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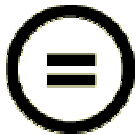
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Context

Activity 6	Dissemination, Liaison, Leadership and Standards
WP 6.2	Coordination of Standardization
Dependencies	This document makes use of work that was done in D2.2.4, D3.1.1 and all available deliverables in D4.1.1, D4.2.1, D4.3.1 and D4.4.1. It will affect the work in WPs 3.1, 4.1, 4.2, 4.3, 4.4, 5.1, 5.4 and 6.4.

Editor:

Julian Gallop, CCLRC

This document is based on input to internal documents by:

Per-Oddvar Osland, TN	Peter Racz, UniZH	Cristian Morariu, UniZH
David Hausheer, UniZH	Ruth del Campo, USTUTT	Victor Villagra, UPM
Eduardo Oliveros, TID	Dirk Haage, UPM	Burkhard Stiller, UniZH
Josep Matrat, ATOS	Nuno Inacio, IT-Av	Vasiliki Andronikou, ICCS/NTUA

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This report was reviewed by: Christian Loos (UHOH) and Victor Villagra (UPM)

Approved by: QM

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Abbreviations

Akogrimo	Access To Knowledge through the Grid in a Mobile World
A4C	authenticating, authorizing, accounting, auditing and charging
GCSG	Grid Standards Co-ordination Group
VO	Virtual organization
WP	In the context of Akogrimo, a work package, usually referring to a specific one, such as WP6.2

This document is inevitably abbreviation heavy. Rather than repeat them all here, the relevant abbreviations are either standards organizations (and so explained in alphabetical order in section 2.2) or standards (listed in Annex A)

1. Summary

This document presents a report on standardization within Akogrimo thus far. The early stage of the project has been characterised by standards understanding and adoption but also in this stage, the EU Grids Standards Collaboration Group has been set up. The Project has now prepared a set of topics on which there will be some focus on standardization – this is described in sections 4 and 5. Outlines of relevant standardization bodies (section 2.2) and a list of relevant standards (Annex A) are included.

2. Standardization context

It is important to understand the environment in which standardization takes place. This section outlines a number of general points and some bodies in particular, which are relevant to Akogrimo.

2.1. Scope

Whether in IT or other activities, a prime purpose of standardization is to achieve interworking, enabling a user to rely on a specification or enabling two products to work in conjunction with each other under defined conditions. Although standards in a wider sense may have other purposes such as specifying that a particular minimum safety level be met, we are primarily concerned with interworking here. In complex situations where numerous products are required from multiple sources, a defined strategy is essential. Standardization can provide a publicly available, neutrally sponsored definition which multiple suppliers can agree to use.

Although the common word for the resulting specification is a standard, some organizations use different words for this. For example, W3C uses the term recommendation for its output.

Despite the obvious disadvantage involved, we do include in this document specifications which cannot be described as neutrally sponsored, where they fulfil a currently indispensable function – for example many of the WS-* specifications are produced by a small number of major industrial players.

Standardization output can include not only a standard protocol or API itself, but also use cases, profiles that group standards for the purpose of increased interoperability, non-normative information documents and guidelines for standards.

In this document, we use the spelling standardization – with a z – which is the preferred spelling used in the Oxford English Dictionary and also a number of standards bodies, for instance, ISO, ETSI, BSI and ANSI.

2.2. Organizations

2.2.1. Standardization bodies relevant to Akogrimo

This section provides a summary of standards organizations relevant to Akogrimo, in alphabetical sequence. It was decided that here the information would be a summary.

We also note here that EGA and GGF have announced a programme of moves towards a merger later this year.

2.2.1.1. EGA

The Enterprise Grid Alliance (EGA) (<http://www.gridalliance.org/>) is an open, non-profit, vendor-neutral organization formed to develop enterprise grid solutions and accelerate the deployment of grid computing within enterprises.

By focussing on the needs of enterprise users, the EGA aims to enable businesses to realize the many benefits of grid computing such as faster response to changing business needs, better utilization and service level performance and lower IT operating costs.

Initial focus areas include reference models, provisioning, security and accounting.

EGA deliverables are developed through its Working Groups.

Currently no EGA outputs are used in Akogrimo, but its area of work is clearly relevant to Akogrimo and, following its merger with GGF which is expected to be complete later this year, the combined organisation will be even more significant.

2.2.1.2. ETSI

The European Telecommunications Standards Institute (ETSI) is one of the three European Standards Organizations and is officially responsible for standardization of Information and Communication Technologies (ICT). It cooperates with other regional standards bodies in this field. It has 500 industrial members throughout Europe.

Its output includes standards which require wide consultation and also “New Regime” outputs which follow a fast, restricted approval procedure.

It is an organizational partner in 3GPP (see 2.2.1.11) and adopts its output.

A recent development relevant to Akogrimo is that ETSI is producing a strategy for Grids standardization. This is being monitored and the Akogrimo plans may need to be adapted accordingly.

2.2.1.3. GGF

The Global Grid Forum (GGF), which is in the process of merging with EGA, is the community of users, developers and vendors leading the standardization effort for Grid computing. It aims to create and document best practice documents – technical specifications, user experiences and implementation guidelines for Grid technologies and applications. It has research and working groups in the following areas: Applications and programming models and environments, Architecture, Compute, Data, Grid Security, Information Systems and performance, Peer-to-Peer, and Scheduling and resource management.

The GGF is modelled along the lines of the IETF, in that it has Birds of a Feather (BOF) meetings of interested parties to determine if a working group (WG) should be established.

Several working and research groups are of interest to Akogrimo including: the several Open Grid Services Architecture (OGSA) groups, Grid Resource Allocation Agreement Protocol (GRAAP), several groups in the Data Area, Grid Economic Services Architecture group and groups on Resource Usage.

The GGF also has community groups including the Telecomm Community Group (Telco-CG) – see also section 5.2.

2.2.1.4. IETF

The primary focus of the Internet Engineering Task Force (IETF) (<http://www.ietf.org/>) is to standardize protocols for the Internet.

Outputs are developed by Working Groups and the results are RFCs which can be Informational, Experimental or Standard, the latter undergoing the most rigorous process. There are now several thousand RFCs.

Many RFCs underly Grids but several are of particular interest to Akogrimo, including those on A4C, policy, session initiation (SIP), presence and Mobile IPv6. Some of the planned outputs from Akogrimo are expected to be directed towards IETF.

2.2.1.5. ISO

The International Organization for Standardization (ISO) (<http://www.iso.org/>) is concerned with all fields of standardization as diverse as the speed of photographic film and organizational process quality. ICT standards are established by the joint technical committee (JTC1) between ISO and the International Electrotechnical Commission (IEC).

The distinctive aspect of ISO is that its membership consists of national standards bodies. Individuals and organizations join the appropriate national committee, which is generally open. The process is formal, allows time for intra-national consultation and can be long lasting. One way of working is that it approves initiatives taken by subject-specific bodies – an example is that ISO 15000 is a suite of ebXML OASIS standards.

Although standards used in Akogrimo are generally drawn from subject-specific standards bodies such as the other organizations presented here, its all-encompassing nature makes it worth noting here.

2.2.1.6. ITU-T

The International Telecommunications Union (ITU) is concerned with international agreements on telecommunications and the ITU-T sector is concerned with standardization. This replaced the former CCITT.

In general the ITU-T outputs are at a lower level than Akogrimo needs to deal with. The X.509 PKI standard originated in ITU-T but is now managed by IETF.

2.2.1.7. Liberty Alliance

The Liberty Alliance <http://www.projectliberty.org/> is an alliance of more than 150 companies, non-profit and government organizations from around the globe. The consortium is committed to developing an open standard for federated network identity that supports all current and emerging network devices.

Liberty is an open body working to address the technical, business, and policy challenges surrounding identity and web services. Its output includes: open technology specifications, business guidelines documents, privacy controls built into the specifications, privacy & security

best practices, enabled compliance with global privacy legislation and industry regulations, Liberty Interoperable Certifications that validate implementations and drive adoption.

As discussed in the Akogrimo architecture document ([3]), the identity model used takes into account the integration of the network and service layers and many different administrative domains, so the Liberty model is not used.

2.2.1.8. OASIS

The Organization for the Advancement of Structured Information Standards (OASIS) (<http://www.oasis-open.org/>). OASIS is a not-for-profit, international consortium that drives the development, convergence, and adoption of XML-based e-business standards. It is currently a primary forum for the development of higher-level XML specifications into accepted standards.

The consortium produces more Web services standards than any other organization along with standards for security, e-business, and standardization efforts in the public sector and for application-specific markets. Founded in 1993, OASIS has more than 5,000 participants representing over 600 organizations and individual members in 100 countries.

Eligible members may observe running Technical Committee (TC) discussions without joining, but to exert voting rights they have to formally join a TC. Most of these administrative processes are enacted via mail or the OASIS homepage.

Several actual or candidate standards sponsored by OASIS are relevant to Akogrimo. They include the following – and the relevant TC is shown where it does not obviously correspond to the name of the standard: Web Services Security (WS-Security); SAML (Security Assertion Markup Language) - Security Services TC; eXtensible Access Control Markup Language (XACML); Web Services Resource Framework (WSRF); Web Services Business Process Execution Language (BPEL); WS-Context and WS Coordination Framework - Web Services Composite Application Framework (WS-CAF) TC; Web Services Notification (WS Notification); Web Services Distributed Management (WSDM) and Electronic business eXtensible markup language (ebXML).

2.2.1.9. W3C

The World Wide Web Consortium (W3C) is an international consortium where Member organizations, a full-time staff, and the public work together to develop Web standards. W3C's mission is: To lead the World Wide Web to its full potential by developing protocols and guidelines that ensure long-term growth for the Web. W3C has around 350 Member organizations from all over the world and has earned international recognition for its contributions to the growth of the Web.

The XML family was defined within W3C and W3C has defined the architecture and messaging mechanisms for Web Services (architecture, SOAP, WS-Addressing). W3C is also responsible for semantic web developments such as OWL. All these are relevant to Akogrimo.

More recently W3C has initiated a Mobile Web Initiative.

2.2.1.10. WS-I

The Web Services Interoperability (WS-I) organization [<http://www.ws-i.org/>] is an open, industry forum promoting Web services interoperability across platforms, operating systems and programming languages, working across industry and standards organizations.

The WS-I has specified a Basic Profile (Version 1.1) and an Attachments and Simple SOAP Binding Profile for guaranteeing basic web services interoperability. In addition, the WS-I is working on a Basic Security Profile and security token profiles to guide web services security interoperability. In general, WS-I does not define standards as such but rather defines profiles that define groups of existing standards for interoperability purposes.

Akogrimo uses a wide range of standards which go beyond the Basic Profile, but nonetheless it is still useful to be aware of the current state of WS-I.

2.2.1.11. 3GPP

The 3rd Generation Partnership Project (3GPP) was formed by a collaboration agreement by a number of existing organizations including ETSI (see 2.2.1.2), who became organizational partners in 3GPP, and is concerned with 3rd generation mobile technology.

Any Akogrimo interest in 3GPP is likely to be best pursued through ETSI (one of the 3GPP partners).

2.2.2. Ad hoc industrial alliances

The WS-* specification family is an example of agreed specifications being defined by ad hoc industrial alliances. It is an effort mainly driven by IBM and Microsoft, along with a number of other organizations, to create an interoperable set of web service related specifications. These specifications are written by a group of industry partners. The effort is not intended as an alternative standardization initiative, and the specifications should eventually move to the appropriate, existing standardization bodies. Microsoft and IBM are heavily involved in this activity and companies have announced the formation of multiple work-groups to design and demonstrate through proof of concept implementations, the integration of systems with WebSphere and .NET frameworks.

This includes initiatives relevant to Akogrimo such as Web Services Policy Framework (WS-Policy).

2.2.3. Other relevant bodies

Other bodies, while not being standards making, are important groups in the field. An example is the field of ubiquitous computing, which among other activities runs the Ubicomp conference series (in 2006 <http://ubicomp.org/ubicomp2006/>)

3. Progress on standardization in Akogrimo

For Akogrimo, it is important both to adopt standards and to influence them based on the experience gained in the course of the Project. Over the lifetime of the Project, the balance of time spent shifts from adoption and observation to contribution and influence.

3.1. Standards monitoring

The Akogrimo architecture makes heavy use of standards from IETF, 3GPP, GGF, OASIS, ISO, OMA, W3C and DMTF. The applicability of these standards was first studied in the Project as part of the State of the Art activity, described in [10] and then developed in the Akogrimo architecture ([2], [3], [4], [5], [6], [7], [8] and [9]). These standards are listed in Annex A.

3.2. Collaboration with other EU Grids Projects - setting up GCSG

The primary standardization activity in the first cycle of the project was the preparatory one of co-chairing and co-founding the “Grid Standards Co-ordination Group” (GCSG), a group which aims to coordinate and focus standards making between the FP6 Grids Unit Projects. One member from each project participates and in general there is active participation from 9 projects. Links are made with the COPRAS project.

This coordination group has presented its work to 2 EU Grids Concertation Meetings, the most recent being June 2005 [12] and a report was produced [11]. The report covers common requirements and common interests between subsets of the projects, cooperation, dissemination, and consideration of requirements of SMEs. This is an ongoing opportunity for identifying collaborations and this will become more important as further new Grids Projects are added.

3.3. Preparation of strategy for influencing standards

Complementing other strands such as dissemination and exploitation, a major long term influence can be achieved through making use of standardization. The work needs to take into account the long timescale, which extends beyond the project lifetime because of standardization cycles, and the significant effort required to achieve effective results. To focus these efforts, Akogrimo has identified a few important topics. These choices have resulted from work in the 1st cycle.

For each topic within the focus, the strategy is being designed to answer questions such as which standards organizations and which partners.

The strategy would also identify groups whom Akogrimo should monitor even if they have currently address no current standardization topic. An example of this is the Telecomm Community Group in GGF, in section 5.2.

3.4. Resources

Standardization is potentially resourced in several Akogrimo WPs.

- Technical work in support of standardization – the 4 WPs which each correspond to specific layers - WP4.1 – WP4.4
- Publishing work on a potential or actual area of standardization - Dissemination - WP6.1
- Coordination of standardization in Akogrimo – WP6.2
- Working with EU Grids collaboration bodies, such as GCSG – formerly recorded under WP6.2, but subsequently recorded under WP6.4

4. Standardization strategy

4.1. Introduction

The Akogrimo Project aims to have a strong influence beyond the Project's lifetime. A vital pathway for this is through standardization. The number of standards that Akogrimo is large (see the list in Annex A). Exerting influence on a standard takes significant effort and the number of standardization topics which Akogrimo can practically influence is small. Therefore it is necessary to focus on a small number of standardization topics, which are summarised in section 5.

For each standardization topic, it is necessary to know why it is important to influence its direction; who Akogrimo should cooperate with and work through; and how and when – plan and timetable. Each of the WP4.x work package groups in Akogrimo were asked to provide proposals for standardization topics to be the subject of Akogrimo influence and to fill in a basic template, which aimed to capture the main issues. This information has been summarised in section 5.

4.2. Criteria and aspects of standards topics within Akogrimo focus

The aspects shown in section 5 for each standardization topic are as follows.

Motivation: firstly a short paragraph on what the topic is and the motivation for focussing on it. Standards influence takes a serious amount of time and thus the choice of focus is important.

Standards organization: the planned target standards organization, for example IETF, GGF, EGA. It is also necessary to identify a subgroup within the overall organization or whether a new one would be required and, where this has been done, this is shown.

Involved partners: identifying who (which partner organization and which individual) is primarily responsible for this standardization topic within Akogrimo and is responsible for seeing that appropriate contacts are made outside Akogrimo to influence the process. This person (in cooperation with others) is responsible for the plan for this standardization topic and for putting it into effect. One could refer to this person as the prime mover or champion for this standards topic. Here (in section 5) we show the partner.

Nature of the work: type of contribution. When thinking about the work involved in standardization, changing the specification is the first thing some people think of. But there are other contributions such as:

- add a profile – many standards have these, which in brief means that, to increase the chances of successful interworking, a subset is defined or some flexibility is removed by (for instance) restricting some parameter values.
- add a use case: Some organizations rely on use cases and relate back to them when defining a specification. So a partner could work on a use

case but not be involved in the very detailed and time consuming work of producing a specification.

- define its place in an overall framework
- define a collection of standards which need to be used for a given purpose to be fulfilled

Collaboration: who to collaborate with. Standardization needs significant time and effort and collaboration with other people who have identified overlapping problems would enhance the effort available. It may be possible to identify other institutions, other groups within Akogrimo partners or more specifically other EU Grids Projects, which may be identified through the EU GSCG.

WP: work package. Work allocation and reporting needs to be identified within Akogrimo. Although the coordination work within the Project takes place within WP6.2 and coordination with other EU Grids Projects within WP6.4, the work of standardization and technical preparation takes place within one or more of the work packages WP4.1 – 4.4.

Standardization generally involves a long cycle, within which a number of progression cycles may occur, leading to increasingly formal acceptance.

In each case, having identified that a particular topic is to be the subject of Akogrimo influence, a stage of study within the Project is required in order to prepare the technical inputs. In general this is taking place through the architecture work in the 2nd cycle and based on experience in the prototype. In some cases the technical work has proceeded to some detail (for instance Accounting parameters to support a mobile Grid, in section 5.1.4.1). This can take place in parallel with gaining initial involvement in the appropriate working groups.

After that more serious involvement in the standards body will be required and the later timescales will be dominated by the approval processes of the standards body itself.

The timescales in most cases will therefore extend beyond the lifetime of the Project itself.

5. Specific standardization topics within focus

5.1. Currently planned

This section contains only those standards for which there is a strong likelihood that Akogrimo plans to influence to create or improve or is already doing so, i.e. that they are to be the subject of standardization focus within Akogrimo

Details of the plans are still being made – many entries in the tables are still blank - and will be presented in subsequent versions of this report.

5.1.1. Integration of network services into a Grid framework

Motivation: Based on what has been learnt in the 1st cycle of the project, the intention is to investigate the possibility of integrating some network services with the Grid Services concept, using a framework like OGSA. The increased interest in the network layers from the Grids standards organizations allows Akogrimo to provide valuable inputs in these areas.

Standards organization: Although the work will require a knowledge of standards within IETF, the result of the integration is expected to be within a Grids standards organization, such as the merged GGF+EGA.

Involved partners: This was initiated by IT-Aveiro and a commercial partner TID are also involved. NTUA will provide Grid expertise and IT-Aveiro and TID will provide support for specialised network aspects.

Nature of the work: Potential aspects of the work include: COPS (Common Open Policy Service) usage for the low layers of interaction with the grid service control; SIP (Session Initiation Protocol) and SDP (Session Description Protocol) interaction with grid control layers; and EMS-QoSBroker signalling using OGSA standards.

Collaboration: This work is not already being done by another EU Grids Project and is likely to be mainly within Akogrimo.

WP: The knowledge of the network aspects is within WP4.1 and/or WP4.2 but Grid infrastructure aspects are also involved, which implies some work within WP4.3.

5.1.2. Mobile Grid use case

Motivation: In some standards organizations, the idea of a use case is a key prerequisite which guides the standardization process. For example it is relied upon within GGF and a previous EU Grids Project (GRASP) was responsible for the Business Services use case that is in OGSA now. The idea of a Mobile Grid Use Case is to encapsulate key issues within Akogrimo in order to guide future standardization. OGSA Use Cases are currently closed, so this would be offered to a different group in GGF+EGA or planned in the next OGSA cycle.

Standards Organization: GGF+EGA.

Involved partners: USTUTT and CCLRC.

Nature of the work: Base this on existing GGF use cases, because that is how the GGF (and likely also the combined GGF+EGA) community expects it. The difficult work would be encapsulating the Akogrimo ideas in a single use case. The test bed scenarios could be used as a basis. This should be proposed when OGSA version 2 becomes actively worked on.

Collaboration: This work is not already being done by another EU Grids Project and is likely to be mainly within Akogrimo.

WP: Almost by definition this work would involve a collaboration between all the 4.x WPs

5.1.3. Presence and Context

Context has become significant in Akogrimo and existing standards are insufficient. Context appears to need regularising at two levels

- Extending SIP Presence to include Context
- and Interpretation and Mapping of Context in a Grid environment

5.1.3.1. Extending SIP Presence to include Context

Motivation: The current RPID standard (Rich Presence Extensions to the Presence Information Data Format (PIDF) (draft-ietf-simple-rpid-06)) focuses on SIP Presence. There is a need to extend this interpretation to a more general description of user context.

Standards Organization: IETF

Involved partners: Telenor, UPM, TID

Nature of the work: (a) Suggest an alternative description of focus for the standard and (b) Investigate and suggest (if necessary) extensions to current presence format (RPID) based on the work within Akogrimo.

Collaboration: No collaborators identified as yet.

WP: 4.2

5.1.3.2. Interpretation and Mapping of Context in a Grid environment

Motivation: The network layers return context and monitoring events in a raw form., which is not suitable for management by applications or Grid services without some translation. An example of an application requirement is “Where is the nearest hospital?” and some work is needed to identify the level of needed to support this kind of request. There does appear to be a gap in an area of importance to Akogrimo.

Standards Organization: To be identified.

Involved partners: CCLRC, TN

Nature of the work: Work on the business process oriented description and a method of translation.

Collaboration: Not being done by other EU Grid Project.

WP: WP4.2 and 4.4

5.1.4. Accounting and usage recording

A mobile grid environment makes potentially complex demands on an accounting system, because of diverse and changing providers, users, aggregators and intermediaries. The two areas of work in this section are related but are expected to lead to distinct standardization initiatives, one concerning IETF Diameter AVPs, the other concerning OGSA accounting. However, it may be very useful to define a transformation function from one into the other. Thus, both actions should be carried out and interfaced accordingly. It seems to be necessary to define in both cases similar parameters etc as well as mandatory/optional attributes.

5.1.4.1. Accounting parameters to support a mobile Grid

Motivation: Standard mechanisms for A4C (authenticating, authorizing, accounting, auditing and charging) are crucial in a commercial Grid environment to enable inter-domain service provisioning and interoperability between these players. A well-defined set of accounting parameters for Grid services is required to be able to exchange usage data between different network components.

Standards Organization: IETF

- Authentication, Authorization and Accounting (AAA) Working Group
- Diameter Maintenance and Extensions (DIME) Working Group

Involved partners: UNIZH, USTUTT, NTUA. Commercial partner within the consortium needs to be identified.

Nature of the work: Specification as an IETF RFC. It provides an extension to the Diameter base protocol (RFC3588) in form of a Diameter application, which is used for AAA support in Grid environments. It specifies authentication and authorization for multi-provider service provisioning. It specifies additional Attribute-Value-Pairs (AVP) used as accounting attributes for Grid services. A draft of the work has produced. Preparation of an RFC Draft needs to start soon. The timing of the final stages of an RFC are largely determined by the number of proposals waiting for a review.

Collaboration: This can be undertaken by partners within the consortium.

WP: 4.2 and 4.3

5.1.4.2. OGSA resource usage recording in a mobile context

Motivation: Until recently no issues on the standardization of grid accounting were addressed mainly due to the lack of interest in the business aspects of the grids. Given the latest business

orientation of the grids however there is the need for standardization of the accounting parameters. In Akogrimo this need is intensified by the existence of the blueprint in mobile grids for business, whereas telecommunication operators report the need for the standardization of a joint model. A set of parameters used in accounting should be defined and chosen focusing on specific applications.

Standards Organization: Merged GGF + EGA

Involved partners: NTUA. Currently no commercial partner is identified.

Nature of the work: The Open Grid Service Architecture provides specifications which are defined by a set of functional and non-functional requirements. It defines a set of core capabilities and behaviours which address key issues in Grid systems and it includes a list of parameters that could be used for accounting. However these need to be investigated. At the moment the efforts focus on providing a draft specification (document) which aims at comprising the standard of Grid accounting¹.

Collaboration: This needs to be decided.

WP: 4.3

5.1.5. Service Level Agreements for mobile Grid services

Motivation: The Akogrimo Mobile Grid environment has implications for service level agreements not likely to have been taken into account already. For example:

- Context changes imply application of policies and even renegotiation of QoS for services (pre-negotiated branches).
- Integration of both network (Bandwidth, packet priority, etc) and grid (CPU, Memory, etc) QoS parameters in SLA contract.

Standards Organization: Merged GGF+EGA

Involved partners: ATOS, USTUTT

Nature of the work: There are two relevant specifications being negotiated.

- WS-Agreement is already at an advanced stage. The potential contribution here is to give feedback to GRAAP WG (Grid Resource Allocation Agreement Protocol) of GGF about the use of WS-Agreement draft specification (contribution to this necessary validation step towards becoming a full standard).
- WS-AgreementNegotiation is still at a very preliminary stage and it is a suitable time to contribute to its definition and aim to influence. Akogrimo work is also relevant to collocation protocols for negotiation.

Collaboration: HPC4U is interested in this, but the extent of their involvement needs to be determined. NextGrid are also involved in this. Although outside the realm of the EU Grids

¹ <http://www.gridforum.org/documents/GWD-I-E/GFD-I.030.pdf>

Unit, it is relevant to the TRUSTCOM project in which some of the Akogrimo partners (including ATOS and USTUTT – and also CCLRC) are involved.

WP: 4.3 and 4.4. Negotiation is more relevant to 4.4.

5.2. Involvement in standards groups independently of a specific topic

Involvement in standards groups will largely be determined by the topics on which Akogrimo is focussing. However it also possible to identify groups as being relevant to Akogrimo without *a priori* determining the topic.

5.2.1. Telecommunications community group in GGF

At present, we identify the telecommunications community group (telco-cg) in GGF (and whatever it will become in the combined GGF+EGA) as an appropriate group for Akogrimo members to join, even though its primary focus is not mobility. Members from ATOS, NTUA and CCLRC attended the meeting at GGF16, but it will also be productive for Akogrimo telecommunications operators. A talk on Akogrimo by NTUA at GGF16 was well received, including material on the Akogrimo business value chain.

5.3. Potential expansion

Although it is intended that the number of standardization topics within the focus will not be large, it is not necessary to completely close the door at this stage. At this time, we may envisage the following possibilities: Security; using SIP for Service Discovery; Using SIP for Grid Session Establishment and Management; Management of Virtual Organizations; and Business Processing for Grid Services.#

6. Conclusion and outlook

Standardization is one important means by which Akogrimo can have a long term influence. The Project makes use of a large number of standards (see Annex A). Planning how an impact can be made has taken longer to achieve. The Project has identified a small subset of topics where it plans to work on standards contributions and identified standards groups where it can participate. Subsequent work will include: elaboration and agreement of technical contributions in the 2nd cycle of the Project; making best use of collaborations to multiply limited effort; participation in the standardization cycles to achieve recognition of Akogrimo contributions; and identifying continuation of standards work beyond the Project's lifetime.

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Annex A. Table of standards usage in Akogrimo

This table contains a list of standards which are explicitly mentioned in Akogrimo architecture and implementation documents. The layer noted is the lowest at which the particular standard is used. The column general area represents an informal grouping of standards.

Topic	Abbreviation	Organization	Layer	General area
Authentication, Authorisation and Accounting	AAA	IETF	4.2	AAA
Business Process Execution Language	BPEL	OASIS	4.4	Business Processing
Common Open Policy Service Protocol	COPS	IETF	4.1	QoS
Diameter		IETF	4.2	AAA
Diameter Credit Control Application	DCCA	IETF	4.2	AAA
Diameter Extensible Authentication Protocol	EAP	IETF	4.2	AAA
Diameter Network Access Server Application		IETF	4.2	AAA
Fast Handovers for MIPv6		IETF	4.1	Mobile IPv6
IT security techniques -- Non-repudiation -- Part 1: General		ISO	4.2	Security
MD5 Message-Digest Algorithm	MD5	IETF	4.1	authentication
Mobile IPv6	MIPv6	IETF	4.1	Mobile IPv6
Mobile Location Protocol	MLP	OMA	4.2	Context
Open Grid Services Architecture	OGSA	GGF	4.3	Grid architecture
PANA / AAA Interworking		IETF	4.2	AAA
Presence Event Package for the Session Initiation Protocol (SIP)		IETF	4.2	Context

Topic	Abbreviation	Organization	Layer	General area
Protocol (SIP)				
Presence Information Data Format	PIDF	IETF	4.2	Context
Protocol for Carrying Authentication for Network Access	PANA	IETF	4.1	Authentication
Resource ReSerVation Protocol	RSVP	IETF	4.1	Resource
Rich Presence Extensions to PIDF	RPID	IETF	4.2	Context
RTP: A Transport Protocol for Real-Time Applications	RTP	IETF	4.1	Multimedia
Security Assertion Markup Language	SAML	OASIS	4.2	Security
Service Location Protocol	SLP	IETF	4.2	Context
Session Description Protocol	SDP	IETF	4.1	Session
Session Initiation Protocol	SIP	IETF	4.1	Session
Simple Object Access Protocol	SOAP	W3C	4.3	Web Services
SIP Event State Publication		IETF	4.2	Session
SIP Refer		IETF	4.1	Session
SIP Specific Event Notification		IETF	4.2	Session
Site Requirements for Grid Authentication, Authorization and Accounting		GGF	4.3	AAA
Universal Description, Discovery, and Integration	UDDI	OASIS	4.2	Discovery
WAP User Agent Profile	WAP-UAPROF	OMA	4.2	Context
Web Ontology Language	OWL	W3C	4.2	Services
Web Services		W3C	4.3	Web Services

Topic	Abbreviation	Organization	Layer	General area
Web Services Description Language	WSDL	W3C	4.3	Web Services
Web Services Level Agreement	WSLA	industry	4.3	SLA
Web Services Policy Framework	WS-Policy	industry	4.3	Policy
Web Services Security	WS-Security	OASIS	4.3	Security
WS Notification	WS-N	OASIS	4.4	WSRF
WS Resource Framework	WSRF	OASIS	4.3	WSRF
WS-Agreement		GGF	4.4	SLA
X.509		IETF - was ITU-T	4.1	Security

Table 1: Standards used in Akogrimo