

heria: A L^AT_EX class for Horizon Europe RIA and IA grant proposals*

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*This document corresponds to heria v5.1.1.0, dated 2026-08-16. See §5.2 for an explanation of the versioning scheme.

1 Introduction

This document describes the usage of `heria`, a $\text{\LaTeX}$ class that facilitates the preparation of Research and Innovation Action (RIA) and Innovation Action (IA) single-stage funding proposals for the European Commission’s (EC) Horizon Europe program. The Commission prescribes a detailed, structured format for the technical description (“Part B”) of these proposals, but provides templates only in Rich Text Format (RTF), a format that does not lend itself well to collaborative authorship and (cross-)reference management. The `heria` class is a conversion of the official Part B template into $\text{\LaTeX}$; it preserves the formatting and most of the instructions of the original version, and has the additional feature that tables (listing the participants, work packages, deliverables, etc.) are programmatically generated according to data supplied by the user. The advantage of this becomes clear when one considers that much of the data is reused across multiple tables.

The `heria` package can be used to write proposals using any of the following versions of the official Part B template:

- 3.2 (2022-11-15)
- 3.3 (2023-09-27)
- 3.4 (2024-04-04)
- 4.0 (2024-12-16)
- 5.1 (2026-01-22)

Besides this technical manual, there is a journal article that describes the motivation for and development of `heria`:

Tristan Miller. [Preparing Horizon Europe proposals in \$\text{\LaTeX}\$ with `heria`](#). *TUGboat: The Communications of the $\text{\TeX}$ Users Group*, 45(1): 59–64, 2024. ISSN 0896-3207. DOI: [10.47397/tb/45-1/tb139miller-horizon](#).

Please cite this journal article if you want to refer to `heria` in a publication.

2 Usage

The EC’s official template is structured in such a way that form and content cannot be entirely separated. The best way of starting a new proposal is therefore to make a copy of `heria-proposal-5.1.tex`, the skeleton proposal distributed with this package, and then adapt it to your project. As suggested by the filename, this skeleton proposal uses version 5.1 of the official Part B template. (`heria` includes skeleton proposals for earlier versions of the Part B template in the files `heria-proposal-4.0.tex`, `heria-proposal-3.4.tex`, etc.).

The following subsections describe the various macros and environments provided by `heria`, roughly in the same order presented in the skeleton proposal.

2.1 Preamble

Your proposal document should begin with the following line if you want the template instructions to be included in the output:

```
\documentclass[showinstructions]{heria}
```

Otherwise you can omit the `showinstructions` option:

```
\documentclass{heria}
```

The `heria` class is based on the default L^AT_EX `article` class, and so all of the macros and environments from the latter are available for you to use. The class automatically sets the font, margins, etc. mandated by the official instructions, and redefines some of the `article` macros as described later in this document.

Following `\documentclass` you should tell `heria` which version of the official Part B template you want to use:

`\templateversion` This macro sets the version of the official Part B template the proposal should use. It takes a single argument; valid values are 3.2, 3.3, 3.4, 4.0, and 5.1. If you omit this macro, `heria` will default to using the latest version of the template.

You should then provide the proposal metadata using the following macros:

`\title` This macro takes the title of the proposal as its sole argument. This title will be printed by the `\maketitle` macro (see below) and used for the PDF metadata.

`\callname` This macro takes as its sole argument the official natural-language description of the call to which the proposal is being submitted. It will be printed in the page header.

`\callidentifier` This macro takes as its sole argument the identifier of the call to which the proposal is being submitted, which will be printed in the page header. Call identifiers normally have the format `HORIZON-XX0-0000-XXXXX-00-XXXX`.

`\calltopic` This macro takes as its sole argument the identifier of the specific topic within the call to which the proposal is being submitted. Such identifiers normally have the format `HORIZON-XX0-0000-XXXXX-00-00`. The official template does not require proposals to mention the call topic, so you are free to omit the `\calltopic` macro. If you do use it, it will be printed by `\maketitle` below the proposal title.

2.2 Title

`\maketitle` This is generally the first macro that should be called in the main body of the document. As with the standard `article` class, it typesets the title.

2.3 Section headings, tags, and instructions

`\heinstructions` When the `showinstructions` options is passed to the document class, the `\heinstruction*` `\heinstructions` macro prints instructions from the official EC template. These instructions are contained in files distributed with the `heria` class; the macro's sole mandatory argument is used to construct the name of one of these files. The macro sets the instructions in a blue-tinted box with a blue border; the starred variant `\heinstructions*` omits the box.

To suppress printing of individual instructions, you can simply remove or comment out the corresponding `\heinstructions`/`\heinstructions*` macro.

`\opentag` Versions of the official Part B template up to and including 4.0 include a `\closetag`

number of “tags” that are used for the EC’s “internal processing of information, mostly for statistical gathering.” The `\opentag` and `\closetag` macros are used to emit the tags at the appropriate places in the proposal, and so should be left in their original positions in the skeleton proposal. The EC asks that proposal authors “not move, delete, re-order, or alter tags in any way”.

`\section` These three macros take a mandatory argument specifying the title of the corresponding section, subsection, or subsubsection, respectively. These document
`\subsection` subdivisions are fixed by the official template and so generally should not be re-
`\subsubsection` named or reordered, though it is probably safe to add additional ones where it does not disrupt the numbering of the existing ones. In versions of the official Part B template up to and including 4.0, many sections and subsections *must* be preceded or followed by certain tags, which are specified in the first and second optional arguments, respectively. The third optional argument contains the recommended page limit, when specified by the official template. The page limit will be printed only when the `showinstructions` option is passed to the document class.

2.4 Participants

`\participant` Participants should be listed in the same order as in Part A of the proposal, which is completed using an online form. Use one invocation of `\participant` for each participant, with the following three mandatory arguments, in order: the participant’s full name, the participant’s short name, and the participant’s two-letter country code. The first participant will be marked in the participant table as the project coordinator. Note that while the short name is typeset in the proposal, it is also used internally by the `heria` class as part of a L^AT_EX counter name, and so should generally consist only of ASCII letters.

`\makeparticipantstable` This macro emits the table of participants using the data from the `\participant` macro. Participants are automatically numbered according to the order of the `\participant` macros.

2.5 Summary tableau

`summarycanvas` (*env.*) Proposals must include a summary tableau of six boxes that briefly describe the
`summarybox` (*env.*) project’s specific needs; expected results; dissemination, exploitation, and communication measures; target groups; outcomes; and impacts. The `summarycanvas` and `summarybox` environments are provided for this purpose. Each `summarybox` environment typesets a shaded box headed by its mandatory argument. Three such boxes can be grouped side by side into a single `summarycanvas` environment.

`SidewaysFigure` (*env.*) The official Part B template uses landscape orientation to set the summary tableau. The `SidewaysFigure` environment can be used to replicate this formatting in your proposal. If both your `summarycanvas` environments fit on a single page, then you can wrap them in a single `SidewaysFigure` environment. Otherwise, you can wrap each `summarycanvas` in its own `SidewaysFigure` environment to put them on separate pages.

`SidewaysFigure` puts its contents in a floating figure, which avoids wasting space when the material preceding the summary tableau doesn’t end at the bottom of a page. The skeleton proposal demonstrates how such a floating summary tableau can be referenced in the relevant subsection of the Impact section. It also demonstrates how, using the `\ContinuedFloat` command of the `caption` package,

the summary tableau can be assigned a single figure number even when it is split across two `SidewaysFigure` environments.

2.6 Work packages and deliverables

<code>\makeworkpackagestable</code>	This macro emits the table of work packages, using the data from the <code>\workpackage</code> macros. Work packages are automatically numbered according to the order of the <code>\workpackage</code> macros.
<code>\workpackage</code>	This macro declares a work package, and takes five mandatory arguments: a unique identifier (used only internally by <code>heria</code> for cross-referencing purposes), the work package title, the short name of the lead participant (as specified in the corresponding <code>\participant</code> macro), the numeric starting month (measured from the start of the project), and the numeric ending month. Since the unique identifier is used as part of a $\text{\LaTeX}$ counter name, you should generally use only ASCII letters. Work packages are automatically numbered. You should use one <code>\workpackage</code> macro for each work package in your project.
<code>objectives (env.)</code>	This environment typesets a box containing an enumerated list of objectives for the most recently declared work package. Use the <code>\item</code> macro to begin each objective.
<code>descriptionofwork (env.)</code>	This environment typesets a box where you can describe the work program of the most recently declared work package. You can enter this information in free-form and/or use the <code>\task</code> macro to enumerate individual tasks.
<code>\task</code>	This macro typesets basic information about a work package task. The format used by this macro is not strictly mandated by the official template, but you may nonetheless find it useful. The macro takes three mandatory arguments: the task name, the short name of the lead participant (as specified in the corresponding <code>\participant</code> macro), a list of other participants (as free-form text, but advisedly using short names of participants where appropriate), and the starting and ending months for the task (as free-form text). You should use one <code>\task</code> macro for each task in your work package. You can, if you wish, follow each <code>\task</code> macro with a free-form description of the task.
<code>\deliverable</code>	This macro declares a deliverable for the most recently declared work package. There are six mandatory arguments: the deliverable name, a short description of the deliverable, the short name of the lead participant (as specified in the corresponding <code>\participant</code> macro), the deliverable type, the dissemination level, and the numeric delivery month (in months from the beginning of the project). The type and dissemination level arguments must be selected from the identifiers given in the template instructions.
<code>\makedeliverablestable</code>	This macro emits the table of deliverables, using the data from the <code>\deliverable</code> macros. Deliverables are automatically numbered according to the order of the <code>\deliverable</code> macros.

2.7 Milestones

<code>\milestone</code>	This macro declares a project milestone. It takes four mandatory arguments: the milestone name, a free-form list of related work packages, the due date (in number of months from the start of the project), and a free-form means of verification. You should use one <code>\milestone</code> macro for each milestone in your project.
<code>\makemilestonestable</code>	This macro emits the table of milestones, using the data from the <code>\milestone</code>

macros. Milestones are automatically numbered according to the order of the `\milestone` macros.

2.8 Critical risks

`\criticalrisk` This macro declares a critical risk for the project. It takes five mandatory arguments: a free-form description of the risk, the likelihood of the risk, the severity of the risk, and a free-form description of proposed mitigation measures. The likelihood and severity arguments must be selected from the identifiers given in the template instructions. You should use one `\criticalrisk` macro for each critical risk in your project.

`\makecriticalriskstable` This macro emits the table of critical risks, using the data from the `\criticalrisk` macros. Critical risks are output in the order of the `\criticalrisk` macros.

2.9 Summary of staff effort

`\staffeffort` This macro declares the number of person-months a given project participant will spend on a given work package. It takes three mandatory arguments: the short name of the participant (as specified in the corresponding `\participant` macro), the short name of the work package (as specified in the corresponding `\workpackage` macro), and the number of months. You must provide one and only one `\staffeffort` macro for every possible combination of participant and work package in your project.

`\makestaffefforttable` This macro emits the summary of staff effort table, using the data from the `\staffeffort` macros. The table rows and columns are automatically ordered according to the order of the `\participant` and `\workpackage` macros, respectively, and the total person-months per participant and total person-months per work package are automatically calculated.

2.10 Costs

`\subcontractingcost` This macro declares a subcontracting cost. It takes three mandatory arguments: the short name of a participant (as specified in the corresponding `\participant` macro), the amount of the subcontracting cost in euros, and a free-form description of the tasks and justification for the subcontracting cost. You should use one `\subcontractingcost` macro for each subcontracting cost in your project.

`\makesubcontractingcoststable` This macro emits the tables of subcontracting costs, using the data from the `\subcontractingcost` macros. Subcontracting costs are automatically grouped by participant and then output according to the order of the `\participant` and `\subcontractingcost` macros.

The following macros are relevant only for those proposals that use versions of the official Part B template from 5.1 onward:

`\equipmentcost` This macro declares an equipment cost (for the “Purchase costs” tables). It takes three mandatory arguments: the short name of a participant (as specified in the corresponding `\participant` macro), the amount of the equipment cost in euros, and a free-form description of the need for the equipment cost. You should use one `\equipmentcost` macro for each equipment cost in your project.

`\makeequipmentcoststable` This macro emits the tables of equipment (i.e., purchase) costs, using the data from the `\equipmentcost` macros. Equipment costs are automatically grouped

by participant and then output according to the order of the `\participant` and `\equipmentcost` macros.

The following macros are relevant only for those proposals that use versions of the official Part B template up to and including 4.0:

`\purchasecost` This macro declares the purchase costs for a participant. It takes eight mandatory arguments:

```
\purchasecost{\participant}%
             {\goodscost}{\justification}%
             {\travelcost}{\justification}%
             {\equipmentcost}{\justification}%
             {\remainingcosts}
```

Here `\participant` is the short name of a participant (as specified in the corresponding `\participant` macro); `\goodscost`, `\travelcost`, `\equipmentcost`, and `\remainingcost` are the amount of the “other goods, works and services”, “travel and subsistence”, “equipment”, and “remaining purchase costs”, respectively, in euros; and the `\justification` arguments are free-form justifications for the immediately preceding cost. (According to the official template, the remaining purchase costs do not require a justification.) You should use one `\purchasecost` macro for each participant with purchase costs in your project.

`\makepurchasecoststable` This macro emits the tables of purchase costs, using the data from the `\purchasecost` macros. Purchase costs are output according to the order of the `\participant` macros, and then in reverse order of the largest costs, with the “remaining purchase costs” output last.

`\othercost` This macro declares an “other” cost (i.e., in the “other costs” category). It takes three mandatory arguments: the short name of a participant (as specified in the corresponding `\participant` macro), the amount of the “other” cost in euros, and a free-form justification for the cost. You should use one `\othercost` macro for each “other” cost in your project.

`\makeothercoststable` This macro emits the tables of “other” costs, using the data from the `\othercost` macros. “Other” costs are automatically grouped by participant and then output according to the order of the `\participant` and `\othercost` macros.

`\inkindcontribution` This macro declares an in-kind contribution. It takes five mandatory arguments: the short name of a participant (as specified in the corresponding `\participant` macro), the third party name, the category of the contribution (selected from `Seconded personnel`, `Travel and subsistence`, `Equipment`, `Other goods, works and services`, and `Internally invoiced goods and services`), the amount of the cost in euros, and a free-form justification for the in-kind contribution. You should use one `\inkindcontribution` macro for each in-kind contribution in your project.

`\makeinkindcontributionstable` This macro emits the tables of in-kind contributions, using the data from the `\inkindcontribution` macros. In-kind contributions are automatically grouped by participant and then output according to the order of the `\participant` and `\inkindcontribution` macros.

3 Hints and tips

Part A. Some proposal data—in particular, the list of participants and the costs—must be entered not just in Part B of the proposal, but also in the online

Part A form. It is your responsibility to ensure that this data is consistent across the two parts of the proposal.

File structure. Rather than putting all the work package data into your main proposal document, you may find it convenient to put the `\workpackage` macro, the `objectives` environment, the `descriptionofwork` environment, and the `\deliverable` macros corresponding to a single work package into a dedicated file, which you can then include in your main proposal document with the `\input` macro. This will make it easier for you to shuffle the order of work packages as you write your proposal. (You may wish to split off other sections of the proposal into their own files, though the official template gives considerably less freedom to reorder them.)

Vertical spacing. The `heria` class applies the same vertical spacing as the `article` class; this is particularly generous around section headings. If you find yourself running up against the page limit, you may wish to add some `\vspace` commands, with a negative length as the argument, to tighten up the spaces before section headings, and perhaps also the tables.

4 Limitations and caveats

Table 3.1h. The instructions in versions of the official template up to and including 4.0 are ambiguous about the construction of the tables for purchase costs. In particular, it's not clear whether each individual cost exceeding 15% of the personnel costs must be listed in a separate row, or whether all costs in each category ("travel and subsistence", "equipment", etc.) should be combined into a single row. The `heria` class takes the latter interpretation; this may or may not be the same interpretation adopted by the funding agency and its reviewers.

This ambiguity is not so troubling in versions of the official template after 4.0, since their purchase tables list only one category of costs (equipment).

Error handling. The class currently does very little error checking on its input. Usually invalid input (e.g., mistyping the short name of a participant or work package in a macro argument, or neglecting to provide a macro necessary to generate a table) *will* result in an error that prevents the document from compiling, though the diagnostic message emitted by $\text{\LaTeX}$ may be somewhat cryptic.

Coverage of instructions. The class reproduces most, but not all, of the instructions from the official template. In particular, it omits all the instructions occurring before the title of the proposal, including three pages of introductory material and definitions. You should not rely solely on the instructions emitted by the class, which are provided only as a convenience; be sure to also read the instructions in the official template (and in the text of the call to which you are applying).

5 Package development

5.1 Source repository and bug tracker

For now, the package’s source code is hosted on GitHub at <https://github.com/logological/heria>. There you will also find an issue tracker for reporting bugs and feature requests.

5.2 Versioning scheme

Each release of the `heria` class carries a version number in the format *omaj.omin.maj.min*. Here *omaj.omin* is the highest version number of the official Horizon Europe RIA template that the class implements, and *maj* and *min* represent, respectively, major and minor revisions to the class (including any ancillary files, such as the skeleton proposal and documentation). A major revision is one that includes potentially breaking changes or significant new features; minor revisions are for all other changes. While efforts will be made to preserve compatibility with earlier versions of the official template (via the `\templateversion` macro), any change to *omaj.omin* could unavoidably introduce breaking changes to the class interface. Any such changes will be noted in the package documentation.

5.3 Version history

- v5.1.1.0 (2026-08-16)** Added support for version 5.1 of the official Part B template.
 - Removed licence notice from skeleton proposals.
 - Added example texts to the summary tableau.
 - Added documentation for the `SidewaysFigure` environment.
 - Provided skeleton proposals for each supported version of the official Part B template.
- v4.0.1.0 (2025-08-16)** Added support for version 4.0 of the official Part B template.
- v3.4.1.3 (2024-09-03)** Fixed a bug where the person-months in Table 3.1a were doubled.
- v3.4.1.2 (2024-09-03)** Fixed a bug where the column totals in Table 3.1f were doubled.
- v3.4.1.1 (2024-08-14)** Updated documentation with a reference to the *TUGboat* paper on `heria`.
- v3.4.1.0 (2024-07-14)** Added support for version 3.4 of the official Part B template and the `\templateversion` macro for backward compatibility with earlier versions.
- v3.2.1.0 (2023-12-04)** Initial release.

6 Disclaimer

The heria package is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. (See the L^AT_EX Project Public License for further details.) In particular, users should understand that the heria proposal template is wholly unofficial, and its author(s) accept no responsibility for any omissions, errors, or discrepancies with respect to the requirements set forth in the official Horizon Europe templates and associated documentation. If you produce a proposal with this template, then you alone are responsible for ensuring that it matches all the official requirements before submitting it to the funding body.

A Implementation

Basic setup

Import the `article` class and set up some basic features (margins, hyperlinks, etc.)

```
1 \LoadClass[11pt,a4paper]{article}
2 \RequirePackage[T1]{fontenc} % T1 font encoding
3 \RequirePackage[left=15mm,
4                 top=15mm,
5                 bottom=15mm,
6                 right=15mm,
7                 includehead,
8                 includefoot,
9                 headheight=10pt,
10                headsep=5mm,
11                footskip=18pt,
12                ]{geometry}
13 \RequirePackage[pdftex]{graphicx} % For graphics
14
15 \RequirePackage[pdftex,pdfusetitle]{hyperref} % Hyperlinks
16 \hypersetup{%
17     colorlinks=true,
18     breaklinks=true,
19     urlcolor=black,
20     linkcolor=black,
21     citecolor=black,
22     pdfsubject={},
23     pdfkeywords={},
24 }
25
26 \RequirePackage{xfp} % Floating point numbers
27
28 A helper function to display variables
29
30 \newcommand{\disptoken}[1]{%
31     \csname#1\endcsname
32 }
```

Tables and framed boxes

```
31 \RequirePackage{colortbl} % for shaded table rows
32 \RequirePackage{xltabular} % for breakable tables with var-width columns
33 \RequirePackage[table]{xcolor} % for colours and shaded table cells
34 \RequirePackage[breakable,raster]{tcolorbox} % for framed boxes
```

Colours

```
35 \definecolor{taggrey}{HTML}{B5B5B5}
36 \definecolor{footergrey}{HTML}{D8D8D8}
37 \definecolor{tablegrey}{HTML}{F2F2F2}
38 \definecolor{summaryblue}{HTML}{00B0F0}
```

Set official Horizon Europe template version

```
39 \gdef\@templateversion{5.1} % Default version
40 \def\@supportedtemplateversions{3.2,3.3,3.4,4.0,5.1} % Supported versions
41 \ExplSyntaxOn
42 \NewDocumentCommand{\templateversion}{m}{%
43   \clist_if_in:NnTF {\@supportedtemplateversions} {#1}%
44     {\gdef\@templateversion{#1}}
45     {\PackageError{heria}%
46       {unsupported~template~version}%
47       {Use~one~of~\@supportedtemplateversions}}
48   }%
49 }
50 \ExplSyntaxOff
```

Basic proposal variables

```
51 \newcommand{\callname}[1]{\gdef\@callname{#1}}%
52 \newcommand{\callidentifier}[1]{\gdef\@callidentifier{#1}}%
53 \newcommand{\calltopic}[1]{\gdef\@calltopic{#1}}%
```

Participants

```
54 \newcounter{@pcount} % Participant counter
55 \newcommand{\participant}[3]{%
56   \stepcounter{@pcount}%
57   \newcounter{@p#2num}%
58   \setcounter{@p#2num}{\value{@pcount}}%
59   \expandafter\xdef\csname @pFullName\arabic{@p#2num}\endcsname{#1}%
60   \expandafter\xdef\csname @pShortName\arabic{@p#2num}\endcsname{#2}%
61   \expandafter\xdef\csname @pCountry\arabic{@p#2num}\endcsname{#3}%
62   \newcounter{@pSubcontractingCosts\arabic{@p#2num}}%
63   \newcounter{@pEquipmentCosts\arabic{@p#2num}}%
64   \newcounter{@pPurchaseCosts\arabic{@p#2num}}%
65   \newcounter{@pOtherCosts\arabic{@p#2num}}%
66   \newcounter{@pInkindContributions\arabic{@p#2num}}%
67 }

Get participant number from short name
68 \newcommand{\getPnum}[1]{%
69   \ifundefined{c@p#1num}{\arabic{@p#1num}}%
70 }
```

Participants table row

```

71 \newcommand{\ptablerow}[1]{%
72   \stepcounter{#1}
73   \the\value{#1}
74   \ifthenelse{\value{#1}=1}{ (Coordinator) &}{&}%
75   \disptoken{@pFullName\arabic{#1}} (\disptoken{@pShortName\arabic{#1}}) &
76   \disptoken{@pCountry\arabic{#1}} \\\
77   \hline%
78 }

```

Participants table

```

79 \newcommand{\makeparticipantstable}{%
80   \newcounter{@ptable}
81   \begin{center}
82     \begin{xltabular}{0.9\textwidth}{|l|X|l|}
83       \hline
84       \textbf{Participant No.} &
85       \textbf{Participant organisation name} &
86       \textbf{Country} \\\
87       \hline
88       \whiledo%
89         {\value{@ptable}<\numexpr\value{@pcount}-1}%
90         {\ptablerow{@ptable}}%
91       \ptablerow{@ptable}
92     \end{xltabular}
93   \end{center}
94 }

```

Work packages

```

95 \RequirePackage{atveryend}
96 \newcounter{@wpcount} % Work package counter
97 \newcommand{\workpackage}[5]{%
98   \stepcounter{@wpcount}%
99   \newcounter{@wp\arabic{@wpcount}deliverable}%
100  \newcounter{@wp\arabic{@wpcount}task}%
101  \newcounter{@wp#1num}%
102  \setcounter{@wp#1num}{\value{@wpcount}}%
103  \expandafter\xdef\csname %
104    @wpPersonMonths\arabic{@wp#1num}\endcsname{0}%
105  \expandafter\xdef\csname @wpShortName\arabic{@wp#1num}\endcsname{#1}%
106  \expandafter\xdef\csname @wpTitle\arabic{@wp#1num}\endcsname{#2}%
107  \expandafter\xdef\csname %
108    @wpLeadParticipantShortName\arabic{@wp#1num}\endcsname{#3}%
109  \expandafter\xdef\csname @wpStartMonth\arabic{@wp#1num}\endcsname{#4}%
110  \expandafter\xdef\csname @wpEndMonth\arabic{@wp#1num}\endcsname{#5}%
111  \@bsphack
112  \protected@write\@auxout{%
113    {\string\makeworkpackagestable@data{\arabic{@wp#1num}
114      & #2 & \getPnum{#3} & #3 & %
115      \@ifundefined{@wpTotalPersonMonths\arabic{@wp#1num}}%
116      {\textbf{??}}%
117      {\fpeval{\disptoken{@wpTotalPersonMonths\arabic{@wp#1num}}/2}}%
118      & #4 & #5}}%
119  \@esphack
120  \ifthenelse{\arabic{@wp#1num}=1}{\bigskip}

```

```

121 \noindent\begin{tabularx}%
122 {1.0\linewidth}{|>{\columncolor{tablegrey}}1|X|}
123 \hline
124 \bfseries Work package number & \arabic{wp#1num} \\
125 \hline
126 \bfseries Work package title & #2 \\
127 \hline
128 \end{tabularx}
129 }
130 \newcommand{\makeworkpackagestable@data}[1]{%
131 \g@addto@macro\makeworkpackagestable@body{#1 \\ \hline}%
132 }
133 \def\makeworkpackagestable@body{}% initialize
134 \AtBeginDocument{\global\let\makeworkpackagestable@body@startup%
135 \makeworkpackagestable@body}
136 \AtEndDocument{%
137 \global\let\makeworkpackagestable@body@end\@empty
138 \def\makeworkpackagestable@data#1%
139 {\g@addto@macro\makeworkpackagestable@body@end{#1 \\ \hline}}%
140 }
141 \AtVeryEndDocument{%
142 \ifx\makeworkpackagestable@body@startup%
143 \makeworkpackagestable@body@end\else
144 \@latex@warning{Rerun for \string\makeworkpackagestable}%
145 \fi
146 }

Work packages table
147 \RequirePackage{makecell}
148 \newcommand{\makeworkpackagestable}{%
149 \begin{center}
150 \renewcommand\theadfont{\normalsize\bfseries}
151 \begin{xtabular}{1.0\textwidth}{|c|X|c|c|c|c|}
152 \hline
153 \rowcolor{tablegrey}%
154 \thead{Work\\ package\\ No.} &
155 \thead{Work package title} &
156 \thead{Lead\\ participant\\ No.} &
157 \thead{Lead\\ participant\\ short name} &
158 \thead{Person-\\ months} &
159 \thead{Start\\ month} &
160 \thead{End\\ month} \\
161 \hline
162 \makeworkpackagestable@body
163 \end{xtabular}
164 \end{center}
165 }

Get work package number from short name
166 \newcommand{\getWPnum}[1]{%
167 \@ifundefined{c@wp#1num}{\arabic{wp#1num}}%
168 }

Work package objectives
169 \newenvironment{objectives}{%
170 \begin{tcolorbox}[colback=white,

```

```

171             parbox=false,
172             boxrule=0.75pt,
173             boxsep=0mm,
174             breakable
175 ]%
176 \textsf{\textbf{Objectives}}~~~}%
177 \begin{enumerate*}[nolistsep,noitemsep,itemjoin={~---~},%
178   label=\textbf{0\arabic{@wpcount}.\arabic*}]%
179 }{%
180 \end{enumerate*}%
181 \end{tcolorbox}%
182 }

Work package description
183 \newenvironment{descriptionofwork}{%
184   \begin{tcolorbox}[colback=white,
185     parbox=false,
186     boxrule=0.75pt,
187     boxsep=0mm,
188     breakable
189 ]%
190   \textsf{\textbf{Description of work}}~~~}
191 }{%
192 \end{tcolorbox}%
193 }

Tasks
194 \NewDocumentCommand{\task}{\mmmm}{%
195   \stepcounter{@wp\arabic{@wpcount}task}
196   \par\medskip\noindent\textbf{Task }
197   \arabic{@wpcount}.\arabic{@wp\arabic{@wpcount}task}: #1}
198 \textit{(Lead: #2; Participants: #3; Month: #4)}\hspace{1em}%
199 }

Deliverables

200 \newcounter{@dcount} % Deliverable counter
201 \newcommand{\deliverable}[6]{%
202   \stepcounter{@wp\arabic{@wpcount}deliverable}%
203   \stepcounter{@dcount}%
204   \expandafter\xdef\csname @dNumber\arabic{@dcount}\endcsname%
205     {\arabic{@wpcount}.\arabic{@wp\arabic{@wpcount}deliverable}}%
206   \expandafter\xdef\csname %
207     @dWorkPackage\arabic{@dcount}\endcsname{\arabic{@wpcount}}%
208   \expandafter\xdef\csname @dName\arabic{@dcount}\endcsname{#1}%
209   \expandafter\xdef\csname @dDescription\arabic{@dcount}\endcsname{#2}%
210   \expandafter\xdef\csname @dLead\arabic{@dcount}\endcsname{#3}%
211   \expandafter\xdef\csname @dType\arabic{@dcount}\endcsname{#4}%
212   \expandafter\xdef\csname %
213     @dDisseminationLevel\arabic{@dcount}\endcsname{#5}%
214   \expandafter\xdef\csname @dDeliveryDate\arabic{@dcount}\endcsname{#6}%
215 }

Deliverables table row
216 \newcommand{\dablerow}[1]{%
217   \stepcounter{#1}

```

```

218 \disptoken{@dNumber\arabic{#1}} &
219 \disptoken{@dName\arabic{#1}} &
220 \disptoken{@dDescription\arabic{#1}} &
221 \disptoken{@dWorkPackage\arabic{#1}} &
222 \disptoken{@dLead\arabic{#1}} &
223 \disptoken{@dType\arabic{#1}} &
224 \disptoken{@dDisseminationLevel\arabic{#1}} &
225 \disptoken{@dDeliveryDate\arabic{#1}} \\
226 \hline%
227 }

```

Deliverables table

```

228 \newcommand{\makedeliverablestable}{%
229 \newcounter{@dtable}
230 \begin{center}
231 \renewcommand\theadfont{\normalsize\bfseries}
232 \begin{xltabular}{1.0\textwidth}%
233 { |c|>{\raggedright\hspace=.667\hspace\linewidth=\hspace}X%
234 |>{\hspace=1.333\hspace\linewidth=\hspace}X|c|c|c|c|p{15mm}|}
235 \hline
236 \rowcolor{tablegrey}%
237 \thead{\#} &
238 \thead{Name} &
239 \thead{Short description} &
240 \thead{WP\\ \#} &
241 \thead{Lead\\ participant} &
242 \thead{Type} &
243 \thead{Dissem.\ \ level} &
244 \thead{Delivery\\ month} \\
245 \hline
246 \whiledo%
247 {\value{@dtable}<\numexpr\value{@dcount}-1}%
248 {\dtablerow{@dtable}}%
249 \dtablerow{@dtable}
250 \end{xltabular}
251 \end{center}
252 }

```

Milestones

```

253 \newcounter{@mcount} % Milestone counter
254 \newcommand{\milestone}[4]{%
255 \stepcounter{@mcount}%
256 \expandafter\gdef\csname @mName\arabic{@mcount}\endcsname{#1}%
257 \expandafter\xdef\csname @mWorkPackages\arabic{@mcount}\endcsname{#2}%
258 \expandafter\xdef\csname @mDueDate\arabic{@mcount}\endcsname{#3}%
259 \expandafter\xdef\csname %
260 @mMeansOfVerification\arabic{@mcount}\endcsname{#4}%
261 }

```

Milestones table row

```

262 \newcommand{\mtablerow}[1]{%
263 \stepcounter{#1}
264 \arabic{#1} &
265 \disptoken{@mName\arabic{#1}} &
266 \disptoken{@mWorkPackages\arabic{#1}} &

```

```

267 \disptoken{@mDueDate\arabic{#1}} &
268 \disptoken{@mMeansOfVerification\arabic{#1}} \\
269 \hline%
270 }

Milestones table
271 \newcommand{\makemilestonestable}{%
272 \newcounter{@mtable}
273 \begin{center}
274 \renewcommand\theadfont{\normalsize\bfseries}
275 \begin{xtabular}{1.0\textwidth}{|c|X|p{26mm}|c|p{26mm}|}
276 \hline
277 \rowcolor{tablegrey}%
278 \thead{\#} &
279 \thead{Milestone\\ name} &
280 \thead{Related\\ WP(s)} &
281 \thead{Month\\ due} &
282 \thead{Means of\\ verification} \\
283 \hline
284 \whiledo%
285 {\value{@mtable}<\numexpr\value{@mcount}-1}%
286 {\mtable row{@mtable}}%
287 \mtable row{@mtable}
288 \end{xtabular}
289 \end{center}
290 }

```

Critical risks

```

291 \newtcbbox{\risktag}[1][black]{%
292 fontupper=\scriptsize\sffamily\bfseries,%
293 on line,%
294 arc=3pt,%
295 colupper=white,%
296 colback=#1!50!black,%
297 colframe=#1!50!black,%
298 before upper={\rule[-3pt]{0pt}{10pt}},%
299 boxrule=1pt,%
300 boxsep=0pt,%
301 left=2pt,%
302 right=2pt,%
303 top=1pt,%
304 bottom=.5pt%
305 }

306 \newcounter{@crcount} % Critical risk counter
307 \newcommand{\criticalrisk}[5]{%
308 \stepcounter{@crcount}%
309 \expandafter\gdef\csname %
310 @crDescription\arabic{@crcount}\endcsname{#1}%
311 \expandafter\xdef\csname @crLikelihood\arabic{@crcount}\endcsname{#2}%
312 \expandafter\xdef\csname @crSeverity\arabic{@crcount}\endcsname{#3}%
313 \expandafter\xdef\csname %
314 @crWorkPackages\arabic{@crcount}\endcsname{#4}%
315 \expandafter\gdef\csname @crMitigation\arabic{@crcount}\endcsname{#5}%
316 }

```

Critical risk table row

```

317 \newcommand{\crtablerow}[1]{%
318   \stepcounter{#1}%
319   \disptoken{@crDescription\arabic{#1}}\newline
320   \risktag[blue]{Likelihood: \disptoken{@crLikelihood\arabic{#1}}}%
321   \risktag[red]{Severity: \disptoken{@crSeverity\arabic{#1}}}% &
322   \disptoken{@crWorkPackages\arabic{#1}}}% &
323   \disptoken{@crMitigation\arabic{#1}}}% \\
324   \hline%
325 }

```

Critical risks table

```

326 \newcommand{\makecriticalriskstable}{%
327   \newcounter{@crtable}
328   \begin{center}
329     \renewcommand{\theadfont}{\normalsize\bfseries}
330     \begin{xtabular}{1.0\textwidth}{|p{60mm}|c|X|}
331       \hline
332       \rowcolor{tablegrey}%
333       \thead{Description of risk (indicate level of\\ %
334         (i) likelihood, and (ii) severity:\\ %
335         Low\slash Medium\slash High)} &
336       \thead{WP(s)\involved} &
337       \thead{Proposed risk-mitigation measures} \\
338       \hline
339       \whiledo{
340         {\value{@crtable}<\numexpr\value{@crcount}-1}%
341         {\crtablerow{@crtable}}}%
342       \crtablerow{@crtable}
343     \end{xtabular}
344   \end{center}
345 }

```

Staff effort

```

346 \newcommand{\staffeffort}[3]{%
347   \expandafter\xdef\csname @se#1.#2\endcsname{#3}%
348 }

```

Summary of staff effort table row

```

349 \newcommand{\setablerow}[1]{%
350   \def\serowtotal{0}%
351   \setcounter{@secolumn}{0}%
352   \bfseries\the\value{#1} \disptoken{@pShortName\arabic{#1}}}%
353   \edef\serowtemp{%
354     \whiledo{\value{@secolumn}<\value{@wpcount}}{%
355       \stepcounter{@secolumn}%
356       \edef\sewpname{\disptoken{@wpShortName\the\value{@secolumn}}}%
357       \edef\sewpcell%
358         {\disptoken{@se\disptoken{@pShortName\the\value{#1}}.\sewpname}}%
359       \edef\serowtotal%
360         {\fpeval{\serowtotal + \sewpcell}}% Total PMs per participant
361     \xdef\setotalpm{\fpeval{\setotalpm + \sewpcell}}% Total PMs
362     \expandafter\xdef\csname %
363       @wpPersonMonths\arabic{@secolumn}\endcsname{\fpeval{%
364         \sewpcell+\csname %

```

```

365      @wpPersonMonths\arabic{@seccolumn}\endcsname}}% Total PMs per WP
366      \IfEq% If...
367      {\disptoken{@pShortName\the\value{#1}}}% ...the current PI
368      {\disptoken{@wpLeadParticipantShortName%
369      \the\value{@seccolumn}}}% ...is the WP lead
370      {\protected@edef\seformat{\bfseries}}% ...then apply boldface
371      {\edef\seformat{}}% ...otherwise don't.
372      \protected@edef\serowtemp%
373      {\serowtemp&\seformat \sewpcell}% Print PI's PMs for this WP
374  }%
375  \protected@edef\serowtemp{\serowtemp&\fpeval{round(\serowtotal,0)}}%
376  \serowtemp%
377  \stepcounter{#1}%
378 }

```

Summary of staff effort table

```

379 \newcommand{\makestaffefforttable}{%
380   \newcounter{@setable}
381   \stepcounter{@setable}
382   \newcounter{@seccolumn}
383   \xdef\settotalpm{0}
384   \edef\serowtemp{}
385   \begin{center}
386     \renewcommand\theadfont{\normalsize\bfseries}
387     \begin{xtabular}{1.0\textwidth}%
388       {>{\columncolor{tablegrey}}l|*{\value{@wpcount}}{r|}%
389       >{\columncolor{tablegrey}}r|}
390       \hline
391       % Table header
392       \rowcolor{tablegrey}%
393       \whiledo{\value{@seccolumn}<\value{@wpcount}}{%
394         \stepcounter{@seccolumn}%
395         \protected@edef\serowtemp%
396         {\serowtemp&\protect\thead{WP\the\value{@seccolumn}}}%
397       }
398       \serowtemp & \thead{Total PMs\\ per Participant} \\
399       \hline
400       % Participant rows
401       \whiledo%
402       {\value{@setable}<\numexpr\value{@pcount}}%
403       {\setablerow{@setable}\\ \hline}%
404       \setablerow{@setable} \\ \hline%
405       % Total
406       \rowcolor{tablegrey}%
407       \setcounter{@seccolumn}{0}
408       \bfseries Total PMs
409       \whiledo{\value{@seccolumn}<\value{@wpcount}}{%
410         \stepcounter{@seccolumn}%
411         \edef\serowtemp{\serowtemp&\fpeval{round(\csname %
412           @wpPersonMonths\arabic{@seccolumn}\endcsname/2,0)}}%
413         \@bsphack
414         \protected@write\auxout{}%
415         {\string\expandafter\string\expandafter\string\expandafter%
416         \string\gdef\string\disptoken{@wpTotalPersonMonths%
417         \arabic{@seccolumn}}{\fpeval{round(\disptoken{@wpPersonMonths%

```

```

418         \arabic{@secolumn}},0)}}}%
419         \@esphack
420     }
421     \serowtemp & \fpeval{round(\setotalpm/2,0)} \\\
422     \hline
423 \end{xtabular}
424 \end{center}
425 }

```

Subcontracting costs

```

426 \newcommand{\subcontractingcost}[3]{%
427 \stepcounter{@pSubcontractingCosts\getPnum{#1}}
428 \expandafter\xdef\csname %
429     @scCost\getPnum{#1}.\arabic{@pSubcontractingCosts\getPnum{#1}}%
430 \endcsname{#2}%
431 \expandafter\xdef\csname %
432     @scJustification\getPnum{#1}.\arabic{@pSubcontractingCosts\getPnum%
433     {#1}}\endcsname{#3}%
434 }

```

Subcontracting costs table

```

435 \newcommand{\makesubcontractingcoststable}{%
436 \newcounter{@scparticipant}
437 \begin{center}
438 % For each participant
439 \whiledo{\value{@scparticipant}<\value{@pcount}}{%
440 \stepcounter{@scparticipant}%
441 \ifthenelse%
442     {\value{@pSubcontractingCosts\arabic%
443     {@scparticipant}}>0}% If they have subcontracting costs
444     {\sctablesection%
445     {@scparticipant}}% Print their subcontracting costs table
446     {}% Otherwise, do nothing
447     }%
448 \end{center}
449 }

```

Subcontracting costs table section

```

450 \newcommand{\sctablesection}[1]{%
451 \newcounter{@sccost\arabic{#1}}
452 \edef\scrowtemp{
453 \renewcommand\theadfont{\normalsize\bfseries}
454 \begin{xtabular}{\textwidth}{|>\columncolor{tablegrey}}l|r|X|}
455 \hline
456 \rowcolor{tablegrey}
457 \multicolumn{3}{|l|}{\bfseries\theadfont\value{#1} %
458 \disptoken{@pShortName\arabic{#1}}} \\\
459 \hline
460 \rowcolor{tablegrey}
461 & \thead{Cost (€)}
462 & \thead{Description of tasks and justification} \\\
463 \hline
464 % For each subcontracting cost
465 \whiledo%
466     {\value{@sccost\arabic{#1}}<\numexpr\value{

```

```

467     {\pSubcontractingCosts\arabic{#1}}-1}{%
468     \stepcounter{@sccost\arabic{#1}}%
469     \sctablerow{#1}{@sccost\arabic{#1}}%
470     }%
471     \stepcounter{@sccost\arabic{#1}}%
472     \sctablerow{#1}{@sccost\arabic{#1}}%
473 \end{xltable}
474 }

Subcontracting costs table row
475 \newcommand{\sctablerow}[2]{%
476 \thead{Subcontracting} &
477 \disptoken{@scCost\arabic{#1}.\arabic{#2}} &
478 \disptoken{@scJustification\arabic{#1}.\arabic{#2}}
479 \\ \hline
480 }

```

Equipment costs

```

481 \newcommand{\equipmentcost}[3]{%
482 \stepcounter{@pEquipmentCosts\getPnum{#1}}
483 \expandafter\xdef\csname %
484     @eqCost\getPnum{#1}.\arabic{@pEquipmentCosts\getPnum{#1}}%
485     \endcsname{#2}%
486 \expandafter\xdef\csname %
487     @eqJustification\getPnum{#1}.\arabic{@pEquipmentCosts\getPnum%
488     {#1}}\endcsname{#3}%
489 }

Equipment costs table
490 \newcommand{\makeeequipmentcoststable}{%
491 \newcounter{@eqparticipant}
492 \begin{center}
493 % For each participant
494 \whiledo{\value{@eqparticipant}<\value{@pcount}}{%
495     \stepcounter{@eqparticipant}%
496     \ifthenelse%
497     {\value{@pEquipmentCosts\arabic%
498     {@eqparticipant}}>0}% If they have equipment costs
499     {\eqtablesection%
500     {@eqparticipant}}% Print their equipment costs table
501     {}% Otherwise, do nothing
502     }%
503 \end{center}
504 }

```

```

Equipment costs table section
505 \newcommand{\eqtablesection}[1]{%
506 \newcounter{@eqcost\arabic{#1}}
507 \edef\eqrowtemp{
508 \renewcommand\theadfont{\normalsize\bfseries}
509 \begin{xltable}{\textwidth}{>{\columncolor{tablegrey}}l|r|X|}
510 \hline
511 \rowcolor{tablegrey}
512 \multicolumn{3}{|l|}{\bfseries\theadfont\value{#1} %
513 \disptoken{@pShortName\arabic{#1}}}\ \

```

```

514 \hline
515 \rowcolor{tablegrey}
516 & \thead{Cost (€)}
517 & \thead{Description of tasks and justification} \\
518 \hline
519 % For each equipment cost
520 \whiledo%
521   {\value{@eqcost\arabic{#1}}<\numexpr\value%
522     {@pEquipmentCosts\arabic{#1}}-1}{%
523     \stepcounter{@eqcost\arabic{#1}}%
524     \eqtablerow{#1}{@eqcost\arabic{#1}}%
525   }%
526   \stepcounter{@eqcost\arabic{#1}}%
527   \eqtablerow{#1}{@eqcost\arabic{#1}}%
528 \end{xltabular}
529 }

```

Equipment costs table row

```

530 \newcommand{\eqtablerow}[2]{%
531   \thead{Equipment} &
532   \disptoken{@eqCost\arabic{#1}.\arabic{#2}} &
533   \disptoken{@eqJustification\arabic{#1}.\arabic{#2}}
534   \\ \hline
535 }

```

Other costs

```

536 \newcommand{\othercost}[3]{%
537   \stepcounter{@pOtherCosts\getPnum{#1}}
538   \expandafter\xdef\csname %
539     @ocCost\getPnum{#1}.\arabic{@pOtherCosts\getPnum{#1}}\endcsname{#2}%
540   \expandafter\xdef\csname %
541     @ocJustification\getPnum{#1}.\arabic%
542     {@pOtherCosts\getPnum{#1}}\endcsname{#3}%
543 }

```

Other costs table

```

544 \newcommand{\makeothercoststable}{%
545   \newcounter{@ocparticipant}
546   \begin{center}
547     % For each participant
548     \whiledo{\value{@ocparticipant}<\value{@pcount}}{%
549       \stepcounter{@ocparticipant}%
550       \ifthenelse%
551         {\value{@pOtherCosts\arabic%
552           {@ocparticipant}}>0}{% If they have other costs
553         {\octablesection{@ocparticipant}}}% Print their other costs table
554       {}% Otherwise, do nothing
555     }%
556   \end{center}
557 }

```

Other costs table section

```

558 \newcommand{\octablesection}[1]{%
559   \newcounter{@occost\arabic{#1}}
560   \edef\ocrowtemp{

```

```

561 \renewcommand\theadfont{\normalsize\bfseries}
562 \begin{xltabular}{\textwidth}{|>\columncolor{tablegrey}}1|r|X|}
563 \hline
564 \rowcolor{tablegrey}
565 \multicolumn{3}{|l|}{\bfseries\theadfont\value{#1} %
566 \disptoken{@pShortName\arabic{#1}}}} \\\
567 \hline
568 \rowcolor{tablegrey}
569 & \thead{Cost (€)} & \thead{Justification} \\\
570 \hline
571 % For each other cost
572 \whiledo%
573 {\value{@occost\arabic{#1}}<\numexpr\value%
574 {\@pOtherCosts\arabic{#1}}-1}{%
575 \stepcounter{@occost\arabic{#1}}%
576 \octablerow{#1}{@occost\arabic{#1}}%
577 }%
578 \stepcounter{@occost\arabic{#1}}%
579 \octablerow{#1}{@occost\arabic{#1}}%
580 \end{xltabular}
581 }

```

Other costs table row

```

582 \newcommand{\octablerow}[2]{%
583 \thead{Internally invoiced\\ goods and services} &
584 \disptoken{@ocCost\arabic{#1}.\arabic{#2}} &
585 \disptoken{@ocJustification\arabic{#1}.\arabic{#2}}
586 \\\ \hline
587 }

```

Purchase costs

```

588 \newcommand{\purchasecost}[8]{%
589 \stepcounter{@pPurchaseCosts\getPnum{#1}}
590 \expandafter\xdef\csname @pcTravelCost\getPnum{#1}\endcsname{#2}%
591 \expandafter\xdef\csname %
592 @pcTravelJustification\getPnum{#1}\endcsname{#3}%
593 \expandafter\xdef\csname @pcEquipmentCost\getPnum{#1}\endcsname{#4}%
594 \expandafter\xdef\csname %
595 @pcEquipmentJustification\getPnum{#1}\endcsname{#5}%
596 \expandafter\xdef\csname @pcOtherCost\getPnum{#1}\endcsname{#6}%
597 \expandafter\xdef\csname %
598 @pcOtherJustification\getPnum{#1}\endcsname{#7}%
599 \expandafter\xdef\csname @pcRemainingCost\getPnum{#1}\endcsname{#8}%
600 \expandafter\xdef\csname %
601 @pcTotalCost\getPnum{#1}\endcsname%
602 {\the\numexpr #2+#4+#6+#8 \relax}% TO DO
603 % \expandafter\xdef\csname @pcTotalCost\getPnum{#1}\endcsname{100}%
604 }

```

Purchase costs table

```

605 \newcommand{\makepurchasecoststable}{%
606 \newcounter{@pcparticipant}
607 \begin{center}
608 % For each participant
609 \whiledo{\value{@pcparticipant}<\value{@pcount}}{%

```

```

610 \stepcounter{@pcparticipant}%
611 \ifthenelse%
612   {\value{@pPurchaseCosts\arabic%
613     {@pcparticipant}}>0}% If they have purchase costs
614   {\pctablesection%
615     {@pcparticipant}}% Print their purchase costs table
616   {}% Otherwise, do nothing
617   }%
618 \end{center}
619 }

Purchase costs table section
620 \newcommand\swap[2]{
621   \let\pcTemp#1
622   \let#1#2
623   \let#2\pcTemp
624 }
625 \newcommand{\pctablesection}[1]{%
626   \newcounter{@pccost\arabic{#1}}
627   % Define table rows
628   \def\pcRowA{%
629     \thead{Travel and subsistence} &
630     \disptoken{@pcTravelCost\arabic{#1}} &
631     \disptoken{@pcTravelJustification\arabic{#1}}
632   }%
633   \edef\pcCostA{\disptoken{@pcTravelCost\arabic{#1}}}%
634   \def\pcRowB{%
635     \thead{Equipment} &
636     \disptoken{@pcEquipmentCost\arabic{#1}} &
637     \disptoken{@pcEquipmentJustification\arabic{#1}}
638   }%
639   \edef\pcCostB{\disptoken{@pcEquipmentCost\arabic{#1}}}%
640   \def\pcRowC{%
641     \thead{Other goods, works\ and services} &
642     \disptoken{@pcOtherCost\arabic{#1}} &
643     \disptoken{@pcOtherJustification\arabic{#1}}
644   }%
645   \edef\pcCostC{\disptoken{@pcOtherCost\arabic{#1}}}%
646   % Sort table rows
647   \ifthenelse{\pcCostA<\pcCostC}{%
648     \swap{\pcRowA}{\pcRowC}
649     \swap{\pcCostA}{\pcCostC}
650   }{}
651   \ifthenelse{\pcCostA<\pcCostB}{%
652     \swap{\pcRowA}{\pcRowB}
653     \swap{\pcCostA}{\pcCostB}
654   }{}
655   \ifthenelse{\pcCostB<\pcCostC}{%
656     \swap{\pcRowC}{\pcRowB}
657     \swap{\pcCostC}{\pcCostB}
658   }{}
659
660 \renewcommand\theadfont{\normalsize\bfseries}
661 \begin{tblular}{\textwidth}{|>{\columncolor{tablegrey}}p{43mm}|r|X|}
662 \hline

```

```

663 \rowcolor{tablegrey}
664 \multicolumn{3}{|l|}{\bfseries\the\value{#1} %
665 \disptoken{@pShortName\arabic{#1}} \\\
666 \hline
667 \rowcolor{tablegrey}
668 & \thead{Cost (€)} & \thead{Justification} \\\
669 \hline
670 % Output purchase costs in sorted order
671 \pcRowA \\\ \hline
672 \pcRowB \\\ \hline
673 \pcRowC \\\ \hline
674 % Output remaining and total costs
675 \thead{Remaining purchase\\ costs (<15\% of pers.\\ costs)}
676 & \disptoken{@pcRemainingCost\arabic{#1}} \\\
677 \cline{1-2}
678 \thead{Total} & \disptoken{@pcTotalCost\arabic{#1}} \\\
679 \cline{1-2}
680 \end{xltable}
681 }

```

In-kind contributions

```

682 \newcommand{\inkindcontribution}[5]{%
683 \stepcounter{@pInkindContributions\getPnum{#1}}
684 \expandafter\xdef\csname %
685 @ikcThirdPartyName\getPnum{#1}.\arabic%
686 {@pInkindContributions\getPnum{#1}}\endcsname{#2}%
687 \expandafter\xdef\csname %
688 @ikcCategory\getPnum{#1}.\arabic%
689 {@pInkindContributions\getPnum{#1}}\endcsname{#3}%
690 \expandafter\xdef\csname %
691 @ikcCost\getPnum{#1}.\arabic%
692 {@pInkindContributions\getPnum{#1}}\endcsname{#4}%
693 \expandafter\xdef\csname %
694 @ikcJustification\getPnum{#1}.\arabic%
695 {@pInkindContributions\getPnum{#1}}\endcsname{#5}%
696 }

```

In-kind contributions table

```

697 \newcommand{\makeinkindcontributionstable}{%
698 \newcounter{@ikcparticipant}
699 \begin{center}
700 % For each participant
701 \whiledo{\value{@ikcparticipant}<\value{@pcount}}{%
702 \stepcounter{@ikcparticipant}%
703 \ifthenelse%
704 {\value{@pInkindContributions\arabic%
705 {@ikcparticipant}}>0}% If they have in-kind contributions
706 {\ikctablesection%
707 {@ikcparticipant}}% Print their in-kind contributions table
708 {}% Otherwise, do nothing
709 }%
710 \end{center}
711 }

```

In-kind contributions table section

```

712 \newcommand{\ikctablesection}[1]{%
713   \newcounter{@ikccost\arabic{#1}}
714   \edef\ikcrowtemp{}
715   \renewcommand\theadfont{\normalsize\bfseries}
716   \begin{xtabular}{\textwidth}%
717     {>\raggedright}p{40mm}>\raggedright}p{35mm}|r|X|}
718     \hline
719     \rowcolor{tablegrey}
720     \multicolumn{4}{|l|}{\bfseries\thead{Category} & \thead{Third party name} & \thead{Cost (€)} & \thead{Justification} \\}
721     \disptoken{@pShortName\arabic{#1}} \\
722     \hline
723     \rowcolor{tablegrey}
724     \thead{Third party name} & \thead{Category} & \thead{Cost (€)} & \thead{Justification} \\
725     \thead{Cost (€)} & \thead{Justification} \\
726     \hline
727     % For each in-kind contribution
728     \whiledo%
729       {\value{@ikccost\arabic{#1}}<\numexpr\value%
730        {\@pInkindContributions\arabic{#1}}-1}{%
731        \stepcounter{@ikccost\arabic{#1}}%
732        \ikctablerow{#1}{@ikccost\arabic{#1}}%
733        }%
734        \stepcounter{@ikccost\arabic{#1}}%
735        \ikctablerow{#1}{@ikccost\arabic{#1}}%
736      \end{xtabular}
737 }

```

In-kind contributions table row

```

738 \newcommand{\ikctablerow}[2]{%
739   \disptoken{@ikcThirdPartyName\arabic{#1}.\arabic{#2}} &
740   \disptoken{@ikcCategory\arabic{#1}.\arabic{#2}} &
741   \disptoken{@ikcCost\arabic{#1}.\arabic{#2}} &
742   \disptoken{@ikcJustification\arabic{#1}.\arabic{#2}}
743   \\ \hline
744 }

```

Summary canvas

```

745 \RequirePackage{pdflscape} % PDF landscape for Summary canvas
746 \newenvironment{summarycanvas}{%
747   \begin{tcbrafter}{%
748     raster columns=3,
749     raster equal height
750   }%
751 }{%
752   \end{tcbrafter}%
753 }
754 \newenvironment{summarybox}[1]{%
755   \begin{tcolorbox}{%
756     colframe=summaryblue,
757     colbacktitle=summaryblue,
758     fonttitle=\bfseries\sffamily,
759     halign title=center,
760     title={#1}
761   ]

```

```

762 }{%
763   \end{tcolorbox}%
764 }

```

Code for sideways figures, adapted from <https://tex.stackexchange.com/a/307142/22603>. Copyright 2016 John Kormylo and licensed under the Creative Commons Attribution-ShareAlike 4.0 license (CC BY-SA 4.0), per personal communication with Tristan Miller on 2023-12-02.

```

765 \RequirePackage{environ}
766 \newcounter{abspage}% \thepage not reliab
767 \newcommand{\newSFPage}[1]% #1 = \theabspage
768   {\global\expandafter\let\csname SFPage@#1\endcsname\null}
769 \NewEnviron{SidewaysFigure}{\begin{figure}[p]
770 \protected@write\@auxout%
771   {\let\theabspage=\relax}% delays expansion until shipout
772   {\string\newSFPage{\theabspage}}%
773 \ifdim\textwidth=\textheight
774   \rotatebox{90}{\parbox[c][\textwidth][c]{\linewidth}{\BODY}}%
775 \else
776   \rotatebox{90}{\parbox[c][\textwidth][c]{\textheight}{\BODY}}%
777 \fi
778 \end{figure}}
779 \AddToHook{shipout/background}{% check if sideways figure on this page
780   \put(1in,-1in){%
781     \ifdim\textwidth=\textheight
782       \stepcounter{abspage}% already in landscape
783     \else
784       \ifundefined{SFPage@theabspage}{\global\pdfpageattr{/Rotate 0}}%
785       \stepcounter{abspage}%
786       \ifundefined{SFPage@theabspage}{}%
787       {\global\pdfpageattr{/Rotate 90}}%
788     \fi}%
789   }

```

Font setup

```

790 \RequirePackage{newtxtext} % Use Times for main text
791 \RequirePackage{newtxmath} % Use Times for math
792 \renewcommand*{\ttdefault}{lmvtt} % Latin Modern Typewriter Proportional

```

Page header and footer

```

793 \RequirePackage{lastpage}
794 \RequirePackage{fancyhdr}
795 \newcommand{\Paragraph}[1]{\vspace*{-.45em}\paragraph{#1.}}
796 \pagestyle{fancy}
797 \renewcommand{\headrulewidth}{0pt} % Remove line at top
798 \lhead{\sffamily\scriptsize Call: \@callidentifier\ --- \@callname}
799 \rhead{}
800 \chead{}
801 \cfoot{\raisebox{\dimexpr(-\height+\ht\strutbox-\dp\strutbox)/2}{%
802   \begin{tcolorbox}[nobeeforafter,
803     fontupper=\scriptsize\sffamily,
804     colback=footergrey,
805     boxrule=0.75pt,
806     halign=center,

```

```

807             boxsep=0mm,
808             ]%
809     \strut Part~B -- Page \thepage\ of \pageref*{LastPage}%
810     \end{tcolorbox}%
811 }%
812 }

```

Titles and section headings

Document title

```

813 \def\@maketitle{%
814     \newpage%
815     \noindent%
816     \large%
817     \framebox[\textwidth]%
818     {\null\hfill\textsf{\textbf{\textsc{\@title}}}\hfill\null}%
819     \par
820     \vskip 1.5em\thispagestyle{fancy}%
821     \ifdefined\@calltopic
822     \vspace{-5mm}
823     \begin{center}
824         Topic: \@calltopic
825     \end{center}
826     \fi
827 }

```

Format comments and page limits used by the Horizon Europe template's section headings

```

828 \ExplSyntaxOn
829 \cs_generate_variant:Nn \str_if_in:nnTF { neTF }
830 \NewDocumentCommand{\showpagelimit}{m}
831 {
832     \ifheria@showinstructions
833     \str_if_in:neTF { 0123456789 } { \tl_head:n { #1 } }
834     {\normalfont\sffamily\itshape [e.g.\ #1]}
835     {#1}
836     \fi
837 }

```

Format “tags” used by the Horizon Europe template

```

838 \NewDocumentCommand{\hetag}{mm}
839 {%
840     \textcolor{taggrey}{\normalfont\sffamily\footnotesize%
841     \clist_map_inline:nn { #2 } { \# #1 ##1 #1 \# ~}%
842     }%
843 }
844 \ExplSyntaxOff
845 \NewDocumentCommand{\opentag}{m}{%
846     \makeatletter%
847     \ifdim\@templateversion pt<5.1pt%
848     \hetag{@}{#1}%
849     \fi%
850     \makeatother%
851 }

```

```

852 \NewDocumentCommand{\closetag}{m}{
853   \makeatletter%
854   \ifdim\@templateversion pt<5.1pt%
855     \noindent\hetag{\$}{#1}%
856     \fi%
857   \makeatother%
858 }

```

Format section titles, with optional opening and closing tags

```

859 \RequirePackage[explicit]{titlesec}
860 \titleformat{\section}
861   {\normalfont\normalsize\bfseries\sffamily}%
862   {\thesection}{1em}{#1 \sectiontag\sectionpagelimit}
863 \titleformat{\subsection}
864   {\normalfont\normalsize\bfseries\sffamily}%
865   {\thesubsection}{1em}{#1 \sectiontag\sectionpagelimit}
866 \titleformat{\subsubsection}
867   {\normalfont\normalsize\bfseries\sffamily}%
868   {\thesubsubsection}{1em}{#1 \sectiontag\sectionpagelimit}
869 \NewDocumentCommand{\extendedsection}{s0{#3}mo}{%
870   \IfValueTF{#4}%
871     {\renewcommand{\sectiontag}{\opentag{#4}}}%
872     {\renewcommand{\sectiontag}{}}%
873   \IfValueTF{#6}%
874     {\renewcommand{\sectionpagelimit}{\showpagelimit{#6}}}%
875     {\renewcommand{\sectionpagelimit}{}}%
876   \IfValueT{#5}{%
877     \closetag{#5}%
878   }%
879   \IfBooleanTF{#1}{%
880     \latexsection*{#3}%
881   }{%
882     \latexsection[#2]{#3}%
883   }%
884 }
885 \NewDocumentCommand{\extendedsubsection}{s0{#3}mo}{%
886   \IfValueTF{#4}%
887     {\renewcommand{\sectiontag}{\opentag{#4}}}%
888     {\renewcommand{\sectiontag}{}}%
889   \IfValueTF{#6}%
890     {\renewcommand{\sectionpagelimit}{\showpagelimit{#6}}}%
891     {\renewcommand{\sectionpagelimit}{}}%
892   \IfValueT{#5}{%
893     \closetag{#5}%
894   }%
895   \IfBooleanTF{#1}{%
896     \latexsubsection*{#3}%
897   }{%
898     \latexsubsection[#2]{#3}%
899   }%
900 }
901 \NewDocumentCommand{\extendedsubsubsection}{s0{#3}mo}{%
902   \IfValueTF{#4}%
903     {\renewcommand{\sectiontag}{\opentag{#4}}}%

```

```

904     {\renewcommand{\sectiontag}{}}%
905 \IfValueTF{#6}%
906     {\renewcommand{\sectionpagelimit}{\showpagelimit{#6}}}%
907     {\renewcommand{\sectionpagelimit}{}}%
908 \IfValueT{#5}{%
909     \closetag{#5}%
910 }%
911 \IfBooleanTF{#1}{%
912     \latexsubsubsection*{#3}%
913 }{%
914     \latexsubsubsection[#2]{#3}%
915 }%
916 }
917 \newcommand{\sectiontag}{}
918 \newcommand{\sectionpagelimit}{}
919 \AtBeginDocument{%
920     \NewCommandCopy{\latexsection}{\section}%
921     \RenewCommandCopy{\section}{\extendedsection}%
922     \NewCommandCopy{\latexsubsection}{\subsection}%
923     \RenewCommandCopy{\subsection}{\extendedsubsection}%
924     \NewCommandCopy{\latexsubsubsection}{\subsubsection}%
925     \RenewCommandCopy{\subsubsection}{\extendedsubsubsection}%
926 }

```

Official Horizon Europe template instructions

```

927 \RequirePackage[inline]{enumitem} % For custom bullets
928 \RequirePackage[normalem]{ulem} % For underlined text
929 \RequirePackage{kvoptions}
930 \SetupKeyvalOptions{
931     family=heria,
932     prefix=heria@
933 }
934 \DeclareBoolOption{showinstructions}
935 \ProcessKeyvalOptions*
936
937 \RequirePackage{twemojis}
938 \RequirePackage{xspace}
939 \newcommand{\twarn}{\twemoji{warning}\xspace}
940 \RequirePackage{verbatim}
941 \newenvironment{instructions}{%
942     \begin{tcolorbox}[fontupper=\sffamily,
943                     fonttitle=\sffamily\bfseries,
944                     colback=blue!5!white,
945                     colframe=blue!75!black,
946                     parbox=false,
947                     breakable
948 ]%
949 }{%
950     \end{tcolorbox}%
951 }
952
953 \NewDocumentCommand{\heinstructions}{sm}{%
954     \ifheria@showinstructions%

```

```

955 \IfBooleanTF{#1}%
956 {%
957   \sffamily%
958   \input{hi-#2}%
959 }%
960 {%
961   \begin{instructions}%
962     \urlstyle{sf}%
963     \def\do@url@hyp{\do\-%
964     \input{hi-#2}%
965   \end{instructions}%
966   }%
967 \fi%
968 }

```