EGI-Engage

Report of quality status and quality plan for Period 2

D 1.3

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Abstract

The document describes the quality process implementation for EGI-Engage to ensure that outputs generated are high quality, timely and fit-for-purpose. This is being achieved by ensuring that all project management processes are conducted in a quality manner (quality assurance) and by developing quality criteria for the outputs themselves (quality control). The document also details the software quality assurance processes and service management standards that are adopted to ensure quality of digital artefacts like software and services delivered in EGI-Engage.

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DELIVERY SLIP

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Contents

1 Introduction

This document defines how the quality process for the EGI-Engage is being implemented to ensure that the project outputs are delivered and satisfies the specified quality requirements. This is being achieved by ensuring that all project management processes are conducted in a quality manner (quality assurance) and by developing quality criteria to access the outputs themselves (quality control).

Project Quality Management, according to Project Management Body of Knowledge 5th edition[1], includes all the processes and activities performed that determine quality policies, objectives and responsibilities to ensure the project will satisfy the requirements. It uses policies and procedures to implement quality management system and support a continuous the improvement of the process. It addresses both quality management of the project and quality of the deliverables of the project.

The goals of Quality Management as defined in Project Management Body of Knowledge are:

- **Customer satisfaction:** to ensure customer expectations are properly recognized and met;
- **Prevention:** to reduce mistakes;
- **Continuous improvement:** to identify and recommend necessary changes for improvement;
- **Management responsibility:** to ensure participation of all members of the project team meet project objectives.

It contains three processes:

- **Plan Quality Management:** to identify the quality requirements of the project and document steps required to demonstrate project compliance. It provides guides and directions on how quality will be managed and validated.
- **Quality Assurance:** to provide a systemic pattern of action to ensure that the product conforms to quality requirements and standards defined by the previous process. It is a management function, such as reviews, or a process for checking work items. It is the systematic measurement, comparison with a standard, monitoring of processes and an associated feedback loop that confers error prevention. It ensures the availability of quality project management processes.
- **Quality Control:** to monitors and checks the correctness of the project outcomes and to assess performance and recommend necessary changes for improvement. It inspects the accomplished work to ensure its alignment with the project scope.

EGI-Engage will use the structure of the quality processes defined in Project Management Body of Knowledge to plan and organize quality management activities as described in the next section.

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[1] http://www.pmi.org/PMBOK-Guide-and-Standards.aspx

2 Quality Management in EGI-Engage

The Quality Manager role has been explicitly assigned to Małgorzata Krakowian – Senior Operations Officer at EGI.eu – who is responsible for the creation and management of the Plan Quality Management, Quality Assurance and Quality Control processes within EGI-Engage.

Quality management in EGI-Engage is composed from the following activities:

Plan Quality Management	Perform quality assurance	Control Quality
Project phase		
Planning	Executing	Monitoring and controlling
Activities		
• Creating Quality Plan • Gathering all existing quality standards, practices and requirements for the project • Creating additional project specific practices, standards and metrics • Defining processes used on the project	• Conducting AMB and PMB meetings • Gathering metrics and KPIs and assessing them against targets • Gathering lessons learned • Conducting project reviews • Updating quality plan • Following quality procedures • Performing risk review	• Evaluating the root cause of quality problems • Verifying deliverables and milestones • Identifying need for improvements • Submitting change requests • Updating lessons learned

2.1 Quality plan during project year 1

Quality plan during project year 1 has been executed successfully according to D 1.1 Quality plan for Period 1[2]. To support project management activities new procedures have been agreed and implemented: "Requesting change in DoA", "Financial and effort review", "Risk review" (defined in D 1.2 Risk analysis and risk response for Period 1[3]) and "Software deliverable testing". In addition "Deliverables and milestones review procedure" has been improved to support different types of deliverables and milestones: report and software. The deliverable/milestone template was also updated to specify, when applicable, the exploitation plan of the project outputs.

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[2] https://documents.egi.eu/public/ShowDocument?docid=2487
[3] https://documents.egi.eu/public/ShowDocument?docid=2595

New guidelines for project outputs have been defined for acknowledgement, license, research data (in D 2.4 Data Management Plan[4]) and surveys.

A number of reviews have been conducted:

1. Project review
   - project month 06 (Milestone 1.2 First intermediate report (M01-M06))
   - project month 12 (Project Periodic Report (first period, M01-M12))
2. Risk review
   - project month 08
   - project month 12
3. Metrics and KPI review
   - project month 06 (Milestone 1.2 First intermediate report (M01-M06))
   - project month 12 (Project Periodic Report (first period, M01-M12))
4. Financial and effort review
   - project month 06
   - project month 09
   - project month 12
5. Deliverables and milestones – all milestones and deliverables (42) have been reviewed

As a result of metrics and KPIs review new metrics have been introduced to better monitor status of work.

In order to facilitate continues improvement of the project management, lessons learned have been gathered in project month 12 and incorporated in this deliverable.

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[4] https://documents.egi.eu/public/ShowDocument?docid=2556

3 Plan Quality Management

Within this process, the Quality Manager is responsible for the creation and maintenance of the EGI-Engage Quality Plan[5] that provides clear guidelines and procedures for all work package leaders on how quality will be managed and validated. The guidelines and procedures provided to the project cover topics such as communications, outputs, requesting changes, risk, finance and effort. In addition, a set of metrics (Key Performance indicators and activity metrics) have been defined and gathered[6].

3.1 Guidelines

3.1.1 Communication management

All outputs produced by staff activities within EGI-Engage (funded and unfunded effort) shall be recorded so that they can be reported by the project. The following guidelines shall be followed:

- **Meetings run by EGI-Engage:** The meetings shall be recorded in the EGI Indico server[7] and all presentations and material provided for the meeting, including any minutes, shall be attached to the appropriate agenda page.
- **Presentations, posters, and publication:** Presentations and/or papers presented at other meetings attended by EGI-Engage staff shall be recorded in the EGI document repository[8]. A link to the meeting and a summary of the outcome should be recorded in the 'notes' section of the document. A dedicated EGI-Engage tag is available to qualify documents, milestones, papers, presentations and other documentation relevant to the project.
- **Mailing Lists:** As the majority of the communication within the project is electronic, having a coherent record of that work is essential. All mailing lists must use the EGI.eu based mailing lists which allow groups defined within the EGI single sign on (SSO) to be linked to mailing lists, access to wiki space, document access, etc.
  Base mailing lists to be used within EGI-Engage project, however others may be requested over the course of the project by contacting quality manager:
  - **egi-engage-po@egi.eu**: EGI-Engage project office
  - **egi-engage-cb@mailman.egi.eu**: SSO based. Collaboration Board
  - **egi-engage-financial@mailman.egi.eu**: SSO based. For discussion of project administration and financial aspects
  - **egi-engage-pmb@mailman.egi.eu**: SSO based. Project Management Board

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[5] https://wiki.egi.eu/wiki/EGI-Engage:Quality_Plan

[6] https://wiki.egi.eu/wiki/EGI-Engage:Metrics

[7] http://indico.egi.eu

[8] http://documents.egi.eu

- o **egi-engage-amb@mailman.egi.eu**: SSO based. Activity Management Board members - composed of WP leaders.
- o **egi-engage-members@mailman.egi.eu**: SSO based. Includes all members of the project including people registered to EGI-Engage-related mailing lists
- o **For work packages:** SSO based
  - ▪ **egi-engage-wp1@mailman.egi.eu**
  - ▪ **egi-engage-wp2@mailman.egi.eu**
  - ▪ **egi-engage-wp3@mailman.egi.eu**
  - ▪ **egi-engage-wp4@mailman.egi.eu**
  - ▪ **egi-engage-wp5@mailman.egi.eu**
  - ▪ **egi-engage-wp6@mailman.egi.eu**

- **Requirements and actions gathering:** Requirements and actions gathering should be performed through EGI RT system[9] with group based access control provided through the EGI SSO system. Incidents related to the services delivered in production will be managed through the EGI helpdesk, GGUS[10]. The status of RT requirements queues was reviewed, and changes were approved to streamline the processing of the requirements by the product teams.

- **Websites:** www.egi.eu is the main website for the project. A dedicated set of project pages has been prepared. It is used mainly for all 'official' 'static' content[11].
  The wiki wiki.egi.eu should be used for all dynamic content being maintained or developed within each project activity. EGI-Engage Project main wiki page[12] content:
  - o description of the project
  - o work packages dedicated pages (tasks, contacts, deliverables, milestones)
  - o milestones and deliverables
  - o software and services guidelines
  - o quality plan
  - o risk plan
  - o data plan
  - o metrics
  - o Project Office

  Other third party websites or wikis should not be used to host EGI-Engage related material in order that the egi.eu domain becomes the definitive source of project information. Individual services supported by EGI.eu will have their own hostname in the egi.eu domain.

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[9] http://rt.egi.eu

[10] http://helpdesk.egi.eu/

[11] http://www.egi.eu/about/egi-engage/

[12] https://wiki.egi.eu/wiki/EGI-Engage:Main_Page

3.1.2 Outputs management

3.1.2.1 Templates

All outputs from EGI-Engage, e.g. project deliverables, presentations, and technical reports, should use EGI-Engage templates available on main website under the "Logo and templates"[13] section.

3.1.2.2 Acknowledgement

The following acknowledgement statements should be used for EGI-Engage outputs unless the output already uses one of the recognised project templates, where appropriate acknowledgements are already included:

- **Documents, presentations and reports**, this statement should be used:
  This material by Parties of the EGI-Engage Consortium is licensed under a Creative Commons Attribution 4.0 International License[14]. The EGI-Engage project is co-funded by the European Union (EU) Horizon 2020 program under Grant number 654142 http://go.egi.eu/eng
- **Work other than software** that cannot be reused without explicit permission:
  Copyright © 2015-2017 Parties of the EGI-Engage Consortium. The EGI-Engage project is co-funded by the European Union (EU) Horizon 2020 program under Grant number 654142.
- For **scientific publications** generated by efforts funded by the project:
  - To acknowledge EGI and the project
    This work used the EGI Infrastructure and is co-funded by the EGI-Engage project (Horizon 2020) under Grant number 654142.
  - To acknowledge EGI, the project and specific countries providing resources
    This work used the EGI Infrastructure through resources from Country_1, Country_2, … and is co-funded by the EGI-Engage project (Horizon 2020) under Grant number 654142.
- **Materials**
  This statement should be used for materials such as documents, presentations and reports:

  This material by Parties of the EGI-Engage Consortium is licensed under a Creative Commons Attribution 4.0 International License. The EGI-Engage project is co-funded by the European Union (EU) Horizon 2020 program under Grant number 654142 http://go.egi.eu/eng
- **Work other than software that cannot be reused without explicit permission:**
  Copyright © 2015-2017 Parties of the EGI-Engage Consortium. The EGI-Engage project is co-funded by the European Union (EU) Horizon 2020 program under Grant number 654142.
- **Source Code** of software created under the project should contain following statement:

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[13] http://www.egi.eu/about/logo_templates
[14] http://creativecommons.org/licenses/by/4.0/

The work represented by source file was partially or entirely funded by the EGI-Engage project co-funded by the European Union (EU) Horizon 2020 program under Grant number 654142.

- Acknowledgement should be visible at the **portals and source code public repositories:**
  - o To acknowledge EGI-Engage (Service co-funded by EGI-Engage)

  - o To acknowledge EGI.eu and EGI-Engage (Service co-funded by EGI.eu and EGI-Engage)

3.1.2.3   License

The following license rules should be followed for EGI-Engage outputs:

- **Software**
  - o **New developed software:** OSI-approved license[15], for any new software developed within the Project;
  - o **Further developed software:** In order to comply with the open access policy and maximise possibility for reuse of results, EGI-Engage partners, together, agree not to further develop software released with a non-open license and which cannot be re-released using an OSI-approved license.
  - o **Existing software:** If no existing OSI license is being used for existing software, the adoption of the Apache 2.0 license is possible.
- **Source Code**
  In order to comply with the open access policy and maximise possibility for reuse of results, EGI-Engage software code, tools and interfaces that fall under the joint ownership will be published under an OSI-approved license. If no existing OSI license is being used, we propose the adoption of the Apache 2.0 license. Free and unrestricted access to research result is a measurable barrier to uptake by SME's and can slow down innovation in measurable terms , and the consortium will make it a priority to comply with the Horizon 2020 Mandate in full support of Europe 2020 Initiative's Economic Growth Agenda.

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[15] http://opensource.org/licenses

3.1.2.4   Documents

All documents, presentations and other material that form an official output of the project (not just milestones and deliverables) are placed in the document repository[16] to provide a managed central location for all material.

Access to documents is linked to the EGI single sign on (SSO) system[17], which can be used to generate an account and password. Once logged into the document repository using the created account, it is possible to create new document items or update existing ones through the 'Create or change documents or other information' link.

3.1.2.4.1   Content

All documents will be written in English and use document formats described in the following section. References to external document and a Glossary to terms not listed on the website must be recorded. The correct capitalisation of the project name is EGI-Engage. English date format must be used (DD/MM/YYYY) when required.

3.1.2.4.2   Formats and tools

The following tools and formats will be recognised within the project:

- **Word Processing:** '.docx or .doc Format' allowing its use on MS Office on Windows/Mac and OpenOffice on Linux
- **Spreadsheet**: '.xls or .xlsx' Format allowing the use of MS Office on Windows/Mac.
- **Presentation:** 'PowerPoint' Format allowing the use of MS Office on Windows/Mac.

Final version of all formal documents (milestones and deliverables) must also be made available in PDF format.

3.1.2.4.3   Document naming convention

Filenames must use the following format in order to link any item back to other versions placed in the document repository. The filename format is:

EGI-Engage <DOCUMENT IDENTIFIER> V<VERSION>

DOCUMENT IDENTIFIER	The document identifier is dependent on the document type. If the document is:
	• Deliverable: Use the deliverable name: e.g. D1.1, D5.5, etc.
	• Milestone: Use the milestone name: e.g. M1.2, M5.4, etc.
	• Activity: Use the activity code: e.g. SA1, NA3, etc.

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[16] http://documents.egi.eu/

[17] https://www.egi.eu/sso/

	• Committee/Board: Use an acronym based on the committee or board name: e.g. TCB, OMB, UCB, USAG, SPG, etc. • Other: If the source of the material cannot be identified then ignore this section.
VERSION	This is the version number generated by the document repository for the particular repository identifier. Versioning rule: • +0.1 – new version of draft • +1.0 – new version of approved document

Example: EGI-Engage M3.1 V1.0.pdf

The title of documents uploaded to document repository must be in the following format:

EGI-Engage <DOCUMENT IDENTIFIER> Title (from the first page of the document)

Example: EGI-Engage M3.1 User Support Contacts

3.1.2.4.4 Document metadata

The cover page of the document contains metadata that needs to be reviewed and completed:

- Title: This must be the title of the milestone or deliverable as described in the Description of Action.
- Deliverable/Milestone code: e.g. D1.1 or M1.1. Delete if not required.
- Date: This field records the last date the document was saved.
- Activity: Enter the work package name (WP1, WP2, etc.) that is producing this document.
- Lead Partner: Enter the recognised short name within the EGI-Engage project of the lead partner.
- Document Status: This will move through the following states for milestones and deliverables, which will be internally tracked via RT:
  - TOC (Table of Contents)
  - Draft
  - Review
  - AMB/PMB Review
  - Final
- Document Link: The URL in the EGI document repository that provides access to the document.
- Abstract: An abstract describing the document's contents and main conclusions. On submission of the final version this should be entered into the relevant field in the repository metadata.

3.1.2.4.5 Repository metadata

When creating the entry in the document repository there are a number of compulsory metadata fields that need to be completed. Where possible these values should be copied from the corresponding document metadata. The Repository Metadata includes the following items:

- Title
- Abstract
- Keywords
- Notes and changes
- Document type
- Status
- Submitter: Select the person submitting the document.
- Authors: Select the people involved in writing significant portions of the document.
- View: Select the groups able to view the document. Documents that are drafts may be restricted to the groups within the project that are working on the document. Documents that are complete must be marked public.
- Modify: The 'office' group must me marked as able to modify the document.
- Topics: Select the topics relevant for the material. These will generally include 'EGI-Engage', committee/board that the material is coming from
  - Any output from EGI-Engage would minimally have the topics 'EGI-Engage'
  - There are also documents that are generated within the community that go beyond the scope of just the EGI-Engage project (e.g. operational policy documents) would minimally have the topics from 'EGI' category selected.

3.1.2.4.6 Access to documents

Access to internal or confidential documents is controlled at SSO group level, with SSO IDs being assigned to particular groups depending on their permissions to view or modify documents. Public documents are available to all, without restriction or the requirement to log in. Restricted documents can only be viewed and/or modified by logging in using an account with the correct permissions.

3.1.2.5 Service and Software

Quality of services produced within EGI-Engage project is ensured by the adoption of the EGI Services management standard FitSM. Instruction for service teams can be found under Instructions Tools teams' instruction[18].

The software produced within the project follows the well-established Software provisioning process[19] that has been adopted since 2010, based on the definition of quality criteria, quality

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[18] https://wiki.egi.eu/wiki/Instructions_for_Production_Tools_teams

verification and software validation in a controlled production environment of the federated EGI infrastructure.

The development activities within the project augment capabilities of existing open source software. The resulting software code, tools and interfaces developed as part of EGI-Engage are released as open source code and the full access is provided via publicly available source code repositories such as GitHub, SourceForge, Subversion (SVN), Concurrent Version System (CVS) etc. Software developers are able to choose their preferred source code repository to better integrate with existing practices, nevertheless they need to

- ensure that the contribution is openly accessible,
- add the metadata information needed to enable reuse,
- communicate the URL to the consortium.

The software and services produced by the project are listed under EGI-Engage wiki space[20].

3.1.2.6   Research Data

The Open Research Data Pilot applies to two types of data:

- the data, including associated metadata, needed to validate the results presented in scientific publications as soon as possible;
- other data (e.g. curated data not directly attributable to a publication, or raw data), including associated metadata.

The obligations arising from the Grant Agreement of the projects are (see article 29.3):

Regarding the digital research data generated in the action ('data'), the beneficiaries must:

- deposit in a research data repository and take measures to make it possible for third parties to access, mine, exploit, reproduce and disseminate — free of charge for any user — the following: the data, including associated metadata, needed to validate the results presented in scientific publications as soon as possible; other data, including associated metadata, as specified and within the deadlines laid down in the 'data management plan';
- provide information — via the repository — about tools and instruments at the disposal of the beneficiaries and necessary for validating the results (and — where possible — provide the tools and instruments themselves).

Note: As an exception, the beneficiaries do not have to ensure open access to specific parts of their research data if the achievement of the action's main objective, as described in Annex 1,

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[19] https://wiki.egi.eu/wiki/EGI_Software_Component_Delivery

[20] https://wiki.egi.eu/wiki/EGI-Engage:Software_Copyrights_and_Licenses#Software_and_Service_table

would be jeopardised by making those specific parts of the research data openly accessible. In this case, the data management plan must contain the reasons for not giving access.

Data management plan has been described in deliverable 2.4 Data management plan[21] and extracted to Data Plan wiki page[22] for easier access.

3.1.2.7   Other outputs

Surveys: All data deriving from surveys created and circulated by the project should be exported in (one of xls/csv/ods) format and provided to the Quality Manager for deposit and providing following information:

- WP number
- Title of the survey
- Purpose of the survey and target group, Deliverable, Milestones where outcome has been used (if applicable)
- Period when the survey was published and closed

3.2 Procedures

During the first year of the project, 4 new procedures have been created to better manage the project. In addition, the deliverables and milestones review procedure has been revised to better serve different types of deliverables.

Project procedures are listed under EGI-Engage wiki space[23].

3.2.1   Deliverables and milestones review[24]

3.2.1.1   Introduction

The formal outputs from the project (milestones and deliverables) pass through a formal review process. The review process provides staged deadlines during the process to ensure the output is available to the EC at the end of the project month (PM) that the material is due.

Depending of the type of milestone and deliverable, different inputs to the process are expected and required as detailed in the following list.

- **R:** Document, report
    - Input: full report
- **DEM:** Demonstrators, pilots, prototypes, plan design
    - Input: Delivery of the product, short 1-4 page report

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[21] https://documents.egi.eu/document/2556

[22] https://wiki.egi.eu/wiki/EGI-Engage:Data_Plan

[23] https://wiki.egi.eu/wiki/EGI-Engage:Project_procedures

[24] https://wiki.egi.eu/wiki/PROC01_Deliverables_and_milestones_review

- **DEC:** Website, press & media actions, events
  - Input: Delivery of the product, short 1-4 page report
    - Events: in addition feedback on satisfaction is provided
- **OTHER:** software, technical diagram etc.
  - Non-user facing software
    - Input: delivery, UMD software provisioning process[25], short 1-4 report based on the staged rollout process outcome
  - User facing software
    - Input: delivery, feedback on satisfaction is provided, short 1-4 page report
  - Other
    - Input: short 1-4 page report

The review process for a milestone and a deliverable is identical except for:

- Milestones are expected to have
  - two reviews produced by reviewers;
  - reviewers: 1 external, 1 Activity Managers Board member
  - are not delivered to the EC
- Deliverables are expected to have
  - three reviews produced by reviewers;
  - reviewers: 1 external, 1 Project Management Board member or reviewer appointed by a PMB member, 1 Activity Managers Board member.

Where possible, the reviewers are selected from relevant EGI's functional areas (i.e. Operations, User Community, Technology and Policy) that are not directly involved in the production of the output.

Roles in the review process are identified below:

- **Reviewer**: Responsible for providing a review of the document on the EGI review form so that responses from the document authors to the reviewer can be tracked. A change tracked version of the document can be provided with corrections for spelling, formatting and other minor issues. The reviewer is generally from the activity and organisation that is not responsible for producing the document.
- **Moderator**: Responsible for bringing to AMB discussion conflicting reviews which elements of a review must be implemented by the author. The decision to follow or reject a reviewer's comment must be tracked in the review document. The moderator is Quality Manager.
- **Editor**: The person from the activity and the partner who is responsible for the document and for collecting input from relevant project tasks. They may rely on others

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[25] https://wiki.egi.eu/wiki/EGI_Verifier_Guideline

within the activity to provide and/or collect the information needed. The editor cannot be a moderator or reviewer.

- **Quality Manager (QM):** Provides administrative support for the process. Acts as Moderator.
- **Work Package leader (WP leader)**: Responsible for overseeing the production of the document. The Work Package leader will work with the Editor to ensure that the work is done in a timely manner, and report to the AMB on its progress.
- **AMB Chair**: the Technical Director.

An individual could hold one or more of these roles if they are not in conflict with each other.

3.2.1.2 Steps

The workflow for the review process is described below.

Time before submission	Role	Action
Deliverable/milestone production phase		
>2 months	QM	- Create Document DB entry. - Remind WP leader responsible for the document about upcoming deliverable
2 months	WP leader	Assign - Editor - Reviewers
7 weeks	WP leader	Ensure the editor has provided an annotated table of contents that is available online (doc DB) and circulated to the AMB
5 weeks	WP leader	The draft is stable and undergoes review within the activity
4 weeks	WP leader	In inform QM that document is ready for external review. For software deliverables provides needed information for testing.
External review and testing phase		
Immediately	QM	- notifies reviewer(s), AMB and PMB that the document is available for external review - confirm expected review completion date with reviewers and explain what is expected - for software deliverables and milestones - a review form must be provided - technical testing needs to be performed
Immediately	Reviewers	Provide review for the deliverable/milestone. For software/service: - perform testing - provide improvements' suggestions for the service/software
Immediately	QM	Collect reviews and place them in Document DB entry Inform Editor and WP leader about received reviews

Immediately	Editor	Apply changes. Involve QM in case of conflicting reviews. Notify the WP leader and QM an updated document is available
Immediately	QM	• Get reviewers approval for final version of the document • Check if software deliverables are delivered according to https://wiki.egi.eu/wiki/EGI-Engage:Software_and_services
Immediately	QM	The external review is complete. Notify the AMB and PMB that the document has completed external review
AMB, PMB review phase		
2 week	AMB and PMB	Review the document and provide comments.
Quality phase		
1 week	QM/AMB Chair	A clean PDF version of the document is generated by the QM and placed in the document repository with updated meta-data
Deadline	AMB Chair	Document is delivered to the EC

3.2.2 Requesting change in DoA[26]

3.2.2.1 Introduction

The procedure has been introduced to better coordinate process of requesting changes in the DoA.

For Deliverables and Milestones change requests should be sent no later than six months before submission deadline.

Each request needs to be described as follow:

- Scope: deliverable/effort/other
- Motivation
- For deliverables:
  - o name of deliverable/milestone
  - o type of change: name/timeline/scope
- Current status in DoA
- New proposed

3.2.2.2 Steps

p#		Responsible	Action	Prerequisites, if any
1		Anyone	Requester send request to WP leader	
2		WP leader	Creates ticket in AMB queue in EGI RT system with prefix [DoA change request] and is writing proposal to WP1 mailing list	

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[26] https://wiki.egi.eu/wiki/PROC02_Requesting_change_in_DoA

3		AMB	Discussion during the next AMB meeting	
4		AMB	Proposes action plan to Technical Coordinator (TC)	
5	1	Technical Coordinator (TC)	Proposes for approval/rejection or ask for more explanation	
	2	PO	Involve PO for the check of the budget	whenever change has financial implications
6		Administrative & Financial Coordinator (AFC)	Validate proposal or ask for more information	
7		TC	TC submit the proposal to PMB for approbation	
8		PMB	Approval or rejection	
9		AFC	AFC submit the proposal to CB for approbation	If change requires a change in the DoA
10		CB	Approval or rejection	If change requires a change in the DoA
11			Once approved by the appropriate body (PMB or/and CB)	
	1	TC	Mail EC Office for approval	approved by CB or PMB
	2	Project office (PO) and QM	Submit a formal amendment request to the EC and the QM update related documentation, PO add information in changelog for the amendment	If change requires a change in the DoA, approved by CB

3.2.3 Financial and effort review[27]

3.2.3.1 Introduction

A financial and effort review procedure has been introduced to identify over and under spending partners and take appropriate action. This procedure is run every 3 months and involves Work package leaders in validating partners effort reported to the project office.

3.2.3.2 Steps

The following table describes

Here, M means month at the end of effort reporting period.

Timeline	Responsible	Action
M + 10 days	Project Partners	Deadline for Partners to report on effort (Actual efforts and costs in preparation for the cost statement. Efforts based on actual

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[27] https://wiki.egi.eu/wiki/PROC03_Financial_and_effort_review

		consumption and costs of personnel (only) based on estimated PM average costs.)
M + 15 days	Quality Manager and PO	Draft sent to AMB
M + 20 days	Quality Manager and AMB	Coordinate AMB to take an action to remind partners and check deviations • Partners not reporting • Partners over/under spending
M + 25 days	PO	Final report provided to PMB

3.2.4 Risk review[28]

3.2.4.1 Introduction

A risk review procedure was introduced in deliverable D1.2 Risk analysis and risk response for Period 1[29]. The goal of this procedure is to identify risks and plan proper response to prevent risk occurrence.

Risk review takes place every 3 months starting from October 2015.

3.2.4.2 Steps

Step	Responsible	Action
1	QM	Organize face to face meetings with all WP leader
2	WP leaders	With QM review risks assigned to WP. • identifying deprecated risks • reassessment of impact and probability of existing risks • reviewing of risk response • identification of new risks
3	Technical Coordinator (TC)	Approve/reject/suggest changes in Risk registry
4	QM	Inform WP leader about outcome of TC review
5	QM	Circulate final version of risk registry to AMB and PMB
6	QM	One no comments were provided by AMB and PMB: Circulate final version of risk registry to CB

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[28] https://wiki.egi.eu/wiki/PROC04_Risks_review

[29] https://documents.egi.eu/document/2595

3.2.5 Software deliverable testing[30]

3.2.5.1 Introduction

This procedure is part of Review procedure for deliverables and milestones. It describes how quality check is done for SW deliverables.

Requirement:

- Production tools, which are part of EGI Catalogue, should have a production and a testing/devel instance (at least 2 instances in total)

Testing Options:

- Each product team should choose between two possible ways to verify the quality of its release:
    1. Manual test
    2. (Semi-)Automatic internal procedure to test the release

In both cases, tests and short document must be finished by the deliverable deadline in the DoA.

3.2.5.2 Steps

Manual Test:

Step#	Responsible	Action
1	WP manager	As for the classical deliverables (the documents), 3 reviewers (1 moderator + 2 reviewers) will be assigned to each software deliverable. The WP manager has the responsibility to identify the reviewers. In the case of deliverables containing more than 1 software releases, there will be 3 reviewers for deliverable plus supporting testers
2	Developers	The candidate release should be installed on the testing/devel instance
3	Reviewers	The reviewers will perform the validation tests on the candidate release. Tests will be executed within a week. During this period, the testing/devel instance should not be updated. Reviewers and developers should agree on the week to perform the tests.
4	WP manager	Ensure that outcomes of the testing process are part of the short document describing the software release.

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[30] https://wiki.egi.eu/wiki/PROC05_Software_deliverable_testing

(Semi-)Automatic Internal Testing procedure:

Step#	Responsible	Action
1	Developers	Propose to its work package leader a (semi-)automatic procedure to verify the quality of its releases. An example of this procedure is a continuous integration system with a set of automatic/manual tests executed against each built. This procedure should be properly documented. The document should: • describe the process adopted by the PT to create a new release • describe the quality tests performed against each release • contain instructions to roll back to the previous release in case of issues in production and describe how the risk of data loss (e.g. for A/R and accounting) is managed
2	WP leader	In collaboration with the project management, should validate and approve the procedure verifying it can guarantee a good level of quality assessment.
3	Developers	Perform testing.
4	WP leader	Ensure that outcome of this (Semi-)Automatic Internal Testing procedure should be reported in the short document describing the software release (including a reference to the document at point 1)

3.3 Metrics

In order to monitor achievement of project objectives, a number of Key Performance Indicators (KPIs) have been defined in PY1 and further updated in PY2 taking into account recommendations from the PY1 review. They are supporting follow- up on project activities regarding quality and progress.

In addition, each of the activities set within a specific work package is managed by an Activity Manager. The Activity Manager is to ensure a list of activity metrics are provided that will allow for the monitoring of progress status against the activity. The Quality Manager, together with the Activity Manager, will control that the defined metrics are Specific, Measureable, Attainable, Relevant and Time-bound (SMART) prior to allowing activity participants to report against them.

KPIs and activity metrics values are either collected manually or extracted as applicable from a number of EGI tools. Metrics are gathered every 6 months as part of the reporting process. KPIs are also reported in intermediate and periodic reports; relevant metrics and KPIs are analysed as applicable.

All metrics have been revised taking into account Project Year 1 review recommendations. In particular key Performance Indicators were properly chosen to demonstrate progress status of the project.

3.3.1 Key Performance Indicators

These indicators are available on http://www.egi.eu/about/egi-engage/metrics.html and updated on a periodic basis (every 6 month).

The following chart provides an updated list of KPI and updated set of targets to make them more ambitious leveraging the activities of PY1 and the results of the exploitation plan related to PY1 project outputs (to be executed in PY2).

*Type: Cumulative (Cum), per period (Pp), average per period (Avg)

NA – not applicable

Objective 1 (O1): Ensure the continued coordination of the EGI Community in strategy and policy development, engagement, technical user support and operations of the federated infrastructure in Europe and worldwide

KPI ID	Metric	Type*	Polarity	Target PM12	Target PM24	Target PM30
KPI.5.SA2.Users	Estimated total number of researchers served by EGI	Cum	Up	40 000	(PY2 update) From: 45 000 To: 48 000	(PY2 update) From: 47 000 To: 50 000

Objective 2 (O2): Evolve the EGI Solutions, related business models and access policies for different target groups aiming at an increased sustainability of these outside of project funding. The solutions will be offered to large and medium size RIs, small research communities, the long-tail of science, education, industry and SMEs

KPI ID	Metric	Type*	Polarity	Target PM12	Target PM24	Target PM30
KPI.7.SA2.Users	Number of new research communities served	Pp	Up	20	20	10
KPI.8.SA1.Users	Number of VO SLAs established and number of long tail of science SLA (num1/num2)	Cum	Up	4	(PY2 update) From: 8/50 To: 10/100	(PY2 update) From: 10/100 To: 15/150
KPI.19.NA2.Partnerships (new)	Number of PaaS providers that are EGI partners: EGI Marketplace partners/Technology partners (num1/num2)	Cum	Up	--	10/10	15/13

Objective 3 (O3): Offer and expand an e-Infrastructure Commons solution

KPI ID	Metric	Type*	Polarity	Target PM12	Target PM24	Target PM30
KPI.3.SA1.Software	Number of new registered software items and VM appliances	Pp	Up	50/50	(PY2 update) From: 60/60 To: 30/90	(PY2 update) From: 70/70 To: 40/130
KPI.4.SA1.Cloud	Number of providers offering compute and storage capacity accessible through	Cum	Up	25	25	25

	open standard interfaces					

Objective 4 (O4): Prototype an open data platform and contribute to the implementation of the European Big Data Value

KPI ID	Metric	Type*	Polarity	Target PM12	Target PM24	Target PM30
KPI.18.NA2.Industry **(updated)**	Number of SME/Industry that successfully completed implemented a use case involving EGI services	Cum	Up	---------	2	3

Objective 5 (O5): Promote the adoption of the current EGI services and extend them with new capabilities through user co-development

KPI ID	Metric	Type*	Polarity	Target PM12	Target PM24	Target PM30
KPI.2.SA1.Integration	Number of RIs and e-Infrastructures integrated with EGI	Cum	Up	9	(PY2 Update) From: 11 To: 13	(PY2 Update) From: 12 To: 15
KPI.16.SA2.Support	Number of international support cases (for/with RIs, projects, industry)	Cum	Up	30	(PY2 Update) From: 30 To: 45	(PY2 Update) From: 30 To: 50

3.3.2   Activity Metrics

This section lists the activity metrics for each of EGI-Engage activity.

3.3.3   NA1 – Project Management

Metric ID	Metric	Type*	Polarity	Target PM12	Target PM24	Target PM30
M.NA1.Quality.1	Number of days of Deliverable, milestone delay per WP	Pp	Down	0	0	0
M.NA1.Quality.2	Percentage of delayed deliverables and milestones per WP	Pp	Down	0	0	0

3.3.4   NA2 – Strategy, Policy and Communication

Metric ID	Metric	Type*	Polarity	Target PM12	Target PM24	Target PM30
M.NA2.Communication.1	Percentage of articles, news, blog posts about or contributed by user communities and NGIs/EIROs with respect to the total of items published in EGI's channels	pp	Up	30%	40%	50%
M.NA2.Communication.2	Number of unique visitors to the website	pp	Up	NA	NA	NA
M.NA2.Communication.3	Number of pageviews on the website	pp	Up	NA	NA	NA
M.NA2.Communication.4	Number of news items published	pp	Up	52	52	27
M.NA2.Communication.6	Number of case studies published	pp	Up	10	10	5
M.NA2.Communication.7	Attendee-days per event	pp	Up	NA	NA	NA
M.NA2.Communication.8	Number of scientific publications supported by EGI	Cum	Up	NA	NA	NA

M.NA2.Strategy.1	Number of EGI impact assessment reports circulated to the stakeholders	Cum	Up	1	2	2
M.NA2.Strategy.2	Number of MoUs involving EGI.eu or EGI-Engage as a project	Cum	Up	3	6	8
M.NA2.Strategy.3	Number of contracts established with paying customers	Cum	Up	0	4	5
M.NA2.Strategy.4	Number of relevant authorities informed of the policy paper on procurement	Cum	Up	0	0	25
M.NA2.Industry.1	Number of engaged SMEs/Industry contacts	Cum	Up	20	90	100
M.NA2.Industry.2	Number of establish collaborations with SMEs/Industry (e.g. MoU)	Pp	Up	4	8	12
M.NA2.Industry.3	Number of requirements gathered from market analysis activities	Pp	Up	10	25	NA
M.NA2.Industry.4	Number of services, demonstrators and project ideas running on EGI for SMEs and industry	Cum	Up	20	30	40

3.3.5   JRA1 – E-Infrastructure Commons

Metric ID	Metric	Type*	Polarity	Target PM12	Target PM24	Target PM30
M.JRA1.AAI.1	Number of communities adopting federated IdP	Cum	Up	0	3	5
M.JRA1.Marketplace.1	Number of entries in the EGI Marketplace (i.e. services, applications etc.)	Cum	Up	50	200	400
M.JRA1.Accounting.1	Number of kinds of data repository systems being integrated with the EGI accounting software	Cum	Up	0	0	5
M.JRA1.Accounting.2	Number of kinds of storage systems being integrated with the EGI accounting software	Cum	Up	0	0	5

M.JRA1.OpsTools.1	Number of new requirements introduced in the roadmap	Pp	NA	NA	NA	NA
M.JRA1.OpsTools.2	Number of probes developed to monitor cloud resources	Pp	Up	NA	NA	NA

3.3.6 JRA2 – Platforms for the Data Commons

Metric ID	Metric	Type*	Polarity	Target PM12	Target PM24	Target PM30
M.JRA2.Cloud.1	Number of VM instances managed through AppDB GUI	Ave	Up	0	50	100
M.JRA2.Cloud.2	Percentage of cloud providers providing snapshot support	Pp	Up	0	50%	100%
M.JRA2.Cloud.3	Percentage of cloud providers providing VM resizing support	Pp	Up	0	50%	100%
M.JRA2.Cloud.4	Number of OCCI implementation supporting OCCI 1.2	Pp	Up	0	3	3
M.JRA2.Integration.1	Number of European cloud providers in the federated Astronomy community cloud	Cum	Up	0	3	4
M.JRA2.Integration.2	Number of virtual appliances shared	Cum	Up	0	3	4
M.JRA2.Integration.4	Number of EUDAT services integrated with the HTC and Cloud platforms of EGI	Cum	Up	1	2	3
M.JRA2.Integration.6	Number of research clouds that interoperate with EGI federated cloud: community clouds, integrated, peer	Cum	Up	2	4	6
M.JRA2.Integration.7	Number of models executed on Federated Cloud resources	Cum	Up	--------	15	30
M.JRA2.Integration.8	Number of CPUs consumed on Federated Cloud resources	Cum	Up	--------	150	300
M.JRA2.AcceleratedComputing.1	Number of batch systems for which GPGPU integration is possible to be supported through CREAM	Cum	Up	1	3	NA

M.JRA2.AcceleratedComputing.2	Number of Cloud Middleware Frameworks for which GPGPU integration is supported and implemented	Cum	Up	1	2	NA
M.JRA2.AcceleratedComputing.3	Number of level 3 disciplines with user applications that can use federated accelerated computing	Cum	Up	2	3	NA
M.JAR2.OpenData1	Number of open research datasets that can be published, discovered, used and reused by EGI applications/tools	Cum	Up	0	10	20

3.3.7 SA1 – Operations

Metric ID	Metric	Type*	Polarity	Target PM12	Target PM24	Target PM30
M.SA1.Operations.3	Amount of allocated resources (storage) allocated through a EGI centrally managed pool of resources to Long tail of science	Cum	Up	100	500	1 000
M.SA1.Operations.4	Amount of allocated resources (logical cores) allocated through a EGI centrally managed pool of resources to Long tail of science	Cum	Up	5 000	10 000	20 000
M.SA1.Operations.5	Number of new products distributed with UMD	Pp	Up	5	5	10
M.SA1.Operations.6	Number of CPU cores available to international research communities and long tail of science (all user communities included, HTC and Cloud) [HTC/Cloud]	Cum	Up	----------	(PY2 Update) From: 690 000 To: 760 000	(PY2 Update) From: 740 000 To: 775 000

M.SA1.Operations.7	Number of storage available to international research communities and long tail of science (disk and tape, HTC and Cloud) [PB] [HTC/Tape/Cloud]	Cum	Up	----------	(285, 250)	(310, 270)
M.SA1.Operations.8	Number of user requests handled in e-GRANT	Pp	Up	10	10	10
M.SA1.Operations.9	Number of compute resources available to the long tail of science	Cum	Up	300	500	500
M.SA1.Operations.10	Number of CPU time consumed by robot certificates	Pp	Up	NA	NA	NA
M.SA1.SecurityOperations.1	Number of security policies and procedures updated reviewed and adapted to support new services	Pp	Up	6	10	12
M.SA1.Platforms.1	Number of gCUBE VREs instantiated on the Federated Cloud for the iMARINE community	Cum	Up	0	2	3
M.SA1.Platforms.2	Number of CPU time consumed by e-CEO challenges (hours * cores)	Pp	Up	0	150 000	300 000
M.SA1.Platforms.3	Amount of computing resources used by long tail of science, both Cloud and HTC	Pp	Up	0	100 000	150 000
M.SA1.Users1	User satisfaction	Ave	Up	4	5	5

3.3.8 SA2 – Knowledge Commons

Metric ID	Metric	Type*	Polarity	Target PM12	Target PM24	Target PM30
M.SA2.UserSupport.1	Number of training modules produced and kept up-to-date	Cum	Up	6	12	15
M.SA2.UserSupport.2	HTC Absolute normalized CPU time to a reference value of HEPSPEC06 (excluding OPS and dteam) per 1 level	Pp	Up	NA	NA	NA

	disciplines IN HOURS					
M.SA2.UserSupport.3	HTC Relative increase normalized CPU time to a reference value of HEPSPEC06 (excluding OPS and dteam) per 1 level disciplines	Pp	Up	NA	NA	NA
M.SA2.UserSupport.4	Relative increase of users per 1 level disciplines	Pp	Up	NA	NA	NA
M.SA2.UserSupport.5	HTC Number of Low/Medium/High Activity VOs and total	Pp	Up			
M.SA2.UserSupport.6	Number of VM instantiated in Federated Cloud per 1 level discipline	Pp	Up	NA	NA	NA
M.SA2.UserSupport.7	Number of delivered knowledge transfer events	Pp	Up	15	20	15
M.SA2.UserSupport.8	Number of robot certificates used in EGI Infrastructure	Cum	NA	---------	NA	NA

4 Quality Assurance

The Quality Assurance process will be responsible for assessing if quality guidelines defined in the Quality Plan, are being followed and whether these are still appropriate for the project.

Project outputs (Milestones and Deliverables[31]) will be reviewed according to the review process for deliverables and milestones described in section 3.2.1.

4.1 Review

The regular review of the project outputs is performed via periodic and intermediate reports, produced according to following schedule:

- Project Month 06: Milestone 1.2 First intermediate report (M01-M06)
- Project Month 12: Project Periodic Report (first period, M01-M12)
- Project Month 18: Milestone 1.3 Second intermediate report (M13-M18)
- Project Month 24: Project Periodic Report (second period, M13-M24)
- Project Month 30: Project Periodic Report (third period, M25-M30)
- Project Month 30: Project Final report (M01-M30)

Building regular reviews will ensure that quality improvement can be carried out throughout the life of the project.

In project year two reviews have been performed:

- Internal through M1.2 First intermediate report[32]
- External through Project periodic report together with Project year 1 review meeting which took place in Brussels on 21 April 2016[33]

4.2 Lessons learned

As part of quality management activities, lessons learned have been collected from Work package leaders and Project Management Board.

4.3 Risk review

During project year 1, two risk reviews took place involving work package leaders and the Project Management Board. All mitigation plans have been reviewed and approved by the Technical Coordinator.

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[31] https://wiki.egi.eu/wiki/EGI-Engage:Deliverables_and_Milestones

[32] https://documents.egi.eu/document/2540

[33] https://indico.egi.eu/indico/event/2893/

4.4 Quality plan review

On a yearly basis the quality plan is reviewed and a report on quality status is produced to meet changed conditions or objectives during the project life span according to the following schedule:

- Project month 14: D 1.3 Report of quality status and quality plan for Period 2 (M13-M30)
- Project month 29: D 1.5 Report of quality status for Period 2 (M13-M30)

4.5 Progress monitoring

Communication with Activity Managers is ensured through the Activity Management Board (AMB)[34], which is responsible for regularly monitoring the progress of the project and of the day-to-day management of the individual activities within the project, which is undertaken by the Activity Managers. The AMB has representation from all the work packages.

The Project Management Board (PMB) – acting as the executive and supervisory body of the project, reporting and accountable to the Collaboration Board – participate in all the processes of the project quality management.

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[34] https://wiki.egi.eu/wiki/EGI-Engage:AMB

5 Quality Control

The Quality Control process collects and monitors the Key Performance Indicators (KPIs) and activity metrics. Based on results, the process identifies necessary improvements and suggests implementation actions to the relevant project boards. It is also responsible for updating lessons learned, i.e. the learning gained from performing the project and risk registry.

5.1 Deliverables and milestones

All deliverables have been provided in project year one.

The following table outlines the timeliness of Deliverable and Milestones.

	Delay [days]	# of Deliverables and Milestones
All work packages	15	42
WP1	14.7	4
WP2	16.8	11
WP3	11.5	7
WP4	8	7
WP5	14	3
WP6	21	10

5.2 Lessons learned

A list of 33 improvement suggestions has been identified and will be used for continuous improvement of project management.

Improvements suggesting related to following areas:

- Deliverables and milestones
- Project collaboration
- AMB
- PMB
- Quality management

5.3 Risk review

Risk registry review performed in March 2016 resulted as follow:

New risks identified	3 (42 since the beginning of the project)
Extreme level risks	0
High level risks	16
Medium level risks	13
Low level risks	11
Deprecated risks	4 (15 since the beginning of the project)

The analysis of risks identified is part of "Risk analysis and risk response" deliverables.

6 Gender plan

Mainstreaming genders in a project is a task that falls under the responsibility of the project's coordinator. However, the actual gender mainstreaming within activities allows for considering that all project partners are to consider how they will mainstream gender issues within and outside their project activities. Most of the partners in EGI-Engage are organisations with an established policy of equal gender opportunities. The EGI-Engage management is committed to ensure equal opportunity, according to EU rules and guidelines, when hiring new project staff. In parallel, the project coordinator will strive to keep the institutions that are part of the consortium positively motivated towards gender issues by raising awareness at management level.

7 Conclusions

The quality plan within EGI-Engage project has been executed successfully in project year 1. Nevertheless a set of improvements have been identified throw lessons learned and incorporated in this document.

This deliverable provides new and improved guidelines, procedures and metrics for project year 2 as well as report on activates which took place in project year 1 to demonstrate maturity and successful execution of quality plan.

Quality management in the project will continually look for farther improvements possibilities by working closely with Activity Management Board and Project Management Board.