NGI H2020 Profile

**IBERGRID (Spain + Portugal)**

 08-05-2014

# Target user communities

* *Provide information here about the* ***top three*** *target international user communities (Research Infrastructures of the ESFRI roadmap, other international research collaborations and projects) that are part of your NGI strategic user engagement roadmap*
* *Provide information about how resources (data, storage,…) will be made available in your NGI to the community and according to which policy*

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| --- | --- |
|  | **Research Community/Project description (list in order of descending priority)** |
| **LIFEWATCH** | IBERGRID is engaged with LIFEWATCH through the provision and coordination of core ICT-Services. IBERGRID is the infrastructure over the core services of Lifewatch will be deployed. Such services need to interact with other services that will be deployed in the Netherlands (Virtual Lab) and Italy (Service Center). |
| **HEP and Astroparticle Physics** | IBERGRID, through LIP and CSIC, is directly involved with the communities. The communities have its own computing capacity that is integrated in the NGI. That capacity is used within the collaborations the community participates.  |
| **ELIXIR** | Both the Portuguese and Spanish Funding Agency have officially engaged with ELIXIR. The Spanish ELIXIR node comprises 10 nodes, leaded by the Spanish National Bioinformatics Institute at the Spanish National Cancer Research Centre – CNIO. Among these nodes, IBERGRID collaborates with the Príncipe Felipe Research Centre (CIPF), the Spanish National Center of Biotechnology (CNB-CSIC), and the Barcelona Supercomputing Centre (BSC). The collaborations are framed in the adaptation of bioinformatics tools to Grid and cloud infrastructures, as well as in the training. Four of them even are part of the Spanish Network for e-Science, who is mainly leaded by people from the Spanish NGI. |
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Both NGIs are being restructured according to the national infrastructure roadmap recently approved by the respective governments. IBERGRID as a consortium has its own computing capacity accessible to multidisciplinary scientific users and strongly focused on their needs.

To further streamline the access conditions the following classes are being implemented:

* **Partner:** For researchers from partner organizations. The partner organizations will have the right to reserved capacity. The access to these shares is managed by each partner.
* **Merit:** For publicly funded research projects or meritorious research. This class is for projects that have passed an evaluation process (e.g. FCT or MINECO funded projects). In addition an evaluation board will prioritize all requests when needed and will evaluate requests missing the corresponding funding approval.
* **Flagship:** For flagship research projects identified as being of high-impact, and having national strategic relevance. This a special class whose access will be granted in accordance with national policies. LIFEWATCH is an example.
* **Commercial:** For pay per use. Access will be granted only at request without major impact on computing capacity availability. National SMEs will have priority. International customers will be also accepted. EGI is considering a commercial brokering service that will enable the commercial exploitation of available capacity at NGI sites.
* **eGovernment:** For public organizations. Enabling the exploitation of available capacity by the regional and central administration.

The NGI priorities will be heavily impacted by the national policies (imposed by the national science funding agency) and evolution of the national infrastructure roadmap. Therefore, the engagement with other ESFRI and Research Communities is expected to evolve according to these priorities which are not yet fully known.

The funding for the national infrastructure roadmap is still not fully known. As a consequence, the NGI capacity that could be provided to ESFRIs and other Research Communities cannot be yet defined. The capacity can be enlarged by the inclusion of national ESFRI and Research Community resources within the NGI infrastructure.

# Resource provisioning for target communities

* *For each of the* ***top three*** *communities provide information on the resources that nationally will be available and the related policies and cost model, as applicable*

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|  | **Compute and storage capacity currently available (or available in the future) to deal with the data growth** | **Access policy** | **Available funding or funding models (present and future)** | **What existing resources the e-infrastructures can offer, their current usage, the limitations and plans to deal with the data deluge** |
| **LIFEWATCH** | LW core ICT ( 9000 HS06, 300TB) | **Flagship** research project (access to NGI pool) | TBD (national infrastructure roadmap, structural funds and H2020) | TBD (The NGI resources still accommodate further community under fair share policies. However, an upgrade of national resources is foreseen) |
| **HEP and Astroparticle Physics** | WLCG (6400 HS06, 400 TB)Astroparticle Physics (~500 HS06)Regional Communities (~700 HS06) | **Partner** (access to own resources and to NGI pool under a fairshare policy) | WLCG MoU Projects and TBD (national infrastructure roadmap and H2020) | TBD (The NGI resources still accommodate further community under fair share policies. However, an upgrade of national resources is foreseen) |
| **ELIXIR** | TBD | **Flagship** research project (access to NGI pool) | TBD (national infrastructure roadmap and H2020) | TBD (The NGI resources still accommodate further community under fair share policies. However, an upgrade of national resources is foreseen) |

# User support skills

* *List and describe here your skills and user support competence that could be made available through a EGI Competence Centre with your participation as applicable*

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|  | **User support skills and related technical and disciplinary areas** |
| **Training and education** | * Training and education on distributed computing technologies (Grid and Cloud), advanced computing (HPC) and related tools
	+ General training courses
	+ Customized hands-on training tailored on user specific needs
* Academic training integrated on master courses on distributed and parallel computing
* Dissemination on distributed technologies and European DCIs. The NGI (through LIP) also performs outreach in these areas
* Production and maintenance of technical documentation (Wikis, white papers, presentations, ...)
* Research and Development on technical breakthroughs related to user community technologies or infrastructure enhancements
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| **Technical skills** | * Strategies for the effective processing and analysis of data
* Planning and establishment of the local resources capacity
* Adaptation and porting of community software
* Testing of new services and infrastructures. Quality assurance and staged rollout.
* Distributed data management services (distributed file systems, grid data management, cloud storage, ...)
* Parallel computing and technologies (Infiniband, OpenMP, OpenMPI, ...)
* Virtualization (Hypervisors), Cloud computing (Orchestrators: Openstack, RDO and OpenNebula), and containers technology.
* Authentication and Authorization (X.509, LDAP, ...)
* Security
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| **Discipline/user-specific skills** | * Application porting on the following areas: Physics, Civil Engineering, Life Sciences, ...)
* Deep understanding of Astroparticles and High Energy Physics environments. Good understanding of Civil Engineering and Life Sciences environments.
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| **Other** |  |

# Software development skills and experience

* *If interested in participating to software development/integration activities, list here the software development skills available in the organizations from your NGI and the experience*

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| **Skill** | **Description** |
| **Application Porting** | * Application porting on the following areas: Physics, Civil Engineering, Life Sciences, ...)
* Deep understanding of Astroparticles and High Energy Physics environments. Good understanding of Civil Engineering and Life Sciences environments.
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| **Programming Languages** | * php, javascript, jquery, css, html, ASP, SQL, SMARTY, AJAX
* Python, perl and other shell scripting languages
* C, Fortran, TCL
* Web development
* Relational DataBases (MySQL, MariaDB, postgreSQL, SQLITE)
* Development tools
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| **Middleware** | * MPI on Distributed Environments (mpi-start)
* OpenStack ATC (Active Technical Contributors). CSIC is in the position 51st in the list of top 100 institutions contributing to OpenStack
* Auth for OpenStack (Keystone).
* OCCI for OpenStack contributors (patches, contextualization).
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