



## **Grid Services and Support for the WLCG, HEP and Related Communities**

This document summarizes briefly the services and other grid-specific support activities foreseen for the above communities. It discusses activities for which funding under INFRA-2010-1.2.1.2 and INFRA-2010-1.2.3 will be sought. It assumes and requires support for activities in (at least) the areas INFRA-2010-1.2.1.1 and INFRA-2010-1.2.1.3. The dependencies on these activities are also listed.

1. The user community targeted under Service Deployment is WLCG (“services for user communities that are heavy users of DCIs and have multi-national dimension”) – call INFRA-2010-1.2.1.2;
2. The communities supported are broader, including also other HEP experiments and communities related by discipline (e.g. Photon Science) or tools / technology (e.g. International Entities / projects such as EnviroGrids) – call INFRA-2010-1.2.3;
3. We assume that “EGI” will provide the full range of activities listed in the e-Infrastructures in FP7: call 7 (WP2010) information document. The specific functions that WLCG depends on have been itemized several times. Some of these may continue – at least for an initial period – in their current form and / or be provided by the same entity as now. However, the transition process can no longer be that initially foreseen and some discontinuities will have to be handled (reduction in staff, transfer of functions, such as operations coordination etc.);
4. We similarly assume that the “EMI” and / or other middleware projects will cover the needs for production-quality, service-ready middleware. The absolute priority for the represented communities being stability and continuity;
5. The communities represented are international – often global – and require coordination with grid activities in other areas (OSG, Asia-Pacific, ...). It is assumed that much of the work to ensure interoperability and interoperation at this scale will fall on the communities requiring such functionality;

### **Service Deployment**

6. The LHC experiments – through the WLCG project – are heavy users of many services built on gLite (and other) middleware components;
7. The full set of services that are currently in production use must continue – at least for an initial period and until a suitable production-proven alternative has been demonstrated and the necessary migration planned and performed;
8. In addition, the experiments require additional services which leverage the more generic infrastructure (middleware, catalogs, databases, information systems etc.) using additional knowledge – for example of data, site hierarchies, location of replicas etc – to build yet more powerful services;
9. These include data and workload management services, as well as production and analysis monitoring frameworks and tools;



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10. Assuming that the underlying middleware and associated services continue to be supported by a combination of EGI / EMI / NGIs, the services required in this area are limited to the above (for more details see section 4.3.1 of the draft chapter “Applications and Community Support: Transition Plan” of the EGI\_DS Transition document);
11. Should this not be the case, man-power to support the corresponding middleware and / or services will be required. The consequences could be significant and therefore this must be clarified as soon as possible;
12. The total effort required in this area is currently estimated at 30FTE, the funding of which is expected to be split across stakeholders together with co-funding that will be sought under 1.2.1.2;

### **Virtual Research Communities (SSC)**

13. To complement the services and operation described above and to ensure the efficient exploitation of the grid infrastructure leading to scientific results and publications, an SSC covering not only the WLCG community (LHC experiments) but also the full HEP community, related scientific disciplines and communities using the same technology is proposed. This reflects today’s reality plus the desires of the prospective partners / entities;
14. The work that will be carried out by the SSC will be predominantly support for production exploitation of the Grid, following on from the successful adaption of numerous major applications and their communities to the Grid environment, ensuring that the return on past investment is maximized. Ease of use, low cost of entry and of ownership will be key priorities;
15. The estimated budget required is EUR10M, of which 50% will be requested from the EU;

### **Summary**

16. We have presented an outline plan for proposals in the areas of 1.2.1.2 and 1.2.3 of the e-Infrastructures in FP7: call 7(WP2010);
17. The total effort currently foreseen is approximately 30FTE against 1.2.1.2 and 25 against 1.2.3, with co-funding envisaged in both areas;
18. These numbers are still draft and are dependent on external factors, such as the services / middleware that are expected to be provided in other areas, e.g. by projects funded through 1.2.1.1 and 1.2.1.3 in particular.

### **References & Further Reading (see [HEP SSC preparation wiki](#))**

HEP SSC lobby document

EGI\_DS transition document – Application & Community Support Chapter (draft V0.9 – see below)

WLCG Data Taking Operations

WLCG in the EGI/NGI era



**Summary of Manpower Requirements**

Key	Activity	Effort 1.2.1.2	Effort 1.2.3
1	Operations and user support liaison	1	
2	Middleware liaison	1	
3	Services for heavy users (“core”, i.e. FTS)	6	
4	Additional VO-specific Services	10	
5	Dashboard, Ganga, Diane, AMGA	4 + 2 + 1 + 1	
6	WLCG “EIS”		8
7	Analysis tasks for WLCG		2
8	Grid technology outside LHC		4+2+4 + (4 to 8)
9	International communities		1.5
10	TOTAL FTE	26 (+4?)	~21.5 – 25.5
11	TOTAL EU Funded	13 (+2?)	11 – 13

**Notes**

1. Liaison / coordination function between Service Delivery for heavy multi-national users & Operations & User support functions in EGI.
2. Liaison / coordination function between Service Delivery for heavy multi-national users & Middleware providers.
3. Services – such as FTS, LFC etc – that have up until now been provided through EGEE III but may no longer be considered core in EGI. Additional resources may be required depending on the scope of EGI / EMI.
4. VO-specific services that build on the above but use knowledge of VO computing models, data placement policies, site hierarchies etc to provide significant additional functionality, e.g. DQ2, PhEDEx.
5. Other named non-VO specific services.
6. WLCG SSC-like functions, traditionally referred to as “EIS”, but refocused on needs of LHC data taking and production (i.e. less “integration”).
7. Additional support for analysis activities – delivering on the LHC machine and detectors potential.
8. Similar SSC functions for non-LHC and non-HEP VOs.
9. Support for several other EU-funded Grid-connected projects: EnviroGrids, Partner etc which may rely on a subset of the above tools and/or CERN/WLCG Gridification experience.
10. Total FTE requirements by call area.
11. Total FTE requirements for which EU funding is foreseen (50% of the above).



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**N.B. the above table is extracted from the Application & Community Support chapter of the draft EGI\_DS transition document. This document is still work-in-progress and will be revised in September to be made consistent with the draft proposals and once the open issues are resolved.**