



A Model-driven development framework for highly Parallel and  
 EnERgy-Efficient computation supporting multi-criteria optimisation

# D8.1 Project Management and Quality Guidelines

Version 0.3

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## Executive Summary

The purpose of the "Project management plan and quality guidelines" deliverable is to provide an overview of the internal management procedures of AMPERE 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

AMPERE is consortium of 9 partners between whom is necessary to establish coordination and management structure. This section describes organization of consortium's governance bodies, project meetings when the project technical progress will be followed and the way possible issues will be resolved.

## 1.1. Governance structure

The main roles in AMPERE governance structure include Project Coordinator (Technical Manager and Project Manager), General Assembly, Work Package Leaders and Industrial Advisory Board. This subsection describes their responsibilities and duties.

### 1.1.1. Project Coordinator

Beneficiary 1, Barcelona Supercomputing Center (BSC), serves as Coordinator of AMPERE project. This role is a shared responsibility between the Technical Manager, Eduardo Quiñones and the Project Manager, Olivera Vujatovic 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 AMPERE beneficiaries and the European Commission (EC).

The Technical Manager (TM):

- Has the overall responsibility for the project progress.
- Guarantees that the scientific and technical objectives are met.
- Chairs the General Assembly General Assembly and the Industrial Advisory Board meetings.
- Defines high-level technical strategy and drives the consortium accordingly.
- Works with the Work Package Leaders to identify issues and propose suitable corrective actions (e.g. temporary resource reallocation, taskforce creation, etc.) that might require approval by the General Assembly.
- Is also responsible for calling General Assembly and Industrial Advisory Board meetings.
- Is supported by the Project Manager, collaborating closely to provide clear and accurate periodic reports.

The Project Manager (PM):

- Controls the day-to-day execution of the project.
- Ensures the timely delivery of project objectives and deliverables by continuously monitoring how closely project progress is following the plan.
- Compiles and distributes the minutes of the meetings.
- Is in charge of day-to-day management tasks including meetings schedule, quality control, and risk management.
- Provides administrative and financial management of the project, including provisioning of Periodic Reports and Financial Statements to ensure a timely distribution of the budget to the beneficiaries according to the Grant Agreement. internal use of resources monitoring, the provisioning of periodic reports and financial statements.
- Ensures a timely and efficient distribution of European Union (EU) funding according to the Grant Agreement.
- Acts as the official point of contact between the European Commission (EC) and the Beneficiaries.

### 1.1.2. General Assembly

The General Assembly (GA), chaired by the TM or a member appointed by the TM, is responsible for the overall direction of the project. It is formed of a delegate from each beneficiary, who can be represented by another member of the same partner if explicitly appointed. The GA meets in person at least twice a

year and performs monthly teleconferences. Each beneficiary 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:

Number	Organisation name	Person	Role
1	BSC	Eduardo Quiñones	Chairman
2	ISEP	Luis Miguel Pinho	Member
3	ETHZ	Luca Benini	Member
4	SSSA	Tommaso Cucinotta	Member
5	EVI	Claudio Scordino	Member
6	BOSCH	Dirk Ziegenbein	Member
7	TRT	Hadi Saoud	Member
8	THALIT	Marco Merlini	Member
9	SYSGO	Jan Rollo	Member

Table 1: General Assembly delegates

### 1.1.3. Work Package Leaders

The Work Package Leaders (WPLs) are responsible for the scientific and technical work of their respective Work Packages (WPs). This includes planning and control of all activities within the work package, and the collection of the contributions from other partners for internal and external reports while inter work package issues will be solved by the GA. Task Leaders have the same roles and responsibilities as the WPLs, but at the task level. The role of WPL and Task Leader is to distribute the workload among the partners participating in the WP/task (including itself) and ensure a timely and qualitatively delivery.

Role	Organisation	Person
<b>Technical manager and Chairman of the GA</b>	BSC	Eduardo Quiñones
<b>WP1 Leader</b>	THALIT	Marco Merlini
<b>WP2 Leader</b>	BSC	Sara Royuela
<b>WP3 Leader</b>	ISEP	Miguel Pinho
<b>WP4 Leader</b>	SSSA	Tommaso Cucinotta
<b>WP5 Leader</b>	EVI	Claudio Scordino
<b>WP6 Leader</b>	TRT	Hadi Saoud
<b>WP7 Leader</b>	BSC	Dayana Fernandes
<b>WP8 Leader</b>	BSC	Olivera Vujatovic

Table 2: Work Package Leaders

### 1.1.4. Industrial Advisory Board

The project established an Industrial Advisory Board (IAB) including key EU industrial stakeholders. Their role will be to observe and provide feedback on the project evolution and results obtained, as well as disseminate the project. It is expected to involve all the members of the IAB during all the phases of the project and they will be invited to join the face-to-face meetings. New members could join the IAB but this should be agreed with the GA by modifying also the budget distribution. The current members of the IAB are:

Name, position	Company (country)	Domain	Expectations
<b>Benoît Dupont de Dinechin, CTO</b>	Kalray (France)	Parallel heterogeneous platforms	(1) Identify the impact of processor on the functional and non-functional constraints, (2) review of parallel strategies derived by the synthesis tools.
<b>Michael Klemm, CEO</b>	OpenMP ARB (Germany)	Parallel Programming language	Evaluate the recommendations on the OpenMP parallel programming model to support the non-functional requirements supported by the AMPERE ecosystem.
<b>Philipp Mundhenk</b>	Participating in IAB as a private person, without mention of the affiliation (Germany)	Security for Automotive Electrical/Electronic Architecture	Evaluation of the AMPERE SW architecture considering its own application domain requirements and contribution on identification of other potential use-cases.
<b>Pavel Zaykov, Lead Scientist at the Advanced Technology Department</b>	Honeywell (Czech Rep)	Aerospace	Evaluate the suitability of the AMPERE ecosystem, considering DSML and non-functional requirements and constraints existing in the corresponding CPSoS domain, i.e. manufacturing and aerospace.
<b>Antoine Certain, On-board Processing Expert</b>	Airbus (France)		

Table 3: Industrial Advisory Board members

## 1.2. Project meetings

Monthly of 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. Online meetings

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



## 1.2.2. Face-to-face meetings

The Kick-off Meeting (KoM) has already taken place on 27<sup>th</sup>-29<sup>th</sup> of January 2020 in the coordinator's premises.

Figure 1: KoM attendees in Barcelona



Different aspects of the projects were discussed to ensure a prompt and efficient project start. Among the different agreements, all the face-to-face meetings were scheduled:

- APM1: First AMPERE project meeting (month 7);
- APM2: Second AMPERE project meeting (month 14);
- CWPPM: Cross-check WP (third) project meeting (month 21);
- APM4: Fourth AMPERE project meeting (month 28);
- FDPM: Final dissemination project meeting (month 36).

Additional workshops and bilateral meetings will be set on demand to address any challenge hindering the progress of the project. The venue of the meeting will rotate among the beneficiaries' premises in order to reduce costs. The host partner will be responsible for organizing the meeting rooms and caterings. Due to coronavirus provoked restrictions in mobility, there is a possibility of replacing face-to-face meeting in M7 for a video conference.

## 1.1. Conflict of interest

Goodwill to avoid any conflict of interest and to act in good faith is essential for AMPERE 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 hold a vote if required.

## **1.2. 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 endeavor 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

This section describes main legal documents that will serve as reference to beneficiaries for contractual framework of the project implementation.

### 2.1. Grant agreement

The Grant Agreement is the main legal document underpinning the project's execution. It is a contract among the project beneficiaries 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 EC (such as reporting requirements), as well as the intellectual property framework and other legal conditions. AMPERE Grant Agreement is dated on 1st January 2020 and has number 871669.

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 being negotiated and will be signed between the project participants. It 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 EC 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 a single amendment.

Grant Agreement amendments are submitted to the EC 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 communication among partners in the consortium, different collaboration tools will be used. Detailed explanation of mailing lists which were created, Slack messaging platform and repositories (Git and intranet) is provided in D8.2 (Project management and collaboration tools).

## 4. Project management procedures and tools

AMPERE consortium established project management procedures and tools to monitor use of financial resources by beneficiaries, follow up technical progress of the project and early detect technical issues to bring them to resolution. Altogether, this should provide delivery of AMPERE objectives within the time and budget constraints of the project.

### 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 PM to early detect any potential deviation and take corrective actions if necessary.

### 4.2. Deliverable quality criteria and review procedure

Project deliverables are the outcome of the 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.

AMPERE deliverable template including a general deliverable structure was sent to AMPERE mailing list and will be available in the website intranet once ready.

#### 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. However, 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, AMPERE 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 40 deliverables were committed in the project and AMPERE Consortium is made up of 9 partners, it was decided that each partner would be responsible of reviewing 4 or 5 of them 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 is sent to the consortium and will be available on the website intranet once ready.

The following table summarizes the internal deliverable review process established to ensure timely submission of deliverables:

Action	Time
PM sends reminder to author	5 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

Table 4: Deliverable review timeline

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. Milestones management

At the end of each phase of the project (i.e., at months 6, 15, 27, and 36) a milestone is set up to perform key technical reviews and make strategic decisions to guarantee that the progress of the project is in line with project objectives. Table 5 presents the milestones, while the means of verification for each of them can be found in the project proposal.

Milestone number and name	Due date
M1 Requirement specification	M6
M2 Single-criterion optimization	M15
M3 Multi-criteria optimization	M27
M4 Validation	M36

Table 5: AMPERE milestones

### 4.4. Risk management

#### 4.4.1. Risk Identification

The project risk management process defines the activities to identify, assess, prioritize, manage, and control risks that may affect the execution of the project and the achievement of its objectives<sup>1</sup>.

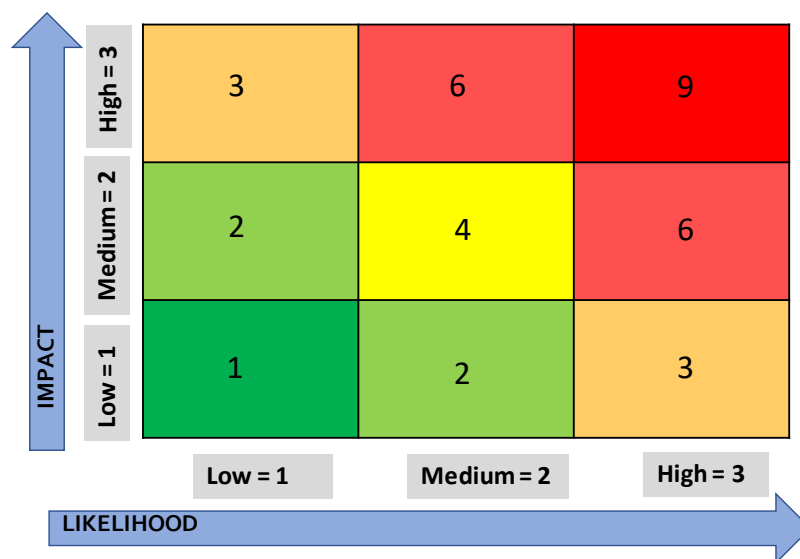
Before risks can be managed, they must be first identified. Risks that could affect the full accomplishment of the objectives may arise due to the complex activities of the project. Risks have been identified in advance, and mitigation measures have been arranged for each case as detailed in the DoA part A. However, unforeseen risks may arise as the project evolves and their identification should be analyzed through AMPERE 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. Recent event of coronavirus epidemic is an example of unforeseen risk which provoked exceptional circumstances and restrictions of mobility. If it persists in time, face-to-face meeting of AMPERE to be organized in M7 will be replaced by a video conference.

### 4.4.2. Risk assessment and prioritization

In order to assess each risk, a risk level will be calculated as the product of the risk impact (Low = 1; Medium = 2; High = 3) and the risk likelihood (Low = 1; Medium = 2; High = 3) as illustrated in the Figure 2. The risk level ranges from 1 to 9 and a different color has been chosen for 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 of 9 should be tackled in the first place as they are considered as high severity risks.

Figure 2: Risk matrix



### 4.4.3. 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 Annex 1 of this deliverable.

## 5. Reporting and reviews

In order to document proper implementation of the project and its compliance with the grant agreement in front of the EC, along the project course there will be organized reviews, periodic reporting and final report.

### 5.1. Periodic reporting

Throughout the entire AMPERE execution period (from 1<sup>st</sup> of January 2020 until 31<sup>st</sup> of December 2022) the Coordinator will have to submit two periodic reports with the contributions of all beneficiaries. In compliance with the H2020 rules specified in clause 20.3 of AMPERE Grant Agreement, periodic reports must be submitted within 60 days following the end of each reporting period, which in AMPERE Project are established at M18 and M36:

- First Reporting Period: 1<sup>st</sup> of January 2020 – 30<sup>th</sup> of June 2021
- Second Reporting Period: 1<sup>st</sup> of July 2021 – 31<sup>st</sup> of December 2022

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

The purpose of the Periodic Report is to check the technical development of the project and to ensure its alignment with the project costs.

#### 5.1.1. Technical report

The technical report is composed of 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
- Deliverables
- Milestones
- Ethical issues
- Critical implementation risks and mitigation measures
- Dissemination and exploitation of results
- Impact on SMEs
- Open Research Data
- Gender

With respect to dissemination and exploitation of results, WP7 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 AMPERE they are involved in. The WP7 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 EC. 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.

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 report

This subsection should guide beneficiaries in determining eligibility of their costs and the way the costs should be reported and justified to the EC.

### 5.1.2.1. AMPERE 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:

- Incurred by the beneficiary and 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 of the Grant Agreement.
- Actual and necessary for carrying out AMPERE implementation.
- 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 partner through the system (in particular users with the role Participant Contact) which uses the Financial Statement model. 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, the Coordinator shall check that all information included is correct and include the different Financial Statements in the Periodic Report composition.

### 5.1.2.3. Explanation on the use of resources deviations

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 should be also provided and justified properly. The PM will be responsible to describe this section. To that end, the PM will monitor every 6 months the effort and cost incurred by all partners as described in section 4.1.

## 5.1.3. Periodic Reporting submission

The Coordinator will be in charge of approving both the Financial Statements of each beneficiary and revise all information included in the Technical Report (Part A and Part B). Once all information is completed, the PM shall submit the Periodic Report to the European Commission in a single step through the Funding and Tenders Portal.

## 5.2. Final report

Within 60 days after the end of the project, and in addition to the Periodic Report for the last reporting period, the Consortium must also submit a final report to the European Commission.

The final report must include the following:

- A 'Final technical report' with a summary for publication containing:
  - an overview of the results and their exploitation and dissemination,
  - the conclusions on the action, and
  - the socio-economic impact of the action.
- A 'Final financial report' containing:
  - a 'final summary financial statement', created automatically by the electronic exchange system, consolidating the individual financial statements for all reporting periods, and including the request for payment of the balance; and
  - a 'certificate on the financial statements' for each beneficiary, if it requests a total contribution of EUR 325,000 (excluding indirect costs) or more, as reimbursement of actual costs and unit costs calculated on the basis of its usual cost accounting practices.

This final report will be prepared by the Coordinator, with input from the other WPLs.

### 5.3. 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. AMPERE reviews will be at Month 9 (Progress report for technical review), month 20, and month 38. 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.

## 6.Acronyms and Abbreviations

- AMPERE – A Model-driven development framework for highly Parallel and EnerGy-Efficient computation supporting multi-criteria optimisation
- BSC – Barcelona Supercomputing Center
- BOSCH – Robert Bosch GMBH
- CA – Consortium Agreement
- D – deliverable
- DoA – Description of the action (Annex 1 of the Grant Agreement)
- EC – European Commission
- ETHZ – Eidgenoessische Technische Hochschule Zuerich
- EVI – Evidence SRL
- EU – European Union
- GA – General Assembly / Grant Agreement
- IAB – Industrial Advisory Board
- ISEP – Instituto Superior de Engenharia do Porto
- KoM – Kick-off Meeting
- PM – Project Manager
- PU – Public
- SSSA – Scuola Superiore di Studi Universitari e di Perfezionamento Sant’ Anna
- SW – Software
- SYSGO – SYSGO SRO
- TRT – Thales SA
- THALIT – Thales Italia SPA
- TM – Technical Manager
- WP – Work Package
- WPL – Work Package Leader

## 7. References

1. "Open PM2 Project Management Methodology". [https://ec.europa.eu/isa2/solutions/open-pm2\\_en](https://ec.europa.eu/isa2/solutions/open-pm2_en)

## Annex 1: A sample of AMPERE risk tracker

AMPERE risk tracker				Risk level legend					
				3	6	9			
				2	4	6			
				1	2	3			
Number	Foreseen in DoA	Description of risk	Impact (I) (Low =1; Medium = 2; High = 3)	Likelihood (L)	Risk level = I*L	WP involved (phase)	Proposed risk-mitigation measures	Did the risk materialize?	Comments
1	Yes	The selected real-world use-cases (described in Section 1.3.3) are not suitable for AMPERE intended research.	1	1	1	WP1 (1st)	Modify the use-case implementation, without affecting functional and non-functional constraints, to better fit with AMPERE research requirements. In the improbable case that modifications are too complex, or changes affects its functionality, select new use-cases.		
2	Yes	Late parallel hardware platform selection and/or availability, impacting on the parallel programming model definition (and so model transformation), multi-criteria optimisation and run-time research.	1	1	1	WP2 (1st)	Tasks 2.1, 3.1 and 4.1 will advance in strict co-operation with Task 5.1 to make sure that the platform selection considers WP2 to WP4 requirements. Any decision in Task 5.1 will be promptly propagated to the other tasks. Activities in WP2 to WP4 will start with surveys of features of architecture(s) if not available; as soon as the target architecture is available the effort will be moved to characterise it.		
3	Yes	The selected target platform does not support fine grain power management or does not expose its control to the software layer	2	1	2	WP3 (2nd)	Shift the effort in software energy management decisions (i.e. number of parallel resources vs. its energy efficiency, compiler optimisations); emulate the impact of hardware power management mechanism by means of analytical modelling and what-if analysis.		
4	Yes	Parallel execution does not provide the level of isolation required by the functional safety standards	2	2	4	WP1 and WP2 (2nd and 3rd)	Reduce the level of parallelism to minimize processor interferences with the objective of increasing the execution isolation of systems components. Provide partial composability (a.k.a compositionality [HaRR13, FAQ+16]) by means of characterising the access the shared processor resources with the objective of accounting the impact of system integration.		