



Enabling Grids for
E-science in Europe

*EGEE 3rd parties Advanced Induction Course,
Athens 20-21/01/05*

HellasGrid project overview

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Objectives of this session

- HG project overview
- Infrastructure details
- Relationship with EGEE

Hellasgrid project overview

OPIS Area:	2.1 “ eGovernment for the citizen”
Category	3: “Pilot and innovative applications”
Title:	Design and development of pilot infrastructures and advanced Grid-enabled services – HellasGrid
Budget:	1,78 Million Euros
Duration:	26 months (start date 01/11/04)

Hellasgrid project summary

- “Hellasgrid aims at..
 - Developing a national Grid infrastructure
 - Testing Grid technologies at a national and pan-European scale
 - Sharing computing, storage and other resources
 - With the perspective of provisioning complete **eGovernment** services for the citizen
- Takes into account:
 - The HG Task Force **Strategy** document
- Testing Grid technologies requires:
 - **Infrastructure**:
 - Procurement of multiple computing-storage islands + virtual collaboration environment
 - **Middleware** deployment
 - Other studies – pilot implementations
 - Integration of other resources
 - **Applications** to run on top including the new GSRT call
- Exploit GRNET network
- **eScience Research and Academic** community:
 - Giving requirements, providing infrastructure for integration with HG, providing know-how, being users (**All in one**)

Hellasgrid project objective

- Hellasgrid objective is the creation of a reliable infrastructure
 - on which technologically advanced distributed applications could run
 - with emphasis on the exploitation of the citizens
 - E.g. Distributed storage and data mining for eGov applications:
 - Tax, Insurance, Social security, Demographic, Recruitment enlistment
 - Civil protection (meteorological prediction of extreme weather conditions), geophysical surveillance (forests, fires, oceans, tsunami), earthquake prediction etc
 - Access, processing and mining information in distributed databases for Health (eHealth)

Project status



- Started: November 2004
- End date: December 2006
- Conditions for project approval
 - Clusters CPU numbers/locations given
 - Applications projects must be supported (Call 3.3)
 - Grid use only
 - Common access policies – safeguarded by GRNET
 - Sites should provide proper telehousing conditions – Should sign SLAs

HellasGrid main activities

- Infrastructure: procurement and integration of
 - 6 Grid computing nodes in Athens (3), Thessaloniki, Patras, Heraclion
 - 4 AccessGrid nodes
 - 30TB Storage & 50 TB Tape Silo
- Middleware deployment, customization and porting
- Establishment of Grid Operations and Management tools
- Studies & Pilots:
 - Middleware
 - Security
 - eGovernment
- Dissemination
 - Conference-workshop-presentations

HellasGrid detailed activities

Y1 - Προμήθεια Συστοιχιών Υπολογιστικών & Αποθηκευτικών Συστημάτων

Y2 - Προμήθεια Συστήματος Εφεδρικού Αποθηκευτικού Χώρου

Y3 - Προμήθεια Κόμβων Εικονικού Περιβάλλοντος Διαχείρισης Access Grid

Y4 - Ανάλυση απαιτήσεων & σχεδιασμός, Λογική και Φυσική Αρχιτεκτονική, Προδιαγραφές Έργου, Τεχνική Υποστήριξη (με ίδια μέσα)

Y5 - Μελέτη, Προσαρμογή & Εγκατάσταση Ενδιάμεσου Λογισμικού στις Συστοιχίες Υπολογιστικών Συστημάτων

Y6 - Μελέτη και Πιλοτική Ολοκλήρωση υφιστάμενων εθνικών Υπολογιστικών Υποδομών με τις Υποδομές HellasGrid

Y7 - Προσαρμογή Λογισμικού Διαχείρισης Δεδομένων & Αποθηκευτικού Χώρου

Y8 - Σχεδιασμός Λειτουργίας και Ανάπτυξη Πανελλήνιας Αρχής Πιστοποίησης & Πολιτικών Ασφαλείας

Y9 - Μελέτη & Λειτουργία Κόμβων Διαχείρισης Υπολογιστικών Συστημάτων και Αποθηκευτικού Χώρου (Grid Operation Centers) και Προσαρμογή/Ανάπτυξη Λογισμικού Διαχείρισης Πλέγματος

Y10 - Μελέτη Αξιοποίησης Υποδομών Grid σε Υπηρεσίες Ηλεκτρονικής Διακυβέρνησης για τον Πολίτη και τις Επιχειρήσεις

Y11- Επικοινωνία & Μεταφορά Αποτελεσμάτων (με ίδια μέσα)

HellasGrid infrastructure procurement

Infrastructure procurement:

-Subproject 1: 6 Grid computing nodes in Athens (3), Thess/niki, Patras, Heraclion - *930K Euro*

-Subproject 2: 30TB Storage & 50 TB Tape Silo - *120K Euro*

-Subproject 3: 4 AccessGrid nodes - *80K Euro*

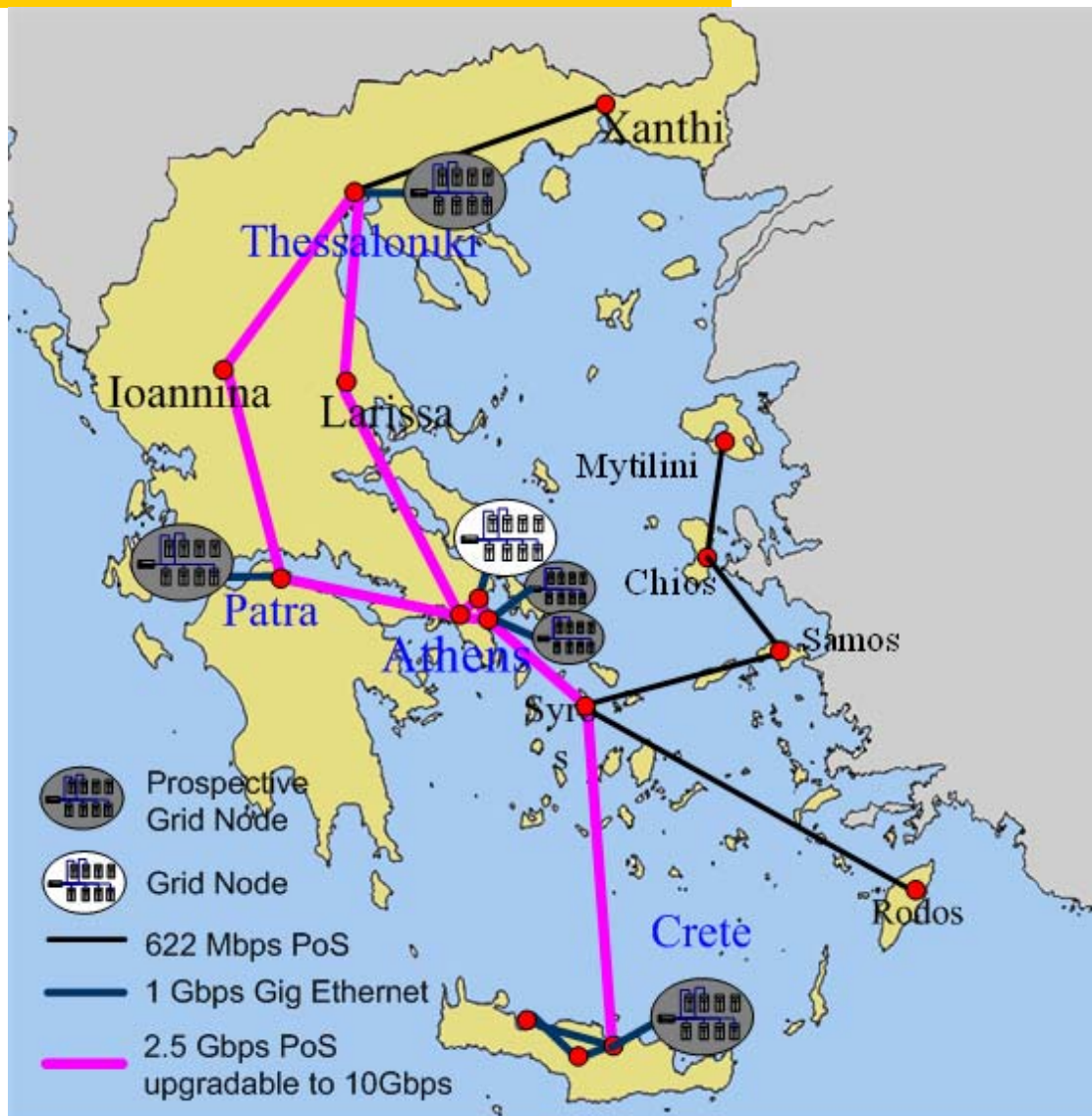
-International Tender

-Initial plan:

-Start: M3 (January 2005)

-End: M8 (**May 2005**)

→ 2 detailed presentations by Christos Aposkitis



HellasGrid infrastructure

- 6 sites connected with 2,5 Gbps GRNET2 network:
 - 96 CPU nodes NTUA
 - 96 CPU nodes IASA
 - 128+64 CPU nodes Demokritos (GRNET)
 - 128 CPU nodes AUTH (Thessaloniki)
 - 128 CPU nodes CTI (Patras)
 - 128 CPU nodes FORTH (Heraclion)
 - Additional 6 x 4 TB on-line storage in local sites
 - Additional 50 TB Tape Library in Demokritos (GRNET)
 - 4 Access Grid nodes

Subprojects 4-6 (PM, M/W, Integration)

- Subproject 4 - Requirements, Design, Specs & Project management – GRNET
 - M1-M26 -200K
- Subproject 5 – Study and implementation of M/W deployment:
 - Study: M/W state of the art → Cookbook
 - Study: National OMII
 - Implementation: adaptation, customization, demonstration of selected M/W in the 6 clusters
 - M6-M12 (April-October 2005)
 - To be given to Third party according to GRNET procurement regulation – 45K
- Subproject 6 – Study and pilot integration of other resources
 - Study: Desktop Grids (Schools, University PC labs, Hospital, Governmental institutes, etc.) or Supercomputing
 - Pilot integration
 - M13-M26 (November 2005 – December 2006)
 - To be given to Third party according to GRNET procurement regulation – 45K

Subprojects 7-8 (Storage – Security)

- Subproject 7 - Distributed Storage and data replication
 - Study: Provisioning of distributed storage and replication architecture
 - Implementation: Middleware deployment and customization (e.g. RLS)
 - M13-M26 (November 2005 – December 2006)
 - To be given to Third party according to GRNET procurement regulation – 45K
- Subproject 8 – Study and implementation of Hellasgrid CA and security – access policies:
 - Studies: Security and access policies, Certificate issuing policies, Middleware architecture
 - Implementation: HellasGrid CA
 - M6-M12 (April-October 2005)
 - To be given to Third party according to GRNET procurement regulation – 45K

Subproject 9 - Operations

- Subproject 9 – Study and Implementation of Grid Operations Centers and Monitoring Software development
 - Study: GOC development
 - Implementation: GOC development and demonstration
 - GOC operations
 - Implementation: Monitoring tool development/adaptation
 - Implementation: Portal development and tools integration
 - M3-M26 (January 2005-December 2006)
 - 160K: International Tender

Subprojects 10-11 (eGov-Dissemination)

- Subproject 10 - eGovernment exploitation study
 - Study: eGovernment exploitation study
 - Study: State of the art – strategy for national eGov services
 - M14-M26 (December 2005 – December 2006)
 - Tender – 65K
- Subproject 11 – Dissemination: M6-M12 (April-October 2005)
 - Action plan
 - Dissemination material
 - EGEE 3rd Conference - Workshops
 - GRNET– 45K

- Efharisto!
- Questions?