EXECUTIVE SUMMARY

The aim of the gSLM project is to bring together Grid experts from the (Grid) infrastructure community with experts in IT service management in order to present and discuss the state-of-the-art in managing the delivery of ICT\(^1\) services and how to apply these concepts and techniques to Grid environments. Up to now, work in this area has proceeded mostly on a best effort basis. Little effort has been put into the processes and approaches from the professional (often commercial) IT service management (ITSM).

To achieve this goal, the gSLM project planned to run an annual workshop to bring together SLM and Grid experts, exchange information and come up with approaches and ideas to improve service management in Grids and other e-infrastructures. In its first year gSLM split the effort between two major events. The first formed part of the larger BDIM2011 (The 6th IFIP/IEEE International Workshop on Business-driven IT Management) conference, which was part of IM2011, a leading IT service management conference. The second even was Managing and Delivering Grid Services 2011, organised by gSLM and run as part of the Euro-Par 2011 conference on parallel computing.

The workshop and the BDIM session help gSLM to act as a platform for members of the Grid community and those involved in IT service management to share their views on the topic of managed service delivery and related requirements and constraints. By bringing these groups together, gSLM helps the Grid community understand the features of traditional ITSM and lets the two communities consider together how and to what extent ITSM techniques can be implemented on the Grid.

The BDIM event introduced Grid computing and the issues of Grid SLM to the ITSM community, followed by a panel discussion including Grid and ITSM experts to discuss the issues. The results of this discussion validated the problem Grids face; a highly informal approach to ITSM that is not supportable as Grids transit to new, sustainable models. It became apparent that ITSM techniques could not be implemented ‘as is’ in Grids due to

\(^1\) ICT: Information and Communication Technology
the complex but informal relationships and agreements that bind participants together. Discussions focussed on the human factors in Grid SLM, mirroring the trends that BDIM tackle, which might be described as a shift in emphasis from quantitative factors to qualitative factors related to business alignment in making IT management decisions.

MDGS 2011 presented a challenge, as while there have been some technical attempts to institute SLM in Grids, the area is a relatively new one. To encourage participation, gSLM requested position papers and problems statements as well as research papers. The project also invited several speakers with different backgrounds to broaden the range of expertise and opinions presented. Topics that arose included the tension between user communities and service providers user needs versus provider provided services. A lack of clarity of the structure and purpose of a National Grid Infrastructure also arose, as did the need for tools that facilitate monitoring of metrics related to Service Level Agreements in real time. An invited talk on the implementation of traditional ITSM in an e-Infrastructure centre also demonstrated both the benefits and challenges of such a situation.

These main events were supplemented by talks given to organisations such as the e-Infrastructure Reflection Group, members of the software and services community through the WoSS workshop and cloud researchers at the CCPI workshop. Finally, following an MoU the results of BDIM, MDGS and the project in general were presented to the EGI community at the EGI Technical Forum 2011, where gSLM also gave a tutorial on ITSM for the EGI and NGI communities.

Figure 1: gSLM Session at BDIM workshop, Dublin Ireland May 2011. gSLM project director Thomas Schaaf (left) introducing the session.

Figure 2: MDGS2011 at Euro-Par 2011, Bordeaux, France. Left, Thomas Schaaf introduces ITSM concepts. Right, Thomas Schaaf and Kuba Moscicki, one of the MDGS keynote speakers.
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1. INTRODUCTION

Work package 2 of the gSLM project is dedicated to the organization of international scientific events on the topic of Service Level Management for grids and e-Infrastructures. These complement the scientific, technical and policy based findings addressed in WP4, and 5 and contribute to the roadmap and advice generated by WP 6.

Initial plans were for the project to run one workshop per year, but the opportunity to participate in a major ITSM event, IM2011, arose shortly after the project began. It was not possible to hold a full size workshop organised solely by gSLM, so after consultation with the commission services, to split the first workshop into two events, one that would be collocated with an IT service management event and the second that would be hosted in a grid/HPC event. The motivation was to invite well-known researches in one community to give talks and present papers to the other and vice versa. Since the gSLM consortium members are active in both communities it was easy to identify major events representing each of the fields.

For IT service event, we selected the 12th IFIP/IEEE International Symposium on Integrated Network Management – IM2011 [1]. More specifically, our event consisted of the afternoon session of the 6th IFIP/IEEE International Workshop on Business-driven IT Management (BDIM 2011) [2] that runs during BDIM. The BDIM workshop series focuses on the impact of business goals on IT processes and vice versa. It asks, what techniques and decision making tools can help IT to adapt to changes in business objectives, business strategy and business processes. In short, the BDIM approach aims at rethinking IT management from a business and organization perspective that includes softer factors than previous, more metric-based approaches.

The goal of gSLM’s participation in BDIM was to present the problem of Grid service management to the traditional ITSM community, in order to validate the view of the situation presented by the gSLM project, and seek input into approaches to Grid SLM that could help improve the situation.

For the grid/HPC event, the gSLM team selected the 17th International European Conference on Parallel and Distributed Computing (EuroPar 2011) [3], which took place three months after the BDIM workshop in Bordeaux, France Euro-Par is an annual series of international conferences dedicated to the promotion and advancement of all aspects of parallel and distributed computing. In this case the format of our gSLM event took the shape of a one-day workshop entitled Managing and Delivering Grid Services (MDGS 2011) [4].

The ultimate objective of MDGS was to initiate a discussion on the relevant issues within the Grid community, and present the approaches taken in traditional ITSM and carry on discussions begun at the BDIM workshop. To facilitate such a transition between the two events we invited one of the BDIM workshop chairs to give a keynote in the context of MDGS. In future events, now the project has built a reputation in both Grid and ITSM communities, we will attempt to encourage more ITSM professionals to attend Grid events and vice versa.

This deliverable describes the two major events organised by gSLM in the first year of the project, including participation, programs, contributions and the impact of the events. An appendix briefly mentions other events the project organised in its first reporting period.

2. BDIM WORKSHOP

2.1. BACKGROUND

BDIM is a series of annual workshops devoted to a new approach to service management. BDIM considers alignment between IT and business - the linking of IT service management to business goals such as consumer satisfaction, growth, customer retention, market share or time to market. In BDIM, IT is regarded as a "strate-
gic asset" from the business viewpoint. BDIM’s location alternates between two major biannual international ITSM conferences – IM2011 an NOMS, the IEEE/IFIP Network Operations and Management Symposium.

The chance to participate in BDIM presented a valuable opportunity for gSLM, as it allowed the project to gain exposure with the expert ITSM community. Given that BDIM fell fairly early in the lifetime of gSLM, the project team elected to use it to present the problem rather than attempt to already have solutions. While the gSLM team includes ITSM expertise, BDIM also gave the consortium access to ITSM experts from commercial organisations such as HP and IBM. This is helpful in looking at ways that the Grid can become increasingly, mature, sustainable and compatible with commercial computing solutions.

2.2. PARTICIPATION IN BDIM

There are multiple connections between gSLM and BDIM, not least that the project director was one of the co-chairs of the 2011 edition of the workshop. Members of gSLM participated in in-depth panel discussions and co-authored papers. Finally and most importantly, gSLM organized the final session of the BDIM workshop. This sessions included the following elements.

- Introductory remarks by Thomas Schaal, gSLM project director
  - Dr Schaal, which has been a part of the BDIM community for several years, introduced the session to the audience. This included a basic background to the project.

- Keynote presentation by Dieter Kranzlmueller on Grids and the problem of Grid service management
  - Prof. Kranzlmueller is a Professor at LMU (the gSLM coordinating) and Director at the Leibniz Research Centre of the Bavarian Academy of Sciences. He is also a long-term member of the Grid community, and apart from being a Director at a supercomputing centre involved in many European initiatives, is also a member of the executive board and council of the European Grid Infrastructure, the largest European Grid body. The talk gave a background into the history, development and purpose of Grids before introducing the challenges of managing Grid services and introducing the gSLM project. It included presenting the current reliability and availability of Grid services and giving a few of ITSM challenges from the point of view of a resource owner.

- Introduction to panel discussion on Service Level Management (SLM) of e-Infrastructures
  - Owen Appleton set the scene for the discussion. He contrasted Grids with other Infrastructure, presented the complexity of the relationships in the Grid community and showed a more idealised model gSLM had developed for a new structure of Grid relationships.

- In depth panel discussion on ITSM and SLM challenges in grids and e-Infrastructure. Owen Appleton moderated the panel and introduced the panellists, who were as follows:
  - Dieter Kranzlmueller, LMU/LRZ: As mentioned above, Prof. Kranzlmueller is an experienced member of the Grid and HPC community and director of a Grid and Supercomputing resource centre.
  - Tomasz Szepieniec, Cyfronet, Poland: Mr Szepieniec is an expert in the Grid domain, where he has participates in several initiatives including EGI_Inspire and PL-Grid, the Polish National Grid Initiative. For gSLM he leads the work package on Studies of Service Delivery Management (SDM) and SLM in Grid
  - Filip De Turck, Universiteit Gent, Belgium: Prof De Turck is an expert in distributed service management, currently working on issues related to cloud computing
2.3. KEYNOTE

The gSLM keynote at BDIM was entitled “Grids, Clouds, and e-Infrastructures: New challenges for IT management” by Prof Dieter Kranzlmüller. It introduced basic grid concepts to the IT service community, and pointed out the challenging issues in production grids that SLAs and service management techniques in order to be solved. It began with a brief history of recent Grid developments and infrastructures, mentioning key user communities and some successes. It provided a definition of Grids, contrasting them with the clouds more familiar to the commercial orientated BDIM and IM communities.

The talk then began discussion of some of the challenges that Grids face around service management. It was clear from the discussions following the keynote that Grid, cloud and HPC initiatives providers of the existing e-Infrastructure can benefit a lot from good practices in ITSM, but before this can happen a clear understanding of the conditions and constraints in implementing ITSM in e-Infrastructures is needed.

2.4. PANEL DISCUSSION TOPICS AND RESULTS

The panel discussion was organized around three themes:

- The need for service management and business alignment on Grid:
  - There was a consensus among the panellists that current practices in Grid are not sustainable. Panellists from both the Grid and ITSM communities felt that different funding and business model should be investigated. So far the funding mechanisms adopted focused on creating the infrastructure, whereas the end-users, often scientists working on specific scientific domains like high-energy physics, were only interested in harvesting CPU cycles and storage.
  - The current best-effort approach used in Grids was enough to allow this type of users to take advantage of the available Grid resources. To guarantee a certain level of QoS with the current management of Grid infrastructure is rather challenging, even a simple update of the Grid middleware might take months before the newly release gets deployed on all available computing resources. Grid Sites are administrated independently and sometimes just finding the appropriate person to contact on a specific issue is a challenge in itself.
  - With the emergence of National Grid Initiatives (NGIs) and the European Grid Initiative (EGI), it is clear that a more advanced IT management is needed to organise and deliver expected performance of an infrastructure which crosses multiple countries and without central control. Having resources residing in different countries makes the management more complex as countries have different legislation regarding sharing of data, privacy, and confidentiality.

- Potential characteristics of Business Driven Integrated Management in Grids, Clouds, and e-Infrastructures:
  - The community must raise awareness within the Grid community on both the user and provider sides, of BDIM tools and approaches. These approaches can bring a certain level of commercial professionalism to the Grid community, a feature not seen in current Grids.
  - Without this attitude, users are likely to misuse resources (like reserving cpu but not using them), while site administrators are likely to provide resources which do not conform with a standard required by users or a Grid, such as running n old version of the current Grid-
middleware or not providing a quality of service that allows users to complete their calculations. It is expected that BDIM tools will bring greater service orientation to the current operation of the Grid, which will improve the attractiveness of the serve to users.

- BDIM tools should also help the monitoring of meaningful service level agreement (SLA), which are currently weak when they exist at all.

- New approaches from Grids and Clouds to “traditional BDIM”
  - Alternative incentive models are needed for the Grid community, which put the users at the centre of the picture. A market-based, contract approach should be considered, where there is a link between money, technology, and policy. There should be a roadmap that associates the use of grid resources with real money, even if there are no actual financial transactions. To achieve this goal, funding agencies must be engaged in the discussion as they are the financial ‘customers’ in the system.

3. MDGS WORKSHOP

3.1. BACKGROUND

Coming toward the end of the first year of the project, the MDGS workshop was the first event organised at a Grid/distributed computing conference. The Euro-Par conference includes Grid computing experts as well as members of related distributed and parallel computing disciplines. A series of workshops covered a wide range of topics including Grid and cloud computing.

The workshop arranged by gSLM was pitched at the Grid and distributed computing communities, almost precisely the inverse of the gSLM contributions to BDIM. Unlike the BDIM contributions, MDGS was run as an academic workshop with a public call for contributions and proceedings to be published in Lecture Notes in Computer Science (LNCS).

MDGS was a full day workshop with three keynotes and eight submitted papers.

3.2. KEYNOTES

The MDGS workshop featured three keynote talks to provide a range of points of view on the issues of Grid service management.

**Keynote 1: Dr. Kuba Moscicki**

**Title:** From top-down to bottom-up: grid services in a complex and dynamic environment

- Dr. Kuba T. Moscicki is a researcher and software engineer at CERN. He is a lead developer of the GANGA project and creator of the DIANE framework. His research interests focus on scheduling and management of distributed and parallel applications, large-scale computing infrastructures such as grids, and various forms of High Throughput and High Performance Computing. Kuba T. Moscicki holds a PhD in Computer Science from the University of Amsterdam.

Dr Moscicki’s talk covered service management as seen by the high-energy physics (HEP) community, including metrics on the jobs run by HEP Grid users and how they try and improve on them. The discussion following the first keynote was centred on the fair share of resources using a bottom-up approach presented, specifically the issue of ‘late binding’, which improves performance of jobs for users but may be undesirable in terms of the overall performance of a Grid infrastructure. Such ‘hacks’ may improve performance for users but can be easily
misused, such as by users submitting more jobs than they needed to guarantee the performance of those they do have.

There was also a discussion about an assertion in the talk, that middleware is getting thinner while the application layer is getting thicker. This shifts the complexity from the middleware to the application. This was a concern for smaller communities that have limited expertise to develop the complexity in the application layer. Tools such as GANGA/DIANE are readily available for communities without the need to develop such complexity and the system is active in small communities.

A clear outcome of this discussion was that there is a problem in the grid when dealing with quality of service. There are technical solutions and managerial solutions, and while the technical solutions presented in the talk have merit, they don’t represent a complete solution.

**Keynote 2: Dr. Michael Brenner**

Title: IT Service Management at e-Infrastructure Providers - Past and Future Steps at the Leibniz Supercomputing Centre

- Dr. Michael Brenner works for the Leibiz-Rechenzentrum’s Leibniz Supercomputing Centre (LRZ) – the computer centre for Munich’s universities and the Bavarian Academy of Sciences and Humanities. He is an expert on service level management and its implementation in e-Infrastructure and computing centres.

This talk demonstrated a case study on the implementation of ITSM at an e-Infrastructure centre. This involved explaining the value of ITSM introduction in terms of the problem it tackled, the difficulties in implementing it and how the system looked at the end. Dr Brenner demonstrated the ITSM suite selected by LRZ during the session, demonstrating the integration between a problem report by a user through to an OLA or SLA, an underlying problem or issue, and how this is remedied through a change management process. This demonstration allowed the workshop participants to see ITSM as a real process rather than a set of intangible and seemingly unreachable goals.

The discussion following the talk was focused on the demonstration of the ITSM system, including the availability of open sources alternatives to the proprietary solution, such as OTRS (http://otrs.org/)

**Keynote 3: Dr. Tiziana Ferrari**

Title: On the EGI Operational Level Agreement Framework

- Dr. Tiziana Ferrari (EGI) Tiziana is Chief Operations Officer at EGI.eu since June 2010. She participated in the design of the European Grid Initiative in the framework of the EGI_DS project, and she has been involved in Grid operations since 2007 contributing to the coordination of operations for the Italian Grid infrastructure. Tiziana holds a PhD in Electronics and Data Communications Engineering from the Universita’ degli Studi in Bologna.

This talk introduced the European Grid Infrastructure and how it conceptualises services as global or local. It described the efforts by EGI to introduce Operational Level Agreements (OLAs) for resource providers and resource infrastructure providers, as well as future plans for OLAs for global services. It also covered plans for SLAs and MoUs with technology providers and other groups. Finally the talk discussed issues around SLAs between EGI and users or user groups.

Discussions covered the issue of user communities and who should sign SLAs, given that virtual organisations are not generally legal entities and cannot sign legal agreements. Contradictory requirements of users were covered, as was how to understand SLA violation when failures might be in the infrastructure, middleware or application layer.
3.3. WORKSHOP PAPERS

Besides the three keynotes the MDGs, eight papers were accepted, after a thorough review, for presentation (the abstract of the papers are listed in the Annex at the end of this report). The papers presented work in the area of Grid and/or service level management covering various issues namely:

- Monitoring of Service Level Agreements.
- Applying service level management tools and procedures in e-Infrastructure service provision practices
- SLA-aware architecture to allow efficient allocation of resources on e-Science infrastructures
- SLA-related activities in on going project like mosaic
- Operational issues related to the creation a viable service with a predefined QoS
- How service Level Agreements can help to provide a comprehensive and sustainable computing infrastructures or e-Infrastructures to support the European scientific community

4. CONCLUSIONS

Organizing the two events has proven to be very constructive if complex for the project, as it helped the consortium to reach a wider audience in both the Grid and ITSM communities. The contributions and the discussions that followed them brought up interesting issues that must be tackled to improve the quality of service provided by current grid systems.

Some of these issues were rather fundamental, such as the structure and purpose of an NGI – which is not fixed or commonly agreed. This extended to who should close agreements with customers, resource centres, NGIs or EGI. Such decisions have major implications for gSLM as different models require quite different approaches to SLM.

Funding was clearly an issue with discussion of the need to make funding schemes for project more user-centric and promote the provisioning of services with managed service levels, in contrast to current funding schemes that might be seen as provider-centric.

The issue of resource ownership also came up repeatedly – with some users arriving with their own resources and so being both user and provider, while in other contexts NGIs may mobilise resources without owning them. In both cases, building simple customer-provider relationships or relationship chains is complex, therefore complicating SLM. Additionally, there are currently few reasons for resource owners to offer resources to new communities that they don’t have a connection to, and few reasons for them to shoulder the additional costs of being part of NGIs in some cases.

The complex but informal nature of the Grid also came up repeatedly. The lack of financial transactions in the sharing of resources in the early stages of Grid development was probably necessary to allow development in an academic environment but makes it difficult to introduce the financially based agreements seen in commercial ITSM. One topic for discussion was the introduction of alternate methods to track the value of services used. Some resource centres already provide usage reports for users that track the value provided even if there is no money changing hands. Providing an estimate of the cost of providing services to users would allow the tracking of value provided across Grid infrastructures, whether locally, nationally or at a European scale. Another option might be a ‘virtual currency’ of arbitrary units rather than even approximations of real currency.

Finally, there was consensus across both workshops (and across other events, talks and discussions with the community) that the current state of service management in the Grid was not sufficient for the continued growth and increased sustainability of European Grid infrastructures.
In terms of the organisation of the workshops, there were several points that came up that can guide future work by the project. In dealing with the ITSM community it is time consuming to explain the situation on the Grid before asking for feedback, and to explain what has already been tried. Hopefully, having engaged with elements of the ITSM community at BDIM, in future elements of this community can be engaged in the discussion, but there will be issues in persuading them that it makes sense to attend Grid events. In the second year of the project only a single workshop is planned, so collocating with two more events may not be possible. If this is the case then the project may try and sue some of the funds for workshops to support participation by ITSM experts.

There is also an issue than in many cases, those in the Grid community not already engaged in improving service management (through encouragement from national and European funding agencies, or perhaps those in operations wishing to improve their efficiency and effectiveness) there is a fear or at least apprehension of ITSM. Commercial ITSM through systems such as ITIL or ISO/IEC 20000 may appear overly complex or bureaucratic and therefore too difficult to implement in the Grid. This issue plays both into the content of the project and into the organisation of events, where we must find ways to encourage participation at workshops. The key appears to be personal discussion where we can explain the approach we take and make it clear that the solutions and advice proposed by gSLM are intended to be achievable.

5. REFERENCES


6. ANNEX

6.1. ABSTRACTS OF THE WORKSHOP PAPERS

6.1.1. PAPER 1: RESOURCE ALLOCATION FOR THE FRENCH NATIONAL GRID INITIATIVE

Presenter: Helene Cordier, (IN2P3/CNRS Computing Centre)

The paper describes the resource allocation model which is currently applied within most National Grid Initiatives was designed with the needs of the EGEE projects and should now be revised: NGIs now especially need to assess how resources and services are delivered to their national community, and expose the return on investment for resources delivered to international communities. The paper describes how the French NGI approach “France Grilles” to define key principles for a national resource allocation strategy that would answer this concern while allowing for the proper definition of SLAs between users, providers and the NGI itself. During the workshop this work was subject to a long discussion.

It was asked about the model for the French NGI when it comes to resource ownership. Resources are owned by the resource providers and not the NGI. The proposed approach defines a threshold that is intended for
dealing with greedy acquisition of resources. It was mentioned that with such a threshold users must have an idea of the resources the need to execute their experiment that might not always be the case. Another interesting point which was raised during the discussion is that the role of the NGI is a little bit fuzzy and raised the point if its comparable to the EGI model. An EGI representative mentioned that for EGI it is better to setup SLA between EGI and NGIs since it alleviates the problem of dealing with tens of SLAs directly to the resource providers. An open question still remains, which asks whether, the French NGI should talk directly to other NGIs or talk up to EGI.

A point was made that for NGIs to attract more resource providers there should be some benefit for the resource provider for example funding for maintenance. It was also noted that Italy’s NGI is only funded for a limited time period after which it has to self-sufficient

6.1.2. PAPER 2: ON THE IMPORTANCE OF SERVICE LEVEL MANAGEMENT IN GRIDS

Presenter: Tomasz Szepieniec (ACC Cyfronet):

The paper supports through the analysis of the Grid foundations and definitions that show the SLM-based ideas were incorporated in them from the beginning. It also describe how implementing SLM in Grids could improve the usability and user- user-experience of the infrastructure - both for its customers and service providers, Finally, the paper present a selection of real-life Grid application scenarios that are important for the research communities supported by the Grid, but cannot be efficiently supported without the SLM process in place. In addition, the paper contains introduction to SLM, a discussion on what introducing SLM to grids might mean in practice, and what were the current efforts already applied in this field.

6.1.3. PAPER 3: ON-LINE MONITORING OF SERVICE LEVEL AGREEMENTS IN THE GRID

Presenter: Bartosz Balis (AGH University of Science and Technology)

The paper addresses the issue of monitoring of Service Level Agreements. The paper presents the state of art in existing Grid monitoring and information services and pointed out the weak points regarding on-line monitoring capabilities to fulfill this case In the most challenging case. The paper describe an SLA monitoring framework which support among other things on-demand definition of SLA metrics using a high-level query language, real-time calculation of the defined SLA metrics, and advanced query capabilities which allow for defining high-level complex metrics derived from basic metrics. SLA monitoring of data-intensive grid jobs serves as a case study to demonstrate the capabilities of the approach. The paper presents an application of Complex Event Processing principles and technologies for on-line SLA monitoring in the Grid.

6.1.4. PAPER 4: CHALLENGES OF FUTURE E-INFRASTRUCTURE GOVERNANCE

Presenter: (Dana Petcu (e-Infrastructure Reflection Group)

The paper presents the recent shift of Applying service level management tools and procedures in e-Infrastructure service provision practices allow users, service providers and funding agencies to investigate e-Infrastructure services in view of individual use cases. The paper claims that this shift should be sustained by legal structure, strategic and financial plans, as well as by openness, neutrality and diversity of resources and services. The latter is the target of e-IRG as an e-infrastructure policy forum envisioned these trends and needs and expressed its position in its recent white paper that is shortly presented and discussed from a perspective of building future research agendas of individual teams. During the workshop the authors claimed that practically any e-infrastructure is considered such as EGI, PRACE, openlab could be considered for Meta management of SLMs described in the paper. An open question remains how this plays out when considering the increasing separation between users and infrastructure, as is the case with clouds.
6.1.5. PAPER 5: INFLUENCES BETWEEN PERFORMANCE BASED SCHEDULING AND SERVICE LEVEL AGREEMENTS

Presenter: Antonella Galizia, (Universita de Genova)

The paper describes an SLA-aware architecture to allow an efficient allocation of resources to jobs running on e-Science infrastructures which is a key issue for scientific communities. The core of this architecture is a scheduler relying on resource performance information. For performance characterization the paper describes a two-level benchmark that includes tests corresponding to specific e-Science applications. In order to evaluate the proposal we present simulation results for the proposed architecture. The discussions following the presentation of this paper raised some concern related to the SLA metric used in this paper namely the job deadline and suggested to use a different metric.

6.1.6. PAPER 6: USER CENTRIC SERVICE LEVEL MANAGEMENT IN MOSAIC APPLICATION

Presenter: Massimiliano Rak, (SUN Napoli)

The paper describes the SLA-related activities in the mosaic project which aims at exploiting a new programming model, which take into consideration the dynamics of the cloud environment, in order to build up a dedicated solution for SLA management. The key idea of SLA management in mOSAIC is that it is impossible to offer a single, static general purpose solution for SLA management of any kind of applications, but it is possible to offer a set of micro-functionalities that can be easily integrated between them in order to build up a dedicated solution for the application developer problem. Due to the mOSAIC API approach (which enable easy interoperability between mOSAIC components) it will be possible to build up applications enriching them with user-oriented SLA management, from the very early development stages.

6.1.7. PAPER 7: SERVICE LEVEL MANAGEMENT FOR EXECUTABLE PAPERS

Presenter: Reginald Cushing (University of Amsterdam)

The paper describes an ongoing operational issues related to the creation a viable service with a predefined QoS to allow published scientific experiments to be reproduced to a certain level of details, the paper is a follow up a previous publication which focused on developing methods and technique to realize the idea of executable papers. In order to provide such a service an SLA/SLM approach is needed, the paper discusses the main challenges and issue facing the realization of executable papers.

6.1.8. Paper 8: Change Management in e-Infrastructures to support Service Level Agreements

Presenter: Knittl, Silvia (Ludwig-Maximilians-Universität München)

The paper describes how service Level Agreements (SLAs) can help to provide a comprehensive and sustainable computing infrastructures or e-Infrastructures (eIIS) to support the European scientific community. A case study outlines and compares the change management process defined by PRACE and LRZ, which is one of the PRACE eIIS partners and resource providers. The analysis shown in the paper, point out that each of the organizations adopts and follows distinct and incompatible operational models. The paper demonstrates how the UMM, a modeling method based on UML and developed by UN/CEFACT, can be applied for the design of inter-organizational change management process. The advantage of this approach is the ability to design both internal and inter-organizational processes with the help of uniform methods. An evaluation of the proposed technique and conclusion ends our article.
6.2. OTHER EVENTS ORGANISED BY GSLM IN THE FIRST PERIOD

6.2.1. GSLM workshop, EGI TECHNICAL FORUM 2011

As part of a Memorandum of Understanding with the European Grid Infrastructure, gSLM ran a 90 minute workshop at their major annual event in September 2011. This event was intended to promote the project to the EGI/NGI ecosystem and receive feedback on its work.

The session began with an introduction to gSLM by project director Thomas Schaaf. This was followed by a brief summary of discussions at the BDIM and MDGS events, followed by a Panel discussion on the topics raised. The panel discussion included representatives of Grid user communities, NGIs and ITSM experts.

It became clear from discussions that neither the user or provider communities are ready for current forms of commercial (revenue based) ITSM. Other discussion covered many of the points mentioned above in the other workshops.

After the discussion a talk by EGI explained their plans for OLAs and SLAs, but also extended to their plans for business models. These models are required in order to allow SLM to be implemented, as the business models and SLM methods are closely related.

Further discussion with EGI after the session opened the way for a greater role to be played by gSLM in assisting EGI in structuring business models and SLM, expanding slightly the slope of the collaboration between the two groups from SLM to the broader range of service management elements including service strategy.

6.2.2. Tutorial ON ITILV3 AND ITSM, EGI TECHNICAL FORUM 2011

On request of EGI, gSLM provided a 90 minute tutorial on ITILv3 and other ITSM frameworks for the EGI community. This event was successful, with 49 conference attendees being introduced to the basic concepts of ITSM. Following this, ITILv3 was introduced and explained, including its benefits and limitations. ITILv3 was then compared and contrasted with ISO/IEC 20000, an international standard based on and compliant with ITIL, as well as with the COBIT framework on IT governance.

The key message of the session was that while all the frameworks introduced had value, none were a simple or always applicable solution. Rather, all the frameworks provided approaches and organizational or conceptual tools that could be adapted to specific situations. Implementation of these frameworks involved interpreting their best practices or descriptions in light of specific situations, as they do not provide actual technological solutions, rather just describe the functions each should provide and the spaces they fulfill in an overall ITSM structure.
D2.1: Report on the first European workshops on Service Level Management in e-Infrastructures

7. GENERAL DOCUMENT INFORMATION

See front page for title, document ID, status, version, creation date, and author(s).

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<th>Adam Belloum, UvA</th>
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7.1. VERSION HISTORY & CHANGE LOG

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