d4science

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Middleware Deployment and Operational Support Procedures

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Research Infrastructures

INFRA-2007-1.2.2: Deployment of
e-Infrastructures for scientific communities

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EXECUTIVE SUMMARY

The objective of the D4Science Service Activity is to deploy and maintain a stable production infrastructure to support the activities of the project two user communities: Environmental Monitoring (EM) and Fisheries and Aquaculture Resources Management (FARM). The infrastructure gathers hardware resources from several members of the project and runs gLite and gCube software to provide reliable Virtual Research Environments (VREs) belonging to the different Virtual Organizations (VO) of the project user communities. The provision of an efficient production-level infrastructure and the successful deployment of VREs is based on two key aspects: (1) the definition and strict execution of a concrete deployment plan describing the infrastructure resources involved, and (2) the compliance with established operational procedures based on a well defined set of tools.

In the first year of the project two major infrastructure milestones have been achieved: MSA1.1 and MSA1.2. These milestones correspond to the availability of the infrastructure, through the provision of different VREs, first to the EM community and then to the EM and FARM communities. Such achievement was based on the deployment strategy and operational procedures previously defined in deliverables DSA1.2a and DSA1.2b.

This deliverable (DSA1.2c) updates its predecessors by reporting the modifications introduced in the deployment plan and in the procedures, in order to maintain operational the D4Science production infrastructure during the second year of the project and prepare the achievement of MSA1.3.

The content of this deliverable is made available through the D4Science infrastructure wiki site available at the following location:

- https://infrastructure.wiki.d4science.research-infrastructures.eu

The deliverable is organized in different sections. The most relevant part of the deliverable is presented in the “Deployment Plan” and “Roles & Procedures” sections. The first section presents the sites involved in the infrastructure and the major milestones planned for its deployment and operation during the project lifetime. More detailed information about the envisaged nodes and services deployment plan is also presented. The second section reports on the procedures and tools regulating the operation of the infrastructure. This information is organized in different sub-sections corresponding to the different roles of the individuals operating and exploiting the infrastructure. A summary table, matching the procedures associated to each role, has been added in the wiki overview page, to facilitate access to the correct information.

One major change introduced in this deliverable update is the clarification of the roles needed to manage and exploit the infrastructure. Previous versions of this document were already organized according to the different infrastructure roles. However some roles were not clearly mentioned while their responsibilities were assumed in different procedures descriptions. In DSA1.2c all infrastructure roles are now described. Each role is presented by (1) explaining the associated responsibilities and tasks, (2) identifying the project members with such role, and (3) listing the procedures associated to the role.

The current roles of the D4Science infrastructure are: Coordinator, Site Manager, Data Manager, VO Admin, VRE Designer, VRE Manager, VRE User, and Support Team.

From the deployment plan point of view this deliverable brings some updates with respect to the previous versions:

- The number of hardware **Nodes** allocated for the second year of the project has been revised in DSA1.1b (January 2009) and is also reported in DSA1.2c. A slight increase of machines, with respect to the nodes made available in MSA1.2, is foreseen. The increase will come mainly from the user communities' side. Technological partners are not expected to increase their contribution;

- The distribution of gCube and gLite **Nodes** among the hardware resources has been also slightly revised. In particular, the revisions concern: the upgrade of all gLite services to version 3.1; a better replication of gCube services; and the deployment of more gHNs to support the creation of new VREs.

- The **Milestones** description has been revised to report the achievement of MSA1.2. The plan towards MSA1.3, due on November 2009, are kept unchanged.

Most of the changes applied in this deliverable concern the infrastructure operation procedures:

- The **Infrastructure Support** procedure has been revised to reflect the enlarged scope of the infrastructure support tickets. Any infrastructure user can now create a "production support" ticket to report a new incident but also to express a new request;

- The descriptions of the **Incident Management** and **Service Request** procedures have been merged in one common page. These procedures have also been enriched with the addition of a new activity to classify and prioritize all new tickets. This introduction allows to better organize the work of the Support Team;

- A new procedure for **Data Validation** has been added. It explains the conditions to stage new data into the infrastructure and make it available in the different infrastructure VOs. The inclusion of such procedure highlights the importance that data resources have in a gCube enabled infrastructure;

- Two new procedures for **VO Deployment** and **VRE Deployment** have been added. These procedures explain the requirements and different steps needed in order to deploy a new VO or VRE. These procedures were already being implemented in MSA1.2 but are only now added in a project deliverable;

- The **Access Management** procedure has been modified to describe the new user registration interface. This interface allows non-project members, belonging to any of the project user communities, to request an account that can access the infrastructure portal.

Some of the modifications applied to the infrastructure operation procedures also add the objective of introducing terminology and concepts coming from internationally accepted best practices, such as Information Technology Infrastructure Library (ITIL).

The current revision of the operational procedures and the minor modifications in the deployment plan create the conditions to accomplish the Service Activity objectives for the second year of the project since they: (1) improve the service quality by providing reliable VREs to the project user communities; (2) reduce the maintenance costs by improving the infrastructure operation activities; (3) increase the number of infrastructure resources (hardware, data, and services); and (4) expand the VREs functionality driven by the community requirements.