GISELA

COMMENTS TO THE EU GREEN PAPER 2011

GISELA Note – ADM06

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Abstract: This document presents views of the GISELA e-Infrastructure Project, on the EU Green Paper 2011: *"From Challenges to Opportunities: Towards a Common Strategic Framework for EU Research and Innovation funding",* relative to the development and support of e-Science in Latin America.

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1. INTRODUCTION

1.1. PURPOSE OF THE DOCUMENT

This document presents views of the GISELA e-Infrastructure Project, on the EU Green Paper 2011: *"From Challenges to Opportunities: Towards a Common Strategic Framework for EU Research and Innovation funding"*. They are based on 6-7 years of Latin America collaboration with Europe on the deployment of a Distributed Computing Infrastructure (DCI) aiming at sustaining e-Science in Latin America.

1.2. APPLICATION AREA

The document is destined to the EU Commission and to the GISELA Community.

1.3. DOCUMENT AMENDMENT PROCEDURE

Amendments to this document can be requested by any Project Member to the Project Coordinator, via the Project Office (hlp-gisela@hlpdeveloppement.fr).

2. PREAMBLE

We thank the European Commission for the invitation to provide input to the Green Paper *'From Challenges to Opportunities: Towards a Common Strategic Framework for EU research and innovation funding' (EN COM 2011 0048 CSF Green Paper.pdf)*.

Indeed GISELA (http://www.gisela-grid.eu/) and its predecessors EELA-2 (http://www.eu-eela.eu/) and EELA (www.eu-eela.org) being e-Infrastructure Projects between Europe & Latin American Associated States, we appreciate the opportunity to witness the importance of the EU support for the development of e-Science in Latin America.

We first acknowledge the quality of the Green paper as being very complete in its scope to propose a comprehensive scheme for the forthcoming EU Research & Innovation Programmes funding at the 2020 horizon.

As a preamble we want to stress that our comments:

- Express our views considering the situation of e-Science in Latin America after 6-7 years of intense collaboration with Europe on e-Infrastructures.
- Reflect also the past (long) experience of several of us, members of scientific collaborations with Europe, either in EC-funded Projects or in outstanding research fields supported by Europe, such as High Energy Physics (CERN, Pierre Auger Collaboration, etc.).

Finally, we think appropriate to restrict our comments to those subjects directly connected to our kind of collaboration with Europe.

3. GISELA COMMENTS ON SOME GREEN PAPER QUESTIONS

Q7: What should be the measures of success for EU research and innovation funding? Which performance indicators could be used?

We are very concerned by the evaluation of the results of the e-Infrastructure Projects. This addresses their two basic objectives:

- Provide the Research Communities with the suited e-Infrastructure and Application-related Services required to improve the effectiveness of their research;

- Evolve towards sustainable e-Infrastructures.

GISELA has recently signed a Memorandum of Understanding with the ERINA+ EU-funded Project (http://www.erinaplus.eu/) whose main objective is to *"evaluate the impact of e-Infrastructure funded projects through the deployment of an effective socio-economic methodology as well as proposing, by the end of the project activities, a pro-active self-assessment methodology."* This was the natural outcome of the *"8th e-Infrastructure Concertation Meeting"* held at CERN on 4th - 5th November 2010 (http://www.e-sciencetalk.org/e-concertation/), at witch the socio-economic evaluation of e-Infrastructures was one of the main topics and where the ERINA+ launch was announced.

On the other hand, it is not easy to evaluate the socio-economic impacts of an e-Infrastructure even if it is a powerful mean to enhance e-Science. In an attempt to estimate the expected socio-economic contribution of EELA-2, we have taken the approach to interview the users themselves. They are the best people to estimate, from their own studies, how EELA-2 was likely to induce, socio-economic advances. Hence the EELA-2 Users were consulted to give their opinion on the eventual influence of EELA-2 in both their professional environment and on the potential socio-economic impacts of the project (see http://documents.eu-eela.eu/record/1418/files/EELA-2-DNA1.13-v1.5.pdf). That is to say that we believe that the evaluation of the success, the impact, the utility of an e-Infrastructure project is up to both the Management and the Users. It should be based on an exhaustive set of metrics agreed upon by both parts.

A complementary approach to identify the indicators of success of the concept of e-Infrastructure itself, on the long term, is to survey the various Virtual Research Communities (VRC) using. As a matter of fact, in 2009, EELA-2 has proposed to the Regional Projects collaborating with EGEE to realise an e-Infrastructure survey to gather from DCI end-users, their appreciation of the usefulness of e-infrastructures, their possible dependability on them for their research, how they see the need for national (NGI) and international (EGI) coordination, etc.. The objective was to get wide, relevant feedback on the existing e-Infrastructure projects and on the NGI, EGI initiatives being created. The survey has been realised by eResearch2020 (www.eResearch2020.eu) in collaboration with BELIEF (http://www.beliefproject.org/) after agreement of the respective Project Officers. The outcomes of the survey have been acknowledged at the *"eResearch2020: The role of e-Infrastructures in the creation of global virtual research communities"* Workshop held in Brussels on February 24th, 2010.

During the last decade, e-Infrastructures were unanimously recognised as of most importance for significant advances in (e-)Science. However, their *direct* socio-economic impacts can be better (only) evaluated when they are used in well defined socio-economic areas like, e.g., industry, banking, commerce, government, health, education.

Q25: How should research infrastructures (including EU-wide e-Infrastructures) be supported at EU level?

With our 6-7 years experience of EU-funded e-Infrastructure Projects, we believe that the approach adopted to launch series of typically 2-year Projects (under FP6 and FP7) with leader Projects (EGEE, EGEE-II, EGE-III and now EGI-Inspire) was excellent and succeeded to rend the DCIs the basic computing model in several domains of science, beyond HEP where it originated.

We observe that the major challenge of most e-Infrastructure nowadays is to secure the long-term sustainability of the e-Infrastructure operation and support. The sustainability conditions, the necessary resources have usually been deduced from specific studies (e.g. "*The EELA-2 Model for long-term sustainability of Grid Infrastructure in Latin America*" http://documents.eu-eela.eu/record/1307?ln=en). In practice, both the National and Regional Grid Initiatives require the creation of modest structures, typically 5-7 FTEs entities. While these National Grid Initiatives (NGI) have been or are being created in several European countries, they are still in their infancy in many regions such as in Latin America. The effort of the partners of e-Infrastructure Projects to convince their local, national authorities to support DCI is constant. It takes the form of direct contacts (when possible), organisation of specific meetings (e.g. Decision Makers Days), press articles, etc.. On the other hand, it is not easy for scientific / computing people to reach their high level authorities nor they always have the competence to participate in political discussions. Altogether, the necessary initiatives are progressing, but too slowly to anticipate the creation of the needed structures (e.g. NGI) by the end of the ongoing projects. This clearly endangers the e-Infrastructure support at the national and regional level on the long term.

We think that the EU Commission could play an important role at the (highest) political level to convince governments of countries currently with DCIs built with the EU help, to create and support NGI-like structures. This support could take place as part of the ordinary consultations between the Commission and non-European states. Another (probably better) opportunity could be the negotiation of specific calls such as the recent *ICT-Brazil Coordinated Call (FP7-ICT-2011-EU-Brazil).* Indeed, one can imagine that the creation of a NGI in the host country (Brazil in this case) could have been a condition (sine qua non?) of the Coordinated call?

Q26: How should international cooperation with non-EU countries be supported e.g. in terms of priority areas of strategic interest, instruments, reciprocity (including on IPR aspects) or cooperation with Member States?

We attach great importance to international cooperation with Europe. On the other hand, it is not up to us to make any statement on priority areas of strategic interest, instruments, reciprocity or cooperation with Member States. We just want to stress, based on the

experience of several of us to cooperate with European Scientific Institutions, either in EC-funded Projects or in outstanding research fields supported by Europe such as High Energy Physics (CERN, Pierre Auger Project, etc.) that the Europe – Latin America cooperation is usually most beneficial to both parts.

To be more specific, we would make the following comments:

Interest of cooperation on Research Infrastructures

e-Infrastructures:

The basic investment to build, operate and support a DCI in Latin America has been made in a coherent framework including CLARA (http://www.redclara.net/) the federator of Latin American NRENs, supported by the EU, equivalent to GEANT and the EU NRENs. International Collaborations are benefitting more and more from the Latin American DCI facility. Conversely Latin American research groups are getting the full value of e-Infrastructures by fostering and supporting their participation in larger e-Science projects.

Participation in Research Infrastructures (e.g. ESFRI Projects)

The e-Infrastructures are becoming the major component of the Computing Model of Research Infrastructures. Indeed the e-IRG has recently published a *"Blue Paper on e-Infrastructures"* (http://www.e-irg.eu/images/stories/eirg_bluepaper2010_final.pdf) providing *"a response to a request from ESFRI to examine ways in which ESFRI Research Infrastructures (RI) and their users can engage and exploit common e-Infrastructure services to satisfy their requirements."*

We believe that the current situation of the Latin America participation in Research Infrastructures can be improved, in the light of the availability of DCI as the GISELA e-Infrastructure. Currently the cooperation to large Research Infrastructures is limited to specific areas as High Energy Physics (e.g. the LHC and the Pierre Auger Projects). There are very few Latin American Institutions involved in the ESFRI Projects. Our wish is that this should be extended now that Latin America has invested in creating empowered DCIs with the support of the EU.

Instruments

We see following instruments as particularly helpful:

a) Usual Research Infrastructure calls

The FP6 and FP7 calls, for typically 2-year projects have been very instrumental in stimulating the deployment of e-Infrastructures in Europe and other Continents by allowing the Associated States to apply. The adopted strategy to have Master Projects (EGEEs, EGI) and related projects has shown to be judicious. These calls can certainly be most useful in the final phase of consolidating the long-term future of DCIs outside Europe.

b) Specialised calls

Specialised calls such as for Collaborative Projects (STREP), as the *ICT-Brazil Coordinated Call (FP7-ICT-2011-EU-Brazil*) mentioned above are efficient to focus in space and time on high-priority R&D actions.

c) Training actions

Much appreciated are training actions such as the Marie Curie actions and specific Projects such as EPIKH: *"Exchange Programme to advance e-Infrastructure Know-How"* (http://www.epikh.eu/) that aims at:

- *"Reinforcing the impact of e-Infrastructures in scientific research defining and delivering stimulating programme of educational events, including Grid Schools and High Performance Computing courses"*

- *"Broadening the engagement in e-Science activities and collaborations both geographically and across disciplines".*

They have shown to be crucial to strengthen Latin American – European Collaborations in raising the level of the e-Infrastructure competence and performance of Latin American countries close to those of Europe.