MoU – Milestone Report

M2.1: STANDARDS REPORT

Document Link	https://documents.egi.eu/document/<DOCID>
Report by	Sergio Andreozzi
Last Modified	DD/MM/YYYY
Version	1
Due Date	08/2011
Delivery Date	09/2011
MoU URL	https://documents.egi.eu/document/485

As EGI's technology provider, the SAGA Project aims to deliver and implementation of the SAGA API, with a set of language bindings (in particular C++ and Python), and with a set of backend bindings (in particular gLite, Globus, BES, and ssh). As such, SAGA is very tightly related to a wide range of standards and standardization activities, and is, in fact, in itself a representation of the SAGA API specification, an OGF standard (GFD.90), and of several related specifications.

> - the already supported standards/specifications

In Detail, the SAGA implementation as provided by the SAGA project

implements
- SAGA Core API Specification" - OGF, GFD.90
- SAGA Advert API Extension" - OGF, GFD.177
- SAGA Service Discovery API Extension" - OGF, GFD.144
- SAGA Information Service Navigator API Extension - OGF, final draft
- SAGA C++ Language Bindings - OGF, draft
- SAGA Python Language Bindings - OGF, draft
- SAGA Message API extension - OGF, GFD.178 - not delivered to EGI
- Checkpoint and Recovery API as defined in
  Architecture for Grid Checkpoint and Recovery Services - OGF, GFD.93
  - not delivered to EGI

interfaces to
- Basic Execution Service / HPC Basic Profile - OGF, GFD.114
- JSDL - OGF, GFD.136
- JSDL HPC - OGF, GFD.111
- JSDL SPMD - OGF, GFD.115
- DRMAA - OGF, GFD.133 - not released to EGI
- GridRPC - OGF, GFD.52 - not released to EGI
- SSH - see
https://secure.wikimedia.org/wikipedia/en/wiki/Secure_Shell#Internet_standard

plans to interface to
- OCCI Core - OGF, GFD.185
- OCCI Infrastructure - OGF, GFD.186
- OCCI HTTP Rendering - OGF, GFD.187
- DRMAA.v2 - OGF, draft

references
- GLUE-1.3 - EGEE
- GLUE-2 - OGF, GFD.147

uses
- SOAP, XML, TCP, Corba, WSDL, and a wide range of related
  networking and communication standards (and non-standards)

A large set of experimental backend bindings exist which are not scheduled for release toward EGI, but nevertheless influence the standard related activities of the SAGA group.

> - the standards/specifications which will be supported in the future
> (please, provide estimate of release dates)

Most notably, we plan to support
- OCCI within the next 6 months,
- DRMAAv.2 within the next 6 months
- SAGA Message API within the next 12 months
- SAGA Resource API within the next 12 months

Those are tentative time lines!

> - missing standards/specifications that you identified

By definition, and contrary to the impression the list of supported standards above may give, SAGA does not directly rely on standardized infrastructure, but in fact is designed to handle proprietary backends as well. Having said that, SAGA *does* rely on the set of SAGA specifications itself (obviously), and is well aware of the respective gaps (such as language binding specifications). We are actively driving the activities to close those gaps.

Further, our implementation works very much *benefit* from the availability of standards, and of standard compliant implementations. In particular JSDL and BES are considered, from our end, incomplete, as they do not support all of our use cases, or make implementing those very difficult. We participate in the respective standardization efforts, but, honestly, are somewhat unhappy about the very slow progress the respective groups are making.

We badly miss technologies which allow to easily talk to web services. That may sound strange given the wide range of WS related tools available, but in practice, it is an enormous challenge to communicate to WSs implemented and hosted with a wide range of backend technologies, from a *set* of programming languages (python, C++, Java). Pairs of [language / WS technology] are working (relatively) well, but general approaches are not available. Similar problems are observed toward different security technologies, which seem (to us) to be very hard to access programatically, on a high level.