EGI-InSPIRE

ANNUAL REPORT ON QUALITY STATUS

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Abstract

This document reports on the implementation of the EGI-InSPIRE quality assurance plan during the second year of the project. It reviews the main quality assurance mechanisms foreseen in the quality plan, analyses results and proposes some improvements for the next period.

II. DELIVERY SLIP

		Name	Partner/Activity	Date
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III. DOCUMENT LOG

Issue	Date	Comment	Author/Partner
1	22/2/12	ToC	C Gater / EGI.eu
2	26/03/12	First draft	C Gater / EGI.eu
3	03/04/12	Second draft	C Gater / EGI.eu
4	06/04/12	Third draft	C Gater / EGI.eu
5	08/05/12	Fourth draft	C Gater / EGI.eu

IV. APPLICATION AREA

This document is a formal deliverable for the European Commission, applicable to all members of the EGI-InSPIRE project, beneficiaries and Joint Research Unit members, as well as its collaborating projects.

V. DOCUMENT AMENDMENT PROCEDURE

Amendments, comments and suggestions should be sent to the authors. The procedures documented in the EGI-InSPIRE "Document Management Procedure" will be followed:
https://wiki.egi.eu/wiki/Procedures

VI. TERMINOLOGY

A complete project glossary is provided at the following page: http://www.egi.eu/about/glossary/.

VII. PROJECT SUMMARY

To support science and innovation, a lasting operational model for e-Science is needed – both for coordinating the infrastructure and for delivering integrated services that cross national borders. The EGI-InSPIRE project will support the transition from a project-based system to a sustainable pan-European e-Infrastructure, by supporting 'grids' of high-performance computing (HPC) and high-throughput computing (HTC) resources. EGI-InSPIRE will also be ideally placed to integrate new Distributed Computing Infrastructures (DCIs) such as clouds, supercomputing networks and desktop grids, to benefit user communities within the European Research Area.

EGI-InSPIRE will collect user requirements and provide support for the current and potential new user communities, for example within the ESFRI projects. Additional support will also be given to the current heavy users of the infrastructure, such as high energy physics, computational chemistry and life sciences, as they move their critical services and tools from a centralised support model to one driven by their own individual communities. The objectives of the project are:

1. The continued operation and expansion of today's production infrastructure by transitioning to a governance model and operational infrastructure that can be increasingly sustained outside of specific project funding.
2. The continued support of researchers within Europe and their international collaborators that are using the current production infrastructure.
3. The support for current heavy users of the infrastructure in earth science, astronomy and astrophysics, fusion, computational chemistry and materials science technology, life sciences and high energy physics as they move to sustainable support models for their own communities.
4. Interfaces that expand access to new user communities including new potential heavy users of the infrastructure from the ESFRI projects.
5. Mechanisms to integrate existing infrastructure providers in Europe and around the world into the production infrastructure, so as to provide transparent access to all authorised users.
6. Establish processes and procedures to allow the integration of new DCI technologies (e.g. clouds, volunteer desktop grids) and heterogeneous resources (e.g. HTC and HPC) into a seamless production infrastructure as they mature and demonstrate value to the EGI community.

The EGI community is a federation of independent national and community resource providers, whose resources support specific research communities and international collaborators both within Europe and worldwide. EGI.eu, coordinator of EGI-InSPIRE, brings together partner institutions established within the community to provide a set of essential human and technical services that enable secure integrated access to distributed resources on behalf of the community.

The production infrastructure supports Virtual Research Communities (VRCs) – structured international user communities – that are grouped into specific research domains. VRCs are formally represented within EGI at both a technical and strategic level.

VIII. EXECUTIVE SUMMARY

This document reports on the implementation of the updated EGI-InSPIRE quality assurance plan, D1.5 [R1] during the second year of the project. It reviews the main quality assurance mechanisms set out in the quality plan, analyses results and proposes some improvements for the next period. This report is a self-assessment of the running of the project and the management tools in use. It is coupled to the annual reports produced by the individual activities, and also to the Periodic Report for the second period.

The metrics described in this document are used to measure work:

- As an Activity within the project
- Towards the project's overall objectives
- Towards EGI's strategic goals outlined in the EGI Strategy Plan

The project level metrics and targets presented in this document correspond to those highlighted in D1.5. Progress towards this original set of project level metrics is described, and areas where updates to the targets are recommended are outlined. The new targets for project level metrics will be described in D1.9 Quality Plan and Project Metrics [R8].

For Project Year 3, strategic level metrics are proposed that align with D2.30 The EGI Strategic Plan [R2]. The Strategic Plan covers the main activities in the areas of community and coordination, operations and virtual research environments. The strategy metrics are designed to highlight the European "value add" of EGI and are aligned with the EGI and EGI.eu's longer term mission and strategy in order to help the project steer itself, reflect objectively upon current performance with a view to deploying a range of easy-to-reach, growth and stretch targets. The strategy metrics targets will also be presented in D1.9 Quality Plan and Project Metrics.[R8]

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1 INTRODUCTION

This document reports on the implementation of the EGI-InSPIRE quality assurance plan, D1.5 [R1] during the second year of the project. It reviews the main quality assurance mechanisms set out in the quality plan, analyses results and proposes some improvements for the next period. This report is a self-assessment of the running of the project, the management tools in use and shows an overview of the project metrics and targets. It is coupled to the annual reports produced by the individual activities, and also to the Periodic Report for the second period. Some changes to the project metrics are also discussed, as well as updates to the targets for the project level metrics.

The metrics described in this document are used to measure work:

- As an Activity within the project
- Towards the project's overall objectives
- Towards EGI's strategic goals outlined in the EGI Strategy Plan

The project level metrics and targets presented in this document correspond to those highlighted in D1.5. Progress towards this original set of project level metrics is described, and areas where updates to the targets are recommended are outlined. Strategic level metrics are proposed that align with D2.30 The EGI Strategic Plan [R2]. The Strategic Plan covers the main activities in the areas of community and coordination, operations and virtual research environments. These metrics are designed to highlight the European "value add" of EGI and are aligned with the EGI and EGI.eu's longer term mission and strategy in order to help the project steer itself, reflect objectively upon current performance with a view to deploying a range of easy-to-reach, growth and stretch targets.

2 QUALITY ASSURANCE ORGANISATION STATUS

2.1 *QA Management in EGI-InSPIRE*

In EGI-InSPIRE, the resources committed to Quality Assurance are provided by NA1 through quality management procedures and processes. Some Quality Assurance effort is also allocated within each activity in order to implement the QA policy and metrics defined in D1.5 Quality Plan and Project Metrics [R1].

The main tasks of the quality functions in NA1 include:

- Develop the Quality and Metrics Plan and update these annually;
- Ensure that agreed quality metrics are applied and measured within the activities;
- Summarise the metrics for the Quarterly and Annual Periodic Reports
- Take quality matters, which cannot be dealt with within the activity, to the AMB or other appropriate body.

2.1.1 QA wiki site and metrics web pages

The project metrics are summarised each quarter at http://www.egi.eu/projects/egi-inspire/metrics/, and further metrics can be obtained through the gstat tool and the accounting portal. A project metrics portal was released by EGI-InSPIRE JRA1 and is also now available at http://metrics.egi.eu/ and was rolled to production starting in PQ6. All NGI metrics and project task metrics are now reported in the metrics portal. Where possible metrics are automatically gathered from operational tools and activity managers and NGIs are requested to validate or modify them as needed. The remaining metrics are manually recorded in the portal.

The full project metrics and activity metrics described in D1.5 are also summarised in the quarterly reports. NGI operational metrics (SA1) are annually gathered and used for the NGI International Task annual assessment[1].

Further operational tools are available at the operational tools wiki page https://wiki.egi.eu/wiki/Tools. Statistic of service levels accomplished by Resource Centres and NGIs are gathered monthly and are accessible on wiki (https://wiki.egi.eu/wiki/Performance).

2.1.2 ITIL

ITIL®[2] is the most widely accepted approach to IT service management and the de facto standard for operating computer centres in the industrial sector. ITIL provides a cohesive set of best practices, drawn from the public and private sectors internationally.

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[1] https://documents.egi.eu/document/963
[2] http://www.itil-officialsite.com/

EGI.eu members received ITIL overview training in September 2011. ITIL was seen to be of benefit to the office environment and more broadly to EGI. As a result, the MoU and SLA documents at EGI are being compared to ITIL templates in order to assist in standardising approaches to our formal collaborations with resource providers, projects and virtual research communities. ITIL procedures have also been added to EGI.eu processes in the areas of operations, policy and software delivery.

D4.3 EGI Operations Architecture: Grid Service Management Best Practices [R9] defines the EGI operations service asset and the related providers and users and also describes the current operations service management best-practices. Following on from the ITIL training, their level of conformance to the ITIL stages and processes for IT Service Management, and the existing gaps are analysed in the document. The ITIL conformance analysis conducted shows that the set of existing EGI operational processes covers the great majority of the ITIL best practices. The most problematic areas identified concern demand management and capacity management and allocation. While processes exist at a Resource Centre level, EGI as a community is currently missing these processes across multiple providers. These capacity planning and demand planning processes are needed for the effective support of international user communities who do not integrate their own community¨s resources into EGI. A related process that also needs improvement is the enabling of VO-level access to resources across multiple administration domains (VO access management). It is currently managed and controlled manually, requiring negotiation and agreement with the Resource Centres, and this can introduce delays after a new VO is created when access is highly distributed.

EGI is also working within the FedSM project, a follow on project to the gSLM project. FedSM aims to set up a professional training and certification program for staff involved in the management and delivery of services in Federated e-Infrastructures. This program aims to be role-based and cover important aspects and contents from existing trainings in the area of ITIL, ISO/IEC 20000, Security Management (ISO/IEC 27000) and IT Governance (COBIT). The consortium will aim to find out (driven by actual requirements) which service management-related training is most important and valuable for people involved in managing Federated e-Infrastructures.

2.2 Project Management

The project management procedures and related materials used within EGI-InSPIRE are based on the successful processes developed during the management of large distributed collaborative projects such as the EGEE series of projects.

2.2.1 Project overall assessment mechanisms

The following mechanisms have been established by the project to assess the project progress:

- Activity Management Board (AMB) meetings[3];
- Quarterly reports and periodic reports [R3,4,5];
- Project execution plan [R6];
- Deliverables and milestones reviews [R7];
- Metrics web[4] and wiki pages[5];

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[3] https://www.egi.eu/indico/categoryDisplay.py?categId=13

- Project Management Board meetings;
- External Advisory Committee reports;
- EC annual project reviews.

Assessment:

The AMB includes the Activity Managers and key Task Leaders for the project and continues to meet on a weekly basis, with an annual face to face meeting. The meetings have driven the Deliverable and Milestone production and their associated review process, and have also proved to be a useful forum to raise and resolve project issues, and to discuss events. The quarterly reports have also been produced successfully, and the time taken to produce them has stabilised to around 5 weeks after the close of the quarter. Metrics are published on the website on a quarterly basis, and further tools are available at the operational tools wiki site for deeper level metrics. Project Management Board meetings were held quarterly up until September 2011. Meetings have been held more frequently after this point to consolidate the PMB's position as the strategic body for EGI, meeting to discuss issues such as sustainability and strategy. The first EC annual project review was held on the 30 June and 31st July 2011 and the second is scheduled for 27th and 28th June 2012.

The metrics portal has been upgraded by JRA1 so that more of the metrics generated by multiple NGIs can be gathered online and delivered as a report on a quarterly basis. The metrics portal is now available online at http://metrics.egi.eu/.

Changes proposed for Year Three:

The overall project assessment mechanisms have matured during Year 2, and the roles of each body will remain similar for Year 3, with the AMB driving the logistics of the project management, and the PMB dealing with strategic matters and project level issues. In Year 3, the quality assurance activity will focus on gathering more NGI level metrics through the metrics portal and in assessing progress towards the strategic metrics discussed in Section 4.

2.2.2 Document management procedure

The document management procedure includes the following elements, described in [R1]:

- Document repository (DocDB);
- Naming conventions;
- Document metadata;
- Repository metadata.

Assessment:

The DocDB has functioned effectively as the document storage repository for all official EGI publications since the start of the project, including deliverables, milestones, review documents, presentations, reports and committee minutes. Statistics for the DocDB are listed at https://documents.egi.eu/secure/Statistics. There are currently over 1000 documents and more than 5800 files in the database, with 1500 registered authors. Guidelines for naming of official documents

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[4] http://www.egi.eu/projects/egi-inspire/metrics/
[5] https://wiki.egi.eu/wiki/Tools

such as deliverables and milestones are set out in D1.5. The final step in the document review process is for the quality team to check that the conventions have been followed before producing a final pdf of the document for submission to the EC, as well as updating the document version to final, setting the modification and viewing permissions in the DocDB and publishing it to the website. The process for publishing a document with all the necessary metadata is outlined on the wiki[6]. The documents have been reviewed to ensure that they have the correct access rights by the correct groups.

Changes proposed for Year Three:
The DocDB will continue as the official repository for the EGI-InSPIRE documents. The topics will be expanded to include metadata relating to other projects in which EGI.eu is participating.

2.2.3 Document review procedure

The formal outputs from the project, in the form of milestones and deliverables pass through a defined review process. The review process is timed to ensure that the output is available to the EC at the end of the project month (PM) that the material is due.

The timetable and detailed processes of the document review procedure are listed on the wiki site at https://wiki.egi.eu/wiki/Review_process_for_deliverables_and_milestones and are also described in D1.5 [R1].

The new review process used in Year 2 is summarised below:

Time before submission	Person	Action	RT action
>2 months	Project Office	Create DoCDB URLs and enter into RT. Obtain moderator and reviewers from the AMB Chair and add these into the ticket fields and cc on the ticket. Set the DoCDB metadata (see Section 2.4) and the view and modify groups to the inspire-taskleaders and the activity group responsible for the work.	Remains blank and is assigned to Shepherd
7 weeks	Shepherd	Add the editor onto the cc of the ticket. Ensure the editor has provided the table of contents (optionally including notes as to the contents of each section) and the document is stored in DoCDB	Set state to ToC
6 weeks	Shepherd	Shepherd is aware a draft is available in the repository and is under active development with revisions from the contributors	Set state to Draft
5 weeks	Shepherd	The draft is stable and is undergoing review within the activity and is nearly complete	Set state to Internal Review
4 weeks	Shepherd	The document is ready for external review.	Set state to External Review and assign to

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[6] https://wiki.egi.eu/wiki/Metadata_management

			the PO
Immediately	Project Office	PO notifies reviewer(s), moderator and AMB that the document is available for review. Confirm expected review completion date with reviewers	Enter completion date as Due Date in RT
	Project Office	Notify the Editor that review is complete	Set state to Being Revised
	Editor	Notify the PO an updated document is available	Set state to External Review and return to ***
	Project Office	The external review is complete. Notify the AMB that the document has completed external review	Set state to AMB Review and assign to the AMB Chair
1 week	AMB Chair	The PMB is emailed that the document is available for the PMB to review for 1 week	Set state to PMB Review
Deadline	AMB Chair	A clean PDF version of the document is generated by the PO and placed in the document repository with updated meta-data	Set state to With EC

The roles are summarised 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 providing a review and deciding in cases of 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 normally an EGI-InSPIRE taskleader not from the activity producing the document.

Editor: The person from the activity and the partner who is responsible for the document. They may rely on others within the activity to provide the information. The editor cannot be a moderator or reviewer.

Project Office (PO): The project office provides administrative support for the process.

Shepherd: The shepherd is a member of the AMB who is responsible for overseeing the production of the document. They will work with the Editor to ensure that the work is done in a timely manner, and report to the AMB on its progress. This is normally the activity manager or their deputy.

AMB Chair: This is the project director, or their deputy.

Assessment

The new review process has run successfully during Year 2. The introduction of the shepherd role has helped the AMB to track the progress of Deliverables and Milestones where the editor is not within the AMB, and the concurrent external and AMB reviews have also helped to coordinate the input of comments in a more focused way. Drafts of the documents have been ready earlier for review, and have been reaching the PMB stage of the process earlier, which has meant that the submission time for documents has improved. The possible exception to this trend in decreasing review times has been seen at the end of the project year, when several annual reports have been prepared in parallel. In response to the reviewers' comments, some strategy and planning documents for Year 3 have been brought forward into the second period so that they can be reviewed at the second project review. This will help EGI-InSPIRE to endorse the plans for Year 3 but also adds to the concentration of end of year reporting into a short space of time.

Proposed changes for Year Three:

The current version of the review process will be continued in Year 3 with the aim of maintaining a realistic time for the review process, and ensuring that the first drafts are available from editors as close to the start of the month that they are due as possible.

3 MAIN PROJECT MANAGEMENT TOOLS

3.1 Document management tools

The document management tools and standards recommended for EGI are the following:
- Word processing: MS Word 97-2003
- Spreadsheet: MS Excel 97-2003
- Slides presentation: MS PowerPoint 97-2003
- Document Management tools: DocDB

The following formats are used for exchanging documents:
- doc, xls, ppt
- PDF
- HTML

All official documents must be available in PDF format. Documents produced by OpenSource versions of office software, and/or in OpenSource formats may also be submitted for review, but final documents should be available as pdfs.

Further templates are available from the website[7], a presentation template in MS PowerPoint and LaTeX, and poster templates in MS PowerPoint and Libre Office.

Assessment:

Since version control and formatting can become difficult if different file formats are used, the expectation during Year 3 is to continue using these file formats for document creation and circulation.

Proposed changes for Year Three:

Further OpenSource alternatives to MS and OpenOffice.org will be considered for sharing documents if they are requested by the community.

3.2 Project Progress Tracking

For the whole project the project effort is tracked using:
- Project Progress Tracking: PPT (CERN tool, customised for EGI-InSPIRE): https://pptevm.cern.ch/egi/ui/main.do

The PPT tool is hosted by CERN and is used by the EGI-InSPIRE project, and other EC-funded projects such as EMI, to track the work of its members across the different work packages and tasks. It manages the online completion of timesheets across the partners. The timesheets submitted are used as the source of data for the quarterly payments to partners, which are calculated based on estimated

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[7] http://www.egi.eu/about/egi-inspire/templates/

costs related to the effort recorded during the quarter and the average staff costs. Final adjustments to payments are made through the Form C's provided by the project partners at the end of each project year, based on real staff costs, and other costs. The Form C's are audited by the partners' institutional accountants, and Certificates on the Financial Statements are provided when necessary. All Form Cs are reviewed by the EC's financial and legal services and any queries resolved through the end of project year NEF session. Global tasks costs are gathered through a separate spreadsheet, which is completed by partners based on the average or actual costs of providing the global tasks as a whole.

Monitoring of project effort within PPT (and by association the quarterly payments) is carried out by the Work Package leaders, to assess expended effort against planned effort. This analysis at both a work package and a project level is reported through the quarterly and periodic reports, along with any associated deviations from the work plan or project issues.

Figure 2: Task view within PPT showing partners

CERN has provided the PPT tool since the beginning of the project, giving administrators rights to the Project Office team which has enabled them to monitor timesheets declared on the project and analyse data regularly.

CERN will continue to ensure the implementation and maintenance of the tool for the full duration of the EGI-InSPIRE project. Performance and functionality is reviewed once a year during a face to face meeting between the EGI.eu Project Office and the CERN team. The Service and support is on a "best-effort" and "as-is" basis.

Assessment:

A second version of PPT (PPT/EU2) was issued by CERN during PY2, and this was tested for EGI-InSPIRE in March 2012. PPT/EU2 represents a complete rewrite of the previous application, due to administrative and technical reasons at CERN. This will provide more flexibility for users and the project office, and will allow the developers to add new features to it as required. The user will be able to fill in time sheets as previously, and each user will have only one time sheet for all the European Projects they are working on to simplify the data entry process. The new version includes a reminder service that will send an email to every user with time sheets that are not submitted and to every supervisor that has any time sheets not validated. In May 2012 the data is being migrated across to the new version of the tool. This expected to lead to implementation of the new version on 1 July 2012, after the end of project year analysis has been completed. Data from the first quarter of Year 3 will be backdated into the new format for future analytical purposes.

Proposed changes for Year Three:

The second version of PPT will be used by all project members to track their progress in the project from the start of Year 3. CERN will continue to provide regular maintenance of the tool and members database.

3.3 Website and wiki

- PUBLIC: Dedicated to the general public: http://www.egi.eu
- INTERNAL: Wikis dedicated to supporting the technical Activities: http://wiki.egi.eu

Assessment:

The EGI public website has been extensively reorganised and relaunched at the EGI Community Forum in Munich in March with a new design and navigation structure. This work is described in more detail, including the web statistics for the previous year in D2.14 Annual Report on External Relations. [R7]

The project wiki site[8] has been regularly updated during the course of the project and has been particularly useful in supporting and reporting the work of the Virtual Teams, as described in D2.14.

The wiki site is now the main reference for operational documentation, procedures and policies. All EGEE legacy documentation has been updated and transferred to the EGI wiki during 2011. The Operations category currently comprehends more than 220 pages.

The EGI website and wiki are hosted and maintained by EGI-InSPIRE partner CESNET. This includes security monitoring and patching, day-to-day maintenance, and more substantial updates to the CMS as were required for the relaunch of the website. The level of service provided by CESNET has been satisfactory, and there have been no major service outages for the website or wiki during Year 2.

Plans for Year Three:

Plans for the website and wiki, as well as the other project dissemination channels such as social media sites, will be outlined in more detail in D2.15 Marketing and Communications Plan in PM24 and MS228 Communications Handbook in PM26.

3.4 Meetings

Meetings and related agendas are managed with Indico: https://www.egi.eu/indico/. These include EGI Community meetings, EGI Management meetings, such as the OTAG, SCG, USAG and UCB, operations meetings and EGI-InSPIRE meetings, such as the AMB, PMB and CB.

EGI also hosts two large annual events each year, the User Forum and the Technical Forum.

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[8] https://wiki.egi.eu/wiki/Main_Page

Assessment:

Indico has been used throughout the second year for hosting meetings of the various EGI, EGI.eu and community groups, including the two large annual meetings. It continues to offer functionalities such as registration, programme generation, agenda, timetabling, abstract review, email lists of contributors and a permanent repository for documents such minutes, notes, abstracts and presentations. The performance of the Indico tool during the second year has been satisfactory, with no major outages experienced.

Plans for Year Three:

Indico will continue to be used to provide meeting planning for EGI.eu and the wider community in the third year. An update to Indico is planned to take place in Year 3, which will allow enhanced sharing of EGI events on online calendars and conference apps.

4 METRICS PROGRAMME

4.1 Project Overall Metrics

In Years 1 and 2, EGI-InSPIRE defined the following project objectives (PO) as its goals:

- **PO1:** The continued operation and expansion of today's production infrastructure by transitioning to a governance model and operational infrastructure that can be increasingly sustained outside of specific project funding.
- **PO2:** The continued support of researchers within Europe and their international collaborators that are using the current production infrastructure.
- **PO3:** The support for current heavy users of the infrastructure in Earth Science, Astronomy & Astrophysics, Fusion, Computational Chemistry and Materials Science Technology, Life Sciences and High Energy Physics as they move to sustainable support models for their own communities.
- **PO4:** Interfaces that expand access to new user communities including new potential heavy users of the infrastructure from the ESFRI projects.
- **PO5:** Mechanisms to integrate existing infrastructure providers in Europe and around the world into the production infrastructure so as to provide transparent access to all authorised users.
- **PO6:** Establish processes and procedures to allow the integration of new DCI technologies (e.g. clouds, volunteer desktop grids, etc.) and heterogeneous resources (e.g. HTC and HPC) into a seamless production

Progress towards these objectives was previously monitored through the project's metrics. Additional metrics are defined to monitor the work of the different activities (work packages).

Therefore the metrics described in this document are used to measure work:
- As an Activity within the project
- Towards the project's overall objectives (PO1-6)
- Towards EGI's strategic goals outlined in the EGI Strategy Plan

The original target metrics for the project level metrics are outlined below:

Table 1: Target Project Metrics

Project Objectives	Objective Summary	Metrics	Target Y1	Target Y2	Target Y3	Target Y4
PO1	Expansion of a nationally based production infrastructure	Number of production resources in EGI (M.SA1.Size.1)	300	330	360	400
		Number of job slots available in EGI (M.SA1.Size.2)	300000	350000	400000	450000
		Reliability of core middleware services (M.SA1.Operation.5)	90%	91%	92%	93%
PO2	Support of European researchers and international collaborators through VRCs	MoUs with VRCs (M.NA2.11)	5	10	15	20
		Number of papers from EGI Users (M.NA2.5)	50	60	70	80
		Number of jobs done a day (M.SA1.Usage.1)	500000	525000	550000	575000
PO3	Sustainable support for Heavy User Communities	Number of sites with MPI (M.SA1.Integration.2)	50	100	125	150
		Number of users from HUC VOs (M.SA1.Size.7)	5000	5500	6000	6500
PO4	Addition of new User Communities	Number of desktop resource (M.SA1.Integration.3)	0	5	10	15
		Number of users from non-HUC VOs (M.NA3.9)	500	1000	1500	2000
		Public events organised (M.NA2.6)	1500	2000	2500	3000
PO5	Transparent integration of other infrastructures	MoUs with resource providers (M.NA2.10)	3	5	6	7
PO6	Integration of new technologies and resources	MoUs with Technology providers (M.NA2.9)	2	4	4	4
		Number of HPC resources (M.SA1.Integration.1)	1	3	5	10
		Number of virtualised resources	0	1	2	5

		(M.SA1.Integration.4)				

The project level metrics reported in the quarterly reports during Year 2, while the EGI Strategic Plan was being developed are listed below:

Table 2: Achieved Year One Project Metrics (Q5-Q7)

Project Objectives	Objective Summary	Metrics	Q5	Q6	Q7	Target Y2
PO1	Expansion of a nationally based production infrastructure	Number of production resources in EGI (M.SA1.Size.1)	346	348	347	**330**
		Number of job slots available in EGI (M.SA1.Size.2)	337,608	364,500	399,300	**350000**
		Reliability of core middleware services (M.SA1.Operation.5)	95.3%	94.5%	94.8%	**91%**
PO2	Support of European researchers and international collaborators through VRCs	MoUs with VRCs (M.NA2.11)	1	1	1	**10**
		Number of papers from EGI Users (M.NA2.5)	39	16	27	**60**
		Number of jobs done a day (M.SA1.Usage.1)	1,029,830	1,331,525	1,264,922	**525000**
PO3	Sustainable support for Heavy User Communities	Number of sites with MPI (M.SA1.Integration.2)	93	91	108	**100**
		Number of users from HUC VOs (M.SA1.Size.7)	9,672	9,861	10,856	**5500**
PO4	Addition of new User Communities	Number of desktop resource (M.SA1.Integration.3)	1	0	0	**5**
		Number of users from non-HUC VOs (M.NA3.9)	5,840	6,413	8,518	**1000**
		Public events organised (M.NA2.6)	1,400 (19 events)	(17 events)	(11 events)	**2000**
PO5	Transparent integration of other	MoUs with resource providers (M.NA2.10)	0	1	1	**5**

	infrastructures					
PO6	Integration of new technologies and resources	MoUs with Technology providers (M.NA2.9)	0	0	0	**4**
		Number of HPC resources (M.SA1.Integration.1)	56	38	39	**3**
		Number of virtualised resources (M.SA1.Integration.4)	1	6	7	**1**

Metrics have been measured through manual and automatic means as described in Section 2.1.1, through the wiki pages, gstat tool and the accounting portal. It was recognised in Y1 that many of the project and activity metrics required inputs from several different NGIs each quarter, which was a complicated and time consuming process. For Year 2, the Quality team has investigated, with SA1 and JRA1, mechanisms for gathering as many of these metrics through an updated metrics portal as possible, rather than gathering them manually. This has now been implemented for the SA1 work package.

The figures for the project level metrics from the first three quarters of PY2 show a mixed level of achievement with regard to the progress towards the targets originally set at the start of Year 2. Metrics associated with P01, expansion of a nationally based production infrastructure are broadly in line with or slightly in excess of targets. Usage of the infrastructure as measured by numbers of jobs and users from the heavy user communities is clearly much higher than predicted, and these targets should be refined for Year 3 to provide more representative targets. These targets should take into account the fact that usage depends heavily on the HEP activities, and the HUC users have been increasing at a lower speed in the past 12 months. Similarly, in future EGI will be in a better position to count users with expired VO membership, no longer actively using the infrastructure, which may affect the metrics. The numbers of HPC resources and virtualised resources are also much higher than expected at the start of Year 2, and should be revised upwards for Year 3.

However, the targets set for number of MoUs signed have not proved to be a predictive measure for tracking engagement with VRCs, resource providers and technology providers. While much progress has been seen through discussions with these groups, a signed MoU has not proved to be the best mechanism for showing engagement – some VRCs for example are not yet mature enough to enter into official, milestone driven agreements, even though progress towards bringing their users into the infrastructure has been made. VRC engagement can be tracked more qualitatively through the strategy metrics proposed in the following section, particularly in the areas of integrating new technologies, access to services, sharing and reuse of innovation and continued European and international funding.

Operations integration of desktop resources requires development both in the monitoring infrastructure and the accounting infrastructure. This is being delivered by the EDGI project[9]. Integration of monitoring will be completed during PQ9, while accounting integration is still in progress. For measuring this sort of engagement, other metrics of a more qualitative nature are needed.

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[9] http://edgi-project.eu/

4.2 Strategy Metrics

The project metrics and the associated targets were reviewed at the start of PY2, before the reviewers comments were received, and revised targets were added to D1.5 Quality Plan and Metrics [R1]. The reviewers comments on metrics and targets indicated that the metrics should help EGI-InSPIRE to understand what must be improved and/or changed, and to monitor and/or control progress in general. They recommended that strategic metrics should be designed and deployed. These metrics should be closely aligned with EGI and EGI.eu's longer term mission and strategy in order to help the project steer itself; reflect objectively upon its current performance; and to deploy a range of easy-to-reach, growth and stretch targets.

This document sets out a new strategy management framework that links the project objectives to the wider EGI strategy [R2] objectives and defines a measurement framework that can be used to track the execution of the strategy itself. The framework that we propose is an adaptation of the strategy map using the "Balanced Scorecard" mechanism outlined for non-profit organisations.

The balanced scorecard is an integrated framework for describing and translating strategy through the use of linked performance measures from a number of key perspectives. In the most common form, these perspectives are: Customer, Internal Processes, Employee Learning and Growth, and Financial. The balanced scorecard acts as a measurement system, strategic management system, and communication tool.

In its most recent evolution, this is coupled with the strategy map, a multi-layered diagram grouping the strategic objectives by perspectives and linking them with arrows to identify a cause-effect relationship. Applying this technique to EGI, the strategy map includes also the values that need to be upheld by the people involved in the organisation, the strategic themes (i.e., grouping of objectives that run across the perspectives) as defined in the EGI 2020 strategy and with the mission/vision at the top. The strategy map is a useful tool to design and communicate a strategy.

Given the not-for-profit nature of EGI, the balance scorecard needs to be adapted. The selected perspectives include are:

1. Learning & Growth: "how EGI must learn, grow and develop as an organisation"
2. Internal perspective: "to satisfy our beneficiaries and funders, what must we focus on and excel at?"
3. Direct beneficiaries: "what do our direct beneficiaries want?"
4. Funders: "what do our funders want in return for funds?"
5. Income: "if we succeed, what will our income look like?"

It should be noted that the EGI strategic plan is aligned with the Europe 2020 vision. For EGI, the two important key flagship initiatives are the Digital Agenda for Europe (DAE) and the Innovation Union (IU). EGI plays an important role in achieving a number of the key actions defined in these initiatives. The contribution to the Europe 2020 will be captured at an aggregate level, while a more detailed measurement framework will be used to track progress in the other areas and to generate the aggregated metrics.

Figure 1 presents the EGI Strategy Map described above. The objectives have been derived from the current version of the EGI Strategic Plan [R2] and are cross-referenced to the EGI-InSPIRE project objectives (see number in the circle).
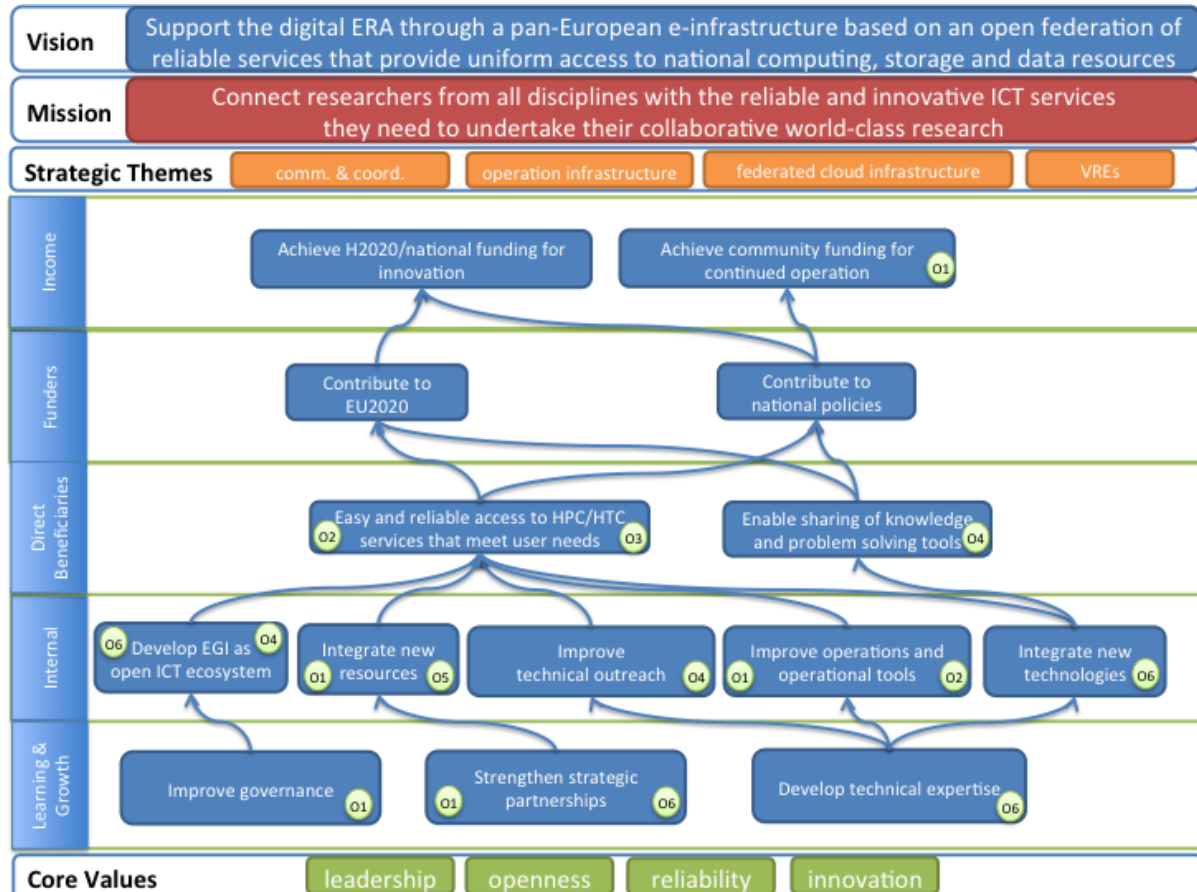

Figure 1 - EGI Strategy Map

The project level metrics presented in the previous section have been useful in measuring the basic outcomes of the project over the last year, with the exception of the number of MoUs, but are less helpful in tracking the impact of the project, or the progress towards the strategy now outlined in D.30 EGI Strategic Plan [R2]. As a result, the following objectives and metrics have been developed for tracking in Year 3, to assess progress towards the strategic plan.

Table 3 EGI Balanced Scorecard

Objectives	Description	Performance measures	Strategic Themes
Perspective: Learning & Growth			
Develop technical expertise	Develop the human capital within the EGI ecosystem. This should have a positive impact on the technical effectiveness and capacity of the EGI ecosystem and the support that can be offered locally to all stakeholders.	• Number of NGI supported training/tutorial attendee days undertaken at NGI events a year. • Number of EGI.eu supported training/tutorial attendee days undertaken through EGI Forums and dedicated events a year. NB: An event that lasted for 2 days that had 25 attendees would contribute 50 attendee training days.	C&C
Strengthen strategic partnerships	Develop strategic relationships with organisations/projects that can contribute or expand the EGI ecosystem (e.g., broaden technology offer, consulting on IT service management, engaging with developing regions, strategic partnerships)	• Number of entries in the EGI 'Yellow Pages' would provide a directory of skilled consultants, services, strategic partnerships, etc. NB: An EGI Yellow Pages (i.e. classified service directory) would have to be developed	C&C

Strengthen governance	Align the EGI governance to sustain the development of an open ecosystem by increasing the diversity of its stakeholders with associate participants who are not resource providers.	• Number of associate participants in the EGI Council	C&C
Perspective: Processes			
Develop EGI as an open ICT ecosystem	With an open governance model the accessibility of the EGI ecosystem will improve. With well-defined roles, processes and interfaces the collaboration between existing actors should improve while stimulating healthy competition to allow new actors to enter the ecosystem.	• Number of service offerings in the ecosystem that have been identified and documented as being able to be fulfilled independently. NB: This service offering equates to a category in the Yellow Pages that organisations can advertise their services under.	C&C
Integrate new physical resources	Expand the installed physical capacity of EGI (as defined by the EGI-InSPIRE partners)	• Total number of job slots (LCPUs) available in EGI • Installed disk capacity (PB) in EGI • Installed tape capacity (PB) in EGI	O.I.

Integrate new technologies	Integrate new functional services into EGI's Operational Infrastructure in order to increase the diversity and therefore the attractiveness of EGI to more research communities.	• Number of different operational service types in EGI as recorded in GOCDB. NB: These function service types could also be reused in the Yellow Pages to refine the offerings coming from technology providers. • Number of resource centres offering federated cloud services accessible to authorised users. (See M.SA2.19)	O.I. VREs
Improve technical outreach	Strengthen local technical outreach to existing and new research communities to increase awareness of EGI.	• Number of recorded geographical contacts across the NGIs that can represent EGI locally to external requests NB: These contact points can be NGI local champions, contact points in RIs, etc. • Number of NGIs with established and active NILs	C&C
Improve operational efficiency and effectiveness	Improve the reliability and the delivery of the operational infrastructure through improvements in the operational tools and associated processes.	• Number of EGI Global Services meeting published OLAs • Number of resource centres meeting the Resource Centre OLA.	O.I.
Perspective: Beneficiaries			
Easy and reliable access to the services that meet the needs of researchers	Increase number of researchers and the diversity of research communities who rely on EGI for performing their data driven research	• Number of researchers using EGI's resources (either directly or through affiliated services – i.e. portals or integrated research infrastructures) • Number of scientific papers produced using NGI resources affiliated into EGI across different disciplines.	VREs,

Promote the sharing and re-use of innovation	Improve the reuse of innovation developed within the EGI ecosystem elsewhere in the ecosystem across all stakeholders (e.g. resource centres, research communities)	• Number of relevant software items registered in the EGI AppDB • Number of relevant training materials and resources in the EGI Training Marketplace • Number of relevant appliances (i.e. virtual machines) available in the EGI Marketplace • Number of software components available in the EGI Repository • Number of agreements established with external research communities to use EGI's operational tools to monitor their deployed services in their infrastructures	VREs, C&C
Support the uniform operation of resource centres	Resource centres providing uniform operation and consistent access to services is a fundamental aspect of a transnational infrastructure.	• Number of resource centres that run services for international VOs.	O.I.
Perspective: Funders			
Contribute to EU2020 priorities	EGI shows a clear impact on enabling the Digital ERA and other key EU strategic objectives for 2020	• Establish a measurement framework that will track the EGI contribute to EU2020 key flagship initiatives (IU and DAE)	C&C

Contribute to national priorities	NGIs, by collaborating with EGI, shows a clear impact on contributing to their national priorities	• Number of NGIs with national ministry/government as a stakeholder in their governance structure (i.e. management or advisory body) • Number of NGIs that are recognised in their national e-Infrastructure strategies or plans.	C&C
Cost effective management	Demonstrate the cost effective management of EGI and utilisation of its resources.	• Cost (in Euro) of providing the operational tools and coordination needed to ensure the operation of EGI • Percentage utilisation through EGI provisioned services by EGI VOs of the job slots (LCPUs) capacity made available for their use	O.I.
Perspective: Income			
Achieve continued European & national funding	The EGI ecosystem is able to attract funding for continued operation, investment in physical resources and innovation in the virtual research environment that are deployed within it.	• Total national funding received for the operation and replacement of the physical resource infrastructure. • Total national funding for the staff needed to operate and provide technical outreach. • Total national and European funding that is supporting technology innovation projects recorded in the EGI Yellow Pages	C & C VREs
Achieve community funding for continued operation	The cost of providing the EGI Global Services needed to ensure the integrated operation and coordination of the production infrastructure is matched by the funds available from the NGIs.	• The percentage of funds coming from outside the community that is needed to deliver the coordinated operation of the EGI Global services	O.I.

The EGI balanced scorecard presented in Table 3 will also presented in D1.9 Quality Plan and Metrics, together with a set of targets. In the same document, a separate detailed set of metrics will be added to evaluate the EGI contribution to EU 2020.

5 CONCLUSION AND FUTURE PLANS

The project has largely followed the quality plan set out in D1.5 Quality Plan and Metrics successfully, and the project tools used to monitor and analyse progress have been effective. The updated document review process put in place at the start of the year has helped to reduce the time taken for Deliverables and Milestones to pass through the review process. The main project website has been relaunched and two large scale meetings, the EGI Technical and EGI Community Forums have been supported using the project tools. The project effort has also been effectively tracked using PPT throughout the year. Updates to Indico and PPT are planned for Year 3, and the impact of these updates on the delivery of the project will be monitored.

This document summarises the progress towards the targets for the project level metrics planned for Year 2. Broadly the targets have been met or exceeded in most cases compared to the plans set out in D1.5, and these targets and the metrics themselves will be revised for Year 3 in response to the reviewers' comments. The document also discusses the future strategy for tracking the progress of the project towards its strategic objectives. These plans will be outlined in more detail in D1.9 Quality Plan and Metrics for Year 3, released in April 2012.

6 REFERENCES

R1	D1.5 Quality Plan and Metrics https://documents.egi.eu/document/436
R2	D2.30 EGI Strategic Plan https://documents.egi.eu/document/960
R3	MS112 Quarterly Report 5: May – July 2011 https://documents.egi.eu/document/723
R4	MS113 Quarterly Report 6: August – October 2011 https://documents.egi.eu/document/881
R5	MS114 Quarterly Report 7: November 2011 – January 2012 https://documents.egi.eu/document/999
R6	MS102 EGI-InSPIRE Execution Plan https://documents.egi.eu/document/358
R7	Deliverable and milestone review documents https://documents.egi.eu/document/54
R7	D2.14 Annual Report on External Relations https://documents.egi.eu/document/1069
R8	D1.9 Quality Plan and Project Metrics https://documents.egi.eu/document/1071
R9	D4.3 EGI Operations Architecture https://documents.egi.eu/document/763