



D5.2: Clients' process implementation and maturity baseline

Deliverable

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Abstract

This deliverable presents the results of the maturity assessment of concrete FedSM clients. This document applies the maturity baseline assessment framework presented in Deliverable 5.1 [1] in an effort to measure on a per-process basis, the overall maturity of service management of the FedSM clients' e-infrastructures. The assessment framework presented in Deliverable 5.1 is also applied in this document to define the overall maturity scores for the FedSM clients. The information presented in this deliverable is used to identify three main aspects. The starting point of the FedSM client's maturity, the target maturity levels and the processes that need improvement to achieve a given maturity level, and for which an implementation plan targeting concrete processes is described in Deliverable 3.3 [2].

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1. Introduction

This document is meant to evaluate the current status (maturity) of IT Service Management implemented by the FedSM clients that participate in the project, namely EGI, FGI and PLGrid.

Concretely, this document analyses the current status of the above FedSM clients by applying the FedSM maturity baseline assessment framework described in Deliverable 5.1, which consists of two models, the FedSM Process Capability Model (PCM) and the FedSM Maturity Assessment Model (MAM).

The PCM has been used in the client's management processes to measure their assessment levels considering a number of requirements for each processes considered. The PCM model has been applied to reflect the extent the management processes are currently implemented in each FedSM client.

The MAM has been used to assess a global vision on how the set of management processes considered in the FedSM project are implemented.

Making use of the models above, we have measured the level of maturity in each FedSM client. The information analysed in this Deliverable is used to compare the maturity assessment among clients, but most important, to define potential actions that could be implemented to raise to target maturity levels in the next part of the project.

1.1. Contribution of this Deliverable to the project and relation with other Deliverables

This Deliverable D5.2 takes input from Deliverable 5.1 [1] as the latter defines the FedSM maturity baseline assessment framework that describes the FedSM Process Capability Model (PCM) and the FedSM Maturity Assessment Model (MAM).

In turn, this Deliverable 5.2 provides input to Deliverable 3.3 [2] to define the actual implementation plan for the FedSM clients in a first stage part of the project that will target concrete processes.

This deliverable contributes with the development of the project to reach a very important milestone for FedSM clients towards improving IT SM maturity. Namely, this deliverable has helped the FedSM clients to "translate" IT SM terms to their local environments by means of a self-evaluation procedure in order to reflect the current status of IT SM maturity for the clients. They were faced with not trivial questions to measure their current per-process and overall maturity levels. The deliverable also helps the clients to identify the areas that they should target to enhance their overall IT SM maturities.

1.2. Structure of this document

This document consists of four main Chapters. After the Introduction, Chapter 2 describes the process assessment tool used for the maturity assessments. Following on, Chapter 3, Chapter 4 and Chapter 5 describe the process assessments for the EGI, FGI and PLGrid FedSM clients respectively. A comparative analysis is performed in Chapter 6. Finally Chapter 7 presents the concluding remarks of the document.

2. Process Assessment Tool

This section describes the tool that the FedSM consortium produced to apply the maturity baseline assessment framework presented in Deliverable 5.1 [1].

2.1. Processes for self-assessment

The tool has been defined as a definition of requirements on a per-process basis, in which the client gives a score for each requirement according to the capability level that the corresponding e-infrastructure can support. The processes and the capability levels are aligned to the FedSM capability model described in Deliverable 5.1[1]. The overall process self-assessment has been divided in two phases. The processes and the self-assessment phase are presented in Table 1.

Process Name	Abbreviation	FedSM Phase
PR1. Service Portfolio Management	SPM	Phase 1
PR2. Service Level Management	SLM	Phase 1
PR3. Service Reporting	SR	Phase 1
PR4. Service Continuity & Availability Management	SCAM	Phase 2
PR5. Capacity Management	CapM	Phase 2
PR6. Information Security Management	ISM	Phase 2
PR7. Customer Relationship Management	CRM	Phase 1
PR8. Supplier Relationship Management	SRM	Phase 1
PR9. Incident & Service Request Management	ISRM	Phase 1
PR10. Problem Management	PM	Phase 2
PR11. Configuration Management	ConfM	Phase 2
PR12. Change Management	ChM	Phase 2
PR13. Release & Deployment Management	RDM	Phase 2
PR14. Continual Service Improvement	CSI	Phase 1

Table 1 – FedSM processes and phase for self-assessment procedure

The tool has been tailored to support the seven processes considered in the Phase 1 of the project. The assessment of the second phase processes is out of the scope of this document. The remaining of this section presents the core elements of the self-assessment tool for Phase 1.

2.2. Self-assessment tool for Phase 1

The tool includes a set of requirements for each process considered in Phase 1. For each requirement the FedSM client can give a score according to the capability level that the client's e-infrastructure can support. For this, the tool provides a short description of the capability levels associated with each requirement, as a support for the client during the self-assessment scoring procedure.

The processes, requirements and the corresponding capability levels' description for the FedSM Phase 1 self-assessment tool are described in the following seven Tables (Table 2 to Table 8).

Process	Requirement Code	Requirement	Capability Level	Description
Service Portfolio Management	PR1.1	A service portfolio shall be maintained. All services shall be specified in the service portfolio.	1 - Ad-hoc	The organisation is aware and can generally describe the service offer (past, current, planned) and related information through some (undefined) format.
			2- Repeatable	There is a clear understanding of the service offer (past, current, planned), relationship to support activities and other related information that connect to the value creation capabilities. This list is maintained on an informal basis.
			3 - Defined	There is a defined and documented procedure for maintaining the service portfolio, clearly specifying differentiated service offerings and links to strategic objectives. This is shared across the organisation.
	PR1.2	Design and transition of new or changed services shall be planned. Plans shall consider goals, acceptance criteria, timescales, responsibilities, new or changed technology, new or changed SLAs, testing and communication.	1 - Ad-hoc	Transition to new services or changes to current services are managed with no structured approach or control. The quality of the output depends on the individual efforts.
			2- Repeatable	There is an understanding of a structured approach for the transition to new services or changes to current services that is applied routinely, but this is not documented. Acceptance criteria, timescales are managed at a qualitative level.
			3 - Defined	There is a clearly documented procedure to handle service transition or change that includes all the mentioned attributes.

Table 2 – Requirements of service portfolio management process with capability descriptions

Process	Requirement Code	Requirement	Capability Level	Description
Service Level Management	PR2.1	Services to be delivered shall be agreed with customers. SLAs shall include agreed service targets.	1 - Ad-hoc	Agreements between the Federator and its customers only exist on an informal basis. SLAs and service targets are poorly defined or not defined at all.
			2- Repeatable	There is an informal process for SLA negotiation, which is understood by both the Federator and its customers, although it is not necessarily defined on a step by step basis. The resulting SLAs usually have a loose textual format. Service targets are defined, but may be different in structure and specification in different SLAs.
			3 - Defined	There is a defined and documented procedure for negotiating SLAs, which in particular specifies the required scope of the negotiated SLA, the output format in which the SLA must be stored, and how the SLA and service targets are defined.
	PR2.2	A service catalogue shall be maintained.	1 - Ad-hoc	The Federator is able to communicate his offerings to its customers through some (undefined) format.
			2- Repeatable	There is a list of offerings to customers that attempts to divide these offerings into logical (value-generating) services. This list is maintained on an informal basis.
			3 - Defined	There is a defined and documented procedure for maintaining a service catalogue clearly specifying differentiated service offerings.
	PR2.3	Services and SLAs shall be reviewed at planned intervals.	1 - Ad-hoc	Services and SLAs, if any, are reviewed on demand and on an individual basis.
			2- Repeatable	Services and SLAs are reviewed periodically, still the frequency and procedure of reviews is undefined and inconsistent.
			3 - Defined	There is a defined and documented procedure for reviewing services and SLAs at planned intervals.
	PR2.4	Service performance shall be monitored against service targets.	1 - Ad-hoc	Performance is monitored on a basic, mainly technical, level, not aligned to service targets.
			2- Repeatable	Performance is monitored by service, and to some extent against service targets.
			3 - Defined	There is a defined and documented procedure for service performance monitoring and reporting the results to relevant parties.
	PR2.5	For supporting services or service components provided by Federation members, OLAs shall be agreed.	1 - Ad-hoc	Operational level agreements (OLAs) between the Federator and Federation members only exist on an informal basis.
			2- Repeatable	There is an informal procedure for establishing OLAs, which is understood by both the Federator and the Federation members, although it is not necessarily defined on a step by step basis. OLAs are supportive to services offered to customers.
			3 - Defined	There is a defined and documented procedure for establishing OLAs, well-aligned to specific services offered to customers [OEDIT defined in an SLA].

Table 3 – Requirements of service level management process with capability descriptions

Process	Requirement Code	Requirement	Capability Level	Description
Service Reporting	PR3.1	Service reports shall be specified and agreed with interested parties.	1 - Ad-hoc	There is no definition of which service reports shall be provided. There is no agreement between Federator and Customer but a service report can be provided on demand.
			2 - Repeatable	Service reports for some services are defined. However definitions may be different in structure and format. Some of the service reports are informally agreed between Federator and Customer.
			3 - Defined	Documented procedures for defining and agreeing service reports between Federator and Customer exists.
	PR3.2	The description of each service report shall include its identity, purpose, audience, frequency and content.	1 - Ad-hoc	The description of a service report is not defined but Customer may make a request of providing some data on demand.
			2 - Repeatable	There is some informal way of defining contents of a service report but the documentation is rather scarce and not always followed.
			3 - Defined	Documented procedures for defining service report format and contents exists.
	PR3.3	Service reports shall be produced. Service reporting shall include performance against service targets, relevant information about significant events, workload characteristics and detected nonconformities.	1 - Ad-hoc	Federator is able to provide some reports on demand, but they are produced mainly manually without any defined output format.
			2 - Repeatable	There is some documentation on how service reports are produced but it is not complete. There may be inconsistencies in output format of service reports.
			3 - Defined	Service reports are produced on regular basis and provided to the Customer according to well defined procedures. The reports always follow the same format and contain characteristics related to service targets.

Table 4 – Requirements of service reporting process with capability descriptions

Process	Requirement Code	Requirement	Capability Level	Description
Customer Relationship Management	PR7.1	Customers and other interested parties shall be identified.	1 - Ad-hoc	Customers are internally known and can be contacted. There is no formal list of customers.
			2 - Repeatable	There is a list of customers and their contacts. This list is maintained on an informal basis.
			3 - Defined	There is a defined and documented procedure for maintaining a customer list.
	PR7.2	For each customer, a designated individual shall be responsible for managing the customer relationship and customer satisfaction.	1 - Ad-hoc	The person on duty manages, on demand, the customers' relationship and satisfaction.
			2 - Repeatable	There is a person assigned to each specific group of customers that manages the relationship and satisfaction.
			3 - Defined	There is a person assigned to each specific group of customers that manages the relationship and satisfaction. For that, this person uses documented procedures.
	PR7.3	Communication mechanisms with customers shall be established.	1 - Ad-hoc	Communication with customers is possible but used in an informal way and on demand.
			2 - Repeatable	Communication mechanisms for contacting customers are available and recorded.
			3 - Defined	Communication mechanisms with customers are available, recorded and the procedures for their use is documented.
	PR7.4	Service reviews with the customers shall be conducted at planned intervals.	1 - Ad-hoc	Service reviews are made on demand or following major changes within the organisation.
			2 - Repeatable	Service reviews are made at planned intervals but there is no defined standard procedure.
			3 - Defined	Service reviews are made at planned intervals, there is a defined standard procedure.
	PR7.5	Service complaints from customers shall be managed.	1 - Ad-hoc	Customer complaints are managed on a direct and case by case basis. There is no formal record of the complaint.
			2 - Repeatable	Customer complaints are managed on a direct and case by case basis, though, a record of the complaint is created and maintained.
			3 - Defined	Customer complaints are managed through a defined and documented procedure. A record of the complaint is created and maintained.
	PR7.6	Customer satisfaction shall be managed.	1 - Ad-hoc	Customer satisfaction is collected through informal means.
			2 - Repeatable	Mechanisms that measure customer satisfaction are used but not documented.
			3 - Defined	Mechanisms that measure customer satisfaction at planned intervals are used and documented.

Table 5 – Requirements of customer relationship management process with capability descriptions

Process	Requirement Code	Requirement	Capability Level	Description
Supplier Relationship Management	PR8.1	Suppliers shall be identified.	1 - Ad-hoc	Suppliers are internally known and can be contacted. There is no formal list of Suppliers
			2 - Repeatable	There is a list of suppliers and their contacts. This list is maintained on an informal basis.
			3 - Defined	There is a defined and documented procedure for maintaining a supplier list.
	PR8.2	Communication mechanisms with suppliers shall be established.	1 - Ad-hoc	Communication with suppliers is possible but used in an informal way and on demand.
			2 - Repeatable	Communication mechanisms for contacting suppliers are available and recorded.
			3 - Defined	Communication mechanisms with suppliers are available, recorded and the procedures for their use are documented.
	PR8.3	(Contractual) disputes with suppliers shall be managed.	1 - Ad-hoc	Disputes with suppliers are managed on a direct and case by case basis. There is no formal record of the complaint.
			2 - Repeatable	Disputes with suppliers are managed on a direct and case-by-case basis, though, a record of the complaint is created and maintained.
			3 - Defined	Disputes with suppliers are managed through a defined and documented procedure. A record of the complaint is created and maintained.
	PR8.4	Supplier performance shall be monitored.	1 - Ad-hoc	Supplier performance is assessed through informal means.
			2 - Repeatable	Mechanisms that measure supplier performance are used but not documented.
			3 - Defined	Mechanisms that measure supplier performance at planned intervals are used and documented.

Table 6 – Requirements of supplier relationship management process with capability descriptions

Process	Requirement Code	Requirement	Capability Level	Description
Incident & Service Request Management	PR9.1	All incidents shall be recorded according to a defined procedure.	1 - Ad-hoc	If regarded as necessary, incidents that are the responsibility of the Federator are recorded. The method of recording may be different for each incident.
			2- Repeatable	All or the majority of incidents are recorded. While there is an intuitive understanding about the information to be collected and method of recording, this is not clearly defined.
			3 - Defined	There is a defined and documented procedure for recording incidents based on clearly specified information templates and step by step guidance.
	PR9.2	All incidents shall be classified according to a defined procedure.	1 - Ad-hoc	Based on the situation and individual involved, some incidents are classified. The method of classification may be different even for similar incidents.
			2- Repeatable	All or the majority of incidents are classified. While there is an intuitive understanding about the underlying classification scheme and categories, this is not clearly defined.
			3 - Defined	There is a defined and documented procedure for classifying incidents based on a clearly specified scheme and step by step guidance.
	PR9.3	All incidents shall be prioritized according to a defined procedure, taking into account impact and urgency of the incidents.	1 - Ad-hoc	Based on the situation and individual involved, some incidents are handled with a certain priority. There are no clear criteria for assigning priorities.
			2- Repeatable	All or the majority of incidents are prioritized. While there is an intuitive understanding about the underlying criteria for prioritization, they are not clearly defined.
			3 - Defined	There is a defined and documented procedure for prioritizing incidents based on clearly specified criteria, considering impact and urgency of the incidents.
	PR9.4	Escalation of incidents shall follow a defined procedure.	1 - Ad-hoc	Based on the situation and individuals involved, incidents are escalated. There is no pre-defined escalation path to follow.
			2- Repeatable	If required, incidents are functionally or hierarchically escalated. While there is an intuitive understanding about the escalation path to follow, it remains undefined. There are no defined triggers for hierarchical escalations.
			3 - Defined	There is a defined and documented procedure for escalating incidents based on clearly specified criteria, differentiating between functional and hierarchical escalation.
	PR9.5	Closure of incidents shall follow a defined procedure.	1 - Ad-hoc	After resolution, incidents are closed without further action.
			2- Repeatable	Closure of incidents after their resolution is a dedicated step in the intuitive process. However, while there is a certain understanding about the actions required to close an incident, they are not clearly defined.
			3 - Defined	There is a defined and documented procedure for the closure of incidents including informing users and/or customers of the resolution and giving them the opportunity to confirm the resolution of the incident, plus a final review of the incident record against defined criteria.
	PR9.6	Personnel involved in the incident and service request management process shall have access to relevant information including configuration and release information.	1 - Ad-hoc	There are some sources of information on the configuration and releases that can be used to support the handling and resolution of incidents.
			2- Repeatable	Configuration and release information are available and are widely used to support the process of handling and resolving incident, although there is no clear definition of the information sources and of how to use them for this purpose.
			3 - Defined	Available sources of configuration and release information are documented. In addition, there is a defined and documented procedure for using these sources of information in order to effectively handle and resolve incidents.
	PR9.7	Customers shall be kept informed of the progress of their reported incidents and service requests.	1 - Ad-hoc	Users and customers are sporadically informed of the progress of their reported incidents and service requests. This usually happens reactively, i.e. in response to a customer or user inquiry.
			2- Repeatable	Users and customers are informed of the progress of their reported incidents and service requests. This includes both responding to customer and user status requests as well as proactive notifications. However, there is no clearly defined and systematic approach for this type of customer communications.
			3 - Defined	Users and customers are systematically and consequently informed of the progress of their reported incidents and service requests. This happens both in a reactive and proactive way, according to a defined and documented procedure.

	PR9.8	There shall be a definition of a major incident. Major incidents shall be classified and managed according to a documented procedure.	1 - Ad-hoc	There is some idea of which incidents should be regarded as "major". In these cases, special care and attention is given the respective incidents.
			2- Repeatable	A clear understanding exists about which kinds of incidents shall be regarded as major incidents. However, the related criteria and actions are not fully documented. Major incidents are classified and named as such, and special care and attention is given to them, including handling them with the highest priority, coordination through a sufficiently senior level of management, communication and post resolution review.
			3 - Defined	There is a defined and documented procedure for the classification and management of major incidents from occurrence to closure including effective communication, coordination of resolution activities and post resolution review.

Table 7 – Requirements of incident & service request management process with capability descriptions

Process	Requirement Code	Requirement	Capability Level	Description
Continual Service Improvement Management	PR14.1	Opportunities for improvement shall be identified and recorded according to a defined procedure.	1 - Ad-hoc	Opportunities for improvement are noticed largely by individuals as they randomly arise or due to urgent need, but are recorded in a haphazard manner if at all.
			2- Repeatable	There is some process for seeking improvements and documenting them that is carried out periodically. However, opportunities are not identified systematically and not all are recorded.
			3 - Defined	There is a clearly documented procedure for identifying and recording opportunities for improvement that is enacted periodically to keep improving services, though implementation may remain imperfect.
	PR14.2	Opportunities for improvement shall be prioritized according to a defined procedure.	1 - Ad-hoc	When multiple opportunities for improvement are noticed at the same time there is a loose prioritisation, mostly based on short terms needs.
			2- Repeatable	There is a procedure for prioritisation of opportunities for improvement but it is loose and based on a small number of parameters, such as cost and immediate impact. Documentation of decisions is patchy.
			3 - Defined	The procedure for prioritisation of opportunities for improvement is clearly defined and documented. It is carried out periodically when sets of opportunities are identified. It is based on clearly identified criteria that seek to maximise the effectiveness of the service
	PR14.3	Opportunities for improvement shall be evaluated and approved according to a defined procedure.	1 - Ad-hoc	When opportunities for improvement arise, there is a person or group responsible for deciding whether to proceed. The decision is more likely based on the opinion or knowledge of the person taking the decision than a set procedure or set of criteria.
			2- Repeatable	There is some procedure for evaluating and approving opportunities for improvement, based on a set of criteria identified in advance. The procedure is broadly followed, though it is not extensively documented and decisions are not well recorded and documented.
			3 - Defined	The procedure for evaluation and approval of opportunities for improvement is clearly defined and documented. It is carried out when sets of opportunities are identified. It is based on clearly identified criteria that seek to maximise the effectiveness of the service and decisions are clearly documented.

Table 8 – Requirements of continual service improvement management process with capability descriptions

The self-assessment tool described in this section was used to measure on a per-process basis, the maturity of service management of the FedSM clients' e-infrastructures. In the next sections the results of the self-assessment procedures for EGI, FGI and PLGrid are presented.

3. EGI process assessment

This section presents the results of the EGI self-assessment procedure. The section provides the process self-assessment results and the EGI overall service management maturity score.

3.1. EGI process self-assessment

This section provides the self-assessment process results for the EGI client. Namely the score of each capability level per process requirement and the rationale of the EGI client's score are provided in this section. In the following Tables the self-assessment for all processes considered in Phase 1 are described.

Process	Requirement	Self-assessment Score and Description	Rationale for Score & Comments
Service Portfolio Management	PR1.1 A service portfolio shall be maintained. All services shall be specified in the service portfolio.	2- Repeatable: There is a clear understanding of the service offer (past, current, planned), relationship to support activities and other related information that connect to the value creation capabilities. This list is maintained on an informal basis.	(Current situation) We have a defined service portfolio. Publication, procedure and owner is currently being defined. All discussion taking place regarding the future strategy EGI is based on the service portfolio. (Required improvement - publish and share jumps to 3)
	PR1.2 Design and transition of new or changed services shall be planned. Plans shall consider goals, acceptance criteria, timescales, responsibilities, new or changed technology, new or changed SLAs, testing and communication.	2- Repeatable: There is an understanding of a structured approach for the transition to new services or changes to current services that is applied routinely, but this is not documented. Acceptance criteria, timescales are managed at a qualitative level.	(current situation) all new and changed services are verified following the UMD software provisioning process, and are tested and validated through staged rollout, however do not this is documented in a formal procude (required improvement) document the process

Table 9 – EGI's self-assessment for service portfolio management process

Process	Requirement	Self-assessment Score and Description	Rationale for Score & Comments
Service Level Management	PR2.1: Services to be delivered shall be agreed with customers. SLAs shall include agreed service targets.	1 - Ad-hoc: Agreements between the Federator and its customers only exist on an informal basis. SLAs and service targets are poorly defined or not defined at all.	SLAs are not established. However accounting and helpdesk are subject to OLAs with the service providers, which are defined in the EGI.eu OLA. Quality parameters are defined after consultation with the resource providers AND the users through the UCB. We have OLA templates but not SLA testplates. OLA changes are subject to approval through a defined process and revisions tracked. Service level targets are also negotiated via the OMB and UCB. Each SLA has a defined owner. (required improvement) discuss the need of an SLA with the established user communities. Comment: Core services that are relevant to this assessment are those that are user-facing: accounting and helpdesk
	PR2.2: A service catalogue shall be maintained.	1 - Ad-hoc: The Federator is able to communicate his offerings to its customers through some (undefined) format.	(Current situation) Not defined or published. Work is in progress. (Required improvements) Define service catalogue, publish and define procedure catalogue maintenance.
	PR2.3: Services and SLAs shall be reviewed at planned intervals.	2- Repeatable: Services and SLAs are reviewed periodically, still the frequency and procedure of reviews is undefined and inconsistent.	(Current situation) SLAs are updated when problem areas are identified through a defined process, but not at regular intervals. Services are reviewed annually, but linked to project reports. (Required improvements) Quality criteria and processes linked to EGI-InSPIRE need to become structured as part of organisational practices.
	PR2.4: Service performance shall be monitored against service targets.	2- Repeatable: Performance is monitored by service, and to some extent against service targets.	(Current situation) Measurement and tools have been established but partilly lack reporting mechanisms (required improvement) Establish periodic reporting for EGI.eu services, assign owner and define service level management responsibilities and controls
	PR2.5: For supporting services or service components provided by Federation members, OLAs shall be agreed.	3 – Defined: There is a defined and documented procedure for establishing OLAs, well-aligned to specific services offered to customers [OEDIT defined in an SLA].	OLAs are negotiated with relevant partners (e.g. NGIs, user communities) and are approved by the OMB and UCB as applicable. Templates are defined and centrally hosted and available on the DocDB. Changes are subject to approval through a defined process and revisions tracked. Operational level targets are also negotiated via the OMB and UCB. Each OLA has a defined owner. Comment: All services with the exception of accounting and helpdesk are considered to be support services

Table 10 – EGI's self-assessment for service level management process

Process	Requirement	Self-assessment Score and Description	Rationale for Score & Comments
Service Reporting	PR3.1: Service reports shall be specified and agreed with interested parties.	2- Repeatable: Service reports for some services are defined. However definitions may be different in structure and format. Some of the service reports are informally agreed between Federator and Customer.	Service reporting of EGI.eu core services is not currently established. (required change) the reporting tools need extensions, and owners of this process must be defined
	PR3.2: The description of each service report shall include its identity, purpose, audience, frequency and content.	1 - Ad-hoc: The description of a service report is not defined but Customer may make a request of providing some data on demand.	(required change) The service report format must still to be established, existing reports only provide the service name
	PR3.3: Service reports shall be produced. Service reporting shall include performance against service targets, relevant information about significant events, workload characteristics and detected nonconformities.	1 - Ad-hoc: Federator is able to provide some reports on demand, but they are produced mainly manually without any defined output format.	Reports must be established. (required change) Discuss with the developers (Operations Portal) the format of these reports

Table 11 – EGI's self-assessment for service reporting process

Process	Requirement	Self-assessment Score and Description	Rationale for Score & Comments
Customer Relationship Management	PR7.1: Customers and other interested parties shall be identified.	2- Repeatable: There is a list of customers and their contacts. This list is maintained on an informal basis.	User community contacts are formally part of the UCB, and the CRM system is available for registration of contacts. However, not all user communities are represented in the UCB. (required change) establish the organization entitled to be engaged in SLAs and to represent a user community. The VRC concept should be revised
	PR7.2: For each customer, a designated individual shall be responsible for managing the customer relationship and customer satisfaction.	1 - Ad-hoc: The person on duty manages, on demand, the customers' relationship and satisfaction.	(required change) define reporting process to users, define owner of process (COD?)
	PR7.3: Communication mechanisms with customers shall be established.	1 - Ad-hoc: Communication with customers is possible but used in an informal way and on demand.	(required change) establish communication with customers.
	PR7.4: Service reviews with the customers shall be conducted at planned intervals.	3 – Defined: Service reviews are made at planned intervals, there is a defined standard procedure.	Service reviews are performed on a yearly basis. (Required change) Define a process for performing service reviews which is independent from project reporting cycles. Describe the procedure.
	PR7.5: Service complaints from customers shall be managed.	1 - Ad-hoc: Customer complaints are managed on a direct and case by case basis. There is no formal record of the complaint.	(required change) establish process
	PR7.6: Customer satisfaction shall be managed.	1 - Ad-hoc Customer satisfaction is collected through informal means.	GGUS tickets are an indirect mechanism to record issues with the performance delivered by core services, but there is no systematic gathering of this information, nor change management processes related to this

Table 12 – EGI's self-assessment for customer relationship management process

Process	Requirement	Self-assessment Score and Description	Rationale for Score & Comments
Supplier Relationship Management	PR8.1 Suppliers shall be identified.	2- Repeatable There is a list of suppliers and their contacts. This list is maintained on an informal basis.	Suppliers can be formally contacted through support units. (required change) check that a support unit is available for all core services
	PR8.2 Communication mechanisms with suppliers shall be established.	3 - Defined Communication mechanisms with suppliers are available, recorded and the procedures for their use are documented.	Issues with the core services are recorded in RT in the form of change request and requirements, in addition, mailing lists are available for each supplier. (required change) document contacts in wiki
	PR8.3 (Contractual) disputes with suppliers shall be managed.	3 - Defined Disputes with suppliers are managed through a defined and documented procedure. A record of the complaint is created and maintained.	In case of problem escalation, procedures are defined in the consortium agreement of EGI-InSPIRE. (Required change) Establish procedures that are project-independent for the post EGI-InSPIRE phase

	PR8.4 Supplier performance shall be monitored.	3 - Defined Mechanisms that measure supplier performance at planned intervals are used and documented.	Supplier performance is reviewed annually. (Required change) establish processes independent of EGI-InSPIRE quality assurance procedures
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Table 13 – EGI’s self-assessment for supplier relationship management process

Process	Requirement	Self-assessment Score and Description	Rationale for Score & Comments
Incident & Service Request Management	PR9.1: All incidents shall be recorded according to a defined procedure.	3 – Defined: There is a defined and documented procedure for recording incidents based on clearly specified information templates and step by step guidance.	Incidents for core services can be registered in GGUS. (Required change) Check that all systems have a support unit. For example, security monitoring systems are not formally supported in GGUS.
	PR9.2: All incidents shall be classified according to a defined procedure.	2- Repeatable: All or the majority of incidents are classified. While there is an intuitive understanding about the underlying classification scheme and categories, this is not clearly defined.	Classification of incidents is assessed autonomously by supporters. (Required change) Establish guidelines for classification of incidents for core tools
	PR9.3: All incidents shall be prioritized according to a defined procedure, taking into account impact and urgency of the incidents.	2- Repeatable: All or the majority of incidents are prioritized. While there is an intuitive understanding about the underlying criteria for prioritization, they are not clearly defined.	Severity of incidents is assessed autonomously by supporters. (Required change) Establish conditions for severity assessment
	PR9.4: Escalation of incidents shall follow a defined procedure.	2- Repeatable: If required, incidents are functionally or hierarchically escalated. While there is an intuitive understanding about the escalation path to follow, it remains undefined. There are no defined triggers for hierarchical escalations.	(Required change) Operational tool tests should become "Operations" so that standard procedures can be applied to failures of the tools.
	PR9.5: Closure of incidents shall follow a defined procedure.	3 – Defined: There is a defined and documented procedure for the closure of incidents including informing users and/or customers of the resolution and giving them the opportunity to confirm the resolution of the incident, plus a final review of the incident record against defined criteria.	GGUS tickets provide the mechanisms to register the solution to the incident and to allow submitters of incidents to verify the solution or reopen the ticket
	PR9.6: Personnel involved in the incident and service request management process shall have access to relevant information including configuration and release information.	3 – Defined: Available sources of configuration and release information are documented. In addition, there is a defined and documented procedure for using these sources of information in order to effectively handle and resolve incidents.	Release documentation is available on wiki. A third level escalation process is available if an incident cannot be resolved, the third level escalation involves the developers of the tools
	PR9.7: Customers shall be kept informed of the progress of their reported incidents and service requests.	3 – Defined: Users and customers are systematically and consequently informed of the progress of their reported incidents and service requests. This happens both in a reactive and proactive way, according to a defined and documented procedure.	Progress of an incident is recorded in the ticket diary, only confidential information is kept private
	PR9.8: There shall be a definition of a major incident. Major incidents shall be classified and managed according to a documented procedure.	2- Repeatable: A clear understanding exists about which kinds of incidents shall be regarded as major incidents. However, the related criteria and actions are not fully documented. Major incidents are classified and named as such, and special care and attention is given to them, including handling them with the highest priority, coordination through a sufficiently senior level of management, communication and post resolution review.	Generic guidelines are available to communicate incidents, inform the community, but post-mortem analysis is distributed only on a voluntary basis. (Required change) Establish a procedure for incident management of EGI.eu core tools, especially in case of major incidents.

Table 14 – EGI’s self-assessment for incident & service request management process

Process	Requirement	Self-assessment Score and Description	Rationale for Score & Comments
Continual Service Improvement Management	PR14.1: Opportunities for improvement shall be identified and recorded according to a defined procedure.	3 – Defined: There is a clearly documented procedure for identifying and recording opportunities for improvement that is enacted periodically to keep improving services, though implementation may remain imperfect.	We have a documented requirement gathering process and a support tool for this (RT)
	PR14.2: Opportunities for improvement shall be prioritized according to a defined procedure.	2- Repeatable: There is a procedure for prioritisation of opportunities for improvement but it is loose and based on a small number of parameters, such as cost and immediate impact. Documentation of decisions is patchy.	Cost of developments and impact on the community are the main parameters when prioritising requests, but decisions are not recorded (Required change) verify if more parameters for prioritisation are needed
	PR14.3 Opportunities for improvement shall be evaluated and approved according to a defined procedure.	3 - Defined The procedure for evaluation and approval of opportunities for improvement is clearly defined and documented. It is carried out when sets of opportunities are identified. It is based on clearly identified criteria that seek to maximise the effectiveness of the service and	We have a board responsible of prioritizing requests of improvement and providing input to the developers

	decisions are clearly documented.	
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Table 15 – EGI’s self-assessment for continual service improvement management process

3.2. EGI service management maturity

This section defines the overall maturity assessment for the EGI FedSM client considering the self-assessment results presented in Section 4.1.

The Table 16 presents the assessment results for the processes’ requirements considered in Phase 1. A graphical representation of the assessment results is provided in the right part of Table 16. The green and red colors represent the fulfillment and not fulfillment respectively, of the capability levels for the corresponding requirement. The right-most border line shown in the table represents the FedSM realistic target for overall capability assessment for the FedSM clients considered in the Phase 1 of the project.

Process	Requirement	Assessment result	L0	L1	L2	L3
PR1. Service Portfolio Management	PR1.1	2	Y	Y	Y	N
	PR1.2	2	Y	Y	Y	N
PR2. Service Level Management	PR2.1	1	Y	Y	N	N
	PR2.2	1	Y	Y	N	N
	PR2.3	2	Y	Y	Y	N
	PR2.4	2	Y	Y	Y	N
	PR2.5	3	Y	Y	Y	Y
PR3. Service Reporting	PR3.1	2	Y	Y	Y	N
	PR3.2	1	Y	Y	N	N
	PR3.3	1	Y	Y	N	N
PR7. Customer Relationship Management	PR7.1	2	Y	Y	Y	N
	PR7.2	1	Y	Y	N	N
	PR7.3	1	Y	Y	N	N
	PR7.4	3	Y	Y	Y	Y
	PR7.5	1	Y	Y	N	N
	PR7.6	2	Y	Y	Y	N
PR8. Supplier Relationship Management	PR8.1	2	Y	Y	Y	N
	PR8.2	3	Y	Y	Y	Y
	PR8.3	3	Y	Y	Y	Y
	PR8.4	3	Y	Y	Y	Y
PR9. Incident & Service Request Management	PR9.1	3	Y	Y	Y	Y
	PR9.2	2	Y	Y	Y	N
	PR9.3	2	Y	Y	Y	N
	PR9.4	2	Y	Y	Y	N
	PR9.5	3	Y	Y	Y	Y
	PR9.6	3	Y	Y	Y	Y
	PR9.7	3	Y	Y	Y	Y
	PR9.8	2	Y	Y	Y	N
PR14. Continual Service Improvement	PR14.1	3	Y	Y	Y	Y
	PR14.2	2	Y	Y	Y	N
	PR14.3	3	Y	Y	Y	Y

Table 16 – EGI’s self-assessment results

4. FGI process assessment

This section presents the results of the FGI self-assessment procedure. Namely, the section provides the process self-assessment results and the FGI overall service management maturity score.

4.1. FGI process self-assessment

The self-assessment process results for the FGI client are described in this section. Similarly than for the EGI client, the score of each capability level per process requirement and the rationale of the FGI client's score are provided in this section. In the following seven Tables (Table 17 to Table 23) the self-assessment for all processes considered in Phase 1 are described.

Process	Requirement	Self-assessment Score and Description	Rationale for Score & Comments
Service Portfolio Management	PR1.1 A service portfolio shall be maintained. All services shall be specified in the service portfolio.	1 - Ad-hoc: The organisation is aware and can generally describe the service offer (past, current, planned) and related information through some (undefined) format.	The grid middleware provides scientists with the computational capacity for serial and parallel jobs, as well as, jobs that require huge amounts of memory. Records can be found at http://www.csc.fi/english/collaboration/projects/fgi
	PR1.2: Design and transition of new or changed services shall be planned. Plans shall consider goals, acceptance criteria, timescales, responsibilities, new or changed technology, new or changed SLAs, testing and communication.	1 - Ad-hoc: Transition to new services or changes to current services are managed with no structured approach or control. The quality of the output depends on the individual efforts.	

Table 17 – FGI's self-assessment for service portfolio management process

Process	Requirement	Self-assessment Score and Description	Rationale for Score & Comments
Service Level Management	PR2.1: Services to be delivered shall be agreed with customers. SLAs shall include agreed service targets.	2- Repeatable: There is an informal process for SLA negotiation, which is understood by both the Federator and its customers, although it is not necessarily defined on a step by step basis. The resulting SLAs usually have a loose textual format. Service targets are defined, but may be different in structure and specification in different SLAs.	<p>FGI operates on a Best Effort SLA. Comments: Customer accepts a AUP when requesting VO membership. https://voms.fgi.csc.fi:8443/voms/fgi.csc.fi/aup/load.action</p> <p>CSC and FGI websites, FGI roadtrips, e-mail lists newsletters and announcements, presentations at CSC's resources workshops, direct contact with customers</p> <p>Service Availability: Local SAM Nagios instance, EGI Operations Dashboard, Nordugrid Monitor; Accounting: SGAS Database and reports; Number of Incidents (Tickets).</p> <p>Comments and evidence: https://pulse.fgi.csc.fi:6143/sgas/view/custom/compare_years https://operations-portal.egi.eu/dashboard https://ping.fgi.csc.fi/nagios/cgi-bin/status.cgi?host=all&hoststatypes=15 http://www.nordugrid.org/monitor/index.php?display=vo=Finland</p>
	PR2.2 A service catalogue shall be maintained.	1 - Ad-hoc The Federator is able to communicate his offerings to its customers through some (undefined) format.	
	PR2.3 Services and SLAs shall be reviewed at planned intervals.	2- Repeatable Services and SLAs are reviewed periodically, still the frequency and procedure of reviews is undefined and inconsistent.	
	PR2.4 Service performance shall be monitored against service targets.	2- Repeatable Performance is monitored by service, and to some extent against service targets.	
	PR2.5 For supporting services or service components provided by Federation members, OLAs shall be agreed.	1 - Ad-hoc Operational level agreements (OLAs) between the Federator and Federation members only exist on an informal basis.	

Table 18 – FGI's self-assessment for service level management process

Process	Requirement	Self-assessment Score and Description	Rationale for Score & Comments
Service Reporting	PR3.1: Service reports shall be specified and agreed with interested parties.	2- Repeatable: Service reports for some services are defined. However definitions may be different in structure and format. Some of the service reports are informally agreed between Federator and Customer.	Accounting: SGAS Database and reports. Evidence: https://pulse.fgi.csc.fi:6143/sgas/view/custom/compare_years https://pulse.fgi.csc.fi:6143/sgas/view/wlwg/user
	PR3.2: The description of each service report shall include its identity, purpose, audience, frequency and content.	1 - Ad-hoc: The description of a service report is not defined but Customer may make a request of providing some data on demand.	
	PR3.3: Service reports shall be produced. Service reporting shall include performance against service targets, relevant information about significant events, workload characteristics and detected nonconformities.	1 - Ad-hoc: Federator is able to provide some reports on demand, but they are produced mainly manually without any defined output format.	

Table 19 – FGI’s self-assessment for service reporting process

Process	Requirement	Self-assessment Score and Description	Rationale for Score & Comments
Customer Relationship Management	PR7.1: Customers and other interested parties shall be identified.	2- Repeatable: There is a list of customers and their contacts. This list is maintained on an informal basis.	There is a list of the VO members. This list includes ID, affiliation and contacts No personal relationship e-Mail lists, CSC RT system, FGI Admins e-mail Evidence: https://confluence.csc.fi/display/fgi/FGI+User+Pages#Contacts through e-Mail lists, CSC RT system, FGI Admins e-mail
	PR7.2: For each customer, a designated individual shall be responsible for managing the customer relationship and customer satisfaction.	1 - Ad-hoc: The person on duty manages, on demand, the customers' relationship and satisfaction.	
	PR7.3: Communication mechanisms with customers shall be established.	2- Repeatable: Communication mechanisms for contacting customers are available and recorded.	
	PR7.4: Service reviews with the customers shall be conducted at planned intervals.	1 - Ad-hoc: Service reviews are made on demand or following major changes within the organisation.	
	PR7.5: Service complaints from customers shall be managed.	2- Repeatable: Customer complaints are managed on a direct and case by case basis, though, a record of the complaint is created and maintained.	
	PR7.6: Customer satisfaction shall be managed.	1 - Ad-hoc: Customer satisfaction is collected through informal means.	

Table 20 – FGI’s customer relationship management process

Process	Requirement	Self-assessment Score and Description	Rationale for Score & Comments
Supplier Relationship Management	PR8.1: Suppliers shall be identified.	2- Repeatable: There is a list of suppliers and their contacts. This list is maintained on an informal basis.	HP Quality meetings and FGI Admins Meetings twice a year
	PR8.2: Communication mechanisms with suppliers shall be established.	1 - Ad-hoc: Communication with suppliers is possible but used in an informal way and on demand.	
	PR8.3: (Contractual) disputes with suppliers shall be managed.	1 - Ad-hoc: Disputes with suppliers are managed on a direct and case by case basis. There is no formal record of the complaint.	
	PR8.4: Supplier performance shall be monitored.	1 - Ad-hoc: Supplier performance is assessed through informal means.	

Table 21 – FGI’s supplier relationship management process

Process	Requirement	Self-assessment Score and Description	Rationale for Score & Comments
Incident & Service Request Management	PR9.1: All incidents shall be recorded according to a defined procedure.	2- Repeatable: All or the majority of incidents are recorded. While there is an intuitive understanding about the information to be collected and method of recording, this is not clearly defined.	CSC's RT System, Grid/FGI e-mail lists, personal e-mails Evidence: https://rt.csc.fi/rt/ https://confluence.csc.fi/display/fgi/FGI+User+Pages#Contacts
	PR9.2: All incidents shall be classified according to a defined procedure.	1 - Ad-hoc: Based on the situation and individual involved, some incidents are classified. The method of classification may be different even for similar incidents.	
	PR9.3: All incidents shall be prioritized according to a defined procedure, taking into account impact and urgency of the incidents.	2- Repeatable: All or the majority of incidents are prioritized. While there is an intuitive understanding about the underlying criteria for prioritization, they are not clearly defined.	
	PR9.4: Escalation of incidents shall follow a defined procedure.	2- Repeatable: If required, incidents are functionally or hierarchically escalated. While there is an intuitive understanding about the escalation path to follow, it remains undefined. There are no defined triggers for hierarchical escalations.	
	PR9.5: Closure of incidents shall follow a defined procedure.	1 - Ad-hoc: After resolution, incidents are closed without further action.	
	PR9.6: Personnel involved in the incident and service request management process shall have access to relevant information including configuration and release information.	2- Repeatable Configuration and release information are available and are widely used to support the process of handling and resolving incident, although there is no clear definition of the information sources and of how to use them for this purpose.	
	PR9.7 Customers shall be kept informed of the progress of their reported incidents and service requests.	2- Repeatable Users and customers are informed of the progress of their reported incidents and service requests. This includes both responding to customer and user status requests as well as proactive notifications. However, there is no clearly defined and systematic approach for this type of customer communications.	
	PR9.8: There shall be a definition of a major incident. Major incidents shall be classified and managed according to a documented procedure.	1 - Ad-hoc: There is some idea of which incidents should be regarded as "major". In these cases, special care and attention is given the respective incidents.	

Table 22 – FGI's incident & service request management process

Process	Requirement	Self-assessment Score and Description	Rationale for Score & Comments
Continual Service Improvement Management	PR14.1: Opportunities for improvement shall be identified and recorded according to a defined procedure.	1 - Ad-hoc: Opportunities for improvement are noticed largely by individuals as they randomly arise or due to urgent need, but are recorded in a haphazard manner if at all.	
	PR14.2: Opportunities for improvement shall be prioritized according to a defined procedure.	1 - Ad-hoc: When multiple opportunities for improvement are noticed at the same time there is a loose prioritisation, mostly based on short terms needs.	
	PR14.3: Opportunities for improvement shall be evaluated and approved according to a defined procedure.	1 - Ad-hoc: When opportunities for improvement arise, there is a person or group responsible for deciding whether to proceed. The decision is more likely based on the opinion or knowledge of the person taking the decision than a set procedure or set of criteria.	

Table 23 – FGI's continual service improvement management process

4.2. FGI service management maturity

This section defines the overall maturity assessment for the FGI FedSM client considering the self-assessment results presented in Section 5.1.

The Table 24 presents the assessment results for the processes' requirements considered in Phase 1. Similarly to the previous case for EGI, a graphical representation of the assessment results is provided in the right part of the Table. The green and red colors represent the fulfillment and not fulfillment respectively, of the capability levels for the corresponding requirement of FGI. The right-most border line shown in the table represents the FedSM realistic target for overall capability assessment for the FedSM clients considered in the Phase 1 of the project.

Process	Requirement	Assessment result	L0	L1	L2	L3
PR1. Service Portfolio Management	PR1.1	1	Y	Y	N	N
	PR1.2	1	Y	Y	N	N
PR2. Service Level Management	PR2.1	2	Y	Y	Y	N
	PR2.2	1	Y	Y	N	N
	PR2.3	2	Y	Y	Y	N
	PR2.4	2	Y	Y	Y	N
	PR2.5	1	Y	Y	N	N
PR3. Service Reporting	PR3.1	2	Y	Y	Y	N
	PR3.2	1	Y	Y	N	N
	PR3.3	1	Y	Y	N	N
PR7. Customer Relationship Management	PR7.1	2	Y	Y	Y	N
	PR7.2	1	Y	Y	N	N
	PR7.3	2	Y	Y	Y	N
	PR7.4	1	Y	Y	N	N
	PR7.5	2	Y	Y	Y	N
	PR7.6	1	Y	Y	N	N
PR8. Supplier Relationship Management	PR8.1	2	Y	Y	Y	N
	PR8.2	1	Y	Y	N	N
	PR8.3	1	Y	Y	N	N
	PR8.4	1	Y	Y	N	N
PR9. Incident & Service Request Management	PR9.1	2	Y	Y	Y	N
	PR9.2	1	Y	Y	N	N
	PR9.3	2	Y	Y	Y	N
	PR9.4	2	Y	Y	Y	N
	PR9.5	1	Y	Y	N	N
	PR9.6	2	Y	Y	Y	N
	PR9.7	2	Y	Y	Y	N
	PR9.8	1	Y	Y	N	N
PR14. Continual Service Improvement	PR14.1	1	Y	Y	N	N
	PR14.2	1	Y	Y	N	N
	PR14.3	1	Y	Y	N	N

Table 24 – FGI's self-assessment results

5. PLGrid process assessment

This section presents the PLGrid self-assessment results. Namely, the section provides the process self-assessment results and the PLGrid overall service management maturity score.

5.1. PLGrid process self-assessment

The self-assessment process results for the PLGrid client are described in this section. Similarly than for the EGI and FGI clients, the score of each capability level per process requirement and the rationale of the PLGrid client's score are provided in this section. In the following seven Tables (Table 25 to Table 31) the self-assessment for all processes considered in Phase 1 are described.

Process	Requirement	Self-assessment Score and Description	Rationale for Score & Comments
Service Portfolio Management	PR1.1: A service portfolio shall be maintained. All services shall be specified in the service portfolio.	2- Repeatable: There is a clear understanding of the service offer (past, current, planned), relationship to support activities and other related information that connect to the value creation capabilities. This list is maintained on an informal basis.	PLGrid service portfolio is published on our website for users. It may need some reorganization to distinguish value creating capabilities and support activities. Services are defined on such abstract level that we do not expect to add or retire services. We do not have a documented procedure for maintaining the service portfolio. Evidence: http://www.plgrid.pl/en/offer
	PR1.2: Design and transition of new or changed services shall be planned. Plans shall consider goals, acceptance criteria, timescales, responsibilities, new or changed technology, new or changed SLAs, testing and communication.	3 – Defined: There is a clearly documented procedure to handle service transition or change that includes all the mentioned attributes.	Changes at the service portfolio are not expected. However new technical service components (products of PLGrid Plus project) are being added following well-defined procedures requiring service availability monitoring, establishing a support team, security and operational audits. These are mainly new scientific applications, web based domain-specific portals and tools. Evidence: https://docs.plgrid.pl/pages/viewpage.action?pageId=8552666 Procedure for deploying scientific software (being updated)

Table 25 – PLGrid's service portfolio management process

Process	Requirement	Self-assessment Score and Description	Rationale for Score & Comments
Service Level Management	PR2.1: Services to be delivered shall be agreed with customers. SLAs shall include agreed service targets.	3 – Defined: There is a defined and documented procedure for negotiating SLAs, which in particular specifies the required scope of the negotiated SLA, the output format in which the SLA must be stored, and how the SLA and service targets are defined.	Applying, negotiating and signing an SLA is implemented using PLGrid User Portal and Bazaar tool. Any user (or group) willing to use PLG resources needs to apply for a computational grant specifying at least two metrics which are reflected in our portfolio: amount of walltime and storage space. Other predefined metrics are possible regarding technical aspects of use of resources. Evidence: https://docs.cyfronet.pl/display/PLGDoc/Granty+obliczeniowe
	PR2.2: A service catalogue shall be maintained.	3 – Defined: There is a defined and documented procedure for maintaining a service catalogue clearly specifying differentiated service offerings.	Compute and storage services are described together with additional metrics defining technical aspect of use (some of them still being defined). Availability of scientific applications is listed on a regularly updated web page. Evidence: https://docs.plgrid.pl/pages/viewpage.action?pageId=5014253 http://www.plgrid.pl/oferta/oprogramowanie_naukowe/dostepnosc_pakietow http://www.plgrid.pl/oferta/oprogramowanie_naukowe
	PR2.3: Services and SLAs shall be reviewed at planned intervals.	2- Repeatable: Services and SLAs are reviewed periodically, still the frequency and procedure of reviews is undefined and inconsistent.	Each SLA is periodically reported by users who can provide their comments about use of resources. Compliance with SLA targets is checked. Appropriate actions taken for violated SLAs. Some processes are covered by documented procedures. We do not have regular service reviews. Evidence: https://docs.cyfronet.pl/pages/viewpage.action?pageId=4260616
	PR2.4: Service performance shall be monitored against service targets.	2- Repeatable: Performance is monitored by service, and to some extent against service targets.	The data for confronting sites with their agreed offerings exists however there is no procedure to follow. Technical service availability is monitored on daily basis, alarms are generated in case of failures. Evidence: https://docs.plgrid.pl/pages/viewpage.action?pageId=6226058
	PR2.5: For supporting services or service components provided by Federation members, OLAs shall be agreed.	3 – Defined: There is a defined and documented procedure for establishing OLAs, well-aligned to specific services offered to customers [OEDIT defined in an SLA].	In fact, each SLA is broken into a set of agreements between Customer and actual resource provider (sub-SLAs) which PLGrid Operations Centre monitors and endorses. PLGrid considers these SLAs as OLAs. Evidence: https://docs.cyfronet.pl/pages/viewpage.action?pageId=4260617#Zak%C5%82adaniegrant%C3%B3wiprocenegocjacjigrantowych-S%C5%82ownik

Table 26 – PLGrid's service level management process

Process	Requirement	Self-assessment Score and Description	Rationale for Score & Comments
Service Reporting	PR3.1: Service reports shall be specified and agreed with interested parties.	2- Repeatable: Service reports for some services are defined. However definitions may be different in structure and format. Some of the service reports are informally agreed between Federator and Customer.	There is no particular procedure for specifying and agreeing reports, but PLGrid already publishes monthly "infrastructure indicators" reports for management. These can be easily extended and indeed they are. Some information regarding use of resources is available in Accounting Portal. Evidence: https://docs.plgrid.pl/pages/viewpage.action?pagelId=6226058
	PR3.2: The description of each service report shall include its identity, purpose, audience, frequency and content.	1 - Ad-hoc: The description of a service report is not defined but Customer may make a request of providing some data on demand.	PLGrid reports contain explanation of the data, but do not contain all mentioned fields.
	PR3.3: Service reports shall be produced. Service reporting shall include performance against service targets, relevant information about significant events, workload characteristics and detected nonconformities.	2- Repeatable: There is some documentation on how service reports are produced but it is not complete. There may be inconsistencies in output format of service reports.	PLGrid reports do not contain information about significant events, workload nor detected nonconformities.

Table 27 – PLGrid's service reporting process

Process	Requirement	Self-assessment Score and Description	Rationale for Score & Comments
Customer Relationship Management	PR7.1: Customers and other interested parties shall be identified.	3 – Defined: There is a defined and documented procedure for maintaining a customer list.	All Customers in PLGrid are registered in User Portal. There are also procedures for account status monitoring. Evidence: https://portal.plgrid.pl/web/guest/home?p_p_id=arulogin_WAR_aruliferay&p_p_lifecycle=0&p_p_state=maximized&p_p_mode=view&p_p_col_id=column-1&p_p_col_count=4&arulogin_WAR_aruliferay_action=register https://docs.plgrid.pl/pages/viewpage.action?pagelId=5014026 https://docs.plgrid.pl/pages/viewpage.action?pagelId=5013507
	PR7.2: For each customer, a designated individual shall be responsible for managing the customer relationship and customer satisfaction.	2- Repeatable: There is a person assigned to each specific group of customers that manages the relationship and satisfaction.	Requests related to SLA are handled by PLGrid Operator. 1st line support deals with all requests coming from user through a helpdesk and is responsible for making sure the customer is satisfied with solution.
	PR7.3: Communication mechanisms with customers shall be established.	2- Repeatable: Communication mechanisms for contacting customers are available and recorded.	Communication mechanisms with the customers are collected during registration. No procedures on their use.
	PR7.4: Service reviews with the customers shall be conducted at planned intervals.	3 – Defined: Service reviews are made at planned intervals, there is a defined standard procedure.	All customers are asked periodically for a feedback regarding use of resources within SLAs (each 6 months). This is implemented in User Portal. Based on user's feedback appropriate actions are taken. Evidence: https://docs.cyfronet.pl/pages/viewpage.action?pagelId=4260616
	PR7.5: Service complaints from customers shall be managed.	2- Repeatable: Customer complaints are managed on a direct and case by case basis, though, a record of the complaint is created and maintained.	Complaints are sent either through Helpdesk or directly to Operators' e-mail list. Complaints in Helpdesk are handled according to Helpdesk procedures. Operators handle their e-mails without documented procedures. Evidence: https://docs.plgrid.pl/download/attachments/8552666/Obs%C5%82uqaZq%C5%82osze%C5%84Helpdesk-v1.9.pdf
	PR7.6: Customer satisfaction shall be managed.	1 - Ad-hoc: Customer satisfaction is collected through informal means.	Overall perception of the PLGrid by users can be reported informally and reacted upon, however no mechanisms to measure user satisfaction.

Table 28 – PLGrid's customer relationship management process

Process	Requirement	Self-assessment Score and Description	Rationale for Score & Comments
Supplier Relationship Management	PR8.1: Suppliers shall be identified.	2- Repeatable: There is a list of suppliers and their contacts. This list is maintained on an informal basis.	We have a list of our suppliers along with contacts etc. However if they change e.g. a phone number we will probably not be notified about that.
	PR8.2 Communication mechanisms with suppliers shall be established.	2- Repeatable Communication mechanisms for contacting suppliers are available and recorded.	
	PR8.3 (Contractual) disputes with suppliers shall be managed.	2- Repeatable Disputes with suppliers are managed on a direct and case-by-case basis, though, a record of the complaint is created and maintained.	Policy may be different at each site, but in general a formal record of the complaint exists, but no documented procedures exist. Usually some tracking tool is used.
	PR8.4 Supplier performance shall be monitored.	1 - Ad-hoc Supplier performance is assessed through informal means.	Individuals can share their experience with the suppliers, however there is no specific activity related to performance monitoring.

Table 29 – PLGrid's supplier relationship management process

Process	Requirement	Self-assessment Score and Description	Rationale for Score & Comments
Incident & Service Request Management	PR9.1: All incidents shall be recorded according to a defined procedure.	3 – Defined: There is a defined and documented procedure for recording incidents based on clearly specified information templates and step by step guidance.	Incidents are recorded in Helpdesk. If they are raised by a phone, they are also put into Helpdesk. Evidence: https://docs.cyfronet.pl/pages/viewpage.action?pageId=4260602
	PR9.2: All incidents shall be classified according to a defined procedure.	3 – Defined: There is a defined and documented procedure for classifying incidents based on a clearly specified scheme and step by step guidance.	All incidents are handled by 1st line support who has a task to classify and assign to proper support unit. Evidence: https://docs.plgrid.pl/pages/viewpage.action?pageId=5014188
	PR9.3: All incidents shall be prioritized according to a defined procedure, taking into account impact and urgency of the incidents.	3 – Defined: There is a defined and documented procedure for prioritizing incidents based on clearly specified criteria, considering impact and urgency of the incidents.	PLGrid proposes criteria for setting incident priority but a priority is set by the support unit itself. Also measures taken to deal with a specific priority issue may differ among support teams. Evidence: https://docs.plgrid.pl/download/attachments/8552666/Obrazek%20z%20uzytkownika%20osze%20Helpdesk-v1.9.pdf
	PR9.4: Escalation of incidents shall follow a defined procedure.	3 – Defined: There is a defined and documented procedure for escalating incidents based on clearly specified criteria, differentiating between functional and hierarchical escalation.	Hierarchical and functional escalation in place. Evidence: https://docs.plgrid.pl/display/IPLG/Procedura+eskalacji+hierarchicznej
	PR9.5: Closure of incidents shall follow a defined procedure.	3 – Defined: There is a defined and documented procedure for the closure of incidents including informing users and/or customers of the resolution and giving them the opportunity to confirm the resolution of the incident, plus a final review of the incident record against defined criteria.	On closure the user is informed, and always have the possibility to reopen issue or verify the solution. 1st line support is responsible for proper closing of the incident. Evidence: https://docs.plgrid.pl/download/attachments/8552666/Obrazek%20z%20uzytkownika%20osze%20Helpdesk
	PR9.6: Personnel involved in the incident and service request management process shall have access to relevant information including configuration and release information.	3 – Defined: Available sources of configuration and release information are documented. In addition, there is a defined and documented procedure for using these sources of information in order to effectively handle and resolve incidents.	1st line support have a special role in User Portal to check some details. Other support teams may ask PLGrid Operators to expose some data.
	PR9.7: Customers shall be kept informed of the progress of their reported incidents and service requests.	3 – Defined: Users and customers are systematically and consequently informed of the progress of their reported incidents and service requests. This happens both in a reactive and proactive way, according to a defined and documented procedure.	Helpdesk tool takes care about that.
	PR9.8 There shall be a definition of a major incident. Major incidents shall be classified and managed according to a documented procedure.	1 - Ad-hoc: there is some idea of which incidents should be regarded as "major". In these cases, special care and attention is given the respective incidents.	No notion of a major incident exists however problems affecting many users or causing severe consequences are handled with a special care including extensive information and quick response times.

Table 30 – PLGrid's incident & service request management process

Process	Requirement	Self-assessment Score and Description	Rationale for Score & Comments
Continual Service Improvement Management	PR14.1: Opportunities for improvement shall be identified and recorded according to a defined procedure.	2- Repeatable: There is some process for seeking improvements and documenting them that is carried out periodically. However, opportunities are not identified systematically and not all are recorded.	No procedure for reporting improvements, however individuals (staff) are raising points which are recorded in JIRA. Users can submit requests officially through "User Technical Council"
	PR14.2: Opportunities for improvement shall be prioritized according to a defined procedure.	2- Repeatable There is a procedure for prioritisation of opportunities for improvement but it is loose and based on a small number of parameters, such as cost and immediate impact. Documentation of decisions is patchy.	An item to be recorded in JIRA is prioritized when inserted into a list. There is an internal, informal procedure for that.
	PR14.3 Opportunities for improvement shall be evaluated and approved according to a defined procedure.	2- Repeatable There is some procedure for evaluating and approving opportunities for improvement, based on a set of criteria identified in advance. The procedure is broadly followed, though it is not extensively documented and decisions are not well recorded and documented.	

Table 31 – PLGrid’s continual service improvement management process

5.2. PLGrid service management maturity

This section defines the overall maturity assessment for the PLGrid FedSM client considering the self-assessment results presented in Section 6.1.

The Table 32 presents the assessment results for the processes’ requirements considered in Phase 1. Similarly to the previous cases for EGI and FGI, a graphical representation of the assessment results is provided in the right part of the Table. The green and red colors represent the fulfillment and not fulfillment respectively, of the capability levels for the corresponding requirement of PLGrid. The right-most border line shown in the table represents the FedSM realistic target for overall capability assessment for the FedSM clients considered in the Phase 1 of the project.

Process	Requirements	Assessment result	L0	L1	L2	L3
PR1. Service Portfolio Management	PR1.1	2	Y	Y	Y	N
	PR1.2	3	Y	Y	Y	Y
PR2. Service Level Management	PR2.1	3	Y	Y	Y	Y
	PR2.2	3	Y	Y	Y	Y
	PR2.3	2	Y	Y	Y	N
	PR2.4	2	Y	Y	Y	N
	PR2.5	3	Y	Y	Y	Y
PR3. Service Reporting	PR3.1	2	Y	Y	Y	N
	PR3.2	1	Y	Y	N	N
	PR3.3	2	Y	Y	Y	N
PR7. Customer Relationship Management	PR7.1	3	Y	Y	Y	Y
	PR7.2	2	Y	Y	Y	N
	PR7.3	2	Y	Y	Y	N
	PR7.4	3	Y	Y	Y	Y
	PR7.5	2	Y	Y	Y	N
	PR7.6	1	Y	Y	N	N
PR8. Supplier Relationship Management	PR8.1	2	Y	Y	Y	N
	PR8.2	2	Y	Y	Y	N
	PR8.3	2	Y	Y	Y	N
	PR8.4	1	Y	Y	N	N
PR9. Incident & Service Request Management	PR9.1	3	Y	Y	Y	Y
	PR9.2	3	Y	Y	Y	Y
	PR9.3	3	Y	Y	Y	Y
	PR9.4	3	Y	Y	Y	Y
	PR9.5	3	Y	Y	Y	Y
	PR9.6	3	Y	Y	Y	Y
	PR9.7	3	Y	Y	Y	Y
	PR9.8	1	Y	Y	N	N
PR14. Continual Service Improvement	PR14.1	2	Y	Y	Y	N
	PR14.2	2	Y	Y	Y	N
	PR14.3	2	Y	Y	Y	N

Table 32 – PLGrid’s self-assessment results

6. Comparative analysis of Self-assessment results

This section compares the process assessment results of the three FedSM clients based on the information provided in Sections 4, 5 and 6, and the FedSM Capability and Maturity models from Deliverable 5.1.

For this comparative analysis the process capability score is considered as the highest score of ALL requirements of a given process. The Figure 1 shows a comparative analysis of the FedSM self-assessment results. The capability scores of all requirements are shown in the figure, where the dotted lines show the scores of all requirements considered in Phase 1 for each FedSM client.



Figure 1. Comparative analysis of the FedSM self-assessment results

From this analysis, we draw the conclusion that none of the FedSM client’s overall maturity reaches a score “Aware”. In order for the FedSM clients to raise its overall service management assessment maturity to a qualification “Aware”, they need to implement the appropriate actions summarized in Table 33.

FedSM Client	Potential Actions to Reach “Aware” overall service management assessment
EGI	Raise PR2.1 and PR2.2 to score “2”.
FGI	Raise PR2.2, PR2.5, PR9.2, PR9.5 and P9.8 to score “2”
PLGrid	Raise P9.8 to score “2”.

Table 33 – Potential actions to reach “Aware” overall assessment for the FedSM clients

On the other hand, some FedSM clients have assessed capability requirement scores closer to “In Place” capability scores in concrete processes. In order for the FedSM clients to raise its overall service management assessment maturity to a qualification “In Place”, they need to implement the appropriate actions summarized in Table 34.

FedSM Client	Potential Actions to Reach “In Place” overall service management assessment	Required potential actions
EGI	Raise PR2.1, PR2.2, PR2.3, PR2.4 to score “3” Raise PR3.2, PR3.3 to score “2” Raise PR7.2, PR7.3, PR7.5 to score “2” Raise PR9.2, PR9.3, PR9.4, PR9.8 to score “3” Raise PR14.2 to score “3”	14
FGI	Raise PR2.1 and PR2.2 to score “2” Raise PR2.1 to PR2.5 to score “3” Raise PR3.2 and PR3.3 to score “2” Raise PR7.2, PR7.4 and PR7.6 to score “2” Raise PR9.1 to PR9.8 to score “3” Raise PR14.1 to PR14.3 to score “2”	23
PLGrid	Raise PR2.3 and PR2.4 to score “3” Raise PR3.2 to score “2” Raise PR7.6 to score “2” Raise P9.8 to score “3”	5

Table 34 – Potential actions to reach “In Place” overall assessment for the FedSM clients

In principle, from Table 34 we can draw a partial conclusion that the PLGrid requires less potential actions than EGI and FGI to reach an overall service management assessment “In Place”. Namely, PLGrid would need to implement only five potential actions to reach an overall service management assessment “In Place”.

On the other hand, EGI would require fourteen potential actions for the same “In Place” overall assessment target, while FGI has the largest number of potential actions (twenty three) to assess an “In Place” overall maturity assessment in service management.

7. Concluding Remarks

This document has applied the FedSM maturity baseline assessment framework to measure the quality of implementation of service management on a per-process basis and also from a holistic viewpoint of the FedSM clients' federated e-infrastructures.

The results obtained from the overall maturity assessment are effective indicators of the requirements and processes that the clients would need to address and work on in order to raise their maturity levels.

The maturity assessments obtained defined in this document are key elements for the development of the FedSM project as they will be the basis to establish achievable maturity targets of the client's federated e-infrastructures of the project.

8. References

- [1] FedSM Deliverable D5.1. Process Implementation and Maturity Baseline Assessment Framework
- [2] FedSM Deliverable 3.3. First stage implementation plan for service management in Federated e-Infrastructures

Version History

Version	Date	Author	Change record
0.1	05.06.2013	J. Rubio	Skeleton
0.2	16.06.2013	J. Rubio	Section 3, Section 4, Section 5 and Section 6
0.3	20.06.2013	J. Rubio	Comments from partners included
0.4	22.06.2013	J. Rubio	First complete draft ready for review
1.0	30.06.2013	J. Rubio	Marcin Radecki's review and final draft released
1.1	30.09.2013	O Appleton	Minor formatting