4}}{1}
10423     \gantttitle[dfgTitleBottomRule]{\dfgGanttShowQs{Q3}{5}}{1}
10424     \gantttitle[dfgTitleBottomRightRule]{\dfgGanttShowQs{Q4}{6}}{1}
10425     % =====
10426     \gantttitle[dfgTitleBottomRule]{\dfgGanttShowQs{Q1}{7}}{1}
10427     \gantttitle[dfgTitleBottomRule]{\dfgGanttShowQs{Q2}{8}}{1}
10428     \gantttitle[dfgTitleBottomRule]{\dfgGanttShowQs{Q3}{9}}{1}
10429     \gantttitle[dfgTitleBottomRightRule]{\dfgGanttShowQs{Q4}{10}}{1}
10430     % =====
10431     \gantttitle[dfgTitleBottomRule]{\dfgGanttShowQs{Q1}{11}}{1}
10432     \gantttitle[dfgTitleBottomRule]{\dfgGanttShowQs{Q2}{12}}{1}
10433     \gantttitle[dfgTitleBottomRule]{\dfgGanttShowQs{Q3}{13}}{1}
10434     \gantttitle[dfgTitleBottomRightRule]{\dfgGanttShowQs{Q4}{14}}{1}
10435     % =====
10436     \gantttitle[dfgTitleBottomRule]{\dfgGanttShowQs{Q1}{15}}{1}
10437     \gantttitle[dfgTitleBottomRule]{\dfgGanttShowQs{Q2}{16}}{1}
10438     %\gantttitle{\dfgGanttShowQs{Q3}{19}}{1}
10439     %\gantttitle{\dfgGanttShowQs{Q4}{20}}{1}
10440     \\
10441     \dfgGanttContent{#1}
10442     \end{gantttchart}%
10443 }
10444 }

```

3.2.22 TOC entry and work-package helpers

`\dfgTOCprojectPart{<letter>}{<title>}` adds a bold chapter-level entry to the table of contents coloured in the project colour (projectA for letter A, etc.). Call it immediately before the project's `\chapter` command.

```
10445 \NewDocumentCommand{\dfgTOCprojectPart}{m O{Project~area} m}{
10446   % #1: project      (kann leer sein)
10447   % #2: pre-freetext (default: "Project area")
10448   % #3: free text    (kann leer sein)
10449   \bool_if:NF \l_@@_class_fastcompile_project_bool
10450   {
10451     \addtocentrydefault{chapter}
10452     { \tl_if_blank:NF {#1} { \texorpdfstring{\getProjectColor{#1}{#1}}{} } }
10453     {
10454       #2\c_space_tl
10455       \tl_if_blank:NF {#1} { \texorpdfstring{\getProjectColor{#1}{#1}}{#1} ~~~~ #3 }
10456     }
10457   }
10458 }
```

3.3 CV / Curriculum Vitae

The CV section produces structured curricula vitae in the DFG-prescribed format for each project leader. The same document class is used for both the integrated CV pages inside the main proposal and the standalone `crc-cv.tex` document (identified by `cv=true`).

Structure per PI:

- 1) `\dfgCVheader{<id>}` – chapter heading with name, academic title and (if present) a QR code linking to the PI's homepage.
- 2) `\dfgCVmandatory{<id>}` – qualification and career table built from all `cv` entries with `cv-type=mandatory`.
- 3) `\dfgCVoptional{<id>}` – the five supplementary sections (supplement, activities, supervision, distinction, other), each rendered only when at least one matching entry exists.
- 4) `\dfgCVpublications{<id>}` – the ten most important publications printed via biblatex; skippable with `skip10pub=true`.
- 5) `\dfgCVdataprivacy` – the mandatory GDPR data-privacy statement.

`\dfgCV{<id>}` is a convenience wrapper that calls all five steps in order and manages the bold-author activations around the publications.

Creating a boolean for detecting optional content (used to conditionally include the privacy statement when optional sections exist).

```
10459 \bool_new:N \l_@@_cvoptional_bool
```

3.3.1 CV commands

`\dfgCVheader` Renders the standardised CV heading for one PI. The chapter title uses a two-line format: the word “Curriculum Vitae” in the alternative font colour, followed by the PI's full name with academic title in bold. If the PI has a URL in the person database, a QR code linking to it is placed in the top-right margin on the first CV page via `\AddToHookNext{shipout/background}`. The QR code is omitted when the URL field is empty to avoid rendering an empty code.

```
10460 \bool_if:NT \l_@@_class_cv_bool {
10461   % multicol for TOC
10462   % https://tex.stackexchange.com/a/314046/98739
10463   \BeforeStartingTOC[toc]{\begin{multicols}{2}}%
10464   \AfterStartingTOC[toc]{\end{multicols}}
10465
10466   % no page number for chapters in TOC
10467   \RedeclareSectionCommands[
10468     tocraggedpagenumber,
10469     toclinefill=\tocpageseparator,
10470     tocindent=0em,
10471     tocnumwidth=0em,
10472     tocpagewidth=\tocpagewidth,%\tocgobble,% <- added
10473     tocpagewidthformat=\textsf,
10474   ]{chapter}
10475 }
10476
10477 \newcommand\dfgReduceSpace{\vspace*{-1.5\baselineskip}}
10478 \NewDocumentCommand{\dfgCVheader}{m}{%
10479   % #1: person-id
```

```

10480 \bool_set_false:N \l_@@_cvoptional_bool
10481
10482 % Single scan: pull all needed fields at once
10483 \getEntry*[person]{#1}{
10484   \theAcademicDegree = academicdegree,
10485   \theURLValue       = url,
10486   \theNameValue      = lastname,
10487   \theFirstNameValue = firstname,
10488   \CurrentPosition   = position,
10489   \CurrentPositionText = positionText
10490 }%
10491 \addchap[ {
10492   head={CV
10493     \texorpdfstring{\dfgShowTag{#1}{academicdegree}}{\theAcademicDegree}[person]}
10494     {\theAcademicDegree}\space
10495     \texorpdfstring{\dfgShowTag{#1}{firstname}}{\theFirstNameValue}[person]}
10496     {\theFirstNameValue}\space
10497     \texorpdfstring{\dfgShowTag{#1}{lastname}}{\theNameValue}[person]}
10498     {\theNameValue}},
10499   tocentry={
10500     \texorpdfstring{\dfgShowTag{#1}{lastname}}{\theNameValue}[person]}
10501     {\theNameValue}, \space
10502     \texorpdfstring{\dfgShowTag{#1}{firstname}}{\theFirstNameValue}[person]}
10503     {\theFirstNameValue}}}%
10504     {\normalsize\textcolor{color@font@alternative}{Curriculum \space Vitae}}\ [.5\baselineskip]
10505 \dfgShowTag{#1}{academicdegree}{\theAcademicDegree}[person]\ [.25\baselineskip]}
10506 \bfseries
10507   \dfgShowTag{#1}{firstname}{\theFirstNameValue}[person]\space
10508   \dfgShowTag{#1}{lastname}{\theNameValue}[person]
10509 }%
10510 %\pdfbookmark{CV~\theNameValue, ~~ \theFirstNameValue}{cv-#1}
10511
10512 % Printing the QR code only on one page next to the headline.
10513 \AddToHookNext{shipout/background}{%
10514   \DTLifnulloreempty{\theURLValue}
10515   {}
10516   {\put(\pagewidth-\marginparwidth,-.05\paperheight){%
10517     \dfgShowTag{#1}{url}{\qrcode[link,height=1.5cm]{\theURLValue}}[person]}}%
10518 }
10519
10520 \begin{tblr}[
10521   theme =main,
10522   long
10523 ]{
10524   colspec={X[t]X[4,t]},
10525   % $column{2}={font=\bfseries},
10526   columns={halign=l},
10527   row{odd}={bg=white},
10528   row{even}={bg=white},
10529   row{1}={font=\footnotesize\bfseries\sffamily,
10530     bg=tableHeadingsBG,
10531     fg=tableHeadingsFont}
10532 }
10533   Personal~ Data &
10534   Title & \dfgShowTag{#1}{academicdegree}{\theAcademicDegree}[person]
10535   First~ name & \dfgShowTag{#1}{firstname}{\theFirstNameValue}[person]
10536   Name & \dfgShowTag{#1}{lastname}{\theNameValue}[person]
10537   Current~ position &
10538   \ifdefempty{\CurrentPositionText}
10539     {\dfgShowTag{#1}{position}{\dfgCategoryName{\CurrentPosition}}[person]}
10540     {\dfgShowTag{#1}{positionText}{\CurrentPositionText}[person]}
10541     \\
10542     {Current~ institution(s)/\ site(s),~ country} & {\dfgInstitutionList{#1}} & \\
10543     ORCID & \getORCID{#1}
10544 \end{tblr}
10545 \dfgReduceSpace

```

10546 }

The next section is about Qualifications and Career.

```
10547 \NewDocumentCommand{\dfgCVmandatory}{ m }{%
10548   % #1: person-id
10549   \DTLsortdata{cv-#1}
10550   {
10551     periodStart = {descending=true},
10552     periodEnd   = {descending=true},
10553     position    = {ascending=true}
10554   }
10555
10556   \group_begin:
10557   \def\tblrbody{}
10558
10559   % Build the institution-name prop on first use (shared with ProjectsTable)
10560   \@_proj_pi_build:
10561
10562   % Single scan over person table for the three fields shown above
10563   \getEntry*[person]{#1}{
10564     \theDegreeProgramme = degree-programme,
10565     \theDoctorateYear   = doctorateYear,
10566     \theDoctorate       = doctorate
10567   }%
10568
10569   \DTLforeach*[
10570     \DTLiseq{\dfgrefpersonid}{#1}
10571     \and
10572     \DTLiseq{\dfgtype}{mandatory}
10573   ]{cv-#1}{%
10574     \dfgrefpersonid      = ref-person-id,
10575     \dfgtype             = type,
10576     \dfgyearstart       = periodStart,
10577     \dfgyearend         = periodEnd,
10578     \dfgpositionText    = positionText,
10579     \dfgposition        = position,
10580     \dfgrefinstitutionid = ref-institution-id,
10581     \dfgdescription     = description
10582   }{%
10583     % Hash lookup instead of two \DTLgetvalueforkey calls
10584     \prop_get:NVNTF \g_@@_inst_narrow_prop \dfgrefinstitutionid \theInstAffName
10585     {}
10586     { \tl_clear:N \theInstAffName }%
10587
10588     \protected@edef\tblrbody{\tblrbody
10589       \ifdefempty{\dfgyearend}
10590         {since\space\dfgShowTag{#1}{periodStart}{\dfgyearstart}[cv-#1]}
10591         {\str_if_eq:eeTF { \dfgyearstart } { \dfgyearend }
10592          { \dfgShowTag{#1}{periodStart}{\dfgyearstart}[cv-#1] }
10593          { \dfgShowTag{#1}{periodStart}{\dfgyearstart}[cv-#1]--
10594            \dfgShowTag{#1}{periodEnd}{\dfgyearend}[cv-#1] }}
10595       \ifdefempty{\dfgposition}
10596     {}{: \space\dfgShowTag{#1}{position}{\dfgposition}[cv-#1]}
10597       &
10598     {\dfgShowTag{#1}{positionText}{\dfgpositionText}[cv-#1]
10599       \ifdefempty{\theInstAffName}{}{: \space\theInstAffName}%
10600       \ifdefempty{\dfgdescription}{}
10601         {\textit{\dfgShowTag{#1}{description}{\dfgdescription}[cv-#1]}}%
10602       }
10603       \\
10604     }%
10605   }
10606
10607   \begin{tblr}[
10608     theme = main,
10609     expand = \tblrbody,
10610     long
```

```

10611     ]{
10612         colspec = {X[.7,t]X[4,t]},
10613         columns = {halign=l},
10614         row{odd}={bg=white},
10615         row{even}={bg=white},
10616         row{1}={font=\footnotesize\bfseries\sffamily,
10617                 bg=tableHeadingsBG,
10618                 fg=tableHeadingsFont}
10619     }
10620     \SetCell[c=2]{1}{Qualifications~ and~ Career} & \\\
10621     \SetRow{tableHeadingsBGalt, font=\footnotesize\bfseries, halign=l}%
10622     Stages & Periods~ and~ Details \\\
10623     {Degree\\programme} & \dfgShowTag{#1}{degree-programme}{\theDegreeProgramme}[person] \\\
10624     Doctorate & \dfgShowTag{#1}{doctorateYear}{\theDoctorateYear}[person] \space
10625                 \dfgShowTag{#1}{doctorate}{\theDoctorate}[person] \\\
10626     \SetHline{-}{tableOuterLines, .5pt}%
10627     % \SetRow{tableHeadingsBGalt}%
10628     % \SetCell{font=\footnotesize\bfseries, halign=l}%
10629     % Stages~ of~ academic/professional~ career & \\\
10630     \tblrbody
10631 \end{tblr}
10632 \group_end:
10633 \dfgReduceSpace
10634 }

```

The next section is about Supplementary Career Information, or Activities in the Research System or Supervision of Researchers in Early Career Phases since they all are technically the same.

```

10635 \NewDocumentCommand{\dfgCVOptional}{ m m m }{%
10636     \def\tblrbody{
10637         \DTLforeach*[
10638             \DTLlseq{\dfgrefpersonid}{#1}
10639             \and
10640             \DTLlseq{\dfgtype}{#2}
10641         ]{cv-#1}{%
10642             \dfgrefpersonid      = ref-person-id,
10643             \dfgtype              = type,
10644             \dfgyearstart        = periodStart,
10645             \dfgyearend          = periodEnd,
10646             \dfgpositionText     = positionText,
10647             \dfgposition          = position,
10648             \dfgrefinstitutionid = ref-institution-id,
10649             \dfgdescription       = description
10650         }{%
10651             % datatool represents an absent value in a numeric column by its null
10652             % sentinel, which expands like zero in this context. Normalise those
10653             % sentinels before testing the optional period fields; description-only
10654             % CV entries must not acquire a spurious ``0'' in the first column.
10655             \DTLifnulloreempty{\dfgyearstart}{\def\dfgyearstart{}}{}
10656             \DTLifnulloreempty{\dfgyearend}{\def\dfgyearend{}}{}
10657             \bool_lazy_and:nnTF
10658                 { \tl_if_empty_p:V \dfgyearstart }
10659                 { \tl_if_empty_p:V \dfgyearend }
10660             {%
10661             \protected@edef\tblrbody{\tblrbody
10662                 \SetCell[c=2]{1, wd=\dimexpr\textwidth-12pt\relax}
10663                 {\dfgShowTag{#1}{description}{\dfgdescription}[cv-#1]} & \\\
10664             }%
10665             }
10666             {%
10667             \protected@edef\tblrbody{\tblrbody
10668                 \ifdefempty{\dfgyearstart}
10669                 {
10670                     \ifdefempty{\dfgyearend}
10671                     {}
10672                     {\dfgShowTag{#1}{periodEnd}{\dfgyearend}[cv-#1] \space}
10673                 }
10674                 {

```

```

10675         \ifdefempty{\dfgyearend}
10676         {since\space\dfgShowTag{#1}{periodStart}{\dfgyearstart}[cv-#1]\space}
10677         {
10678             \str_if_eq:eeTF { \dfgyearstart } { \dfgyearend }
10679             { \dfgShowTag{#1}{periodStart}{\dfgyearstart}[cv-#1] }
10680             { \dfgShowTag{#1}{periodStart}{\dfgyearstart}[cv-#1]--
10681               \dfgShowTag{#1}{periodEnd}{\dfgyearend}[cv-#1] }
10682             \space
10683         }
10684     }
10685     &
10686     \dfgShowTag{#1}{description}{\dfgdescription}[cv-#1]
10687     \\
10688 }%
10689 }%
10690 }%
10691
10692 \ifdefempty{\tblrbody}{}{%
10693 \begin{tblr}[
10694     theme = main,
10695     expand = \tblrbody,
10696     long
10697     ]{
10698         %rowsep=3pt,
10699         width = \textwidth,
10700         colspec = {X[0.7,t]X[4,t]},
10701         columns = {halign=l},
10702         row{odd}={bg=white},
10703         row{even}={bg=white},
10704         row{1}={font=\footnotesize\bfseries\sffamily,
10705                 bg=tableHeadingsBG,
10706                 fg=tableHeadingsFont}
10707     }
10708     \SetCell[c=2]{1}{#3} & \\*
10709     \tblrbody
10710 \end{tblr}
10711 \bool_set_true:N \l_@@_cvoptional_bool
10712 \dfgReduceSpace
10713 }%
10714 }

```

For the publications we define a custom bibliography template that is enumerating the items as required.

```

10715 \newlist{DFGlist}{enumerate}{1}
10716 \setlist[DFGlist]{leftmargin=*}
10717 \setlist[DFGlist,1]{
10718     % font=\bfseries,
10719     % first=\bfseries,
10720     % after=\normalfont,
10721     % itemsep=.5\baselineskip,
10722     % wide,
10723     label={\bfseries\arabic*},
10724     nosep
10725 }

```

Further on we apply this to the bibliography environment.

```

10726 \defbibenvironment{DFGlist}
10727 {\begin{DFGlist}\RaggedRight}
10728 {\end{DFGlist}}
10729 {\item}

```

The next section combines everything and wraps it. To have a reference listed in this section you have to write into the

```

10730 \defbibheading{categoryA}{%
10731     \par
10732     \begin{tblr}[ theme=main, long ]{
10733         rowhead = 0,
10734         colspec = {X[1,t]},
10735         row{odd}={bg=white},

```

```

10736     row{even}={bg=white},
10737     %hline{1,2,Z} = {0pt},
10738     row{1}={font=\footnotesize\bfseries\sffamily,
10739             bg=tableHeadingsBG,
10740             halign=l,
10741             fg=tableHeadingsFont},
10742     row{2} = {%bg=tableHeadingsBGalt, fg=tableHeadingsFont,
10743             font=\footnotesize\sffamily, halign=l, valign=t, guard},
10744     }Scientific~ results \\*
10745     Category~ A~ --- Articles~ in~ peer-reviewed~ journals,~
10746     contributions~ to~ peer-reviewed~ conferences~ or~ to~
10747     anthology~ volumes,~ and~ book~ publications          \\
10748     \end{tblr}
10749     \vspace*{-1.5\baselineskip}
10750 }
10751
10752 \defbibheading{categoryB}{%
10753     \par
10754     \begin{tblr}[ theme=main, long ]{
10755         rowhead = 0,
10756         colspec = {X[1,t]},
10757         row{odd}={bg=white},
10758         row{even}={bg=white},
10759         %hline{1,2,Z} = {0pt},
10760         row{1}={font=\footnotesize\bfseries\sffamily,
10761                 bg=tableHeadingsBG,
10762                 halign=l,
10763                 fg=tableHeadingsFont},
10764         row{2} = {%bg=tableHeadingsBGalt, fg=tableHeadingsFont,
10765                 font=\footnotesize\sffamily, halign=l, valign=t, guard},
10766         }Scientific~ results \\*
10767         Category~ B~ --- Any~ other~ form~ of~ published~ results \\
10768     \end{tblr}
10769     \vspace*{-1.5\baselineskip}
10770 }
10771
10772 \NewDocumentCommand{\dfgCVpublications}{ m }{%
10773     % #1: person-id
10774     \bool_if:NTF \l_@@_class_skipTENpublications_bool
10775     {%
10776         \par
10777         \group_begin: \ttfamily
10778         Publication~ section~ for~ \getFullName{#1}~ omitted~
10779         for~ faster~ compilation.\\
10780         To~ enable~ the~ 10~ most~ important~ publications,~
10781         go~ to~ the~ documentclass~ options\\ and~ state~
10782         '\textbf{skip10pub=false}'.
10783         \group_end:
10784     }{%
10785         \tl_gset:Nn \g_@@_current_pi_tl {#1}
10786         \newrefcontext[sorting=ydnt]
10787         \nocite{*}%
10788         \datatool_if_has_key:nnT { person } { name-alias }
10789         {
10790             \DTLgetvalueforkey { \theAliases } { name-alias } { person } { id } { #1 }
10791             \DTLifnulloreempty { \theAliases }
10792             { }
10793             { \exp_args:No \addboldnames { \theAliases } }
10794         }
10795
10796         \renewcommand*{\bibfont}{\footnotesize}%
10797
10798         \printbibliography[
10799             env          = DFGList,
10800             resetnumbers,
10801             keyword      = {#1-A},

```

```

10802     heading      = categoryA
10803   ]
10804   \printbibliography[
10805     env            = DFGList,
10806     resetnumbers,
10807     keyword        = {#1-B},
10808     heading        = categoryB
10809   ]
10810
10811   \endrefcontext
10812   \resetboldnames
10813   \tl_gclear:N \g_@@_current_pi_tl
10814 }%
10815 }
10816
10817 \tl_new:N \g_@@_current_pi_tl

```

`\ifIDequal` Conditional macro for use inside .bib files. Inside an addendum field, write `\ifIDequal{pi-id}{text}`; the text is only emitted when the bibliography is being rendered for that PI.

The current PI is held in `\g_@@_current_pi_tl`, which is set by `\dfgCVpublications` before each `\printbibliography` call.

The implementation deliberately uses classic L^AT_EX primitives (`\edef`, `\ifx`, `\csname`) rather than `expl3`, because `\ifIDequal` is invoked from inside a bibl_{at}ex-rendered bibliography where `\ExplSyntaxOff` is in effect. Wrapping the variable lookup in `\csname... \endcsname` makes the name resolve correctly regardless of catcode state.

```

10818 \DeclareFieldFormat{addendum}{\mkbibitalic{#1}}
10819 \ExplSyntaxOff
10820 \protected\long\def\ifIDequal#1#2{%
10821   \if\relax\detokenize{#2}\relax
10822     % #2 is empty: do nothing
10823   \else
10824     \begingroup
10825       \edef\dfg@tempa{#1}%
10826       \edef\dfg@tempb{\csname g_@@_current_pi_tl\endcsname}%
10827       \ifx\dfg@tempa\dfg@tempb
10828         \endgroup \par\textcolor{color@font@alternative}{#2}%
10829       \else
10830         \endgroup
10831       \fi
10832   \fi
10833 }
10834 \ExplSyntaxOn

```

After each section - especially when any content was written for the optional parts, a data privacy is needed. We only need this section if there has been optional text before. We find this out by checking the `bool`.

```

10835 \ExplSyntaxOff
10836 \NewDocumentCommand{\dfgCVdataprivacy}{ m }{%
10837   \begin{tblr}{%
10838     theme    =main,
10839     long
10840   }{%
10841     colspec = {
10842       X[-1,t]
10843       X[10,t]
10844     },
10845     rows = {bg=white},
10846     row{2-Z}={font=\scriptsize},
10847     row{1}={font=\footnotesize\bfseries\sffamily,
10848             halign=l,
10849             bg=tableHeadingsBG,
10850             fg=tableHeadingsFont},
10851   }
10852   \SetCell[c=2]{1}
10853   Data protection and consent to the processing of optional data & \\\
10854   \SetCell{font=\large}\ding{55} & I (\getFullName*{#1}) expressly consent
10855     to the processing of the voluntary

```

```

10856 (optional) information, including "special categories of personal data" in
10857 connection with the DFG's review and decision-making process regarding my
10858 proposal. This also includes forwarding my data to the external reviewers,
10859 committee members and, where applicable, foreign partner organisations who
10860 are involved in the decision-making process. To the extent that these
10861 recipients are located in a third country (outside the European Economic
10862 Area), I additionally consent to them being granted access to my data for
10863 the above-mentioned purposes, even though a level of data protection
10864 comparable to EU law may not be guaranteed. For this reason, compliance with
10865 the data protection principles of EU law is not guaranteed in such cases. In
10866 this respect, there may be a violation of my fundamental rights and freedoms
10867 and resulting damages. This may make it more difficult for me to assert my
10868 rights under the General Data Protection Regulation (e.g.\ information,
10869 rectification, erasure, compensation) and, if necessary, to enforce these
10870 rights with the help of authorities or in court. \\[2pt]
10871 & I may \emph{revoke} my consent in whole or in part at any time - with effect for the
10872 future, freely and without giving reasons - vis-à-vis the DFG
10873 (\href{mailto:postmaster@dfg.de}{postmaster@dfg.de}). The lawfulness of the
10874 processing carried out up to that point remains unaffected. Insofar as I
10875 transmit \enquote{special categories of personal data} relating to third
10876 parties, I confirm that the necessary legitimation under data protection law
10877 exists (e.g.\ based on consent). \\[2pt]
10878 & I have taken note of the DFG's Data Protection Notice relating to research
10879 funding, which I can access at \url{www.dfg.de/privacy_policy} and I will forward it
10880 to such persons whose data the DFG processes as a result of being mentioned in
10881 this CV.
10882 \end{tblr}
10883 }
10884 \ExplSyntaxOn

```

We wrap everything into one command.

```

10885 \NewDocumentCommand{\dfgCV}{ m }{%
10886   % #1: person-id
10887   \bool_if:NF \l_@@_class_fastcompile_project_bool
10888   {
10889     \DTLifdbexists{cv-#1}{
10890       \StartTimer\dfgCVheader{#1}\StopTimer{#1:dfgCVheader}
10891       \StartTimer\dfgCVmandatory{#1}\StopTimer{#1:dfgCVmandatory}
10892       \StartTimer\dfgCVoptional{#1}{supplementary}{Supplementary~ Career~ Information}\StopTimer{#1:dfgCVoptional|supplementary}
10893       \StartTimer\dfgCVoptional{#1}{activities}{Activities~ in~ the~ Research~ System}\StopTimer{#1:dfgCVoptional|activities}
10894       \StartTimer\dfgCVoptional{#1}{supervision}{Supervision~ of~ Researchers~ in~ Early~ Career~ Ph}\StopTimer{#1:dfgCVoptional|supervision}
10895       \StartTimer \dfgCVpublications{#1}\StopTimer{#1: dfgCVpublications}
10896       \StartTimer\dfgCVoptional{#1}{distinction}{Academic~ Distinctions}\StopTimer{#1:dfgCVoptional|distinction}
10897       \StartTimer\dfgCVoptional{#1}{other}{Other~ Information}\StopTimer{#1:dfgCVoptional|other}
10898     }
10899     % We check for the bool at this place because we dont have to enable
10900     % \LaTeX3-Syntax within the command which would require to put |~| at each space.
10901     \bool_if:NT \l_@@_cvoptional_bool {
10902       \StartTimer \dfgCVdataprivacy{#1} \StopTimer{#1:dfgCVdataprivacy}
10903     }
10904   }
10905   {\msg_warning:nne { dfg } { database-not-found }{ cv-#1 }}
10906 }
10907 }

```

The CV should be printed automatically for all persons with the role PI.

```

10908 \NewDocumentCommand{\dfgCVsection}{ O{person} }{%
10909   \bool_if:NF \l_@@_class_fastcompile_project_bool
10910   {
10911     \DTLifdbexists{#1}{%
10912       \DTLsort*{lastname,firstname}{#1}%
10913       \DTLforeach*[%start of conditions
10914         \DTLisinlist{\theFundingPeriodNumeral}{\period}% 1st condition
10915         \and%
10916         \DTLisinlist{PI}{\role}% 2nd condition
10917       ]{#1}{%
10918         \id
10919         =id,

```

```

10919     \period           =period,
10920     \role              =role%
10921   }{%
10922   \exp_args:Ne \dfgCV { \id }
10923   }
10924 }{
10925   Database \texttt{#1} missing.
10926   \msg_warning:nne { dfg } { database-not-found }{ #1 }
10927   }%
10928   }
10929 }

```

Finally we load the metadata and customization provided by the user. In case a file is missing a message will be displayed to inform the user.

```

10930 \NewDocumentCommand{\checkFile}{m}{%
10931   \StartTimer
10932   \file_if_exist:NTF {#1}
10933   {\ExplSyntaxOff\input{#1}\ExplSyntaxOn}
10934   {\msg_warning:nne { dfg } { file-not-found }{#1}}%
10935   \StopTimer{checkFile:#1}
10936 }

```

There are at least some file we need or should consider checking.

```

10937 \bool_if:NF \l_@@_class_fastcompile_project_bool
10938 {
10939   \checkFile{metadata/dfg-metadata.tex}
10940   \bool_if:NTF \l_@@_class_cv_bool
10941   { \checkFile{metadata/dfg-metadata-cv.tex} }
10942   { \msg_warning:nnn { dfg } { cv-entry-omitted }
10943     {metadata/dfg-metadata-cv.tex} }
10944   \bool_if:NF \l_@@_class_cv_bool
10945   { \checkFile{metadata/dfg-metadata-tables.tex} }
10946 }

```

This is a gimmick but quite fun to experiment with. This is taken from <https://tex.stackexchange.com/a/732406/98739>. Note that the message is written into the .log-file, not in the terminal.

```

10947 \def\dfgFinalComment{Well~ done~ coding!~ Happy~ TeXing.}
10948 \directlua{
10949   luatexbase.add_to_callback('wrapup_run',
10950   function ()
10951     f=io.open("\jobname.log", "a")
10952     f:write("\dfgFinalComment")
10953     f:close()
10954   end,
10955   "final message"
10956   )
10957 }

```

3.4 Main file

In this section we provide a skeleton of files to be used as a starting point for your proposal. You can adjust the content anytime. The following code block leads to a strange behaviour and in a table are ignored, it can be fixed with a minipage around the table.

```

10958 % \DocumentMetadata{
10959 %   pdfstandard=A-2b,
10960 %   lang=en-EN,
10961 %   % tagging=structure,
10962 %   % uncompress
10963 % }
10964 \documentclass[
10965   showtags           =true,
10966   showtags-tables    =false,
10967   showmarginalia     =true,
10968   % fastcompile       =true,
10969   % fastcompile-project =true,
10970   % fastcompile-project-show-images=true,
10971   % fastcompile-project-show-publications=false,

```

```

10972 % skip10pub      =true,
10973 % colorscheme     =rgb,
10974 % final           =true,
10975 english % <-- needed here
10976 ]{dfg-crc}

```

We use `includeonly` for the case to compile only one, two or n-many chapters. This speeds up the compiling time in case you are working mainly and currently on one specific chapter.

```

10977 %% % \includeonly{
10978 %% %   content/01_general-information,
10979 %% %   content/02_existing-funds-and-requested-funds,
10980 %% %   content/03_project,
10981 %% %   content/04_bylaws-of-the-crc,
10982 %% %   content/05_declarations
10983 %% %}
10984 \begin{document}
10985 \dfgIfFastCompileProjectF{\input{content/00_titlepage}}
10986 \include{content/01_general-information}
10987 \include{content/02_existing-funds-and-requested-funds}
10988 \include{content/03_project}
10989 \include{content/04_bylaws-of-the-crc}
10990 \include{content/05_declarations}
10991 \include{content/99_backmatter}
10992 \end{document}

```

3.5 Bibliography Files

There are at least two bibliography files in the folder `bib/`. One is for the common `bibtex`-entries, the others contain so called strings.

3.5.1 Main Bibliography File

```

10993 @Article{FAIR2016,
10994   Author       = {Wilkinson, Mark D. and others},
10995   Title        = {The {FAIR} Guiding Principles for scientific data management and stewardship},
10996   JournalTitle = {Scientific Data},
10997   Date         = {2016-12},
10998   DOI          = {10.1038/sdata.2016.18},
10999   Keywords     = {{FAIR}},
11000   langid       = {english},
11001   Number       = {1},
11002   Pages        = {160018},
11003   ShortJournal = {Sci Data},
11004   URLDate      = {2021-05-31},
11005   Volume       = {3}
11006 }

```

3.5.2 Bibliography Strings

The strings are used for quick and consistent referencing parts repeatedly.

```

11007 @String {equal      = {\textit{*equal contribution}}}
11008 @String {sharedlast = {\textit{*shared last authorship}}}

```

3.6 Customization File

In the file `preamble/dfg-customization.tex` you can adjust settings of this template. Further information you find in 2.6. If you want to create new commands put them in this file as well.

```

11009 % \title{<Title>}
11010 % \subtitle{<Subtitle>}
11011 %% \changeSettings{
11012 %% font                =<nn>,
11013 %% crcLogoPath         =<file path>,
11014 %% affiliationLogoPath =<file path>,
11015 %% doiAPIMail          =<contact email for optional DOI API lookup>,
11016 %% projectPIOOncePerSection =true,
11017 %% salary@prof         =123600,
11018 %% salary@groupLeader  =102300,
11019 %% salary@postDoc      =88200,
11020 %% salary@medDoc       =111000,

```

```

11021 %% salary@PhD =81600,
11022 %% salary@research =67200,
11023 %% salary@nonResearch =60000,
11024 %% salary@student =1,
11025 %% salary@assistant =1,
11026 %% animalHousing@mouse =0.75,
11027 %% animalHousing@mouseGnotobiotic=3.9,
11028 %% animalHousing@rat =1.4,
11029 %% thumbindex =true,
11030 %% thumbindex@pattern =<int>,
11031 %% boldnamesinbib =false,
11032 %% biblalexstyleCV =<nn>,
11033 %% biblalexstyleFeatureCV ={<nn>, <nn>},
11034 %% biblalexstyleProposal =<nn>,
11035 %% biblalexstyleFeatureProposal={<nn>, <nn>},
11036 %%%% color section %%%%
11037 %% color@reference@boldAuthors =<nn>,
11038 %% color@table@headingsBG =<nn>,
11039 %% color@table@headingsBGalt =<nn>,
11040 %% color@table@headingsFont =<nn>,
11041 %% color@table@rows =<nn>,
11042 %% color@table@lines =<nn>,
11043 %% color@table@outerLines =<nn>,
11044 %% color@table@noValue =<nn>,
11045 %% color@table@firstColumn =<nn>,
11046 %% color@table@link =<nn>,
11047 %% color@table@contFootHead =<nn>,
11048 %% color@table@caption =<nn>,
11049 %% color@gantt@frame =<nn>,
11050 %% color@gantt@default =<nn>,
11051 %% color@gantt@crosshatch =<nn>,
11052 %% color@gantt@important =<nn>,
11053 %% color@gantt@stripe-one =<nn>,
11054 %% color@gantt@stripe-two =<nn>,
11055 %% color@thumbindex@bg =<nn>,
11056 %% color@thumbindex@font =<nn>,
11057 %% color@tags@font =<nn>,
11058 %% color@tags@line =<nn>,
11059 %% color@font@alternative =<nn>,
11060 %% color@item@i =<nn>,
11061 %% }

```

3.7 DFG salary and animal-housing defaults

The DFG specifies standardised all-in salary costs (*Personalmittel*) per position category for the current funding year. These constants are used in the requested-funding staff tables to calculate yearly personnel costs from FTE counts.

The values are updated annually and published by the DFG. Their canonical defaults are keys in the `dfg/custom` key family. Override them together with the other proposal settings in `dfg-customization.tex`:

Overriding salary and animal-housing rates

```

% \changeSettings{
%   salary@postDoc = 90000,
%   animalHousing@mouse = 0.80,
% }
%

```

Source: <https://www.dfg.de/resource/blob/345094/31cd4b597ee7a1fc711a8f2566010783/60-12-2025-de.pdf> (status: 2026-01)

The expandable `\dfgSalaryProf`, `\dfgSalaryGroupLeader`, `\dfgSalaryPostDoc`, `\dfgSalaryMedDoc`, `\dfgSalaryPhD`, `\dfgSalaryResearch`, `\dfgSalaryNonResearch`, `\dfgSalaryStudent`, `\dfgSalaryAssistant`, `\dfgMouseHousing`, `\dfgMouseHousingGnotobiotic`, and `\dfgRatHousing` accessors remain available for compatibility. They expand to the corresponding setting.

3.8 Metadata File

The file `metadata/dfg-metadata.tex` provides all or at least most of the meta information needed for the proposal. Especially put all entries of person, affiliation, institution and meta (the proposal title etc.) in here. For an explanation how to use and fill the fields see 2.4.

```
11062 \addEntry{meta}{
11063     id                = {crc}, %<--- id (do not change)
11064     name               = {Mechanisms of Host--Microbiome Communication},
11065     nameAddon          = {From Molecular Interactions to Organ Function},
11066     number             = {9999},
11067     fundingPeriodNumeral = {3}, % 1|2|3
11068     ref-affiliation-id  = {aff1}, % or {aff1,aff2} for two applicants
11069     fundedSince        = {2019-07-01},
11070     fundingYears       = {2027|2,2028,2029,2030,2031|1},
11071     fundingYearsPrevious = {2022|2,2023,2024,2025,2026|1}
11072 }
11073
11074 \addEntry{institution}{
11075     id                = {ins1},
11076     name              = {Institute of Microbial Systems Medicine},
11077     abbreviation      = {IMSM},
11078     ref-affiliation-id = {aff1}
11079 }
11080
11081 \addEntry{institution}{
11082     id                = {ins2},
11083     name              = {Department of Translational Biosciences},
11084     abbreviation      = {DTB},
11085     ref-affiliation-id = {aff2}
11086 }
11087
11088
11089 \addEntry{affiliation}{
11090     id                = {aff1},
11091     name              = {Example University},
11092     abbreviation      = {EU},
11093     addressStreet     = {University Avenue 1},
11094     addressZIP        = {12345},
11095     location          = {Example City},
11096     country           = {Germany}
11097 }
11098
11099 \addEntry{affiliation}{
11100     id                = {aff2},
11101     name              = {Partner University},
11102     abbreviation      = {PU},
11103     addressStreet     = {Research Road 2},
11104     addressZIP        = {54321},
11105     location          = {Partner City},
11106     country           = {Germany}
11107 }
11108
11109 \addEntry{person}{
11110     id                = {per1},
11111     firstname         = {Kim},
11112     lastname          = {Muster},
11113     academicdegree    = {Prof. Dr. rer. nat.},
11114     period            = {1,2,3},
11115     role              = {PI},
11116     gender            = {d},
11117     ref-institution-id = {ins1,ins2},
11118     ref-project-id    = {A01,A02},
11119     name-alias        = {
11120         {Kim Muster},
11121         {Muster, Kim S.}
11122     },
```

```

11123   orcid                = {0000-0000-0000-0001},
11124   doctorateYear         = {2000},
11125   doctorate             = {Dr. rer. nat., Example University},
11126   degree-programme     = {Biology, Example University},
11127   position              = {prof-W3},
11128   positionText          = {Professor and Director},
11129   url                   = {https://www.example.org/kim-muster},
11130   phone                 = {+49 000 100-1000},
11131   email                 = {kim.muster@example.org},
11132   contract-information = {
11133       C1 = {no},
11134       C2 = {yes},
11135       C2a = {2028-12-31},
11136       C2b = {2029-01-03},
11137       C3 = {yes},
11138       C3a = {2054-03-10},
11139       C4 = {no},
11140       C4a = {DFG}
11141   }
11142 }
11143
11144 \addEntry{person}{
11145   id                = {per2},
11146   period            = {2,3},
11147   firstname         = {Alex},
11148   lastname          = {Example},
11149   academicdegree    = {Prof. Dr. phil.},
11150   position          = {groupLeader},
11151   positionText      = {Research group leader},
11152   role              = {PI,steering-committee-member},
11153   doctorateYear     = {1999},
11154   doctorate         = {Dr. phil., Partner University},
11155   degree-programme = {Data Science, Partner University},
11156   gender            = {m},
11157   ref-institution-id = {ins2},
11158   ref-project-id    = {A01,B01,Q01,Q02},
11159   orcid             = {0000-0000-0000-0002},
11160   phone            = {+49 000 200-2000},
11161   email            = {alex.example@example.org},
11162   contract-information = {
11163       C1 = {no},
11164       C2 = {no},
11165       C2a = {},
11166       C2b = {},
11167       C3 = {no},
11168       C3a = {},
11169       C4 = {yes},
11170       C4a = {BMFTR}
11171   }
11172 }
11173
11174 \addEntry{person}{
11175   id                = {per3},
11176   period            = {2,3},
11177   firstname         = {Hansi},
11178   lastname          = {Meier},
11179   academicdegree    = {Dr. rer. nat.},
11180   position          = {postDoc},
11181   positionText      = {Senior research scientist},
11182   role              = {PI,steering-committee-member},
11183   doctorateYear     = {1999},
11184   doctorate         = {Dr. rer. nat., Partner University},
11185   degree-programme = {Microbiology, Partner University},
11186   gender            = {f},
11187   ref-institution-id = {ins2},
11188   ref-project-id    = {B01,Q03},

```

```

11189   orcid                = {0000-0000-0000-0003},
11190   phone                 = {+49 000 200-3000},
11191   email                 = {hansi.meier@example.org},
11192   contract-information = {
11193       C1 = {yes},
11194       C2 = {no},
11195       C2a = {},
11196       C2b = {},
11197       C3 = {no},
11198       C3a = {},
11199       C4 = {yes},
11200       C4a = {DFG}
11201   }
11202 }
11203
11204 \addEntry{person}{
11205     id                = {per4},
11206     period            = {2,3},
11207     firstname         = {Kimmi},
11208     lastname          = {Müller},
11209     academicdegree    = {Prof. Dr. rer. nat.},
11210     position          = {prof-W2},
11211     positionText      = {Professor of Molecular Medicine},
11212     role              = {PI},
11213     doctorateYear     = {1999},
11214     doctorate         = {Dr. rer. nat., Partner University},
11215     degree-programme = {Molecular Medicine, Partner University},
11216     gender            = {f},
11217     ref-institution-id = {ins2},
11218     ref-project-id    = {B02},
11219     orcid              = {0000-0000-0000-0004},
11220     phone             = {+49 000 200-4000},
11221     email             = {kimmi.mueller@example.org},
11222     contract-information = {
11223         C1 = {yes},
11224         C2 = {no},
11225         C2a = {},
11226         C2b = {},
11227         C3 = {no},
11228         C3a = {},
11229         C4 = {yes},
11230         C4a = {DFG}
11231     }
11232 }
11233
11234 \addEntry{person}{
11235     id                = {per5},
11236     period            = {3},
11237     firstname         = {Friedhelm},
11238     lastname          = {Redata},
11239     academicdegree    = {Prof. Dr.-Ing.},
11240     orcid              = {0000-0000-0000-0005},
11241     position          = {prof-W2},
11242     positionText      = {Professor of Research Training},
11243     role              = {PI, steering-committee-member},
11244     doctorateYear     = {1998},
11245     doctorate         = {Dr.-Ing., Example University},
11246     degree-programme = {Biomedical Engineering, Example University},
11247     gender            = {m},
11248     ref-institution-id = {ins1},
11249     ref-project-id    = {Q02},
11250     phone             = {+49 000 100-5000},
11251     email             = {friedhelm.redata@example.org},
11252     contract-information = {
11253         C1 = {yes},
11254         C2 = {yes},

```

```

11255     C2a = {2028-12-31},
11256     C2b = {2029-01-03},
11257     C3  = {yes},
11258     C3a = {2054-03-10},
11259     C4  = {no},
11260     C4a = {DFG}
11261   }
11262 }
11263
11264
11265 \addEntry{project}{
11266   id           = {A01},
11267   project-area = {A},
11268   number       = {A01},
11269   project-status = {C},
11270   consider-for-lists = {true},
11271   reference-only = {false},
11272   name         = {Microbial signalling across epithelial barriers},
11273   project-type  = {research},
11274   research-area = {2.21-02},
11275   ref-person-id = {perl,per2},
11276   collaborations = {A02,B01,B02,Q01},
11277   legal-issues  = {
11278     L1 = no,
11279     L1a = no,
11280     L2 = no,
11281     L2a = no,
11282     L3 = no,
11283     L4 = no,
11284     L5 = no,
11285     L5a = no,
11286     L6 = no,
11287     L7 = no,
11288     L7a = no
11289   }
11290 }
11291 \addEntry{project}{
11292   id           = {A02},
11293   project-area = {A},
11294   number       = {A02},
11295   project-status = {N},
11296   consider-for-lists = {true},
11297   reference-only = {false},
11298   project-type  = {research},
11299   name         = {Metabolic control of tissue-resident immunity},
11300   research-area = {2.21-05},
11301   ref-person-id = {perl},
11302   collaborations = {B01,Q02},
11303   legal-issues  = {
11304     L1 = no,
11305     L1a = no,
11306     L2 = yes,
11307     L2a = no,
11308     L3 = yes,
11309     L4 = yes,
11310     L5 = no,
11311     L5a = no,
11312     L6 = yes,
11313     L7 = no,
11314     L7a = yes
11315   }
11316 }
11317
11318 %% Reference-only rows remain available to \getProject but are omitted from
11319 %% generated lists and collaboration plots.
11320 \addEntry{project}{

```

```

11321     id                = {A00},
11322     project-area       = {A},
11323     number             = {A00},
11324     project-status     = {E},
11325     consider-for-lists = {false},
11326     reference-only      = {true},
11327     project-type       = {research},
11328     name               = {Former project on microbial community dynamics},
11329     research-area       = {},
11330     ref-person-id      = {},
11331     collaborations     = {}
11332 }
11333
11334 \addEntry{project}{
11335     id                = {B01},
11336     project-area       = {B},
11337     number             = {B01},
11338     project-status     = {C},
11339     consider-for-lists = {true},
11340     reference-only      = {false},
11341     project-type       = {research},
11342     research-area       = {2.21-03,2.21-05,2.22-15},
11343     name               = {Host defence during microbiome perturbation},
11344     ref-person-id      = {per3,per2},
11345     collaborations     = {A01,Q02},
11346     legal-issues       = {
11347         L1 = no,
11348         L1a = no,
11349         L2 = no,
11350         L2a = no,
11351         L3 = no,
11352         L4 = no,
11353         L5 = no,
11354         L5a = no,
11355         L6 = no,
11356         L7 = no,
11357         L7a = no
11358     }
11359 }
11360 \addEntry{project}{
11361     id                = {B02},
11362     project-area       = {B},
11363     number             = {B02},
11364     project-status     = {E},
11365     consider-for-lists = {true},
11366     reference-only      = {false},
11367     project-type       = {research},
11368     research-area       = {2.22-15},
11369     name               = {Molecular signatures of tissue regeneration},
11370     ref-person-id      = {per4},
11371     collaborations     = {A01},
11372     legal-issues       = {
11373         L1 = yes,
11374         L1a = no,
11375         L2 = yes,
11376         L2a = yes,
11377         L3 = yes,
11378         L4 = yes,
11379         L5 = yes,
11380         L5a = no,
11381         L6 = yes,
11382         L7 = yes,
11383         L7a = no
11384     }
11385 }
11386 \addEntry{project}{

```

```

11387     id                = {Q01},
11388     project-area       = {Q},
11389     number             = {Q01},
11390     project-status     = {C},
11391     consider-for-lists = {true},
11392     reference-only     = {false},
11393     project-type       = {service},
11394     name               = {Integrated imaging and analysis services},
11395     research-area      = {2.21-02,2.22-15},
11396     ref-person-id      = {per2},
11397     collaborations     = {A01},
11398     legal-issues      = {
11399         L1 = no,
11400         L1a = no,
11401         L2 = no,
11402         L2a = no,
11403         L3 = no,
11404         L4 = no,
11405         L5 = no,
11406         L5a = no,
11407         L6 = no,
11408         L7 = no,
11409         L7a = no
11410     }
11411 }
11412 \addEntry{project}{
11413     id                = {Q02},
11414     project-area       = {Q},
11415     number             = {Q02},
11416     project-status     = {C},
11417     consider-for-lists = {true},
11418     reference-only     = {false},
11419     project-type       = {mgk},
11420     name               = {Integrated Research Training Group},
11421     research-area      = {},
11422     ref-person-id      = {per5,per2},
11423     collaborations     = {A02,B01}
11424 }
11425 \addEntry{project}{
11426     id                = {Q03},
11427     project-area       = {Q},
11428     number             = {Q03},
11429     project-status     = {C},
11430     consider-for-lists = {true},
11431     reference-only     = {false},
11432     project-type       = {admin},
11433     name               = {Central coordination and data stewardship},
11434     research-area      = {},
11435     ref-person-id      = {per3},
11436     collaborations     = {A01,A02,B01,Q01,Q02}
11437 }
11438
11439
11440 \addEntry{person}{
11441     id                = {spokesperson},
11442     role              = {spokesperson,steering-committee-member},
11443     period            = {1,2,3},
11444     lastname          = {Sample},
11445     firstname         = {Morgan},
11446     academicdegree    = {Prof. Dr. med.},
11447     gender            = {f},
11448     position          = {prof-W3},
11449     positionText       = {CRC spokesperson and professor of systems medicine},
11450     doctorateYear     = {1998},
11451     doctorate         = {Dr. med., Example University},
11452     degree-programme  = {Medicine, Example University},

```

```

11453   ref-institution-id = {ins1},
11454   ref-affiliation-id = {aff1},
11455   orcid                = {0000-0000-0000-0006},
11456   phone                = {+49 000 100-6000},
11457   email                = {morgan.sample@example.org}
11458 }
11459
11460
11461 \addEntry{person}{
11462   id                    = {man1},
11463   role                  = {manager},
11464   period                = {2,3},
11465   firstname             = {Jamie},
11466   lastname              = {Coordinator},
11467   academicdegree        = {Dr. rer. nat.},
11468   gender                = {d},
11469   position              = {nonResearch},
11470   positionText          = {Scientific manager},
11471   doctorateYear         = {2012},
11472   doctorate             = {Dr. rer. nat., Partner University},
11473   degree-programme      = {Life Sciences, Partner University},
11474   ref-institution-id    = {ins2},
11475   ref-affiliation-id    = {aff2},
11476   orcid                 = {0000-0000-0000-0007},
11477   phone                 = {+49 000 200-7000},
11478   email                 = {jamie.coordinator@example.org}
11479 }
11480
11481
11482 \addEntry{person}{
11483   id                    = {rector},
11484   role                  = {rector},
11485   period                = {3},
11486   lastname              = {Rector},
11487   firstname             = {Robin},
11488   academicdegree        = {Prof. Dr.},
11489   gender                = {d},
11490   position              = {prof},
11491   positionText          = {Rector of Example University},
11492   ref-affiliation-id    = {aff1},
11493   phone                 = {+49 000 100-8000},
11494   email                 = {rector@example.org}
11495 }
11496
11497 \addEntry{person}{
11498   id                    = {rector2},
11499   role                  = {rector},
11500   period                = {3},
11501   lastname              = {President},
11502   firstname             = {Casey},
11503   academicdegree        = {Prof. Dr.},
11504   gender                = {d},
11505   position              = {prof},
11506   positionText          = {President of Partner University},
11507   ref-affiliation-id    = {aff2},
11508   phone                 = {+49 000 200-8000},
11509   email                 = {president@partner.example.org}
11510 }
11511
11512 % \iffalse
11513 </meta>
11514 <*meta-cv>
11515 % \fi
11516
11517 \addEntry[cv]{cv-per1}{
11518   ref-person-id         = {per1},

```

```

11519     cv-type           = {mandatory},
11520     periodStart       = {2013},
11521     periodEnd         = {},
11522     positionText      = {Professor and Director},
11523     position          = {Professor of Microbial Systems Medicine},
11524     description       = {Director of the Institute of Microbial Systems Medicine},
11525     ref-institution-id = {ins1}
11526 }
11527
11528 \addEntry[cv]{cv-per1}{
11529     ref-person-id     = {perl},
11530     cv-type           = {mandatory},
11531     periodStart       = {2005},
11532     periodEnd         = {2012},
11533     positionText      = {Associate professor},
11534     position          = {Associate Professor of Molecular Microbiology},
11535     description       = {Established an interdisciplinary microbiome research group},
11536     ref-institution-id = {ins2}
11537 }
11538
11539 \addEntry[cv]{cv-per1}{
11540     ref-person-id = {perl},
11541     cv-type       = {supplement},
11542     description   = {Research visits at international centres for microbiome
11543         science and systems immunology.}
11544 }
11545
11546 \addEntry[cv]{cv-per1}{
11547     ref-person-id = {perl},
11548     cv-type       = {activities},
11549     description   = {Member of national review panels and organiser of an annual
11550         interdisciplinary host--microbiome symposium.}
11551 }
11552
11553 \addEntry[cv]{cv-per1}{
11554     ref-person-id = {perl},
11555     cv-type       = {supervision},
11556     description   = {Supervision of doctoral and postdoctoral researchers in
11557         structured mentoring teams.}
11558 }
11559 \addEntry[cv]{cv-per1}{
11560     ref-person-id = {perl},
11561     cv-type       = {distinction},
11562     description   = {Example University Award for Interdisciplinary Research}
11563 }
11564 \addEntry[cv]{cv-per1}{
11565     ref-person-id = {perl},
11566     cv-type       = {distinction},
11567     description   = {Fellow of the Example Academy of Sciences}
11568 }
11569 \addEntry[cv]{cv-per1}{
11570     ref-person-id = {perl},
11571     cv-type       = {other},
11572     description   = {No commercial interests related to the proposed research.}
11573 }
11574
11575 %% A CV database must exist for every current-period PI. These compact
11576 %% entries keep the generated CV example complete while perl demonstrates all
11577 %% optional CV categories above.
11578 \addEntry[cv]{cv-per2}{
11579     ref-person-id     = {per2},
11580     cv-type           = {mandatory},
11581     periodStart       = {2016},
11582     periodEnd         = {},
11583     positionText      = {Research group leader},
11584     position          = {Computational systems biology},

```

```

11585     description      = {Leads the biomedical data-integration group},
11586     ref-institution-id = {ins2}
11587 }
11588
11589 \addEntry[cv]{cv-per3}{
11590     ref-person-id      = {per3},
11591     cv-type            = {mandatory},
11592     periodStart        = {2018},
11593     periodEnd          = {},
11594     positionText       = {Senior research scientist},
11595     position           = {Microbiology and host defence},
11596     description        = {Coordinates translational infection research},
11597     ref-institution-id = {ins2}
11598 }
11599
11600 \addEntry[cv]{cv-per4}{
11601     ref-person-id      = {per4},
11602     cv-type            = {mandatory},
11603     periodStart        = {2015},
11604     periodEnd          = {},
11605     positionText       = {Professor of Molecular Medicine},
11606     position           = {Molecular tissue regeneration},
11607     description        = {Leads the molecular regeneration programme},
11608     ref-institution-id = {ins2}
11609 }
11610
11611 \addEntry[cv]{cv-per5}{
11612     ref-person-id      = {per5},
11613     cv-type            = {mandatory},
11614     periodStart        = {2014},
11615     periodEnd          = {},
11616     positionText       = {Professor of Research Training},
11617     position           = {Biomedical engineering education},
11618     description        = {Directs interdisciplinary doctoral training},
11619     ref-institution-id = {ins1}
11620 }
11621 % \iffalse
11622 </meta-cv>
11623 <*meta-tables>
11624 % \fi
11625
11626
11627
11628

```

3.9 Title Page (Proposal specific)

```

11629 \pdfbookmark{Titlepage}{titlepage}
11630 \begin{titlepage}
11631     \def\tmpLocalDB{meta}%
11632     \vspace*{4em}
11633     \begin{center}%
11634         \large
11635         \crc\,\dfgCRCNumber\\
11636         \vspace*{1.5em}
11637         {\Large\bfseries \dfgCRCName}\\
11638         \dfgCRCNameAddon\\
11639         \vspace*{2em}
11640         \crcLogo[height=2cm]\\
11641         \vspace*{2em}
11642         \theCRCCoordinatingAffiliation\\
11643         \dfgApplicantAffiliationsTF
11644         { }
11645         {\theCRCOtherApplicantAffiliations}\\
11646         \vspace*{2em}
11647         {\Large\bfseries Funding Proposal}\\[1em]
11648         for the \dfgFundingPeriodText\space Funding Period\\

```

```

11649 \dfgFundingYear{1}--%
11650 \dfgFundingYear{2}--%
11651 \dfgFundingYear{3}--%
11652 \dfgFundingYear{4}--%
11653 \dfgFundingYear{5}
11654 \dfgIfCVT{\par\textcolor{tableHeadingsFont}{Appendix: Research profiles}}
11655 \dfgIfFinalF{{\par\large\InfoTeX}}
11656 % \iftoggle{crc@chapter}{%
11657 % \par\vspace*{5em}\par
11658 % \begin{crcTitleBox}
11659 % \centering\Huge%
11660 % {\color{rwthRed}%
11661 % \ttfamily%
11662 % content/\textbf{\dfgChapter}.tex}\\
11663 % \Large\dfgCompiled
11664 % \end{crcTitleBox}%
11665 % }{}
11666 \vfill
11667 %
11668 % \crcLogo[height=1cm]
11669 \hfill%
11670 \affiliationLogo[height=1cm]
11671 \end{center}
11672 \clearpage
11673 \checkFile{content/00_titlepage-colophon}
11674 \end{titlepage}
11675 \begin{titlepage}
11676 % setting the default database for general information
11677 \def\tmpLocalDB{meta}
11678 \begin{center}
11679 Proposal for the \dfgFundingPeriodText\space Funding Period of\\
11680 \crc\,\dfgCRCNumber
11681
11682 \enquote{\bfseries\dfgCRCName: \dfgCRCNameAddon}
11683 \end{center}
11684 funded since
11685 \begin{center}
11686 \getEntry{crc}{fundedSince}
11687 \end{center}
11688 for
11689 \begin{center}
11690 \dfgFundingYear{1}--%
11691 \dfgFundingYear{2}--%
11692 \dfgFundingYear{3}--%
11693 \dfgFundingYear{4}--%
11694 \dfgFundingYear{5}
11695 \end{center}
11696 Coordinating university:
11697 \begin{center}
11698 \theCRCCoordinatingAffiliation
11699 \end{center}
11700 \dfgApplicantAffiliationsTF
11701 { }
11702 {
11703 Other applicant
11704 \dfgOtherApplicantAffiliationsTF{university}{universities}:
11705 \begin{center}
11706 \theCRCOtherApplicantAffiliations
11707 \end{center}
11708 }
11709 \Hrule[
11710 thickness = 1.5pt,
11711 above = 2em,
11712 below = 2em]
11713
11714 \begin{minipage}[t]{.49\linewidth}

```

```

11715 \textbf{Spokesperson of\\ the \crc:}\\[1\baselineskip]
11716 \getPISWithRole{spokesperson}[raster columns=1]
11717 \end{minipage}\hfill%
11718 \begin{minipage}[t]{.49\linewidth}
11719 \textbf{Management or office of\\the \crc:}\\[1\baselineskip]
11720 \getPISWithRole{manager}[raster columns=1]
11721 \end{minipage}
11722 \vfill
11723 \printSignaturesWithRole{spokesperson}{(Spokesperson~of~\crc)}
11724 \printSignaturesWithRole{rector}
11725 {(Rector,~chancellor,~or~president~of~
11726 \getEntry[affiliation]{\theAffiliationOfRoleID}{name})}
11727 \end{titlepage}
11728 \bgroup
11729 \let\cleardoublepage\clearpage% to get the TOC on two pages (left/right)
11730 \pdfbookmark{\contentsname}{Contents}
11731 \tableofcontents
11732 \dfgIfCVT{\KOMAOptions{open=left}}
11733 \egroup

```

3.10 Content Files (Proposal specific)

```

11734 \newrefsection
11735 \chapter{General information}
11736 \printThumbIndex{1}
11737 \section{Key data}
11738 \subsection{Governing bodies of the \crc}
11739 % \subsubsection{Spokesperson of the \thisCRC}
11740 % \getPISWithRole{spokesperson}
11741
11742 \subsubsection*{Steering Committee of the \thisCRC}
11743
11744 \getPISWithRole{steering-committee-member}
11745
11746 For the third funding period, the steering committee includes representatives
11747 of both research areas and the Integrated Research Training Group. The
11748 spokesperson and committee members are elected by the CRC general assembly in
11749 accordance with the bylaws. The composition is reviewed annually with regard
11750 to scientific breadth, career stage, and equitable participation.
11751
11752 \subsection{Project leaders}
11753 \printTable{ProjectLeaders}
11754
11755 \subsection{Participating institutions}
11756 \printList{ParticipatingInstitutions}
11757
11758 \clearpage
11759 \subsection{Project groups and projects}
11760 \printTable{{Projects}{A}{Microbiota and metabolic pathways}}
11761 \printTable{{Projects}{B}{Immunological circuits}}
11762 \printTable{{Projects}{Q}{Central projects}}
11763 N: New projects started in the \dfgFundingPeriodText\space funding period; %
11764 E: Ending projects not continued in the \dfgFundingPeriodText\space funding
11765 period; %
11766 Research areas according to the German Research Foundation (2024--2028)%
11767 \footnote{\raggedright\url{https://www.dfg.de/resource/blob/331950/fachsystematik-2024-2028-
11768 en.pdf}}:
11769
11770 \printList{ResearchAreasFromProjects}
11771
11772 % For the following sections we want to have them
11773 % numbered until 'subsubsection'
11774 \setcounter{secnumdepth}{4}
11775
11776 \clearpage
11777 \section{Research profile of the \crc} %1.2
11778 \begin{dfgSummaryBox}[title={Spotlights: Moving Forward}]

```

```

11778 \item Resolve causal mechanisms of communication between microbial
11779 communities, epithelial barriers, and tissue-resident immune cells.
11780 \item Combine spatial profiling, experimental perturbation, and predictive
11781 modelling across the participating projects.
11782 \item Translate shared methods into reproducible services, interoperable
11783 data, and structured training for researchers in early career phases.
11784 \end{dfgSummaryBox}
11785
11786 %% \FloatBarrier % no images in references list.
11787 \defbibnote{frame-references}{%
11788 \usekomafont{subsection}%
11789 \bfseries\sffamily References
11790 }
11791 \printbibliography[
11792 prenote={frame-references},
11793 heading=none
11794 ]
11795
11796
11797 \subsection{Summary of the research programme}%1.2.1
11798
11799 The CRC investigates how microbial and host-derived signals cross epithelial
11800 barriers and influence organ function. During the previous funding periods,
11801 the consortium established shared cohorts, experimental models, imaging
11802 workflows, and computational methods. The new programme links these resources
11803 in hypothesis-driven projects that test causality across molecular, cellular,
11804 and tissue scales.
11805
11806 \subsection{Detailed presentation of the research programme}%1.2.2
11807
11808 Project area A examines microbial metabolites and barrier signalling, whereas
11809 project area B focuses on immune circuits and tissue responses. The central
11810 projects provide imaging, analysis, training, coordination, and research-data
11811 services. Common samples, harmonised metadata, and reciprocal collaborations
11812 connect the individual work programmes and enable validation across models and
11813 participating institutions.
11814
11815 \subsection{Positioning of the \crc within its general research area}%1.2.3
11816
11817 The programme combines mechanistic microbiome research with systems immunology
11818 and organ physiology. Its distinguishing feature is the coordinated
11819 validation of candidate signals from discovery cohorts through controlled
11820 experimental systems to tissue-level readouts, supported by shared technology
11821 and transparent data-management standards.
11822
11823 \subsection{National and international cooperation and networking} %1.2.4
11824
11825 The CRC maintains method-oriented collaborations with national infrastructure
11826 networks and international partner laboratories. Cooperation agreements
11827 define sample and data transfer, authorship, quality assurance, and access to
11828 specialised technologies. Visiting-researcher and exchange formats are
11829 coordinated through the Integrated Research Training Group.
11830
11831 \section{Research profile of the applicant
11832 \dfgApplicantAffiliationsTF{university}{universities}} %1.3
11833 \subsection{Strategy and planning}%1.3.1
11834
11835 Example University has identified host--microbiome research as a strategic
11836 priority and supports the CRC through permanent scientific positions, shared
11837 technical platforms, research-data infrastructure, and central administration.
11838 Annual reviews align institutional investments with the scientific milestones
11839 of the consortium.
11840
11841 \subsection{Staff situation} % 1.3.2
11842
11843 The participating units contribute principal investigators, research staff,

```

technical personnel, data stewards, and administrative support. Recruitment planning prioritises timely appointments, transparent selection procedures, career development, and continuity of essential technical expertise.

\subsection{Research infrastructure} % 1.3.3

The CRC has access to advanced microscopy, flow cytometry, sequencing, gnotobiotic facilities, secure data storage, and high-performance computing. Central projects coordinate access, training, maintenance, and quality control so that methods and datasets remain comparable across all projects.

\section{Support structures} % 1.4

\subsection{Researchers in early career phases} % 1.4.1

Researchers in early career phases receive structured scientific and career mentoring, transferable-skills training, annual progress reviews, and access to methods courses and exchange opportunities organised by \getProject{Q02}.

\addEntry[person]{EarlyCareerResearcher}{
 ref-project-id= {A01},
 id = {KM},
 lastname = {Musterlich},
 firstname = {Kimmi},
 financed-by = {DFG},
 category = {PhD},
 topic = {Epithelial sensing of microbial metabolites},
 periodStart = {2025-04},
 periodEnd = {2029-06}
}

\addEntry[person]{EarlyCareerResearcher}{
 ref-project-id= {B01},
 id = {KiM},
 lastname = {Wunderlich},
 firstname = {Kimmi},
 financed-by = {DFG},
 category = {MD},
 topic = {Immune signatures during microbiome perturbation},
 periodStart = {2025-04},
 periodEnd = {2029-06}
}

%% \getEntry[EarlyCareerResearcher]{KM}{lastname}
\printTable{EarlyCareerResearchers}

\subsection{Promotion of equity and diversity} % 1.4.2

Recruitment, supervision, and committee appointments follow transparent criteria and are monitored by career stage and gender. Flexible working arrangements, mentoring, accessibility measures, and targeted career support are available through the central coordination project.

\addEntry[GenderEquality]{GenderEqualityStaff}{
 position = {PhD}, %PhD|PostDoc
 previous-objective-percentage-female = {40},
 status-quo-number-female = {20},
 status-quo-percentage-female = {14},
 future-objective-percentage-female = {40}
}

\addEntry[GenderEquality]{GenderEqualityStaff}{
 position = {postDoc}, %PhD|PostDoc
 previous-objective-percentage-female = {22},
 status-quo-number-female = {34},
 status-quo-percentage-female = {44},
 future-objective-percentage-female = {34}
}

```

11910 % -----
11911
11912 \addEntry[GenderEquality]{GenderEqualityProjectLeaders}{
11913     position                = {postDoc}, %PhD|PostDoc
11914     previous-objective-percentage-female = {22},
11915     future-objective-percentage-female   = {34}
11916 }
11917 \addEntry[GenderEquality]{GenderEqualityProjectLeaders}{
11918     position                = {groupLeader}, %PhD|PostDoc
11919     previous-objective-percentage-female = {22},
11920     future-objective-percentage-female   = {34}
11921 }
11922
11923
11924 \addEntry[GenderEquality]{GenderEqualityProjectLeaders}{
11925     position                = {prof-W2}, %PhD|PostDoc
11926     previous-objective-percentage-female = {22},
11927     future-objective-percentage-female   = {34}
11928 }
11929
11930 \addEntry[GenderEquality]{GenderEqualityProjectLeaders}{
11931     position                = {prof-W3}, %PhD|PostDoc
11932     previous-objective-percentage-female = {22},
11933     future-objective-percentage-female   = {34}
11934 }
11935
11936 \clearpage
11937 \subsubsection*{A. Objectives for the participation of female researchers}
11938 \printTable{GenderEqualityStaff}
11939
11940 \subsubsection*{B. Project leaders}
11941 \printTable{GenderEqualityProjectLeaders}
11942
11943 \subsection{Knowledge transfer and science communication} % 1.4.3
11944
11945 The CRC communicates results through open research resources, public lectures,
11946 school and patient-group activities, and dialogue formats with clinical and
11947 societal stakeholders. Transfer opportunities are assessed early, with clear
11948 procedures for intellectual property, responsible communication, and reusable
11949 research outputs.
11950
11951 \section{Risks in international cooperation} %1.5
11952
11953 International partnerships are reviewed for legal, ethical, export-control,
11954 data-protection, and research-security risks. Written agreements specify
11955 permitted data and material transfers, access rights, publication principles,
11956 and responsibilities. The participating universities reassess collaborations
11957 when partners, technologies, or regulatory conditions change.
11958
11959 \section{Considerations on aspects of ecological sustainability in project
11960     planning and implementation} %1.6
11961
11962 The CRC considers ecological sustainability when planning experiments,
11963 procurement, travel, computing, sample storage, and shared infrastructure.
11964 Projects consolidate measurement campaigns, share equipment and reference
11965 materials, select proportionate data-retention and computing strategies, and
11966 prefer lower-emission travel or remote participation where this is compatible
11967 with the scientific objective. The steering committee reviews these measures
11968 alongside scientific feasibility, research quality, legal obligations, animal
11969 welfare, and the responsible use of resources.
11970
11971
11972 % ok, let's go back to the default (from base.tex)
11973 \setcounter{secnumdepth}{2}
11974
11975 \endrefsection

```

```

11976 \resetboldnames
11977
11978 \chapter{Existing funds and requested funds} %2
11979 \printThumbIndex{2}
11980 \section{Existing funds} % 2.1
11981 \subsection{Overview of existing funds for direct costs} %2.1.1
11982
11983 \addEntry[funding]{PreviousExistingFundsDirectCosts}{
11984     year      = 1,
11985     applicant  = 1000,
11986     participant = 2000,
11987     other-funds = 3000
11988 }
11989 \addEntry[funding]{PreviousExistingFundsDirectCosts}{
11990     year      = 2,
11991     applicant  = 1000,
11992     participant = 2000,
11993     other-funds = 3000
11994 }
11995 \addEntry[funding]{PreviousExistingFundsDirectCosts}{
11996     year      = 3,
11997     applicant  = 1000,
11998     participant = 2000,
11999     other-funds = 3000
12000 }
12001 \addEntry[funding]{PreviousExistingFundsDirectCosts}{
12002     year      = 4,
12003     applicant  = 1000,
12004     participant = 2000,
12005     other-funds = 3000
12006 }
12007 \addEntry[funding]{PreviousExistingFundsDirectCosts}{
12008     year      = 5,
12009     applicant  = 1000,
12010     participant = 2000,
12011     other-funds = 3000
12012 }
12013
12014
12015 % New-period values are declared once in the individual project files below.
12016 % The class restores those later declarations from the preceding LaTeX run's
12017 % auxiliary files into the overview database used here.
12018 \printTable{ExistingFundsDirectCosts}
12019
12020
12021 \subsection{Overview of existing staff} % 2.1.2
12022 % Data are reused from project-level RequestedFundingStaff declarations with
12023 % funding-status={existing}. No separate overview database is required.
12024 \printTable{OverviewExistingStaff}
12025
12026 \subsection{List of existing instrumentation} % 2.1.2
12027 \addEntry[instrumentation]{existingInstrumentation}{
12028     ref-project-id = {A01},
12029     quantity       = {1},
12030     instrument      = {Confocal laser-scanning microscope},
12031     company         = {Example Instruments GmbH},
12032     year            = {2025},
12033     cost            = {250},
12034     financed-by     = {DFG}
12035 }
12036 \addEntry[instrumentation]{existingInstrumentation}{
12037     ref-project-id = {A01,B01},
12038     quantity       = {2},
12039     instrument      = {Anaerobic workstation},
12040     company         = {Laboratory Systems AG},
12041     year            = {2024},

```

```

12042     cost          = {80},
12043     financed-by    = {Institutional funds}
12044 }
12045
12046 \printTable{ExistingInstrumentation}
12047
12048 \section{Previous and requested funds} %2.2
12049 \subsection{Overview} % 2.2.1
12050
12051 \addEntry[funding]{PreviousRequestedFunding}{
12052     year          = 1,
12053     staff          = 1000,
12054     costs          = 2000,
12055     instrumentation = 3000,
12056     fellowships    = 4000,
12057     globalfunds    = 5000
12058 }
12059 \addEntry[funding]{PreviousRequestedFunding}{
12060     year          = 2,
12061     staff          = 1000,
12062     costs          = 2000,
12063     instrumentation = 3000,
12064     fellowships    = 4000,
12065     globalfunds    = 5000
12066 }
12067 \addEntry[funding]{PreviousRequestedFunding}{
12068     year          = 3,
12069     staff          = 1000,
12070     costs          = 2000,
12071     instrumentation = 3000,
12072     fellowships    = 4000,
12073     globalfunds    = 5000
12074 }
12075 \addEntry[funding]{PreviousRequestedFunding}{
12076     year          = 4,
12077     staff          = 1000,
12078     costs          = 2000,
12079     instrumentation = 3000,
12080     fellowships    = 4000,
12081     globalfunds    = 5000
12082 }
12083 \addEntry[funding]{PreviousRequestedFunding}{
12084     year          = 5,
12085     staff          = 1000,
12086     costs          = 2000,
12087     instrumentation = 3000,
12088     fellowships    = 4000,
12089     globalfunds    = 5000
12090 }
12091
12092
12093 \printTable{PreviousAndCurrentRequestedFunding}
12094
12095 \subsection{Overview of funds requested for staff} % 2.2.2
12096 % data comes from all the
12097 % \addEntry[funding]{RequestedFunding}{
12098 %     ...
12099 %     category      = {...},
12100 %     funding-type = {staff},
12101 %     ...
12102 % }
12103 \printTable{OverviewOfFundsRequestedForStaff}
12104
12105 \subsection{Overview of funds requested for instrumentation} % 2.2.3
12106
12107 % data comes from all the

```

```

12108 % \addEntry[funding]{RequestedFunding}{
12109 %     ...
12110 %     funding-type = {instrumentation},
12111 %     ...
12112 % }
12113 \printTable{OverviewFundsRequestedInstrumentation}
12114
12115
12116 \section{Upkeep of laboratory animals} % 2.3
12117 \addEntry{UpkeepLaboratoryAnimals}{
12118     ref-project-id   = {A01},
12119     species          = {mouse},
12120     quantity         = {1212},
12121     weeks-kept       = {43},
12122     purchasing-costs = {23},
12123     requested-funds  = {100},
12124     existing-funds   = {232}
12125 }
12126 \addEntry{UpkeepLaboratoryAnimals}{
12127     ref-project-id   = {A01,A02},
12128     species          = {rat},
12129     quantity         = {2},
12130     weeks-kept       = {3},
12131     purchasing-costs = {23.54},
12132     requested-funds  = {1230},
12133     existing-funds   = {232}
12134 }
12135 \addEntry{UpkeepLaboratoryAnimals}{
12136     ref-project-id   = {B01},
12137     species          = {mouse-gnotobiotic},
12138     quantity         = {3},
12139     weeks-kept       = {43},
12140     purchasing-costs = {23},
12141     requested-funds  = {201},
12142     existing-funds   = {132}
12143 }
12144 \printTable{UpkeepLaboratoryAnimals}
12145
12146 \addtocontents{toc}{%
12147     % Change style of TOC from here on. (not recommended)
12148     \RedeclareSectionCommands[
12149         tocbeforeskip=0ex,
12150         tocentryformat=\normalsize\normalfont
12151     ]{section}
12152     \protect\clearpage}
12153 \chapter{Project details} %3
12154 \printThumbIndex{3}
12155
12156 %% Each extracted project file is a complete, copyable status/type example.
12157 %% \printProjectHead creates the general-information section, project title,
12158 %% project leaders, contract information, and legal-issues block from metadata.
12159 \dfgTOCprojectPart{A}{Research Projects}
12160 \input{content/03_project_A01}
12161 \input{content/03_project_A02}
12162
12163 \dfgTOCprojectPart{B}{Research Projects}
12164 \input{content/03_project_B01}
12165 \input{content/03_project_B02}
12166
12167 \dfgTOCprojectPart{Q}{Central Projects}
12168 \input{content/03_project_Q01}
12169 \input{content/03_project_Q02}
12170 \input{content/03_project_Q03}

```

3.11 Complete continuing-project example

This file demonstrates the complete heading and command structure for a continuing research project (project-status=C).

```
12171 \printProjectHead{A01}
12172
12173 \section{Summary}
12174 \label{A01:summary}
12175
12176 Summarise the continuing project's central question, progress, planned work,
12177 methods, and contribution to the Collaborative Research Centre.
12178
12179 \section{Project progress to date}
12180 \label{A01:project-progress-to-date}
12181
12182 \subsection{Report and current state of research}%
12183 \label{A01:report-and-current-state-of-research}
12184
12185 Report the work and results from the previous funding periods, relate them to
12186 the current state of research, and explain how they motivate the new plan.
12187
12188 \FloatBarrier
12189
12190 \projectPublicationsHeading
12191
12192 %% Add all project-specific publication keys before printing the bibliography.
12193 \projectNocite{FAIR2016}
12194 \printProjectBibliography[heading=none]
12195
12196 \section{Project plan}
12197 \label{A01:project-plan}
12198
12199 \begin{aims}
12200   \addAim{A} Define the underlying mechanism.
12201   \addAim{B} Validate the mechanism experimentally.
12202   \addAim{C} Integrate the findings across the CRC.
12203 \end{aims}
12204
12205 Refer to one aim as \getAim{A}, or to several as \getAim{A,B,C}.
12206
12207 \begin{workpackages}
12208   \addWP{wp1}{
12209     name={Mechanistic analysis},
12210     description={Define the underlying mechanism},
12211     periodStart={1},
12212     periodEnd={8},
12213     style={default},
12214   }
12215
12216   Describe the work, methods, milestones, risks, and expected results of
12217   \getWP{wp1}.
12218
12219   \begin{workpackages}
12220     %% Sub-workpackages deliberately have no name key: their authored text is
12221     %% the visible list item, while description is used only in the Gantt chart.
12222     \addWP{wpla}{
12223       description={Establish the experimental system},
12224       periodStart={1},
12225       periodEnd={4},
12226       style={alternative},
12227     }
12228     Establish and validate the experimental system.
12229
12230     \addWP{wplb}{
12231       description={Perform the mechanistic experiments},
12232       periodStart={3},
```

```

12233         periodEnd={8},
12234         style={important},
12235     }
12236     Perform the mechanistic experiments and define decision points.
12237 \end{workpackages}
12238
12239 \addWP{wp2}{
12240     name={Experimental validation},
12241     description={Validate and integrate the mechanism},
12242     periodStart={7},
12243     periodEnd={16},
12244     style={striped},
12245 }
12246
12247 Describe the validation strategy, expected results, and contingency plan of
12248 \getWP{wp2}.
12249 \end{workpackages}
12250
12251 \printPlot{{Gantt}}{A01}}
12252
12253 \FloatBarrier
12254
12255 \section{Relevance of sex, gender and/or diversity in the research
12256     project}
12257 \label{A01:relevance-of-sex-gender-and-diversity}
12258
12259 Explain whether and how sex, gender, and diversity affect the research
12260 questions, design, analysis, and interpretation.
12261
12262 \section{Role within the Collaborative Research
12263     Centre}
12264 \label{A01:role-within-the-collaborative-research-centre}
12265
12266 Describe the project's contribution to the CRC and its principal
12267 collaborations.
12268
12269 %% The heatmap is the default collaboration layout.
12270 \printPlot{{ProjectCollaboration}}{A01}}
12271 %% To use the compact arc layout instead, replace the call above with:
12272 %% \printPlot{{ProjectCollaboration}[layout=arc]}{A01}
12273 %% [Optional additional caption text.]}
12274
12275
12276 \section{Differentiation from other funded
12277     projects}
12278 \label{A01:differentiation-from-other-funded-projects}
12279
12280 Explain how this project differs from, and complements, other funded work of
12281 the project leaders.
12282
12283 \section{Project funding}
12284 \label{A01:project-funding}
12285
12286 \subsection{Previous funding}
12287
12288 Funding of this project within the Collaborative Research Centre started
12289 in July 2019. Preparatory work was funded by Example University's seed-fund
12290 programme from January 2018 to June 2019 (reference number EU-EXAMPLE-01).
12291
12292 \subsection{Requested funding}
12293
12294 %% Without sum, the class calculates from salary@prof, percentage, and
12295 %% quantity, using half the annual amount in year1 and year5.
12296 \addEntry[funding]{RequestedFunding}{
12297     ref-project-id = {A01},
12298     funding-type   = {staff},

```

```

12299     category      = {prof},
12300     percentage     = {100},
12301     quantity = {
12302         year1 = {2},
12303         year2 = {2},
12304         year3 = {2},
12305         year4 = {2},
12306         year5 = {2}
12307     }
12308 }
12309
12310 %% With sum, these concrete yearly amounts override the central salary rate;
12311 %% year1 and year5 below already represent half-years.
12312 \addEntry[funding]{RequestedFunding}{
12313     ref-project-id = {A01},
12314     funding-type   = {staff},
12315     category       = {PhD},
12316     percentage     = {65},
12317     quantity = {
12318         year1 = {1},
12319         year2 = {1},
12320         year3 = {1},
12321         year4 = {1},
12322         year5 = {1}
12323     },
12324     sum = {
12325         year1 = {26500},
12326         year2 = {53000},
12327         year3 = {53000},
12328         year4 = {53000},
12329         year5 = {26500}
12330     }
12331 }
12332
12333 \addEntry[funding]{RequestedFunding}{
12334     ref-project-id = {A01},
12335     funding-type   = {costs}, %staff, costs, ...
12336     category       = {Laboratory consumables},
12337     sum = {
12338         year1      = {2112},
12339         year2      = {67},
12340         year3      = {9843},
12341         year4      = {2375},
12342         year5      = {983}
12343     }}
12344
12345 \addEntry[funding]{RequestedFunding}{
12346     ref-project-id = {A01},
12347     funding-type   = {costs}, %staff, costs, ...
12348     category       = {Sequencing and data analysis},
12349     sum = {
12350         year1      = {1000},
12351         year2      = {2000},
12352         year3      = {3000},
12353         year4      = {4000},
12354         year5      = {5000}
12355     }}
12356
12357 \addEntry[funding]{RequestedFunding}{
12358     ref-project-id = {A01},
12359     funding-type   = {instrumentation}, %staff, costs, ...
12360     category       = {Live-cell imaging system},
12361     sum = {
12362         year1      = {1000},
12363         year2      = {2000},
12364         year3      = {3000},

```

```

12365     year4      = {4000},
12366     year5      = {5000}
12367   }}
12368
12369   \printTable{{RequestedFunding}{A01}}
12370
12371
12372
12373
12374
12375   \subsubsection{Requested funding for staff for the new funding period}
12376   \addEntry[staff]{RequestedFundingStaff}{
12377     ref-project-id      = {A01},
12378     funding-status      = {existing},
12379     staff-type          = {research},
12380     ref-person-id       = {perl},
12381     field-of-research    = {Microbiology and systems medicine},
12382     commitment          = {8},
12383     category             = {prof},
12384     funding-source       = {State funds},
12385     description          = {Leads the experimental programme and supervises the
12386       research staff assigned to the project.}
12387   }
12388
12389   \addEntry[staff]{RequestedFundingStaff}{
12390     ref-project-id      = {A01},
12391     funding-status      = {existing},
12392     staff-type          = {nonResearch},
12393     firstname            = {Alex},
12394     lastname             = {Example},
12395     academic-degree      = {M.Sc.},
12396     positionText         = {Technical assistant},
12397     field-of-research    = {Laboratory management},
12398     ref-institution-id   = {ins1},
12399     commitment           = {20},
12400     category             = {nonResearch},
12401     funding-source       = {Core support},
12402     description          = {Maintains shared laboratory workflows and coordinates
12403       sample logistics.}
12404   }
12405
12406   \addEntry[staff]{RequestedFundingStaff}{
12407     ref-project-id      = {A01},
12408     funding-status      = {requested},
12409     staff-type          = {research},
12410     firstname            = {Researcher},
12411     lastname             = {TBA},
12412     academic-degree      = {Dr. rer. nat.},
12413     positionText         = {Postdoctoral researcher},
12414     field-of-research    = {Host--microbiome interactions},
12415     ref-institution-id   = {ins2},
12416     category             = {postDoc},
12417     description          = {Performs the planned mechanistic experiments and
12418       integrates molecular and clinical datasets.}
12419   }
12420
12421   \addEntry[staff]{RequestedFundingStaff}{
12422     ref-project-id      = {A01},
12423     funding-status      = {requested},
12424     staff-type          = {nonResearch},
12425     firstname            = {Taylor},
12426     lastname             = {Demo},
12427     academic-degree      = {B.Sc.},
12428     positionText         = {Research assistant},
12429     field-of-research    = {Biobanking and data curation},
12430     ref-institution-id   = {ins2},

```

```

12431     category          = {assistant},
12432     description        = {Supports biobanking, quality control, and structured
12433       curation of the project datasets.}
12434   }
12435
12436   \printTable{{RequestedFundingStaff}{A01}}
12437
12438   \subsubsection{Requested funding for direct costs for the new funding
12439     period}
12440
12441   \addEntry[funding]{RequestedAndExistingFundingDirectCosts}{
12442     ref-project-id = {A01},
12443     ref-affiliation-id = {aff2},
12444     financed-by = {Partner University core support},
12445     sum = {
12446       year1      = {1200},
12447       year2      = {500},
12448       year3      = {21100},
12449       year4      = {5600},
12450       year5      = {3400}
12451     }}
12452
12453   \addEntry[funding]{RequestedAndExistingFundingDirectCosts}{
12454     ref-project-id = {A01},
12455     ref-affiliation-id = {aff1},
12456     financed-by = {Example University core support},
12457     sum = {
12458       year1      = {11100},
12459       year2      = {53800},
12460       year3      = {21100},
12461       year4      = {600},
12462       year5      = {38300}
12463     }}
12464
12465
12466   \printTable{{RequestedAndExistingFundingDirectCosts}{A01}}
12467
12468   \begin{FundingDirectCostsTable}[Text]
12469     Laboratory consumables and antibodies & EUR & 15000 \\
12470     Single-cell sequencing and spatial profiling & EUR & 12000 \\
12471     Research data storage and analysis & EUR & 3000 \\
12472   \end{FundingDirectCostsTable}
12473
12474
12475   \subsubsection{Requested funding for instrumentation for the new funding
12476     period}
12477
12478
12479   \begin{FundingDirectCostsTable}[Text]
12480     Automated live-cell imaging system & EUR & 95000 \\
12481     Environmental control module & EUR & 18000 \\
12482     Analysis workstation and software & EUR & 7000 \\
12483   \end{FundingDirectCostsTable}
12484
12485
12486   \printProjectTail

```

3.12 Complete new-project example

This file demonstrates the complete heading and command structure for a new research project (project-status=N). Its scientific-background section is intentionally named differently from the progress section of a continuing project.

```

12487   \printProjectHead{A02}
12488
12489   \section{Summary}
12490   \label{A02:summary}

```

```

12491
12492 Summarise the new project's central hypothesis, methods, expected results, and
12493 contribution to the Collaborative Research Centre.
12494
12495 \section{Research rationale}
12496 \label{A02:research-rationale}
12497
12498 \subsection{Current state of research and preliminary work}
12499 \label{A02:current-state-of-research-and-preliminary-work}
12500
12501 Describe the relevant state of research, preliminary work, open questions,
12502 and the scientific rationale for the proposed project.
12503
12504 \FloatBarrier
12505
12506 \projectPublicationsHeading
12507 \projectNocite{FAIR2016}
12508 \printProjectBibliography[heading=none]
12509
12510 \section{Project plan}
12511 \label{A02:project-plan}
12512
12513 \begin{aims}
12514   \addAim{1} Establish the experimental and analytical framework.
12515   \addAim{2} Test the central hypothesis and validate the findings.
12516 \end{aims}
12517
12518 \begin{workpackages}
12519   \addWP{wp1}{
12520     name={Framework and pilot experiments},
12521     description={Establish the framework and complete pilot experiments},
12522     periodStart={1},
12523     periodEnd={7},
12524     style={default},
12525   }
12526
12527   Describe the methods, milestones, expected results, and risks of
12528   \getWP{wp1} and its contribution to \getAim{1}.
12529
12530   \addWP{wp2}{
12531     name={Hypothesis testing and validation},
12532     description={Test the hypothesis and validate the findings},
12533     periodStart={6},
12534     periodEnd={16},
12535     style={important},
12536   }
12537
12538   Describe the validation strategy and contingency plan for \getWP{wp2} and
12539   \getAim{2}.
12540 \end{workpackages}
12541
12542 \printPlot{{Gantt}{A02}}
12543
12544 \FloatBarrier
12545
12546 \section{Relevance of sex, gender and/or diversity in the research project}
12547 \label{A02:relevance-of-sex-gender-and-diversity}
12548
12549 Explain whether and how sex, gender, and diversity affect the research
12550 questions, design, analysis, and interpretation.
12551
12552 \section{Role within the Collaborative Research Centre}
12553 \label{A02:role-within-the-collaborative-research-centre}
12554
12555 Describe the project's contribution to the CRC and its principal
12556 collaborations.

```

```

12557
12558 \printPlot{{ProjectCollaboration}{A02}}
12559
12560 \section{Differentiation from other funded projects of the project leader(s)}
12561 \label{A02:differentiation-from-other-funded-projects}
12562
12563 Explain how this new project differs from, and complements, other funded work
12564 of the project leaders.
12565
12566 \section{Project funding}
12567 \label{A02:project-funding}
12568
12569 \subsection{Previous funding}
12570
12571 State that this is a new CRC project and list related previous funding of the
12572 project leaders where applicable.
12573
12574 \subsection{Requested funding}
12575
12576 %% Automatic staff-cost example: sum is intentionally omitted; the class
12577 %% halves the calculated amounts in year1 and year5.
12578 \addEntry[funding]{RequestedFunding}{
12579   ref-project-id = {A02},
12580   funding-type   = {staff},
12581   category       = {postDoc},
12582   percentage     = {100},
12583   quantity = {
12584     year1 = {1},
12585     year2 = {1},
12586     year3 = {1},
12587     year4 = {1},
12588     year5 = {1}
12589   }
12590 }
12591
12592 %% Explicit staff-cost example: sum overrides the central salary calculation;
12593 %% the concrete year1 and year5 amounts below already represent half-years.
12594 \addEntry[funding]{RequestedFunding}{
12595   ref-project-id = {A02},
12596   funding-type   = {staff},
12597   category       = {PhD},
12598   percentage     = {65},
12599   quantity = {
12600     year1 = {1},
12601     year2 = {1},
12602     year3 = {1},
12603     year4 = {1},
12604     year5 = {1}
12605   },
12606   sum = {
12607     year1 = {26500},
12608     year2 = {53000},
12609     year3 = {53000},
12610     year4 = {53000},
12611     year5 = {26500}
12612   }
12613 }
12614
12615 \addEntry[funding]{RequestedFunding}{
12616   ref-project-id = {A02},
12617   funding-type   = {costs},
12618   category       = {Consumables},
12619   sum = {
12620     year1 = {2000},
12621     year2 = {2000},
12622     year3 = {2000},

```

```

12623     year4 = {2000},
12624     year5 = {2000}
12625 }
12626 }
12627
12628 \addEntry[funding]{RequestedFunding}{
12629     ref-project-id = {A02},
12630     funding-type   = {instrumentation},
12631     category       = {Specialised instrument},
12632     sum = {
12633         year1 = {5000},
12634         year2 = {0},
12635         year3 = {0},
12636         year4 = {0},
12637         year5 = {0}
12638     }
12639 }
12640
12641 \printTable{{RequestedFunding}{A02}}
12642
12643 \subsubsection{Requested funding for staff}
12644
12645 %% When no person database row is needed, all display data can be supplied
12646 %% directly. Leave academic-degree empty when it is unknown.
12647 \addEntry[staff]{RequestedFundingStaff}{
12648     ref-project-id      = {A02},
12649     funding-status      = {requested},
12650     staff-type          = {research},
12651     firstname           = {Researcher},
12652     lastname            = {TBA},
12653     academic-degree     = {},
12654     positionText        = {Postdoctoral researcher},
12655     field-of-research   = {Experimental systems medicine},
12656     ref-institution-id = {ins1},
12657     category            = {postDoc},
12658     description         = {Establishes the new experimental platform, performs
12659         the mechanistic studies, and analyses the resulting datasets.}
12660 }
12661
12662 \printTable{{RequestedFundingStaff}{A02}}
12663
12664 Provide the scientific and organisational justification for every requested
12665 staff position.
12666
12667 \subsubsection{Requested funding of direct costs}
12668
12669 \addEntry[funding]{RequestedAndExistingFundingDirectCosts}{
12670     ref-project-id      = {A02},
12671     ref-affiliation-id = {aff1},
12672     financed-by         = {State funds},
12673     sum = {
12674         year1 = {500},
12675         year2 = {500},
12676         year3 = {500},
12677         year4 = {500},
12678         year5 = {500}
12679     }
12680 }
12681
12682 \printTable{{RequestedAndExistingFundingDirectCosts}{A02}}
12683
12684 \begin{FundingDirectCostsTable}[Text]
12685     Consumables for pilot experiments & EUR & 10000 \\
12686     External data analysis & EUR & 5000 \\
12687 \end{FundingDirectCostsTable}
12688

```

```

12689 \subsubsection{Requested funding for instrumentation}
12690
12691 \begin{FundingDirectCostsTable}[Text]
12692   Specialised instrument including installation & EUR & 5000 \\
12693 \end{FundingDirectCostsTable}
12694
12695 \printProjectTail

```

3.13 Second continuing-project example

This compact but complete file demonstrates another continuing research project and keeps the funding-category examples used by the dummy proposal.

```

12696 \printProjectHead{B01}
12697
12698 \section{Summary}
12699 \label{B01:summary}
12700
12701 Summarise the continuing project and the work proposed for the new funding
12702 period.
12703
12704 \section{Project progress to date}
12705 \label{B01:project-progress-to-date}
12706
12707 \subsection{Report and current state of research}
12708 \label{B01:report-and-current-state-of-research}
12709
12710 Report the previous work, published and unpublished results, and the current
12711 state of research.
12712
12713 \FloatBarrier
12714
12715 \projectPublicationsHeading
12716 \projectNocite{FAIR2016}
12717 \printProjectBibliography[heading=none]
12718
12719 \section{Project plan}
12720 \label{B01:project-plan}
12721
12722 \begin{aims}
12723   \addAim{1} Complete the mechanistic analysis.
12724   \addAim{2} Validate the findings with CRC partners.
12725 \end{aims}
12726
12727 \begin{workpackages}
12728   \addWP{wp1}{
12729     name={Mechanistic analysis},
12730     description={Complete the mechanistic analysis},
12731     periodStart={1},
12732     periodEnd={10},
12733     style={default},
12734   }
12735   Describe \getWP{wp1}, including methods, milestones, and risks.
12736
12737   \addWP{wp2}{
12738     name={Collaborative validation},
12739     description={Validate the findings with CRC partners},
12740     periodStart={8},
12741     periodEnd={16},
12742     style={alternative},
12743   }
12744   Describe \getWP{wp2} and its links to \getAim{2}.
12745 \end{workpackages}
12746
12747 \printPlot{{Gantt}{B01}}
12748
12749 \FloatBarrier
12750

```

```

12751 \section{Relevance of sex, gender and/or diversity in the research project}
12752 \label{B01:relevance-of-sex-gender-and-diversity}
12753
12754 Explain the relevance of sex, gender, and diversity, or justify why they do
12755 not affect this project's research questions and methods.
12756
12757 \section{Role within the Collaborative Research Centre}
12758 \label{B01:role-within-the-collaborative-research-centre}
12759
12760 Describe the role of the project and its reciprocal collaborations.
12761
12762 \printPlot{{ProjectCollaboration}}{B01}}
12763
12764 \section{Differentiation from other funded projects}
12765 \label{B01:differentiation-from-other-funded-projects}
12766
12767 Differentiate the project from other funded work of its project leaders.
12768
12769 \section{Project funding}
12770 \label{B01:project-funding}
12771
12772 \subsection{Previous funding}
12773
12774 State when CRC funding began and list other relevant previous funding.
12775
12776 \subsection{Requested funding}
12777
12778 %% Automatic staff-cost example: sum is intentionally omitted; the class
12779 %% halves the calculated amounts in year1 and year5.
12780 \addEntry[funding]{RequestedFunding}{
12781   ref-project-id = {B01},
12782   funding-type   = {staff},
12783   category       = {groupLeader},
12784   percentage     = {100},
12785   quantity = {
12786     year1 = {2},
12787     year2 = {2},
12788     year3 = {2},
12789     year4 = {2},
12790     year5 = {2}
12791   }
12792 }
12793
12794 %% Explicit staff-cost example: sum overrides the central salary calculation;
12795 %% the concrete year1 and year5 amounts below already represent half-years.
12796 \addEntry[funding]{RequestedFunding}{
12797   ref-project-id = {B01},
12798   funding-type   = {staff},
12799   category       = {postDoc},
12800   percentage     = {100},
12801   quantity = {
12802     year1 = {1},
12803     year2 = {1},
12804     year3 = {1},
12805     year4 = {1},
12806     year5 = {1}
12807   },
12808   sum = {
12809     year1 = {45000},
12810     year2 = {90000},
12811     year3 = {90000},
12812     year4 = {90000},
12813     year5 = {45000}
12814   }
12815 }
12816

```

```

12817 \addEntry[funding]{RequestedFunding}{
12818   ref-project-id = {B01},
12819   funding-type   = {globalfunds}, %staff, costs, ...
12820   category       = {Project-wide data stewardship},
12821   sum = {
12822     year1 = {1000},
12823     year2 = {2000},
12824     year3 = {3000},
12825     year4 = {4000},
12826     year5 = {5000}
12827   }
12828 }
12829
12830 \printTable{{RequestedFunding}{B01}}
12831
12832 \subsubsection{Requested funding for staff for the new funding period}
12833
12834 \addEntry[staff]{RequestedFundingStaff}{
12835   ref-project-id   = {B01},
12836   funding-status   = {requested},
12837   staff-type       = {research},
12838   firstname        = {Researcher},
12839   lastname         = {TBA},
12840   academic-degree  = {},
12841   positionText     = {Research group leader},
12842   field-of-research = {Translational microbiology},
12843   ref-institution-id = {ins2},
12844   category         = {groupLeader},
12845   description      = {Coordinates the experimental programme and the
12846     collaborative validation studies.}
12847 }
12848
12849 \printTable{{RequestedFundingStaff}{B01}}
12850
12851 \subsubsection{Requested funding for direct costs for the new funding period}
12852
12853 \addEntry[funding]{RequestedAndExistingFundingDirectCosts}{
12854   ref-project-id   = {B01},
12855   ref-affiliation-id = {aff2},
12856   financed-by      = {Institutional funds},
12857   sum = {
12858     year1 = {1000},
12859     year2 = {1000},
12860     year3 = {1000},
12861     year4 = {1000},
12862     year5 = {1000}
12863   }
12864 }
12865
12866 \printTable{{RequestedAndExistingFundingDirectCosts}{B01}}
12867
12868 \begin{FundingDirectCostsTable}[Text]
12869   Experimental consumables & EUR & 10000 \\
12870   Data-processing services & EUR & 5000 \\
12871 \end{FundingDirectCostsTable}
12872
12873 \subsubsection{Requested funding for instrumentation for the new funding
12874   period}
12875
12876 \begin{FundingDirectCostsTable}[Text]
12877   No instrumentation requested & EUR & 0 \\
12878 \end{FundingDirectCostsTable}
12879
12880 \printProjectTail

```

3.14 Complete ending-project example

Ending projects use a deliberately shorter DFG structure: after the general information printed by `\printProjectHead`, they report project history, published results, and closing funding information. They do not contain a new project plan or a request for another funding period.

```
12881 \printProjectHead{B02}
12882
12883 \section{Project history}
12884 \label{B02:project-history}
12885
12886 \subsection{Report}
12887 \label{B02:report}
12888
12889 \begin{projectReport}
12890 Describe the complete funding history, objectives, methods, results, and
12891 contribution of the ending project. Citations used only in the report are
12892 printed automatically at the end of this environment. This dummy citation
12893 also demonstrates the exclusion of a result listed below
12894 \autocite{FAIR2016}.
12895 \end{projectReport}
12896
12897 \subsection{Published project results}
12898 \label{B02:published-project-results}
12899
12900 %% Replace the example key with the project's results. Use the literal value
12901 %% none only when a category genuinely produced no result; leaving a value
12902 %% empty keeps a visible drafting instruction.
12903 \printProjectResults{
12904     quality-assured = {FAIR2016},
12905     other           = none,
12906     patents         = none
12907 }
12908
12909 \section{Funding}
12910 \label{B02:funding}
12911
12912 Funding of this project within the Collaborative Research Centre started in
12913 April 2018. The project will be completed by the end of the current funding
12914 period. Replace these dates and, where applicable, add previous funding under
12915 another DFG programme and its reference number.
12916
12917 \subsection{Project staff in the ending funding period}
12918 \label{B02:project-staff-in-the-ending-funding-period}
12919
12920 %% For an ending project, funding-status=requested is printed as
12921 %% ``Staff funded with approved grant money'', matching the DFG form.
12922 \addEntry[staff]{RequestedFundingStaff}{
12923     ref-project-id      = {B02},
12924     funding-status      = {existing},
12925     staff-type          = {research},
12926     ref-person-id       = {per4},
12927     commitment          = {8},
12928     funding-source      = {State funds},
12929     field-of-research   = {Molecular tissue regeneration},
12930     description         = {Led the project, supervised the experimental work,
12931         and integrated its results across the CRC throughout the ending funding
12932         period.}
12933 }
12934
12935 \addEntry[staff]{RequestedFundingStaff}{
12936     ref-project-id      = {B02},
12937     funding-status      = {requested},
12938     staff-type          = {research},
12939     firstname           = {Researcher},
12940     lastname            = {TBA},
12941     academic-degree     = {},
```

```

12942 positionText      = {Postdoctoral researcher},
12943 field-of-research  = {Regenerative cell biology},
12944 ref-institution-id = {ins2},
12945 category           = {postDoc},
12946 description        = {Completed the final validation experiments and data
12947   publication from April 2025 until the end of the current funding period.}
12948 }
12949
12950 \printTable{{RequestedFundingStaff}{B02}}
12951
12952 \printProjectTail

```

3.15 Complete continuing service-project example

Service projects use the continuing-project headings while the prose and work packages focus on services, resources, access rules, and collaborative use.

```

12953
12954 \printProjectHead{Q01}
12955
12956 \section{Summary}
12957 \label{Q01:summary}
12958
12959 Summarise the service portfolio, its scientific purpose, its users, and the
12960 developments planned for the new funding period.
12961
12962 \section{Project progress to date}
12963 \label{Q01:project-progress-to-date}
12964
12965 \subsection{Report and current state of research}
12966 \label{Q01:report-and-current-state-of-research}
12967
12968 Report completed and ongoing services, usage by CRC projects, technical
12969 developments, quality assurance, and relevant service-project research.
12970
12971 \FloatBarrier
12972
12973 \projectPublicationsHeading
12974 \projectNocite{FAIR2016}
12975 \printProjectBibliography[heading=none]
12976
12977 \section{Project plan}
12978 \label{Q01:project-plan}
12979
12980 \begin{aims}
12981   \addAim{1} Maintain and quality-assure the core service portfolio.
12982   \addAim{2} Extend the portfolio for new collaborative requirements.
12983 \end{aims}
12984
12985 \begin{workpackages}
12986   \addWP{wp1}{
12987     name={Core service provision},
12988     description={Provide and quality-assure core services},
12989     periodStart={1},
12990     periodEnd={16},
12991     style={default},
12992   }
12993   Describe access, sample or data handover, turnaround, quality assurance,
12994   responsibilities, and capacity for \getWP{wp1}.
12995
12996   \addWP{wp2}{
12997     name={Service development},
12998     description={Develop and validate new service modules},
12999     periodStart={3},
13000     periodEnd={14},
13001     style={alternative},
13002   }
13003   Describe development milestones and the projects participating in

```

```

13004 \getWP{wp2}.
13005 \end{workpackages}
13006
13007 \printPlot{{Gantt}}{Q01}}
13008
13009 \FloatBarrier
13010
13011 \section{Relevance of sex, gender and/or diversity in the research project}
13012 \label{Q01:relevance-of-sex-gender-and-diversity}
13013
13014 Explain relevance for the service methods and the studies supported by them.
13015
13016 \section{Role within the Collaborative Research Centre}
13017 \label{Q01:role-within-the-collaborative-research-centre}
13018
13019 Describe which projects use the services and how priorities, access, and
13020 collaborations are coordinated.
13021
13022 \printPlot{{ProjectCollaboration}}{Q01}}
13023
13024 \section{Differentiation from other funded projects}
13025 \label{Q01:differentiation-from-other-funded-projects}
13026
13027 Differentiate the CRC service from existing institutional infrastructure and
13028 other funded service activities.
13029
13030 \section{Project funding}
13031 \label{Q01:project-funding}
13032
13033 \subsection{Previous funding}
13034
13035 State when the service project began and describe relevant previous funding.
13036
13037 \subsection{Requested funding}
13038
13039 %% Automatic staff-cost example: sum is intentionally omitted; the class
13040 %% halves the calculated amounts in year1 and year5.
13041 \addEntry[funding]{RequestedFunding}{
13042   ref-project-id = {Q01},
13043   funding-type   = {staff},
13044   category       = {nonResearch},
13045   percentage     = {65},
13046   quantity = {
13047     year1 = {1},
13048     year2 = {1},
13049     year3 = {1},
13050     year4 = {1},
13051     year5 = {1}
13052   }
13053 }
13054
13055 %% Explicit staff-cost example: sum overrides the central salary calculation;
13056 %% the concrete year1 and year5 amounts below already represent half-years.
13057 \addEntry[funding]{RequestedFunding}{
13058   ref-project-id = {Q01},
13059   funding-type   = {staff},
13060   category       = {assistant},
13061   percentage     = {50},
13062   quantity = {
13063     year1 = {1},
13064     year2 = {1},
13065     year3 = {1},
13066     year4 = {1},
13067     year5 = {1}
13068   },
13069   sum = {

```

```

13070     year1 = {9000},
13071     year2 = {18000},
13072     year3 = {18000},
13073     year4 = {18000},
13074     year5 = {9000}
13075 }
13076 }
13077
13078 \addEntry[funding]{RequestedFunding}{
13079     ref-project-id = {Q01},
13080     funding-type   = {costs}, %staff, costs, ...
13081     category      = {Invitation},
13082     sum = {
13083         year1 = {1000},
13084         year2 = {2000},
13085         year3 = {3000},
13086         year4 = {4000},
13087         year5 = {5000}
13088     }
13089 }
13090
13091 \printTable{{RequestedFunding}{Q01}}
13092
13093 \subsubsection{Requested funding for staff for the new funding period}
13094
13095 \addEntry[staff]{RequestedFundingStaff}{
13096     ref-project-id      = {Q01},
13097     funding-status      = {requested},
13098     staff-type          = {nonResearch},
13099     firstname           = {Service},
13100     lastname            = {Specialist},
13101     academic-degree     = {},
13102     positionText        = {Technical specialist},
13103     field-of-research   = {Core-facility services},
13104     ref-institution-id  = {ins1},
13105     category            = {nonResearch},
13106     description         = {Operates the service platform, performs quality
13107         control, and supports participating projects.}
13108 }
13109
13110 \printTable{{RequestedFundingStaff}{Q01}}
13111
13112 \subsubsection{Requested funding for direct costs for the new funding period}
13113
13114 \addEntry[funding]{RequestedAndExistingFundingDirectCosts}{
13115     ref-project-id      = {Q01},
13116     ref-affiliation-id  = {aff1},
13117     financed-by         = {Core-facility funds},
13118     sum = {
13119         year1 = {1000},
13120         year2 = {1000},
13121         year3 = {1000},
13122         year4 = {1000},
13123         year5 = {1000}
13124     }
13125 }
13126
13127 \printTable{{RequestedAndExistingFundingDirectCosts}{Q01}}
13128
13129 \begin{FundingDirectCostsTable}[Text]
13130     Service-specific consumables & EUR & 10000 \\
13131     Maintenance and quality assurance & EUR & 5000 \\
13132 \end{FundingDirectCostsTable}
13133
13134 \subsubsection{Requested funding for instrumentation for the new funding
13135     period}

```

```

13136
13137 \begin{FundingDirectCostsTable}[Text]
13138   Service-platform upgrade & EUR & 5000 \\
13139 \end{FundingDirectCostsTable}
13140
13141 \printProjectTail

```

3.16 Complete integrated research training group example

The MGK/IRTG project type has its own required narrative and funding headings. This file mirrors that structure instead of pretending it is a conventional research project.

```

13142 \printProjectHead{Q02}
13143
13144 \section{Summary}
13145 \label{Q02:summary}
13146
13147 Summarise the objectives, development, and added value of the Integrated
13148 Research Training Group.
13149
13150 \section{Tabular report}
13151 \label{Q02:tabular-report}
13152
13153 Provide the required tabular report of all researchers funded by the
13154 Integrated Research Training Group to date.
13155
13156 \section{Qualification programme}
13157 \label{Q02:qualification-programme}
13158
13159 Describe the qualification programme, workshops, courses, retreats, career
13160 development measures, and other training activities.
13161
13162 \section{Management and supervision}
13163 \label{Q02:management-and-supervision}
13164
13165 Describe management responsibilities, recruitment, supervision arrangements,
13166 mentoring, conflict-resolution processes, and quality assurance.
13167
13168 \section{Environment of the Integrated Research Training Group}
13169 \label{Q02:environment-of-the-integrated-research-training-group}
13170
13171 Describe the scientific, institutional, interdisciplinary, and international
13172 training environment.
13173
13174 \section{Interim assessment and outlook}
13175 \label{Q02:interim-assessment-and-outlook}
13176
13177 Assess progress during the current funding period and describe priorities and
13178 measurable objectives for the next funding period.
13179
13180 \section{Project funding}
13181 \label{Q02:project-funding}
13182
13183 \subsection{Previous funding}
13184
13185 The Integrated Research Training Group has been funded within the
13186 Collaborative Research Centre since April 2018. Replace this date and add any
13187 relevant funding under another programme.
13188
13189 %% Declare all monetary rows before the existing-funds overview: that table
13190 %% compares existing direct-cost resources with the requested direct costs.
13191 %% Automatic staff-cost example: sum is intentionally omitted; the class
13192 %% halves the calculated amounts in year1 and year5.
13193 \addEntry[funding]{RequestedFunding}{
13194   ref-project-id = {Q02},
13195   funding-type   = {staff},
13196   category       = {PhD},
13197   percentage     = {65},

```

```

13198     quantity = {
13199         year1 = {1},
13200         year2 = {1},
13201         year3 = {1},
13202         year4 = {1},
13203         year5 = {1}
13204     }
13205 }
13206
13207 %% Explicit staff-cost example: sum overrides the central salary calculation;
13208 %% the concrete year1 and year5 amounts below already represent half-years.
13209 \addEntry[funding]{RequestedFunding}{
13210     ref-project-id = {Q02},
13211     funding-type   = {staff},
13212     category       = {nonResearch},
13213     percentage     = {50},
13214     quantity = {
13215         year1 = {1},
13216         year2 = {1},
13217         year3 = {1},
13218         year4 = {1},
13219         year5 = {1}
13220     },
13221     sum = {
13222         year1 = {15000},
13223         year2 = {30000},
13224         year3 = {30000},
13225         year4 = {30000},
13226         year5 = {15000}
13227     }
13228 }
13229
13230 \addEntry[funding]{RequestedFunding}{
13231     ref-project-id = {Q02},
13232     funding-type   = {costs},
13233     category       = {Qualification programme},
13234     sum = {
13235         year1 = {2000},
13236         year2 = {2000},
13237         year3 = {2000},
13238         year4 = {2000},
13239         year5 = {2000}
13240     }
13241 }
13242
13243 \addEntry[funding]{RequestedFunding}{
13244     ref-project-id = {Q02},
13245     funding-type   = {fellowships},
13246     category       = {Short-term fellowships},
13247     sum = {
13248         year1 = {1000},
13249         year2 = {1000},
13250         year3 = {1000},
13251         year4 = {1000},
13252         year5 = {1000}
13253     }
13254 }
13255
13256 \addEntry[funding]{RequestedFunding}{
13257     ref-project-id = {Q02},
13258     funding-type   = {globalfunds},
13259     category       = {Training and networking},
13260     sum = {
13261         year1 = {3000},
13262         year2 = {3000},
13263         year3 = {3000},

```

```

13264     year4 = {3000},
13265     year5 = {3000}
13266 }
13267 }
13268
13269 \addEntry[funding]{RequestedAndExistingFundingDirectCosts}{
13270     ref-project-id      = {Q02},
13271     ref-affiliation-id  = {aff2},
13272     financed-by        = {Graduate-school funds},
13273     sum = {
13274         year1 = {1000},
13275         year2 = {1000},
13276         year3 = {1000},
13277         year4 = {1000},
13278         year5 = {1000}
13279     }
13280 }
13281
13282 \addEntry[staff]{RequestedFundingStaff}{
13283     ref-project-id      = {Q02},
13284     funding-status      = {existing},
13285     staff-type          = {nonResearch},
13286     firstname           = {Taylor},
13287     lastname            = {Trainer},
13288     academic-degree     = {},
13289     positionText        = {Training coordinator},
13290     field-of-research   = {Structured doctoral training},
13291     ref-institution-id  = {ins2},
13292     commitment          = {20},
13293     funding-source      = {Partner University core funds},
13294     description         = {Coordinates recruitment, course administration,
13295         progress monitoring, mentoring, and quality assurance for the
13296         qualification programme.}
13297 }
13298
13299 \subsection{Existing funds for the new funding period}
13300
13301 Describe the coordination, training, staff, and direct-cost resources made
13302 available to the Integrated Research Training Group by the participating
13303 institutions.
13304
13305 \subsubsection*{Existing staff}
13306
13307 \printTable{{RequestedFundingStaff}{Q02}}
13308
13309 \printTable{{RequestedAndExistingFundingDirectCosts}{Q02}}
13310
13311 \subsection{Requested funding}
13312
13313 \printTable{{RequestedFunding}{Q02}}
13314
13315 \subsection{Requested funding for staff}
13316
13317 \begin{FundingDirectCostsTable}[Text]
13318     Doctoral-researcher position: interdisciplinary research and participation
13319     in the complete qualification programme & EUR & 5000 \\
13320 \end{FundingDirectCostsTable}
13321
13322 \subsection{Requested funding for direct costs}
13323
13324 \begin{FundingDirectCostsTable}[Text]
13325     Workshops and transferable-skills courses & EUR & 10000 \\
13326     Visiting researchers and networking & EUR & 5000 \\
13327 \end{FundingDirectCostsTable}
13328
13329 \subsection{Requested funding for fellowships}

```

```

13330
13331 \begin{FundingDirectCostsTable}[Text]
13332   Short-term research fellowships: state the type of fellowship, average
13333   number of fellows, average duration, monthly allowance per person, and
13334   justification & EUR & 5000 \\
13335 \end{FundingDirectCostsTable}
13336
13337 \subsection{Requested global funds}
13338
13339 \begin{FundingDirectCostsTable}[Text]
13340   Training and networking measures: explain the purpose, allocation rules,
13341   selection process, and administration & EUR & 15000 \\
13342 \end{FundingDirectCostsTable}
13343
13344 \printProjectTail

```

3.17 Complete central administrative-project example

The central administrative project has a dedicated DFG structure. It does not reuse the summary, research-progress, publication, project-plan, or instrumentation headings of a continuing research project.

```

13345 \printProjectHead{Q03}
13346
13347 \section{Documentation of the central activities of the Collaborative
13348   Research Centre}
13349 \label{Q03:documentation-of-central-activities}
13350
13351 Document governance and decision-making, scientific coordination, reporting,
13352 internal communication, data stewardship, publication support, equal-
13353 opportunity measures, early-career support, outreach, and the interfaces with
13354 all applicant and participating institutions. Distinguish CRC-specific tasks
13355 from permanent institutional duties and state responsibilities, workflows,
13356 results from the current period, and priorities for the new funding period.
13357
13358 \section{Project funding}
13359 \label{Q03:project-funding}
13360
13361 %% The existing-funds overview includes the requested direct-cost total, so
13362 %% all monetary records are declared before either table is printed.
13363 %% Automatic staff-cost example: sum is intentionally omitted. The class
13364 %% applies the half-year factor to year1 and year5.
13365 \addEntry[funding]{RequestedFunding}{
13366   ref-project-id = {Q03},
13367   funding-type   = {staff},
13368   category       = {nonResearch},
13369   percentage     = {100},
13370   quantity = {
13371     year1 = {1},
13372     year2 = {1},
13373     year3 = {1},
13374     year4 = {1},
13375     year5 = {1}
13376   }
13377 }
13378
13379 %% Explicit staff-cost example: the stated sums override the salary settings;
13380 %% year1 and year5 below already represent half-years.
13381 \addEntry[funding]{RequestedFunding}{
13382   ref-project-id = {Q03},
13383   funding-type   = {staff},
13384   category       = {assistant},
13385   percentage     = {50},
13386   quantity = {
13387     year1 = {1},
13388     year2 = {1},
13389     year3 = {1},
13390     year4 = {1},
13391     year5 = {1}

```

```

13392     },
13393     sum = {
13394         year1 = {12500},
13395         year2 = {25000},
13396         year3 = {25000},
13397         year4 = {25000},
13398         year5 = {12500}
13399     }
13400 }
13401
13402 \addEntry[funding]{RequestedFunding}{
13403     ref-project-id = {Q03},
13404     funding-type   = {costs},
13405     category       = {Central coordination and communication},
13406     sum = {
13407         year1 = {2000},
13408         year2 = {2000},
13409         year3 = {2000},
13410         year4 = {2000},
13411         year5 = {2000}
13412     }
13413 }
13414
13415 \addEntry[funding]{RequestedFunding}{
13416     ref-project-id = {Q03},
13417     funding-type   = {globalfunds},
13418     category       = {Central measures},
13419     sum = {
13420         year1 = {2000},
13421         year2 = {2000},
13422         year3 = {2000},
13423         year4 = {2000},
13424         year5 = {2000}
13425     }
13426 }
13427
13428 \addEntry[staff]{RequestedFundingStaff}{
13429     ref-project-id      = {Q03},
13430     funding-status      = {existing},
13431     staff-type          = {nonResearch},
13432     ref-person-id       = {man1},
13433     field-of-research   = {Research management},
13434     commitment         = {20},
13435     funding-source      = {Partner University core funds},
13436     description         = {Coordinates governance, reporting, internal
13437         communication, central measures, and interfaces with applicant and
13438         participating institutions.}
13439 }
13440
13441 \addEntry[funding]{RequestedAndExistingFundingDirectCosts}{
13442     ref-project-id      = {Q03},
13443     ref-affiliation-id  = {aff1},
13444     financed-by         = {Central university funds},
13445     sum = {
13446         year1 = {1000},
13447         year2 = {1000},
13448         year3 = {1000},
13449         year4 = {1000},
13450         year5 = {1000}
13451     }
13452 }
13453
13454 \subsection{Existing funds for the new funding period}
13455
13456 Describe the central staff, facilities, and direct-cost resources contributed
13457 by the applicant and participating institutions.

```

```

13458
13459 \subsubsection*{Existing staff}
13460
13461 \printTable{{RequestedFundingStaff}{Q03}}
13462
13463 \printTable{{RequestedAndExistingFundingDirectCosts}{Q03}}
13464
13465 \subsection{Requested funding for the new funding period}
13466
13467 \printTable{{RequestedFunding}{Q03}}
13468
13469 \subsection{Requested funding for staff}
13470
13471 \begin{FundingDirectCostsTable}[Text]
13472   Scientific coordination: justify the category, percentage, period, and
13473   CRC-specific responsibilities & EUR & 5000 \\
13474 \end{FundingDirectCostsTable}
13475
13476 \subsection{Requested funding for direct costs}
13477
13478 \begin{FundingDirectCostsTable}[Text]
13479   Governance meetings and scientific exchange & EUR & 10000 \\
13480   Communication and outreach & EUR & 5000 \\
13481 \end{FundingDirectCostsTable}
13482
13483 \subsection{Requested global funds}
13484
13485 \begin{FundingDirectCostsTable}[Text]
13486   Central measures: explain the purpose, allocation rules, selection process,
13487   and administration & EUR & 10000 \\
13488 \end{FundingDirectCostsTable}
13489
13490 \printProjectTail
13491
13492 \chapter{Bylaws of the Collaborative Research Centre} %4
13493 \printThumbIndex{4}
13494 \cohead{Bylaws of the \crc}%
13495 \cehead{Bylaws of the \crc}%
13496
13497 \begin{bylaws}
13498   \item Name, coordinating
13499     \dfgApplicantAffiliationsTF{university}{universities}, and purpose of the \crc
13500   \begin{bylaws}
13501     \item The \crc (CRC) \enquote{\dfgCRCName\space --\space\dfgCRCNameAddon}
13502       is a legally dependent institution of \theCRCAffiliation.
13503
13504     \item The \crc conducts interrelated research on microbial signalling,
13505       epithelial barriers, immune regulation, and organ function. It is
13506       divided into research project areas and central projects.
13507
13508     \item The \crc promotes interaction with other research institutions,
13509       supports researchers in early career phases, and fosters responsible
13510       international cooperation, equity, and equal opportunity.
13511   \end{bylaws}
13512
13513   \item Membership and governing bodies
13514   \begin{bylaws}
13515     \item Members are the project leaders and persons appointed to central
13516       scientific or administrative responsibilities by the general assembly.
13517     \item The governing bodies are the general assembly, the spokesperson, and
13518       the steering committee. The general assembly elects the spokesperson
13519       and steering committee for the applicable funding period.
13520     \item The steering committee prepares strategic and budgetary decisions,
13521       monitors milestones, and reports to the general assembly at least once
13522       per year.
13523   \end{bylaws}

```

```

13524
13525 \item Decisions and allocation of shared resources
13526 \begin{bylaws}
13527 \item Decisions are normally taken by simple majority of members present;
13528 changes to these bylaws require a two-thirds majority.
13529 \item Shared funds and infrastructure are allocated through documented,
13530 transparent procedures based on scientific need, feasibility, and equal
13531 access across participating projects.
13532 \item Members disclose conflicts of interest and do not participate in the
13533 corresponding deliberation or decision.
13534 \end{bylaws}
13535
13536 \item Research integrity, equity, and conflict resolution
13537 \begin{bylaws}
13538 \item All members follow the applicable rules of good research practice,
13539 data protection, animal welfare, research ethics, and occupational safety.
13540 \item The CRC implements equal-opportunity and accessibility measures and
13541 monitors participation in recruitment, training, and governance.
13542 \item Concerns may be raised confidentially with the spokesperson, the CRC
13543 management, or the competent independent offices of the participating
13544 institutions.
13545 \end{bylaws}
13546
13547 \item Research-data governance
13548 \begin{bylaws}
13549 \item Projects document data, code, samples, access rights, retention, and
13550 publication in project-specific data-management plans.
13551 \item Central data stewardship defines common metadata and quality
13552 standards, manages controlled access, and supports publication according
13553 to the FAIR principles and applicable legal requirements.
13554 \end{bylaws}
13555 \end{bylaws}
13556 \chapter{Declarations} %5
13557 \printThumbIndex{5}
13558 I/We hereby confirm the accuracy of the information contained in the proposal, including the research p
13559
13560 The \emph{DFG Rules of Procedure for Dealing with Scientific Misconduct}
13561 (\emph{Verfahrensordnung zum Umgang mit wissenschaftlichem Fehlverhalten -
13562 VerfOwF})
13563 apply to individuals with a high level of scientific/\-academic responsibility in connection with fundi
13564 academic responsibility in the project proposal submitted by the \dfgApplicantAffiliationsTF{university
13565
13566 In submitting this proposal, all project leaders undertake to comply with the
13567 relevant discipline-specific research ethics guidelines, to determine whether
13568 a statement from the responsible ethics committee is required and, where
13569 necessary, to obtain it in good time before the start of funding. They will
13570 inform the DFG immediately if an ethics committee expresses substantive
13571 concerns or issues a negative statement and will submit the statement if the
13572 DFG requests it.
13573
13574 The DFG takes the protection of your personal data very seriously.
13575 Please note the DFG's data protection notice on research funding, which can be viewed and downloaded a
13576 \url{www.dfg.de/privacy_policy}
13577
13578 Please forward this information to those individuals whose data will be processed by the DFG because t
13579
13580 I/We have read the DFG's data protection notice.
13581
13582 I/We consent to the processing and transfer of special categories of personal
13583 data (including the data of all parties involved) for the purposes stated in the
13584 Privacy Policy if, after careful consideration, I/we provide such data either
13585 now or at a later date.\par
13586 \vfill
13587 \printSignaturesWithRole{spokesperson}{(Spokesperson~of~\crc)}
13588 \printSignaturesWithRole{rector}

```

```

13589 { (Rector,~chancellor,~or~president~of~
13590 \getEntry[affiliation]{\theAffiliationOfRoleID}{name}}) }

```

3.18 Backmatter File

The final page suppresses running headers and page numbers and delegates the complete layout to the project-overview table defined by the class.

```

13591 \pagestyle{empty}
13592 \printTable{projectOverview}

```

3.19 Project collaboration plot test

This focused test is deliberately independent of the proposal metadata. It contains active, ending, and reference-only projects; duplicate and reverse-only declarations; and calls both supported collaboration layouts.

```

13593 %% Compile from the generated local directory with:
13594 %%   lualatex -interaction=nonstopmode -halt-on-error test-project-collaboration.tex
13595 %%
13596 %% This test is deliberately self-contained. The fast project option prevents
13597 %% the proposal metadata from loading; immediately after \begin{document} the
13598 %% two fast-mode booleans are reset so the dummy \addEntry data and plots below
13599 %% are processed normally.
13600 \documentclass[
13601   fastcompile-project = true,
13602   english
13603 ]{dfg-crc}
13604
13605 \begin{document}
13606
13607 \ExplSyntaxOn
13608 \bool_set_false:N \l_@@_class_fastcompile_project_bool
13609 \bool_set_false:N \l_@@_class_fastcompile_bool
13610 \ExplSyntaxOff
13611
13612 %% #1 is either empty or a complete project-area assignment; #2 is the
13613 %% project id, #3 status (C/N/E), #4 collaborations, and #5 reference-only.
13614 \NewDocumentCommand{\AddDummyProjectEntry}{m m m m m}{
13615   \addEntry{project}{
13616     id                = {#2},
13617     #1
13618     number            = {#2},
13619     name               = {Dummy project #2},
13620     project-status    = {#3},
13621     project-type      = {research},
13622     consider-for-lists = {true},
13623     reference-only    = {#5},
13624     ref-person-id     = {},
13625     collaborations    = {#4},
13626     research-area     = {},
13627     legal-issues     = {
13628       L1 = {no},
13629       L1a = {},
13630       L2 = {no},
13631       L2a = {},
13632       L3 = {no},
13633       L4 = {no},
13634       L5 = {no},
13635       L5a = {},
13636       L6 = {no},
13637       L7 = {no},
13638       L7a = {}
13639     }
13640   }
13641 }
13642 %% Omitting the optional area leaves the project-area database column absent
13643 %% until the first plot and therefore exercises both schema and ID fallbacks.
13644 \NewDocumentCommand{\AddDummyProject}{o m m m m}{
13645   \IfNoValueTF{#1}

```

```

13646     { \AddDummyProjectEntry(){#2}{#3}{#4}{#5} }
13647     { \AddDummyProjectEntry{project-area=#1},}{#2}{#3}{#4}{#5} }
13648 }
13649
13650 %% Active project area A. All repeats B06 deliberately to test that an
13651 %% undirected relation declared twice is collapsed.
13652 \AddDummyProject{A02}{C}{}{false}
13653 \AddDummyProject{A03}{C}{}{false}
13654 \AddDummyProject{A05}{C}{}{false}
13655 \AddDummyProject{A09}{C}{}{false}
13656 \AddDummyProject{A10}{C}{}{false}
13657 \AddDummyProject{A11}{C}{B06}{false}
13658 \AddDummyProject{A12}{N}{}{false}
13659 \AddDummyProject{A13}{N}{}{false}
13660
13661 %% A04 is ending and A00 is reference-only. Neither may occur in a plot.
13662 \AddDummyProject{A04}{E}{}{false}
13663 \AddDummyProject{A00}{C}{}{true}
13664
13665 %% Active project area B. The A04 relation checks ending-project filtering.
13666 \AddDummyProject{B01}{C}{}{false}
13667 \AddDummyProject{B04}{C}{}{false}
13668 \AddDummyProject{B05}{C}{}{false}
13669 \AddDummyProject{B06}{C}
13670     {A00,A04,A11,A12,B01,B04,B05,B07,B10}
13671     {false}
13672 \AddDummyProject{B07}{C}{}{false}
13673 \AddDummyProject{B08}{C}{}{false}
13674 \AddDummyProject{B09}{C}{}{false}
13675 \AddDummyProject{B10}{N}{}{false}
13676
13677 %% Active project area Q. Q02 declares B06 in the reverse direction only.
13678 \AddDummyProject{Q01}{C}{}{false}
13679 \AddDummyProject{Q02}{C}{B06}{false}
13680 \AddDummyProject{Q03}{C}{}{false}
13681 \AddDummyProject{Q04}{C}{}{false}
13682
13683 %% The first plot is deliberately called before any project-area key has been
13684 %% entered. It exercises the missing-column and ID-prefix fallbacks.
13685 \printPlot{{ProjectCollaboration}{B06}}
13686
13687 \clearpage
13688
13689 %% Explicit project areas need not match the project-ID prefix. The longer
13690 %% service-area label exercises dynamic label measurement, while the options
13691 %% exercise explicit color mappings for otherwise unknown areas.
13692 \AddDummyProject[C]{X01}{C}{B06}{false}
13693 \AddDummyProject[Shared services]{Y01}{N}{}{false}
13694 \ExplSyntaxOn
13695 \@@_project_count_build:
13696 \prop_get:NnN \g_@@_project_count_area_prop { C } \l_tmpa_tl
13697 \int_compare:nNnF { \l_tmpa_tl } = { 1 }
13698     { \PackageError{test}{Expected~one~project~in~dynamic~area~C}{} }
13699 \prop_get:NnN \g_@@_project_count_area_prop { SHARED~SERVICES } \l_tmpa_tl
13700 \int_compare:nNnF { \l_tmpa_tl } = { 1 }
13701     { \PackageError{test}{Expected~one~project~in~dynamic~Shared~services~area}{} }
13702 \ExplSyntaxOff
13703 \printPlot{{ProjectCollaboration}[
13704     area-colors={C=cyan!70!black,Shared services=orange!80!black}
13705 ]{B07}}
13706
13707 \clearpage
13708
13709 %% Select the low arc layout explicitly. Every displayed arc should reach the
13710 %% same vertical peak, IDs should sit inside the boxes, and each area rule should
13711 %% span its boxes; additional caption text follows the id.

```

```

13712 \printPlot{{ProjectCollaboration}}[
13713   layout=arc,
13714   area-palette={orange!80!black,violet!75!black,teal!70!black}
13715 ]{B06}
13716 [Dummy metadata; A04 and A00 are intentionally omitted.]
13717
13718 \end{document}

```

3.20 Existing direct-cost overview test

This focused two-pass test prints section 2.1.1 before declaring the project-level rows. On the following run, the auxiliary-file mirror must restore those rows early enough for the table and the assertions.

```

13719 %% Compile from the generated local directory with:
13720 %%   latexmk -lualatex -g -halt-on-error test-existing-funds-direct-costs.tex
13721 \documentclass[english,final=true]{dfg-crc}
13722
13723 \providecommand{\dfgDirectCostsAuxReady}{0}
13724
13725 %% Ending-period values remain explicit because they describe the preceding
13726 %% funding period rather than the project requests below.
13727 \addEntry[funding]{PreviousExistingFundsDirectCosts}{
13728   year=1, applicant=4300, participant=1200, other-funds=500
13729 }
13730 \addEntry[funding]{PreviousExistingFundsDirectCosts}{
13731   year=2, applicant=0, participant=0, other-funds=0
13732 }
13733 \addEntry[funding]{PreviousExistingFundsDirectCosts}{
13734   year=3, applicant=0, participant=0, other-funds=0
13735 }
13736 \addEntry[funding]{PreviousExistingFundsDirectCosts}{
13737   year=4, applicant=0, participant=0, other-funds=0
13738 }
13739 \addEntry[funding]{PreviousExistingFundsDirectCosts}{
13740   year=5, applicant=0, participant=0, other-funds=0
13741 }
13742
13743 \begin{document}
13744
13745 \section*{Overview of existing funds for direct costs}
13746
13747 %% The second and later passes must see the rows restored from the auxiliary
13748 %% file before the live project declarations below are encountered.
13749 \ifnum\dfgDirectCostsAuxReady=1\relax
13750   \ExplSyntaxOn
13751   \cs_set_eq:NN
13752     \@@_direct_costs_test_show_saved:nnN
13753     \@@_show_calculated_number:nnN
13754   \cs_set_protected:Npn
13755     \@@_show_calculated_number:nnN #1#2#3 { }
13756   \cs_new_protected:Npn \@@_direct_costs_test_expect:nnn #1#2#3
13757   {
13758     \getSumRequestedFundingDirectCosts
13759       [RequestedAndExistingFundingDirectCostsOverview]{#1}{#2}
13760     \DTLconverttodecimal {\SumRequestedFundingDirectCosts} \l_tmpa_tl
13761     \fp_compare:nNnF {\l_tmpa_tl} = {#3}
13762     {
13763       \PackageError{direct-costs-test}
13764         {Expected~#1/#2~sum~#3,~got~\SumRequestedFundingDirectCosts}
13765         {The~section~2.1.1~overview~classification~is~incorrect.}
13766     }
13767   }
13768   \@@_direct_costs_test_expect:nnn {1}{applicant}{5000}
13769   \@@_direct_costs_test_expect:nnn {1}{participant}{2100}
13770   \@@_direct_costs_test_expect:nnn {1}{other-funds}{300}
13771   \@@_direct_costs_test_expect:nnn {1}{all}{7400}
13772   \@@_direct_costs_test_expect:nnn {all}{applicant}{25000}
13773   \@@_direct_costs_test_expect:nnn {all}{participant}{10500}

```

```

13774 \@@_direct_costs_test_expect:nnn {all}{other-funds}{1500}
13775 \@@_direct_costs_test_expect:nnn {all}{all}{37000}
13776 \cs_set_eq:NN
13777 \@@_show_calculated_number:nnN
13778 \@@_direct_costs_test_show_saved:nnN
13779 \iow_term:n
13780 {DIRECT~COSTS~TEST~PASS:~auxiliary~restore,~classification,~and~totals}
13781 \ExplSyntaxOff
13782 \fi
13783
13784 \printTable{ExistingFundsDirectCosts}
13785
13786 %% These rows intentionally occur after the overview. aff1 is the applicant
13787 %% affiliation in the generated metadata; aff2 is a participating affiliation.
13788 \addEntry[funding]{RequestedAndExistingFundingDirectCosts}{
13789   ref-project-id      = {A01},
13790   ref-affiliation-id = {aff1},
13791   financed-by         = {Applicant university core support},
13792   sum = {
13793     year1 = {5000}, year2 = {5000}, year3 = {5000},
13794     year4 = {5000}, year5 = {5000}
13795   }
13796 }
13797 \addEntry[funding]{RequestedAndExistingFundingDirectCosts}{
13798   ref-project-id      = {B01},
13799   ref-affiliation-id = {aff2},
13800   financed-by         = {Participating university core support},
13801   sum = {
13802     year1 = {2100}, year2 = {2100}, year3 = {2100},
13803     year4 = {2100}, year5 = {2100}
13804   }
13805 }
13806 \addEntry[funding]{RequestedAndExistingFundingDirectCosts}{
13807   ref-project-id      = {Q01},
13808   ref-affiliation-id = {other-funds},
13809   financed-by         = {External grant},
13810   sum = {
13811     year1 = {300}, year2 = {300}, year3 = {300},
13812     year4 = {300}, year5 = {300}
13813   }
13814 }
13815
13816 \makeatletter
13817 \protected@write\@auxout{}{%
13818   \string\gdef\string\dfgDirectCostsAuxReady{1}}
13819 \makeatother
13820
13821 \end{document}

```

The focused release regression test covers the four staff-roster groups and the automatic monetary calculation used when staff rows omit sum.

```

13822 \documentclass[
13823   english,
13824   final=true
13825 ]{dfg-crc}
13826
13827 % Check the shipped defaults before exercising proposal-specific overrides.
13828 \ExplSyntaxOn
13829 \fp_compare:nNnF { \dfgSalaryProf } = { 123600 }
13830 {
13831   \PackageError{test}
13832     {Expected~default~professor~salary~123600,~got~\dfgSalaryProf}
13833     {The~default~salary~setting~is~incorrect.}
13834 }
13835 \fp_compare:nNnF { \dfgMouseHousing } = { 0.75 }
13836 {
13837   \PackageError{test}

```

```

13838         {Expected~default~mouse~housing~rate~0.75,~got~\dfgMouseHousing}
13839         {The~default~animal-housing~setting~is~incorrect.}
13840     }
13841     \bool_if:NF \l_@@_custom_project_pi_once_per_section_bool
13842     {
13843         \PackageError{test}
13844         {Expected~projectPIOOncePerSection~to~default~to~true}
13845         {The~project/PI~reference~setting~has~the~wrong~default.}
13846     }
13847     \ExplSyntaxOff
13848
13849     \changeSettings{
13850         salary@prof           = 120000,
13851         salary@PhD            = 80000,
13852         animalHousing@mouse   = 0.80,
13853         animalHousing@mouseGnotobiotic= 4.10,
13854         animalHousing@rat     = 1.50,
13855     }
13856
13857     % A preamble declaration is immediately mirrored into the proposal-wide
13858     % overview database and exercises the non-empty instrumentation-table branch.
13859     \addEntry[funding]{RequestedFunding}{
13860         ref-project-id = {A01},
13861         funding-type   = {instrumentation},
13862         category       = {Test microscope},
13863         sum             = {
13864             year1 = {10000},
13865             year2 = {0},
13866             year3 = {0},
13867             year4 = {0},
13868             year5 = {0}
13869         }
13870     }
13871
13872     \begin{document}
13873
13874     \changeSettings{projectPIOOncePerSection=false}
13875     \section*{Natural-language project-reference lists}
13876
13877     Two projects: \getProject{A01,B01}.
13878
13879     Three projects: \getProject{A01,B01,Q01}.
13880
13881     \begin{tblr}{colspec={lX[l]}}
13882     Two table projects    & \getProject{A01,B01}      & \\
13883     Three table projects & \getProject{A01,B01,Q01} & \\
13884     PI command in table  & \getProjectPI{A01,B01}   & \\
13885     \end{tblr}
13886
13887     % The focused-project fallback has no project database but should retain the
13888     % same natural-language separators for its visible identifiers.
13889     \ExplSyntaxOn
13890     \bool_set_true:N \l_@@_class_fastcompile_project_bool
13891     \ExplSyntaxOff
13892     Fast-mode projects: \getProject{A01,B01,Q01}.
13893     Fast-mode project with PI command: \getProjectPI{B01}.
13894     \begin{tblr}{colspec={lX[l]}}
13895     Fast table & \getProject{A01,B01,Q01} & \\
13896     \end{tblr}
13897     \ExplSyntaxOn
13898     \bool_set_false:N \l_@@_class_fastcompile_project_bool
13899     \ExplSyntaxOff
13900
13901     \changeSettings{projectPIOOncePerSection=true}
13902     \section*{Project/PI references once per section}
13903

```

```

13904 First reference through \verb|\getProject|: \getProject{B01}.
13905
13906 Repeated reference through \verb|\getProjectPI|: \getProjectPI{B01}.
13907
13908 Mixed repeated/new list through \verb|\getProject|: \getProject{B01,Q01}.
13909
13910 \section*{Project/PI state reset at the next section}
13911
13912 First reference after reset through \verb|\getProjectPI|: \getProjectPI{B01}.
13913
13914 Repeated reference after reset through \verb|\getProject|: \getProject{B01}.
13915
13916 \changeSettings{projectPIOncePerSection=false}
13917 \section*{Repeated project/PI names enabled}
13918
13919 First reference with repetition enabled: \getProjectPI{B01}.
13920
13921 Second reference with repetition enabled: \getProjectPI{B01}.
13922
13923 Compact \verb|\getProject| with repetition enabled: \getProject{B01}.
13924
13925 \begin{group}
13926 \ExplSyntaxOn
13927 \tl_set:Nn \l__tmp_current_project_tl {B01}
13928 \ExplSyntaxOff
13929 Current-project reference: \getProjectPI{B01}.
13930 \end{group}
13931
13932 \changeSettings{projectPIOncePerSection=true}
13933
13934 \section*{Requested funding for staff for the new funding period}
13935
13936 \addEntry[staff]{RequestedFundingStaff}{
13937   ref-project-id      = {A01},
13938   ref-person-id       = {perl},
13939   funding-status      = {existing},
13940   staff-type          = {research},
13941   field-of-research   = {Microbiome research},
13942   ref-institution-id  = {ins1},
13943   commitment          = {8},
13944   category            = {prof},
13945   funding-source      = {University funds},
13946   description         = {
13947     Coordinates sample processing and integrates microbiome measurements with
13948     the project's experimental work.
13949   }
13950 }
13951
13952 \addEntry[staff]{RequestedFundingStaff}{
13953   ref-project-id      = {A01},
13954   funding-status      = {existing},
13955   staff-type          = {nonResearch},
13956   firstname           = {Bob},
13957   lastname            = {Existing},
13958   academic-degree     = {--},
13959   positionText        = {Technical assistant},
13960   field-of-research   = {Laboratory support},
13961   ref-institution-id  = {ins2},
13962   commitment          = {10},
13963   category            = {nonResearch},
13964   funding-source      = {University funds},
13965   description         = {
13966     Maintains the sample archive, prepares laboratory material, and documents
13967     quality-control procedures.
13968   }
13969 }

```

```

13970
13971 \addEntry[staff]{RequestedFundingStaff}{
13972   ref-project-id      = {A01},
13973   funding-status      = {requested},
13974   staff-type          = {research},
13975   lastname            = {TBA},
13976   positionText        = {Postdoctoral researcher},
13977   field-of-research   = {Immunometabolism},
13978   ref-institution-id  = {ins1,ins2},
13979   category            = {postDoc},
13980   description         = {
13981     Performs the mechanistic experiments, analyses the multi-omics data, and
13982     prepares the resulting manuscripts.
13983   }
13984 }
13985
13986 \addEntry[staff]{RequestedFundingStaff}{
13987   ref-project-id      = {A01},
13988   funding-status      = {requested},
13989   staff-type          = {nonResearch},
13990   firstname           = {Dana},
13991   lastname            = {Requested},
13992   academic-degree     = {--},
13993   positionText        = {Technical assistant},
13994   field-of-research   = {Cell culture},
13995   ref-institution-id  = {ins2},
13996   category            = {nonResearch},
13997   description         = {
13998     Supports cell-culture experiments, records reagent use, and performs the
13999     routine technical quality checks.
14000   }
14001 }
14002
14003 \printTable{{RequestedFundingStaff}{A01}}
14004
14005 \clearpage
14006 \section*{Overview of existing staff reused in chapter 2}
14007
14008 % The explicit database option lets this focused test read the live rows above.
14009 % In the proposal, \printTable{OverviewExistingStaff} uses the auxiliary-file
14010 % mirror because chapter 2 precedes the individual project declarations.
14011 \printTable[RequestedFundingStaff]{OverviewExistingStaff}
14012
14013 \clearpage
14014 \section*{Automatic calculation of requested staff funding}
14015
14016 The following two entries deliberately omit the \texttt{sum} key. The full-
14017 year values and their half-year counterparts are:
14018 \begin{itemize}
14019   \item Professor:  $\text{\num{120000}} \times 100/100 \times 2$ 
14020     =  $\text{\num{240000}}$ , or  $\text{\num{120000}}$  in years 1 and 5.
14021   \item Doctoral researcher:  $\text{\num{80000}} \times 65/100 \times 1$ 
14022     =  $\text{\num{52000}}$ , or  $\text{\num{26000}}$  in years 1 and 5.
14023 \end{itemize}
14024
14025 \addEntry[funding]{RequestedFunding}{
14026   ref-project-id = {A01},
14027   funding-type   = {staff},
14028   category       = {prof},
14029   percentage     = {100},
14030   quantity       = {
14031     year1 = {2},
14032     year2 = {2},
14033     year3 = {2},
14034     year4 = {2},
14035     year5 = {2}

```

```

14036     }
14037 }
14038
14039 \addEntry[funding]{RequestedFunding}{
14040     ref-project-id = {A01},
14041     funding-type   = {staff},
14042     category       = {PhD},
14043     percentage     = {65},
14044     quantity       = {
14045         year1 = {1},
14046         year2 = {1},
14047         year3 = {1},
14048         year4 = {1},
14049         year5 = {1}
14050     }
14051 }
14052
14053 \ExplSyntaxOn
14054 \@@_funding_sum_set:Nnnnn \l_tmpa_tl
14055     {RequestedFunding}{A01}{staff}{sum-year1}
14056 \fp_compare:nNnF {\l_tmpa_tl} = {146000}
14057     {
14058         \PackageError{test}
14059             {Expected~half-year~1~staff~sum~146000,~got~\l_tmpa_tl}
14060             {The~automatic~salary~calculation~is~incorrect.}
14061     }
14062 \@@_funding_sum_set:Nnnnn \l_tmpa_tl
14063     {RequestedFunding}{A01}{staff}{sum-year2}
14064 \fp_compare:nNnF {\l_tmpa_tl} = {292000}
14065     {
14066         \PackageError{test}
14067             {Expected~full-year~2~staff~sum~292000,~got~\l_tmpa_tl}
14068             {The~automatic~salary~calculation~is~incorrect.}
14069     }
14070 \@@_funding_sum_set:Nnnnn \l_tmpa_tl
14071     {RequestedFunding}{A01}{staff}{sum-year5}
14072 \fp_compare:nNnF {\l_tmpa_tl} = {146000}
14073     {
14074         \PackageError{test}
14075             {Expected~half-year~5~staff~sum~146000,~got~\l_tmpa_tl}
14076             {The~automatic~salary~calculation~is~incorrect.}
14077     }
14078 \@@_funding_sum_set:Nnnnn \l_tmpa_tl
14079     {RequestedFunding}{A01}{staff}
14080     {sum-year1, sum-year2, sum-year3, sum-year4, sum-year5}
14081 \fp_compare:nNnF {\l_tmpa_tl} = {1168000}
14082     {
14083         \PackageError{test}
14084             {Expected~five-year~staff~sum~1168000,~got~\l_tmpa_tl}
14085             {The~automatic~salary~calculation~is~incorrect.}
14086     }
14087 \iow_term:n
14088     {TEST~PASS:~custom~staff~sums~==~146000/292000/146000~and~1168000~total}
14089 \ExplSyntaxOff
14090
14091 \printTable{{RequestedFunding}{A01}}
14092
14093 Expected combined amount in years 1 and 5: \num{146000}; in years 2--4:
14094 \num{292000}. Expected amount over all five funding columns: \num{1168000}.
14095
14096 \clearpage
14097 \section*{Requested-instrumentation overview states}
14098
14099 \addEntry[funding]{NoInstrumentationFunding}{
14100     ref-project-id = {A01},
14101     funding-type   = {costs},

```

```

14102     category      = {Consumables},
14103     sum            = {
14104         year1 = {1000},
14105         year2 = {1000},
14106         year3 = {1000},
14107         year4 = {1000},
14108         year5 = {1000}
14109     }
14110 }
14111 \OverviewFundsRequestedInstrumentationTable[NoInstrumentationFunding]
14112
14113 \printTable{OverviewFundsRequestedInstrumentation}
14114
14115 \clearpage
14116 \section*{Configurable animal-housing rates}
14117
14118 \addEntry{UpkeepLaboratoryAnimals}{
14119     ref-project-id  = {A01},
14120     species         = {mouse},
14121     quantity        = {10},
14122     weeks-kept      = {4},
14123     purchasing-costs = {20},
14124     requested-funds = {100},
14125     existing-funds  = {0}
14126 }
14127 \addEntry{UpkeepLaboratoryAnimals}{
14128     ref-project-id  = {A01},
14129     species         = {mouse-gnotobiotic},
14130     quantity        = {2},
14131     weeks-kept      = {4},
14132     purchasing-costs = {20},
14133     requested-funds = {50},
14134     existing-funds  = {0}
14135 }
14136 \addEntry{UpkeepLaboratoryAnimals}{
14137     ref-project-id  = {A01},
14138     species         = {rat},
14139     quantity        = {3},
14140     weeks-kept      = {4},
14141     purchasing-costs = {25},
14142     requested-funds = {75},
14143     existing-funds  = {0}
14144 }
14145 \printTable{UpkeepLaboratoryAnimals}
14146
14147 \end{document}

```

Starting now a template CV file.

```

14148 \documentclass[english,cv]{dfg-crc}
14149 \begin{document}
14150 \input{content/00_titlepage}
14151 \dfgCVsection
14152 % %% \dfgCV{MM}
14153 \end{document}

```

Index

A		
abbreviation key	21	\getFullName 29
academic-degree key	24	\getName 29
academicdegree key	25	\getORCiD 42
\addAim	38	\getPI 29
\addboldnames	44	\getPIofProject 31
\addEntry	25	\getPIProject 30
addressStreet key	21	\getPIsWithRole 31
addressZIP key	21	\getProject 29
\addWP	38	\getProjectCount 30
\affiliationLogo	40	\getProjectPI 31
affiliationLogoPath key	35	\getWP 39
aims environment	38	\Hrule 40
applicant key	23	\hvFloat 42
		\ORCiD 42
		\OverviewExistingStaffTable . 135
		\OverviewFundsRequestedInstrumentationTable . 144
		\OverviewOfFundsRequestedForStaffTable . 141
B		\printGantt 39
biblatexstyleCV key	37	\printList 32
biblatexstyleFeatureCV key	37	\printPlot 32, 39
biblatexstyleFeatureProposal		\printProjectBibliography . 33
key	37	\printProjectHead 32
biblatexstyleProposal key	37	\printProjectResults 33
		\printProjectTail 33
		\printSignature 40
		\printSignaturesWithRole . . 40
		\printTable 32
		\printThumbIndex 39
		\printThumbIndexOff 40
		\projectNocite 33
		\projectPublicationsHeading . 33
		\RequestedFundingStaffTable . 170
		\resetboldnames 44
		\tmpLocalDB 29
		\TRR 30
		commitment key 24
		\compareEntry 31
		consider-for-lists key 19
		contract-information key 16
		costs key 23
		country key 21
		\CRC 30
		\crcLogo 40
		crcLogoPath key 35
		cv key 35
		cv-type key 17
C		
C1 key	16	
C2 key	16	
C2a key	16	
C2b key	16	
C3 key	16	
C3a key	16	
C4 key	16	
C4a key	16	
category key	16, 22, 24	
\changeSettings	35	
\checkFile	42	
collaborationAreaColors key	35	
collaborationAreaPalette key	35	
collaborations key	19	
colorscheme key	35	
Commands		
\addAim	38	
\addboldnames	44	
\addEntry	25	
\addWP	38	
\affiliationLogo	40	
\changeSettings	35	
\checkFile	42	
\compareEntry	31	
\CRC	30	
\crcLogo	40	
\dfgApplicantAffiliationsTF	40	
\dfgBox	40	
\dfgCV	18	
\dfgCVsection	18	
\dfgInstitutionList	41	
\dfgTOCprojectPart	34	
\documentclass	34	
\getAim	38	
\getCountRequestedStaff . .	134	
\getEntry	28	
\getEntry*	28	
		D
		dateDefense key 17
		degree-programme key 16
		department key 24
		description key 17, 24
		\dfgApplicantAffiliationsTF . . 40
		\dfgBox 40
		dfgBoxEnv environment 40
		\dfgCV 18
		\dfgCVsection 18
		\dfgInstitutionList 41
		dfgSummaryBox environment 40
		\dfgTOCprojectPart 34
		doctorate key 16
		doctorateYear key 16

\documentclass	34
doiAPIMail key	35

E

email key	15
emphasizeAuthors key	38
Environments	
aims	38
dfgBoxEnv	40
dfgSummaryBox	40
projectReport	33
workpackages	38

F

fastcompile key	34
fastcompile-project key	34
fastcompile-project-show-images key	34
fastcompile-project-show- publications key	34
fellowships key	23
field-of-research key	24
final key	35
financed-by key	16
firstname key	24, 25
font key	38
fontspec key	38
fundedSince key	26
funding-source key	24
funding-status key	24
funding-type key	22
fundingPeriodNumeral key	26
fundingYears key	26
fundingYearsPrevious key	26

G

gender key	26
\getAim	38
\getCountRequestedStaff	134
\getEntry	28
\getEntry*	28
\getFullName	29
\getName	29
\getORCiD	42
\getPI	29
\getPIofProject	31
\getPIProject	30
\getPIsWithRole	31
\getProject	29
\getProjectCount	30
\getProjectPI	31
\getWP	39
globalfunds key	23

H

\Hrule	40
\hvFloat	42

I

id key	25
--------	----

instrumentation key	23
---------------------	----

K

Keys

abbreviation	21
academic-degree	24
academicdegree	25
addressStreet	21
addressZIP	21
affiliationLogoPath	35
applicant	23
biblatexstyleCV	37
biblatexstyleFeatureCV	37
biblatexstyleFeatureProposal	37
biblatexstyleProposal	37
C1	16
C2	16
C2a	16
C2b	16
C3	16
C3a	16
C4	16
C4a	16
category	16, 22, 24
collaborationAreaColors	35
collaborationAreaPalette	35
collaborations	19
colorscheme	35
commitment	24
consider-for-lists	19
contract-information	16
costs	23
country	21
crcLogoPath	35
cv	35
cv-type	17
dateDefense	17
degree-programme	16
department	24
description	17, 24
doctorate	16
doctorateYear	16
doiAPIMail	35
email	15
emphasizeAuthors	38
fastcompile	34
fastcompile-project	34
fastcompile-project-show- images	34
fastcompile-project-show- publications	34
fellowships	23
field-of-research	24
final	35
financed-by	16
firstname	24, 25
font	38
fontspec	38
fundedSince	26
funding-source	24
funding-status	24
funding-type	22
fundingPeriodNumeral	26
fundingYears	26
fundingYearsPrevious	26

gender	26
globalfunds	23
id	25
instrumentation	23
L1	19
L1a	19
L2	19
L2a	19
L3	19
L4	19
L5	20
L5a	20
L6	20
L7	20
L7a	20
lastname	24, 25
legal-issues	19
location	21
name	26
name-alias	16
nameAddon	26
number	26
orcid	16
other-funds	23
participant	23
percentage	22
period	26
periodEnd	17
periodStart	17
phone	16
position	26
positionText	24, 26
project-area	19
project-status	19
project-type	18
projectPIOncePerSection	35
quantity	22
ref-affiliation-id	24, 26
ref-institution-id	24, 26
ref-person-id	17, 24
ref-project-id	24, 26
reference-only	19
research-area	19
role	26
sansfont	38
sansfontspec	38
showmarginalia	34
showtags	34
showtags-tables	34
skip10pub	34
staff	23
staff-type	24
style	39
sum	22
thumbindex	36
topic	16
url	15
year	23

L

L1 key	19
L1a key	19
L2 key	19
L2a key	19
L3 key	19

L4 key	19
L5 key	20
L5a key	20
L6 key	20
L7 key	20
L7a key	20
lastname key	24, 25
legal-issues key	19
location key	21

N

name key	26
name-alias key	16
nameAddon key	26
number key	26

O

\ORCiD	42
orcid key	16
other-funds key	23
\OverviewExistingStaffTable	135
\OverviewFundsRequestedInstrumentationTable	144
\OverviewOfFundsRequestedForStaffTable	141

P

participant key	23
percentage key	22
period key	26
periodEnd key	17
periodStart key	17
phone key	16
position key	26
positionText key	24, 26
\printGantt	39
\printList	32
\printPlot	32, 39
\printProjectBibliography	33
\printProjectHead	32
\printProjectResults	33
\printProjectTail	33
\printSignature	40
\printSignaturesWithRole	40
\printTable	32
\printThumbIndex	39
\printThumbIndexOff	40
project-area key	19
project-status key	19
project-type key	18
\projectNocite	33
projectPIOncePerSection key	35
\projectPublicationsHeading	33
projectReport environment	33

Q

quantity key	22
--------------	----

R

ref-affiliation-id key	24, 26
ref-institution-id key	24, 26

ref-person-id key	17, 24
ref-project-id key	24, 26
reference-only key	19
\RequestedFundingStaffTable	170
research-area key	19
\resetboldnames	44
role key	26

S

sansfont key	38
sansfontspec key	38
showmarginalia key	34
showtags key	34
showtags-tables key	34
skip10pub key	34
staff key	23
staff-type key	24
style key	39
sum key	22

T

thumbindex key	36
\tmpLocalDB	29
topic key	16
\TRR	30

U

url key	15
---------	----

W

workpackages environment	38
--------------------------	----

Y

year key	23
----------	----

References

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