



Safe and Explainable
Critical Embedded Systems based on AI

D7.1 Project management and quality guidelines

Version 1.0

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Executive Summary

The purpose of the project management and quality guidelines is to provide an overview of the internal management procedures of SAFEXPLAIN project, in order to ensure efficient project execution together with high quality project results. It will also serve as a support reference manual for project partners as it describes, in an understandable way, the governance structure, the main project legal documents of reference, the project management procedures and tools and the reporting procedure. It also includes roles and responsibilities and internal monitoring process for project progress.

Planning the management procedures contributes to the management objectives of the project and will indirectly influence the technical implementation of the project by ensuring an efficient working environment.

This is a living document that may be updated during the project.

1. Project coordination and management

1.1. Governance structure

1.1.1. Project Coordinator

Beneficiary 1, Barcelona Supercomputing Center (BSC), serves as Coordinator of SAFEXPLAIN project. This role is a shared responsibility between the Technical Manager (TM), Jaume Abella and the Project Manager (PM), Susana Vaquero or the individuals assigned to these roles during any interim absence from the project. The Coordinator is fully responsible for all the project affairs and acts as the official link between SAFEXPLAIN Beneficiaries and the European Commission (EC).

The TM chairs the General Assembly (GA) formed of a delegate of each partner. TM defines the technical and innovation strategy, and drives the team accordingly. The TM works with the Work Package Leaders to identify issues and propose suitable corrective actions that might require approval by the GA. The Project Manager (PM), Susana Vaquero from BSC, will control the day-to-day execution of the project and ensure the timely delivery of project objectives and deliverables by continuously monitoring how closely project progress is following the plan. Activities within day-to-day management include meetings schedule, deliverables follow-up and timely submission, quality control and risk management. The administrative and financial management of the project is also the responsibility of the PM, including internal use of resources monitoring, the provisioning of periodic reports and financial statements. The PM will ensure a timely and efficient distribution of EU funding according to the Grant Agreement. The PM will also act as the official point of contact between the EC and the Beneficiaries.

1.1.2. General Assembly

The General Assembly (GA), chaired by the TM, is the decision-making body and is formed of a delegate from each partner. Each partner will have one vote, with the vote of the chairperson deciding in case of a tie. The GA will provide a forum for the discussion of administrative and strategic management issues linked to the project will decide on approving major modifications to project plans, allocated efforts, and budget issues. The following table summarizes the GA members:

Table 1. SAFEXPLAIN GA members.

Beneficiary no.	Beneficiary short name	Member	Role
1	BSC	Jaume Abella	Member and Chairman
2	IKERLAN	Irune Aguirre	Member
3	AIKO	Gabriele Giordana	Member
4	RISE	Christofer Englund	Member
5	NAVINFO	Elahe Arani	Member
6	EXIDA DEV	Carlo Donzella	Member

1.1.3. Executive Board

The Executive Board (EB) is the main day-to-day decision-making team and it is chaired by the TM and includes the WPLs. The EB is an executive body that reviews the project progress on a regular basis; it has ample powers to make decisions on daily implementation issues and is responsible for resource allocation, the review / approval of the Periodic Reports and Deliverables, the preparation of project reviews and the coordination of exploitation plans. The EB holds monthly conference calls and makes decisions by consensus. In case the EB cannot obtain consensus with respect to an issue, the issue is escalated to the GA and brought to a vote if required. The EB will hold regular monthly teleconferences to evaluate progress, assess risks, and take any decision needed to meet project goals timely. The following table summarizes the EB composition:

Table 2. SAFEXPLAIN EB members.

Role	Person	Organization
Technical manager	Jaume Abella	BSC
WP1 Leader	Elahe Arani	NAVINFO
WP2 Leader	Irune Aguirre	IKERLAN
WP3 Leader	Christofer Englund	RISE
WP4 Leader	Enrico Mezzetti	BSC
WP5 Leader	Gabriel Giordana	AIKO
WP6 Leader	Renata Giménez	BSC
WP7 Leader	Susana Vaquero	BSC

1.2. Project Meetings

Face-to-Face meetings and online meetings were scheduled at the beginning of the project. In order to keep track of the main points discussed and the action points to be implemented, meeting minutes are registered by the Technical Manager and Project Manager in each session.

1.2.1. On-line Meetings

Monthly teleconferences are scheduled the first Friday of each month to review the progress of the Work Packages on a regular basis. Zoom software is used to facilitate the online information sharing. In addition, WP Leaders will organise specific meetings for their WPs as needed.

1.2.2. Face-to-face meetings

Face-to-face 1,5-day meetings will occur every five or six months. Additional workshops and bilateral meetings will be set on demand to address any challenge hindering the progress of the project. At the time of writing this deliverable, the kick off meeting was hosted at BSC in Barcelona at M1. The next F2F meeting was agreed to be hosted at IKERLAN in Basque Country at M6. The host partner is responsible for organising the meeting rooms and caterings.

1.3. Meetings with the PPP on AI, Data and Robotics and the Adra-e project

SAFEXPLAIN participated in the launch event “Paving the way towards the next generation of R&I excellence in AI, Data and Robotics” organized by The Adra-e and AI4Europe Coordination and Support Actions on the 17/10/2022. In particular, SAFEXPLAIN provided a dedicated brochure together with a video explaining the objective and the main results expected of the project. A sample of the brochure is given in Figure 1 and the video of the launch event can be seen at [youtube](#):

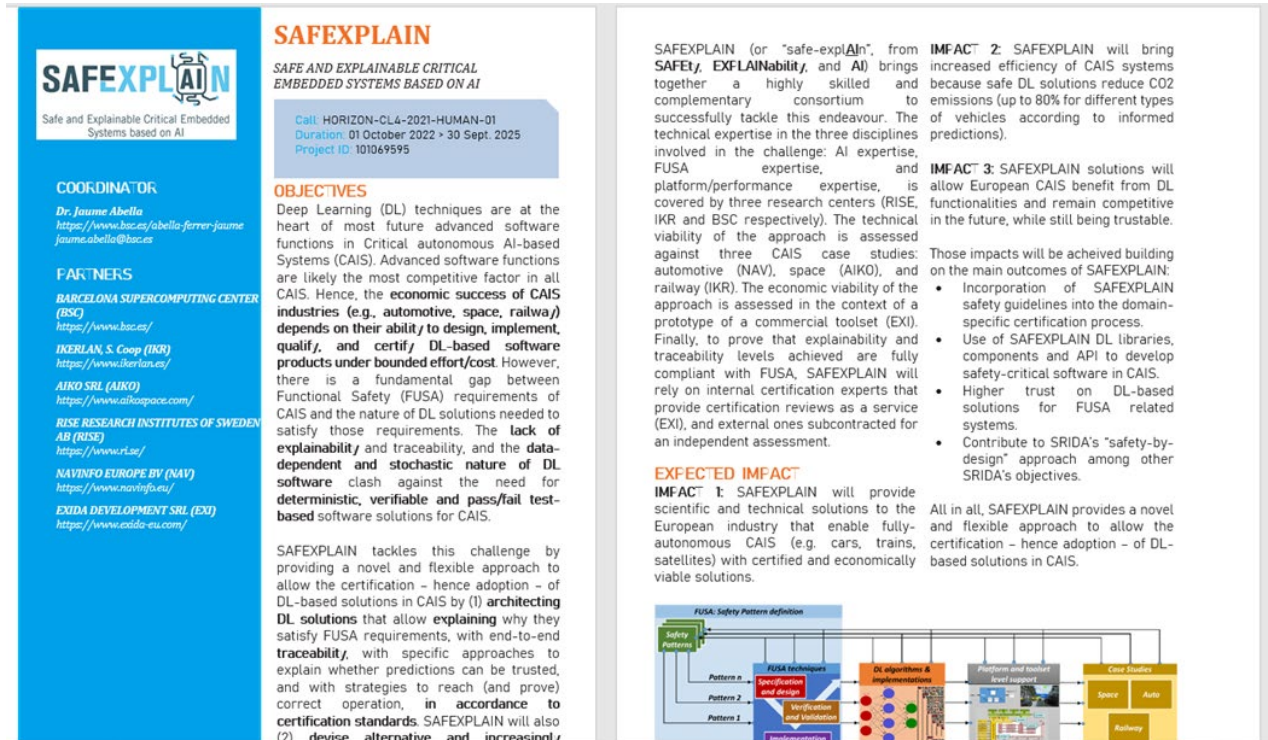


Figure 1. SAFEXPLAIN Brochure submitted to Adra-e coordinators.

Further activities with the PPP on AI, Data and Robotics and the Adra-e project are expected. SAFEXPLAIN will contribute with the collaboration plan devised by the Adra-e project and has already been contacted by the coordinator of TALON to study possible synergies.

1.4. Conflict of interest

Goodwill to avoid any conflict of interest and to act in good faith is essential for SAFEXPLAIN project. When Beneficiaries identify conflicts of interest which cannot be resolved through bilateral communication, they should bring the issues to the attention of the Project Coordinator immediately. The Project Coordinator will bring the issue to the General Assembly for discussion and a hold a vote if required

1.5. Emergency procedures

Any event that may jeopardize the overall completion date of the Project should be reported immediately to the Project Coordinator. The Project Coordinator will endeavour to resolve the issue as soon as possible by calling an emergency General Assembly Meeting as required in order to determine the next steps.

2. Legal Documents

2.1. Grant Agreement

The Grant Agreement is the main legal document underpinning the project's execution. It is a contract among the project participants and the European Commission. The Grant Agreement mainly provides information on the grant (parties, duration, start date, budget, maximum funding, etc.), obligations of the beneficiaries towards the European Commission (such as reporting requirements), as well as the intellectual property framework and other legal conditions. SAFEXPLAIN Grant Agreement is dated on 01/10/2022 and has number 101069595.

Beyond its core terms and conditions, mostly standard text, the Grant Agreement also includes the following annexes, which form an integral part of the contract:

- Annex I. Description of the action (DoA)
- Annex II. Estimated budget for the action
- Annex III. Accession form for beneficiaries
- Annex IV. Financial statement
- Annex V. Model for the certificate on financial statements
- Annex VI. Model for the certificate on the methodology

The most extensive and important Annex to the Grant Agreement is the Description of Action (DoA), which comprises the technical description of the work to be undertaken in the project (work packages, tasks, deliverables, milestones), the description and roles of the different partners, allocated efforts in person-months, and budget details.

2.2. Consortium Agreement

The Consortium Agreement (CA) is agreed between the project participants and aims to provide a legal framework for their collaboration within the boundaries of the Grant Agreement. The CA includes provisions on governance, intellectual property, dissemination, and liability among others. The European Commission is not a party to the CA.

2.3. Changes to the Grant Agreement

The Grant Agreement can and must be changed when an important project parameter changes: partnership, duration, budget, etc. Implementation of such changes must follow a specific procedure called "Grant Agreement Amendment". Most changes that trigger Grant Agreement amendments relate to updates in the DoA (e.g. changes in tasks and deliverables, changes in

efforts allocated, changes in partner's teams, budget transfers across participants, etc.). Whenever it is possible, changes tend to be grouped and implemented all at once in an amendment.

Grant Agreement amendments are submitted to the European Commission through the Funding and tenders portal by the Coordinator on behalf of the Consortium. This implies that the Consortium must be informed and agree on the proposed changes before the amendment is requested. The PM will be responsible to prepare and follow-up the amendments to the Grant Agreement during the project. Participants should contact the PM and TM for any modification they consider necessary. The PM should contact the Project Officer to inform about the proposed changes before launching the amendment officially through the portal.

3. Internal Communication

To ensure a proper project implementation, internal communication is essential. SAFEXPLAIN Consortium will use electronic mail as main tool of communication and will document all meetings by means of agenda and minutes which will be made available through one drive folder.

3.1. Mailing lists

The following mailing lists have been created at the beginning of the project to facilitate the internal communication in SAFEXPLAIN project:

- safexplain_technical@bsc.es
- safexplain_mgmt@bsc.es
- safexplain_wp1@bsc.es
- safexplain_wp2@bsc.es
- safexplain_wp3@bsc.es
- safexplain_wp4@bsc.es
- safexplain_wp5@bsc.es
- safexplain_dissem_expl@bsc.es

An excel file with the subscribers to each of these lists is available at the One Drive folder and it is regularly updated by the Project Manager. The spreadsheet also contains contact details for each participant. Requests to add new members to the list should be directed to the Project Manager.

3.2. Repository

A One Drive folder has been created in order to keep track of project results and other project documents useful for project implementation. It has the following structure:

- Deliverables
 - There are subfolders by deliverable, ordered by delivery date. There is also a deliverable list with all deliverables, their authors and their corresponding appointed reviewers
- Meetings
 - There are 3 subfolders: F2F, Teleconferences, Project Reviews.
- Templates
- WPs
 - There is one subfolder per WP.

4. Project management procedures and tools

4.1. Financial management

In order to control the effort consumption according to plan, partners are requested every six months by the PM to complete a template where they indicate the person months incurred across the WP they are involved in together with a cost justification. This exercise allows the project manager to detect any potential deviation and take corrective actions when necessary.

4.2. Deliverable quality criteria and review procedure

Project deliverables are the outcome of the WP technical progress. As a general rule, the generation of deliverables is a responsibility of the corresponding WPLs, who need to gather contributions from WP participants as appropriate. Prior to submission to the Funding and Tenders Portal, deliverables are examined against a quality criteria and undergo an internal review process, as detailed in subsections 4.2.1 and 4.2.2 respectively.

4.2.1. Quality criteria

The review procedure uses the following quality criteria as reference:

- **Completeness.** Information must address all aspects related to the purpose for which the information is produced. On the other hand, a redundancy of information must be avoided, as it may obscure the clarity of the deliverables. Information should be provided to the depth needed for the purpose of the document.
- **Accuracy.** Information provided in the deliverable, must be evidence-based. This means that all factual information used in the deliverables should be supported by relevant and up-to-date references.
- **Relevance.** Information used in the deliverable should be focused on the key issues and be written in a way that takes into consideration its target audience.
- **Adherence to uniform appearance.** It is important that deliverables are prepared with uniform appearance and structure so that they appear as originated from a single initiative. Therefore, SAFEXPLAIN deliverable template must be used.

4.2.2. Review procedure

The intention of the Deliverable Review Procedure is to ensure that the document has been reviewed against the set of quality criteria described above. As a total of 26 deliverables were committed in the project and SAFEXPLAIN Consortium is made up of 6 partners, it was decided that each partner would be responsible of reviewing 4 or 5 of them (depending on the partner expertise) to ensure a fair work load distribution. This does not exclude other partners not appointed as reviewers to provide their comments to the different deliverables if they wish to do it. The list of deliverables and their corresponding appointed reviewers are available in the One Drive folder. The following table summarizes the internal deliverable review process established to ensure timely submission of deliverables:

Table 3. SAFEXPLAIN Internal Deliverable Review process.

Action	Time
PM sends reminder to author	6 weeks before the deadline
Author sends draft deliverable to appointed reviewer	3 weeks before the deadline
Appointed reviewer sends comments to author	2 weeks before the deadline
Author sends consolidated deliverable back to reviewer	1 week before the deadline
Reviewer accepts deliverable and inform the PM	2 days before the deadline
PM reviews the format and sends the deliverable to the EC	Deadline

In order to reject a deliverable, the reviewer must provide constructive suggestions for improvement in writing to the deliverable author. Upon receiving the suggestions for improvement, the deliverable author must determine together with the Project Manager the schedule to complete the deliverable.

4.3. Risk management

The project risk management process defines the activities to identify, assess, prioritise, manage and control risks that may affect the execution of the project and the achievement of its objectives [1].

4.3.1. Risk identification

Before risks can be managed, they must be first identified. Risks that could affect the full accomplishment of the objectives may arise due to the complex activities of the project. These have been identified in advance, and mitigation measures have been arranged for each case as detailed in the DoA part A page 24. However, unforeseen risks may arise as the project evolves and their identification should be analysed through SAFEXPLAIN project lifecycle. Analysis of deliverable status, WP objectives and periodic reports analysis will be considered as tools for risk identification. In addition, brainstorming meetings might be organized among work packages leaders in order to identify new potential risks

4.3.2. Risk management and action plan

A risk tracker has been created by the PM in order to monitor and keep track of foreseen and unforeseen risks together with their corresponding mitigation plans. The Project Manager will ask work Package Leaders to complete the tracker every six months in order to keep risks updated. A sample of the risk tracker is illustrated in Figure 2 below:

Number	Foreseen in DoA	Description of risk	Likelihood (L)	Impact (I)	Risk level = I * L	WPs involved	Owner	Status Open/Closed	Type	Proposed risk-mitigation measures
1	Yes	The safety concept for FUSA-aware DL solutions is not approved by the internal or external certification authority or experts	1	2	2	WP2	IKERLAN (Name of the person)	Open	Technical	SAFEXPLAIN will adopt an incremental strategy for DL in FUSA projects. This guarantees that a safety concept always be produced: in the worst scenario, the one to the most conservative safety pattern. Furthermore authority (EXI) is part of the consortium, and IKR has experience working with certification authorities like
2	Yes	Statistical approaches cannot be successfully applied for timing analysis	1	2	2	WP2	IKERLAN (Name of the person)	Open	Technical	Build on previous experience of BSC on statistical timing analysis in non-DL software to apply it to DL support from the platform level for isolation so that variability diminishes, hence being easier to manage analyses.
3	Yes	The produced FUSA guidelines cannot be adequately supported in SAFEXPLAIN DL solutions (algorithms and implementations)	2	2	4	WP2, WP3		Open	Technical	The WP organization of SAFEXPLAIN will guarantee alignment of DL and FUSA requirements, which will divergences to emerge unexpectedly in the later phase project. In case of conflictive requirements, properly considered, possibly resulting in recommendations

Figure 2. Risk tracker sample.

The risk tracker consists of an excel file with different fields: risk number, description of risk, WP involved, risk owner, status, type, proposed mitigation measures, a question asking whether the risk materialized or not, last update date and also a field for comments. It also contains fields for risk assessment. In order to assess each risk, a risk level is calculated by the product of impact (Low =1; Medium = 2; High = 3) and likelihood (Low =1; Medium = 2; High = 3) as depicted in Figure 2. The risk level ranges from 1 to 9 and a different colour has been chosen to illustrate each of the risk levels ranging from dark green (very low risk level) to deep red (very high risk level). Risks with a risk level = 9 should be addressed in the first place as they are considered high severity risks.

4.4. Gender Equality monitoring

According to the “She Figures 2021” Report [2] published by the European Commission (EC), a disproportion between women and men in both academia and the private sector is still present in all European Member States especially when considering senior levels of employment and decision-making positions.

The SAFEXPLAIN consortium is fully committed to take all the necessary actions to improve gender equality within the consortium and to promote gender balance in the activities of the Consortium. To this end, SAFEXPLAIN established, at the beginning of the project, the Gender and Equality Committee. In SAFEXPLAIN, the Gender and Equality Committee look for a diverse representation, including gender-balanced representation and representation from across the consortia, as summarized in Table 4.

Table 4. SAFEXPLAIN Gender and Equality Committee.

Participant number	Partner short name	Person	Gender
1	BSC	Susana Vaquero and Renata Giménez	♀
2	IKERLAN	Irene Aguirre	♀
3	AIKO	Gabriele Giordana	♂
4	RISE	Than Bui	♂
5	NAVINFO	Elahe Arani	♀
6	EXIDA	Davide Cunial	♂

The Committee will focus on the monitoring of the gender balance within the consortium on a regular basis as well as to establish guidelines for future activities aimed to promote and improve gender equality. Some aspects have been already discussed in the first months of the project:

1. How to monitor gender balance in the SAFEXPLAIN consortium.
2. How equal participation of women and men will be monitored in SAFEXPLAIN project.

Regarding point one, the Committee designed a dedicated template to monitor the gender balance taking into account the different roles envisaged in the project and agreed to monitor the figures every six months. Regarding point two, and as first approach, the Committee decided during the kick off meeting, to monitor every six months the number of men and women who are first authors and corresponding authors in SAFEXPLAIN related publications.

The Committee will discuss and define future actions/activities to promote and improve gender equality during the course of the project.

5. Reporting and reviews

5.1. Periodic Reporting

Throughout the entire SAFEXPLAIN execution period (from 1st of October 2022 until 30th September 2025) the Coordinator will have to submit 2 periodic reports with the contributions of all beneficiaries. In compliance with the Horizon Europe rules specified in clause 21 of SAFEXPLAIN Grant Agreement, periodic reports must be submitted within 60 days following the end of each reporting period, which in SAFEXPLAIN Project are established at M18 and M36:

- First Reporting Period: 1st October 2022- 31st March 2024 (deadline for submission: 31 May 2024)
- Second Reporting Period: 1st April 2024- 30th September 2025 (deadline for submission: 30 November 2024).

Each periodic report consists of a technical and a financial statement that must describe the technical activities and cost incurred over the corresponding period specified above.

The purpose of the Periodic Report is to ensure that project costs are in agreement with the technical project progress.

5.1.1. Technical Report

The technical report is composed by two parts:

- **PART A** can be updated at any time during the lifetime of the project. This has to be done through the funding and tenders portal under the *Continuous Reporting Module*.

It consists of the following sections:

- Summary for publication
- Researchers involved in the project
- Deliverables
- Milestones
- Critical implementation risks and mitigation measures
- Publications
- Dissemination activities
- Communication activities
- Patents
- Events and trainings
- Datasets
- Beneficiaries feedback
- Gender

With respect to dissemination and exploitation of results, WP6 leader will keep track of the project's dissemination activities for the purpose of periodic reporting. Participants will be asked regularly to provide any dissemination activity related to SAFEXPLAIN they are involved in. SAFEXPLAIN WP6 leader will integrate all the available information in a general dissemination tracking table. Regarding the remaining sections, the Coordinator will be responsible to collect and introduce the information indicated above through the Funding and tenders portal.

- **PART B** is the core part of the report and follows the template of Part B Periodic Technical report made available by the European Commission. It has to be uploaded to the grant management tool under the Report Core tab, as a single pdf document including:
 - Explanations of the work carried out by all beneficiaries during the reporting period.
 - An overview of the progress towards the project objectives, justifying the differences between work expected under Annex I (DoA) and work actually performed, if any.
 - Explanations on the use of resources deviations (please see section 5.1.2.3 of this document for further information)

The Coordinator in close collaboration with the project partners will be responsible to elaborate the Part B of the Periodic Technical report and upload the file in the portal.

5.1.2. Financial Statements

5.1.2.1. SAFEXPLAIN eligible costs

In order to consider project costs as eligible and therefore to get them approved by the European Commission, they must fulfil the following general conditions:

- They must be incurred by the beneficiary
- Incurred during the duration of the project, with the exception of costs relating to the submission of the periodic report for the last reporting period and the final report;
- Indicated in the estimated overall budget in Annex II.
- Actual and necessary for carrying out SAFEXPLAIN implementation;
- They must be identifiable and verifiable and recorded in the participants' accounts;
- Determined in accordance with the usual accounting principles of the participant
- Comply with the applicable national law on taxes, and social security;
- Reasonable, justified and must comply with the principle of sound financial management, in particular regarding economy and efficiency.

5.1.2.2. Financial Statements for each beneficiary

The Financial Report is composed by Individual Financial Statements for each beneficiary together with an explanation on the use of resources. Financial statements are specific documents in which each participant declares all the costs incurred over the corresponding reporting period.

The justification of costs is done through the Funding and tenders Portal by using the Periodic Reporting Module (which is made available to the participants usually right after the end of the corresponding reporting period by the Project Officer). The costs must be filled by each Consortium participant through the system (in particular users with the role Participant Contact) which uses the Financial Statement model provided in the Annex IV of SAFEXPLAIN GA. Once all the information is completed, each beneficiary shall electronically sign the Financial Statement. Only users with the role of Project Financial Signatory (PFSIGN) can perform this action. Once all Financial Statements have been signed by all beneficiaries (including the coordinator), the Coordinator shall check that all information included is correct and include the different Financial Statements in the Periodic Report composition.

Specific guidelines for accessing the *Periodic Reporting Module* will be prepared by the PM. These guidelines will include screenshots and instructions for adequate reporting and will be made available to all participants as supporting material.

5.1.2.3. Explanations on the use of resources deviation

In addition to the financial statements for each beneficiary, an explanation of any deviation on the use of resources should be provided in the Part B of the Periodic technical report document (section 5.2 use of resources). Moreover, information on unforeseen subcontracting and unforeseen in-kind contributions provided by third parties (if any) should be also provided and justified properly. The PM will be responsible to describe this section.

5.2. Reviews

The Commission carries out checks and reviews on the proper implementation of the action (including assessment of deliverables and reports). Reviews normally refer mainly to the technical implementation of the project (i.e. its scientific and technological relevance), but may also cover financial and budgetary aspects or compliance with other obligations under the GA. SAFEXPLAIN reviews are scheduled at Month 18 and Month 36 at the Commission premises in Brussels. However, it is important to note that these dates are tentative and are subject to change based on

the flexibility and availability of the Project Officer, the selected reviewers and the project partners.

Acronyms and Abbreviations

- CA – Consortium Agreement
- D – deliverable
- DoA – Description of Action (Annex 1 of the Grant Agreement)
- EB – Executive Board
- EC – European Commission
- GA – General Assembly / Grant Agreement
- M – Month
- MS – Milestones
- PM – Project manager
- WP – Work Package
- WPL – Work Package Leader

References

- [1] “Open PM² Project Management Methodology”. https://ec.europa.eu/isa2/solutions/open-pm2_en
- [2] European Commission, Directorate-General for Research and Innovation, She figures 2021: gender in research and innovation: statistics and indicators, Publications Office, 2021, <https://data.europa.eu/doi/10.2777/06090>