D7.1 Project Handbook

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Grant agreement no.: 871259

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GLOSSARY

CA	Consortium Agreement
D	Deliverable
DoA	Description of the Action
EB	Executive Board
EC	European Commission
GA	Grant Agreement
H2020	Horizon 2020
PHB	Project Handbook
PM	Project Manager
PC	Project Coordinator
PCT	Project Coordination Team
PO	Project Officer (European Commission)
RMCP	Risk Management & Contingency Plans

WP	Work Package
WPL	Work Package Leader

Disclaimer

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Executive summary

The Project Handbook (PHB) is a public report that describes the project organisation and internal procedures of the ADMORPH project with regard to day-to-day communication and progress towards the timely delivery of the deliverables within budget. It defines the standard rules and procedures with regard to the production of documentation that all partners need to apply throughout the project.

The Handbook describes the following procedures in the project:

- Management and decision-making structure
- Project communication mechanisms
- Document management, including:
  - File naming conventions
  - Documents versioning convention
- Tracking of work plan and budget implementation, including:
  - Reporting (internal and official) procedure
  - Person months' monitoring procedure
- Conflict resolution procedures

1 Introduction

1.1 Purpose

The Project Handbook (PHB) describes the project organisation and internal procedures of the project with regard to day-to-day communication and progress towards the timely delivery of the deliverables within budget. This document provides the information needed to facilitate the monitoring of the overall progress and the communication between project partners and the European Commission (EC).

The PHB specifications shall be used by all partners for:

1. All reporting deliverables to be submitted to the EC;
2. Document exchange and communication between partners.

The Consortium Partners will supervise and check the work performed by the consortium in accordance with the ADMORPH Risk Management & Quality Assurance Plan (RMQAP), as described in the Description of the Action (DoA).

1.2 Maintenance and distribution

This PHB is issued at the end of Month 3 and will be updated as deemed necessary. The Project Manager (PM) is responsible for its maintenance and updating. It will be downloadable by the public from the ADMORPH website and by project partners from the ADMORPH GitLab service. Information concerning updates will be duly sent to all partners.

1.3 Reference documents and list of procedures

Reference documents:
1. ADMORPH Grant Agreement (GA)
2. ADMORPH Description of the Action (DoA)
3. ADMORPH Consortium Agreement (CA)

This Handbook is based upon and complements the above-mentioned documents. For any inconsistency, the provisions contained in the above-mentioned documents prevail.

2 Project Management Structure

In this section the Project Management structure of the project is described.

The Project governance is ensured by the coordinated actions of various groups and boards, all monitored by the Coordinator's team:

General Assembly (GA)
Executive Board (EB)
Project Coordinator (PC)
Project Manager (PM)
Work Package Leaders (WPLs)
Use Case Leaders (UCL)
External Expert Advisory Board (EEAB)
Project Coordination Team (PCT)

2.1 General Assembly

The General Assembly (GA) is the highest and ultimate decision-making body of the consortium. It is composed of at least one member of each beneficiary and is chaired by the Project Coordinator (PC), with each beneficiary having one vote. The GA will convene ordinary twice a year, during the consortium meetings, or at any time upon request of the Executive board or 1/3 of the members of the GA.

The decisions to be taken by the GA, according to the consortium agreement, include:

- Content, finances and intellectual property rights
  - Proposals for changes to Annexes 1 and 2 of the Grant Agreement to be agreed by the EC
  - Changes to the Consortium Plan
  - Modifications to Attachment 1 (Background Included) of the CA
  - Additions to Attachment 3 (List of Third Parties for simplified transfer according to Section 8.3.2) of the CA
  - Additions to Attachment 4 (Identified Affiliated Entities) of the CA
- Evolution of the consortium
  - Entry of a new Party to the consortium and approval of the settlement on the conditions of the accession of such a new Party
  - Withdrawal of a Party from the consortium and the approval of the settlement on the conditions of the withdrawal
  - Identification of a breach by a Party of its obligations under this Consortium Agreement or the Grant Agreement
  - Declaration of a Party to be a Defaulting Party
  - Remedies to be performed by a Defaulting Party
  - Termination of a Defaulting Party's participation in the consortium and measures relating thereto
  - Proposal to the Funding Authority for a change of the Coordinator
  - Proposal to the Funding Authority for suspension of all or part of the Project
  - Proposal to the Funding Authority for termination of the Project and the Consortium Agreement

- Appointments
  On the basis of the Grant Agreement, the appointment if necessary of:

  – Executive Board Members

The members of the GA, at the time of writing, appointed by each beneficiary, are the following:

n.	Name	Surname	Organisation	Country	Role
1	Andy	Pimentel	UvA	The Netherlands	Chair
2	Jeroen	Kouwer	TNL	The Netherlands	Member
3	Don	Kuzhiyelil	SYS	France	Member
4	Marcus	Völp	UNILU	Luxembourg	Member
5	Martina	Maggio	ULUND	Sweden	Member
6	Stefanos	Skalistis	UTRC-I	Republic of Ireland	Member
7	Petr	Novobilisky	QMA	Czech Republic	Member
8	Antonio	Casimiro	FC.ID	Portugal	Member
9	Sebastian	Altmeyer	UAU	Germany	Member
10	Clemens	Grelck	UvA	The Netherlands	Member
11	Juliane	Steinhardt	UvA	The Netherlands	Member

Each beneficiary will have one representative vote concerning GA decisions to be made.

2.2 Executive Board

The Executive Board as the supervisory body for the execution of the Project which shall report to and be accountable to the General Assembly. The Executive Board shall consist of the Project Coordinator, the WP Leaders (WPL) and the Use Case Leaders (UCL).
The Executive Board (EB) ensures ADMORPH's efficient daily general management and assists and facilitates the work of the PC and the GA.
The EB is appointed by the GA. It is chaired by the PC and composed of the Project Manager.

The task of the EB comprise:

- Preparation of meetings
- Propose decisions and prepare the agenda of the GA, according to section 6.3.1.2 in the Consortium Agreement (CA)
- Seek a consensus among the Parties
- Execution and implementation of the decisions of the GA
- Monitoring of the effective and efficient implementation of the project
- Coordination among work packages
- Support the Project Coordinator in preparing meetings with the Funding Authority (EC) and in preparing related data and deliverables
- Timely and quality submission of the deliverables
- Preparation of the content and timing of press releases and joint publications by the consortium or proposed by the Funding Authority in respect of the procedures of the Grant Agreement Article 29

The EB meets every 2 months through teleconference facility provided by the coordinator/project manager.
At the time of writing, the EB consists of the following members:

n.	Name	Surname	Organisation	Country	Role
1	Andy	Pimentel	UvA	NL	Project Coordinator, Chair
2	Clemens	Grelck	UvA	NL	WP1L, member
3	Marcus	Völp	UNILU	LU	WP2L, member
4	Martina	Maggio	ULUND	SE	WP3L, member
5	Don	Kuzhiyelil	SYSGO	FR	WP4L, member
6	Stefanos	Skalistis	UTRC-I	IE	WP5L, member
7	Antonio	Casimiro	FC.ID	PT	WP6L, member
8	Juliane	Steinhardt	UvA	NL	WP7L, member

2.3 Work Package Leaders

The WP Leaders (WPL) will be part of the Executive Board. By default, the principal investigator of the legal entity leading the work package will be the Work Package Leader, unless the relevant Party decides otherwise.

The WP Leader is responsible for all aspects of his/her WP:

1. Technical Development: the WPLs are responsible for proposing and monitoring the detailed planning and execution of the technical work to be carried out in their respective work package. Each WPL reports to the EB ensuring that the objectives and milestones of the whole work package are met in time, quality and budget.
2. Timeliness: the WPL is responsible for the timely delivery of the work carried out in its work package and timely submission of deliverables.
3. Day-to-day supervision of the tasks within their WP trough the task leaders
4. Information Flow: the WPL will on a regular basis, or when requested to do so, prepare short reports to the EB. Each work package member will attend meetings within the project and where relevant also external meetings.
5. Interfacing with other work packages: The WPLs are responsible for technical collaboration on the interface to other work packages.

2.4 External Expert Advisory Board

An External Expert Advisory Board (EEAB) is appointed by the General Assembly. The EEAB consists of experts in the field of cyber-physical systems and fault-and intrusion-tolerant systems.
The EEAB will advise on key strategic matters and on research- and innovation-related activities, possibly assist in extending the Project Results to different user communities and application fields, and meet with the Executive Board or the General Assembly (either remotely or face-to-face) approximately once a year. The Project Coordinator will ensure that a non-disclosure agreement is executed between all Parties and each EEAB Member.
The project coordination team shall write the minutes of the EEAB meetings and prepare the implementation of the EEAB's suggestions.
The EEAB Members shall be allowed to participate in General Assembly meetings upon invitation but have not any voting rights.
Only the travel and accommodation of the EEAB members will be compensated, covered by the UvA (original travel budget, designated to FC.ID, but due to matters of convenience is going to be transferred to UvA). The members will be asked to sign a confidentiality agreement regarding the non-disclosure of foreground.

At the time of writing, the EEAB consists of the following members:

nr.	Titel	Name	Surname	Organisation	Country
1	Dr.	Dirk	Ziegenbein	Robert-Bosch GmbH	DE
2	Prof. Dr.	Leandro Soares	Indrusiak	University of York	GB
3	Prof. Dr.	Marisol	Garcia Valls	Universidad Politécnica de Valencia	ES

2.5 Project Coordinator

The Project Coordinator (Prof. Andy Pimentel) is the legal entity acting as the intermediary between the Parties and the Funding Authority. The Coordinator shall, in addition to its responsibilities as a Party, perform the tasks assigned to it as described in the Grant Agreement and this Consortium Agreement (6.4).

In particular, the Project Coordinator shall be responsible for:
- Monitoring compliance by the Parties with their obligations
- Keeping the address list of Members and other contact persons updated and available
- Collecting, reviewing to verify consistency and submitting reports, other deliverables (including financial statements and related certifications) and specific requested documents to the Funding Authority
- Transmitting documents and information connected with the Project to any other Parties concerned
- Administering the financial contribution of the Funding Authority and fulfilling the financial tasks described in Section 7.3
- Providing, upon request, the Parties with official copies or originals of documents that are in the sole possession of the Project Coordinator when such copies or originals are necessary for the Parties to present claims.

If one or more of the Parties is late in submission of any project deliverable, the Project Coordinator may nevertheless submit the other 'Parties' project deliverables and all other documents required by the Grant Agreement to the Funding Authority in time.

2.6 Use Case Leaders

The Use Case Leaders (UCL) will be formally part of the Executive Board. By default, the principal investigator of the legal entity leading the Use Case tasks (T5.2-5.4) according to the Consortium Plan will be the Use Case Leader, unless the relevant Party decides otherwise. The Use Case leader is responsible for the implementation of the Use Case and formally reports to the WP 5 leader.

2.7 Projects coordination team

The Project coordination team (PCT) consists of the Project Coordinator (PC), Prof. Andy Pimentel, and the Project Manager (PM), Juliane Steinhardt.

The role of the PC is to ensure that the project plan is executed in fulfilment of the grant agreement with the EC.

The PC's tasks include:
- Acting as the contact point with the Project Officer of the EC (if possible and useful delegated to the PM for operational issues)
- Acting as main point of contact (with regard to technical content and coordination) between the project and other related projects and organizations
- Coordinating the project activities
- Ensuring the implementation of the work plan
- Preparing and supporting the decision-making process
- Coordinating the reporting
- Monitoring the legal processes

The PM has the role to assist the PC in ensuring that the project work plan, milestones, and time scales are maintained according to the specifications of the DoA.

The PM's tasks include:
- To assist the PC in the interface with the EC
- To assist in the preparation and submission of all deliverables, project reviews and reports to the EC
- In collaboration with the OB, to help the PC monitor the progress of the work plan's implementation
- To act as main administrative point of contact between the ADMORPH project and other related projects and organizations
- To assist the PC in ensuring that all IP used or generated by the project is managed in accordance with the CA

Only the PC and PM shall have direct communication with the Project Officer at the European Commission.

3 Project Communication Mechanisms

3.1 ADMORPH meetings and teleconferences

Within ADMORPH, the following meetings are foreseen:

- Consortium Meetings
- GA meetings
- EB meetings
- WP-level meetings

3.1.1 Consortium meetings

Face-to-face ADMORPH consortium meetings have been foreseen to take place every six months, in order to continuously ensure the interaction among work packages and proper discussions which cannot be guaranteed through a teleconference. These meetings include a GA meeting and once per year the EEAB meeting.

The costs incurred by the beneficiaries for travel and accommodation shall be claimed as part of Other Direct Costs of the beneficiary's budget. UvA will take charge on calling the meeting and will decide on the venue together with the hosting partner. Once decided, the partner hosting the meeting will work with UvA to manage the logistics. UvA will cover the costs for lunches, coffee breaks, venue costs (if needed), and travel for invited speakers / EEAB members from the UvA ADMORPH management budget, unless otherwise agreed.

A schedule of the meetings has already been defined, as follows:

Title	Date	Location	Status	Notes
Kick-off meeting	29-30 January, 2020	Amsterdam	Done	UvA
Consortium meeting #2	2-3 June 2020	Online via Telco	Done	UvA
Consortium meeting #3	16.Nov.2020	Online via Telco		UvA
Consortium meeting #4	June 2021	Ireland		UTRC-I
Consortium meeting #5	November 2021	Luxembourg		UNILU
Consortium meeting #6	June 2022	Sweden		ULUND
Consortium meeting #7	November 2022	Portugal		FC.ID

The detailed scheduling of meetings will always be done in advance to allow maximum participation (at least three months in advance).

Agenda and minutes are produced for each meeting and saved in the project folders.

3.1.2 GA meetings

The GA will meet face-to-face during the consortium meetings (see above). Whenever there are issues to be discussed that cannot wait for the next meeting, a GA meeting will be held via teleconference.
Agenda and minutes are produced for each meeting and saved in the project folders.

3.1.3 EB meetings

The EB will meet via teleconference every two months.

Agenda and minutes are produced for each meeting and saved in the project folders.

3.1.4 WP-level meetings

Meetings (both online and face-to-face) take place continuously throughout the project duration at the level of work packages and specific tasks. The meetings are organised by the respective WP leader or Task Leader.

3.2 Mailing Lists

To support the project communication, the PCT created specific mailing lists for the different management bodies (GA, EB) and the partners' scientific and administrative teams:

All:	ADMORPH@list.uva.nl	all members
GA:	ADMORPH-GA@list.uva.nl	General Assembly members
WP1:	ADMORPH-WP1@list.uva.nl	WP1participants
WP2:	ADMORPH-WP2@list.uva.nl	WP2 participants
WP3:	ADMORPH-WP3@list.uva.nl	WP3 participants
WP4:	ADMORPH-WP4@list.uva.nl	WP4 participants
WP5:	ADMORPH-WP5@list.uva.nl	WP5 participants
WP6:	ADMORPH-WP6@list.uva.nl	WP6 participants
EEAB:	ADMORPH-EEAB@list.uva.nl	External Expert Advisory Board members
Social Media:	ADMORPHsocial@list.uva.nl	Partners involved in managing the Social Media channels

To prevent an avalanche of unsolicited messages, senders are strongly recommended to target their messages carefully to the narrowest audience as reasonably possible. If you would like to be added or removed from a mailing list, contact the PM.

3.3 List of contacts

The PM is in charge of updating the consortium members list, which reports, for each consortium member, the contact details, role in the project, mailing lists he/she belongs to, and governance bodies participated. This excel file (ADMORPH_Consortium_members.xlsx) will be accessible by any consortium member at any time, being stored at the ADMORPH GitLab service.

All partners will inform the PM of any change to be made to the excel file (e.g. changes in their contact details or contact persons), as well as of changes in any other information needed for executing the project.

4 Document Management

4.1 Introduction

This chapter describes the documentation management procedure in the ADMORPH project. It defines the standard rules and procedures with regard to the production of documentation that all partners need to apply throughout the project.

The document management specifications shall be used by all partners for:

1. All deliverables documents to be submitted to the EC;
2. Documents exchanged between partners.
3. Publications and presentations

4.2 EU funding acknowledgement and disclaimer

All publications and any other dissemination material relating to results of ADMORPH should include a statement to indicate that this result was generated with the assistance of financial support from the European Union. Further information can be found under: https://ec.europa.eu/research/participants/docs/h2020-funding-guide/grants/grant-management/acknowledge-funding_en.htm

Any dissemination of results (in any form, including electronic), according to article 38 of the GA, must:

- Display the EU emblem (when appropriate; emblem can be found here)
- Include the following acknowledgement: "This (*project/work/article*) has received funding from the *European Union's Horizon 2020 research and innovation programme* under grant agreement No 871259 (ADMORPH project)".

Any communication activity related to the action must, according to Article 29.5 of the GA:

- Include the disclaimer: "This *(publication/report)* reflect00s only the author's view and the European Commission is not responsible for any use that may be made of the information it contains." :

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This project has received funding from the *European Union's Horizon 2020 research and innovation programme* under grant agreement No 871259 (ADMORPH project).
This deliverable reflects only the authors view and the European Commission is not responsible for any use that may be made of the information it contains.

4.3 File naming conventions

Each document shall be uniquely identifiable from its name. For Microsoft Office (Word/PowerPoint/Excel) files, its version and date are also added to the filename. See the table below for the way to name Microsoft Office files. For LaTeX files, versioning will be automatically handled using Git.

Document Type	Convention	File Name example
Deliverables	ADMORPH_D[WP#].[D#]_[Short Title]_[version#]_[YYMMDD]	ADMORPH _D7.1_ ProjectHandbook_v0 _200130.docx
Meeting Minutes/agenda, etc.	ADMORPH_[type of meeting]_[type of document, e.g. agenda, minutes, etc.]_[version#]_[YYMMDD]	ADMORPH_Kickoff_Agenda _v0m1_200130.docx
Presentation	ADMORPH_[name of conference]_[short topic]_[version#]_[YYMMDD]	ADMORPH_ kickoff_project overview_v0m1_200130.pptx
Periodic Report	ADMORPH_PeriodicReport [period#]_[version#]_[YYMMDD]	ADMORPH_PeriodicReport1 _v0m1_200130.docx

For versioning for Microsoft Office files please refer to the following paragraph.

4.4 Documents versioning convention for Microsoft Office files

Using consistent document versioning is very important for effective collaborative work. Please note that this section only applies to Microsoft Office files, and not to LaTeX files of which the versioning will be taken care by Git.

The following basic principles apply:

1) Document versions should clearly indicate the progress from initial version to the final and allow documents ordering by version number.
2) Version number typically is appended to the basic file name.
3) Different version numbering can be used: either simple numerical like "_v00.docx", "_v01.docx" or by date "_181001.docx" (note that you should use date format **YYMMDD** to allow predictable ordering).
4) In case of numerical version numbering, consider version 1.0 as a final version, and all previous draft versions are numbered as _0.1 (or suffix as _v0.1), _0.2 (or suffix as _v0.2), etc.

The procedure foresees the identification of a document owner, main author or editor (DocEditor). He/she is responsible for consistent versioning, updating the document and issuing new versions, as follows:

1) DocEditor prepares initial and following document versions and posts them to working directory. Every next reviewer or contributor, adds comments, corrections and uploads/posts it back adding own initials or organisation acronym to the file name like "-FS" or "-UvA", or content related like "-section1.2"

a. If the next contributor or reviewer continues previous review, he/she adds own initials at the end, e.g. –FS-CC.doc
b. If a reviewer/contributor updates own comments in the same version, he/she adds sequential number, e.g. –FS01, FS02
c. However, chaining of initials and comments as in a.) and b.) should be limited

2) DocEditor revises the document and assigns a new version number by changing/modifying version in the file name (also removing previous reviewer's initials).

4.5 Project templates

All partners will use standard document templates in order to apply a consistent look for all project documents. One generic document template will be provided and several specific templates for particular documents such as deliverables, Periodic Report etc. The templates will be available on the ADMORPH GitLab server, in both Word/PowerPoint and LaTeX versions.

The generic document template will follow the guidelines given by the EC and will contain the following:
- Layout of the title page
- Layout of headers and footers
- Styles that are to be used in the documents

Templates foreseen:
- Periodic Report
- Deliverables
- Presentations

4.5.1 Structure of deliverables and reports

Each document for reporting and for deliverables shall follow the guidelines given by the EC and shall contain the following elements:

- Project logo
- Project number
- Project acronym
- Project title
- Title of report
- Period covered from … to (if relevant)
- Dissemination level (i.e.: public or confidential)
- Date of preparation
- Editor and reviewers
- Revision history
- EU funding acknowledgement and disclaimer

The structure will be the following:

1) Cover page
2) Table of content
3) Executive summary (max 1 A4)
4) List of contributors, their role
5) Main body of the report, consisting in an appropriately titled chapter

6) Conclusions
7) References (if applicable)
8) Acronyms (Can be at the beginning or at the end)
9) Appendices (contain all the technical details, e.g. a paper)

The executive summary should include a summary description of the results of the work carried out and conclusions, highlighting the contribution of the results of the deliverable for the achievements of project objectives, and specific impacts to be derived from the actual usage of such results (Deliverable´s Value Proposition).

By reading the executive summary and main body, readers must be able to assess the content of the deliverable, and must also be able to assess that the deliverable reflects the contractual obligations as laid down in the DoA. If needed, the reviewer can choose to read the full appendix to assess all details.

4.6 Documentation publication rules

During the project and for a period of 1 year after the end of the Project, the dissemination of own results by one or several parties including but not restricted to publications and presentations, shall be governed by the procedure of Article 29.1 of the Grant Agreement subject to the following provisions.

- Presentations and papers/articles shall be placed on the ADMORPH's GitLab server for the whole consortium.
- The document's owner shall invite and solicit contributions from the whole consortium when applicable.
- The formal procedure for publication notification is documented in the GA and CA (clause 8.4.2.1)
- For practical purposes the consortium has agreed, that the contributors and authors of the publication shall notify the consortium of the intent to publish **as soon as possible**. The notification must include:
  - Title of the publication
  - Authors
  - Name of conference/journal
  - Content of publication, described in bullet-points
- In case the notification was received 45 days before submission then no response would be approval; a notice of publication less than 45 days would require explicit approval from each GA member.
- Any objections on the publication of specific results (i.e. in case such result is susceptible to breach Intellectual Property Rights of another party within the consortium) shall be made to the Coordinator by the party raising the objection.
- The coordinator shall notify the consortium.
- Any objection to the planned publication shall be made in accordance with the Grant Agreement in writing to the Coordinator and to the Party or Parties proposing the dissemination within 30 calendar days after receipt of the notice. If no objection is made within the time limit stated above, the publication is permitted.

An objection is justified if

(a) the protection of the objecting Party's Results or Background would be adversely affected (b) the objecting Party's legitimate interests in relation to the objecting Party's Results or Background would be significantly harmed.

The objection has to include a precise request for necessary modifications.

If an objection has been raised the involved Parties shall discuss how to overcome the justified grounds for the objection on a timely basis (for example by amendment to the planned publication and/or by protecting information before publication) and the objecting Party shall not unreasonably continue the opposition if appropriate measures are taken following the discussion.

The objecting Party can request a publication delay of not more than 90 calendar days from the time it raises such an objection. After 90 calendar days the publication is permitted.

4.7 Review process of (public) documents and deliverables/milestones

Each document for reporting and for deliverables shall be reviewed internally by one or two other members of the consortium. A schedule for the internal review process is given below:

No.	Document/Deliverable /Publication	WP	Lead	Type	Level	Delivery date	Internal review period	Review 1	Review 2
D7.1	Online project handbook	WP7	UvA	R	P	M03	2 weeks	UTRC-I	ULUND
D6.1.a	Dissemination Plan and Report	WP 6	FC.ID	R	P	M03	2 weeks	UvA	QMA
M1	Consortium staffed and operational	ALL				M03			
D5.1	Requirement analysis and use case specification	WP 5	UTRC-I	R	CO	M06	2 weeks	UNILU	SYS
D7.2	Data management plan (first version)	WP 7	UvA	R	P	M06	2 weeks	FC.ID	UAU
M2	Use case requirements	WP 1-WP 5				M06			
D1.1	Report on a coordination language for robust, adaptive systems	WP 1	UvA	R	P	M09	2 weeks	UTRC-I	TNL
D3.1	Report on analysis techniques for adaptive systems	WP 3	ULUND	R	P	M09	2 weeks	UNILU	FC.ID
D7.3	Progress Report for Technical Review	WP7	UvA	R	P	M10	2 weeks	ULUND	QMA
D2.1	Report on identified adaptation opportunities and methods	WP 2	UNILU	R	P	M12	2 weeks	UAU	SYS
D4.1	Report on run-time and operating systems for adaptivity	WP 4	SYS	R	CO	M12	2 weeks	UTRC-I	UvA
D6.1.b	Dissemination Plan and Report	WP 6	FC.ID	R	P	M12	2 weeks	UvA	QMA
D1.2	Report on and first software prototype release of a coordination language for robust, adaptive systems	WP 1	UvA	R	P	M18	2 weeks	UNILU	TNL
D3.2	Report on analysis techniques for adaptive systems and first release	WP 3	ULUND	R	P	M18	2 weeks	SYS	FC.ID

	of prototype analysis tools								
D5.2	Report on use cases and description of prototype demonstrators	WP 5	UTRC-I	R	CO	M18	2 weeks	UAU	ULUND
D6.2	Plan for exploitation and use (intermediate)	WP 6	FC.ID	R	CO	M18	2 weeks	UvA	QMA
D7.4	Data management plan (updated version)	WP 7	UvA	R	P	M18	2 weeks	FC.ID	UAU
M4	Interplay of coordination language, analysis techniques and adaptivity methods	WP 1-WP 3				M24			
D2.2	Report on adaptation methods	WP 2	UNILU	R	P	M24	2 weeks	UAU	QMA
D4.2	Report on run-time and operating systems for adaptivity and first software prototype release of run-time adaptivity support	WP 4	SYS	R	CO	M24	2 weeks	UTRC-I	ULUND
D6.1.c	Dissemination Plan and Report	WP 6	FC.ID	R	P	M24	2 weeks	UvA	UNILU
D1.3	Report on and second software prototype release of a coordination language	WP 1	UvA	R	P	M30	2 weeks	UNILU	TNL
D2.3	Report on ADMORPH adaptation methods and their integration with the coordination language and runtime system	WP 2	UNILU	R	P	M33	2 weeks	ULUND	SYS
D3.3	Report on analysis techniques for adaptive systems and second release of analysis tools	WP 3	ULUND	R	P	M33	2 weeks	UTRC-I	FC.ID
M5	Enforcement of adaptation strategies using adaptivity run-time system	WP 1-WP 4				M33			
D4.3	Report on run-time and operating systems for adaptivity and second software prototype release of run-time adaptivity support	WP 4	SYS	R	CO	M36	2 weeks	UTRC-I	ULUND
D5.3	Report on use cases and full prototype demonstrators	WP 5	UTRC-I	R/ DEM	CO	M36	2 weeks	SYS	UNILU
D6.1.d	Dissemination Plan and Report	WP 6	FC.ID	R	P	M36	2 weeks	UvA	QMA
D6.3	Plan for exploitation and use (final)	WP 6	FC.ID	R	CO	M36	2 weeks	UvA	TNL
D7.5	Data management plan (final version)	WP 7	UvA	R	P	M36	2 weeks	FC.ID	UAU
M6	Demonstrable QoS in use cases despite faults + attacks	WP 1-WP 5				M36			

Partner	# internal reviews
UvA	6
TNL	5
SYS	5
UNILU	6

ULUND	6
UTRC-I	6
QMA	6
FC.ID	6
UAU	6

4.8 Document repository

For the purpose of storage and internal exchange of files and documents, ADMORPH relies on an ADMORPH GitLab service, to which all project members have access. New consortium members will receive an account for the GitLab server.

The ADMORPH website at http://www.admorph.eu/ hosts the public repository intended for the project deliverables, published publications and selected other dissemination materials.

5 Tracking of work plan and budget implementation

5.1 Reporting (internal and official)

The ADMORPH project has 2 reporting periods:

1) Month 1-18
2) Month 19-36

At the end of each period, official reporting to the EC will be done.

For each reporting period, partners will be asked by the PCT to submit a financial report (including person-months reporting) covering the reporting period. The reports submitted by each partner will then be evaluated by the PCT against budget and person-months plan (see following paragraph). Corrective actions might be suggested to each partner if needed.

A separate CFS must be submitted for each beneficiary (and linked third party) that requests **total of €325 000 or more** as reimbursement of actual costs and unit costs calculated according to its usual cost accounting practices at the end of the project period.
The project coordinator must send the CFSs to the EC, with the final report, **within 60 days** of the end of the last reporting period.

Partners will receive detailed instructions on how to perform this internal reporting well in advance.

5.2 Person months' monitoring

The PCT will monitor the list of staff members working within the consortium. Every partner will communicate the list of staff working for ADMORPH throughout the lifetime of the Project to the PM. The workforce may change but the current Person Months (PMs) will be adhered to as much as possible by each of the partners in the WPs they are dealing with.

6 Conflict resolution procedures

It is vital that potential problems are identified and resolved early on. The decision-making procedures are aimed at finding a consensus among the partners and at avoiding any adverse effects of one partner's activities on those of another partner. In the event that a dispute arises which cannot be settled amicably between the partners concerned, it will be resolved according to the following principles:

- It will first be addressed within the relevant WP through discussion chaired by the WPL.
- If this fails, the issue will be presented by the WPL to the EB (depending on the nature of the problem the GA may also be involved).
- The relevant board will attempt to resolve the issue through the usual voting procedure.
- Disputes that could then still not be settled finally will be subject to arbitration in Brussels pursuant to the rules of arbitration of the International Chamber of Commerce. The award of the arbitration panel will be final and binding.

7 Risk management and contingency plans

Potential risks that might occur in general or in individual tasks and appropriate solutions have been identified and are listed in the following Table 3.2b. Each partner is responsible to report immediately to his respective WPL and the PC any risk situations that may conflict with the project objectives or the successful completion of tasks. The PC will then consult the EB according to the gravity of the problem. Changes in the scheduling of deliverables or allocated budget are to be reported as quickly as possible to the WPL and the PC. Each issue will be managed in accordance with the guidelines of the EC grant agreement and the consortium agreement. An ad-hoc EB or GA meeting will be called, if necessary.

Description of risk (indicate level of likelihood: Low/Medium/High)	**WP(s)**	**Proposed risk-mitigation measures**
Partner does not perform or drops out *Impact: High* *Probability: Low*	All	The regular monitoring system in place will ensure an early detection and speedy reaction. If necessary, the Executive Board will propose a reallocation of the tasks within the consortium or a replacement of the partner.
Delays in delivery of the expected outputs of the WPs required by other tasks or activities. *Impact: Medium* *Probability: Medium*	All	High priority to the work needed to re-align the work plan. Additional resources allocation to the delayed tasks.
Failure/Delay to achieve a project milestone. *Impact: High* *Probability: Medium*	All	The Executive Board will propose reinforcing the consortium re-allocating part of the activities inside or outside the consortium; this proposal will be discussed and approved by the General Assembly. Negotiation with the EU Commission for possible amendment.

Disagreement over task requirements / implementation *Impact: high* *Probability: low*	All	A conflict resolution mechanism has been defined that can be used to resolve problems as they arise. Many of the partners have worked together successfully in previous projects, there will be regular technical and management meetings, and the Project Coordinator is actively involved in most work packages. These measures will help to ensure good working relationships.
Failure to achieve key project objectives *Impact: high* *Probability: low*	All	In the event that it proves impossible to achieve some specific objective within the scope of the project, we will firstly attempt to reallocate resources to ensure that all objectives are obtained, then to prioritise objectives so that the most critical are achieved, and finally, if absolutely necessary, we will scale down our technical objectives, by relaxing or deleting some part of those objectives as required to achieve success.
Severe impacts COVID-19 on the project development *Impact: high* *Probability: medium*	All	The regular monitoring system in place will ensure an early detection and speedy reaction. If necessary, the Executive Board will propose an amendment or extension of the project. Reallocation of new deadlines to deliverables and period reviews.
Dissemination activities planned during physical meetings cannot be realized, due to COVID-19. *Impact: high* *Probability: medium*	All	The consortium will try to find alternative means of dissemination activities, e.g. online congresses, -meetings, and teaching events /workshops.
COVID-19-related hiring difficulties that lead to notable delays in task development *Impact: high* *Probability: medium*	All	High priority to the work needed to re-align the work plan will be aimed by existing staffing. Additional resource allocation to the delayed tasks.
COVID-19-related delays in delivery of the expected outputs of the WPs required by other tasks or activities. *Impact: medium* *Probability: medium*	All	High priority to the work needed to re-align the work plan. Additional resources allocation to the delayed tasks.
The coordination language does not allow, in an easy way, describing the robustness requirements and adaptivity strategies for a wide spectrum of different CPS(oS) *Impact: medium* *Probability: low/medium*	WP 1	Consider the classification of different CPS(oS) and the definition and, and possibly development, of separate DSLs for each of these 'CPS(oS) domains'.

Compilation of coordination language for a specific target OS appears to be troublesome *Impact: low* *Probability: low*	WP 1	Study the underlying problem(s) and consider an alternative target OS to provide a proof of concept.
Adaptation turns out to be too slow to maintain resilience in case of failure or attack *Impact: high* *Probability: low*	WP 2	Design space exploration (WP3) and adaptation (WP2) must consider the provisioning of additional resources on the target device for hot or cold standby to buy the time required for adaptation. An implied low-probability, high-impact risk, which we cannot mitigate, is that adaptation may become too expensive to be applied in practice.
Adaptation methods turn our inadequate to maintain the desired quality of service *Impact: medium* *Probability: low*	WP 2	Apply adaptation to coordinate a safe shutdown of the CPSoS with the remaining guaranteed quality of service.
Providing hard guarantees on achievable communication QoS requires too strong assumptions on environment and fault models (for typical use cases) *Impact: medium* *Probability: low*	WP 2	Relax assumptions and provide awareness of the achievable (soft) guarantees. Alternatively, employ techniques to raise awareness when assumptions are violated. Exploit this awareness in system-level solutions (e.g., adapt to safe state).
Techniques for efficient design-space exploration (DSE) of adaptive systems are not effective *Impact: medium* *Probability: low*	WP 3	Analysis of underlying problems and development of new / additional techniques for pruning the design space or 'early stopping' of system simulations during DSE.
Techniques for the timing analysis of heterogeneous systems may result in too pessimistic timing bounds. *Impact: medium* *Probability: low/medium*	WP 3	Use temporal isolation to increase system predictability and hence the improve the analyzability of the CPSoS, and to simplify the timing verification process.
Runtime system cannot enforce adaptation strategy *Impact: medium* *Probability: low*	WP 4	Explore alternative adaptation strategies that can be enforced.
Runtime system behavior cannot be verified *Impact: medium* *Probability: low/medium*	WP 4	Validation via Monte Carlo testing, which provides only partial guarantees due to the need of exploring the space of runtime configurations and alternatives
Adaptation as a strategy to improve resilience turns out to be not applicable in a use case. *Impact: high* *Probability: low*	WP 5	Analyze the root cause why adaptation is not applicable and focus on the remaining use cases. The affected CPSoS can still apply traditional mechanisms and techniques to preserve the expected quality of service despite faults and

		attacks, by overprovisioning resources for these circumstances.

8 Conclusions

This document has set out the practical organisation and procedures of the ADMORPH project. It is a reference document for the consortium members: all partners must read it and familiarise themselves with it.

The PHB is work in progress; based on experiences and needs in the consortium, the document will be continuously adapted and updated. Best practice will be incorporated and used to systematically improve the operational management of the project.