evolve

Leading the Big Data Revolution

# D1.2 Quality Management Plan

This project has received funding from the European Union's Horizon H2020 research and innovation programme under grant agreement No 825061

DDN Storage, BULL, IBM, FORTH, OnApp, Institute of Communications and Computer Systems, MemoScale, webLyzard technology, LOBA, Thales Alenia Space, Space Hellas, CybeleTech, Neurocom Luxembourg, MemEX, Tiemme SPA, Virtual Vehicle, AVL List GmBH, BMW AG, KOOLA

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## Revision history

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# Executive Summary

The Quality Plan presents the EVOLVE project decision taking bodies, as well as the structure, processes, time lines and procedures for quality control.
The purpose of the Quality Plan is two-fold, first to guarantee that the goals will be achieved according to the defined schedule and second to not to hinder fast progress and adapting to changing conditions which are intrinsic to innovation and research in technologies.
This deliverable describes the actions taken to ensure quality across documents, actions, and all communication efforts performed by the project internally and externally.
This deliverable provides also project timelines and quality plan to specify the quality procedures, quality reviews, peer reviews, control, monitoring and reporting activities which will ensure that the prerequisite quality standards are met.



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## Terminology

| | | |
|---|---|---|
| EC | European Commission | Funding Authority of the EVOLVE Project |
| PO | Project Officer | EC representative in charge of the EVOLVE project. |
| CA | Consortium Agreement | Binding legal contract describing the project *modus operandi* between all the participants of EVOLVE |
| GA | Grant Agreement / General Assembly | Upon context, refers either to the Grant Agreement the binding legal document signed between Project Participants and the EC, or to the General Assembly of the EVOLVE project. The General Assembly being one of the project decision body |
| EB | Executive Board | One of the two decision bodies in the project structure. |
| WP | Work Package | One of the 9 work packages defining the EVOLVE project |
| IPR | Intellectual Property Right | *Self explanatory* |



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# 1 Introduction

The Quality Management Plan defines the acceptable level of quality and describes how it will be guaranteed in the project deliverables and work processes. It serves as a reference for all related project members to identify their roles & responsibilities and to address quality-related project processes.

The present document gives a practical guidance to the coordinator, coordinating bodies and project partners for tracking the progress of the project and assuring the quality of its outputs.

The main objectives of the present EVOLVE Quality Management Plan are:

- Planning review procedures for monitoring of the project progress and achievement of project's goals [Technical Objectives, Milestone]
- Provide the consortium with templates for project outputs [Deliverable]
- Create clear procedures for delivery of high quality results[Deliverable, Technical Objective]
- Provide the consortium with guidance for project reporting [Internal Communication]
- Provide the consortium with guidance on communication, exchange of data, publication and dissemination [External Communication]
- Put in place risk management and quality control mechanisms [Risk]

This can be more formally synthesized with the following table:

| Expected Output | Quality Management Plan Contribution |
|---|---|
| Technical Objective (Milestone) | Process, tools (Meeting Minutes) |
| Deliverable | Process, role distribution, tools (template) |
| Internal Communication | Process, schedule, tools (channel, template) |
| External Communication | Process, Timeline, role distribution. |
| Decision Taking | Process, Timeline, role distribution |
| Risk | Process, tools (template) |

The document summarizes the key information, based on the Grant Agreement and the Consortium Agreement, about project management structures, the role and responsibilities of the different project management bodies, the decision making procedures as well as the communication channels within the consortium. It outlines the reporting requirements for WP leaders and project partners, the overall project monitoring and risk assessment procedures.

Finally, this document describes the documents management process.



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The Project Quality Management Plan is a cornerstone document for professional management and assurance of high quality for large-scale projects such as EVOLVE. The present document is designed to be used in conjunction with the following documents:

1. The Grant Agreement including its Annexes and in particular “Annex 1: *Description of Action”*
2. The Consortium Agreement including its Annexes
3. Template for Work Package Status Update, provided in Annex 2
4. Template for Deliverable Review, provided in Annex 3



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# 2 Quality Management: Structure, Strategies and Objectives

The Quality Management in EVOLVE consists of a planned and systematic set of activities aimed at determining and ensuring the achievement of the project's quality objectives.
The first and mandatory step in the Quality Management Plan is to describe the project structure in term of organizational bodies and decision making process.
Next, the Quality Management Plan describes how to assess that the project deliverables are completed with an acceptable level of quality. Quality management assures the quality of the project deliverables as well as the quality of the processes used to manage and create them.
This can be summarized in the following matrix:

| Quality Assessment | Quality Measurement | Quality Methodology |
|---|---|---|
| Project Deliverable | 1. Meets Quality Standards<br>2. Completeness and Correctness criteria | Quality Control Activities |
| Project Process | 3. Process Quality Standards<br>4. Stakeholders Expectations | Quality Assurance Activities |

## 2.1 Quality Measurement

The following are the quality objectives of the project that reflect the overall intentions to be applied with regard to quality throughout the project:

- Deliverables support improved project management proficiency [*Completness and Correctness*]
- Deliverables meet the requirements of partners, project managers and the European Commission (EC) [*Completeness and Correctness*]
- Deliverables are aligned with industry best practices for project management and Web delivery [*Meeting Quality Standards*]
- Deliverables represent best practices of usability [M*eeting Quality Standards*]
- Project processes conform to recommended project management standards [*Process Quality Standards*]
- Project processes meet the standards for good scientific practice [*Process Quality Standards*]
- Project processes allow to meet project expectations and goals [*Stakeholders Expectations*]
- Project processes are documented and traceable [*Process Quality Standards*]

## 2.2 Quality Methodology

The quality methodology is structured around early identification, iterative reporting and report consolidation.


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- Progress toward technical achievement is tracked through the Milestone timetable
- Distance to milestone is measured with monthly status update
- Showstoppers and Risks are reported throuhg monthly status update and monthly task progress analysis
- Monthy reports are aggregated and analyzed during Executive Board meetings
- All Decisional meetings (Executive Board and General Assembly) have minutes, minutes are archived. Thus all decision are recorded and documented
- All Decisional meetings have agenda pre-publised, thus decision proposals can be analyzed, vetoed and refined ahead of the meeting
- Mid-term orientations are discussed with an external board of expert (Scientific Advisory Board)



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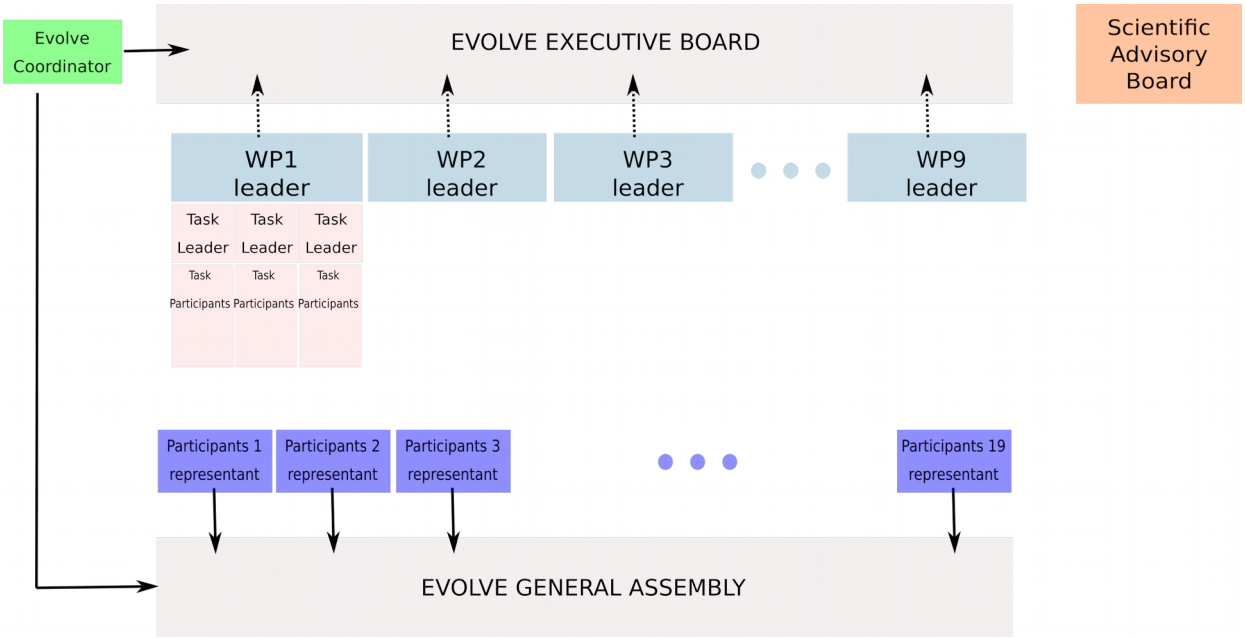
# 3 Management structure – Roles and responsibilities

The management structure as agreed in the Consortium Agreement is constituted of 2 decisional bodies.

1. The General Assembly (GA), is constituted by the representative of each party in the project. The GA is the ultimate decision body of the consortium.
2. The Executive Board (EB) chaired by the project coordinator is constituted by selected members of the GA. The Executive Board acts as the supervisory body for the execution of the Project. EB reports and is accountable to the General Assembly.

This organizational chart from the Consortium Agreement can be mapped to the scheme proposed in the Technical Appendix of the Grant Agreement.




Notice, that if only 2 decision making bodies exist in the project, decision can be *vetoed* by any partners. Any member can express a veto on a decision taken by the GA if the partner can show that its own work, time for performance, costs, liabilities, Intellectual Property Rights or other Legitimate Interests would be significantly harmed by the decision.

## 3.1 General Assembly

### 3.1.1 General Assembly Members

The General assembly is constituted by the representative of all participants. It is mandatory for each participant to delegate a single voting representative to this assembly. Even if for the quality of the debate multiple persons from a single participant can attend, only one person per participant is entitled to vote.



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### 3.1.2 General Assembly Duties

The General Assembly Ordinary meets at least once a year and at any time upon written request of any Member of the consortium.
Decisions will only be binding once the relevant part of the GA meeting minutes has been accepted. See the section related to Decision Making (Sec 3.6).
Any decision may also be taken without a meeting if the Coordinator circulates to all Members of the Consortium Body a written document which is then agreed by the defined majority of all Members of the Consortium Body. Such document shall include the deadline for responses. A failure in providing a response within the given deadline is considered as an agreement.
The General Assembly decisions must be written in the Minutes of the Meeting and even if approved during the meeting, they are formally accepted after the delay of Veto notification if no Member has sent an objection in writing to the coordinator.
In addition, all proposals made by the Executive Board shall also be considered and decided upon by the General Assembly.

## 3.2 Executive Board

### 3.2.1 Executive Board Members

The Executive Board is constituted by one representative of the Coordinator and one representative from each work-page leader partners.
Considering the large number of Work Packages in the EVOLVE project, and for the sake efficiency, multiple Work Packages can be represented in the Executive Board by the same person. The delegation of authority has to be written and recorded in the Executive Board meeting minutes.

### 3.2.2 Executive Board Duties

1. The Executive Board is in charge of preparing the GA meetings. Thus, to propose decisions and to prepare the agenda of the General Assembly.
2. The Executive Board is responsible for the proper execution and implementation of the decisions of the General Assembly. More generally, the Executive Board must monitor the effective and efficient implementation of the Project. Therefore, it is a duty of the Executive Board to collect information at least every month on the progress of the Project. The collected information has to be analyzed in order to assess the compliance of the Project with the project schedule. Shall an issue be detected, it should be addressed accordingly to the risk mitigation scheme detailed in the Technical Appendix. If necessary, the Execution board can propose modifications of the Consortium Plan to the General Assembly[1].
3. Assign internal reviewers for each EVOLVE deliverable. Reviewers should have sufficient knowledge in the area covered by the deliverable but not being part of the task which has produced the deliverable. In order to guarantee the highest standard for the deliverable review, reviewers' nominations should follow the best practices in regards of conflict of interest management. Shall the nomination of a reviewer not being possible within the project participants, the Executive Board will escalate to the Scientific Advisory Board to contact relevant external experts to proceed to the review.
4. Additionally, the Executive Board is in charge of supporting the Coordinator in preparing meetings with the Funding Authority and in preparing related data and deliverables.

1 As a lean project, it is expected that the iterative nature of EVOLVE could lead to updates of the Consortium plan.


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## 3.3 Scientific Advisory Board

### 3.3.1 Board Members

Scientific Advisory Board members are chosen externally to the EVOLVE project, and are invited on request of the Executive Board or of the General Assembly.

### 3.3.2 Members Duties

The Scientific Advisory Board can be involved to propose name of external reviewers for a deliverable which can not be reviewed by project participants, either due to lack of skills or conflict of interests.
Furthermore, the Scientific Advisory Board participates to yearly meeting to discuss, assess and influence the scientific trajectory of the project.
The Scientific Advisory Board is a non-decision making entity and can only provide guidelines, insight and advises.
The Scientific Advisory Board can be consulted upon request of the Executive Board or of the General Assembly on a specific technical topic outside of the scheduled meetings.

## 3.4 Work Package Leaders

Work package leaders are in charge of monitoring the progress of all the tasks within the work package. In addition, they participate to the whole quality process within the work package and more specifically:

- Coordinate: ensure good communication across partners
- Review: quality of the deliverables produced in the work package
- Report: evaluate risk and report to the Executive Board any situation which may require a mitigation action
- Participate: to the project decision making process, either as an entitled member of the General Assembly or as a member of the Executive Board

## 3.5 Coordinator

From a legal standpoint the Coordinator is the intermediary between the Parties and the Funding Authority. From an organizational standpoint the coordinator is in charge of collecting, reviewing and checking the consistency of any submitted reports.
Therefore, any document must be reviewed by the coordinator prior to its submission to the Project Officer.
The Coordinator shall not enlarge its role beyond the tasks specified in the Consortium Agreement and in the Grant Agreement.
However, if one or more of the Parties is late in submission of any project deliverable, the Coordinator may nevertheless submit the other parties' project deliverables and all other documents required by the Grant Agreement to the Funding Authority in time.
Normally it is a due task of the project Coordinator or its representative to chair both General Assembly and Executive Board meetings.

## 3.6 Decision taking

Decisions are made either by the GA or the EB. All decisions are recorded through meeting minutes.



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Decisions are always safeguarded by a veto period. Any participant is allowed to emit a veto if there is concern on the significant harm of the participant's interests due to the decision.
Any member can express a veto on a decision taken by the GA if the partner can show that its own work, time for performance, costs, liabilities, Intellectual Property Rights or other Legitimate Interests would be significantly harmed by the decision.
When the decision is foreseen on the original agenda, a Member may veto such a decision during the meeting only.
When a decision has been taken on a new item added to the agenda before or during the meeting, a Member may veto such decision during the meeting and within 15 calendar days after the draft minutes of the meeting are sent.
In case a decision has been taken without a meeting, a Member may veto such decision within 15 calendar days after written notification by the chairperson of the outcome of the vote.
In case of exercise of veto, the Members of the related Consortium Body shall make every effort to resolve the matter which occasioned the veto to the general satisfaction of all its Members.



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# 4 Quality Control Activities

Quality control monitors project deliverables to verify that deliverables are of acceptable quality, are complete and correct. The following sections detail how processes are established to ensure the quality of deliverables.

## 4.1 Review Process

The quality of the deliverables including the reports is managed through an extensive review process. Before they can be released, all deliverables have to pass a deliverable review process. The purpose of this review is to verify that the technical content is keeping pace with the state of the art, and that contributions to the overall project objectives are clearly stated.
The main goal of the deliverable review process is to ensure that only high quality deliverables are submitted to the EC by eliminating any problems regarding quality before the deliverable is released. Before releasing the deliverable, several tasks have to be performed by the deliverable responsible:

- Spell check (US English)
- Consistency (wording, multiple spaces...)
- All references up to date and working (e.g. table of contents, cross references)
- No track-changes, comments etc. included, and track-changes turned off
- Check the complete document according to the acceptance criteria defined in EVOLVE

The EVOLVE review process, consists of an internal and an independent formal review.

1. Internal review: performed by the partners of the the WP creating the deliverable. The goal of this internal review is to ensure, that the document matches the basic quality criteria (technical, structure/content, etc.) and includes a significant delta in respect of any deliverable previously produced in the project. There is no requirement to produce a formal record of this internal WP review.
2. Independent formal review: It has to be initiated by the Executive Board. The Executive Board shall nominate suitable reviewers. External reviewers could also be involved. The involvement of suitable external reviewers is managed by the Scientific Advisory Board. In such case the EB must inform the responsible of the deliverable.

There shall be at least two independent reviewers for the deliverable, plus the coordinator who is always responsible for the consistency of any submitted deliverable.
Reviewers shall have a sufficient amount of expertise. The review must be performed based on the provided EVOLVE deliverable review template and has to match the defined acceptance criteria and scoring metrics into account. Reviewers are appointed by the Executive Board. Reviewer can not be part of the task which has produced the deliverable. Ideally Reviewer should not be part of the Work Package which has produced the deliverable (not always possible since some work packages involve all participants). Reviewer should not have conflict of interest with the deliverable topic.
By using the template provided in Annex 3, the review must be documented. The review forms must be handed in once the final deliverable is submitted to the project coordinator to act as proof for the independent formal review. The deliverable-review-template is available as Annex 3 of this document.
The Executive Board is in charge of guaranteeing that appropriate actions are taken to assure that the review comments are integrated into the final version of the deliverable.


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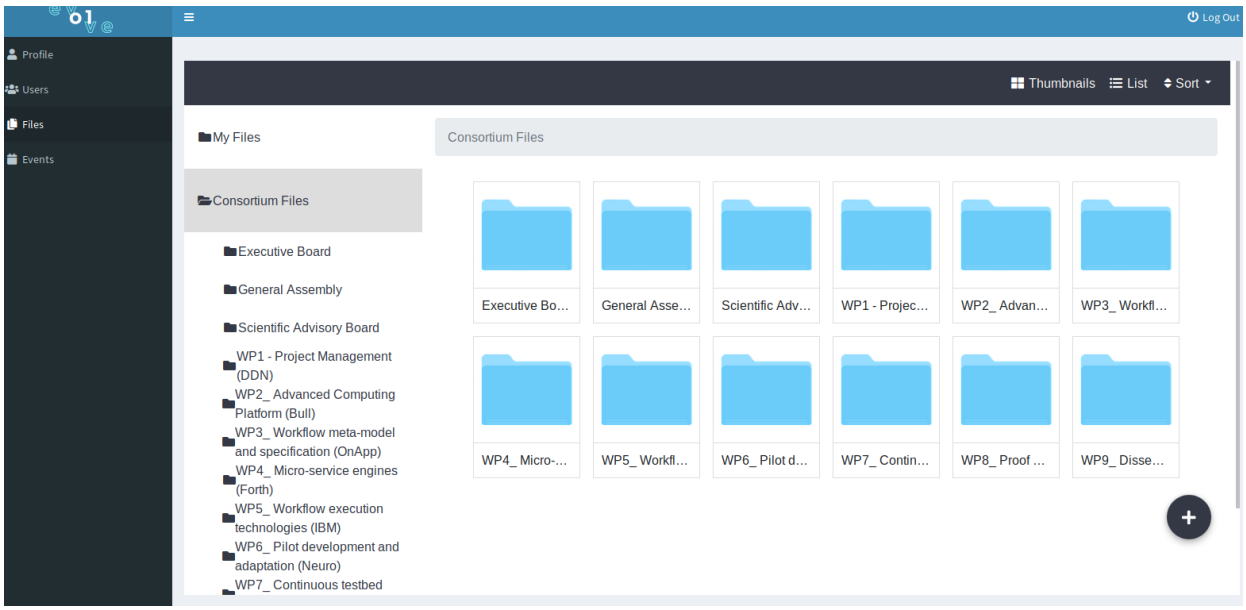
The deliverable responsible has the final responsibility that the deliverable is meeting the acceptance criteria in both technical and formal way to ensure that only high quality deliverables are submitted to the EC. The Project Coordinator remains in charge of performing consistency check and sending the document to the EC.

## 4.2 EVOLVE Document Management

Documents produced during the project are systematically archived.
The documents archiving process is implemented via a private area of the EVOLVE website, providing a shared storage facility for project documents.

The snapshot below presents the current archive organization.




Considering the importance of this storage space all the contents are backed-up.

### 4.2.1 General Assembly Folder

This folder is dedicated to all presented documents during the GA meetings. It also contains the agenda and the minutes of every meeting. Therefore, all the decisions taken within the project lifetime can be retrieved in this folder.

### 4.2.2 Executive Board Folder

This folder is dedicated to all presented documents during the EB meetings, as well as the agenda and the minutes of every meeting.

### 4.2.3 Scientific Advisory Folder

This folder is dedicated to all presented documents during the Scientific Advisory Board meetings. It contains also the agenda and the minutes of every meeting. The External reviewer nominations and answers to technical and scientific questions are archived in this folder as well.



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### 4.2.4 Work Package Folder

One folder is dedicated to each of the nine (9) EVOLVE Work Packages. The folder contains a copy of each of the WP deliverables which has been submitted to the EC. WP meetings status update and internal documents are archived in these folders as well.
The folder for WP1 contains also a copy the Consortium wide document such as the Consortium Agreement. It should be noticed that a physical copy of the signed Consortium Agreement is kept on the premises of the Project Coordinator.

## 4.3 Project milestones

The project milestones act as the main quality gates. Milestones status and their achievement will be reviewed during the Executive Board monthly status meeting.
The milestone responsible should present at the regular Executive Board meeting, when the Milestone should be declared as met.
The Executive Board releases the crossing of the milestones; the Project Coordinator proposes then the crossing of the Milestone to the general Assembly at the next meeting.
In case the General Assembly does not accept the achievement of the milestone, the Project Coordinator will define corrective actions. EVOLVE uses global project milestones as crucial "points of alignment" for the whole project.
The project is structured around 25 milestones, listed bellow by chronological order:

– *Month 3*
**1 – MS1.1 Web page and public project presentation.**
– *Month 6*
**2 – MS2.1 Plan for converged hardware platform**
**3 – MS9.1 Launch of Website**
– *Month 12*
**4 –** MS1.2 First period deliverable complete
**5 –** MS2.2 Access to base platform integrating processing, acceleration, storage, systems software
**6 –** MS7.1 First integrated prototype and evaluation
**7 –** MS8.1 PoC identification
**8 –** MS9.2 First Dissemination and communication activity report
– *Month 18*
**9 –** MS4.1 First version of workflow processing micro-services
**10 –** MS3.1 First version of workflow specification front-end and execution environment
**11 –** MS6.1 First version of pilot workflows
– *Month 24*
**12 –** MS1.3 Second period deliverable complete
**13 –** MS2.3 Access to refined platform
**14 –** MS5.1 First version of workflow management and scheduling services
**15 –** MS7.2 Second integrated prototype and evaluation
**16 –** MS8.2 PoC implementation and ecosystem status
**17 –** MS9.3 Second Dissemination and communication activity report midterm
– *Month 30*
**18 –** MS3.2 Second version of workflow specification front-end and execution environment
**19 –** MS4.2 Second version of workflow processing micro-services
**20 –** MS6.2 Second version of pilot workflows
– *Month 36*
**21 –** MS1.4 Third period deliverable completed
**22 –** MS5.2 Second version of workflow management and scheduling services
**23 –** MS7.3 Final integrated prototype and evaluation


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**24 –** MS8.3 PoC evaluation and ecosystem status
**25 –** MS9.4 Third Dissemination and communication activity report final

The ability to reach a milestone in time is a key criterion to estimate risk and evaluate the project quality and process.
It should be noticed that the three first milestones of the EVOLVE project have been reached ***ahead of schedule.***

## 4.4 Process for Dissemination Activities

### 4.4.1 Rules for Dissemination

Dissemination activities undertaken by any partners should acknowledge at all times EU funding to EVOLVE Project.

The following sentences may be used for:

- Publicity and promotional materials

*"The EVOLVE Project has received funding from the European Union's Horizon 2020 Research and Innovation programme under Grant Agreement no. 825061"*

- Results

*"The research leading to these results/this publication has received funding from the European Union's Horizon 2020 Research and Innovation programme under Grant Agreement no. 825061"*

As detailed in the Consortium Agreement (see section 8.4), dissemination of results depends on the nature of the results, Own Results can be handled in a short period of time, while dissemination of Shared results implied striker rules and some notification delays.

- Dissemination of Shared Results:

Dissemination of a Shared results implies a notification to all the Results Owners. The notification has to be sent at least 45 calendar days before the publication.

Any objection shall be made 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 the partner can show that its own work, time for performance, costs, liabilities, Intellectual Property Rights or other Legitimate Interests would be significantly harmed by the decision.

- Dissemination of Own Results:

Providing that the Own Results subjected to the dissemination has already been published in a Public Deliverable, no notification period of any kind are required .


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### 4.4.2 Step by Step Dissemination Schedule

Each Partner wishing to undertake any formal communication activity/initiative related to the Project should inform both Coordinator and the Leader of the Work Package dedicated to "Communication, Dissemination, and Exploitation" (WP9).

The content and the overall message of the communication activities should be agreed with the Coordinator while WP9 Lead Beneficiary should be consulted on the visual identity of the Project (logo, communication style..)

All communication activities shall be reported Monthly within the scope of the WP9 Status Update and presented to the Executive Board meeting meeting.

Dissemination and publication of project results: Before the dissemination and publication of Project results, the Partner shall give the Coordinator and all the other Project Partners at least 45-calendar-day-notice.

Other Partners then have 30 days to comment the dissemination/publication and request necessary modifications, if any. If there are no Partners comments within the period above, the dissemination/ publication of results is allowed.

- Use of social media:

EVOLVE uses social media. In order to adapte to the rapid time pace of these media, content to be shared using social media shall be sent in advance to the WP9 Lead Beneficiary, either on individual notice or by batch of per-notifications.



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# 5 Quality Assurance Activities

The focus of quality assurance is on the processes used in the project. Quality assurance ensures that project processes are used effectively to produce high quality deliverable. The following sections describe the activities established to ensure the quality of the processes used in the project.

## 5.1 Frequent communication within the project

As the most important quality assurance activity, a good, regular and frequent communication within the project has to be established.
Therefore, the statuses of all Work Packages need to be communicated on a regular basis to the project Coordinator.
This internal reporting process is a monthly status report to be delivered by each WP-Leader.
A simple template is provided in Annex 2. This template has to be completed and uploaded by each WP every month until 2 days before the monthly project-wide status meeting of the Executive Board.

During the monthly Status Meeting, which can be part of the regular Executive Board meeting, the status of each WP is presented by the WP representative.
As an outcome of the WP status presentation risks should be assessed, so that effective actions can be defined.
It contains no numbers on costs and efforts, but should focus on the progress of deliverables and the innovations achieved.
This monthly project-wide status report is the main problem and risk reporting process regarding quality and schedule. Due to its monthly cadence, it is easy to analyze what has changed/improved/fallen off in quality since the last status report.
In the last status meeting before a General Assembly meeting, the Executive Board prepares a status report for the General Assembly meeting, containing all 9 WP-Status one pagers.
Necessary corrective measures should be proposed in a way that the General Assembly is able to take the relevant decisions.

## 5.2 Communication

### 5.2.1 Communication channels

**Asynchronous communication:**

- Slack channels: **evolve-h2020.slack.com**. All partners are registered and the Slack workspace contains multiple channels for point to point or Work Package wide discussion
- Mailing list: additionally to the general project mailing list evolve-h2020@ics.forth.gr, each work package has it own dedicated mailing list, e.g wp6-evolve-h2020@ics.forth.gr

**Synchronous communications:**

- Project Executive Board Monthly Status meeting. Minutes of these meeting are broadcasted to the whole project mailing list
- Each work package organizes a monthly conference call
- General Assembly Meetings are organized on a six months basis


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## 5.3 Meetings schedule and Minutes

### 5.3.1 Meeting schedule

| Meeting | Period | Nature | Output |
|---|---|---|---|
| Internal Work Package Meeting | Once per month | Remote / Telco | Status update template is fulfilled, reviewed by EB and and archived |
| Executive Board Meeting | Once per month | Remote / Telco | WP status reviewed. Minutes are written, risks reviewed, minutes are broadcasted to all project participants. Minutes are archived |
| General Assembly Meeting. | Once every 6 month | Face to Face | Progress reviewed. Decision made / proposed. Minutes are written, broadcasted to all project participant and archived. |
| Scientific Advisory Board Meeting | Once per year | Remote / Telco or Face to Face | Questions are asked, advice are recorded, broadcasted to all project participant and archived |

### 5.3.2 Minutes of meetings

Meetings of any decision taking bodies have to be traced and recorded.
The chairperson of a Consortium Body shall produce written minutes of each meeting which shall be the formal record of all decisions taken. Draft minutes should be sent to all Members within 10 calendar days of the meeting.
The minutes shall be considered as accepted if, within 15 calendar days from sending, no Member has sent an objection in writing to the chairperson with respect to the accuracy of the draft of the minutes.
The chairperson shall send the accepted minutes to all the Members of the Consortium Body and to the Coordinator, who shall safeguard them. If requested, the Coordinator shall provide authenticated duplicates to Parties.
Minutes of Executive Board meetings, once accepted, shall be sent by the Coordinator to the General Assembly Members for information.


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## 5.4 Risk management

The second critical quality assurance activity is the control of the risk management and the relevant contingency plans. Hence it is necessary to review the open risks on a regular basis within the Executive Board.
The risk management is intended to recognize overall project risks as early as possible and respond proactively to these risks before they become a problem for the project.
During the project, technical progress and potential risks have to be reviewed continuously and systematically, and appropriate risk management measures have to be taken.
Risks in EVOLVE can be categorized as:

- Technical
- Organizational
- Financial

The Coordinator must monitor the indicators of the risk and manage and monitor the realization of the countermeasures.
The Coordinator will be supported by the WP-Leaders and their related risk management.
The main process for reporting of any new risks/problems is the monthly status report to be done by each WP Leader. WP Leaders and the Executive Board will dynamically identify potential risks and describe them by using the risk analysis form. Any identified risk has to be reported immediately to the Coordinator, independently of the schedule of the next monthly status report.
Within the "*Description of Action*", several risks have already been identified and corrective actions have been defined accordingly. The *risk summary table* provided bellow is an augmented version of the initial "*Description of Action*" risk analysis.

The Executive Board together with the Coordinator will track the Risk Analysis and set up appropriate Contingency Plans.

Risk summary table

| Risk Description | Probability (low, medium, high) | Work package | Impact | Mitigation |
|---|---|---|---|---|
| **Technical Risks** | | | | |
| Integration of software components requires more efforts than planed | M | 3,4,5,7 | Keep the functional perimeter unchanged, but provide fewer optimizations | Partners are experimented in this type of work and have resources to prototype the required components. Due to the continuous integration approach, EVOLVE will deploy and evaluate a reduced test-bed. |
| Integration with Pilot workflows is more complex than anticipated | M | 6,7 | Reduced impact due to limiting the scope of the work on Pilot | The continuous integration approach reveals early gaps in pilot workflow implementation. If not possible to cover gaps with shifting resources, partners will limit work to a subset of necessary features for pilots |
| Integration with HPC features requires more effort than estimated | L | 2,6,7 | Reduced impact due to limited use of HPC features | Incremental staging of use for HPC features to allow for clear and measurable estimation of improvements throughout project |


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| | | | | |
|---|---|---|---|---|
| | | | | execution |
| Application workflow not able to stress the system as required | L | 6 | Will not be able to generate the required load | Application under consideration have a wide range of parameters. Partners will identify the right parameters range to to march future storage system needs |
| Data available are not able to stress the system | L | 6,7,8 | Will not be able to generate the required load | Massive data-sets committed and available to partners. In case more data is required, the consortium will increase data-sets using a synthetic approach |
| Tight FPGA integration with CPU not available within the time frame of the project | L | 6 | Evaluation limited to loosely coupled FPGAs | Extrapolate numbers from I/O-attached accelerators to processor-attached accelerators via detailed breakdowns |
| Delays in delivering the advanced compute platform or storage | M | 2 | Less time available for final full-system evaluation | Final evaluation on the advanced hardware platform will delay. Evaluation will start with intermediate versions of the platforms available by BULL, DDN |
| Concurrent and more competitive technologies are developed elsewhere | L | 8,9 | Temporary loss of leadership and change of context | Monitor the evolution of the field in both the scientific and product areas. Development of a modular system so that new technologies can easily be integrated in different system levels |
| One partner step out from the consortium | L | 1 | Delay in partner contribution, integration and results | Monitor progress of each partner in project. Search for partner substitute with right expertise or move partner responsibilities to other partners |
| **Organizational Risks** | | | | |
| One partner under performs or is taken over by another entity | L | 1 | Tasks in execution are suspended | Pending workload will be load balanced among the partners, or the involvement of a replacement partner will be considered |
| Delayed tasks or deliverable | M | All | Task execution is delayed | Work Package monthly Status update. Executive Board will oversee this activity and evaluate results to identify potentially problematic tasks or milestones |
| Ineffective Dissemination and inability to motivate adopters of EVOLVE | M | 9 | Reduced visibility of the developed material | Periodically review assess dissemination activity, considering the level of dissemination. Share results with a wider relevant audience. Use dissemination performance indicator to track progress |
| Issues related to IPR right arise during exploitation | L | 9 | Exploitation strategy, deployment of pilot | The Consortium Agreement will constitute the primary source to resolve IPR issues. The GA may be involved if conflict remains |
| Challenge identifying and / or managing PoCs | M | 8 | Reduce validation of the value proposition | EVOLVE partners will act as PoC mentors to provide training and support in order to lower the entering cost for external organization to operate on |



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| | | | | |
|---|---|---|---|---|
| | | | | EVOLVE testbed. |
| **Financial Risks** | | | | |
| A partner commitment does not meet expectation | L | All | Balance of the project is altered | EVOLVE partners re-balanced the workload of the faulting partners. Scientific Advisory Board is involved to mitigate impact of the faulty partners. EC may be involved to re-balance the payment among partners |
| Project expectation are not met | L | All | Reputation of the consortium is at stake. Payment of the EC for consortium is at risk | Scientific Advisory Board is involved to analyze the technical issues and propose adjustment of the project goal. PO is involved to redefine goals and expectation. Partners increase their resources commitments. |



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# 6 Deliverable Schedule

The project results and progress will be documented through 85 deliverables. After an initial setting-up and ramp-up phases, most of the deliverables will be produced by batch every 6 months. Month 6, 18 and 30 are important milestones in the sense that they concentrate a large number of deliverables. They will be systematically preceded by a General Assembly Meeting in order to review the status of the planned deliverables and to ensure an early risk detection and guaranteed highest quality standard.

| month | WP1 | WP2 | WP3 | WP4 | WP5 | WP6 | WP7 | WP8 | WP9 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D1.1 | | | | | | | | | **1** |
| 3 | D1.2 | | | | | | | | D9.1, D9.2a | **3** |
| 6 | | D2.1 | | | | D6.1a, D6.1b, D6.1c, D6.1d | D7.1a, D7.2a | | D9.3 | **8** |
| 12 | D1.3 | D2.2, D2.3, D2.4 | D3.1a | D4.1a, D4.5a | D5.1a | | D7.3a | D8.1a | D9.2a, D9.4a, D9.5a | **13** |
| 18 | | | D3.2a, D3.3a, D3.4a, D3.5a | D4.2a D4.3a,D4.4a, D4.6a | D5.2a | D6.2a, D6.2b, D6.2c, D6.2d | D7.1b, D7.2b | | | **15** |
| 24 | D1.4 | D2.5, D2.6, D2.7 | D3.1b | D4.1b, D4.5b | D5.1b, D5.3a, D5.4a | | D7.3b | D81b, D8.2a, D8.3a | D9.2c , D9.4b, D9.5b | **17** |
| 30 | | | D3.2b, D3.3b, D3.4b, D3.5b | D4.2b D4.3b,D4.4b, D4.6b | D5.2b | D6.3a, D6.3b, D6.3c, D6.3d | D7.1c, D7.2c | | | **15** |
| 36 | D1.5, D1.6 | | | | D5.1c, D5.3b, D5.4b | | D7.3c, D7.4 | D8.2b, D8.3b | D9.2d, D9.4c , D9.5c,D9.6 | **13** |
| **WP Deliverables** | **6** | **7** | **10** | **12** | **9** | **12** | **10** | **6** | **13** | |



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# 7 REFERENCES

[1] EVOLVE Grant Agreement Annex 1 – Description of Work
[2] EVOLVE Consortium Agreement



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# 1 Annex 1: Notification Timeline

Meetings announcements, Agenda, Decision, notifications and expression of veto have to follow a strict timing constraints.
The following table summarizes the organizational time constraints:

| Actions | Notification period | Notes |
|---|---|---|
| Organization of an ordinary GA meeting | 45 days | Reduce to 15 days for extraordinary meeting |
| Send GA meeting agenda | 21 days | Reduce to 10 days for extraordinary meeting |
| Adding items to the GA agenda | 14 days | 7 days for extraordinary meeting |
| Organization of an ordinary Executive board meeting | 14 days | 7 days |
| Send EB meeting agenda | 7 days | |
| Adding items to the EB agenda | 2 days | |
| Veto right on a taken decision | Up to 15 days after decision notification | |
| Meeting Minutes availability | Within 10 days after the meeting | If no veto is expressed within 15 days, minutes are considered as accepted. |
| Notification of a planned publication (including deliverable) | 45 days | Potential object have to be made with 30 days of the notification |
| Notification of a Dissemination of Own Results already published | none | - |
| Social Media Dissemination | 45 days / none depending on the nature of the Results | Elements can be pro-notified by batch |



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# 2 Annex 2: Work Package Status Update

## WP [1-9] Status Update #Number

## #Date

**Participants**

- #Participant Lists

**Agenda**

Review of the previous Action Items

**[list of items to discuss]**

**List of the previous/pending Action Items**

| Action item id | Description | Due Date | Assignee(s) |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

**Summary of the discussion**

- #blah blah
- Per Task discussion: #blah #blah

**Risk Analysis**

- Deliverable still on schedule #YES/#NO
- Per Task risk status: #NONE/#Risk
- Technical Difficulties Analysis: #list

**Opened Action Items**

| Action Item id | Description | Due Date | Assignee(s) |
|---|---|---|---|
| #AI_Id | | | |
| | | | |
| | | | |

**Closed Action Items**

| Action Item id | Description | Due Date | Assignee(s) |
|---|---|---|---|
| | | | |
| | | | |
| | | | |



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# 3 Annex 3: Deliverable Review Form

**Deliverable [1-85]**

**Title: #Title**

**Workpackage [1-9]**

**#Date**

**notation scale: 5 excellent, 0 very bad**

**Contributors**

- **#Contributors Lists**

**Reviewer name: #name**
**Reviewer expertise in the domain: #[0-5]**
**Reviewer confidence: #[0-5]**

**Summary of the Deliverable**

**Strength and Weakness**

**Evaluation**

- Quality of the presentation: **#[0-5]**
- Quality of the Technical content: **#[0-5]**
- Alignment with work package orientation: **#[0-5]**

**Requested changes**

**Comment for the contributors**



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# Consortium

**DDN Storage**
www.ddn.com

**BULL**
www.atos.net

**IBM**
www.ibm.com

**FORTH**
www.ics.forth.gr

**OnApp**
www.onapp.com

**Institute of Communications and Computer Systems**
www.microlab.ntua.gr

**MemoScale**
www.memoscale.com

**webLyzard technology**
www.weblyzard.com

**LOBA**
www.loba.pt

**Thales Alenia Space**
www.thalesgroup.com

**Space Hellas**
www.space.gr

**CybeleTech**
www.cybeletech.com

**Neurocom Luxembourg**
www.neurocom.eu

**MemEX**
www.memexitaly.it

**Tiemme SPA**
www.tiemmespa.it

**Virtual Vehicle**
www.v2c2.at

**AVL List GmbH**
www.avl.com

**BMW AG**
www.bmw.com

**KOOLA**
www.koola.io



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