

Status of EGI and the Specialized Support Centre for HEP

WLCG Collaboration Board
Friday 13th November 2009

Overview

1. This presentation will summarize the work-packages in ROSCOE & EGI InSPIRE with emphasis on those *directly* relevant to WLCG
 - This means Services for Heavy User Communities in EGI InSPIRE (1.2.1.2)
 - The services under EGI (1.2.1.1) are more strongly related to the discussions later this afternoon and I am not directly involved (so I probably know less than you anyway...)
2. More importantly, I will try to suggest how we (WLCG) work with both of these projects / constructs in the short term (2010/2011) as well as the longer term perspectives
 - I would prefer to spend closer to 30' on the second point – together with **discussion** – but this will require going through the description and status of ROSCOE+InSPIRE rather quickly...

Summary

- The deadline for submitting these proposals is November 24th 2009 at 17:00 Brussels time
- We can expect the proposals to include requests for funding for:
 - **Services** for Heavy Users, including Ganga, Dashboards & LHC VO-specific services
 - A “one-time” injection to cover the transition to EGI
 - **Support** for [HEP] (Experiment) Integration, Operations, Distributed Analysis etc.
 - IMHO **not** limited to once-only funding!
 - We should start to make the arguments **now** for why this is valuable (“a steal”) for Europe / the world / ...
- ☹ **Overhead!** That comes with each of these...
 - Some of this we would do anyway... but some we wouldn't

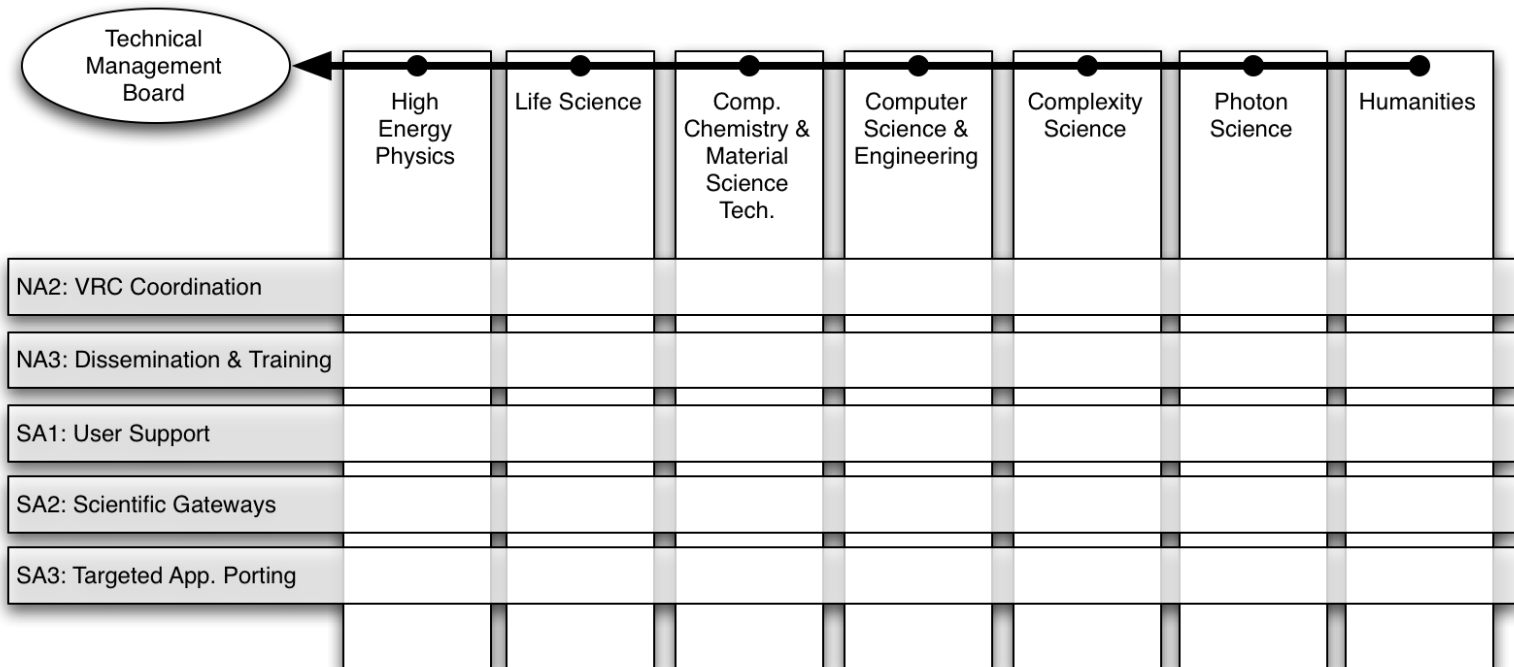
**ROSCOE – INFRA-2010-1.2.3:
VIRTUAL RESEARCH COMMUNITIES**

What is ROSCOE?

- *Robust Scientific Communities for EGI*
 - INFRA-2010-1.2.3—Virtual Research Communities
 - **Which means we don't say "SSC" anymore!**
- Many partners, many disciplines:
 - Mature Virtual Research Communities (VRC) within ROSCOE are High-Energy Physics, Life Sciences, Computational Chemistry & Material Science Technology, and Computer Science & Engineering.
 - ROSCOE targets three nascent communities: Photon Science concerning users of synchrotron radiation (light) sources, Complexity Science concerning the analysis of complex, interconnected systems, and Humanities.
 - ROSCOE safeguards current international scientific collaboration, expands that collaboration to new scientific disciplines, and prepares existing and nascent communities to be reliable, stable partners within EGI ecosystem, thereby maximizing the scope and impact of their scientific work.
- **Objectives (call):**
 - **Enable and increasing number of users & communities ... to use ...**
 - **Remove constraints of distance, access, usability ... barriers between disciplines ... for more effective scientific collaboration and innovation**

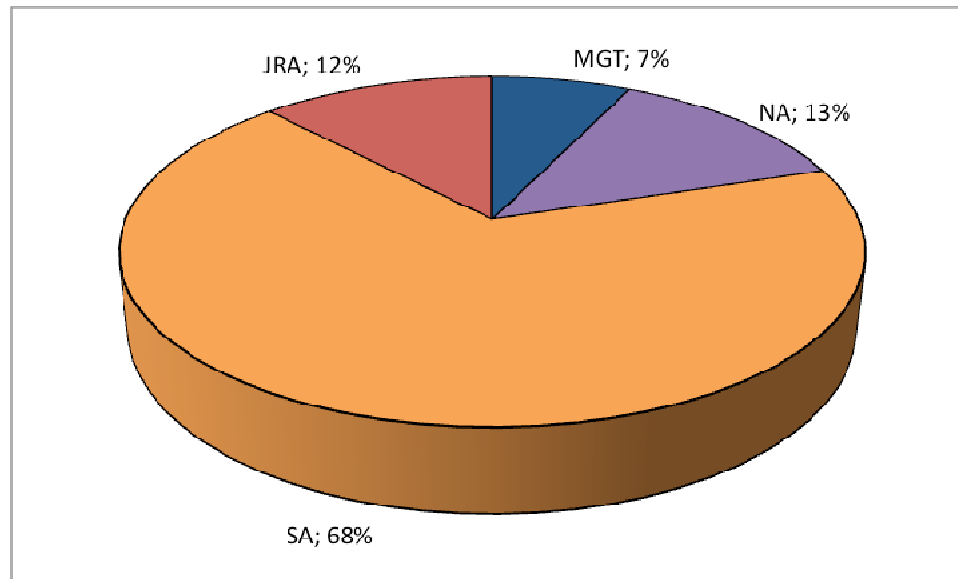
What's in ROSCOE?

- 3 NA WPs, 3 SA WPs and at least one JRA
 - Lead partner is CNRS – Cal Loomis
 - We're in NA2/3 (un-funded) & SA1-3 (almost un-funded (30% “officially” ...))



Project Overview

Area	Total Cost	EU Contribution		Fraction
		Current	Target	
Management	1,113,576	640,626	500 k€	6%
High Energy Physics	6,288,653	2,688,476	2700 k€	32%
Life Sciences	2,717,281	1,133,436	1000 k€	12%
Comp. Chemistry	2,257,096	1,001,095	1000 k€	12%
Grid Observatory	2,312,864	1,001,321	1000 k€	12%
Photon Science	2,944,800	1,390,188	750 k€	8%
Complexity Science	1,759,200	749,693	1000 k€	12%
Humanities	728,312	282,799	500 k€	6%
TOTAL	20,121,782	8,887,634	8450 k€	100%



**CERN: € 900K
= 3 fellows
for 3 years + travel
& overheads**

NA2 – VRC Coordination

- **Objectives**
 - Coordinate VRC activities
 - Liaise with other EGI activities and EGI-related projects
 - Liaise with NGIs about deployment of services and provision of resources
 - Facilitate sharing of resources
 - Develop and implement VRC policy and procedures
 - Develop sustainability and exploitation plans
 - Evaluate technical and scientific impact
- Effort: CERN (liaison to WLCG and other HEP coordination bodies): **0.5 FTE, un-funded**; OSLO (liaison to EMI): **0.5 FTE, co-funded**.
 - We've minimized this to reduce overhead whilst retaining the possibility to use (minimal) travel funds for named suspects

NA3 – Dissemination & Training

- **Objectives**
 - Coordinate dissemination activities
 - Disseminate VRC activities within the targeted VRC communities
 - Coordinate training activities
 - Coordinate participation in general training events
 - Provide focused training events for VRC communities
 - Coordinate VRC participation in EGI User Conferences
 - Organize ROSCOE participation in strategic non-EGI conferences
- CERN will coordinate the HEP contribution to this activity (**0.5 FTE, unfunded**).
 - Same comments as for NA2

SA1 – User Support

- **Objectives**

- Create and maintain targeted documentation
 - Provide support concerning use of the grid infrastructure
 - Provide user support for domain-specific services and applications
 - Provide intensive debugging support for operational problems
 - Contribute to the treatment of user support tickets
 - Investigate novel mechanisms for providing user support
 - Support for the evaluation and testing of pre-production services
- Operational support for all of the tasks above for the LHC experiments will be provided by CERN (**2 FTEs, co-funded**), INFN (**2 FTEs, co-funded**) and UIO (**0.5 FTEs, co-funded**).
 - GSI will provide operational support for all of the above tasks for the FAIR community (**2 FTE co-funded**)
 - DESY will provide operational support for all of the above tasks for the ILC community (**1 FTE co-funded**)
 - CESNET will investigate generic and sustainable implementation of LHC data analysis (Tier3) support (**1 FTE, co-funded**)

SA2 – Scientific Gateways

- **Objectives**
 - Operate existing portals during evolution to accepted portal implementation(s)
 - Maintain documentation, information, and news on VRC portal
 - Ensure that the VRC portal functions effectively for the target community
 - Extend functionality of VRC portal to meet needs of the community
 - Manage transition to common scientific gateway implementation
- ***K? (i.e. this may sound a little strange but...)***
- **“A gateway should encompass the following functionality:**
 - **Documentation, information, and contacts**
 - **Events/News**
 - **Monitoring view of activity within the VRC/VO**
 - **Monitoring of services**
 - **Access to and management of data**
 - **Access to grid services”**
- Effort: CERN (**2 FTEs co-funded**)

SA3 – Targeted Application Porting

- **Objectives**

- Port example applications covering common use cases.
 - Port strategic applications with high scientific, social, or economic impact.
 - Interface common analysis frameworks or APIs with grid infrastructure.
 - Optimize and maintain common scientific libraries for the grid infrastructure.
- Effort (Ganga support and evolution): CERN (**1 FTE co-funded**), IC (**1 FTE co-funded**), BHAM (**1 FTE, co-funded**), UIO (**1 FTE, co-funded**), DESY (**1FTE co-funded**)
 - Effort (Integration of LHC experiments frameworks): INFN (**2 FTEs, co-funded**), CERN (**1 FTE, co-funded**)

HEP Manpower Summary

Partner	WP	Effort	Goals
BHAM	SA3	1 FTE	Distributed Analysis Support – focus on ATLAS
CERN	NA2	0.5 FTE	Liaison (un-funded)
	NA3	0.5 FTE	Dissemination & Training (un-funded)
	SA1	2 FTEs	User & Operations support
	SA2	2 FTEs	Dashboards (“portals”)
	SA3	2 FTEs	Distributed Analysis Support, Integration Support
CESNET	SA1	1 FTE	Support for Distributed Analysis
DESY	SA1	1 FTE	Operational support for ILC
	SA3	1 FTE	Targetted application porting for ILC
GSI	SA1	2 FTEs	Operational support for FAIR
IC	SA3	1 FTE	Distributed Analysis Support – focus on LHCb
INFN	SA1	2 FTEs	User & Operations support
	SA3	2 FTEs	Integration support
UIO	NA2	0.5 FTE	Liaison to EMI
	SA1	1 FTE	Distributed Analysis Support – focus on ATLAS

Based on real costs for real people with overheads – except CERN: €100K/FTE year

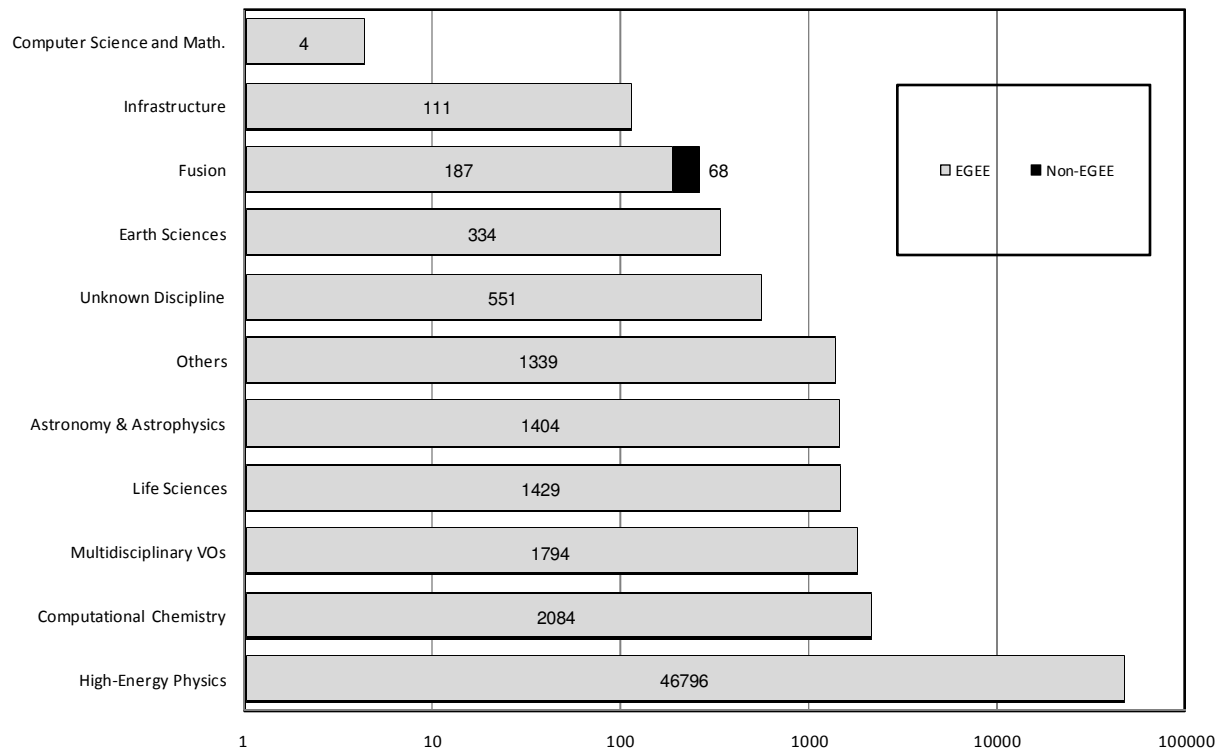
INSPIRE – INFRA-2010-1.2.1:

DISTRIBUTED COMPUTING INFRASTRUCTURE

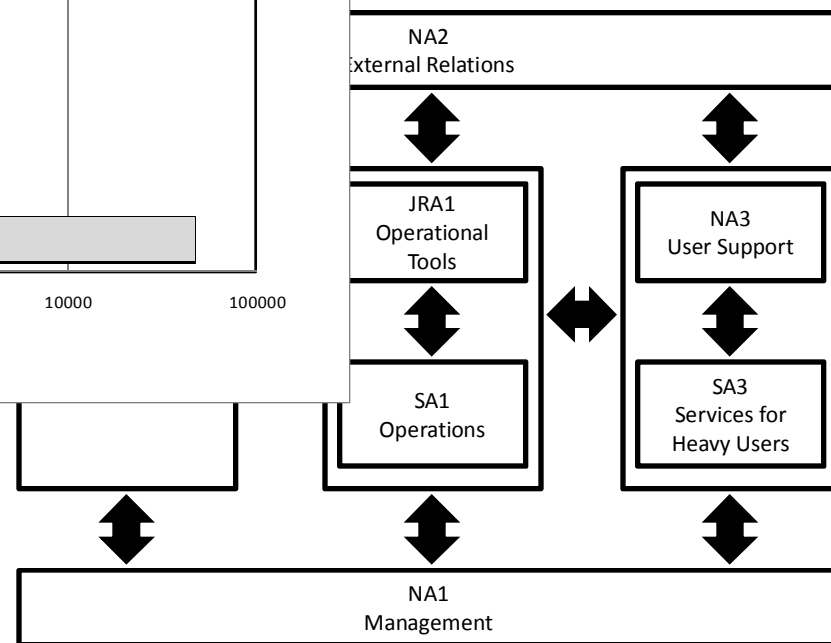
1.2.1.1 – THE EUROPEAN GRID INITIATIVE

1.2.1.2 – SERVICE DEPLOYMENT (“HEAVY USERS”)

EGI InSPIRE & Services for “HUCs”



Approx. No. of CPUs Used 9/2008-8/2009



Shared Tools & Services

Item	Functionality	Funded HUC	Current HUC Adopters	Future HUC Adopters
Dashboard	Monitoring	HEP	HEP, LS, CCMST, ES	A&A
GANGA	Task Management	HEP	HEP, CCMST, A&A, ES	F, LS
DIANE	Task Management	A&A	A&A, ES, LS	
GReIC	Database Access Service	ES	ES, A&A, CCMST	
Hydra	Encrypted Data	LS	LS	
SOMA2	Web based workflow	CCMST	LS, CCMST	
TAVERNA	Workflow Manager	LS	LS, A&A, CCMST	
Roaming Access Server (RAS) & Migrating Desktop (MD)	Running Interactive Applications	F	F, ES	A&A, LS
Gridway	Resource Broker	F	F, ES	LS
MPI	Programming Model	CCMST & F	CCMST, F, ES	A&A

SA3 “HEP” Tasks

- **TSA3.3.1 Dashboards**

- In order to perform production and analysis tasks across a highly distributed system crossing multiple management domains powerful ...

- **TSA3.3.2 Applications**

- **GANGA** ... has been developed to meet the needs of ATLAS and LHCb for a Grid user interface ...

- **TSA3.4: Services for HEP**

- Building on ... the LHC experiments have developed important complementary services particularly in the areas of data and workload management, as well as in support for analysis services...

SA3 – non HEP Tasks

- **TSA3.5: Services for Life Sciences (LS)**
 - This task will provide services and service deployment for the Life Sciences community. ...
- **TSA3.6: Services for Astronomy and Astrophysics (A&A)**
 - ... The A&A community will Grid enable visualisation and associated data interpretation tools ...
- **TSA3.7: Services Earth Sciences (ES)**
 - Implement, deploy and maintain the EGDR service to provide access from the grid to resources within GENESI-DR.
- Plus additional sub-tasks under **TSA3.3: Shared services and tools**, as well as **TSA3.2: Outreach to potential heavy user communities**

SA3 “HEP” Manpower

	Year 1	Year 2	Year 3	Year 4	
TSA3.1	6PM	6PM	6PM	6PM	Activity Management
TSA3.2.1	24PM	24PM	24PM	-	Dashboards
TSA3.2.2	24PM	24PM	24PM	-	Ganga + Diane
TSA3.3*	108PM	108PM	102PM	-	VO services
TOTAL					486PM

* 24 PM allocated to INFN in years 1 – 3

“with the proviso that these people will get INFN money for staying at CERN virtually full time”

[and assuming no further cuts / surprises!]

Check-point...

- If we are successful the sum of the two proposals represents extremely valuable manpower – that **more** than **compensates** for the on-going losses – to cover the early years of LHC data-taking
- We need to be aware that the reductions have already started: there will be a dip before funding arrives
 - **1 June 2010** – most likely backdated by 1 month
- We need to balance resources & preserve where possible existing knowledge and effort
 - CERN / partners
 - Staff / fellows / ...
- We need to prepare **now** for the longer term
 - Sustainability “post-FP7”

Working Methodology

- *Posit: by working together with the other communities in EGI InSPIRE & ROSCOE we can address not only some/many of our needs, the “expected impact” explicitly listed in the Call itself, but also longer-term socio-economic issues*
 - Time-scale: decades; impact: significant; cost: O(€1M/year/community)
- **The EU is well positioned to fund cross-discipline activities and to invest in Europe’s future well beyond the horizon of governments and (at least some) funding agencies**
- If we believe this – and I do – then it should translate directly into our work-plan within and across these projects
 - Our input to the proposals (impact etc.) has been along these lines
- This is also consistent with the stated goals of CERN

ROSCOE & other VRCs

- We will be expected / required to participate in ROSCOE / VRC meetings, trainings, schools and other events
 - This is similar to the past: we have been gradually increasing the HEP content in EGEE conferences and User Fora
 - Allows us to cover similar issues as in dedicated “WLCG Collaboration” and other workshops **and also** look for synergies – e.g. other communities using Dashboards, Ganga;
- Proposal: use April User Forum to kick-off “HEP VRC” activities / HUC meetings
 - Pre-CHEP WLCG workshop not foreseen for 2010 (timing, location)
 - We probably need to re-think such events in any case in the light of LHC operations: some stream-lining in any case could be useful...
- 1st EGI conference – presumably in Amsterdam – should clearly be used to develop this theme further
- Connections beyond Europe also essential for WLCG: how do we maintain and even expand our contacts with (projects in) these regions?

Mind the Gap

- Somehow we need to find a way (very rapidly) of bridging the gap not only between EGEE III & EGI but also other funding (e.g. INFN fellows)
 - 1 fellow started in August as part of EIS team;
 - Synergies with EnviroGRIDS project & Ganga;
 - Visitor from Prague on VO services recently – repeat early 2010 if funds available
 - Bridging (to what?) funding for remaining EIS fellows
 - Other funding?

DISCUSSION

Conclusions

- The deadline for submitting these proposals is November 24th 2009 at 17:00 Brussels time
- The proposals include requests for funding for:
 - **Services** for Heavy Users, including Ganga, Dashboards & LHC VO-specific services
 - **Support** for (Experiment) Integration, Operations, Distributed Analysis etc.
- The sum of the two proposals should provide extremely valuable effort to cover the early years of LHC data-taking
- Using these projects, we can prepare not only for the medium-long term but also demonstrate significant socio-economic impact that goes way beyond HEP
- This **may** open the door to **future funding**.