PROPOSAL
Co-ordination and Harmonisation of Advanced e-INfrastructures (CHAIN)

Introduction
The idea of this project starts from a question that we, as coordinators of international Grid projects, should pose to ourselves: does make sense to have a coordination of "Regional Extensions" to European e-Infrastructures which do include not only Grids but HPC and, possibly, Networking.
One can say: yes, we could envisage such a project related for sure to Grids and Networking, since these activities seem to have reached a pretty stable situation, but for HPC its much more difficult and there is no clear mapping between partners. Moreover the co-ordination of Grids and HPC has not been "striking" in the last ten years, although there is a pressure from EC to arrive to some agreement and to a more organised coexistence of the two approaches to scientific computing. We can also add to this the recent rising of attention to other paradigms such as Virtualisation and Cloud Computing which are, of course, not in complete competition with Grids but should be considered and evaluated in the light of a large (world wide?) e-Infrastructure.

It's thus quite difficult to answer to this question with a simple yes or no. Let's then limit ourselves to Grid and Network based e-Infrastructures and elaborate on this.
- All the projects which aim at extending the European Grid Infrastructure to other regions are in their second phase and there will probably not be a third one available for funding.
- It's time to demonstrate that the efforts of inter-projects coordination and collaboration are converging and deemed to be supported.
- On the other hand, EGEE and the future EGI (as far as we know), are restricting the financial support to the core European e-Infrastructure and there will be no real opportunities to fund external interoperations with these funds, at least in the beginning of this new phase of EGI consolidation.
- One could then imagine a certain number of EU Countries/Regions which act as bridges to other Regions/Continents. These EU organisations (probably/possibly NGIs) could be funded, in a separate but coordinated project, for their role of Gateways and to support interoperations with other e-Infrastructures.
- The scope could, however, be simply limited: support interoperations with other regions/continents (Latin America and the Caribbean, Asia, Africa, Middle-East, etc.).
- A bit larger scope could be: participate in the management and operations of those external e-Infrastructures acting as a "tutor" and/or "advisor" using the European background and supporting interoperable/standard solutions.
In both cases: support the extension of virtual communities, which even more tend to use distributed facilities (large instruments, data & databases, libraries, etc.) across the regions for trans-continental research infrastructures such as: LHC, Radio Telescopes, Earth Sciences, Emerging Diseases, etc.

General ideas
The outcome of this introduction is thus the proposal of a new project which will exactly do what has been previously discussed acting as a single point of coordination between EGI and external e-Infrastructures. This project would have limited number of European partners acting, as already mentioned, as "gateways" for other regions.

The list should include (and probably limited to) the following:
- France for Africa (sub-Sahara)
- Greece for SEE (e.g. Georgia, Azerbaijan, Armenia, etc.)
- Italy for Asia (with Czech & Taiwan ?), China, India and Mediterranean
- Spain and Portugal for Latin America and the Caribbean
- TBD for USA, Russia, Japan, etc.
- Possibly another independent European country to represent EGI or EGI itself.
- Another 2-3 partners from each of the different regions could also be involved with much smaller funding.

Those EU partners will operate a distributed ROC acting as gateway to other regions.
On some regions a reasonable overlap of a couple (or more) partners can also be foreseen in order to have redundancy in the relationships and operations (e.g. Greece and France can backup Italy in the Mediterranean, etc.).
The services of the Gateway would do:
- Catchall ROC if there is no other ROC in place
- Liaison for user communities and virtual organisations
- Disseminations and trainings and general liaison activities.
- It should also have a strong "organizational study" component and apply regional "customisation" to a commonly agreed model for sustainability.

Selection of the partners and their role
The first observation regarding non-European partners is related to the regional situation which may present at least three alternatives:
1) The region is completely green field and needs to be supported from scratch (e.g. sub-Saharan Africa)
2) There is already a good/promising level of awareness and a regional e-Infrastructure has already been started (e.g. Mediterranean, LA & Caribbean).
3) Advanced Countries/Regions which have autonomously invested in e-Infrastructures and are willing to interoperate with European ones (e.g. China, India, USA, Japan, etc.).
In these three different cases (there may be other intermediate nuances) the role of European partners acting as Gateway may be different in the choice of the number of the possible activities or addressing them differently.

Another issue is related to the support of Communities which have international span.
We will not have sufficient resources to fund single institutions here and there in the multidisciplinary fields involved (HEP, Biomed, Earth Sciences, Astronomy, etc.) .
How could we then address entire relevant communities keeping limited the number of partners ?
- We should select a couple of very relevant communities to be the drivers of our coordination. There is no common sense to have inter-operations if nobody uses/needs it. Some communities of reference could also participate without specific funding (e.g. HEP/WLCG). In some very limited number of cases we can choose a representative international organisation (e.g. CERN for HEP, ESA for Earth Observation, etc.), but this will not always work.
- Another possibility is to link the project with a (limited) series of (coordinated) SA proposals dedicated to specific communities, but this is a very risky puzzle, although it allows to enlarge the potential budget.

- A third more attractive possibility is that the EU NGIs that are partners will take care of the national part of the communities. This will mean that they (the communities) will not be uniquely represented in the constituency but we can possibly reserve some funding for their supra-national coordination.

The issue with this last very attractive organisational line, is that we will need for sure a large participation of EU based communities and being the EU partners limited this responsibility will go on the shoulders of EGI (as partner in the project), or as it was already anticipated a limited amount of money for co-ordination of communities could also be envisaged.

Issues to be addressed
1) Selection of non-european partners : Single Partner / JRUs / NGIs still active after the end of the current project and also new partner? - Criteria to accept a former / new Partner
2) Need for an existing regional (EGI-like) sustainability model / strategy, e.g. the EELA-2 model under negotiation with the CLARA management ?
3) Importance to link with NRENs especially in non-European countries
4) Objectives with priorities:
   - Support for RGI (Regional Grid Infrastructures/Initiatives) design, installation where appropriate
   - Catchall ROC if there is no other ROC in place
   - Interoperability framework
   - Liaison for user communities and Virtual Organisations
   - Dissemination and training (very limited) and general liaison activities
5) Identification of common actions towards objectives
   - Dissemination activities (e.g. feedback from communities)
   - Training, workshop, conferences
   - Interaction with Decision Makers
6) Definition of Metrics of success
7) Funding scheme of non-European partners, if any.

Finalisation of the EU Call
This proposal should be finalised and submitted at the foreseen Autumn/Winter call 2009.
If we plan to have operations in it, it cannot be a support action and would thus probably fall in grid Infrastructures and virtual research communities (see below INFRA-2009-1.2.x).
Another possibility will be to have a limited co-ordination action for the study (see below INFRA-2009-3.2) or apply to the Spring 2010 call (see below INFRA-2010-1.2.1).

Extracted from the:
Work Programme 2009 – Capacities Part 1 – Research Infrastructures
(European Commission C(2008)4566 of 26 August 2008)

Table 1 – Calls already published and indicative priorities for future calls

Activity	Call 1 (02.5.07)	Call 2 (20.9.07)	*Call 3 (29.2.08)*	*Call 4 (11.9.08)*	*Call 5 (17.3.09)*	*Call 6 (Autumn 2009)*	*Call 7 (Spring 2010)*	*Call 8 (Spring 2012)*
Integrating activities			272.9					
e-Infrastructures	42	50		113	*4*	*X*	*X*	*X*
Design studies	31						X	
Construction – support to the preparatory phase	146,7						X	
Support to policy development and programme implementation	8	14	9		5.6	X	X	X
Budget (EUR million)	227.7	64	281.9	113	9.6			

Call N° 6 and 7 in 2009/2010 will address the following topics:
- INFRA-2009-1.2.x ICT based e-Infrastructures (grid infrastructures, virtual research communities)
- INFRA-2009-3.2 Studies, conferences, coordination actions supporting policy development, incl. international cooperation, for e-Infrastructures
- INFRA-2010-1.1.1 Integrating Activities in all scientific and technological fields
- INFRA-2010-1.1.2.x Integrating Activities to support the specific needs of thematic priority areas
- INFRA-2010-1.2.1 ICT based e-Infrastructures (scientific data infrastructures)
- INFRA-2010-2.1.1 Design Studies for research infrastructures in all S&T fields
- INFRA-2010-2.2.1.x Preparatory phase for research infrastructures
- INFRA-2010-3.1 Studies, conferences, coordination actions supporting policy development, including international cooperation, in all S&T fields