Improving EGI's Service Level Management – an initial view

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Owen Appleton & Thomas Schaaf – gSLM – www.gslm.eu

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Introduction

Problem

To improve the strength and maturity of EGI's IT service management to support improved maturity in the technical services provided.

Current situation

The Grid and e-Infrastructure grew out of an academic community, and was initially based on handshake level agreements and trust networks rather than formal agreements, contracts and SLAs. Despite the need to move to more controlled and legally compatible agreements there are challenges, both resistance from the community and complexities in asking the organisations involved in moving toward a new contractual structure. While EGI can advise NGIs and other actors in this regard, it cannot easily enforce new SLAs.

Goal

EGI should aim to achieve a situation where the agreements it signs; Service Level Agreements, Operational Level Agreements and Underpinning Contracts, should facilitate comparison, cooperation and competition with commercially provided services. This will provide a basis for legal contracts where appropriate – as well as helping to better define and control existing less formal agreements, such that they can transit to legal contracts as they mature. In this way EGI can maximise the maturity of service level management in the EGI ecosystem, facilitating legally binding contracts without enforcing them in relationships that cannot support them.

Context

Background

In order to make these improvements we need to looks at the differences between the current agreements that capture relationships between e-Infrastructure actors and the kinds of agreement used in the commercial sector. In order to do this we need to look at the IT Service Management domain, which is a mature body of knowledge related to provision of IT services in the commercial and public sector domains. Specifically, these questions refer to the area of Service Level Management (SLM).

ITIL – perhaps the world most popular framework for IT Service Management, provides the following definition: "*Service Level Management (SLM) negotiates, agrees and documents appropriate IT service targets with representatives of the business, and then monitors and produces reports on the service provider's ability*

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to deliver the agreed level of service[1]".

Agreement types

In the ITIL schema, broadly adopted within the commercial sector, the contracts types are as follows:

- SLA (Service Level Agreement): Written agreement between a provider and its customer.
- UC (Underpinning contract): Written agreement (in the form of a legally binding contract) between a provider and its supplier (e.g., sub-service provider, technology vendor, etc.)
- OLA (Operational Level Agreement): Written agreement between a provider and any party/team which can be regarded as "part of" the provider organisation; in a wider sense any operational agreement which is closed between a provider and a party/organisation that is NOT a customer and NOT an external supplier from the viewpoint of the provider.

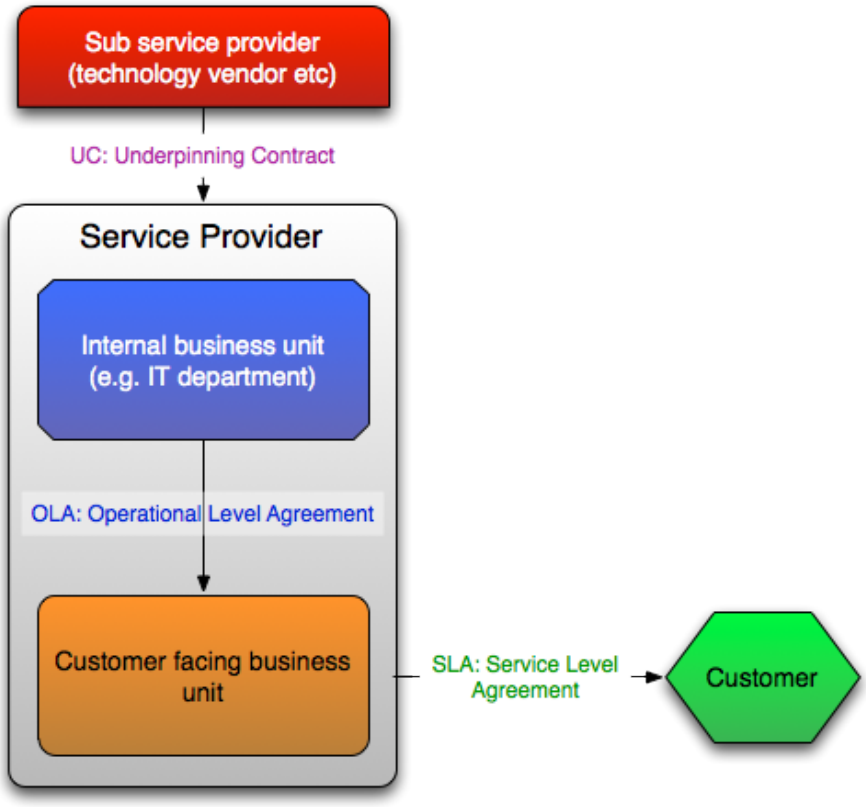

Figure 1: Standard ITSM agreements and relationships

Essentially, all three classes of service agreement, SLAs, OLAs and UCs, set out descriptions of the quality of service to be delivered and describe the measures

[1] ITIL v3 Service Design, Office of Government Commerce, 2007

for managing them, such as responsible parties, monitoring of key performance indicators and response and escalation procedures in case the service is interrupted. In the commercial sector these can include legally binding contracts, but as often will act as adjuncts to the actual contract -referred to but separate from a contract to be signed by a legal representative. This is particularly the case for OLAs, which often operate between different parts of the same legal entity (for instance an IT department providing a CRM tool to a sales department). Here the agreement must support commercial activity and be aligned with commercial needs and goals, but cannot be said to be legally binding per se.

SLM in the EGI ecosystem

EGI relationships

EGI is in an unusual position regarding contracts and agreements, due to the structure of the European Grid community. EGI has a coordination role, working alongside Resource Providers (RPs) such as National Grid Infrastructures (NGIs) to help them serve a wide range of Virtual Organisations and Virtual Research Communities. EGI provides value to a huge range of stakeholders, both directly and indirectly, but in order to improve our service level management we must define which relationships are subject to these agreement types. We identify three classes of agreement with different levels of influence.

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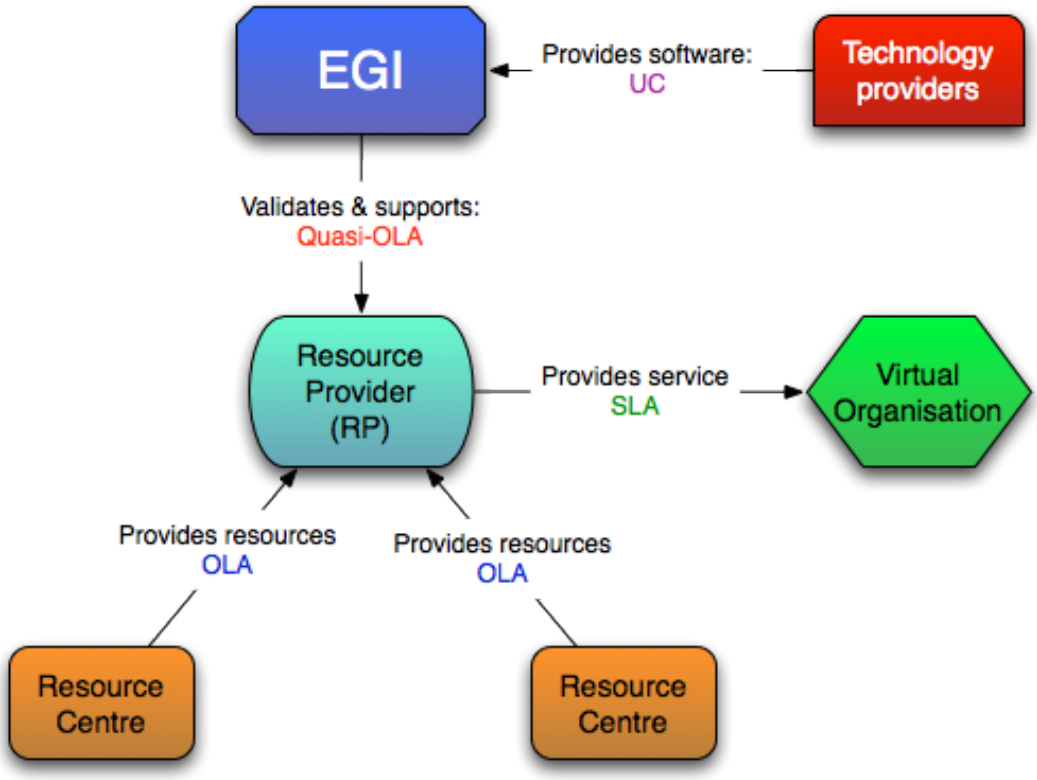

Figure 2: Relationships and agreements in the EGI ecosystem

Services supplied to EGI

EGI has a number of organisations and projects that supply services that help EGI fulfil its business goals. These include technology providers such as the EMI project, who provide us with Grid middleware packages that form part of our Unified Middleware Distribution. These agreements would be considered Underpinning Contracts in the ITSM field – agreements with external suppliers and subcontractors who are not part of your legal entity but who provide you services that assist in supporting your own customers. These agreements are under the direct control of EGI, and as such can be moved toward commercial-style SLM. The only difficulty here in terms of legally binding agreements is that these require legal entities, and ones able and happy to sign such contracts – which is difficult with project based structures such as EMI. However this does not stop the Underpinning Contracts being made more mature.

Resources provided to the overall EGI infrastructure by sites through NGIs

EGI helps to coordinate the vast network of European Grid actors, as collected through Resource Infrastructure Providers (RIPs), who themselves federate resource centres. In order to be certified as an RIP in the EGI system, the RIP must sign an agreement with EGI, current labelled as an OLA, which sets out minimum standards they must meet and services they must provide. Arguably this is not really an OLA in the commercial context, as EGI is not providing the services itself, it is simple stamping the services as complaint with some set of

criteria and supporting service provision with some central services. EGI can strongly influence the contents of this RIP-OLA – but it cannot be entirely prescriptive, as EGI is not operating in a market environment. That is to say that there is not competition to provide services to EGI – rather EGI is meant to include as many RIPs as possible, while maintaining a certain level of consistent quality. Moving beyond this, each RIP has an OLA with its Resource Centres (RCs) that define what services it can provide. While EGI sets out what these agreements should look like, at this level they must deal with a great variation in the structure, maturity and approach of Europe's resource centres. EGIs influence here is still noticeable, but still less than the level of influence with the RIP-OLA.

Agreements with users

Finally, at some point agreements must be made with users, captures in Service Level Agreements. In the current business models considered for EGI, it seems unlikely that EGI will sign agreements with users to provide services. Rather EGI will support NGIs or other RIPs that will serve users. SLAs will vary widely not only based on the RIP (technologies supported, resource types) and the type of user group (bio scientists will have different concerns to particle physicists, such as perhaps a greater focus on the confidentiality of results). Here EGI has still less influence, and will have to take a supporting role in helping RIPs and NGIs in selecting SLAs appropriate to their situation while as concrete as possible.

Summary of EGI agreements and relationships

These agreements types are summarised in the table below:

Table 1: Agreements in the EGI ecosystem

Agreement	ITSM agreement type	Customer	Provider	EGI influence
Technology provider SLA	UC	EGI	Technology providers (e.g. EMI)	High
Resource Infrastructure provider OLA	'Quasi-OLA'	EGI	Resource Infrastructure Providers (e.g. NGI)	Medium
Resource Centre OLA	OLA	Resource Infrastructure Provider (e.g. NGI)	Resource Centre	Medium / Low
'User SLA'	SLA	VO	Resource Infrastructure Provider	Low

Once we understand these different subject for our improved service level management we can look at the experience of the elements seen in commercial SLAs, OLAs and UCs and see what we see is relevant to the agreements in the EGI

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ecosystem. At present EGI has an 'SLA' with technology providers, though in ITSM terms this is better described as a UC.

SLM in the commercial sector

SLAs and UCs

While EGI itself is likely to make agreements only with RPs and Technology providers, due to its coordination role in the community it must be aware of all the agreements made. Still, at present, the most relevant agreements are SLAs and UCs.

The following are some general aspects of SLAs:

- An SLA is a document that describes the service and service targets.
- An SLA also specifies the responsibilities of the service provider and the customer.
- A single SLA may cover multiple services or multiple customers.
- SLAs should cover all components required to deliver the service.

These aspects also largely apply to UCs, which are quite similar agreements - differentiated largely by the point of view of the service provider, who is the 'supplier' in an SLA and the 'customer' in a UC.

- A UC is a document that describes the delivered service/product/technology and related (performance) targets.
- A UC also specifies the responsibilities of the supplier and the customer (here: customer = regarded provider).
- A single UC may cover multiple services/products/technologies.
- UCs should cover all components required to deliver the service/product/technology.

In general we can say the following about SLAs (and UCs).

- The customer requirements [UC: provider's requirements] and the provider's capabilities [UC: supplier's capabilities] should be the defining force for the content, structure and targets of the SLA [UC]. The targets, against which the delivered service (product/technology) should be measured, should be defined from a customer perspective.
- Too many targets in an SLA [UC] can create confusion and lead to excessive overheads without delivering benefits. The SLAs [UC] should include only an appropriate subset of the targets to focus attention on the most important aspects of the service/product/technology.

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SLA & UC checklist

The typical content that should be in an SLA [UC] or that may be directly referenced from an SLA [UC] (e.g., reference in a service catalogue) is:

a) Brief service/product/technology description;
b) Validity period and/or SLA [UC] change control mechanism;
c) Change approval details;
d) Brief description of communications, including reporting, review frequency and schedule;
e) 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;
f) Scheduled and agreed interruptions to services, including notice to be given and number per period;
g) Customer responsibilities, e.g. correct use of systems, adherence to the information security policy;
h) Service provider [UC: supplier] liability and obligations, e.g. security;
i) Impact and priority guidelines;
j) Escalation and notification process;
k) Complaints procedure;
l) Service targets;
m) Upper and lower workload limits, e.g. the ability of the service/product/technology to support the agreed number of users/volume of work, system throughput;
n) High level financial management details, e.g. charge codes;
o) Actions to be taken in the event of a service interruption, including both incidents and disasters
p) Glossary of terms;
q) Supporting and related services/products/technologies;
r) Any exceptions to the terms given in the SLA.

Next steps

From this initial view, the natural next steps are to compare the current EGI 'SLA' with technology providers and the OLAs with RPs and RCs with the list and comments above. This comparison should take into account the normal elements of a commercial SLA or UC but also the peculiarities of the EGI situation. The gSLM project or other experts in commercial ITSM can support this analysis. Following this, the OLAs with RPs and RCs should be explored, to understand if an OLA is a suitable agreement to make with an RP (for sentence instead EGI may chose to sign an SLA with NGIs to show what services it provides them). EGI can also consider helping provide model OLAs for RPs to sign with RCs – though these will likely need to be varied by each RC (as for instance NGIs are not uniform in structure). If the results of these studies support it, EGI can also consider assisting RPs in the form of SLAs they sign with users, but this is the most long-range activity of those suggested here.

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