EGI-InSPIRE

SERVICE LEVEL AGREEMENT WITH A SOFTWARE PROVIDER

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Abstract

This document provides a review of the existing SLA template that EGI is offering to Technology Providers to define the services it would offer through EGI.eu to the EGI Community. This review brings together an initial alignment with the ITIL service design and management best practices, and one full year of experiences in IT service management and reporting within EGI.



I. COPYRIGHT NOTICE

II. DELIVERY SLIP

	Name	Partner/Activity	Date
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Approved by	**AMB & PMB**		11/6/2012

III. DOCUMENT LOG

Issue	Date	Comment	Author/Partner
1	25-04-2012	First document skeleton	Michel Drescher, EGI.eu
2	13-05-2012	Near-complete draft	Michel Drescher, EGI.eu
3	14-05-2012	Draft for internal review	Michel Drescher, EGI.eu
4	4-6-2012	Revised following external reiew	Michel Drescher, 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 constitutes the third iteration on evolving Service Level Agreements (SLAs) with Software Providers. Unlike the first two iterations, the review of the current SLA template is driven by two main sources of expertise and experience. As EGI is generally moving towards adopting ITIL Service Design and Service Management best practices, the existing template for SLAs with Technology Providers (including Software Providers) needs to be aligned with that framework.

By making use of increased understanding and knowledge of the relevant ITIL best practices within EGI, and existing expertise on IT Service Management and IT Service Design outside of EGI (such as the gSLM project), EGI knows *how* to solve current issues with its IT Service Management, particularly that of its technical relationships with Technology Providers, using a commonly accepted model and terminology. Having gained experience in practical service management and reporting (however good or bad), EGI now knows through this practical experience, *what* needs to be addressed in its every day IT Service Management processes.

In principle, EGIs business relationships with Technology Providers are best described as an outsourcing scenario between EGI as the service provider for research communities organised in Virtual Organisations, and a number of external suppliers who provide the entire software maintenance for EGI (software development and maintenance, expert level customer support, software delivery). ITIL recommends formalising these into underpinning contracts that may include entire SLA documents by reference, or entirely incorporate them into one document, as required.

The experience gained in one year of designing outsourced services, negotiating SLAs and providing service level reporting has confirmed that it is not enough to reach an agreement of a common goal as described in an SLA, but to also have the infrastructure in place to monitor and report on how well these goals were achieved, and to provide material and evidence for any deviation to allow for *improvement* in service delivery and overall experience for the service provider's customers.

Bringing together these two major sources of input, it becomes clear that the current template needs to change in several aspects: A reorganisation is required to improve the scope and definition of services that EGI expects to be supplied by the Technology Providers, including the associated service level reporting aspects. Terminology, setup and alignment with ITIL best practices may gradually improve as EGI's knowledge in this field is maturing.

Collaborating with partners with relevant expertise in this field will allow a more fundamental assessment of the EGI's relationships with Technology Providers, by combining EGI business models and the technical platform architecture into an agreement document that truly underpins the services provided by EGI. However EGI's service design and management will evolve, EGI currently does not consider improving existing agreements to be commercially or legally defendable, until the EGI community has mutually agreed on and plans to utilise a form of compensation that can be considered legally accepted compensation that would require at least legally defendable underpinning contracts with Technology Providers.

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1 INTRODUCTION

This milestone represents the third iteration of a Service Level Agreement template. The initial template for Service Level Agreements was provided with MS505 [R 1] in November 2010 (PM7), which formed the basis of negotiations with the EMI and IGE project in the project months PM7 through PM12. Based on the experiences collected in this process, an improved SLA template was developed in MS509 [R 2], which was published in PM16 (August 2011).

The annual project review for the first project year recommended to "[…]4. Continue to improve SLA configuration to make them legally and commercially defendable." [R 3]. The timing between the due date of MS509 and the publication of the project reviewer's response made it impossible to incorporate the comments made into MS509, thus leaving this recommendation to be addressed in this document.

As EGI is generally moving towards adopting ITIL Best Practices in general and specifically IT Service Management and ITIL Service Design best practices, the existing template for Service Level Agreements with Technology Providers needs to be reviewed and updated within that framework. With improvements and evolutions of the EGI Business Model in place [R 4] the scope for agreements with Technology Providers has become clearer, aiding in assessing the suitability of the current agreement template, and which areas need improvement.

In order to assess EGI's current SLA template for Technology Providers as provided in MS509, one needs to understand the context where such an agreement is necessary, and for what purpose. In order to improve an existing SLA, one also needs practical experience with existing, signed agreements in place, and material revealing where the agreement has succeeded, and where it failed. Only then, when both components are in place, a sound improvement of the current SLA templates is reasonable.

The experience that was gained during PY2 using the current SLAs with IGE and EMI has shown discrepancies between the intended service management and actual service level reporting. Also, the processes around provisioning the required infrastructure for service level reporting and encoding this into service descriptions and reporting mechanisms was not followed in the right order: The SLA template described what EGI *wanted* to cover by the SLAs, and not what EGI *was able to manage and report* on in its subsequent service management processes.

Unlike the first and second iteration of this document (MS505 and MS509) this milestone will not be accompanied by a new iteration of the SLA template for Software Providers. The work described in this document mandates a more thorough review of the SLA template to prepare for the mid-term future, where EGI's main Technology Providers EMI and IGE will no longer exist in their current form.

Section 2 provides context for SLAs with Technology Providers and Platform Integrators to be able to compare the current SLA template with the intended scope and purpose of such documents. Section 3 summarises EGI's experience with current SLAs in force with EMI, IGE and SAGA. Section 4 provides a step-by-step comparison of the current SLA template with an initial checklist provided by the gSLM project. The document finishes with conclusions and next steps in section 5.

2 TECHNOLOGY PROVIDER AGREEMENTS IN CONTEXT

This section focuses on the context within which agreements with Technology Providers are required to operate, and the alignment with the ITIL IT Service Management best practices. It provides a concise review of the EGI ecosystem looking at those interactions and collaborations that are influenced by services provided by EGI's Technology Providers. It will look at the outcomes of a general assessment of EGI's IT Service Level Management processes and conclude with issues related to setting up legally and commercially binding agreements.

2.1 A 10,000 km overview of EGI

"EGI provides uniform access to large scale computing, storage and data resources across Europe through a federation of national resource providers that allow scientists from all fields of research to make the most out of the latest computing technologies for the benefit of their activities." – D2.18 Evolving the EGI Business Model [R 4]. This verbatim quote (section 2, first sentence), together with the three strategic areas of investment presented in the EGI Strategic Plan [R 5] provides the scope within which an SLA with a Technology Provider will have to serve its purpose. EGI will work towards satisfying the needs of its customers, the different and diverse research communities that it supports, by providing a solid foundation through the EGI Platform Model as described in MS510 [R 6]. This foundation can support a refined and rich EGI ecosystem that allows a larger set of organisations to scale EGI's services to research communities beyond those it already serves.

Together, the EGI Platform Model (MS510) and the EGI Ecosystem analysis (D2.18) deliver a set of key messages that may impact the design of Service Level Agreements with Technology Providers:

1. **EGI, through its federation of National Infrastructures, provides uniform access to distributed physical computing and storage resources.**
   EGI is operating a federated distributed computing infrastructure (DCI) that consists of two elementary layers on top of the federated physical infrastructure: The core operational infrastructure consists of services for infrastructure management and oversight (currently the operational tools maintained by EGI-InSPIRE JRA1), and services operated on behalf of its heavy user communities (which is maintained by EMI, IGE and SAGA).
2. **EGI relies on external Technology Providers to deliver the virtual research environments and functional services needed by the research communities it supports.**
   Except for services that are part of the operational infrastructure (e.g. Accounting Portal, Metrics Portal, MyEGI Monitoring portal) EGI neither develops nor maintains the deployed software that comprises the domain specific virtual research environments that it operates on behalf of the supported research communities.
3. **EGI may act as a Platform Operator for particular research communities**
   While it is expected that many research communities will operate their own community platform on top of the EGI Infrastructure Platform, EGI or its partners may operate community platforms for a specific set of research communities, at levels of service agreed elsewhere.

2.2 EGI IT Service Design and ITIL Best Practices

Through collaboration with the gSLM Project [R 7] considerable groundwork has been laid in a document assessing EGI's general Service Level Management design [R 8]. In this document, the gSLM project assessed EGI's current IT Service Design and Service Level Management practices on a

generic level, indicating which service level agreement types would best fit for which type of IT Services operated by EGI.

In general, the business relationship between EGI and Technology Providers would be that of a service provider to an external supplier (see Figure 1), where goods and services supplied by Technology Providers (e.g. the EMI and IGE projects co-funded by the EC) would support EGI's business to provide a wide-scale distribute computing environment to its customers, a diverse set of national and international research communities in Europe and worldwide.

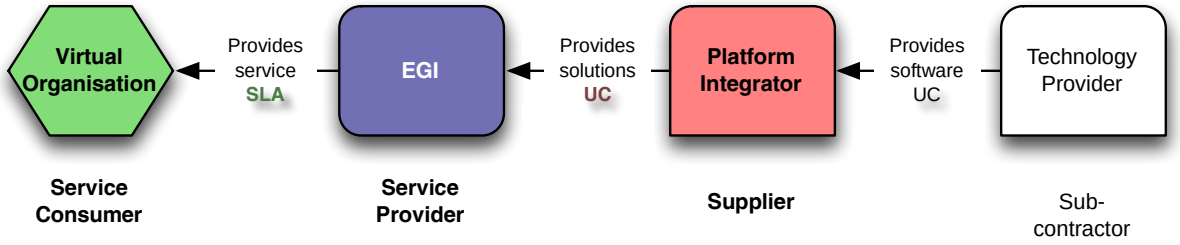

Figure 1: Principal technology relationships between stakeholders in the EGI ecosystem.

Conforming to ITIL Service Design best practices the relationships to Technology Providers would be formalised using underpinning contracts (UC). Although SLAs, OLAs and UCs have a lot of concepts (and at times even contents) in common, they are written from the perspective of the Service Provider. From the supplier's point of view however, an UC may be considered an SLA, or include an SLA (by reference or by inclusion) reflecting the notion that a supplier (Technology Provider) is in turn a service provider to one of its customers (EGI).

gSLM's initial assessment of EGI's IT Service Management practices provides a checklist for designing SLAs and UCs that is based on Service Level Management best practices in the commercial sector. This checklist, repeated in this document for convenience, will be the basis for assessing the current template for agreements with Technology Providers from the EGI ecosystem:

1. Brief service/product/technology description;
2. Validity period and/or UC change control mechanism;
3. Change approval details;
4. Brief description of communications, including reporting, review frequency and schedule;
5. Service hours, e.g. 09:00 h to 17:00 h, date exceptions, e.g. weekends, public holidays, critical business periods and out-of-hours coverage;
6. Scheduled and agreed interruptions to services, including notice to be given and number per period;
7. Customer responsibilities, e.g. correct use of systems, adherence to the information security policy;
8. Supplier liability and obligations, e.g. security;
9. Impact and priority guidelines;
10. Escalation and notification process;
11. Complaints procedure;
12. Service targets;
13. Upper and lower workload limits, e.g. the ability of the service, product or technology to support the agreed number of users/volume of work, system throughput;
14. High level financial management details, e.g. charge codes;

15. Actions to be taken in the event of a service interruption, including both incidents and disasters;
16. Glossary of terms;
17. Supporting and related services/products/technologies;
18. Any exceptions to the terms given in the SLA.

2.3 Legally and commercially defendable underpinning contracts

One explicit recommendation with respect to business relationships with Technology Providers was to "continue to improve SLA configuration to make them legally and commercially defendable." [R 3].

In principle, the difference between legally and commercially defendable contracts is the scope of applicability. A contract is legally defendable when its provisions do not break any applicable law, but it may not be commercially defendable because of ill-defined clauses, making it difficult to understand who is right and who is wrong in case of problems. In other words, legally defendable contracts abide by the applicable law, while their commercial provisions may be insufficient to facilitate the desired outcome (on either side) and thus may render a court indecisive of a potential ruling if such a contract is ever challenged.

Therefore contracts contain both legal and commercial provisions, where legal provisions may be either necessary constraints (required by the local applicable jurisdiction) or as a means to protect a contractor from unforeseen incidents. Commercial provisions can be seen as the technical description of services and goods that are exchanged, service level descriptions and targets, etc. In fact, the checklist for underpinning contracts as described in section 2.2 already indicates the types of commercial provisions such a contract should include.

An important aspect of commercially binding contracts is the component of *consideration*[1]. Usually, in commercial contracts, the consideration involves monetary compensation for one party providing goods and/or services to the other party. In the current EGI ecosystem, however, this type of consideration is not applicable: Although EGI (through EGI.eu) may legally purchase software or provide monetary consideration in exchange for services provided by its current Technology Providers, the converse is not true, since all current Technology Providers are operated as publically funded projects (through the European Commission or otherwise) and thus are already compensated for their offered services. So the question arises which alternative types of considerations are possible and realistic in the EGI ecosystem, but also can be considered as commercially binding. Without including any form of direct consideration it is hard to provide defendable contracts, whether in legal or commercial terms. Such underpinning contracts are usually called agreements, significantly impeding the consumer's control and influence on the practical execution of the agreed terms. This is the situation that EGI currently has to operate in.

[1] See http://legal-dictionary.thefreedictionary.com/consideration for a definition of the term "consideration", though describing the US American aspects. The term "consideration is also used in EU contract law documents, e.g. at http://ec.europa.eu/justice/contract/index_en.htm

3 EXPERIENCES WITH EXISTING SLAS

Practical experience is essential when reviewing and improving service agreements. This section will review the activities that have taken place in PY2 around service level negotiation and management. It will *not* review and assess individual Technology Provider performance with respect to negotiated service level targets; however the underlying methodology will be reviewed to allow conclusions to be reached on the changes needed in future agreement templates.

3.1 Negotiating SLAs

In April 2011, three SLAs were agreed and signed with three different Technology Providers, EMI, IGE and SAGA for the development and maintenance of Grid Middleware deployed in EGI's production infrastructure [R 9], [R 10] [R 11].

Negotiations with all three Technology Providers began with the initial SLA template provided in MS505 [R 1] as a starting point. The template provided in MS505 was intentionally used as a means for smaller Technology Providers to enter agreements without having to develop their own processes, documents and Service Level Management processes. Consequently, the negotiation process with EMI was based on EMI's existing SLA document. Negotiations and eventual agreements with IGE and SAGA, in turn, followed EGI's template document.

The experiences gathered in the negotiation process are reflected in the updated SLA template described in MS509, published in August 2011. The template and the negotiation process already served one fundamental objective of the IT Service Management processes, often described as "meeting of minds"[2], a mutual and unambiguous understanding of the purpose and objectives of the agreement, and the mechanisms of how the agreed service levels will be monitored and reported.

At the same time, however, the discrepancy between the agreements engaged with IGE and SAGA, and the agreement between EMI may lead to unclear objectives for the Service Level Management as described in the following paragraphs.

3.2 Service level design

Once agreements are signed, the delivered services will have to be monitored and reviewed against agreed service level targets. This implies that appropriate processes and infrastructure is in place to actually *enable* service level monitoring and reporting.

The current SLA template for Technology Providers dedicates chapter 5 to "performance measurement" describing metrics and measures that, at the time of writing, were considered important to EGI in the collaboration with Technology Providers. These were related to:

- Security vulnerabilities
- Response times for security vulnerability related service requests
- Number of "issues" assigned to Technology Providers, together with communicated date and actual date when fixed (individual per issue)
- Quality of delivered software
- Response time for service requests other than security vulnerabilities

[2] http://www.allbusiness.com/legal/contracts-agreements/731-1.html

At that time, only two out of the five performance metrics could be produced in a feasible manner to allow service level management to take place.

The quality of delivered software is an output of the Software Provisioning Process, and is easily obtained by assessing the final state of RT tickets tracking the provisioning progress of individual software products. Products are assessed against Quality Criteria, and based on the outcome of the assessment a decision is taken to accept the software for subsequent Staged Rollout, or to reject it. The same decision is taken during Staged Rollout, i.e. whether to accept the tested product version for general production rollout, or to reject it. Three base measures (the SLA template calls them metrics) were available from the start, i.e. the number of delivered product updates, the number of delivered product updates passing the Quality Criteria Verification, and the number of product updates that pass Staged Rollout. Later on, the Software Provisioning process was adjusted to record whether a product update failed against documentation-related Quality Criteria. It was considered unreasonable to reject a product update failing against documentation Quality Criteria that otherwise met all other Quality Criteria, and passed Staged Rollout. This is also reflected in the objectives defined in the SLA template. Consequently, the relevant objectives defined in the SLA template in section 5.3, O.REPO.1 and O.REPO.2, were available for service level reporting.

The response time data was to be provided by the EGI Helpdesk[3] EGI's service desk solution. Service request response times are easily defined, i.e. as the time elapsing between initial assignment to a service desk unit, and a member of that unit responding to this request. Collecting these metrics revealed unexpected differences in the interpretation and actual calculation to determine any service level target violation between EGI and its technology providers. Two issues influenced the calculation of the response time of individual service requests and the time by which a latest response should be provided: the working time (or office hours) and public holidays. While the definition of office hours was resolved relatively quickly to Monday to Friday 8:00 to 16:00 CET/CEST, the discussion and definition around public holidays quickly revealed the significant differences in amount and actual dates of public holidays across EU member states, and the organisation of service desk support units located in any particular member state.

For the remainder of the SLA performance metrics, the process or infrastructure to obtain figures was either not defined, or too ambiguous. Further work during PY2 has defined the number of "issues" assigned to a Technology Provider's service desks, the precise process on determining a date on which a fix for a software problem would be published by the Technology Provider, and the actual infrastructure to obtain related figures. Only recently have the details of the process been documented[4] and the necessary extensions to the EGI Helpdesk integrated into the production instance in February 2012[5].

3.3 Service level reporting

Actual service level reporting differed significantly from the intended set of metrics. The first Technology Provider performance review took place in November 2011 at the ninth TCB meeting[6]; an update was provided at the 11th TCB[7] meeting covering almost completely PY2.

Both reports followed the same methodology and reported on the same metrics as follows:

[3] http://ggus.eu
[4] https://wiki.egi.eu/wiki/EGI_DMSU_Ticket_Followup
[5] https://ggus.eu/pages/releasenotes/release2012-02-27.html
[6] http://go.egi.eu/TCB-9
[7] http://go.egi.eu/TCB-11

- Service Request response time violation (O.MISC.1)
- Service request management (open tickets, mean time to solve tickets)
- Software quality (O.REPO.1, O.REPO.2, O.MISC.2)
- Software verification effort across UMD versions and Technology Providers
- Issues and proposed solutions

The deviations and differences described in the earlier paragraph indicate a need to assess the actual degree of deviation between intended and actual services provided by Technology Providers, and the associated service level management processes that support maintaining good business relationships.

4 ASSESSING EGI'S CURRENT SLA TEMPLATE

The checklist for underpinning contracts outlined in section 2.2 provides a good starting point for determining the degree of deviation between intention and reality in the signed SLAs.

The remainder of this section provides a topic-by topic comparison between the recommendations given in the checklist, and the actual SLA template as it exists today.

1. Brief service/product/technology description

In chapter 4, the current template lists six topics that are of concern to EGI in a business relationship with Technology Providers:

- Appointing relevant representatives to EGI management bodies such as the TCB
- Deliver software in form of product updates to EGI
- EGI's Software Quality assurance
- "Issue management"
- Vulnerability management
- Service requests

These issues are not entirely services that can be easily described; and where services are described, the wrong terminology is frequently used. For example "issue management" should be renamed to "customer support". Service descriptions are mixed with describing supplier responsibilities.

A new revision of the agreement template will have to improve the service descriptions.

2. Validity period and/or underpinning contract change control mechanism

The validity period is defined in section 3.1 and accompanied by the agreement amendment regulations change control mechanisms in section 3.2 of the template.

Section 8 in the template describes the procedures and constraints of agreement termination, e.g. EGI retaining the right to operate already delivered software components even after the agreement was terminated. It also retains EGI's right to prematurely terminate the contract before its agreed regular termination time under described circumstance.

3. Change approval details

Change approval is not explicitly defined in the template – it is only implied.

4. Brief description of communications, including reporting, review frequency and schedule

None of these are explicitly described in the existing template. These aspects will be defined in a new revision of the agreement template.

5. Service hours (e.g. 09:00 h to 17:00 h, date exceptions, e.g. weekends, public holidays, critical business periods and out-of-hours coverage)

None of these are explicitly described in the existing template. Anticipating a review of service descriptions, service hours are expected to apply only to services that are not technical services. Only some of the aspects are expected to become necessary, depending on the specific service agreed upon in a revision of the agreement template.

6. Scheduled and agreed interruptions to services, including notice to be given and number per period

None of these are described in the existing template. Depending on the specific services that are defined in the agreement, regulations of interruptions to services may apply.

7. Customer responsibilities (e.g. correct use of systems, adherence to the information security policy)

EGI's duties are described in section 7 of the current template, but not explicitly correlated with defined services. Also, the described duties are technical and not legal responsibilities. These duties should be described elsewhere in process descriptions for respective services instead.

8. Supplier liability and obligations, e.g. security

Liabilities are not described in the current template. A revision of the template should contain liabilities and obligations protecting EGI in case of any damage caused by actions of Technology Providers.

9. Impact and priority guidelines

Priority definitions are given for technical support services, but not regulating priorities of services as such.

10. Escalation and notification process

Escalation paths and notification processes are described in section 6.1.1[8] of the template for any issues regarding the provisioning of the agreement.

11. Complaints procedure

The current agreement template does not differentiate between complaints and escalation procedures. It defines a process for resolving disagreements between the signing parties. Very few times – in fact only during Technology Provider performance reviews and in related follow-up conversations – the escalation procedure described in section 6.1.2 [sic] could be considered as being invoked and followed. During the first Technology Provider performance review[9], some of the reported SLA violations were challenged (the disagreement) and quickly identified as invalid reporting including EMI Support Units that are out of scope for EMI customer support duties. Consequently, the eligible EMI Support units were reviewed with EMI[10], leading to an update of GGUS and thus the service level reporting.

12. Service targets

Service targets are described in section 5 "Performance measurement" of the current template, for a subset of the described services (see above). It is expected that the service targets will change significantly with the review and description of services in a new template revision.

13. Upper and lower workload limits (e.g. the ability of the service, product or technology to support the agreed number of users/volume of work, system throughput)

[8] Section number as used in the SLA template, even though it is a numbering mistake.
[9] 9th TCB meeting, 29 November 2011, http://go.egi.eu/TCB-9
[10] Reviewing the EMI SU topology. GGUS requirements tracking, https://savannah.cern.ch/support/?125010

The current descriptions of services do not require defining these limits. However, services described in a revision of the template may in fact require defining workload limits. For example when describing a repository service, EGI may define which workloads that service may be required to sustain, for example for regular synchronisation of EGI software repositories.

14. High level financial management details, e.g. charge codes

The current template does not define any financial management details (see also section 2.3 and 5.2).

15. Actions to be taken in the event of a service interruption, including incidents and disasters

Neither is defined in the current template.

16. Glossary of terms

A glossary of terms is not provided as a separate section of the document. Terms are defined in-place where required.

17. Supporting and related services/products/technologies

Section 9 “References” of the agreement template refers to related processes and documents, e.g. the EGI security incident response procedures and software vulnerability procedure, the Software Provisioning process.

18. Any exceptions to the terms given in the SLA

The only exception to terms defined in the agreement is regulated in section 8 related to premature termination of the agreement.

5 CONCLUSIONS AND NEXT STEPS

After one year's experience in maintaining business relationships with Technology Providers, it is quite obvious that the current agreement template has several shortcomings that require attention.

Clearly, the current agreement template was written from a technical perspective, aspiring to govern and regulate potential technical issues in an environment that is less inclined to legal disputes and commercial competition, but more operating in a collaborative spirit that is common in the academic sector. Experience with existing agreements with IGE and SAGA (based on EGI's SLA template) and EMI (based on EMI's SLA document) supports this observation. While the types of agreements in place with EMI on one hand, and IGE and SAGA on the other hand, differ significantly in design, terminology and maturity towards ITIL compliance, all three Technology Providers contributed to the same documents, processes, and activities no matter which type of agreement is in place.

5.1 EGI IT Service Design and Management

From an ITIL point of view, it makes sense to mature existing agreements into the style of underpinning contracts supporting agreements with EGI's customers, the European and worldwide research communities. It helps clarifying EGI's business processes and puts expectations towards Technology Providers into context.

However, looking at the fundamental purpose of the agreements, EGI is facing two correlated issues in its current situation. EGI is working with two types of Technology Providers (as indicted in section 4.5 in [R 4]) aiming at two different customer segments in the EGI community: Generic Technology Providers may target the EGI federation itself, installing and administering software on physical resources owned by Resource Centres that are part of the EGI federation through national federations (the NGIs) for the purpose of maintaining the core operational infrastructure. In this segment, EGI is the direct customer of such Technology Providers. Community-specific Technology Providers may target the second customer segment consisting of those research communities, for which EGI is operating a specific Virtual Research Environment (or parts thereof) *on behalf of the research community* (see section 2.1). [11]

These different customer segments must be considered when reviewing SLA templates with Technology Providers since a straightforward setup of underpinning contracts seems feasible only for technology for which EGI is the direct customer. Operating Grid middleware services for research communities may result in a different setup of contracts and agreements, since EGI is operating these software components on behalf of research communities instead of its own behalf.

5.2 Does EGI need defendable underpinning contracts?

In the first customer segment, the only current Technology Provider are the partners involved in the EGI-InSPIRE project work package JRA1 – which is bound by contractual obligations: The EGI-InSPIRE Description of Work, and the corresponding Consortium Agreement. These documents are legally binding agreements as is required by the EC. Are these agreements underpinning contracts in the sense of ITIL? Regardless, the existing agreements sufficiently cover any eventual legal contention

[11] Specific Technology Providers may fall into either categories, or only one, depending on the definition of operational infrastructure. What is commonly known as "Grid middleware" may be included in the definition of operational infrastructure for research communities but not for the infrastructure provider on whose infrastructure those services are running.

and disputes. Even when briefly looking at EGI's emerging Cloud Infrastructure Platform, Resource Providers are predominantly deploying available Open Source solutions such as OpenStack and OpenNebula that are backed by their own development community (that may include commercial providers), or solutions developed in-house that in turn are based on Open Source solutions[12].

All Technology Providers, with which EGI has signed agreements, are targeting the second customer segment, i.e. the research communities. None of the Technology Providers currently active in the EGI ecosystem can be classified as commercial Technology Providers, and no commercial Technology Provider is currently foreseen to enter the community. Current agreements have demonstrated their primary purpose to establish a common understanding of expectations and duties of both contractual partners. However, neither the agreement with EMI, nor the agreements with IGE and SAGA include any type of consideration or compensation for the benefit of the respective Technology Provider, in return for the serviced they provide to EGI.

In the absence of any consideration, underpinning contracts cannot be considered contracts: They are just agreements that do not impose defendable legal liability on the supplier's side. The reason lies in the setup and relationships of the EGI ecosystem in its current form, in that EMI, IGE and SAGA are all publically funded projects through the EC or otherwise and therefore cannot enter into compensative agreements.

Unless EGI finds some sort of compensation, reimbursement or currency (not necessarily monetary) that is considered legally accepted compensation, it will be hard to argue that any contract will be legally defendable, and with that commercially defendable, too.

5.3 Next steps

The initial collaboration with the gSLM project, an initial assessment of EGI's IT Service Management processes, has shown that there is a need for EGI to review and adapt its IT Service Management processes.

With the absence of any legal consideration provisions with Technology Providers, current agreements are considered sufficient for the time being to formalise the existing relationships. Iterations of these agreements may gradually improve in terminology and service descriptions, with reasonable effort. In the short-term, this will focus on improvements on the most critical parts of the SLA template, i.e. the description of the services, and the corresponding service management and reporting aspects.

However, these agreements will cease to exist with the respective supplier ceasing existence in the current form (except the SAGA project) within a year's time. EGI must prepare for this situation, with significant impact on agreements with Technology Providers. At the time of writing it is unclear, on which financial and collaborative basis EGI will be able to formalise future relationships with Technology Providers. It will be necessary to reassess the current core set of services (providing software releases, requirements analysis with inclusion in new releases, and 3rd level expert support), and determine, how these may fit into alternative schemes of business relationships.

[12] For example, GRNET's ~okeanos Cloud Management solution (https://cms.okeanos.grnet.gr/) is based on Ganeti, a free cluster based virtualization management software: http://code.google.com/p/ganeti/

It is clear that it will be difficult for EGI alone to resolve these issues. Through a strengthened relationship with the gSLM project and its successor, the FedSM project, EGI is seeking strong expert support in setting up Technology Provider agreements and contracts that are fit for purpose within the context that EGI operates in.

6 REFERENCES

R 1	MS505: Service Level Agreement with a Software Provider, https://documents.egi.eu/document/503
R 2	MS509: Service Level Agreement with a Software Provider, https://documents.egi.eu/document/615
R 3	EGI-InSPIRE PY1 reviewer recommendations (report not publically available)
R 4	D2.18: Evolving the EGI Business model, https://documents.egi.eu/document/1040
R 5	D2.30: EGI Strategic Plan, https://documents.egi.eu/document/960
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R 7	The gSLM project, http://www.gslm.eu/
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R 9	SLA with EMI, https://documents.egi.eu/document/461
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R 11	SLA with SAGA, https://documents.egi.eu/document/449