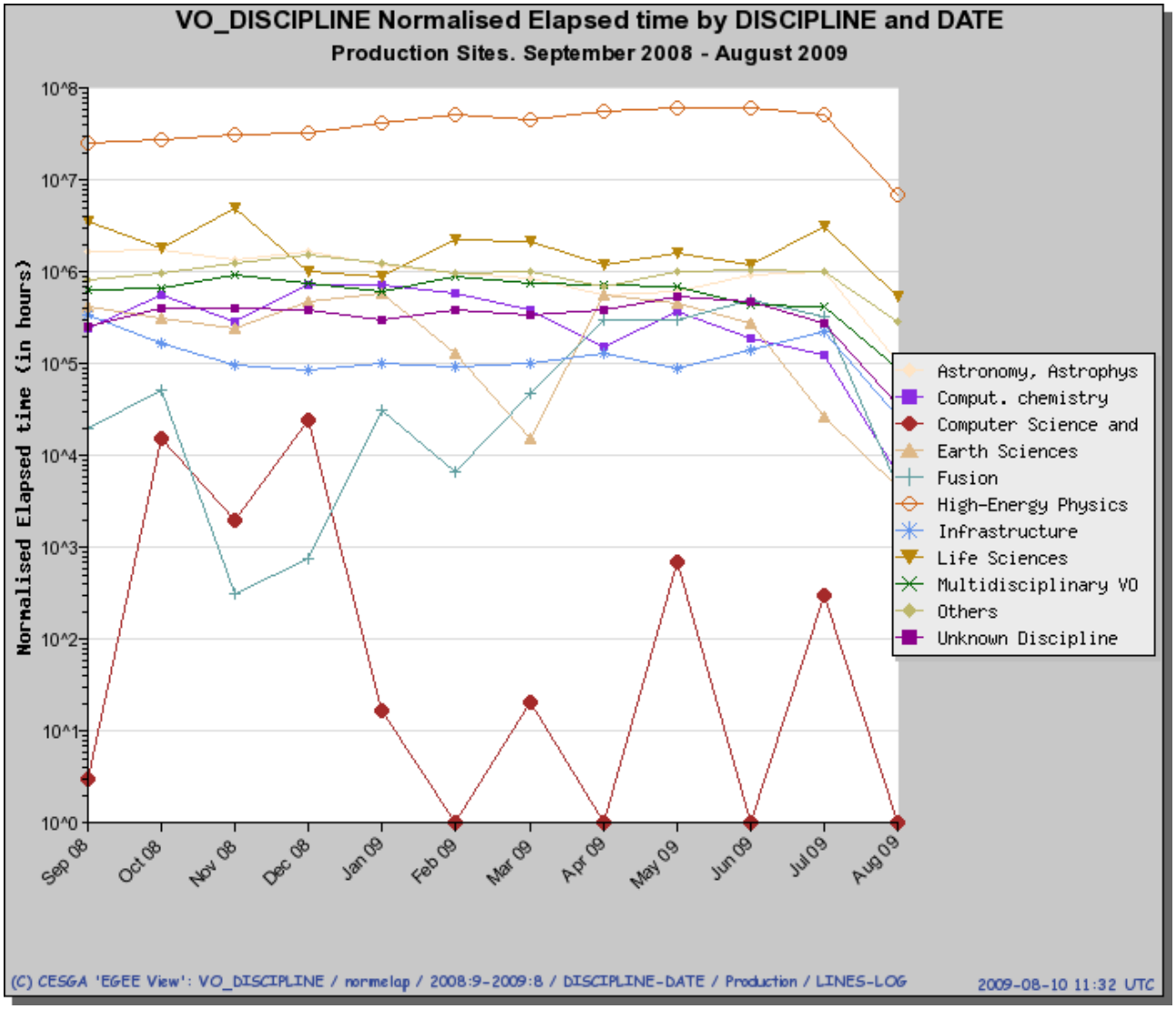
1.5.4 Activity SA4: Services for Communities of Heavy Grid Users

1.5.4.1 Activity Description

The support of the services needed by the present heavy users of the grid, is a key Service Activity in this Proposal, in response to the 1.2.1.2 sub-call. These services are build over the basic middleware components that in year 2008 (and beforehand) are provided by EGEE and other interoperable projects, and include both middleware services (e.g. FTS) and the frameworks that relay on the elementary components and services for performing functions tailored for specific communities (e.g. the Dashboard for the monitoring of the grid for specific VO's). The EGI support to these services includes their deployment, operation, and evolution for adapting to the needs both of the community that originally used the service, and of a larger set of users. The deployment and operation is part of this Activity, while the evolution is treated in JRA2

The European Grid Infrastructure is presently actively used by some scientific disciplines that heavily relay on this infrastructure for carrying on their research activity. The graph below, showing the monthly usage in the year from September 2008 to August 2009 by the different Scientific disciplines, gives clear indication of this massive usage.



The graph is taken from the EGEE accounting portal, the unit is Hours.1kSI2k elapsed time; in very first approximation a 10^6 in the vertical scale corresponds to about 2000 typical processors continuously working for the full month.

The Communities identified as Heavy Users Communities (HUCs) are

- High Energy Physics (HEP)
- Life Sciences (LS)
- Astronomy and Astrophysics (AA)
- Computational Chemistry and Material Sciences (CCMT)
- Earth Sciences (ES)

Besides the massive usage of the Grid, the HEP and LS have played a pilot role in EGEE, giving decisive contributions for bringing the grid at production quality level, via feedback on the deployed services efficiency and functionalities, stress tests of the infrastructure and selected components, etc. It is expected now that all the HUCs will be able to play a similar role for the services of their interest included in this Activity, and at least in some case for specific aspects of the EGI grid (e.g. further scalability in case of HEP)

A key element for the satisfaction of the needs of these users, and for ensuring the continuity and enlargement of the role of "pilot users", vital for the grid, is providing them with the higher level services they need. In general these services are already used by the community, with some support by EGEE and the other interoperable projects.

The first objective for SA4 is that Heavy Users Communities experiment no disruption of their activity with the transition of the e-infrastructure to the EGI support. In fact EGI aims at increasing the satisfaction of these main users, also in view of expanding the Grid usage within the disciplines they belong to, and toward new disciplines. SA4 will grant to the communities the continuity and good integration of services in the general grid, and will shape the provision of these services so that they are efficiently used by all the presently interested user communities and extend their usage to new communities.
SA4 will work so that most services will become more standard and easy to configure, deploy and operate. Some services will retain interest only for a small fraction of the user communities, and in perspective will be supported primarily by these communities with reduced contribution from EGI, while some other services will become more general in their use and will in the future become integral part of the EGI general infrastructure.

1.5.4.2 Assumptions on the general services available outside SA4

The services provided in SA4 are the services needed by the HUCs and not included in the general EGI infrastructure, nor supported by any other trusted provider.

The following Table.SA4.1 provides a list of the general services available outside SA4; when the service is not included in the general EGI infrastructure the provider is indicated

Compute Element from gLite and ARC	
LCG CE?	?
SE from GLite and ARC	
dCache	?
StoRM	
Castor	CERN
SRM	
GridFTP	
Info.services from gLite and ARC	
Accounting from gLite and ARC	
Authorization Services from gLite and ARC (e.g. VOMS, MyProxy, SCAS LCMAPS, LCAS, gLExec)	
Work Load Management services (e.g. WMS)	

Each HUC provides the indication of with detailed services in the list are of interest for it, specifying the use, the importance etc.

1.5.4.3 Task Description

1.5.4.3.1 TSA4.1 SA4 Management

The SA4 management comprises the full time Activity Manager, with the responsibility of supervising the services and coordinating their provision with the relevant communities.
He/she is assisted by representatives of the relevant communities, with the expertise necessary for providing feedback on the working of the services and input on the modification that may be needed, in configuration, operation and deployment of the services for the specific communities.
The effort needed from the representatives of the communities depend from the amount and complexity of the services requested by the specific community

The SA4 manager will be a member of the MCB

1.5.4.3.2 TSA4.2 Hosting of Community specific Services

Provision and operation by a small number of NGIs of Core Grid Services (O-N-8) explicitly needed to support this user community, but of potential benefit to other communities.
These centres will be experts and provide an SLA around the hosting of services such as FTS, LFC, Hydra, AMGA and VO specific services.
*This list is an **example** of services and the writers from the specific communities should introduce here the services of their interest,if any; for each service please provide*

- *The description and the motivations*
- *The evaluation of the effort*
- *The NGI(s) proposed for hosting and their share of the effort*
- *Indication of SLA/SLD*
- *Interested HUC(s)*

1.5.4.3.3 TSA4.3 Hosting of VO specific Services

Provision and operation by a small number of NGIs of Core Grid Services (O-N-8) explicitly needed to support this VO, but of potential benefit to other users.
Justified if the VO users are a relevant fraction of the Grid users and/or they use a relevant fraction of the grid resources, or if the service is foreseen to become of more general interest during this Project.
The writers from the specific communities should introduce here the services of their interest, for each service please provide

- *The description, and the justification*
- *The evaluation of the effort*
- *The NGI(s) proposed for hosting and their share of the effort*
- *Indication of SLA/SLD*
- *Interested HUC(s)*

1.5.4.3.4 TSA4.4 Support of Frameworks

The frameworks integrate different components and services for performing functions tailored for specific communities or VOs
An example are the VO Dashboards: VO Dashboards have been found to be very useful by large VOs to provide a VO view of the infrastructure for their community. Other examples may be GANGA, PHEDEX, DDM, WISDOM

This task in case of Dashboard includes the hosting of the service and the integration and development of VO specific tests, driven by the particular user community, necessary to verify the correct functioning of the infrastructure for their work. This will also draw on the generic service monitoring infrastructure and tests maintained by the NGIs.

The content is analogue in the case of the other Framework and should be described by the specific writers

The writers from the specific communities should introduce here the frameworks of their interest, if any; for each framework please provide

- *The description, and the justification*
- *The evaluation of the effort*
- *The NGI(s) proposed for contributing and their share of the effort*
- *Indication of SLA/SLD if applicable*
- *Interested HUC(s)*