The Workplan of the EELA-2 Project

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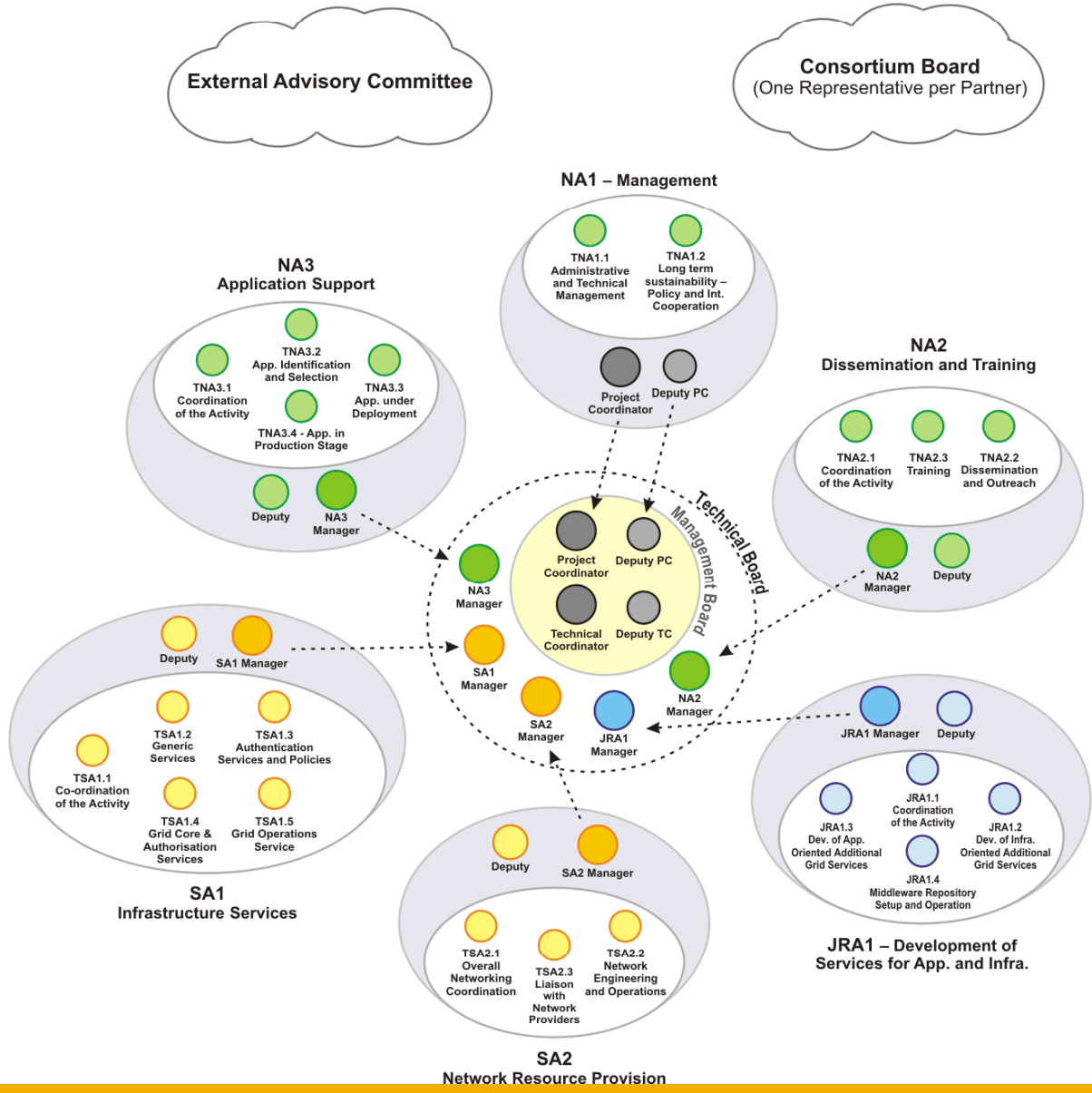
University of Catania and INFN (Italy)
EELA-2 Workshop
Monterrey (Mexico), 06.10.2008

Outline

- **Work Breakdown Structure:**
  - Description of Work and resources;
  - Partners' involvement;
  - Procedures and workflows;
- **Survey of results after first six months**
- **Summary and conclusions**

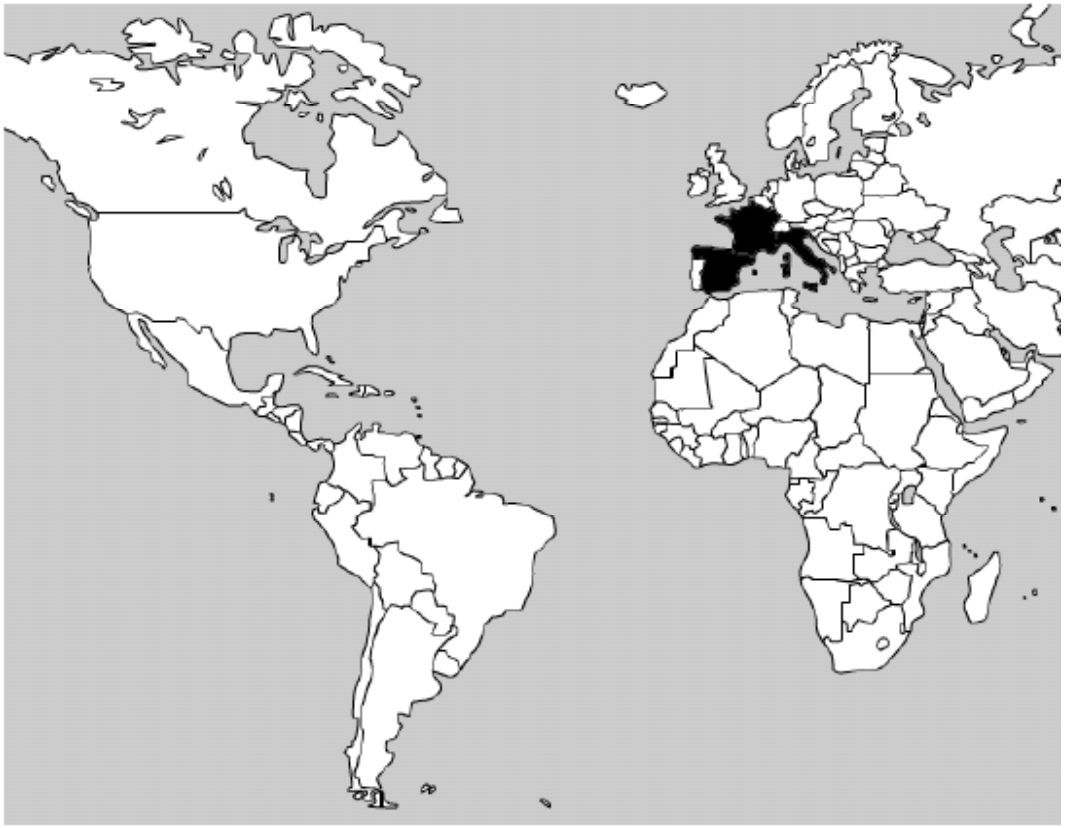
Management Structure



NA1 – Management of the project (general overview)

- **Leading partner: CIEMAT**
- **Total Effort: 18 PM UF + 8 PM F**
- **Objectives:**
  - Overall coordination and management of the project;
  - Long-term sustainability, policies, and international cooperation.
- **DoW:**
  - **TNA1.1: Administrative and Technical Management of the Project (CIEMAT)**
    - **This task will deal with the overall coordination and management of the project.**
  - **TNA1.2: Long-term Sustainability – Policy, International Cooperation (CIEMAT)**
    - **This task will care about long-term sustainability of the e-Infrastructure and of the liaison with international initiatives, representing the EELA-2 views. It contributes to policy & standards definition with the objective of ensuring long-term sustainability of the e-Infrastructures.**

NA1 – Management of the project (partners involved)



- **CIEMAT (8 PM)**
- **HLP (8 PM)**
- **INFN (10 PM)**

NA2 – Dissemination and Training (general overview)

- **Leading partner: ULA**
- **Total Effort: 48 PM UF + 72 PM F**
- **Objectives:**
  - Promote and spread the Project to the scientific, academic and industrial communities as well as among politicians and decision makers / coordinating the training process on the use and management of the grid infrastructure.
- **DoW:**
  - **TNA2.1: Activity coordination and management (ULA)**
    - **This task will deal with the overall coordination of the Activity.**
  - **TNA2.2: Dissemination and Outreach (CLARA)**
    - **This task will deal with the organization of dissemination events and production of multimedia material and documentation in different languages;**
  - **TNA2.3: Training (INFN)**
    - **This task will deal with the organization of induction tutorials and management of a digital document repository.**

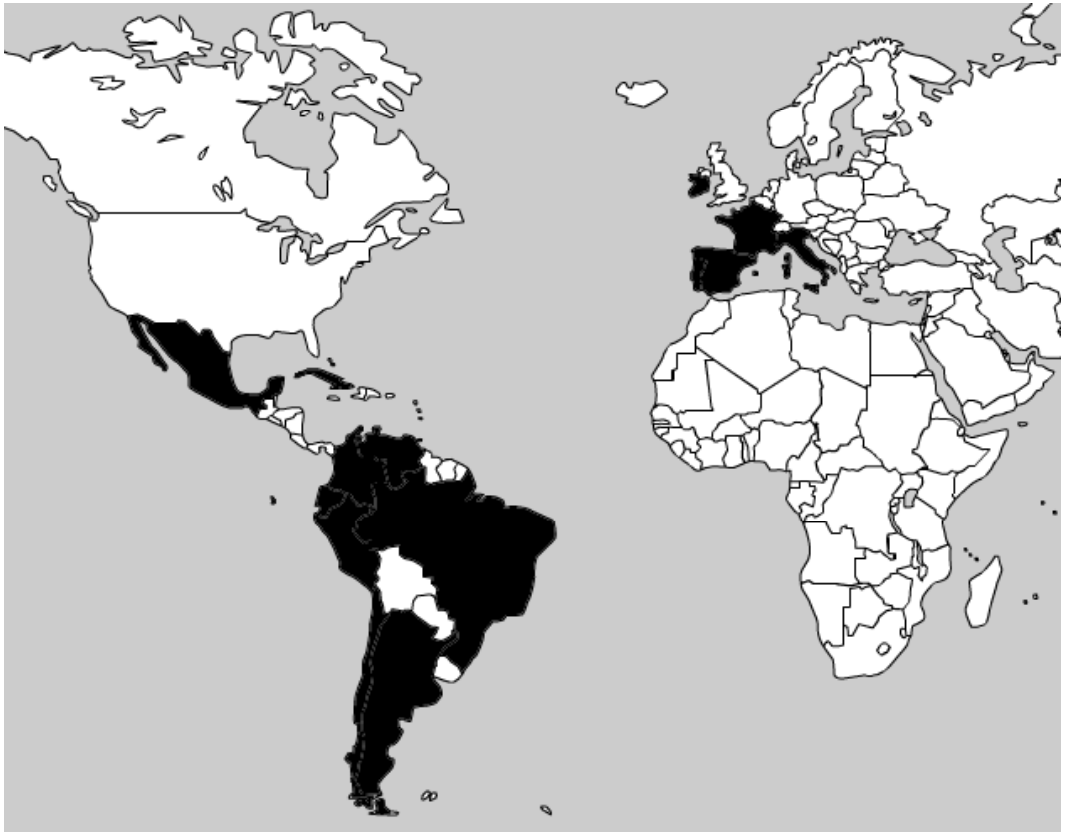
NA2 – Dissemination and Training (partners involved)

- **ULA (32 PM)**
- **CIEMAT (20 PM)**
- **CUBAENERGIA (8 PM)**
- **CLARA (18 PM)**
- **HLP (2 PM)**
- **INFN (16 PM)**
- **LINTI-UNLP (8 PM)**
- **UNAM (8 PM)**
- **UFRJ (8 PM)**

NA3 – Application Support (general overview)

- **Leading partner: INFN**
- **Total Effort: 151 PM UF + 136 PM F**
- **Objectives:**
  - To provide support to a series of relevant and strategic applications that have been and will be selected through a strict, although open, procedure from a large portfolio.
- **DoW:**
  - **TNA3.1: Coordination of the Activity (INFN)**
    - This task will deal with the overall coordination of NA3.
  - **TNA3.2: Application Identification, Selection and Gridification Support (INFN)**
    - This task will carry out the identification of the applications to be deployed on the EELA-2 Production Infrastructure and the setup of a “gridification” team able to understand the applications’ requirements and lead the porting process-
  - **TNA3.3: Applications under Deployment (CIEMAT)**
    - This task will be responsible for planning the deployment strategy and assisting the applications’ owners during testing and actual deployment of the software.
  - **TNA3.4: Applications in Production Stage (CIEMAT)**
    - This task will be responsible for assisting applications’ owners accessing output data and integrating results of different applications in the same domain.

NA3 – Application Support (partners involved)



- INFN (25 PM)
- CIEMAT (64 PM)
- CUBAENERGIA (8 PM)
- UCC-CMRC (18 PM)
- CNRS (28 PM)
- LINTI-UNLP (6 PM)
- REUNA (10 PM)
- SENAMHI (4 PM)
- ULA (34 PM)
- UNIANDES (4 PM)
- UNAM (13 PM)
- UPORTO (4 PM)
- UFRJ (89 PM)
- UTPL (2 PM)

Already identified applications

Application short name	Scientific Domain	Leading Institution	Country
AlignSeq	Bioinformatics	UTPL	Ecuador
AlterORF	Bioinformatics	FCV	Chile
CMS software	HEP	UNIANDES	Colombia
CROSS-Fire	Civil Protection	UMINHO	
DRACON	HEP	UFRJ	
eIMRT	Bioinformatics		
Filogenia			Spain
GenecodisGrid		UCM	Spain
	Optimization	UNEX	Spain
	Bioinformatics	UFRJ	Brazil
Heart Simulator	Bioinformatics	UFJF	Brazil
HeMoLab application	Bioinformatics	LNCC	
HEP at RHIC and LHC	HEP	UTFSM	
HIRLAM + WAM	Earth Sci		
HPC Structure			Peru
Industr		LAFET/RJ	Brazil
Integra		UNMACK	Brazil
LOA	Optimization	COPPE / UFRJ	Brazil
LSC Cardiology Portal	Bioinformatics	UBA	Argentina
MIRaS + GAMOS	Bioinformatics	CIEMAT	Spain
MM5 Coquimbo	Earth Science	CEAZA	Chile
ProtozoaDB	Bioinformatics	FIOCRUZ	Brazil
SAG-Ocean	Earth Sciences	INPE	Brazil
WABA	Bioinformatics	IME	Brazil

Application short name	Scientific Domain	Leading Institution	Country
3D simulation of the seismic response of geological basins	Earth Sciences	IPGP	France
AERMOD	Environmental Sciences	CUBAENERGIA	Cuba
Aiuri Project	Data mining	COPPE / UFRJ	Brazil
ALICE	HEP	CIEMAT / UNAM	Spain, Mexico
ATLAS	HEP	IFLP-UNLP	
BiG	Bioinformatics	UPV	
BRAMS	Earth Sci		
CAM+WRF			Peru, Spain, Chile
Centroid Seismi of M		IPGP	France
	Bioinformatics	INCOR	Brazil
	Physics	CIEMAT	Spain
owledge	e-Learning	MAAT-G	Spain
fMRI analysis	Bioinformatics	UAV	Portugal
GrEMBOSS	Bioinformatics	UNAM	
Grid infrastructure, security & middleware	Grid Security	LINTI-UNL	
Grid Portal of Bioinformatics	Bioinfo		Spain
gSATyrus		UFRJ	Brazil
Interop. for bio		CUBAENERGIA	Cuba
	Food Engineering	UNAM	Mexico
	HEP	CNRS	France
Mammogrid+	Bioinformatics	MAAT-G	Spain
Phylogenetics service	Bioinformatics	UPV	Spain
Pierre Auger Experiment	HEP	INFN / UNAM	Italy, Mexico
PILP	Artificial Intelligence	UPORTO	Portugal
Portal de Pórticos	Engineering	ULA	Venezuela

Applications to be "gridified"

One of the biggest challenges of EELA-2 !

Already "gridified" applications

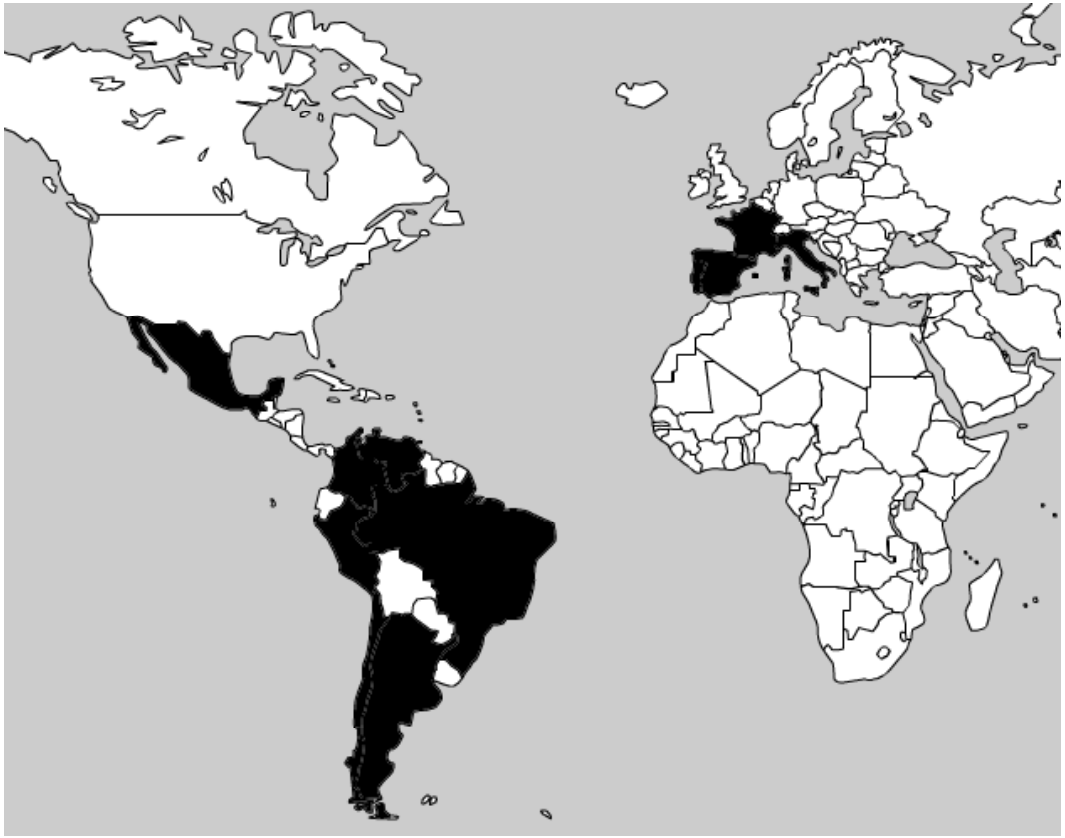
SA1 – Grid Infrastructure Service Activity (general overview – 1/2)

- **Leading partner: UFRJ**
- **Total Effort: 303 PM UF + 414 PM F**
- **Objectives:**
  - The Service Activity 1 (SA1) will create, operate, maintain, support and manage a production quality Grid empowered infrastructure, which will make computing and storage resources from selected partners across the Latin American and European areas accessible to EELA2 e-Science communities. Moreover, this activity will consolidate the prospective work done by the previous SSA project, undertaken in both areas, also fostering the creation of basic organizational structures, protocols and procedures required for a long-term operation of a European-Latin American interoperable infrastructure.
- **DoW:**
  - **TSA1.1 – Coordination of the activity (UFRJ)**
    - take care of all aspects related to the administration of SA1, including all necessary effort related to the inter-task co-ordination and the liaison with the entire project;

SA1 – Grid Infrastructure Service Activity (general overview – 2/2)

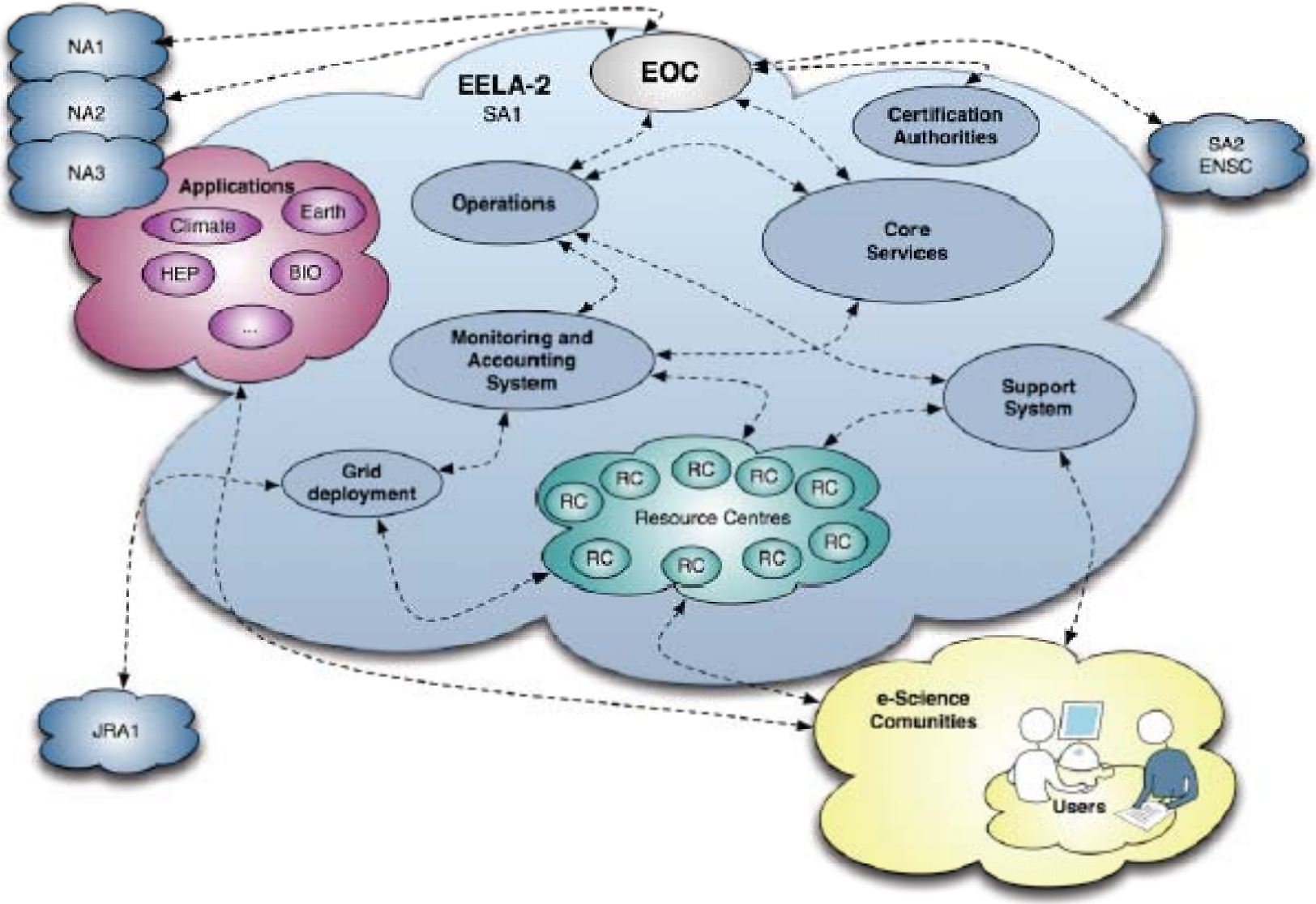
- **DoW:**
  - **TSA1.2 – Generic services (CEFET-RJ)**
    - provide support, i.e. not directly related to the grid itself, services to the other activity tasks, helping ensure proper coordination and management between the different tasks;
  - **TSA1.3 – Authentication services and policies (UFF)**
    - take care of all aspects related to the management of Security related services within SA1. This includes the management of the Latin America Public Key Infrastructure (LA-PKI) deployed by EELA, and of security related issues;
  - **TSA1.4 – Core and authorization services (CIEMAT)**
    - take care of all aspects of the production services that are not directly deployed on partners that commit resources to the project. These include the operation and support of the core grid services necessary for the proper functioning of the e-Infrastructure, of the VO specific services and the accounting and monitoring subsystems, both from managerial and operational points of view;
  - **TSA1.5 – Grid operations (UFCG)**
    - take care of the monitoring and administration support of computing and storage resources deployed locally on partners that commit resources to the project, in order to minimise downtime and maximise availability of resources to end users.

SA1 – Grid Infrastructure Service Activity (partners involved)

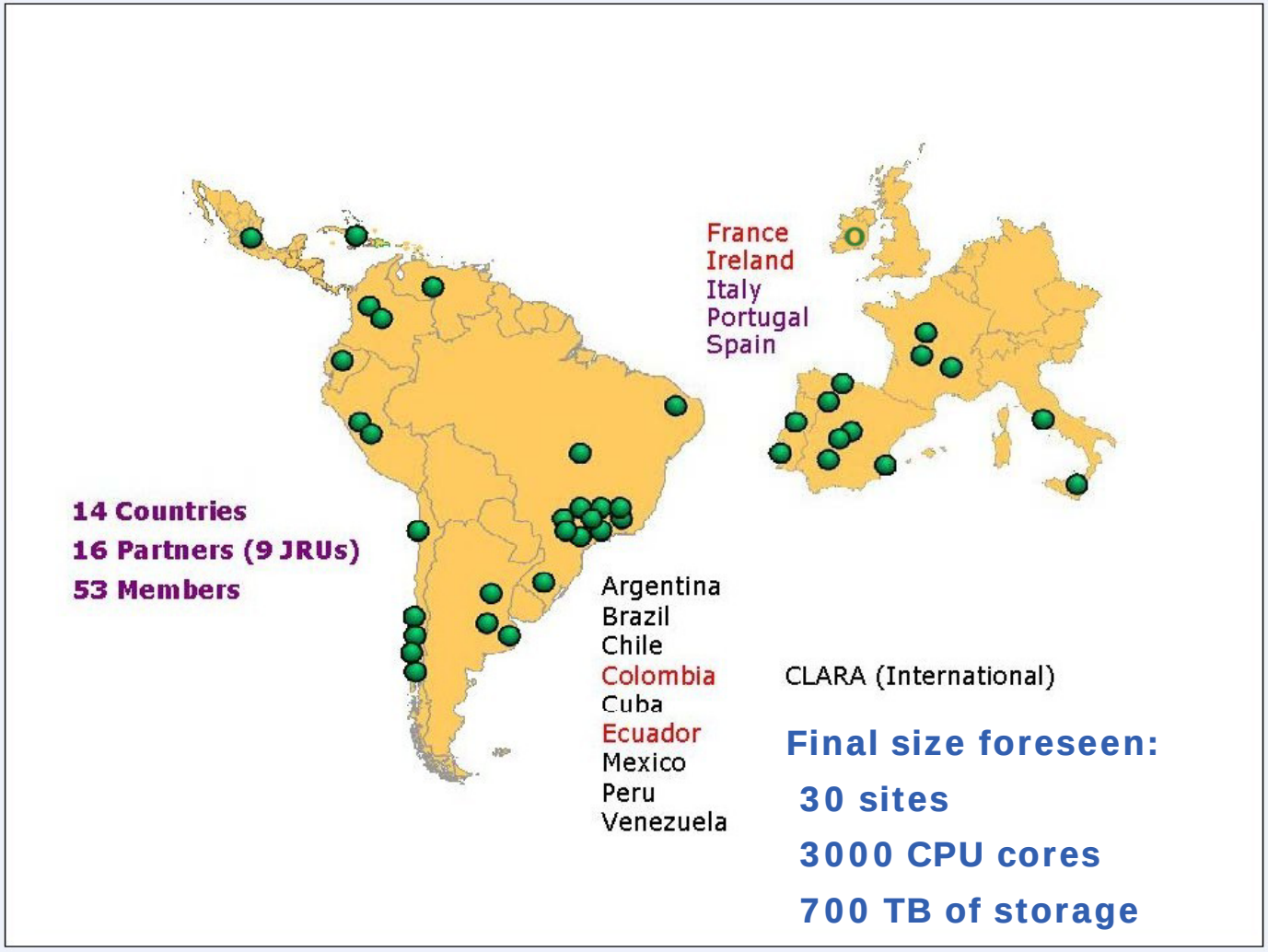


- **UFRJ (344 PM)**
- **CIEMAT (114 PM)**
- **CNRS (18 PM)**
- **INFN (12 PM)**
- **LINTI-UNLP (18 PM)**
- **REUNA (38 PM)**
- **SENAMHI (18 PM)**
- **ULA (66 PM)**
- **UNIANDES (54 PM)**
- **UNAM (12 PM)**
- **UPORTO (13 PM)**
- **UTPL (12 PM)**

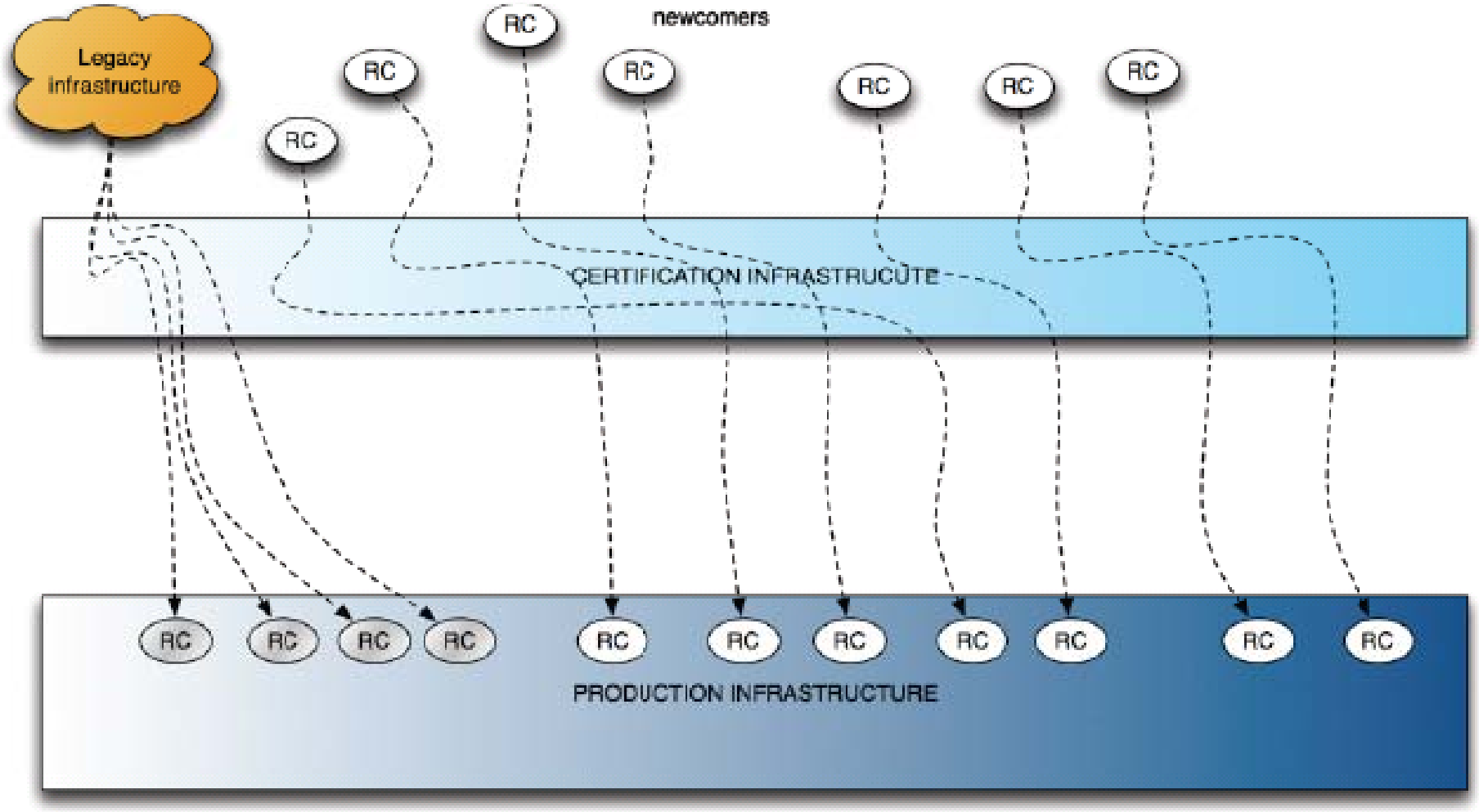
SA1 “at a glance”



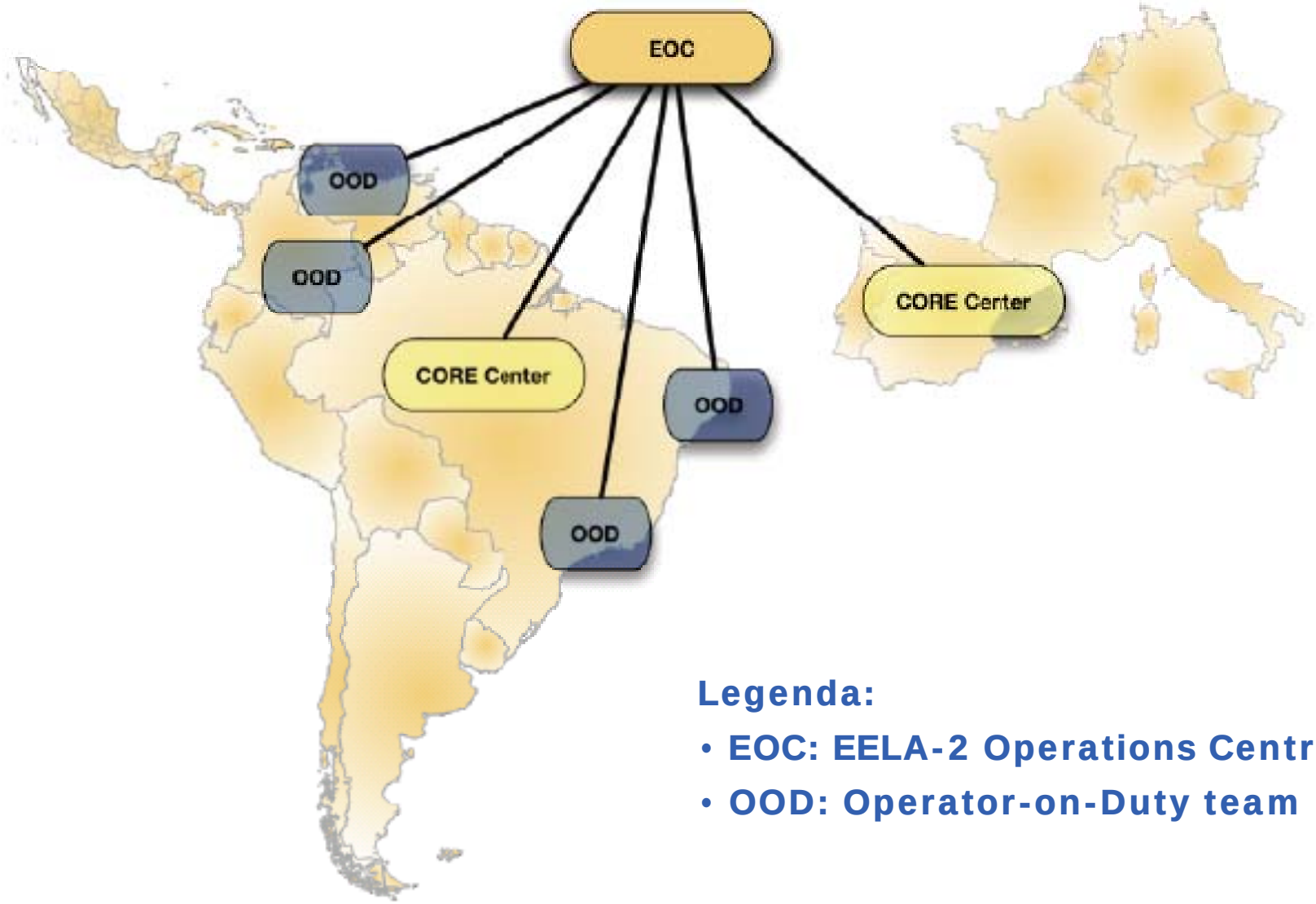
EELA-2 “targeted” e-Infrastructure
(taken from the DoW)



EELA-2 Infrastructures



EELA-2 Infrastructure Architecture



Legenda:

- **EOC: EELA-2 Operations Centre**
- **OOD: Operator-on-Duty team**

SA2 – Network Resource Provision (general overview)

- **Leading partner: CLARA**
- **Total Effort: 12 PM UF + 24 PM F**
- **Objectives:**
  - EELA-2 will use the European and Latin American research networks to connect the providers of computing, storage, instrumentation and applications resources with users in Virtual Organisations.
  - In EELA-2, the objective of the Networking Support Activity is to have a central role in:
    - Network related activities;
    - Network engineering and operations support integrated with the EOC;
    - Management of the relationships between EELA-2, CLARA, GÉANT and NRENs in Latin America and Europe;
    - Strengthening of the link between the “Grid” and the “network/NREN” communities;
    - Automation (to the extent possible) of the processes for network service provisioning to EELA-2.
  - **DoW:**
    - The activity will provide network support by coordinating the networking related tasks inside EELA-2, implementing the network engineering and operations centre, developing inter-operation agreements consolidating the relationship with GÉANT2, RedCLARA and the NRENs in Europe and Latin America, engaging with projects likely to share resources. SA2 is organized ins three tasks:
      - *TSA2.1 – Overall networking coordination (CLARA)*
      - *TSA2.2 – Network Engineering and Operations (CLARA)*
      - *TSA2.3 – Liaison with Network Providers (CLARA)*

SA2 – Network Resource Provision (partners involved)

- **CLARA (24 PM)**
- **UFRJ (12 PM)**

JRA1 – Development of Services for Applications and Infrastructure (general overview – 1/2)

- **Leading partner: UFRJ**
- **Total Effort: 60 PM UF + 120 PM F**
- **Objectives:**
  - Increase the *reach* and the *usability* of e-Infrastructures like the ones that will be provided by the EELA-2 and EGEE-III projects
  - Cope with the requirements on versatility of the production service managed by SA1 and on functionalities of the NA3 applications running on it
  - Promote a continued and increased interaction between research groups in Europe and Latin-America.
- **DoW:**
  - TJRA1.1 – Coordination of the Activity (UFCG)
    - The aim of this task is to deal with issues related to JRA1 coordination and management. These include tracking the progress of the various activities, organizing technical meetings (either virtual or face-to-face ones, the latter often taking advantage of the project's programmed training and dissemination activities), anticipating difficulties, devising contingency plans when necessary, identifying opportunities, etc. The execution of the task also encompasses administrative duties such as the preparation of deliverables and reports, as well as budget management. The activity manager will be responsible for the execution of this task.

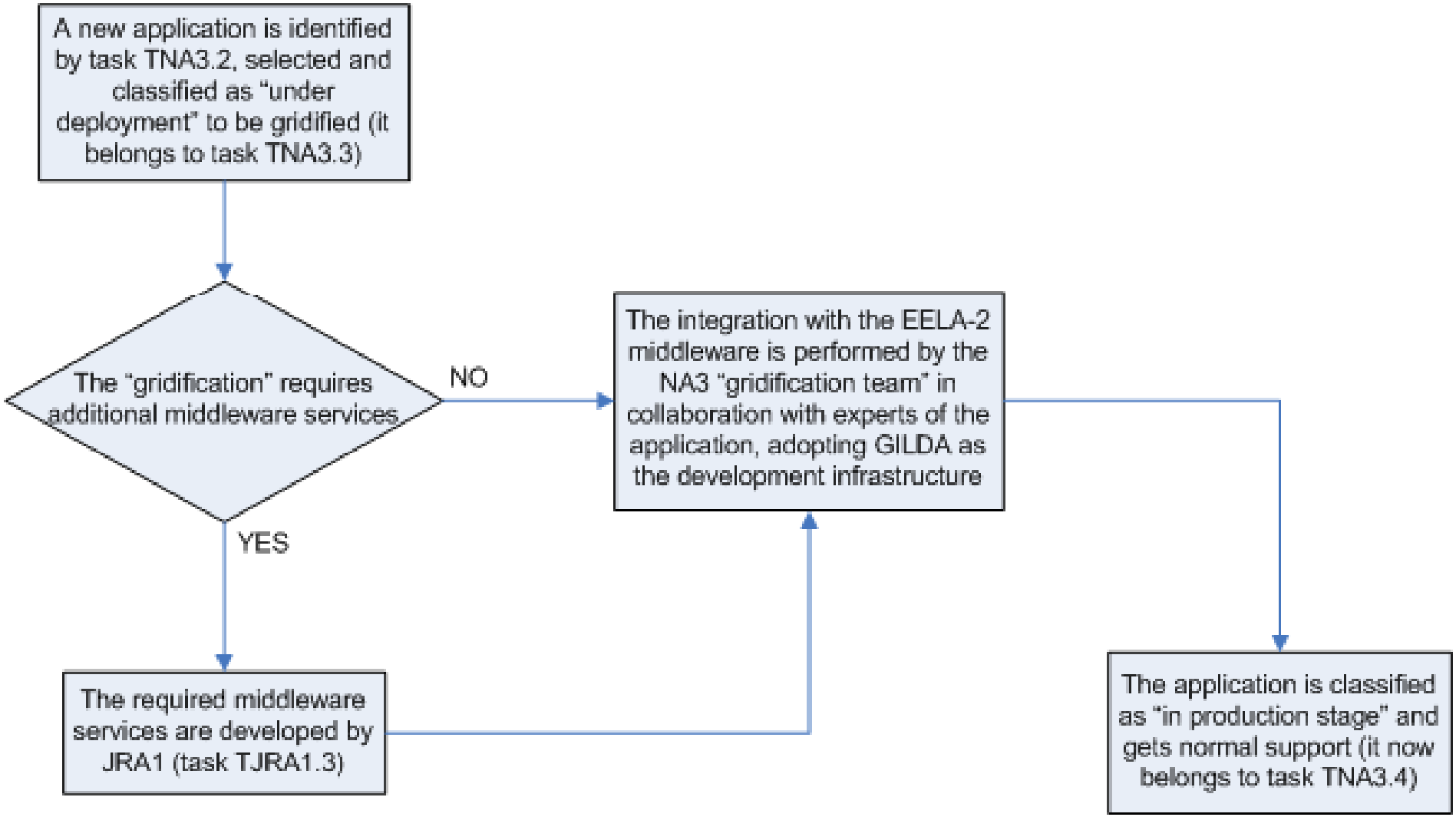
JRA1 – Development of Services for Applications and Infrastructure (general overview – 2/2)

- **DoW:**
  - TJRA1.2 – Development of Infrastructure-oriented Additional Grid Services (UFCG)
    - The goal of this task is to provide alternatives to facilitate the installation, management and use of the e-Infrastructure. To this end we will build on simpler peer-to-peer grid middleware, allow the interoperation of gLite-based sites with sites running other grid middleware, and give support to the execution of grid middleware on top of Microsoft Windows platforms. We will develop infrastructure-specific services for:
    - Simplifying the access to the infrastructure for new users and applications;
    - Porting the gLite User Interface and Computing Element to the Microsoft Windows platform;
    - Interoperate gLite with a peer-to-peer grid middleware;
    - Develop application and VO compliant execution environments through virtualization.
  - TJRA1.3 – Development of Application-oriented Additional Grid Services (INFN)
    - The goal of this task is to develop the application-oriented grid services necessary to fulfill the requirements of the applications selected by NA3 and to solve most of the problems reported by EELA users and site administrators related to application deployment and use. It will develop advanced application-oriented grid services for:
    - The easy building of digital archives and data grid frameworks;
    - Storing data in a secure way, solving the insider abuse problem;
    - Promoting the collaboration of community of users through the support of cooperative workflow applications and tagging systems;
    - Cope with any additional requirement that may arise during the gridification of the applications selected by NA3
  - TJRA 1.4 - Middleware Repository Setup and Operation (INFN)
    - The aim of this task is to develop the contents, for the whole duration of the project, for the SourceForge-like repository that will be set-up and maintained by SA1 and that will host all the software developments and documentation that will be produced by the other tasks of JRA1. The repository will be customized and the software components will be packaged in such a way to make the transfer to and the integration into the repository managed by SA1 as easy as possible.

JRA1 – Development of Services for Applications and Infrastructure (partners involved)

- **UFRJ (120 PM)**
- **CIEMAT (30 PM)**
- **INFN (30 PM)**

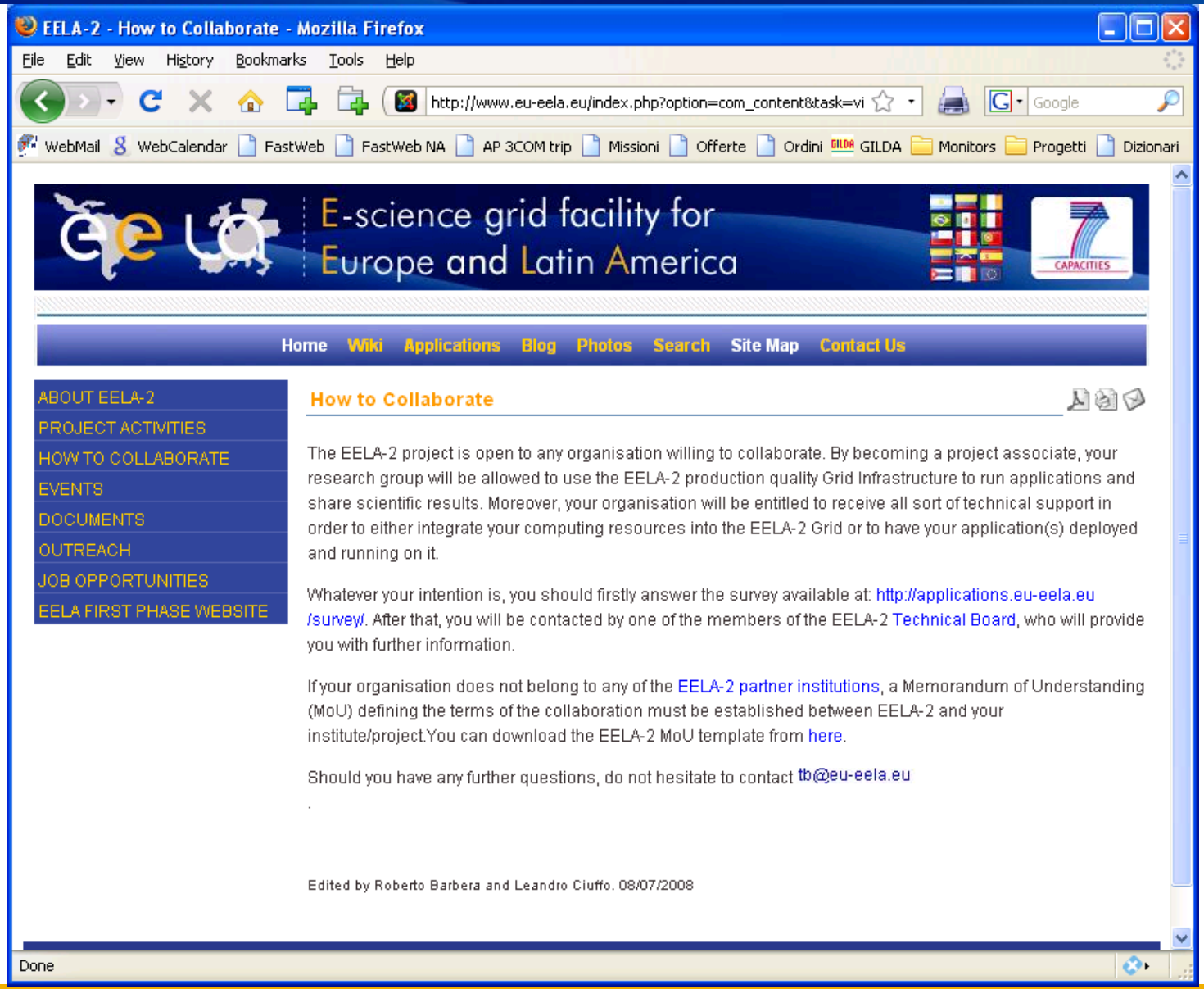
“Applications-driven” development of new middleware services



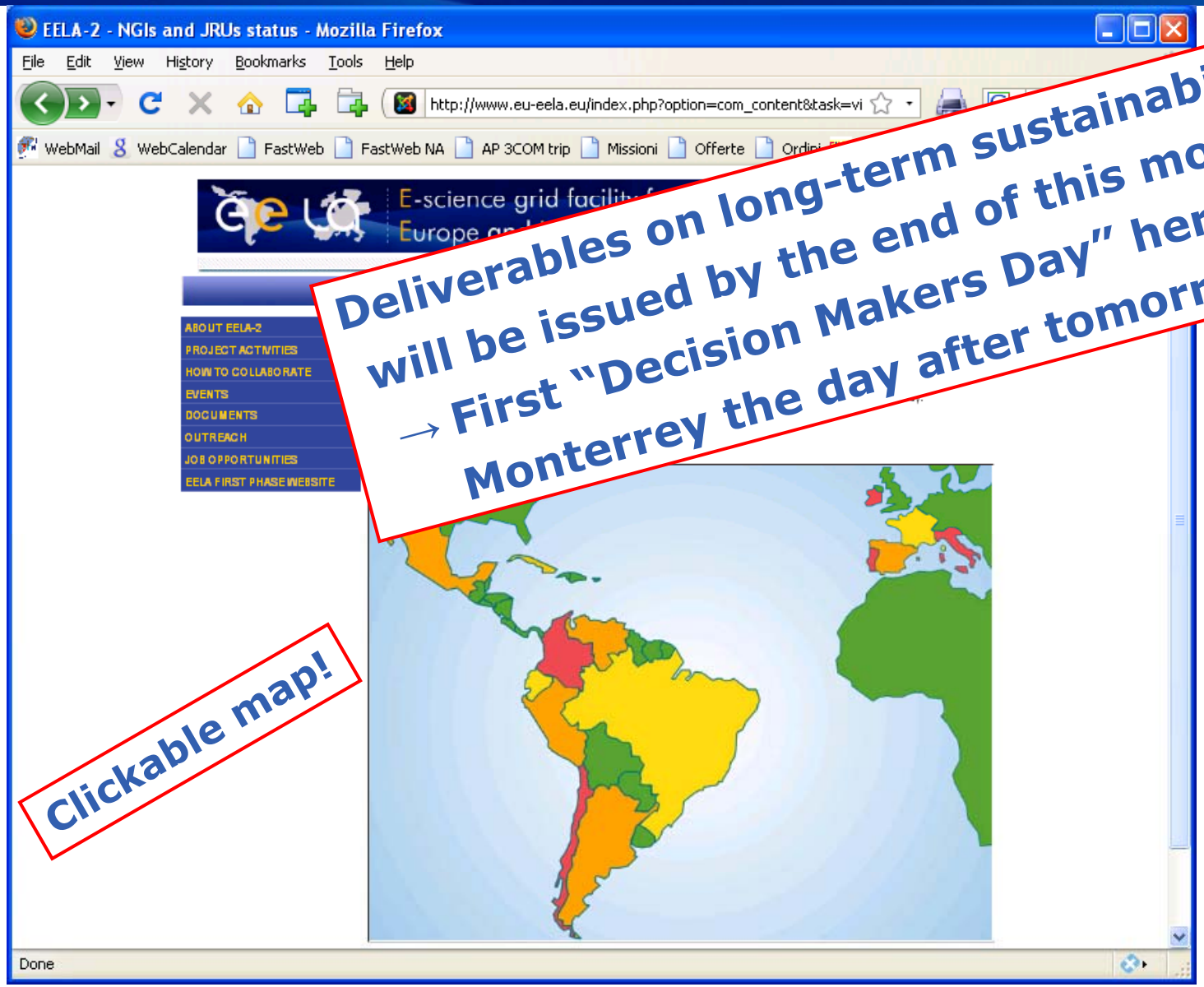
What has been done so far…

Project web site (www.eu-eela.eu)

How to collaborate with EELA-2 ?



JRUs and NGIs

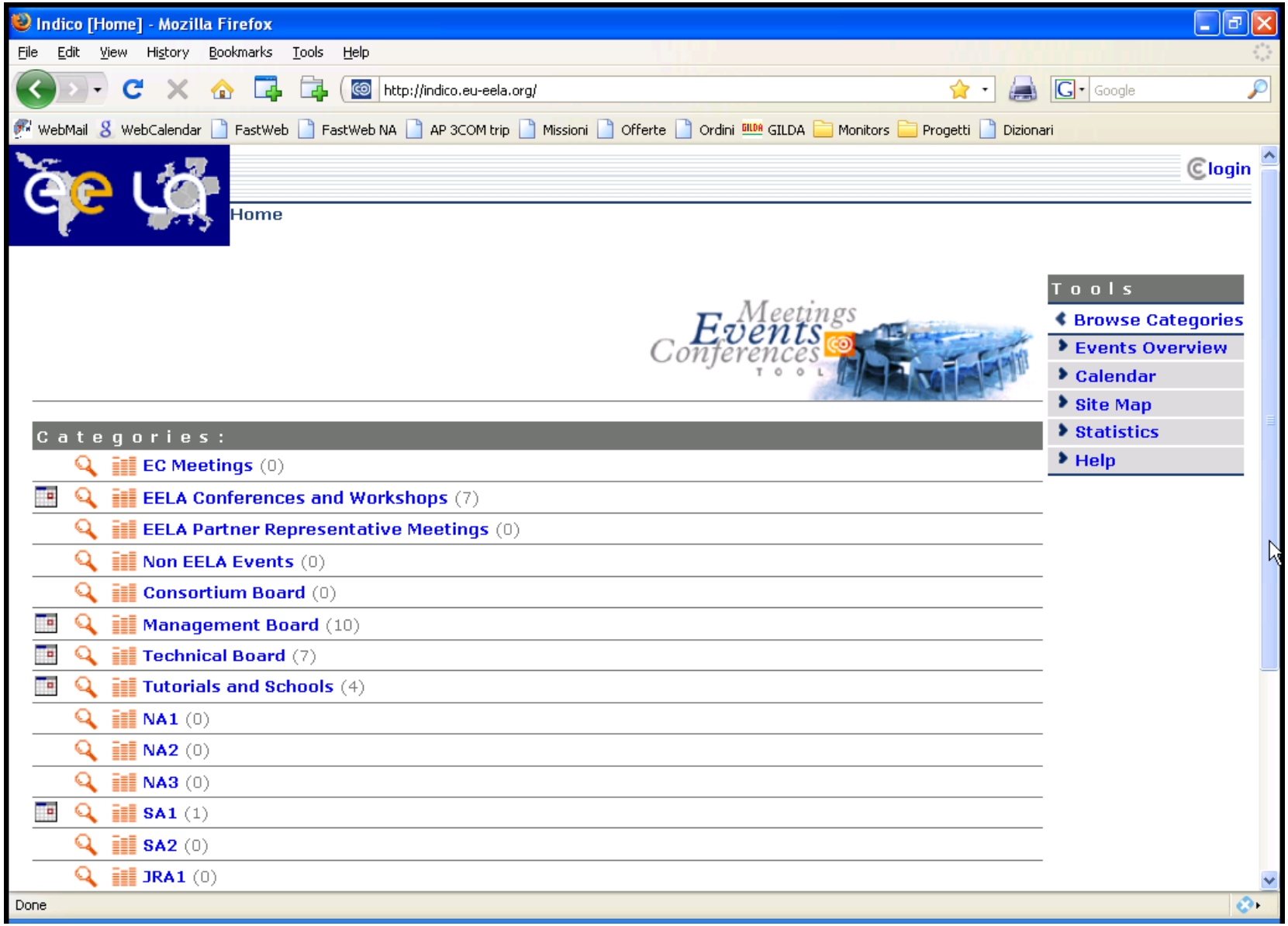


Deliverables on long-term sustainability will be issued by the end of this month!

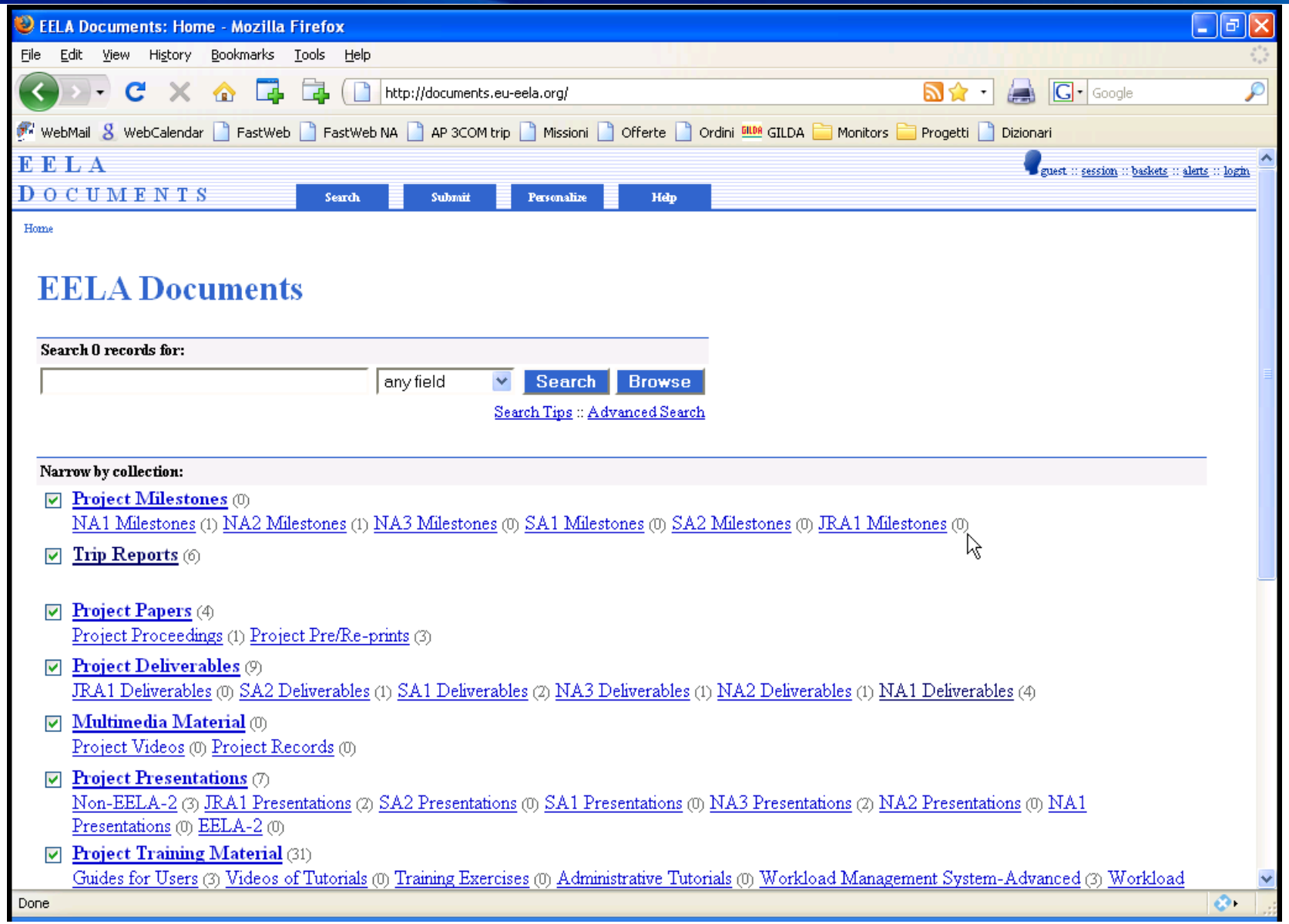
→ First "Decision Makers Day" here in Monterrey the day after tomorrow

Clickable map!

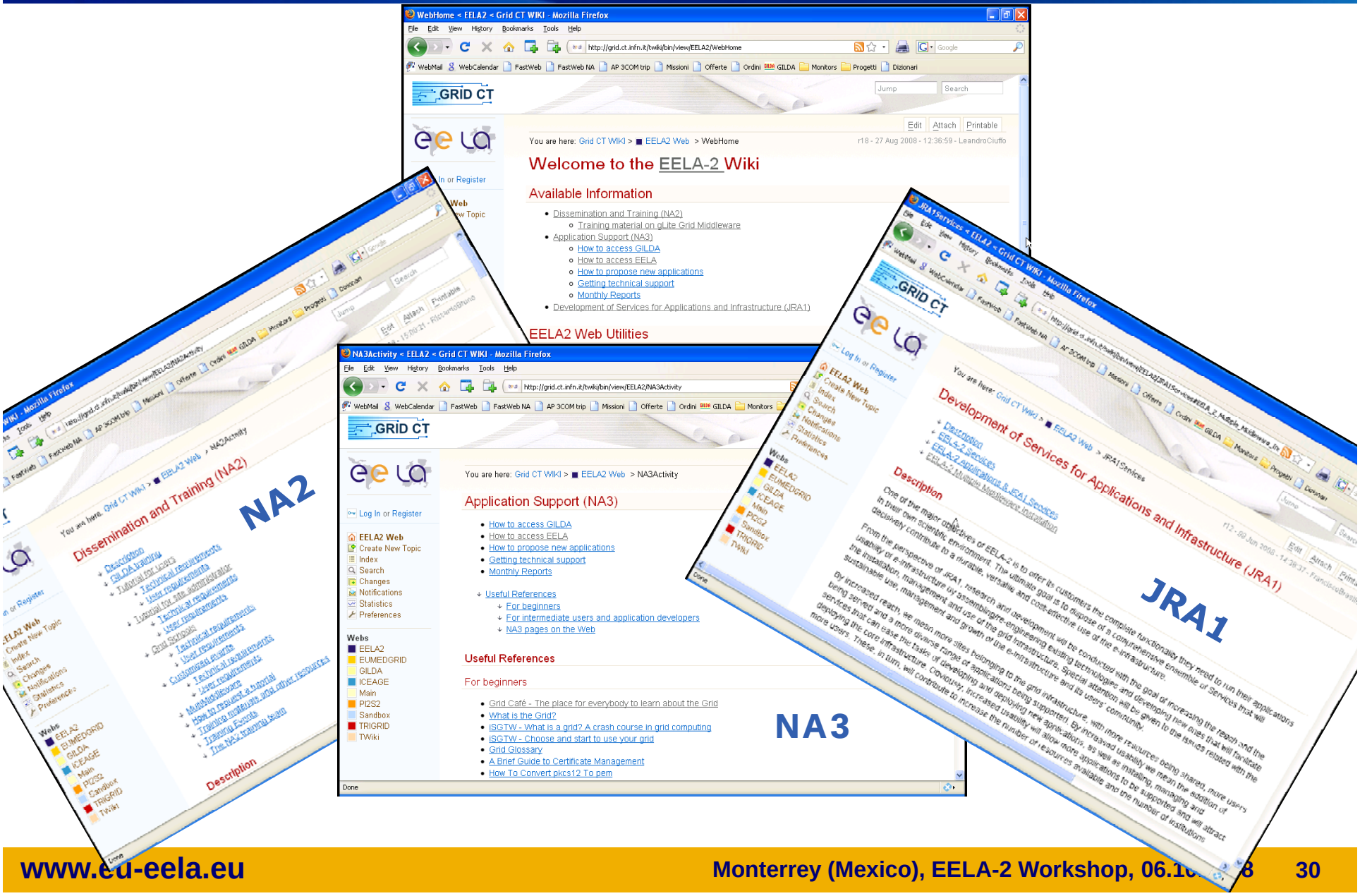
Agenda (indico.eu-eela.eu)



Digital Library (documents.eu-eela.eu)



Wiki site(s)
(wiki.eu-eela.eu)



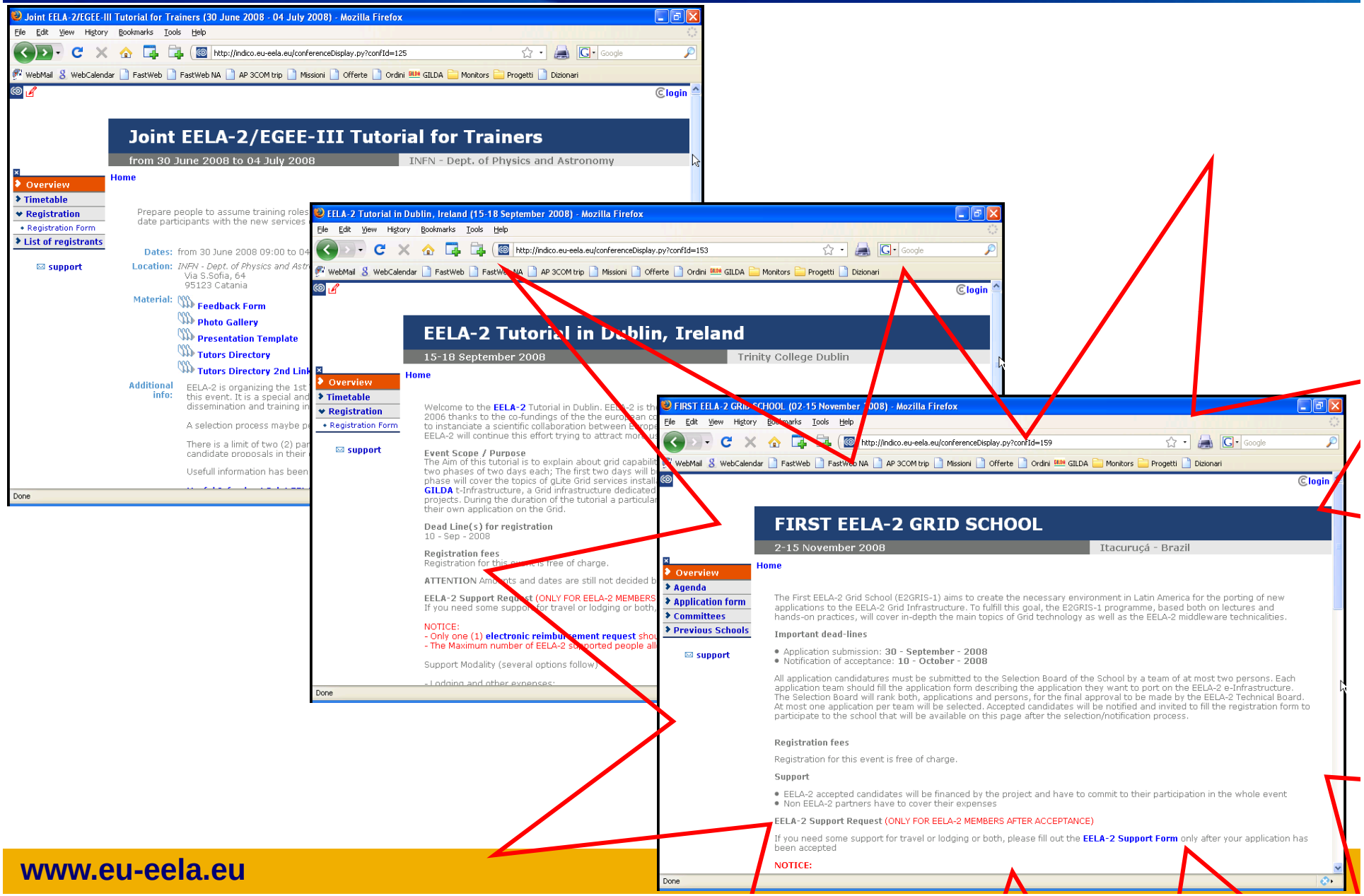
Dissemination Material

Dissemination Events
(http://indico.eu-eela.eu/categoryDisplay.py?categId=15)

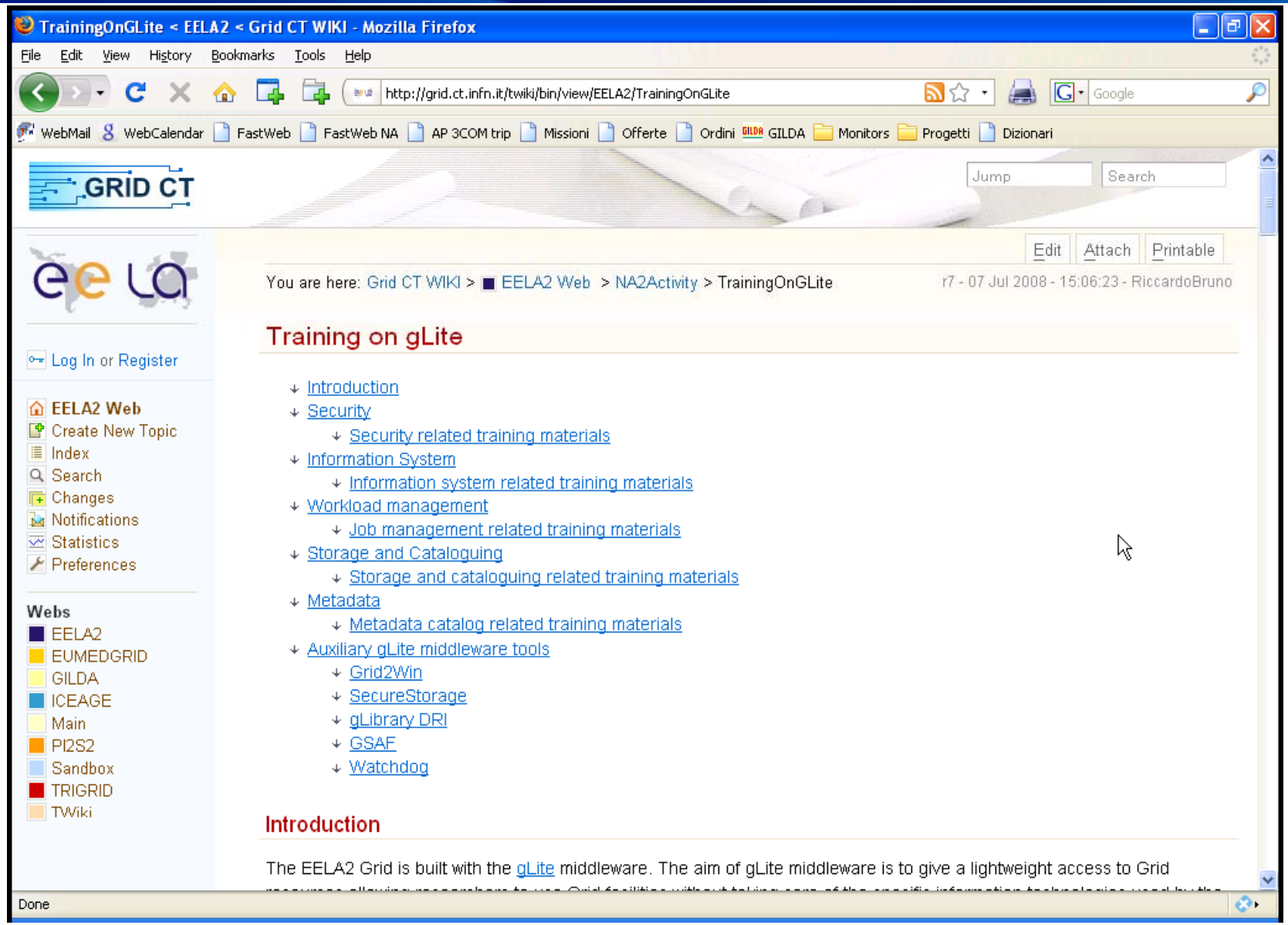
- **EELA-2 Kick-off Meeting**
  - Trujillo (Spain),
- **EELA-2 Meetings in Chile**
  - Santiago & Valparaiso, September, 8-10, 2008
- **EELA-2 Workshop in Ireland**
  - Dublin, September, 19, 2008
- **Concertation Workshop at EGEE'08 (jointly organized with BELIEF-II)**
  - Istanbul, September, 23, 2008
- **EELA-2 Workshop in Mexico**
  - Monterrey, October, 6, 2008
- **EELA-2 Decision Makers Day in Mexico**
  - Monterrey (Mexico), October, 8, 2008
- **EELA-2 in the Grid Island at ICT 2008**
  - Lyon, November, 25-27, 2008
- **EELA-2 Workshop in Ecuador**
  - Guayaquil/Quito, December 2008

- **EELA-2 Conference**
  - **Bogota (Colombia), February, 25-27, 2009**
  - **http://indico.eu-eela.eu/conferenceDisplay.py?confId=132**
  - **Dead line for paper submission: November, 1, 2008**

Training Events
(http://indico.eu-eela.eu/categoryDisplay.py?categId=21)



Training Material Repository
(inside the NA2 wiki site)



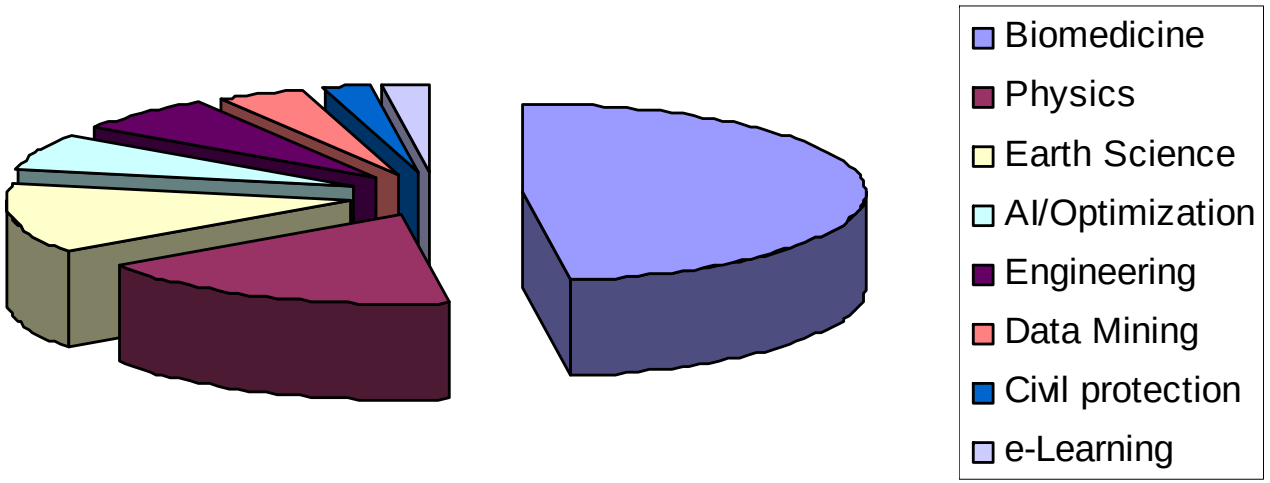
EELA-2 Applications

- **46 Applications in total**

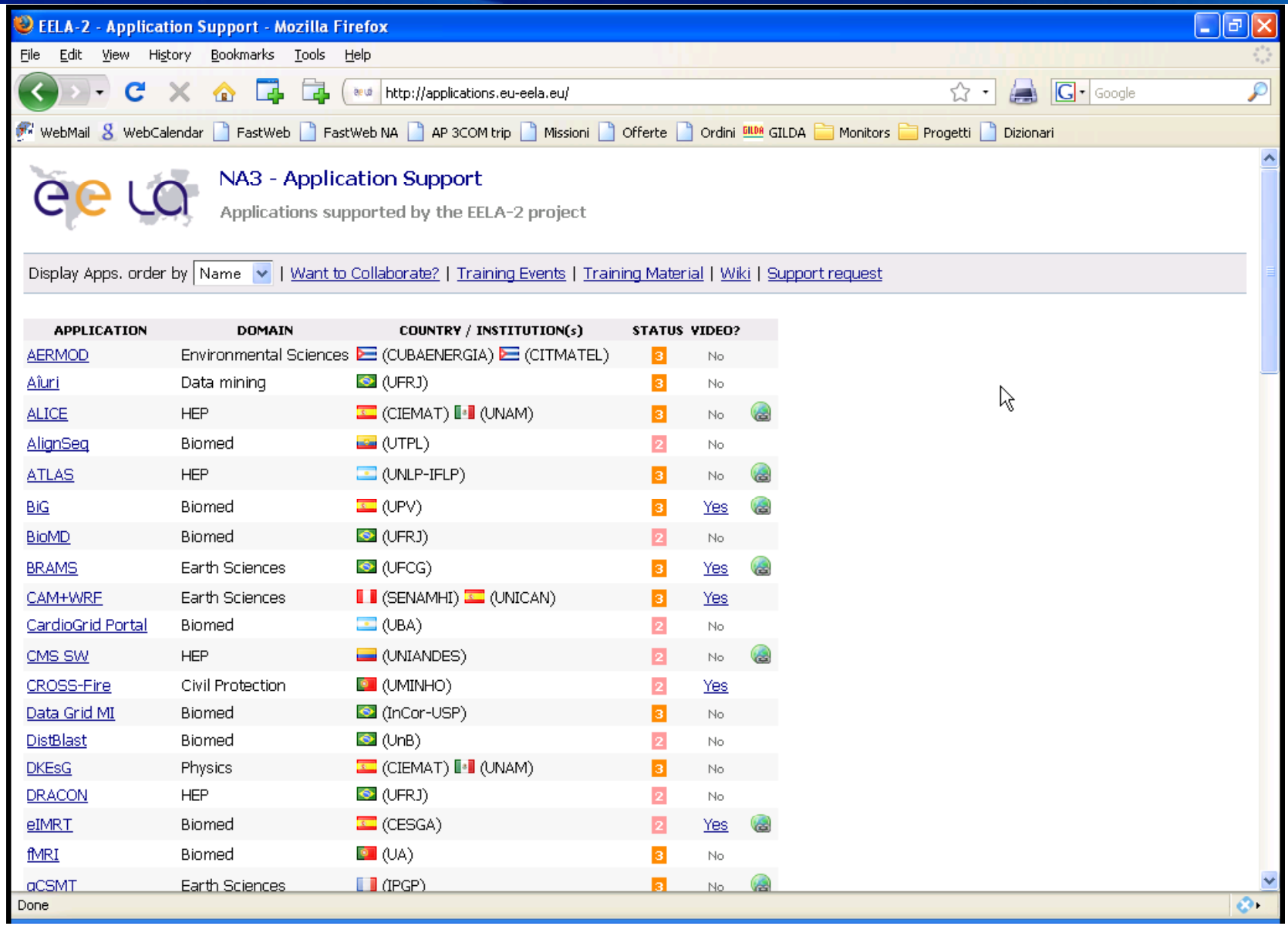
- **Assessment based on:**
  - Suitability for Grid deployment;
  - Easiness of gridification;
  - Grid added value;
  - Resources (CPU, storage) commitments of the Institutions involved;
  - Usage of the infrastructure (number of jobs and frequency of runs);
  - Potential outreach / impact (in the scientific community, industry, socially in the country, towards policy / decision makers);
  - Number of involved institutions from Europe and Latin America;

Scientific disciplines involved

- **Distribution by domain:**
  - 22 Biomedicine
  - 8 Physics
  - 6 Earth Science
  - 3 AI/Optimization
  - 3 Engineering
  - 2 Data Mining
  - 1 Civil protection
  - 1 e-Learning

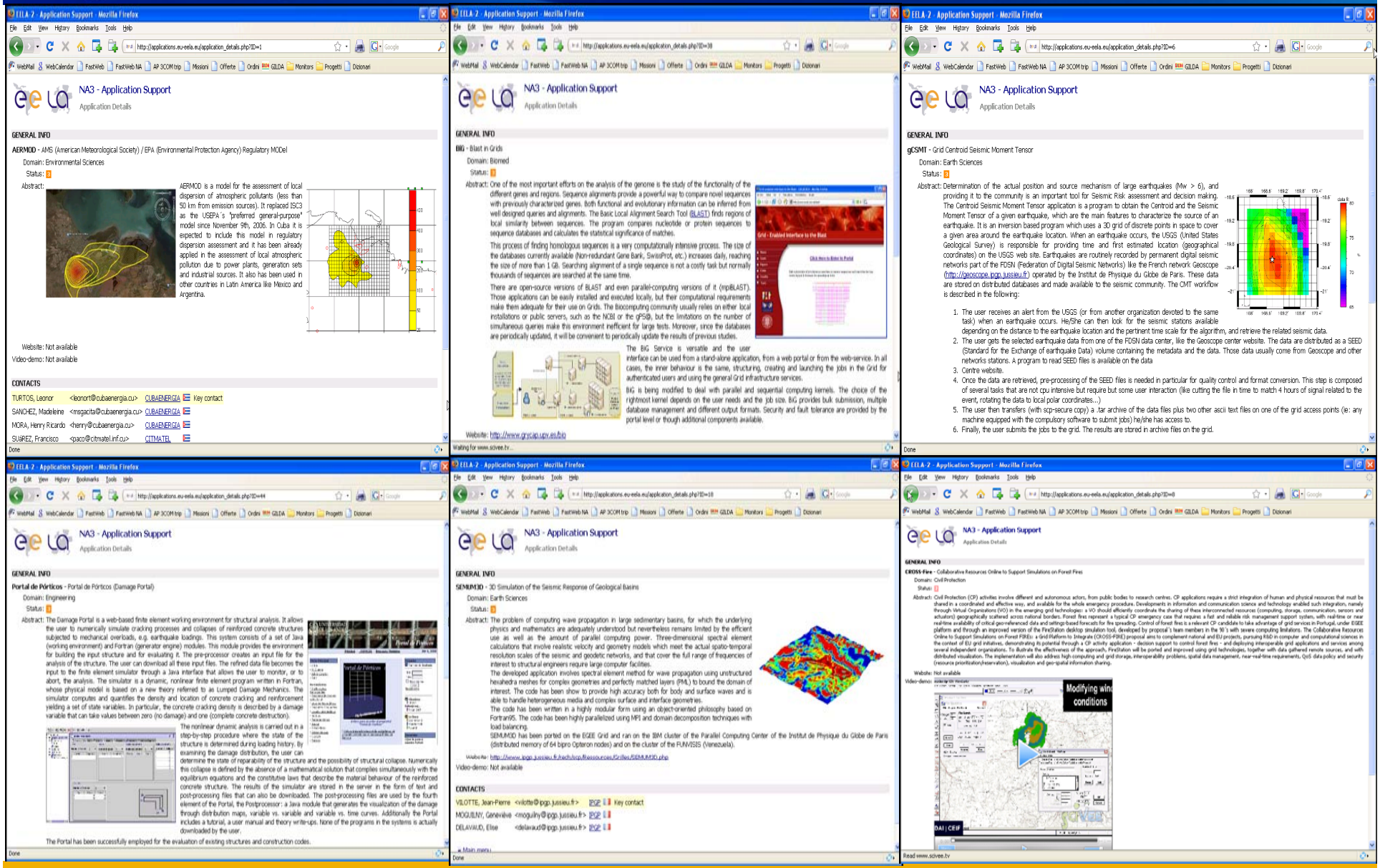


EELA-2 Applications Database
(applications.eu-eela.eu)

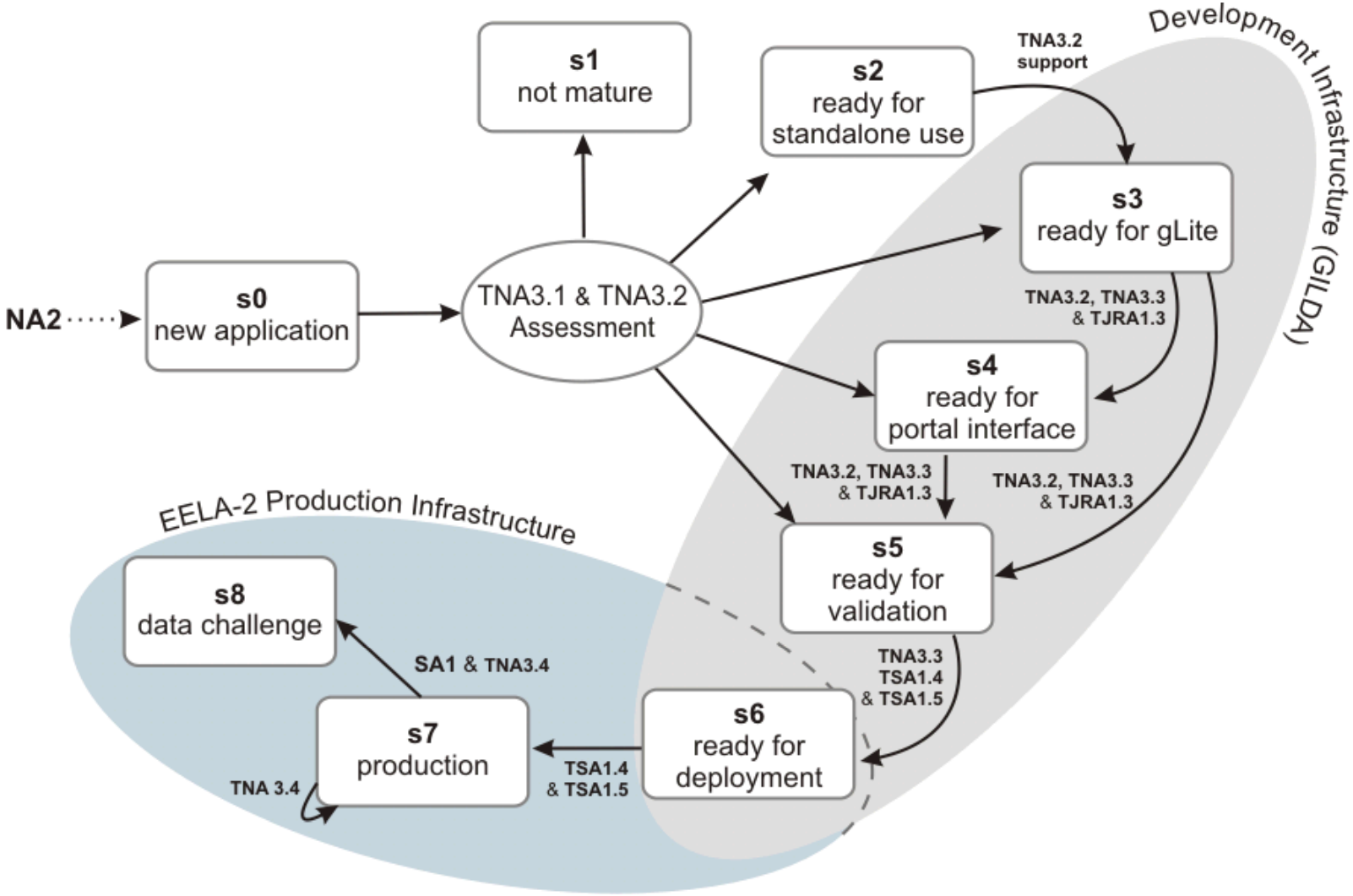


APPLICATION	DOMAIN	COUNTRY / INSTITUTION(s)	STATUS	VIDEO?
AERMOD	Environmental Sciences	(CUBAENERGIA) (CITMATEL)	3	No
Aîuri	Data mining	(UFRJ)	3	No
ALICE	HEP	(CIEMAT) (UNAM)	3	No
AlignSeq	Biomed	(UTPL)	2	No
ATLAS	HEP	(UNLP-IFLP)	3	No
BiG	Biomed	(UPV)	3	Yes
BioMD	Biomed	(UFRJ)	2	No
BRAMS	Earth Sciences	(UFCG)	3	Yes
CAM+WRF	Earth Sciences	(SENAMHI) (UNICAN)	3	Yes
CardioGrid Portal	Biomed	(UBA)	2	No
CMS SW	HEP	(UNIANDES)	2	No
CROSS-Fire	Civil Protection	(UMINHO)	2	Yes
Data Grid MI	Biomed	(InCor-USP)	3	No
DistBlast	Biomed	(UnB)	2	No
DKEsG	Physics	(CIEMAT) (UNAM)	3	No
DRACON	HEP	(UFRJ)	2	No
eIMRT	Biomed	(CESGA)	2	Yes
fMRI	Biomed	(UA)	3	No
gCSMT	Earth Sciences	(IPGP)	3	No

Some Examples…

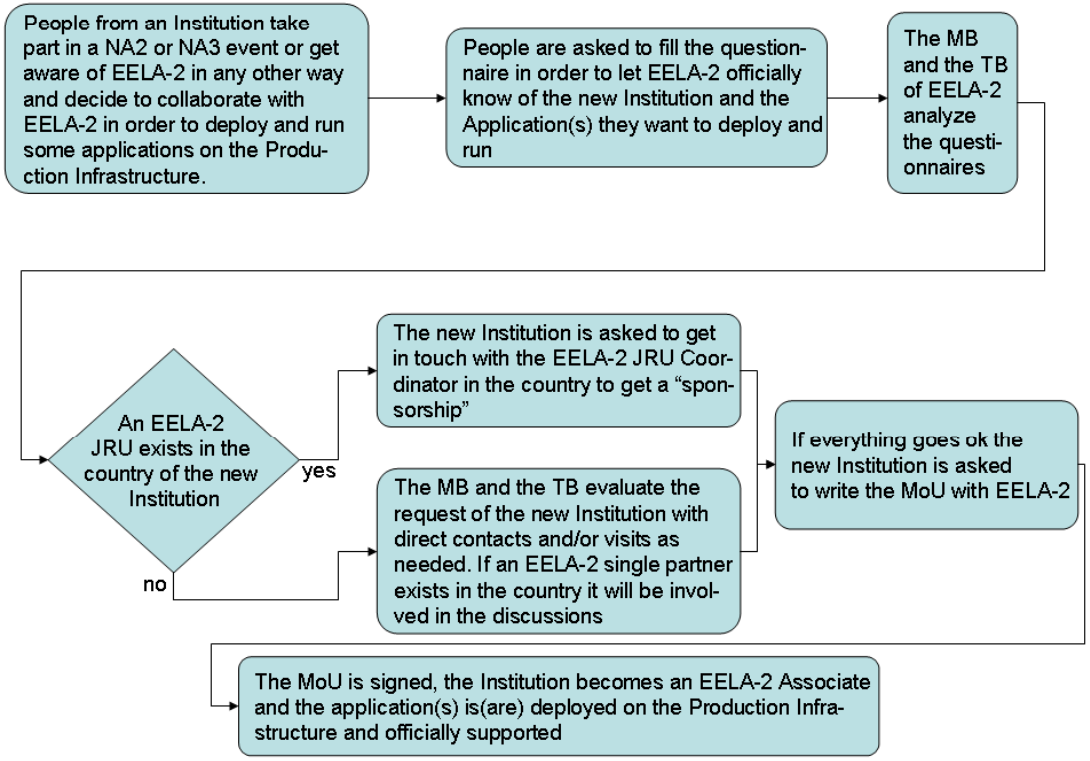


Application Life-cycle

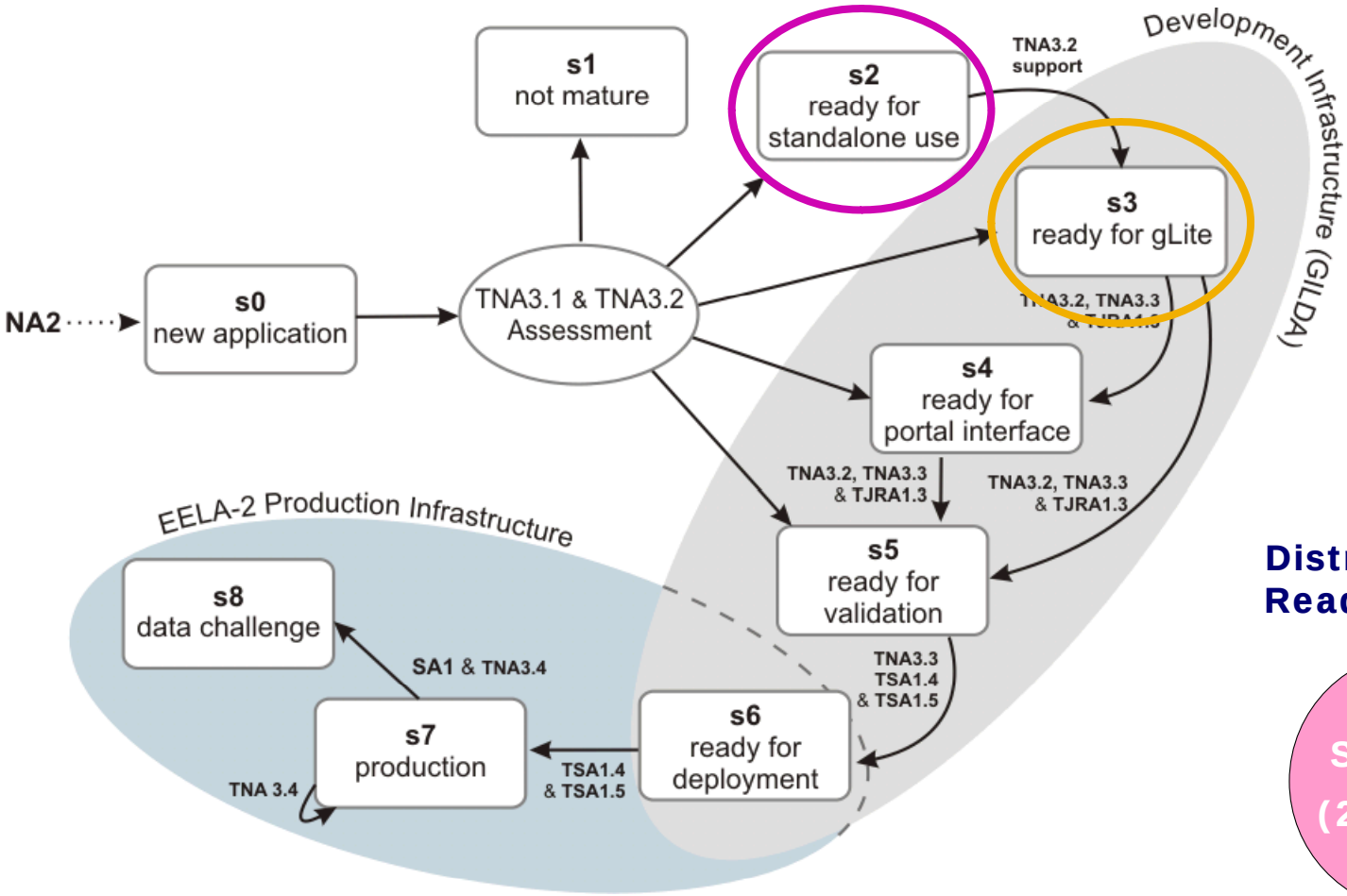


s0 - New application

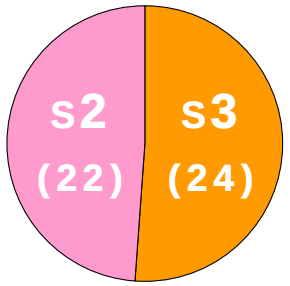
- **The number of applications are expected to increase**
  - First Step: Visit the “How to collaborate” section of the EELA-2 website
  - Second Step: Fill out the “Survey of Applications”
    - (available at *wiki.eu-eela.eu*)



Application Life-cycle



Distribution by Readiness status:



What we can offer

- **Free and customized technical support**
  - Specialized support team (climate / biomedicine)
  - Possibility of organizing “Gridification weeks”
- **Invitation to participate in the EELA-2 training events (Tutorials, Schools…)**
  - in some cases, travel expenses might be covered
- **Access to the EELA-2 Grid**

Applications doing well can also apply for travel funds to present their results in conferences worldwide !

Development Infrastructure

- **GILDA Training infrastructure**

  Grid INFN Laboratory for Dissemination Activities

https://gilda.ct.infn.it

What we can't offer

- **"Gridify" your application for you**
  (instead, we teach you how to do so)

- **Funding your institution to pay salaries or scholarships for porting your application on the EELA-2 Grid**

Your duties

- **Report periodically to NA3 so that we can follow up the gridification process.**
  - See: *http://grid.ct.infn.it/twiki/bin/view/EELA2/AppReportsEELA*

- **Run your application on the EELA-2 Grid on a regular basis**

NA3 useful bookmarks

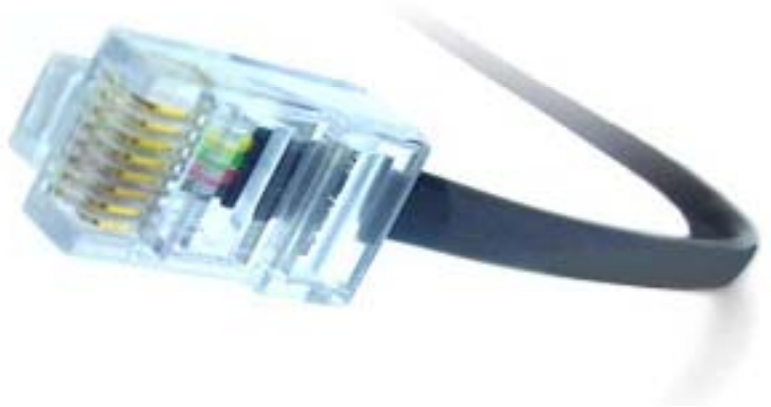
- **Info about the applications**
  - http://applications.eu-eela.org
- **Wiki Page**
  - http://wiki.eu-eela.org
- **NA3 Support system**
  - http://eventum.eu-eela.eu
- **NA3 daily**
  - http://twitter.com/eela_na3

CONTACT US !!!

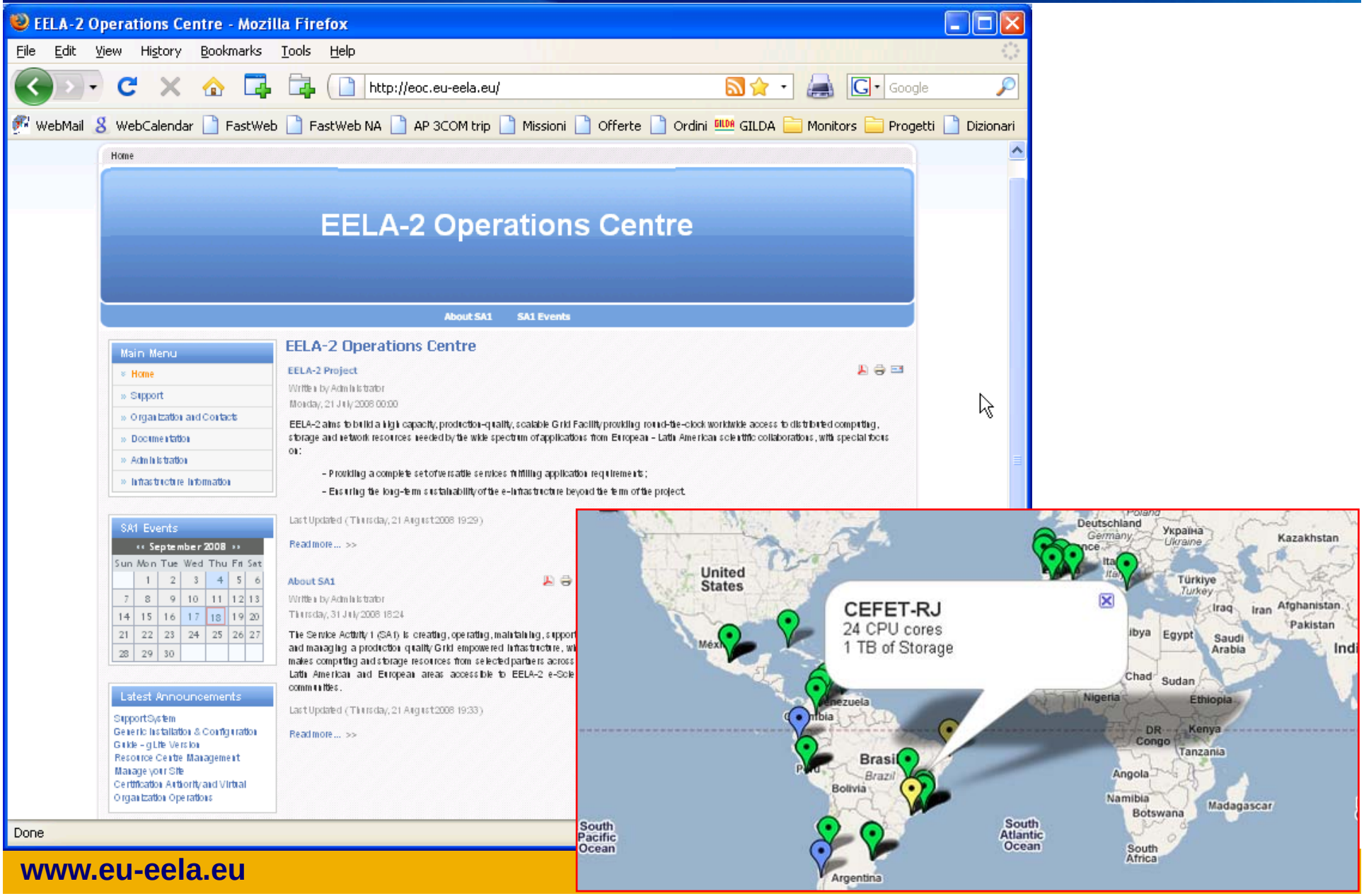
<leandro.ciuffo@ct.infn.it>

<rafael.mayo@ciemat.es>

<manuel.rubio@ciemat.es>



EELA-2 Operations Centre
(eoc.eu-eela.eu)



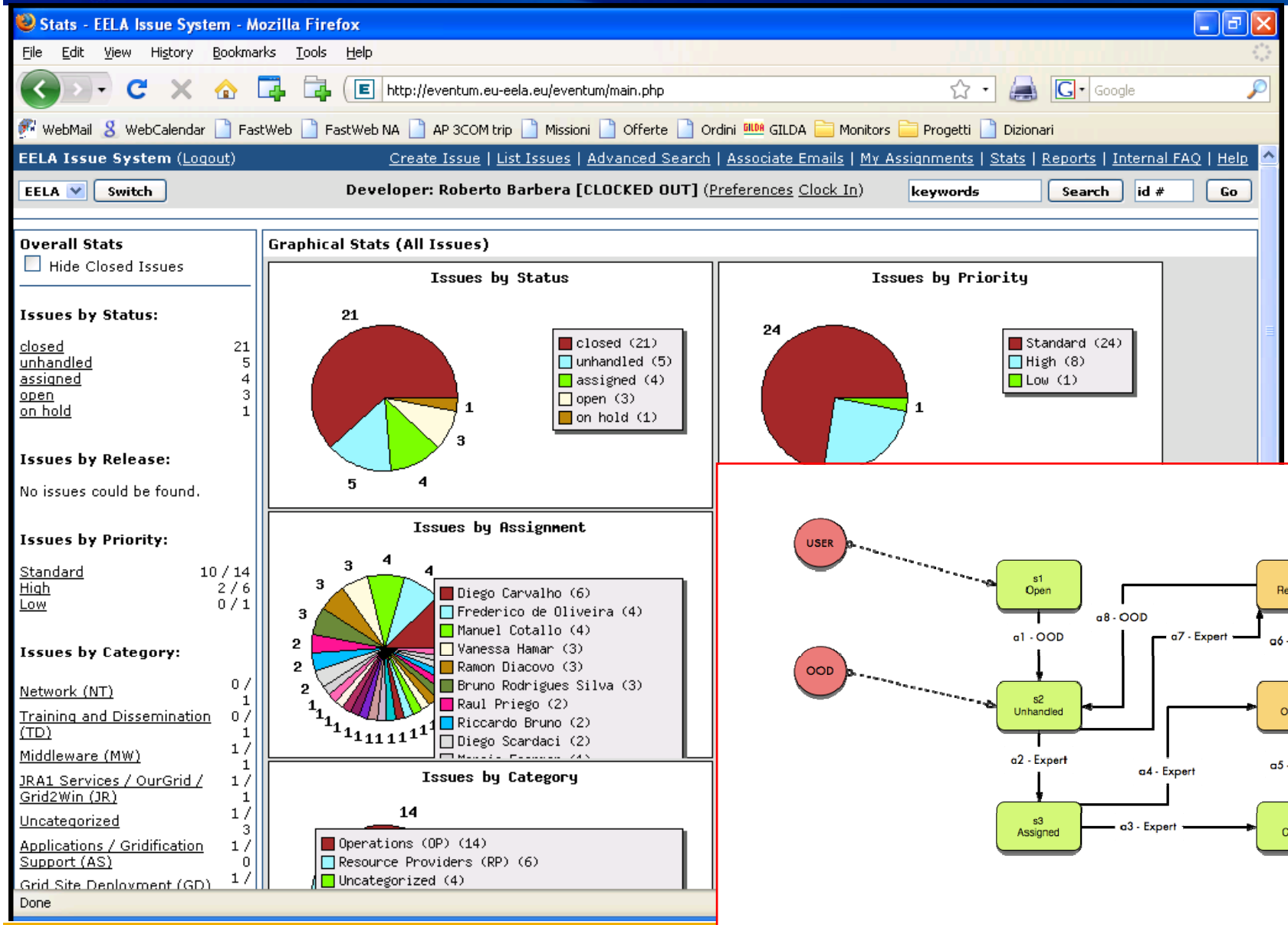
www.eu-eela.eu

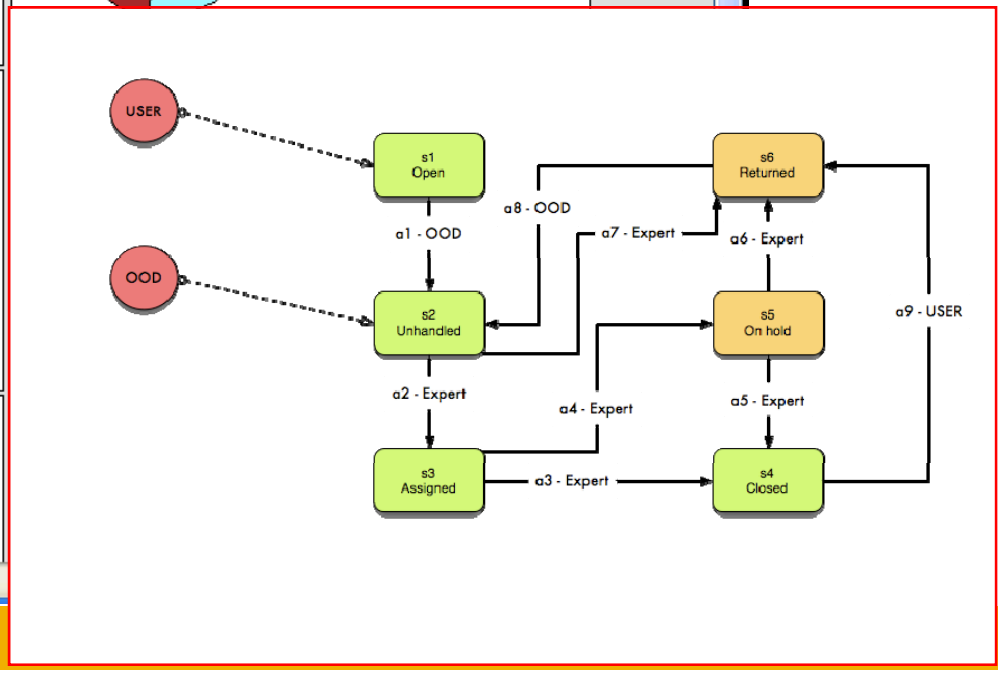
Status of EELA-2 Infrastructure

Core services deployed. Pledged resources installed ramping up. Production service available in October.

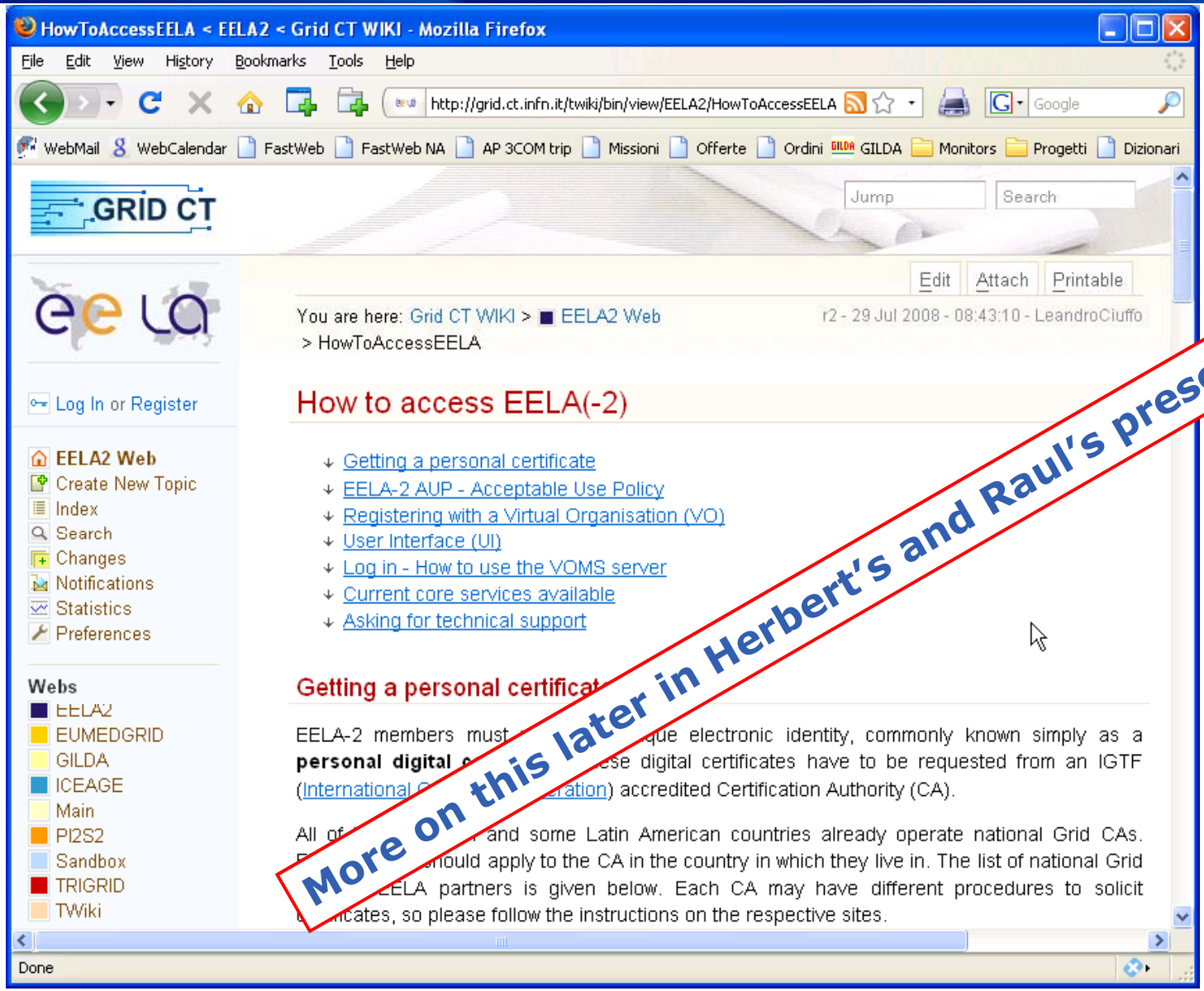
- 11 sit… in EU
- 650 CPUs
  - 200 in LA
  - 450 in EU
- 11 TB of Disk
  - 2 in LA
  - 9 in EU

User Support System
(eventum.eu-eela.eu)



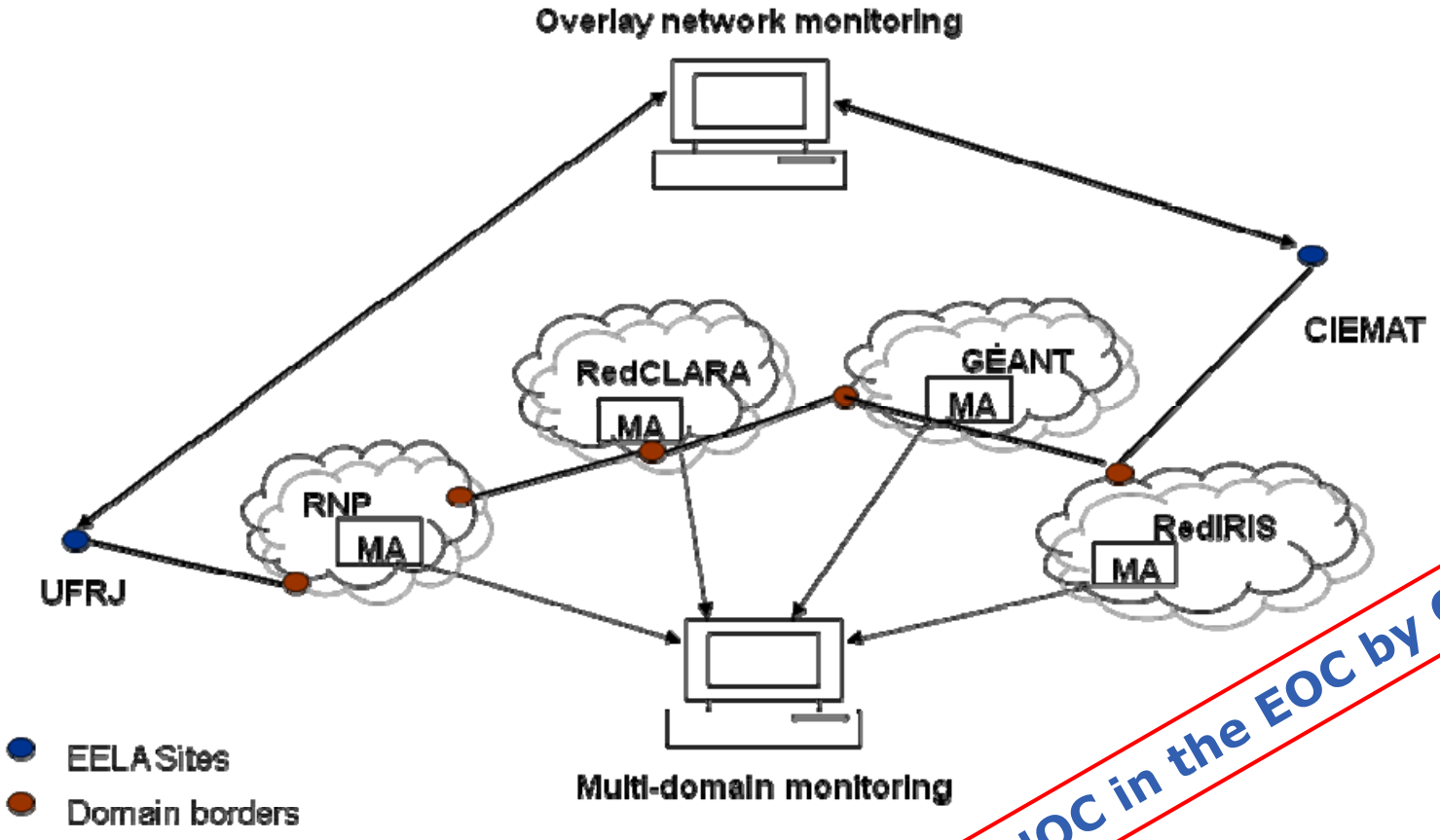


How to access EELA-2 ?
(inside the NA3 wiki site)



More on this later in Herbert's and Raul's presentation

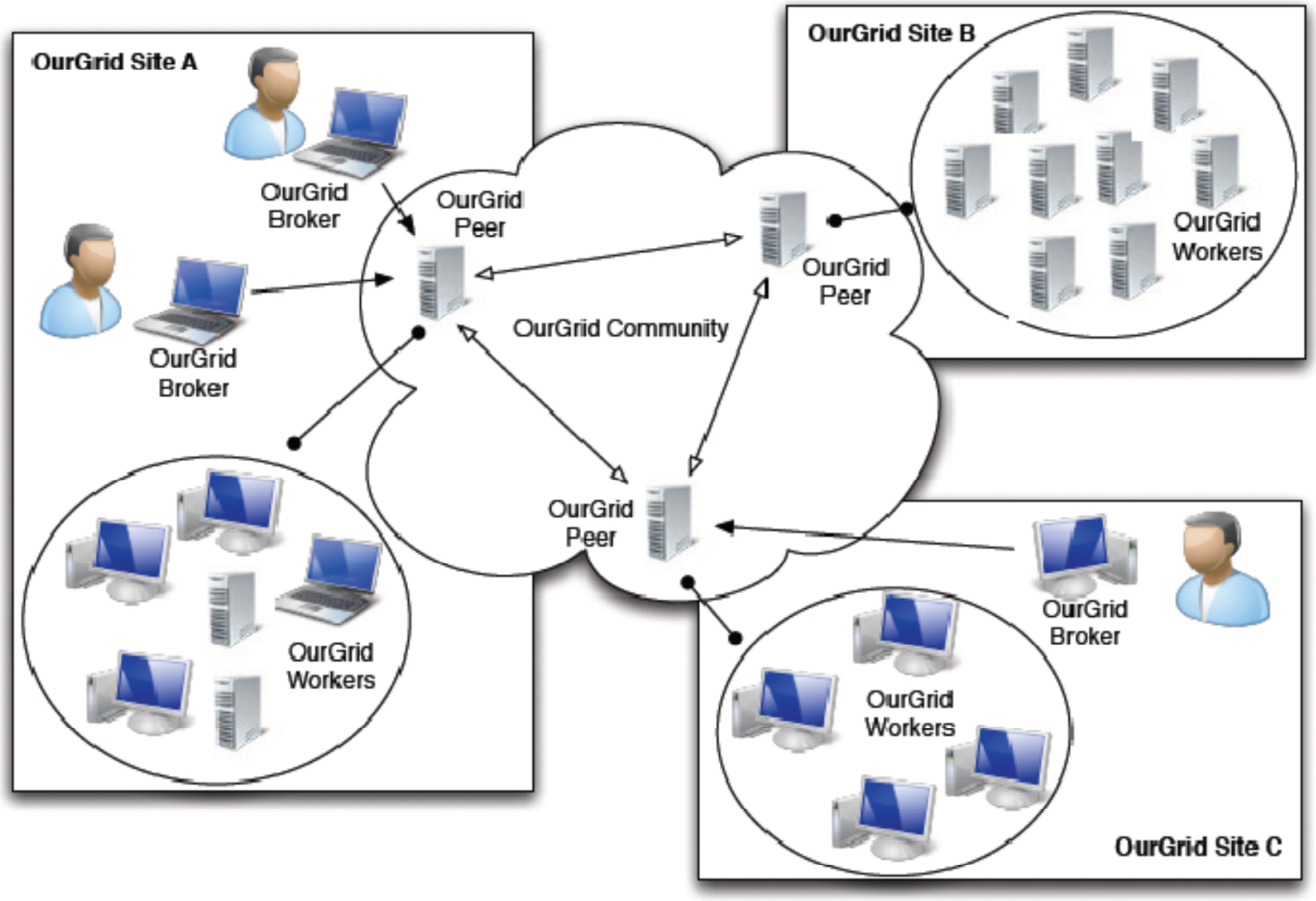
Multi-domain Monitoring Environment for EELA-2



Integration of the ENOC in the EOC by Q1 2009

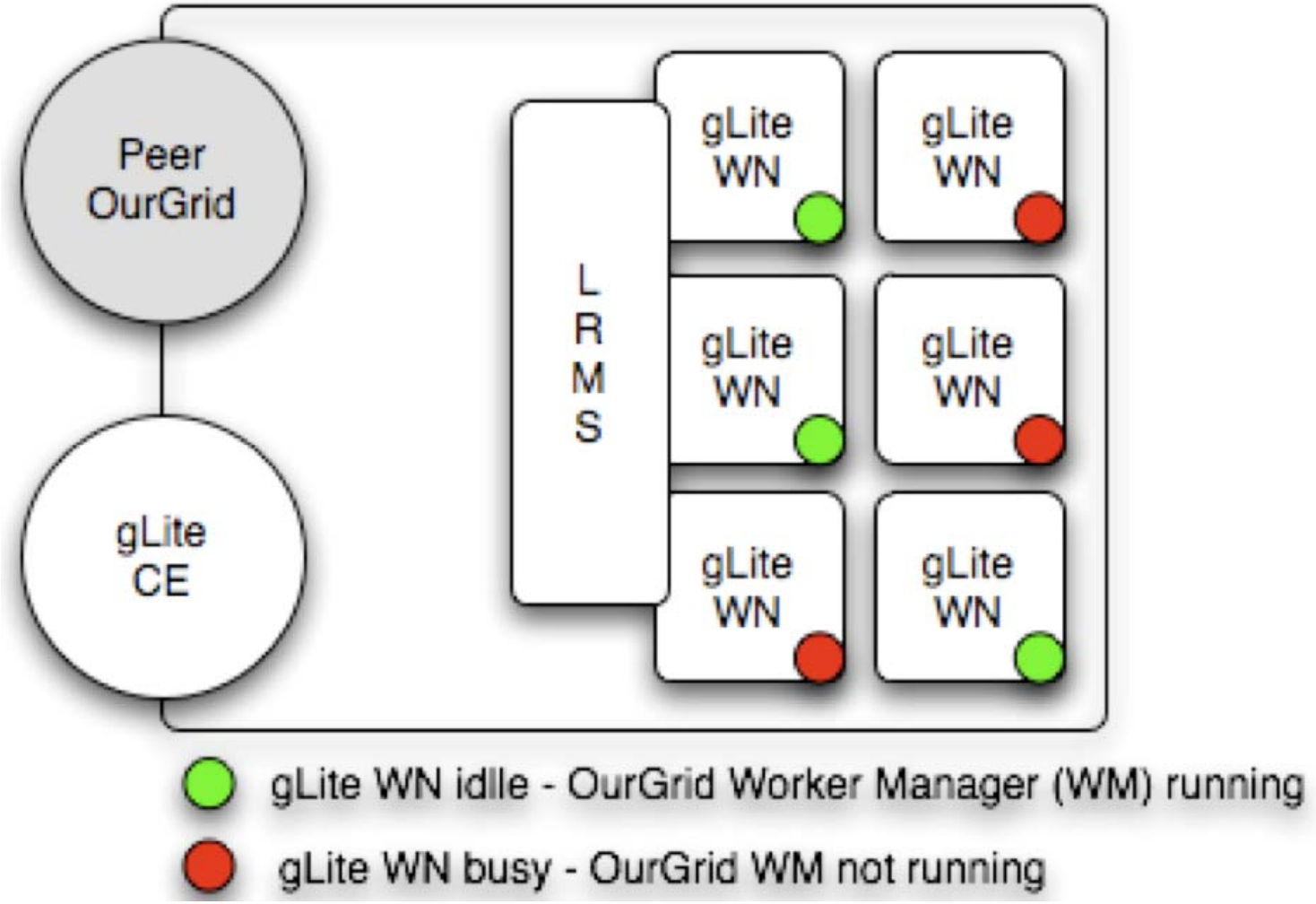
- Based on perfSONAR (collaboration with EGEE-III and RINGrid)
- Web service oriented
- Each network controls its own monitoring system
- Time series can be accessed in a uniform way

EELA-2 and OurGrid (www.ourgrid.org)



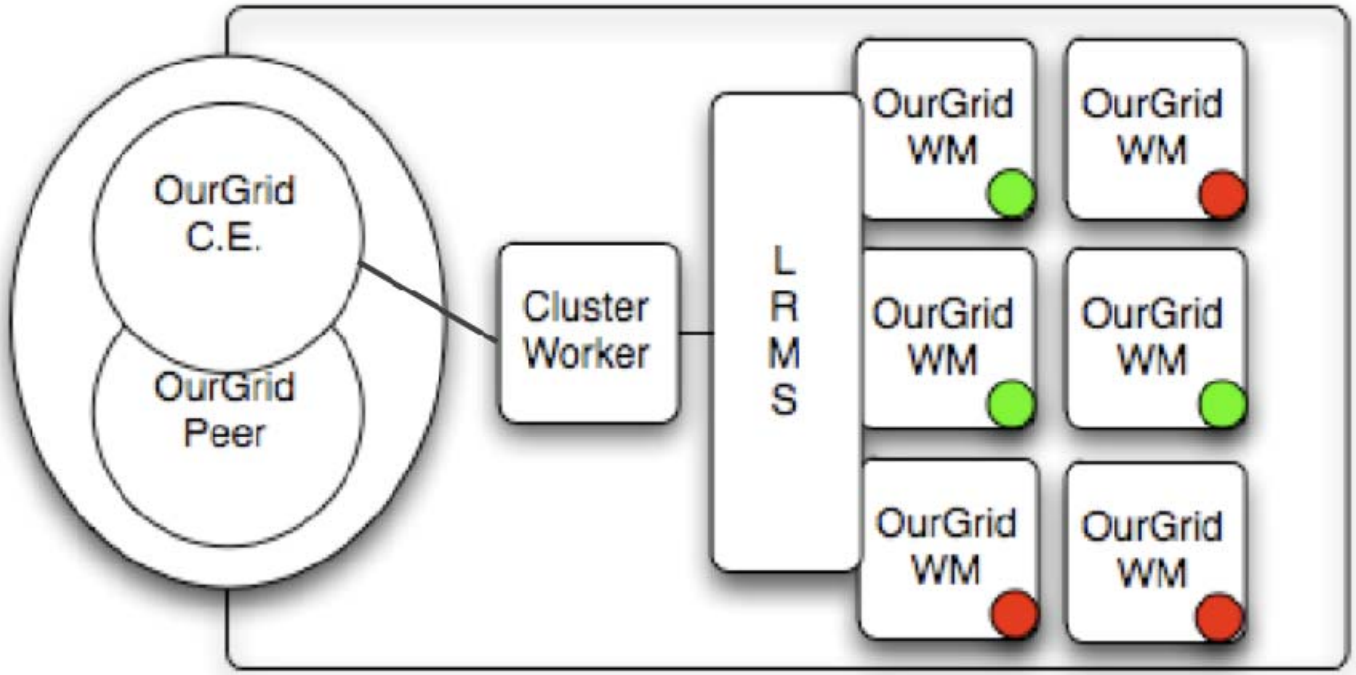
gLite ⟺ OurGrid Interoperability (1/2)

gLite ⇨ OurGrid



gLite ⟺ OurGrid Interoperability (2/2)

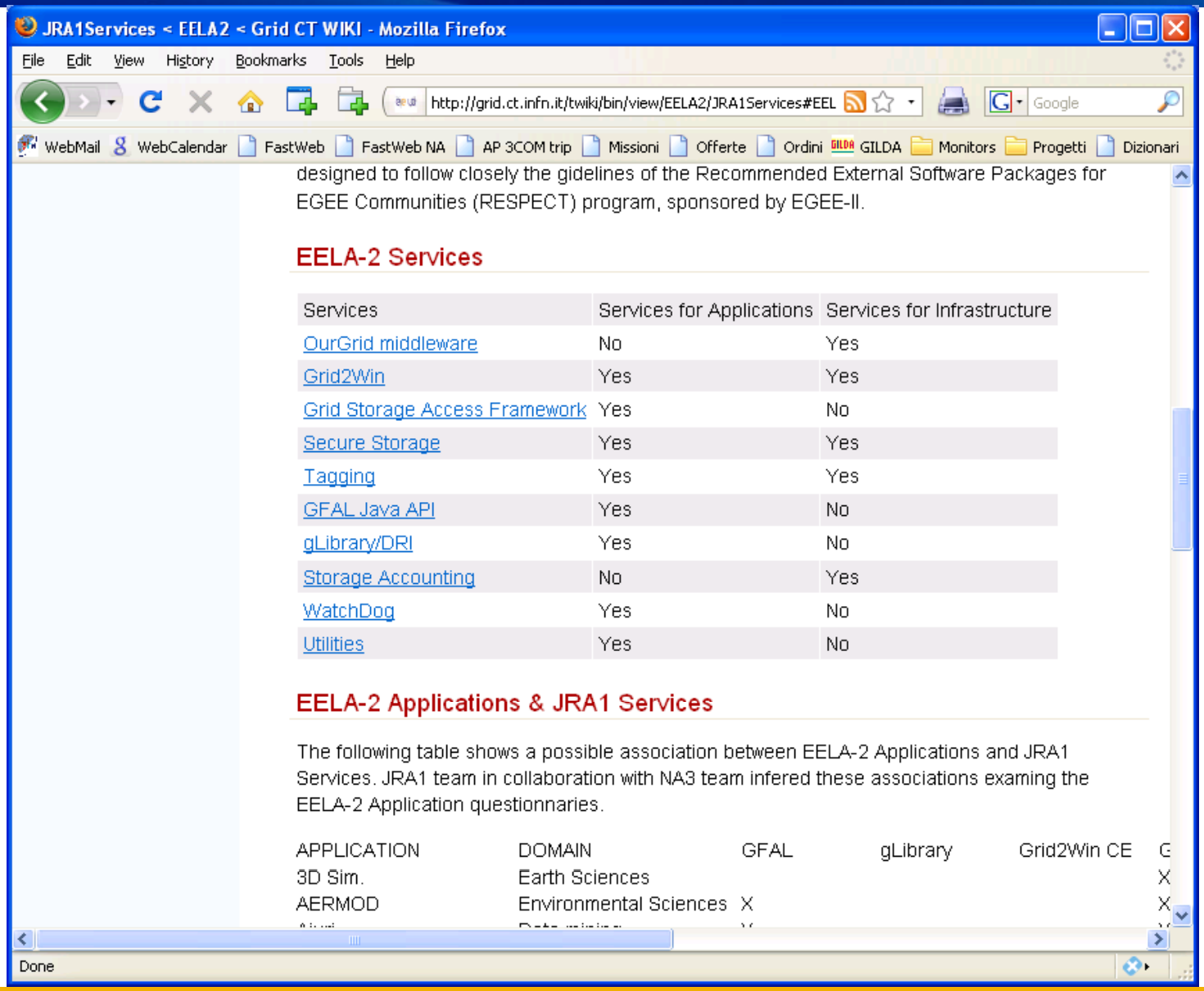
OurGrid ⇨ gLite



OurGrid Worker Node (WN) not allocated to the CW - idlle or running preemptable OurGrid WN

OurGrid WN allocated to the CW - running non-preemptable OurGrid WN or gLite WN

Other JRA1 Middleware Services



designed to follow closely the gidelines of the Recommended External Software Packages for EGEE Communities (RESPECT) program, sponsored by EGEE-II.

EELA-2 Services

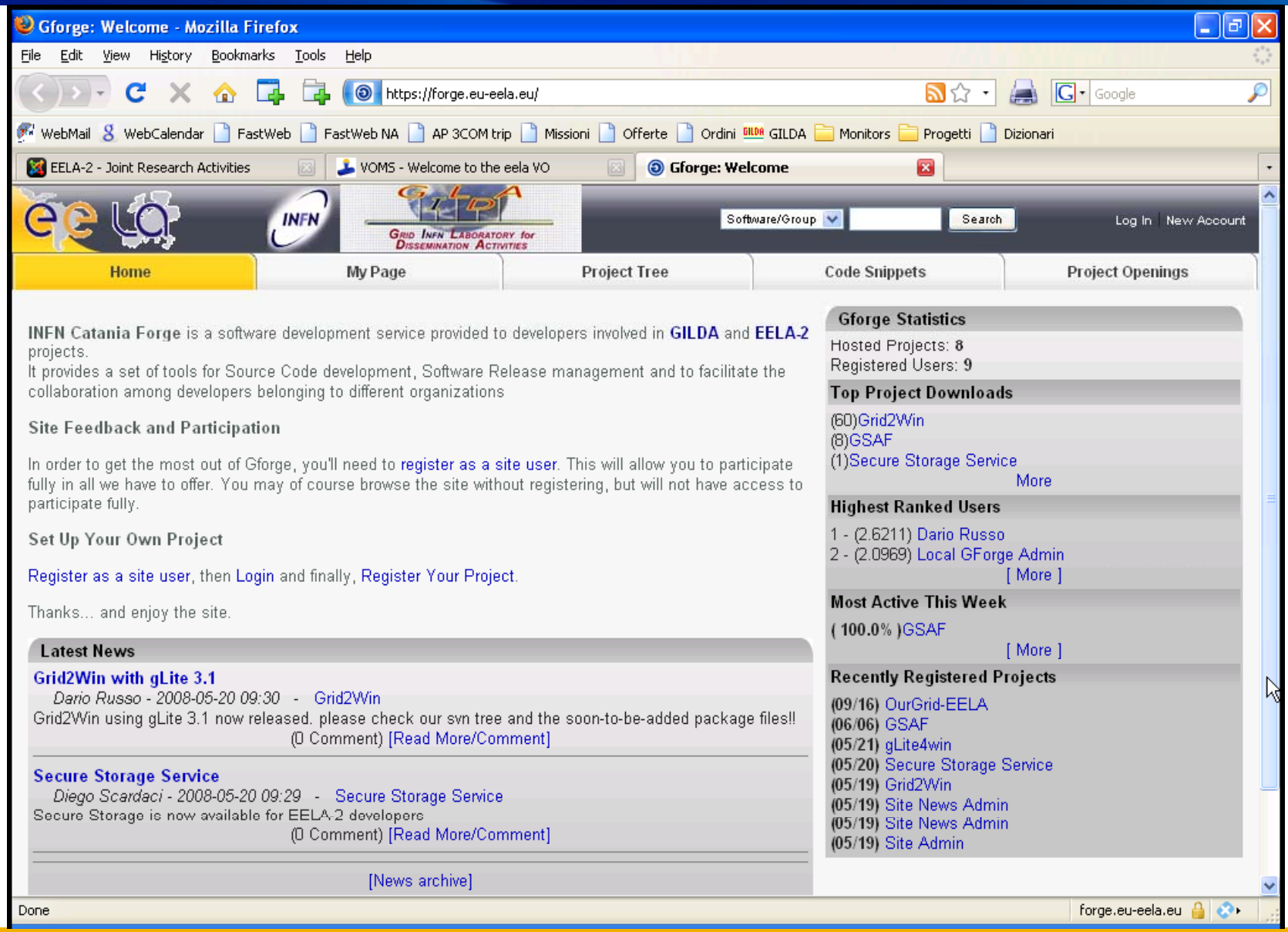
Services	Services for Applications	Services for Infrastructure
OurGrid middleware	No	Yes
Grid2Win	Yes	Yes
Grid Storage Access Framework	Yes	No
Secure Storage	Yes	Yes
Tagging	Yes	Yes
GFAL Java API	Yes	No
gLibrary/DRI	Yes	No
Storage Accounting	No	Yes
WatchDog	Yes	No
Utilities	Yes	No

EELA-2 Applications & JRA1 Services

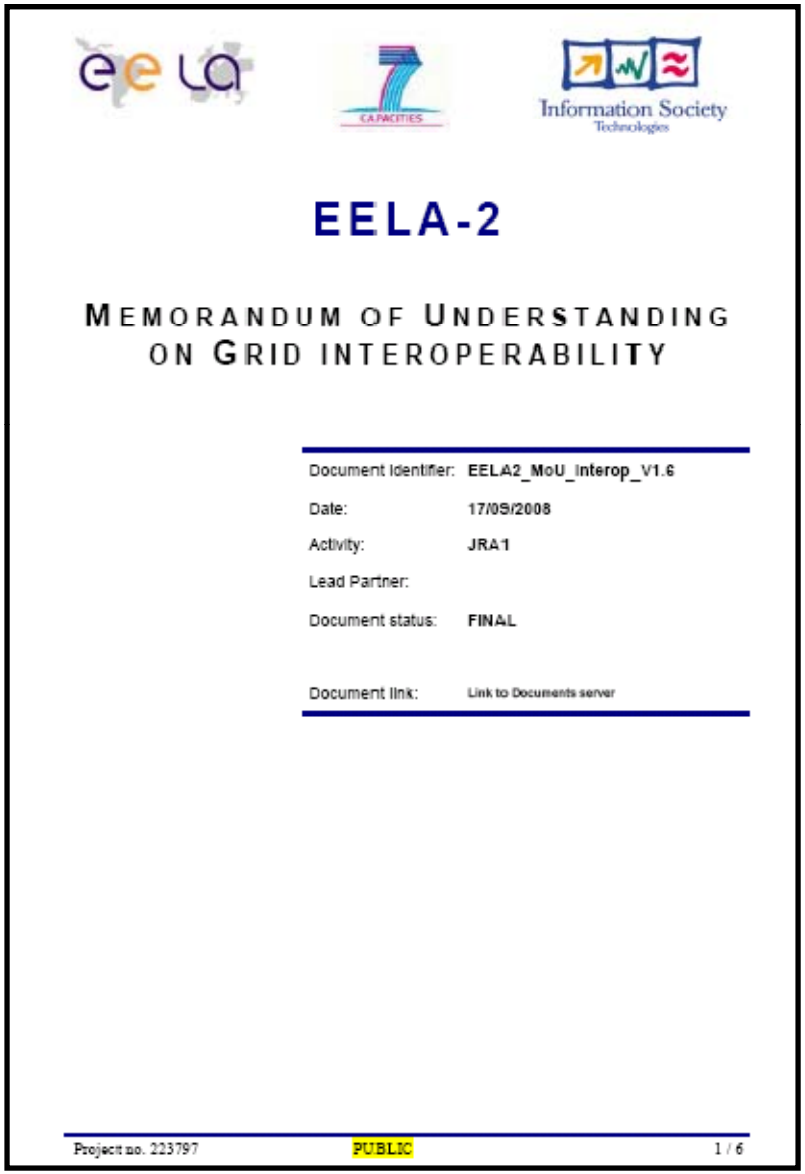
The following table shows a possible association between EELA-2 Applications and JRA1 Services. JRA1 team in collaboration with NA3 team infered these associations examing the EELA-2 Application questionnaries.

APPLICATION	DOMAIN	GFAL	gLibrary	Grid2Win CE	G
3D Sim.	Earth Sciences				X
AERMOD	Environmental Sciences	X			X

The EELA-2 Forge Repository (forge.eu-eela.eu)



General MoU on Grid Interoperability



EELA-2

MEMORANDUM OF UNDERSTANDING ON GRID INTEROPERABILITY

Document Identifier:	EELA2_MoU_Interop_V1.6
Date:	17/09/2008
Activity:	JRA1
Lead Partner:	
Document status:	FINAL
Document link:	Link to Documents server

Project no. 223797 PUBLIC 1 / 6

Have agreed so far:

- **EELA-2**
- **EDGeS Project**
- **EUAsiaGrid Project**
- **EU-India Grid Project**
- **SEEGRID-SCI Project**
- **UTIC Laboratory (Tunisia)**

Summary and conclusions

- Consortium widening and severe budget constraints make EELA-2 an unprecedented challenge (much more complicated than EELA)
- Long-term sustainability and the search for extra-funding is a top priority
- Partners' commitment and responsiveness must be continuously and pro-actively monitored
- The first six months indicate a steep ramp-up of all the Activities and the forthcoming commission of the production infrastructure will boost the use of the services
- We look forward to collaborate with the Mexican scientific community and I hope that this workshop will be a very good occasion to set the grounds of a fruitful cooperation

Thank you very much!
…Questions ?