



Project Number: 026024

Project Acronym: EUMEDGRID

Project Title: EUMEDGRID - Empowering  
eScience in Across the  
Mediterranean

Instrument: Specific Support Action

Activity: Research Infrastructures

## D5.2- Policy state of the art

Due on: 14/11/2006

Submitted on: 21/12/2006

Start date of project: 1 January 2006

Duration: 24 months

Organisation name of lead contractor for this deliverable: INFN

Project co-funded by the European Commission within the Sixth Framework Programme (2002-2006)		
Dissemination Level		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
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D5.2- Policy state of the art

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document identifier: **EUMEDGRID-Del5.2**  
date: **21/12/2006**  
workpackage: **WP5: Dissemination**  
lead partner: **GARR**  
document status: **Final**  
document link: <http://www.eumedgrid.org/deliverable/D5.2.html>

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abstract:

This document describes the Status and perspectives of the creation of National Grid Initiatives (NGIs) in the Mediterranean Countries involved in EUMEDGRID, with special reference to the ones not currently belonging to the EGEE consortium.

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#### Delivery slip

name	partner/activity	date	signature
from:		dd-mm-aaaa	
reviewed by:		dd-mm-aaaa	
approved by:	TB		

#### Document log

Issue	Date	Comment	Author
0-0	06/10/2006	First draft	F. Tanlongo
0-1		NGI questionnaires	Partners representatives
1-0		NGI session in Marrakech	Partners, PO
2-0		Second draft for comments by partners	F. Tanlongo
2-1		Corrections, integrations	F. Ruggieri
3-0		Final version	F. Tanlongo

#### Document change record

Issue	Item	Reason for change
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## 1. INTRODUCTION

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### 1.1. Purpose of the document

This document describes the Status and perspectives of the creation of National Grid Initiatives (NGIs) and the development of policies in this area in the Mediterranean Countries involved in EUMEDGRID, with special reference to the ones not belonging to the EGEE Area.

### 1.2. Application area

This document addresses Partner organizations based in the Countries involved in EUMEDGRID, providing them with a picture of the current NGIs status and expectable trends with a special stress on the situation in the Mediterranean Area, possibly providing the ones willing to form or support the creation of an NGI in their Country with a useful working model. It addresses as well international projects (such as, for example, EGEE) and organizations (such as the EC) which may be interested in learning more about the development of policies.

### 1.3. References

- [R1] Project website <http://www.eumedgrid.org/>
- [R2] User and eInfrastructure requirements capture and analysis <http://www.eumedgrid.org/documents/EUMEDGRID-Del2.1-v1.1.pdf>
- [R3] Proposed technical roadmap <http://www.eumedgrid.org/deliverable/D2.2.html>
- [R4] NGI update <http://agenda.eumedgrid.org/fullAgenda.php?ida=a0660>
- [R5] CA and RA procedures and guidelines <http://www.eumedgrid.org/deliverable/D3.1.html>
- [R6] SEEGRID NGI workshop <http://www.see-grid.org/index.php?op=modload&modname=Sitemap&action=sitemapviewpage&pageid=63>
- [R7] EGEE NGI policy workshop <http://indico.cern.ch/sessionDisplay.py?sessionId=81&slotId=0&confId=1504#2006-09-26>
- [R8] EUMEDCONNECT project website <http://www.eumedconnect.net>
- [R9] GTRS (Grille academique tunisienne) website <http://www.esstt.rnu.tn/utic/gtrs/index.htm>
- [R10] MaGrid website <http://www.magrid.ma>
- [R11] TR-GRID website <http://www.grid.org.tr>
- [R12] EUMEDGRID workshop in Marrakech <https://agenda.eumedgrid.org/conferenceDisplay.py?confId=5>
- [R13] Rome Declaration [http://www.eumedconnect.net/upload/pdf/EUM-06-042\\_Rome\\_Declaration.pdf](http://www.eumedconnect.net/upload/pdf/EUM-06-042_Rome_Declaration.pdf)
- [R14] EGEE NGI Survey <http://www.zoomerang.com/survey.zgi?p=WEB225MMZDBX92>

### 1.4. Document amendment procedure

In order to amend the document, please contact the Project Office at: [po@eumedgrid.org](mailto:po@eumedgrid.org).

## 1.5. Terminology

### Glossary

AAI	Authentication and Authorization Infrastructure: the term refers both to policy schemes and technological means which implement the infrastructure needed to Authenticate people and servers on the Grid and authorize operations on it according to their privileges.
CA	Certification Authority: organization identifying people and providing them with the certificates needed to authenticate on the grid (as well as other applications). The CA has generally a hierarchical structure and acts through RAs.
CP/CPS	Certification Policy and Certification Practice Statement of a Certification Authority.
Grid	The term designates a distributed infrastructure of computation and storage resources, which can be used by a VO in a transparent way (i.e. without need to know about the location of the resources etc).
GILDA	Grid INFN Laboratory for dissemination activities
Middleware	Generic terms defining a communications layer that allows applications to interact across hardware and network environments.
NGI	National Grid Initiative – with this term, we mean one legally established organisation per Country/Region with the potential to technically and/or financially coordinate the national Grid activities in that Country/Region.
NREN	National Research and Education Network – in each Country, the organization implementing and operating the national network infrastructure and services for the community of Research, Academic and Education.
RA	Registration Authority: organization or physical person who acts on behalf of a Certification Authority, identifying people in a single organization and providing them with certificates. The RA acts as an interface between the CA and the organization.
VO	Virtual Organization: a Virtual Organization is a geographically independent group of collaborating scientists.

## 2. EXECUTIVE SUMMARY

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This document describes the Status and perspectives of the creation of National Grid Initiatives (NGIs) and the development of policies in this area in the Mediterranean Countries involved in EUMEDGRID, with special reference to the ones not belonging to the EGEE Consortium.

In the EUMEDGRID vision, the support to the formation of such initiative is regarded a key strategic objective; accordingly, several actions in the project's work programme are devoted to achieve it.

This document provides a picture of the state of the art in this context at Project Month 9, whit updates at Project Month 12. It illustrates as well the framework of the EUMEDGRID strategy and actions, i.e., in particular:

- ▶ The international scenario and the available success model(s) [chapter 4];
- ▶ The current situation of eInfrastructures, especially of Network connectivity, in the Mediterranean Region and its most likely developments [chapter 5];
- ▶ The user base existing in the region [chapter 6].

The information relating to the status and perspectives of NGIs in the Region was gathered from different sources and methods:

- ▶ The findings of WP2 “Requirements capture and analysis”, published in Project Deliverables 2.1 and 2.2 [see R2 and 3 for details].
- ▶ Discussions from PMB meeting in Rome (September 2006) and Marrakech (December 2006), concerning the steps already taken or to be taken in the next future in order to establish NGIs. These steps, illustrated in chapter 7.1, concern:
  - ▶ The establishment of new grid sites and their connection to the EUMEDGRID infrastructure;
  - ▶ The delivery of tutorials and reference materials for users and system administrators, in order to widen the grid-aware and grid-ready community in the Southern Mediterranean;
  - ▶ The creation of a Certification Authority per Mediterranean Country and its participation in EuGridPMA;
  - ▶ A number of dissemination actions, including organization of workshop and seminars at a national level, press relations etc.
- ▶ The delivery of a NGI Profile questionnaire in order to monitor the progresses of NGIs and related actions/initiatives to each Mediterranean Partner<sup>1</sup>. All Mediterranean Partners contributed to the survey, whose analysis is given in chapter 7.2. The complete questionnaire is provided in appendix 1 and the full responses per Country can be found in appendix 2.
- ▶ The NGI session of the EUMEDGRID workshop held in Marrakech on last 4<sup>th</sup> December (see the agenda at <https://agenda.eumedgrid.org/conferenceDisplay.py?confId=5>). In that occasion, the Moroccan case history was presented, discussed and compared with other experiences. The session provided interesting updates on some specific situations, i.e. the Moroccan experience itself and the ones of Algeria and Tunisia, while providing suggestions and possible models to partners still dealing with the first stages of the

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<sup>1</sup> The survey included also two out of the three Third Parties/Third Countries involved in the Project, i.e. Jordan and Palestine; the third one, Israel, was not included in the survey as it is already part of EGEE and answered a similar questionnaire in that context.

NGI formation. This point is described in chapter 7.3, while Appendix 3 to the document provides more details about the Moroccan strategy.

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### 3. INTRODUCTION

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The EUMEDGRID project is aimed to set up a pilot grid infrastructure for Research in the Mediterranean Region. Such infrastructure is conceived to be interoperable and compatible with EGEE and with analogous initiatives in the Balkans, North Europe, Latin America and Far-East Asia, in order to widen the ERA, while fostering collaboration with European and worldwide projects and promoting scientific and industrial development in the area.

Since the planning phases of the project, the creation of National (and/or Regional) Grid Initiatives in the Mediterranean has been regarded as a major step towards meeting this goal.

Following the EGEE concept, we intend an NGI as a legally established organization, with the potential to technically and/or financially coordinate the national Grid activities in a Country or Region<sup>2</sup>. The effort towards the formation of stable NGIs often involves as a first step the integration of academic and research-based resource centers under the umbrella of a national program aiming to establish an e-Infrastructure for the benefit of e-Science and, in a wider perspective, of industry and the society at large; therefore, it is considered as a key point to achieve long-term sustainability.

Accordingly with this vision, three<sup>3</sup> of the eight objectives declared in the Technical annex, explicitly focus on the formation of NGIs; several other EUMEDGRID objectives and related actions, although focusing on more technical aspects, may nevertheless be framed in a NGI strategy:

- ▶ The effort to implement those elements of the eInfrastructure which can be regarded as the technological basis of NGIs, as for example the AAI;
- ▶ Actions aiming at disseminating high-level technical knowledge in the target area, building upon European expertise;
- ▶ Initiatives addressing and sustaining the availability of quality network connectivity in the Region;
- ▶ Actions devoted to raise Grid awareness in the general public and especially in Governments and other national funding bodies.

In order to understand the EUMEDGRID strategy to foster the development of NGIs across the Mediterranean Countries, several factors should be taken into account:

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<sup>2</sup> At this stage of diffusion of the Grid technology, however, the proposed definition is far to be universally accepted: this may explain some ambiguous results about the establishment of such entities (see below for a discussion).

<sup>3</sup> The mentioned objectives are:

O1 “Stimulate the formation of National Grid Infrastructures (NGI) in the Mediterranean Countries, thus contributing to the creation of a “virtual Grid-based research space”[...]

O3 “Establish a dialogue regarding policy developments for research and education networking and provide input to the agenda of national funding bodies and if possible governments. (WP5). This is to be done as part of NGI establishment (O1) as well as in a form of dedicated policy workshop”.

O8 “Build upon and exploit the infrastructure provided by the Gigabit Pan-European Research & Education Network (GEANT) and the Mediterranean Research and Education Networking (EUMEDCONNECT) initiative in the region. The coordination of NGI into a Regional (Mediterranean) infrastructure will take advantage from the existing human network created within the EUMEDCONNECT project” [...].

- ▶ The international scenario and the success model(s) available, especially in those Countries where the process of NGI formation is most advanced;
- ▶ The current situation of eInfrastructures (and especially of Network connectivity) in the Mediterranean Region, both on technical and political point of view;
- ▶ The user base existing in the region.

#### 4. INTERNATIONAL SCENARIO AND SUCCESS MODEL(S)

Both from a technical and a policy point of view, the general scenario of NGIs in Europe and beyond is far from being definite: NGIs are generally considered as an important step towards the promotion of Grid technology beyond the field of mere Research and the self-sustainability of Nation-wide – or larger – eInfrastructures, but they take different forms and appear to be at different stages of development.

In this rapidly evolving scenario, the very definition of NGI still presents some ambiguities, as appears from a survey on the subject carried out few months ago within the EGEE Countries<sup>4</sup> among e-IRG members, NGI representatives and PMB-level EGEE managers. In that occasion, 22 respondents out of 26 declared to have an NGI and 17 of them indicated that such initiative was supported by the government; on the other hand, just one of these “NGIs” was defined as a separate legal entity, while half of them are a funded national project: the findings of the EGEE survey show therefore a looser definition of NGI than the one proposed in this document.

Also taking into account this ambiguity, it appears that, in several European Countries NGIs have been recently established as autonomous entities; in other cases, existing organizations, such as NRENs or supercomputing centers, have enlarged the scope of their original mission in order to address this new function of coordinator of grid activities across the Country. The technical know-how in contiguous fields, together with the web of relationships already in place with the Academic and Research communities of their Countries makes those actors especially fit to take this new role. Other possible stakeholders (although more application-oriented) are large research organizations/communities interested in using grids to enhance their computing/storage capacities.

In other cases, the NGI formation process is still ongoing: the NGI is not yet officially established, but it is in progress or planned, or some existing organization was appointed for the task.

However, Research has proved to be the driving sector towards this goal: this can be regarded as the result of several facts:

- ▶ At this stage, the effort towards harmonization, both at the technical and policy level, is one of the main function of NGIs, and the Research sector is a fertile ground for this kind of actions, because of the lack of blind competition (in comparison with the industrial sector) and of the presence of stable relationship in international cooperation.
- ▶ The business model(s) for commercial grids is far to be established and, even if it is expected that a commercial use of this technology will be exploited in a few year, the sector appears to be not mature yet: funding from Governments and other public bodies seems to be at the moment the most likely source of sustainability for Grid infrastructures.
- ▶ Researchers have often especially demanding needs for computation and storage for their applications and, on the other hand, they often have the knowledge needed to master this technology: they therefore are likely to become Grid early adopters.

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<sup>4</sup> See [R14]

Due to their privileged contact with these advanced communities, as well as their original mission and unique experience, deeply connected with the standardization and harmonization of different protocols and services, NREN model has often been proposed as a possible organizational model for Grids and, in some Countries, they are actually acting as NGIs. However, some important differences should be highlighted as well: a point that is often raised is, for example, that the technology NRENs usually deal with is a mature one and, more or less, commercial; on the other hand, Grid technology is still under development and needs a stricter coordination between operations and development levels.

More generally, it is clear that no unique success reference model is available to Countries newly approaching Grid technology and its policy framework.

Quoting the conclusions emerged from the SEEGRID workshop<sup>5</sup>: *“There is also no “silver bullet” to guarantee long-term growth of the deployed eInfrastructures; sustainability can only be achieved by persistently undertaking several complementary and well-coordinated actions.”* Those actions may of course vary, depending on the context (political, geographical etc) in which they’re carried out: ad-hoc technical roadmaps should be made available to fit to the needs and available infrastructures of each Country/Region.

This has been already made for the South-Eastern Europe within the framework of the SEEGRID project and for the Mediterranean region in the EUMEDGRID one. [R4]

At the European level, a great interest has been raised around this subject and the proposal to have a pan-European organization, coordinating international grid activities has been aired and discussed in several occasions, although it is not yet clear the form that such an organization may eventually take, as well as its duties and responsibilities. However, some general indications on the subject emerged in the mentioned EGEE survey and the following NGI workshop, held in Geneva in occasion of the EGEE conference in September 2006 [R7]. According to these, the most important functions for this organization could be:

- ▶ Representation at international level
- ▶ Coordination of infrastructure operations
- ▶ Middleware testing and validation
- ▶ Representation of European Grid efforts on standards bodies
- ▶ Coordination of dissemination and training efforts

For the project’s purposes, it is important to keep up with the evolution of such initiatives. In the framework of the liaisons with related projects, the EUMEDGRID team is therefore following the intense dialogue at the European level and project members are actively participating in coordination meetings such as the Geneva workshop.

## 5. CURRENT SITUATION OF EINFRASTRUCTURES IN THE MEDITERRANEAN REGION

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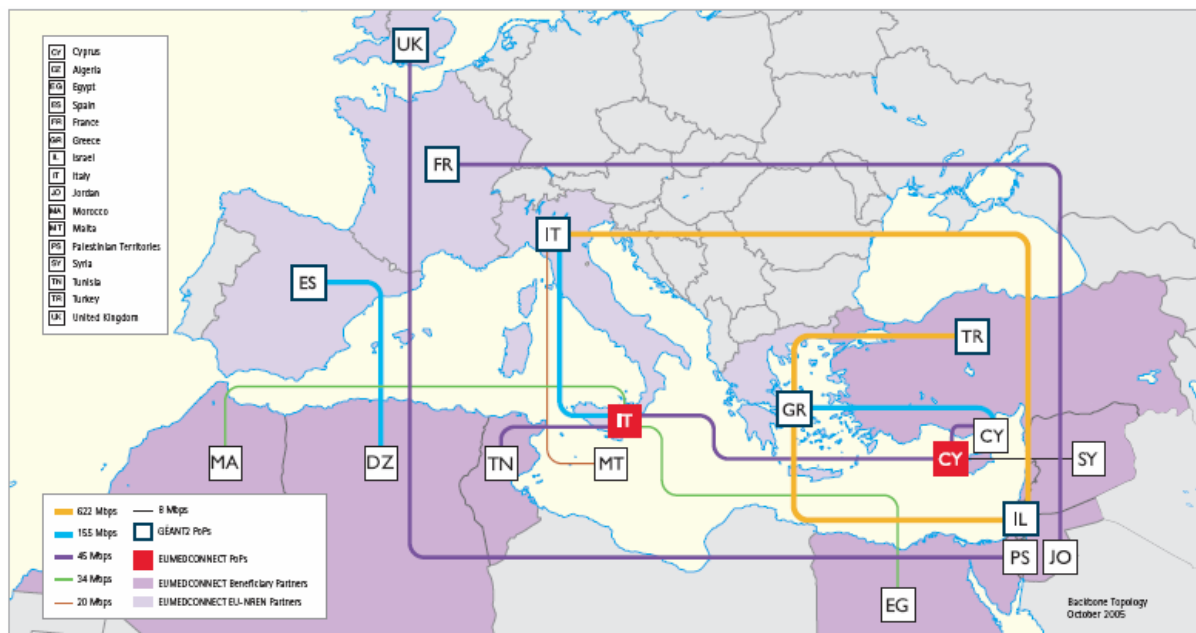
### 5.1. Network connectivity

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<sup>5</sup> See [R6]

The availability of high-capacity, reliable network connectivity is largely recognised as the funding base of a product-quality, high-performing grid infrastructure. In order to realistically dimension the EUMEDGRID infrastructure, the existing and planned network infrastructure must be taken into account, and an in-depth study has been performed from the early stages of the project. As regards to the situation per single Country, the IT and Telecom landscape, with special reference to the community of Research and Education and to Mediterranean NRENs, has been analyzed within the activities of WP2 and summarized in Deliverable 2.1 “User and eInfrastructure requirements capture and analysis” [R2]<sup>6</sup>.

As regards to international connectivity, a special stress was posed on the EUMEDCONNECT backbone. Started in 2002 in the framework of the EuropeAid – EUMEDIS programme, the EUMEDCONNECT initiative (<http://www.EUMEDCONNECT.net/>) established an IP-based network that serves the research and education communities of the Mediterranean region and is linked to the pan-European GÉANT network. At the moment, all the EUMEDGRID Countries benefit from the connectivity provided by the EUMEDCONNECT network, which can be therefore regarded as crucial to the creation of a real Grid infrastructure in the Region. Nevertheless, a concrete risk exists for this international connectivity to quit: the EUMEDCONNECT project was indeed bound to operate up to June 2006 (i.e. the end of the EUMEDIS programme). Thanks to the effort of the EUMEDCONNECT management, supported by Partners and users (including the EUMEDGRID Project) EuropeAid has finally agreed to extend EUMEDCONNECT to 14 July 2007, without the provision of new funding.



**Figure 1 – Current EUMEDCONNECT topology**

Mediterranean NRENs have grown aware of the importance of international connectivity for Research and Education and are therefore actively pursuing measures to ensure it beyond the end of EUMEDCONNECT. Such measures include at date:

<sup>6</sup> See in particular chap.2 – “Telecom/IT sector status in EUMEDGRID Countries and 3 Landscape of EUMEDGRID NRENs”.

- ▶ The development of a replacement regional network project “EUMEDCONNECT2” to follow on EUMEDCONNECT in late 2007<sup>7</sup>.
- ▶ The implementation of bilateral links to GEANT, at least for the most interested partners<sup>8</sup>.
- ▶ The implementation of a Pan-Arab network, connecting in an arc all Countries situated in the Southern part of the Mediterranean and not linking to the GEANT backbone; such network could then link to GEANT.<sup>9</sup>



**Figure 2: the proposed Pan-Arab Network could integrate the EUMEDCONNECT network**

At a policy level, several actions meant to individuate alternative sources of funding and to awaken national Governments and institutional bodies, in order to increase their commitment on Network connectivity for Research, have been carried out. These efforts<sup>10</sup> resulted in the Rome Declaration<sup>11</sup> and in a number of letters and contacts with national-level politicians in order to ensure the largest possible support to the continuation of EUMEDCONNECT.

In a longer-term perspective, most Mediterranean NRENs are currently interested pursuing the creation of an association or a legally established consortium with the mission of improving the current networking situation. Such organization could be a major actor in proposing and steering

<sup>7</sup> The European Neighbourhood Programme (ENP) has been individuated as the most likely source of funding a possible follow-on project, but as the details concerning the programme are yet unknown at date, also in case of success of a EUMEDCONNECT2 proposal, a gap in international connectivity lasting several months would be possible. Short-term solutions (including agreements with the local carriers and a rise in the contribution from the Mediterranean partners) for this scenario have been studied.

<sup>8</sup> This approach would be less effective for the EUMEDGRID purposes (but indeed not very different from the current topology of EUMEDCONNECT), as it would deter the possibility to directly interconnect Mediterranean Countries with each other – a solution which would of course improve the effectiveness of the EUMEDGRID infrastructure.

<sup>9</sup> In principle, the latter approach does not contrast with the first two and, on the contrary, could easily integrate them

<sup>10</sup> The EUMEDGRID management and Partners, most of which are engaged in EUMEDCONNECT as well, took active part in these activities.

<sup>11</sup> [R13].

further regional projects and initiatives in the field and could easily widen its mission to eInfrastructures in general, thus proposing itself as a privileged INTERLOCUTORE at an international level.

The EUMEDGRID team, through direct participation to the most relevant EUMEDCONNECT discussion and the participation of several project partners in EUMEDCONNECT itself constantly monitor this issue.

## 5.2. Grid infrastructure

Like other developing areas neighboring EU, like South-East Europe Baltic, the Southern Mediterranean has limited infrastructure (network capacity, computing and storage resources) compared to more advanced EU countries. It is therefore no surprising that, at the beginning of the EUMEDGRID initiative, only few researchers had already carried out pioneering Grid experiences in the southern part of the Mediterranean. A picture of the situation per single Country at project month 3 is provided in Deliverable 2.1 “User and eInfrastructure requirements capture and analysis” [R2]<sup>12</sup>.

## 6. THE EUMEDGRID ACTUAL AND POTENTIAL USER BASE

In order to reach to an NGI effective technical and economic model, the existence of a critical mass of users, from both quantitative and qualitative points of view, is of the highest importance.

This is especially true for the so-called “greenfield” regions, where the initial set of resources is often limited and regional initiatives/projects targeting the dissemination and exploitation of national efforts may greatly help maximizing the potential impact of such new paradigm.

In such cases, coordination is especially important, in order to efficiently use those limited resources, avoid dispersion in the effort and, in the meanwhile, help to reach a critical mass in the user base.

The region-wide programme should therefore be conceived as an enabler for collaborations, especially outside the typical application fields: in these regions, existing user groups (and especially advanced ones) are relatively small. For a real NGI to take off, it is of the utmost importance to clearly identify them and involve new potential users.

As regards to the user base, the main source of information currently available is the survey carried out in the framework of EUMEDGRID Activity 2.1. An important part of the work was the new community questionnaire, which was published and advertised on a national basis among all Mediterranean Partners. The questionnaire, whose detailed description is given in the mentioned document, addressed several aspects of grid applications in the Region, from organizational issues to technical ones, thus providing a complete picture of early EUMEDGRID users (or potential users) at Project Month 3<sup>13</sup>.

91 organizations provided their responses, with average 8-9 questionnaires from each Country. As already highlighted in that document, the number and quality of responses show a significant interest in grids for the Mediterranean area; on the other hand, from the analysis of the distribution of answers, it is clear that both awareness and interest are quite uneven: actually, only Algeria and Morocco received a more than average responses, and this seems to agree with the fact that, in those Countries, national Partners have taken early steps to advertise the project and to involve potential user communities.

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<sup>12</sup> See in particular chap.4 – “Landscape of EUMEDGRID NGIs”.

<sup>13</sup> [R2] see in particular chap.5 – “Analysis for EUMEDGRID NGIs”.

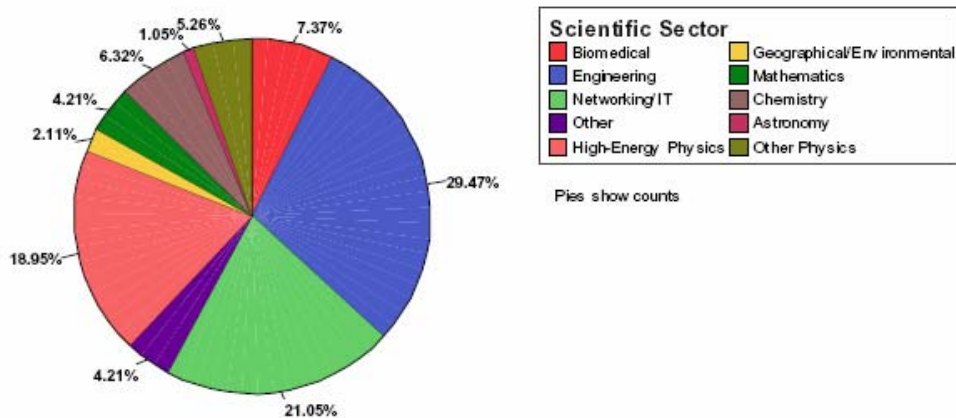
<b>Algeria</b>
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<b>Cyprus</b>
Agricultural Research Institute Cyprus College The Cyprus Institute of Neurology & Genetics Electronic Research Institute
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**Table 1 – Organizations involved in the WP2 survey, divided per Country**

As regards to application area, the survey highlighted a challenging but fragmentary situation, characterized by the existence of a large variety of scientific sectors, such as Engineering, Networking/IT, HEP, Biomedical, Geological, Oceanographic, Mathematics and Astronomy, none of which (apart from the first three, representing respectively the 29.5%, 21.1% and 18.9% of responses) covering more than the 10% of respondents.

This could require a special effort in supporting the less experienced users, because the specific needs of each application could be different. On the other hand, such situation could turn in an opportunity towards the development of interdisciplinary applications of regional interest. This could be the case, for example, of complex geological and environmental applications and multidisciplinary archaeological approaches requiring geological, climatologic and botanic contributions<sup>14</sup>.



**Figure 3 - The EUMEDGRID user base comes from a number of different sectors**

The survey also showed that, while all of them seemed to be aware of Grid technology and of its benefits, respondents had different levels of Grid expertise and, in the overall, only 20.4% of them (mainly in Algeria, Egypt, Malta, Morocco, Tunisia) had used the technology at the moment of the survey. Most of them were basic or normal users, while advanced ones were a minority.

On the basis of these findings, it was recommended to carry out promotion at a national level and several Partners worked in this direction in the following months. In order to improve the situation,

<sup>14</sup> See for example the presentation of the ArchaeoGrid project, given at the EUMEDGRID conference in Rome <https://agenda.eumedgrid.org/materialDisplay.py?contribId=s2t15&sessionId=s2&materialId=0&confId=a0658>

Grid tutorials and seminars were organized or planned in all target Countries. Attendance to events held to date was encouraging both in term of figures and of motivation of attendees.<sup>15</sup>

An interesting finding of the survey was that the 64% of respondents were interested in a National Grid Initiative or Project but, surprisingly, they seemed to be confused when asked about the existence and status of such an initiative in their Countries: 40.9% of them did not know, while the others gave contradictory answers, and only 24 respondents were able to provide further details on such an initiative. This may be explained with differences in the meaning attributed to the term: probably respondents were aware of the existence of some kind of Grid initiatives in their Countries, but they did not know about their legal status and the opportunity to join. The same ambiguity in the definition of NGI appears from the already quoted EGEE survey.

## 7. STATUS OF MED-NGIS FORMATION PROCESS AT DATE

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### 7.1. Med-NGI strategy

During the PMB meetings in Rome (September 2006) and Marrakech (December 2006), the steps already taken or to be taken in the next future in order to establish NGIs in the Region were discussed. They concern on one hand the implementation of:

- New national grid sites, which should form the initial core of the national grid infrastructure in these Countries. The following are some examples of results in this direction. The first Moroccan site<sup>16</sup> was already in operations at Project Quarter two and others are bound to join in brief. MARWAN-CNRS, the Moroccan Partner, is hosting at Project Month 12 a EUMEDGRID workshop including a site administration advanced tutorial in order to involve directly Universities and other Academic and Research centres and speed-up the installation of new EUMEDGRID sites all around the Country. Another Country in process to join the infrastructure is Tunisia. The site in Tunis is already operating and should be connected to the infrastructure in brief. Also in this case a tutorial for site administrator has been already delivered.
- An operating Certification Authority per Country. Also in this field, the situation is still uneven. A Certification Authority Manager tutorial and meeting has been held in Rome at Project Month 9. Almost all the future CA managers involved participated to the tutorial, which was followed by a discussion on the state of the implementation of their national CAs. Morocco and Egypt will be able to present their CP/CPS at next EuGridPMA meeting in January. Cyprus has a peculiar situation, with the request of temporarily having two national CAs in EuGridPMA for a certain time in order to have a smooth transition from one to another: apparently this request created some difficulties, but the Cypriot partner is currently negotiating with EuGridPMA and their CP/CPS are likely to be discussed at the meeting in January or at the one in September. It is expected that remaining countries should be in the position of presenting their CP/CPS document at the September 2007 Meeting of EuGridPMA. Another CA managers meeting will be held in mid January in order to review and finalize their draft CP/CPS.

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15 The statistics on trainings can be found at: <http://www.eumedgrid.org/statistiche-en.html>

16 The current EUMEDGRID infrastructure includes other 7 sites in Cyprus, Malta, Greece, Italy and Turkey.

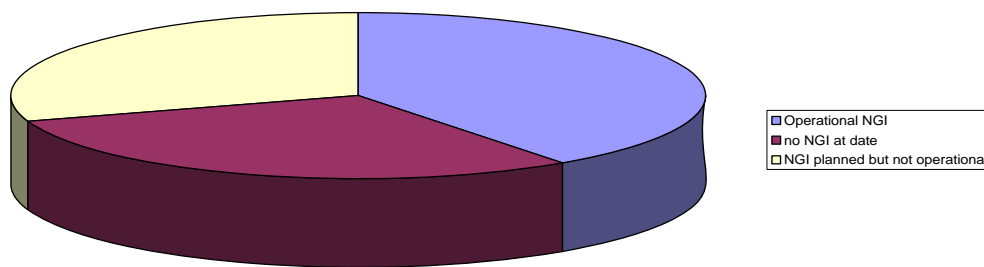
- The organization of workshop and seminars at a national level (with or without the direct involvement of the EUMEDGRID team) in order to contact, inform and involve new users in the initiatives. Several partners have already organized such kind of events.

## 7.2. Med-NGI Profile questionnaire

A Questionnaire to monitor the progresses of NGIs on the policy level has been delivered to each Mediterranean Partner<sup>17</sup> at the end of the reporting period of this document. A brief summary of the results is given in the following paragraph. The full questionnaire and the partners' responses can be found in appendix<sup>18</sup> to this document.

A general finding of the survey is that, at month 9, the process of NGI formation was well on in the area: four NGIs (Algeria, Morocco, Turkey and Tunisia) were already operational, while three others (Cyprus, Egypt and Palestine) were at a planning stage with a clear (though tentative) timeline. In Egypt, the NGI was not yet operational, but a national grid project is already ongoing. All the operational ones were recognised by the Government, which, in some cases, is already funding (or in process to fund) a national Grid programme.

Status of Mediterranean NGIs



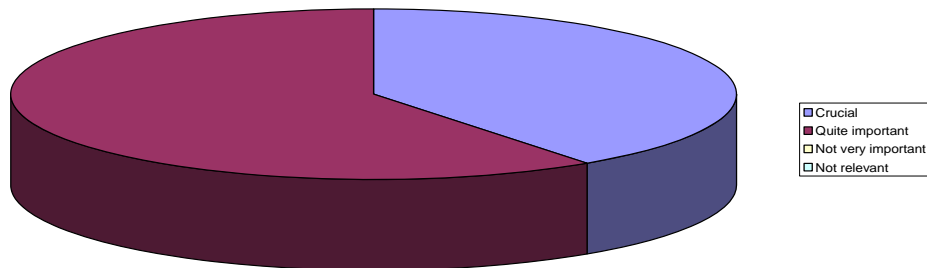
**Figure 4: At Project month 9, four Mediterranean NGIs were already established, while other three were planned**

This general trend is in accordance with the perceived importance of NGIs for the promotion of Grid Technologies, which is very high.

17 The survey included also two out of the three Third Parties/Third Countries involved in the Project, i.e. Jordan and Palestine; the third one, Israel, was not included in the survey as it is already part of EGEE and answered a similar questionnaire in that context.

18 See respectively appendixes 1 and 2 to this document.

Perceived importance of NGIs in promoting Grid Technology



**Figure 5: Respondents to the NGI survey delivered at month 9 consider NGIs an important step towards promoting Grid technology in the Mediterranean**

Respondents seem to be deeply aware of this potential role of NGIs in fostering the establishments of grids in their countries, in terms of:

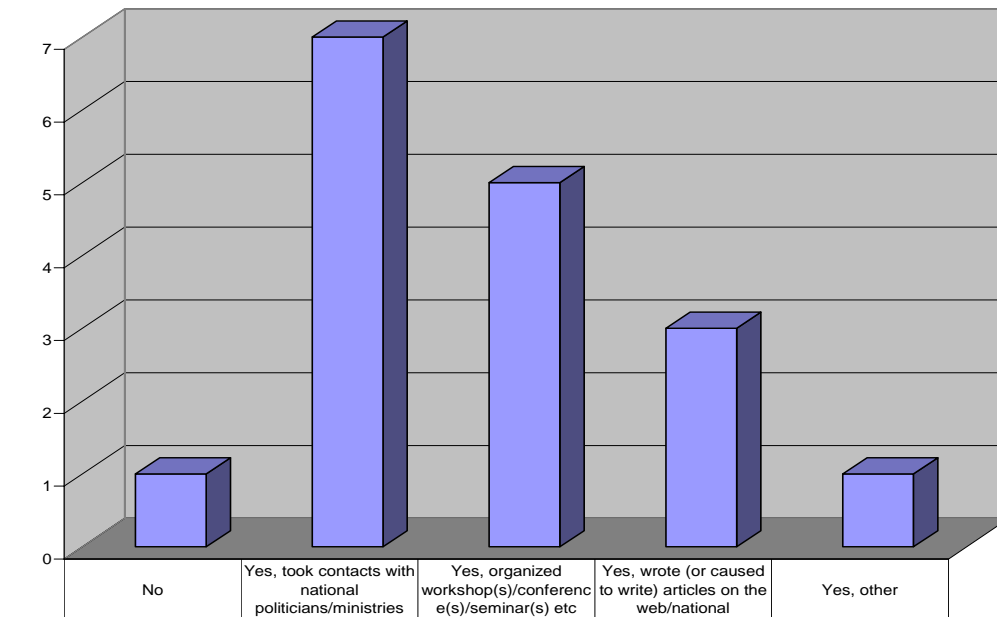
- ▶ Dissemination of advanced knowledge amongst users and system administrators: NGIs, together with the international effort in EUMEDGRID etc are considered as a multiplier of grid competences.
- ▶ Optimization of scarce resources: the implementation and coordination of a grid infrastructure at a national level is seen, especially in developing Countries, as an opportunity to optimize the usage of the existing storage and computing resources and to enhance their accessibility for all research groups.
- ▶ Sustainability, both in a bottom-up and in a top-down perspective: NGIs are regarded as a trigger towards widening the User community and, on the other hand, finding stable sources of funding at a national and international level.
- ▶ Regional/international cooperation: with their coordinating role, NGIs may effectively foster the network of collaboration amongst Mediterranean researchers and between them and their counterparts in Europe and worldwide.

The following sentences, quoted from the questionnaires, can summarize this common vision:

*“There is a need for the local scientific community to use these tools to aid in their research and work. Powerful computing resources are scarcely available and the use of grid technologies will help advance the local scientific community in two ways. Firstly, by the introduction of new computing concepts (the grid) that will allow for more efficient use of current scarce resources. [...]”*

*“If the NGIs gain political and financial support from the national governments and the European Commission while representing the interests of the nascent grid user communities in the participating countries, they could form the basis for a sustainable grid infrastructure operating at both the national and regional level”.*

*“The Grid technology is new for some of Mediterranean countries. Creation of NGIs in such countries will be a good way to demonstrate the benefits of the grid where it may offer solutions to many research problems that need a huge processing power and storage space”*

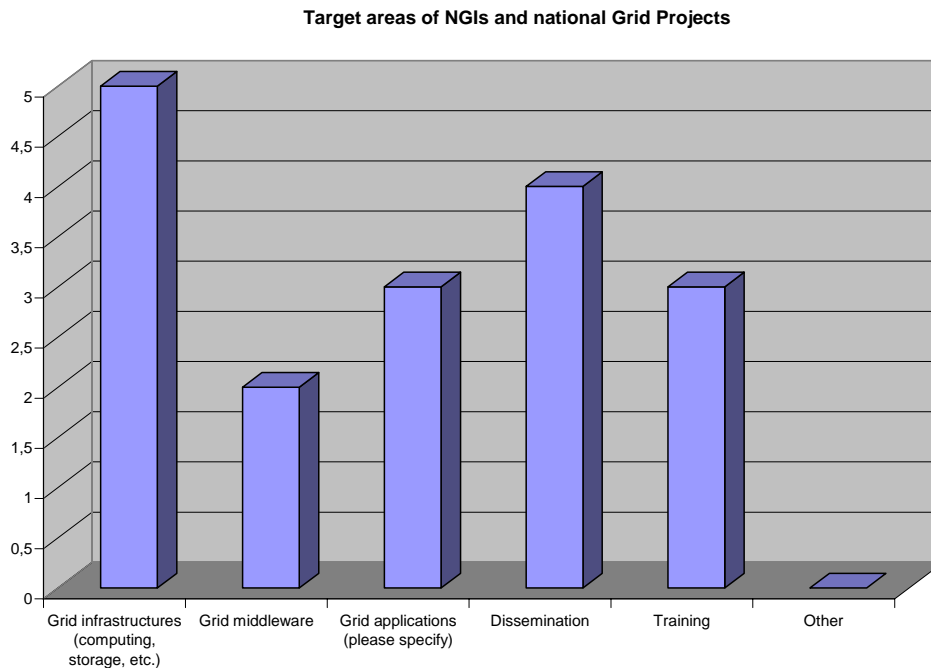


**Figure 6: A number of actions have been taken to date by respondents in order to raise grid awareness at a political level**

The approaches chosen by each partner in order to promote the creation of an NGI in their country are different, but almost all of them include contacts at a political level in a first place: 7 respondents out of 10 say that they have already taken contact with national level politicians, ministries and/or other funding agencies in order to raise awareness about the importance of establishing grids in their countries and facilitate the creation on a NGI recognised by the government. This prominence of the top-down perspective is confirmed by the fact that 4 out of 4 established NGIs have gone for government support in their very early stages.

The other way, i.e. the bottom-up approach is also well represented and often combined with the former. It mainly includes dissemination and other actions relating to advertise grids and enlarge the potential user base, contacting new communities, especially in applications with a specific regional interest, and providing them with information and advanced knowledge.

Accordingly, the most important target area of the NGI and/or National Grid Project is of course infrastructure, but an important place is given to dissemination and training (respectively 4 and 3 respondents out of the 5 having an NGI and/or a National Grid project in their country included these items among the relevant ones for their NGI).



**Figure 7: target areas of Mediterranean National Grid initiatives and Projects cover a broad range, but infrastructure and dissemination (especially training of users and system administrators) are central**

As regards to the form, the situation is much more heterogeneous: in one case, it is an existing entity appointed by an official authority to run a funded national project; in another it is the funded national project itself, while in other two it takes the form of a memorandum of understanding. In one of the latter cases, it identifies as well with a group of researchers which meets regularly. In all cases, anyway, the entities appointed to manage the NGI are NRENs, which, as discussed above, was one of the possible models already implemented elsewhere in Europe.

### 7.3. NGI session and Countries' updates at the EUMEDGRID Workshop in Marrakech

During the EUMEDGRID workshop held in Marrakech on last 4<sup>th</sup> December (see the agenda at <https://agenda.eumedgrid.org/conferenceDisplay.py?confId=5>), a specific session was devoted to present the Moroccan case history (Morocco is, at date, the Mediterranean Partner who has gone further in the process of NGI formation, although several other Countries are well on in this task) and discuss the different experiences done amongst the partners.

The session was very useful in order to get a better picture of the state of the art of NGI in the Mediterranean Area, gathering interesting updates and more information on some specific situations, i.e. the Moroccan experience itself and the ones of Algeria and Tunisia, which are reported in the paragraphs below. It was also an occasion to provide suggestions and possible models to partners who are still dealing with the first stages of the project.

## 1. Morocco

Already in December 2005, a Task Force composed by a Grid expert and several potential users was appointed with the aim of drafting a NGI strategy<sup>19</sup>. Such commission identified a set of objectives for the NGI:

- ▶ Provide the Moroccan scientific community with a data-intensive computation platform
- ▶ Federate the computation resources distributed on the National Territory, thus allowing an optimization of their usage.
- ▶ Allowing the National community of Research to enhance its capacity of collaboration at a national and international level.

The planned implementation of the initiative is composed of a Pilot phase and a widening/consolidation phase. The pilot phase, estimated in 18 months, involves the CNRST itself and 3 Universities/labs with a limited number of pilot applications and is mainly aimed to disseminate the needed know-how among future site administrators and users, test the Grid administration and management system and identify key issues.

The consolidation phase, which will start once the NGI Task Force will deem that the objectives of the pilot phase have been reached, is intended to gradually extend the know-how to other communities across the Country and widen the available eInfrastructure. The implementation of MaGrid goes along three major axes:

- ▶ **Organization:** the NGI is organized around a steering committee composed by MARWAN, representatives of Universities and Moroccan experts working abroad.
- ▶ **Infrastructure and services:** The first Moroccan cluster is operating from April 2006 and connected to the EUMEDGRID infrastructure from May 2006; a second Cluster is operational at University of Tétouane and will be connected in brief. The Moroccan CA, which will be presented in next January in front of EuGridPMA, will be an integrating part of MaGrid.
- ▶ **Creation of competences:** A continuous training policy will be applied in order to enable users and site administrators to maintain their own sites/applications, thus distributing grid activities among different sites and organizations and keeping the need for a centralized support (and therefore for new personnel to be specifically hired) to a minimum.

The latter is a key point, as it will allow on one hand minimizing the economic and organizational impact of MaGrid and, on the other hand to guarantee a high level of involvement of Universities and Research Centres. Of course, this approach could turn to be crucial, in a context in which Grid sustainability is a key issue also for more advanced Countries. In order to pursue the sustainability issue, specific communication and dissemination activities will address the most relevant stakeholders:

- ▶ Decision makers at political/academic level
- ▶ Users
- ▶ Industry and other actors in the private sector

An initial set of applications has been selected for the pilot phase and will involve the following fields:

- ▶ Biology

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<sup>19</sup> More details on the subject can be found in Appendix 3: MaGrid strategy document

- ▶ Theoretic Chemistry
- ▶ Mathematics
- ▶ High Energy Physics
- ▶ Engineering
- ▶ Oceanography
- ▶ Climatology
- ▶ Seismology
- ▶ Pollution and Environment

## 2. Algeria

The Algerian NGI is sponsored by the Ministry of Higher Education and Scientific Research, which promotes a national Programme to initiate Researchers to Grid Technology. Till now, the work has been mainly addressing dissemination and involvement of major stakeholders in the Country; a few pilot clusters are already operating and could be connected to the EUMEDGRID infrastructure. The strategy to establish the initiative is a blend of bottom-up and top-down actions: on one hand, contacts at the government level have been taken in order to raise awareness of politicians about the opportunities provided by this new technology and obtain the official recognition and support from the Ministry; in the meanwhile, several dissemination actions have been carried out in order to involve and widen the potential user base. As a natural point of reference for the Algerian Community of Research in its Country for Networking and Technologies, CERIST is of course in a unique position to get actors in the Scientific and Academic fields involved.

As regards to infrastructural aspects, the Algerian CA is in progress, but it won't probably be ready for the EuGridPMA meeting in January.

## 3. Tunisia

The Tunisian NGI appears to be well on. As the Algerian and Moroccan ones, it takes the form of a Ministry-recognized project; the project's acronym is GTRS, standing for "Grille Academique Tunisienne pour la Recherche Scientifique" (see the institutional website at: <http://www.esstt.rnu.tn/utic/gtrs/index.htm>) and it is managed by the Research Unit on Information and Communication Technology (UTIC).

Based on a peer-to-peer approach, the project aims to optimize the usage of computing facilities available to Tunisian Research Institutions, which are geographically scattered across the Country and often have a limited amount of computing power for their activities. The resulting grid infrastructure is mainly intended to provide dispersed research groups with the needed computing power without implementing of large (and expensive) computing centers (thus minimizing the economic impact for the Government and other funding agencies). In the meanwhile, national and international cooperative applications such as the ones involved in EUMEDGRID will exploit the infrastructure.

At the moment, the GTRS infrastructure is mainly based on resources made available to the project community by each participating organization on a voluntary basis; as the GTRS project is regarded as

complementary to EUMEDGRID, interoperability with gLite is a key issue for the Tunisian partners, who are in process to connect the first site to the EUMEDGRID infrastructure.

Several Tunisian research groups from different application fields (i.e., for example, Physics, Chemistry, Biology, Mechanics, Mathematics etc), plus a few international ones are at date involved in the initiative, while dissemination and outreach activities are ongoing in order to widen this initial community.

The following is a list of the Tunisian Partners involved at date in GTRS:

- ▶ UTIC
- ▶ Laboratoire de Physique de la Matière condensée
- ▶ Centre National des Sciences et Technologies Nucléaires
- ▶ Unité de Recherche en Algorithmique Parallèle et Analyse de Données - Faculté des Sciences de Tunis
- ▶ Laboratoire CRISTAL - Ecole Nationale des Sciences de l'Informatique – Manouba.
- ▶ Laboratoire de Génie Mécanique – ENIM
- ▶ Unité de Recherche en développement et contrôle d'applications distribuées (ReDCAD)
- ▶ Multimedia, Information systems and Advanced Computing Laboratory
- ▶ Centre de Calcul al Khawaritzmi

According to the Tunisian Partners' view, applications are the key issue and not the infrastructure: therefore, a large effort is devoted to involve new users, thus widening the user base. In particular, a Grid seminar (see <http://www.esstt.rnu.tn/utic/colloque>), with an audience of approximately 150 participants from different application fields was held in November 2006 and several of the attendees were involved in the EUMEDGRID user and site manager tutorials held at the end of the same month in Tunis.

New partners may join through the web portal as well, which is also provided with administration and visualizing tools.

#### **4. The role of EUMEDGRID**

An interesting outcome of the session was to clarify the role of EUMEDGRID in fostering the process of NGI formation: it was indeed clear that the engagement in EUMEDGRID is in many ways complementary to activities carried out at a national level. In particular, it appears that EUMEDGRID has been a trigger in dissemination at different levels: of course, the participation in an international, EU-funded project contributes in increasing the credibility and importance of Grid technology; furthermore, EUMEDGRID events are an occasion (although not the only one) to reach a larger public.

As grid technology are moving the first steps in these countries, the impact of EUMEDGRID activities seems to be important also in terms of training local groups (users, site administrators), establishing

new clusters, and contributing to coordinate grid initiatives at a national and regional level, thus providing a model for the rising or new-born NGIs.

## 8. CONCLUSIONS

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As shown in this document, the process of NGI formation in the Southern Mediterranean appears to be well on, with four NGIs up and running after less than a year from the beginning of the project and other three ongoing. It is clear that the participation in EUMEDGRID acted as a catalyst in this process, both providing support on the technical and know-how side, management models and occasions for discussion on the strategic and political one.

On the other hand, partners have been very active on this issue and showed so far autonomy and independence in selecting the appropriate model for their own national situation and performing the appropriate actions, thus widely proving to have both the will and the capability to carry out the necessary steps at governments/ministries level. This is already a very good result in itself, especially if compared with analogous initiatives in other part of the world, and it is expected that the situation will swiftly evolve in the next few months. It is a realistic hypothesis that the larger part (if not all of them) of Mediterranean Countries involved in EUMEDGRID will be able to set up a NGI by the end of the project, although in some cases there may be peculiar issues delaying the establishment (i.e., for instance political difficulties, or relating to the meagreness of some user communities).

However, actions to follow-up and enhance the situation will continue within WP5 and the project's activities in general for the whole duration of the project. In particular, constant monitoring of the progresses in establishing CAs and support to the implementation, configuration and connection of new grid sites in the target area will be carried out in the context of WP3 activities, while the programme of dissemination and outreach will be further exploited. Specific support in order to help single partners to follow their technical roadmaps will be provided on demand.

In a higher-level perspective, the liaison effort with related Regional projects and application/user communities will be maintained, and the project management will participate in all NGI-related initiative within the EGEE framework. Other important actions will be devoted to ensure the availability of quality network connection for Research in the Southern Mediterranean and a smooth transition to EUMEDCONNECT2 or any other solution at the end of the EUMEDCONNECT project.

## 9. APPENDIX 1: MED-NGI PROFILE QUESTIONNAIRE

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1. Please provide your contact information:
  - ▶ Title/Name:
  - ▶ Telephone:
  - ▶ e-mail:
  - ▶ country:
  
2. In your opinion, the creation of Mediterranean NGIs is important to promote grid technologies in the area?
  - ▶ Crucial
  - ▶ Quite important
  - ▶ Not very important
  - ▶ Not relevant
  
3. Why?
  
4. Have you (or someone else in your Country) taken any step in order to raise grid awareness at the political level? (You can select more than an answer).
  - ▶ No
  - ▶ Yes, took contacts with national politicians/ministries etc (please explain)
  - ▶ Yes, organized workshop(s)/conference(s)/seminar(s) etc (please explain and, if possible, provide details on the event, such as date, location, participants and URL)
  - ▶ Yes, wrote (or caused to write) articles on the web/national newspapers/other publications (please explain and, if possible, provide details and possibly a copy/a link of the article/publication)
  - ▶ Yes, other (please explain)
  
5. Is there a National Grid Initiative (NGI) in your country?

### (A) IF YES

- A.6. Please give the NGI's name and URL:
  
- A.7. Please provide the contact details of the management:
  
- A.8. What form does your NGI have?
  - ▶ An entity appointed by an official authority
  - ▶ A funded national project
  - ▶ A memorandum of understanding
  - ▶ An informal group that meets frequently
  - ▶ None of the above (please specify)
  
- A.9. Is it a separate legal entity or does it exist as part of another organisation?
  
- A.10. Is it NGI recognised by the Government? (If yes, please explain)
  
- A.11. What roles does your NGI have?

D5.2- Policy state of the art

- ▶ National Research and Education Network (NREN)
- ▶ Supercomputing centre
- ▶ National Documentation Centre / National Repository
- ▶ Other (Please specify)

A.12. How many research and academic institutes participate in the NGI?

A.13. (a) Is your NGI involved in application projects?

If yes, in which application areas:

- ▶ High Energy Physics
- ▶ Bioinformatics
- ▶ Chemistry
- ▶ Earth Sciences
- ▶ Other (Please specify)

(B) IF NOT

B.6. If possible, please indicate the reason(s) why an NGI has not been formed:

- ▶ There is not a big enough Grid community
- ▶ There is no agreement on who will lead it
- ▶ There is not enough political support from the government
- ▶ There is not enough funding support from the government
- ▶ The NGI is in a planning stage
- ▶ Other (Please specify)

B.7. Is there a plan to establish an NGI in your country?

If yes:

- ▶ What is the target launch date?
- ▶ What role(s) is it planned to take?

B.8. Have you (or someone else in the Country) taken any step towards the creation of an NGI?  
(You can select more than one answer).

- ▶ no
- ▶ yes, took contact with ministries and/or other funding agencies (please specify)
- ▶ yes, took contact with national user communities (please specify)
- ▶ yes, wrote a strategic document (please provide the document in your national language and English/French if available)
- ▶ yes, submitted (or in process of submitting) a project (please provide the document in your national language and English/French if available)
- ▶ yes, others (please specify)

B.9. Is there a national Grid project in your Country?

If yes:

B.10. What is the name and URL of the national Grid project?

B.11. What are the target areas of the national Grid project?

- ▶ Grid infrastructures (computing, storage, etc.)



D5.2- Policy state of the art

- ▶ Grid middleware
- ▶ Grid applications (please specify)
- ▶ Dissemination
- ▶ Training
- ▶ Other, please specify

B.12. Is it officially sponsored by a government ministry?

B.13. How many research and academic institutes participate in the project?

## 10. APPENDIX 2: RESPONSES TO THE QUESTIONNAIRE<sup>20</sup>

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### 1. Algeria

1. Please provide your contact information:
  - ▶ Title/Name: *Aouaouche El-Maouhab*
  - ▶ Telephone: *+213 21 91 54 34*
  - ▶ e-mail: *[elmaouhab@wissal.dz](mailto:elmaouhab@wissal.dz)*
  - ▶ country: *Algeria*
  
2. In your opinion, the creation of Mediterranean NGIs is important to promote grid technologies in the area?
  - ▶ *Quite important*
  
3. Why?
  - ▶ *Needs for these technologies for scientific community for their research and thesis work.*
  - ▶ *To be more accurate about advanced technologies for national scientific program.*
  
4. Have you (or someone else in your Country) taken any step in order to raise grid awareness at the political level?
  - ▶ *Yes, took contacts with national politicians/ministries etc:*
    - *Introduction of this technology at the ministry level.*
    - *The first step has been our participation to the EUMEDGRID project with the agreement and strong support from our ministry.*
  
5. Is there a National Grid Initiative (NGI) in your country?
  - ▶ *The NGI started at the same time as EUMEDGRID project (January 2006) and is done in parallel with EUMEDGRID project*
  
- A.6. Please give the NGI's name and URL:
  - ▶ *Not yet established.*
  
- A.7. Please provide the contact details of the management:
  - ▶ *(see above)*
  
- A.8. What form does your NGI have?
  - ▶ *A funded national project*
  
- A.9. Is it a separate legal entity or does it exists as part of another organisation?
  - ▶ *No, it's a funded national project as part of the NREN ARN activities managed by CERIST.*
  
- A.10. Is it NGI recognised by the Government?

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<sup>20</sup> Some of the questions were mutually exclusive; for this reasons, the relevant ones were reported in this Appendix. The numbering is fixed in order to allow a easy comparison among corresponding questions answered by different partners, but places are missing where no answer was given.

D5.2- Policy state of the art

- ▶ *The project is recognized by the Ministry of high education and scientific research (MESRS).*
- A.11. What roles does your NGI have?
- ▶ *NREN with computing facilities.*
- A.12. How many research and academic institutes participate in the NGI?
- ▶ *At the first step 8 universities*
  - ▶ *At the end step about 20 universities*
- A.13. Is your NGI involved in application projects?  
If yes, in which application areas:
- ▶ *High Energy Physics*
  - ▶ *Chemistry*
  - ▶ *Earth Sciences*
  - ▶ *Other (See the WP2 questionnaire for more details)*
- B.7. What role(s) is it planned to take?
- ▶ *The plan is to acquire and setup a pilot cluster to be in product state and accessible through our NREN ARN.*
  - ▶ *The second step is to identify and install the potential applications in advanced phase. The third step is to train users and administrators for GRID technology. The fourth step is to disseminate all activities related to NGI. At the end step, others clusters at universities will be setup.*
- B.8. Have you (or someone else in the Country) taken any step towards the creation of an NGI?
- ▶ *yes, took contact with ministries and/or other funding agencies (see above)*
  - ▶ *yes, took contact with national user communities through universities*
- B.11. What are the target areas of the national Grid project?
- ▶ *Grid infrastructures (computing, storage, etc.)*
  - ▶ *Grid middleware*
  - ▶ *Grid applications (will be selected soon)*
  - ▶ *Dissemination*
  - ▶ *Training*

## 2. Cyprus

1. Please provide your contact information:

- ▶ Title/Name: *Dr. Agathoclis Stylianou*
- ▶ Telephone: *+357 22892131*
- ▶ e-mail: *[agatho@ucy.ac.cy](mailto:agatho@ucy.ac.cy)*
- ▶ country: *Cyprus*

2. In your opinion, the creation of Mediterranean NGIs is important to promote grid technologies in the area?

- ▶ *Quite important*

3. Why?

- ▶ *There is a need for the local scientific community to use these tools to aid in their research and work. Powerful computing resources are scarcely available and the use of grid technologies will help advance the local scientific community in two ways. Firstly, by the introduction of new computing concepts (the grid) that will allow for more efficient use of current scarce resources. Secondly, the exposure of the local community to new technologies will aid towards the creation of more grid sites and the dissemination of knowledge through tutorials and other informative events.*

4. Have you (or someone else in your Country) taken any step in order to raise grid awareness at the political level? (You can select more than an answer).

- ▶ *No*

5. Is there a National Grid Initiative (NGI) in your country?

- ▶ *No*

B.6. If possible, please indicate the reason(s) why an NGI has not been formed:

- ▶ *The NGI is in a planning stage*

B.7. Is there a plan to establish an NGI in your country?

If Yes:

What is the target launch date?

- ▶ *End of 2007 (tentative)*

What role(s) is it planned to take?

- ▶ *The NGI will take a number of roles starting with a lead role in disseminating all available knowledge to its partners and local scientific community. This is one of the crucial roles of an NGI since it will allow for better planning and deployment of future sites and also help the local community in realising the full grid potential through various tutorials, posters and involvement with international research activities such as EGEE. In addition the NGI will be responsible in assisting with the planning, procurement and deployment of future sites by consulting with interested parties based on experience gained from initiatives in which the NGI will be a member of. (eg EUMEDGRID). The NGI is also planning to be the National Certification Authority for issuing GRID certificates to the local user community.*

B.8. Have you (or someone else in the Country) taken any step towards the creation of an NGI?



D5.2- Policy state of the art

- ▶ *Yes, took contact with national user communities (the NREN-connected organizations)*
- ▶ *Yes, others:*
  - *Have held many presentations to possible NGI partners informing them of the grid and disseminating related information.*
  - *In the process of organizing the 1st EUMEDGRID User Workshop in Cyprus which is scheduled for January 2007.*
  - *Spreading all available knowledge and newsletters via mailing lists setup for this purpose (EGEE papers, iSGTW etc).*

B.9. Is there a national Grid project in your Country?

- ▶ *No*

### 3. Egypt

1. Please provide your contact information:
  - ▶ Title/Name: *EUN Director. Dr. Omar Hassan Karam*
  - ▶ Telephone: *+202 3458366, 67*
  - ▶ e-mail: *[ohkaram@mail.eun.eg](mailto:ohkaram@mail.eun.eg)*
  - ▶ country: *Egypt*
  
2. In your opinion, the creation of Mediterranean NGIs is important to promote grid technologies in the area?
  - ▶ *Quite important*
  
3. Why?
  - ▶ *NGI helps to raise the awareness by preparing tutorials, workshops and dissemination.*
  - ▶ *NGI gives the people who working in the grid area in different counties technical support which save the time and give a great push.*
  
4. Have you (or someone else in your Country) taken any step in order to raise grid awareness at the political level?
  - ▶ *Yes, others:*
    - *Providing a political people with EUMEDGrid project situation updates.*
    - *Organizing meeting with IT contact persons in the Egyptian Universities.*
    - *Spreading printed documents about grid via mail.*
    - *Preparing to organize a local workshop to arise Grid awareness.( this will be by the end of Dec. 2006)*
  
5. Is there a National Grid Initiative (NGI) in your country? *No*
  
- B.6. If possible, please indicate the reason(s) why an NGI has not been formed:
  - ▶ *The NGI is in a planning stage*
  
- B.7. Is there a plan to establish an NGI in your country?  
If yes:
  - ▶ *What is the target launch date? Unknown till now*
  - ▶ *What role(s) is it planned to take?*
    - *Organizing the workgroup.*
    - *Establishing a Grid node in EUN.*
    - *Preparing to be Egypt CA.*
  
- B.8. Have you (or someone else in the Country) taken any step towards the creation of an NGI?
  - ▶ *Yes, others. In process of submitting a project.*
  
- B.9. Is there a national Grid project in your Country? *Yes*
  
- B.10. What is the name and URL of the national Grid project?
  - ▶ *Egyptian National Grid. (Under ERI umbrella) The URL is not available yet.*
  
- B.11. What are the target areas of the national Grid project?



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- ▶ *Grid infrastructures (computing, storage, etc.)*
- ▶ *Grid middleware*
- ▶ *Grid applications*

B.12. Is it officially sponsored by a government ministry? *No.*

B.13. How many research and academic institutes participate in the project? *Two*

#### 4. Jordan

1. Please provide your contact information:
  - ▶ Title/Name: *Yousef Torman*
  - ▶ Telephone: *+962 6 5330527*
  - ▶ e-mail: *[yousef@junet.edu.jo](mailto:yousef@junet.edu.jo)*
  - ▶ country: *JORDAN*
  
2. In your opinion, the creation of Mediterranean NGIs is important to promote grid technologies in the area?
  - ▶ *Crucial*
  
3. Why?
  - ▶ *Because this is the only way to provide researchers in this area with computing power and applications and to encourage the joint research as well as the promoting the research that focus on the needs of this area like water issues etc.*
  
4. Have you (or someone else in your Country) taken any step in order to raise grid awareness at the political level?
  - ▶ *Yes, took contacts with national politicians/ministries: I started promoting the Grid concept to the Universities by sending them some brochures to be distributed (also electronic copies) to the faculty members in these Universities. I also visited and made presentations to the scientific research councils in each University, the presentations also included some video material produced by some GRID communities. I requested meetings with the ministers of ICT and Higher Education and Scientific Research and the national research centres to promote the GRID and the NGI.*
  
5. Is there a National Grid Initiative (NGI) in your country? *NO*
  
- B.6. If possible, please indicate the reason(s) why an NGI has not been formed:
  - ▶ *The NGI is in a planning stage*
  
- B.7. Is there a plan to establish an NGI in your country? *NO*
  
- B.8. Have you (or someone else in the Country) taken any step towards the creation of an NGI?
  - ▶ *yes, took contact with ministries and/or other funding agencies*
  
- B.9. Is there a national Grid project in your Country? *NO*

## 5. Malta

1. Please provide your contact information:

- ▶ *Title/Name: Dr. Kevin Vella*
- ▶ *Telephone: +356 2340 2128*
- ▶ *e-mail: kevin.vella@um.edu.mt*
- ▶ *country: Malta*

2. In your opinion, the creation of Mediterranean NGIs is important to promote grid technologies in the area?

- ▶ *Crucial*

3. Why?

- ▶ *If the NGIs gain political and financial support from the national governments and the European Commission while representing the interests of the nascent grid user communities in the participating countries, they could form the basis for a sustainable grid infrastructure operating at both the national and regional level.*

4. Have you (or someone else in your Country) taken any step in order to raise grid awareness at the political level? (you can select more than an answer).

- ▶ *To date, some indirect steps have been taken to raise grid awareness at the political level in Malta:*
  - ▶ *The EUMEDGRID kick-off meeting was held in Malta in February 2006, at the Radisson SAS in St. Julians, at which delegates from all partner countries were present. A one day information session on Grid computing which was open to the Maltese public, was also held. The Maltese Minister for Education, Dr. Louis Galea, opened the meeting with a keynote speech.*
  - ▶ *The meeting was covered by the local print and visual media. In subsequent months, a number of television spots were aired to introduce the concept of grid computing to the Maltese audience.*
  - ▶ *A paper promoting the EUMEDGRID project is being presented at CSAW2006, a Maltese computer science workshop, in December 2006.*

5. Is there a National Grid Initiative (NGI) in your country?

- ▶ *No*

B.6. If possible, please indicate the reason(s) why an NGI has not been formed:

- ▶ *There is not a big enough Grid community: The Maltese Grid community is, at the time of writing (November 2006), in its nascent stages. Prior to EUMEDGRID, no effort to promote the use of grid computing in Malta existed, and Maltese researchers did not have the opportunity to experience grid technologies. No political pressure was exerted to establish an NGI due to the non-existence of a grid community with grid applications.*

B.7. Is there a plan to establish an NGI in your country?

If yes:

What is the target launch date? What role(s) is it planned to take?

D5.2- Policy state of the art

- ▶ *We intend to seek support to establish an NGI once we succeed in establishing a Maltese community of grid users to back the cause.*

B.8. Have you (or someone else in the Country) taken any step towards the creation of an NGI?

- ▶ *Yes, took contact with national user communities: as part of EUMEDGRID, we are currently assembling a small community of Maltese researchers who are interested in making use of grids to assist them in their research in areas such as Engineering and Biomedical Sciences and identifying their application requirements. We plan to guide these potential users to deploy their applications on EUMEDGRID, thus creating a first generation grid community in Malta. It is envisaged that this first wave of users will, with sufficient exposure in the local media, turn on a wider audience to the benefits of grid computing. We believe that a credible case for the creation of a Maltese NGI can only be made to the Maltese government when a number of local researchers are actively utilizing grid technologies through the EUMEDGRID infrastructure. If the political push for the creation of an NGI is made without the backing of a user community with real applications, there is a danger that grids will be perceived as a technology searching for a problem to solve, and our potential to influence political directions in the future would be accordingly diminished.*

B.9. Is there a national Grid project in your Country?

- ▶ *No*

## 6. Morocco

1. Please provide your contact information:
  - ▶ Title/Name: *Dr. Redouane Merrouch*
  - ▶ Telephone: *212 37686233*
  - ▶ e-mail: *[merrouch@cnrst.ma](mailto:merrouch@cnrst.ma)*
  - ▶ country: *Morocco*
  
2. In your opinion, the creation of Mediterranean NGIs is important to promote grid technologies in the area?
  - ▶ *Crucial*
  
3. Why?
  - ▶ *Permettre aux pays Méditerranéens d'accéder aux moyens de calculs importants*
  - ▶ *Faciliter la coopération scientifique entre les 2 rives de la Méditerranée*
  
4. Have you (or someone else in your Country) taken any step in order to raise grid awareness at the political level?
  - ▶ *Yes, took contacts with national politicians/ministries etc: Nous avons convaincu le Ministère de l'Enseignement Supérieur de Financer la mise en place d'une grille national de calcul au Maroc appelée MaGrid.*
  - ▶ *Yes, organized workshop(s)/conference(s)/seminar(s) etc: En Décembre 2005 le CNRST a réuni des représentants des universités Marocaines et des experts en grille de calcul pour élaborer une stratégie pour la mise en place d'une grille de calcul au Maroc (MaGrid).*
  - ▶ *Yes, wrote (or caused to write) articles on the web/national newspapers/other publications (please explain and, if possible, provide details and possibly a copy/a link of the article/publication): Article sur MaGrid/EumedGrid publié le 12 Octobre 2006 sur le principal portail Marocain spécialisé dans le TI : MarocIT ( <http://www.maroc-it.com> <sup>21</sup>).*
  
5. Is there a National Grid Initiative (NGI) in your country? *Yes*
  
- A.6. Please give the NGI's name and URL:
  - ▶ *MaGrid, <http://www.magrid.ma>*
  
- A.7. Please provide the contact details of the management:
  - ▶ Title/Name: *Dr. Redouane Merrouch*
  - ▶ Telephone: *212 37686233*
  - ▶ e-mail: *[merrouch@cnrst.ma](mailto:merrouch@cnrst.ma)*
  - ▶ country: *Morocco*
  
- A.8. What form does your NGI have?
  - ▶ *An entity appointed by an official authority*
  - ▶ *A funded national project*
  
- A.9. Is it a separate legal entity or does it exist as part of another organisation?
  - ▶ *Part of the CNRST (National Centre of Scientific and Technical Research)*

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21 The articles and relating to EUMEDGRID and its partners are available at: <http://www.eumedgrid.org/cut.html>

D5.2- Policy state of the art

- A.10. Is it NGI recognised by the Government? *Yes*
- A.11. What roles does your NGI have?  
▶ *Supercomputing centre*
- A.12. How many research and academic institutes participate in the NGI?  
▶ *13 Universities*
- A.13. Is your NGI involved in application projects? *Yes*  
If yes, in which application areas:  
▶ *High Energy Physics*  
▶ *Bioinformatics*  
▶ *Chemistry*  
▶ *Earth Sciences*  
▶ *Other: Hydrologie*

## 7. Palestine

1. Please provide your contact information:
  - ▶ Title/Name: *Mahir Sabra, Ph.D*
  - ▶ Telephone: *+970/2 82860700 ex: 1049/1270*
  - ▶ e-mail: *[mahir@iugaza.edu](mailto:mahir@iugaza.edu)*
  - ▶ country: *Palestine*
  
2. In your opinion, the creation of Mediterranean NGIs is important to promote grid technologies in the area?
  - ▶ *Quite important*
  
3. Why?
  - ▶ *Grids are crucial in order to exchange knowledge amongst different countries in the Mediterranean and promote cooperation in Research, and NGIs are a major step towards their establishment in the area.*
  
4. Have you (or someone else in your Country) taken any step in order to raise grid awareness at the political level?
  - ▶ *Yes, took contacts with national politicians/ministries etc. We contacted the Ministry of Telecommunication and Information Technology and explained the importance of establishing a National Grid Initiative in Palestine. The Ministry welcomed the idea and we are trying to follow-up the issue, but at the moment there are difficulties in pursuing it.*
  
5. Is there a National Grid Initiative (NGI) in your country? *No*
  
- B.6. If possible, please indicate the reason(s) why an NGI has not been formed:
  - ▶ *There is not a big enough Grid community*
  - ▶ *There is not enough funding support from the government*
  - ▶ *The NGI is in a planning stage*
  - ▶ *At the moment, the only effort towards the NGI is within EUMEDGRID*
  
- B.7. Is there a plan to establish an NGI in your country? Yes  
If yes:
  - *What is the target launch date? [Mid 2007](#)*
  - *What role(s) is it planned to take?*
    - ▶ *Coordinate grid efforts amongst different Palestinian Institutions;*
    - ▶ *Technical support;*
    - ▶ *Dissemination of know-how*
    - ▶ *Promote implementation of grid clusters across the country*
    - ▶ *Work on sustainability and funding sources to support grid activity*
  
- B.8. Have you (or someone else in the Country) taken any step towards the creation of an NGI?
  - ▶ *Not yet*
  
- B.9. Is there a national Grid project in your Country?
  - ▶ *At the moment, the only effort at a national level is within EUMEDGRID*
  
- B.10. What are the target areas of the national Grid project?



- ▶ *Grid infrastructures (computing, storage, etc.)*
- ▶ *Dissemination*
- ▶ *Training*

B.11. Is it officially sponsored by a government ministry? *No*

B.12. How many research and academic institutes participate in the project?

- ▶ *13*

## 8. Syria

1. Please provide your contact information:
  - ▶ Title/Name: *Dr. Maher Suleiman*
  - ▶ Telephone: *+963 94 654 153*
  - ▶ e-mail: *[m.suleiman@hiast.edu.sy](mailto:m.suleiman@hiast.edu.sy)*
  - ▶ country: *Syria*
  
2. In your opinion, the creation of Mediterranean NGIs is important to promote grid technologies in the area?
  - ▶ *Quite important*
  
3. Why?
  - ▶ *The Grid technology is new for some of Mediterranean countries. Creation of NGIs in such countries will be a good way to demonstrate the benefits of the grid where it may offer solutions to many research problems that need a huge processing power and storage space.*
  
4. Have you (or someone else in your Country) taken any step in order to raise grid awareness at the political level?
  - ▶ *Yes, took contacts with national politicians/ministries etc*
  - ▶ *I am working know on organizing a meeting with the minister of Higher Education and with some other key persons and decision taker in research filed to discuss with them some issues about the networking infrastructure in Syria. This will include launching an NGI.*
  
5. Is there a National Grid Initiative (NGI) in your country? *NO*
  
- B.6. If possible, please indicate the reason(s) why an NGI has not been formed:
  
- B.7. Is there a plan to establish an NGI in your country? *Not Yet*
  
- B.8. Have you (or someone else in the Country) taken any step towards the creation of an NGI?  
*No*
  
- B.9. Is there a national Grid project in your Country?
  - ▶ *No, Except our participation to EUMedGrid*

## 9. Tunisia

1. Please provide your contact information:
  - ▶ Title/Name: *Prof. Mohamed JEMNI*
  - ▶ Telephone: *+216 97 419 328*
  - ▶ e-mail: *[mohamed.jemni@fst.rnu.tn](mailto:mohamed.jemni@fst.rnu.tn)*
  - ▶ country: *Tunisia*
  
2. In your opinion, the creation of Mediterranean NGIs is important to promote grid technologies in the area?
  - ▶ *Crucial*
  
3. Why?
  - ▶ *It is important to gain competencies related to different aspects of this technology. This is important for the use this technology and also to conduct research in this area.*
  
4. Have you (or someone else in your Country) taken any step in order to raise grid awareness at the political level?
  - ▶ *Yes, took contacts with national politicians/ministries etc: I already met the Tunisian Minister of Research, Technology and development of competencies and he is encouraging these activities.*
  - ▶ *Yes, organized workshop(s)/conference(s)/seminar(s) etc:*
    - *Organization of An EUMEDGRID tutorial (27 Nov – 01 Dec 2006, ESSTT, Tunis)*
    - *A conference on Grid Computing, November 3 2006, ESSTT, Tunis ([www.esstt.rnu.tn/utic/colloque](http://www.esstt.rnu.tn/utic/colloque))*
  - ▶ *Yes, wrote (or caused to write) articles on the web/national newspapers/other publications: two articles in Tunisian newspapers (Le temps and Le Quotidien; One is available online as well at: <http://www.letemps.com.tn/default.asp?Date=20061101>)<sup>22</sup>*
  
5. Is there a National Grid Initiative (NGI) in your country?
  - ▶ *Yes*
  
- A.6. Please give the NGI's name and URL:
  - ▶ *[www.esstt.rnu.tn/utic/gtrs](http://www.esstt.rnu.tn/utic/gtrs)*
  
- A.7. Please provide the contact details of the management:
  - ▶ *Research Unit UTIC of Ecole Supérieure des Sciences et Techniques de Tunis – University of Tunis ([www.esstt.rnu.tn/utic](http://www.esstt.rnu.tn/utic))*
  
- A.8. What form does your NGI have?
  - ▶ *An informal group that meets frequently*
  - ▶ *A memorandum of understanding*
  
- A.9. Is it a separate legal entity or does it exists as part of another organisation?
  - ▶ *Part of another organisation*

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<sup>22</sup>The articles and relating to EUMEDGRID and its partners are available at: <http://www.eumedgrid.org/cut.html>

D5.2- Policy state of the art

- A.10. Is it NGI recognised by the Government?  
▶ *It is encouraged by the government.*
- A.11. What roles does your NGI have?  
▶ *National Research and Education Network (NREN)*
- A.12. How many research and academic institutes participate in the NGI?  
▶ *9 research and academic institutes or laboratories and more participants are expected to join the NGI.*
- A.13. Is your NGI involved in application projects?  
▶ *Our NGI makes available an environment to deploy and run applications but it is not dedicated for any specific application.*

## 10. Turkey

1. Please provide your contact information:

- ▶ Title/Name: *Dr. Burcu AKCAN*
- ▶ Telephone: *+903122989368*
- ▶ e-mail: *[burcu@ulakbim.gov.tr](mailto:burcu@ulakbim.gov.tr)*
- ▶ country: *Turkey*

2. In your opinion, the creation of Mediterranean NGIs is important to promote grid technologies in the area?

- ▶ *Quite important*

3. Why?

- ▶ *National and regional NGIs provide significant support for grid infrastructure and projects sustainability. Especially regional NGI such that Mediterranean NGI is quite important to define and improve of regional grid e-infrastructure strategy.*

4. Have you (or someone else in your Country) taken any step in order to raise grid awareness at the political level?

- ▶ *Yes, organized workshop(s)/conference(s)/seminar(s) etc: the TR-GRID First National Grid Workshop was organized at 21-22 September 2005, in Ankara /Turkey with participation of nearly 80 participants. The second one will be organized at the beginning of 2007. Some bureaucrats and politicians are invited for opening presentation of the workshop.*

5. Is there a National Grid Initiative (NGI) in your country?

- ▶ *Yes*

A.6. Please give the NGI's name and URL:

- ▶ *TR-GRID <http://www.grid.org.tr>*

A.7. Please provide the contact details of the management:

- ▶ *TUBITAK ULAKBIM*  
*Dr. Burcu Akcan*  
*+903122989368*  
*[burcu@ulakbim.gov.tr](mailto:burcu@ulakbim.gov.tr)*

A.8. What form does your NGI have?

- ▶ *A memorandum of understanding*

A.9. Is it a separate legal entity or does it exists as part of another organization?

- ▶ *TR-GRID NGI is an agreement body between TUBITAK ULAKBIM and Bilkent, Bogazici, METU, ITU, Erciyes, Cukurova and Pamukkale Universities. TUBITAK ULAKBIM is the coordinator and chair of TR-GRID. TUBITAK, as the mother organization, belongs directly to Prime Ministry of Turkey and has high level authorizations to provide and improve of scientific and technological policy of Turkey.*

A.10. Is it NGI recognised by the Government? (If yes, please explain)

D5.2- Policy state of the art

- ▶ *TR-GRID national initiative is indirectly recognized by Turkish Prime Ministry because of legal status and high level authorizations of TUBITAK.*

A.11. What roles does your NGI have?

- ▶ *National Research and Education Network (NREN)*

A.12. How many research and academic institutes participate in the NGI?

- ▶ *8*

A.13. Is your NGI involved in application projects? *Yes*

If yes, in which application areas:

- ▶ *High Energy Physics*
- ▶ *Chemistry*
- ▶ *Earth Sciences*

B.9. Is there a national Grid project in your Country? *Yes*

B.10. What is the name and URL of the national Grid project?

- ▶ *“Turkish National Grid Infrastructure” (TUGA) project is funded by TUBITAK to provide significant infrastructure to TR-GRID.*

B.11. What are the target areas of the national Grid project?

- ▶ *Grid infrastructures (computing, storage, etc.)*
- ▶ *Dissemination*
- ▶ *Training*

B.12. Is it officially sponsored by a government ministry?

- ▶ *TUGA project is sponsored by TUBITAK's special budget that is allocated directly by Prime Ministry for establishment and improvement of research infrastructure in Turkey.*

B.13. How many research and academic institutes participate in the project?

- ▶ *7*



## 11. APPENDIX 3: MAGRID STRATEGY DOCUMENT

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