



E-infrastructure shared between Europe and Latin America

EELA project aims to build a digital bridge between the existing e-Infrastructure initiatives that are in process of consolidation in Europe and those that are emerging in Latin America, throughout the creation of a collaborative network that will share an interoperable Grid infrastructure to support the development and test of advanced applications. In its collective effort, **EELA** will start up a common infrastructure in Latin America and Europe, interconnected by means of RedCLARA and GÉANT networks, in which certain applications of general interest will be implemented: Biomedicine, High Energy Physics, e-Education and Climate. Due to the scope of its action, **EELA** will help to reduce the digital divide in the Latin-American region, making available to researchers a very powerful e-Infrastructure on which to make complex investigations in a simple way, which can be extended in the future to serve as basis for a greater community of users.

Partners:



Argentina
= UNLP - Universidad Nacional de La Plata



Brazil
= CECIERJ/ CEDERJ - Fundação Centro de Ciências e Educação Superior a Distância do Estado de Rio de Janeiro
= UFF - Universidade Federal Fluminense
= UFRJ - Universidade Federal do Rio de Janeiro
= RNP - Rede Nacional de Ensino e Pesquisa (Brazil)



Chile
= REUNA - Red Universitaria Nacional
= UDEC - Universidad de Concepción
= UTFSM - Universidad Técnica Federico Santa María



Cuba
= CUBAENERGIA - Centro de Gestión de la Información y Desarrollo de la Energía



México
= UNAM - Universidad Nacional Autónoma de México



Peru
= SENAMHI - Servicio Nacional de Meteorología e Hidrología



Venezuela
= ULA - Universidad de Los Andes



Latin America
= CLARA - Cooperación Latinoamericana de Redes Avanzadas



Europe
= CERN - European Organization for Nuclear Research



Italy
= INFN - Istituto Nazionale di Fisica Nucleare



Portugal
= LIP - Laboratório de Instrumentação e Física Experimental de Partículas



Spain
= CIEMAT - Centro de Investigaciones Energéticas Medioambientales y Tecnológicas
= CSIC - Consejo Superior de Investigaciones Científicas
= RED.ES - Entidad Pública Empresarial Red.es
= UC - Universidad de Cantabria
= UPV - Universidad Politécnica de Valencia

Projects Objectives:

The **EELA** project aims to build a bridge between consolidated e-Infrastructure initiatives in Europe and emerging ones in Latin America.

The Project is structured into three specific objectives:

- = Establishing a human collaboration network: 21 participant Institutions from 12 different countries.
- = Setting a pilot e-infrastructure in LA: interoperability with already existing European infrastructures, pilot GRID test-beds in Latin America and Europe, advanced services shared by participants.
- = Identifying and promoting a sustainable framework for e-Science: specific fields are High Energy Physics, Climate, Biomedicine and Education.

Work Packages:

WP1 - Project Administrative and Technical Management

The structure of the **EELA** management has been designed to deal with typical challenges and problems associated with projects putting together different scientific areas. The major issue is to ensure that the management provides the environment to deliver reliable quality services. This will be essential for the effective exploitation of the results throughout the different scientific areas and the overall success of this project. The management structure of the project will comply with the contract signed with the European Commission and the consortium agreement subscribed by the contractors.

WP3 - Identification and Support of Grid Enhanced Applications

This WP is crucial to the objectives of the proposal. First of all, the impact of the project depends upon an adequate identification of applications really benefiting from the use of a Grid-empowered e-Infrastructure, and of interest for research communities in Europe and Latin America.

The WP3 considers first of all communities that have already established research links, and where the experience from other initiatives guarantees that the applications can be enhanced thanks to the use of the Grid. In particular tasks 3.1 and 3.2 address Biomedical and High Energy Physics applications, already supported in the EGEE production Grid. The collaboration within these communities however will consider new applications of common interest, but restricted to these areas. These two selected areas cover both high societal interest and advanced research topics, in an adequate balance. On the other hand the task 3.3 aims to support two additional areas that have been pre-selected because of their expected impact in terms of research collaboration between Latin America and Europe, and also due to the benefit of having access to a Grid infrastructure. The first additional area is Education in the Grid Environment, and will be a joint effort between five institutions. The second additional area is Climate, and it will mainly focus on the research of "El Niño" phenomenon, a topic of key importance in the area, and where the Grid will greatly improve the research possibilities.

For all tasks, three activities will be sequentially performed in order to achieve the main goal of this WP. The first activity is the selection of applications, which will be used in dissemination activities. The second one is the customization of the selected applications in order to take advantage of the Pilot Testbed. The last activity is the evaluation of the impact of these applications in dissemination activity and how they impart to the communities.

WP2 - Pilot Testbed Operations and Support

EELA aims to support a Pilot e-Infrastructure between Europe and Latin America, with a clear emphasis on dissemination activities and integration between LA grid initiatives and European counterparts. Europe has successfully launched a large pan-European e-Infrastructure project, EGEE, while in Latin America there are several projects on-going at national scale. In most cases, the basic technology is evolving from the use of specialized middleware toolkits, like Globus and gLite, to setup a Grid-empowered infrastructure towards a more general framework based on web services. However, these initiatives keep essential components like an authentication scheme based on the use of public/private key certificates, and a layered architecture, with applications built on top of middleware and collective services over a basic layer of local computing resources.

For production operation of the Pilot Testbed, a number of additional services must be provided.

These services deal with authentication of grid users and the related authorization necessary to use resources.

WP4 - Dissemination Activities

The dissemination activities are of strategic importance to introduce state of the art Grid technologies and services to an international community of users covering a broad range of scientific and technological areas. At the same time, the knowledge dissemination events will contribute to further disseminate the project and the benefits of the grid technologies. This is seen as the first step in the process of bringing more Latin American and European groups into **EELA**. Dissemination will work closely with the other project activities with a special focus on the knowledge dissemination and how to join the project. While dissemination will provide a general picture of the project, knowledge dissemination will provide detailed technical information to the potential users and give them the skills to use the **EELA** pilot infrastructure.

The formation of liaisons with other international Grid projects and initiatives (like GRIDLA, HELEN, OurGrid, etc.) will be investigated. Additional sources of funding will be investigated including funds from the EU, from the countries of the partners signing the proposal, and other organisations involved in L.A. The strategic tool and key enabler of WP4 activities will be the INFN GILDA virtual laboratory for Grid and knowledge dissemination which has originally been developed and successfully used in the context of the EGEE Project.