



Overview of EGEE

and beyond,
from an operations standpoint

Workshop Exploiting the GRID for
Synchrotron Radiation Data Analysis



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Project structure (1)



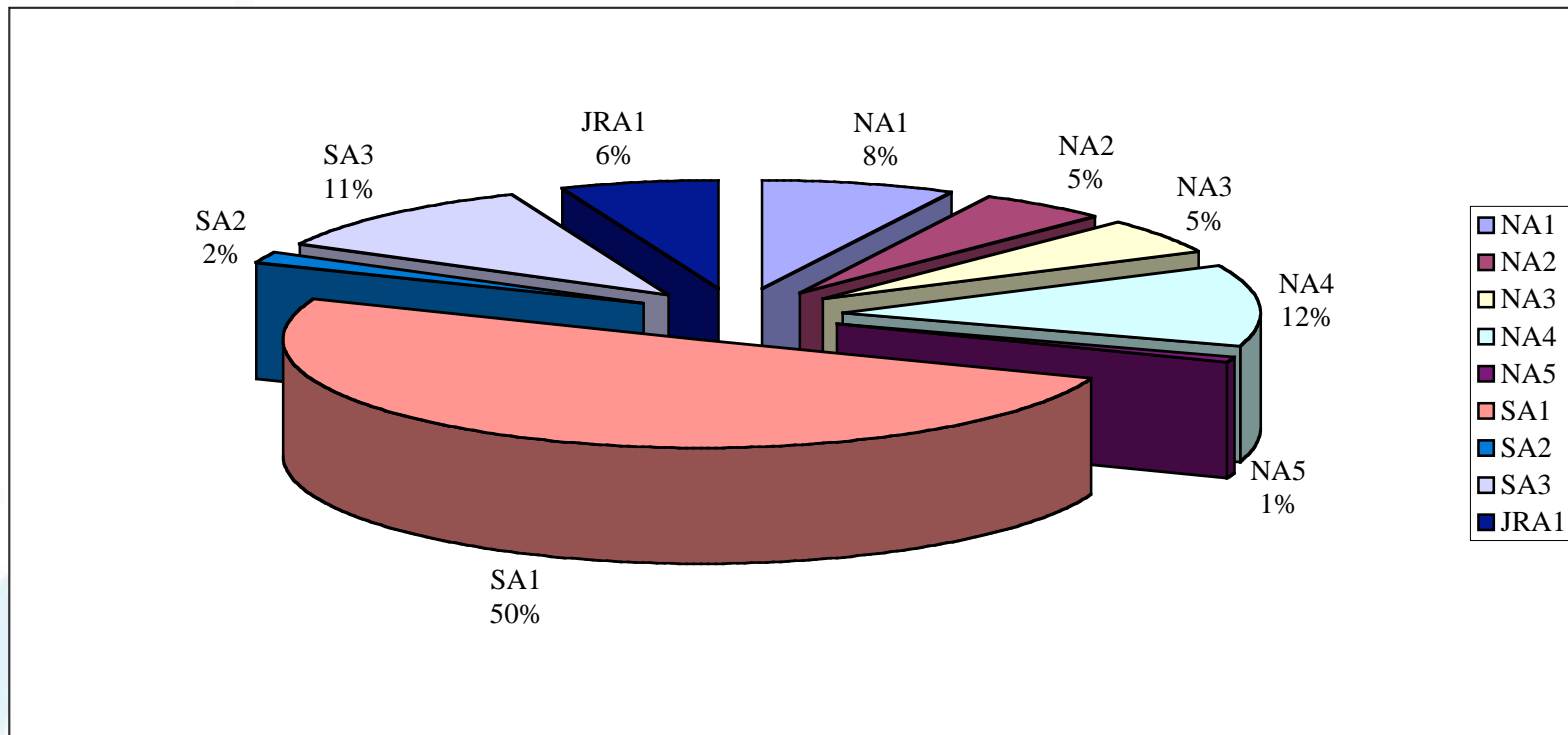
- EGEE phase I started in April, 2004. Now in phase III.
- Boards and committees define strategies, handle high level management problems
- Daily work is done in Network Activities (NA), Service Activities (SA), and Joint Research Activities (JRA)
- Main parts are, in this context:
 - NA1 - Project management
 - NA4 - Applications / VOs
 - JRA1 - Middleware development
 - SA1 - Operations
 - SA2 - Network support
 - SA3 - Integration, testing, and certification



Project structure (2)



- Budget from EU: 32 M€ for two years (EGEE-III only)



Source: internal French JRU information, 2007-12-17



The users (December 1st, 2008)

- 149 registered VOs, 15000 users (double counts included, sorry)
- 56 HEP, astrophysics, fusion VOs
- 7 Life science, 5 Chemistry, 4 Earth science VOs
- and others...

The fabric (October 2008)

- 262 sites ("resource centres") in 50 countries
- 128,000 kSpecInt2000 on 100,000 job slots
- More than 20 PB of available storage

The production activity (August to October 2008)

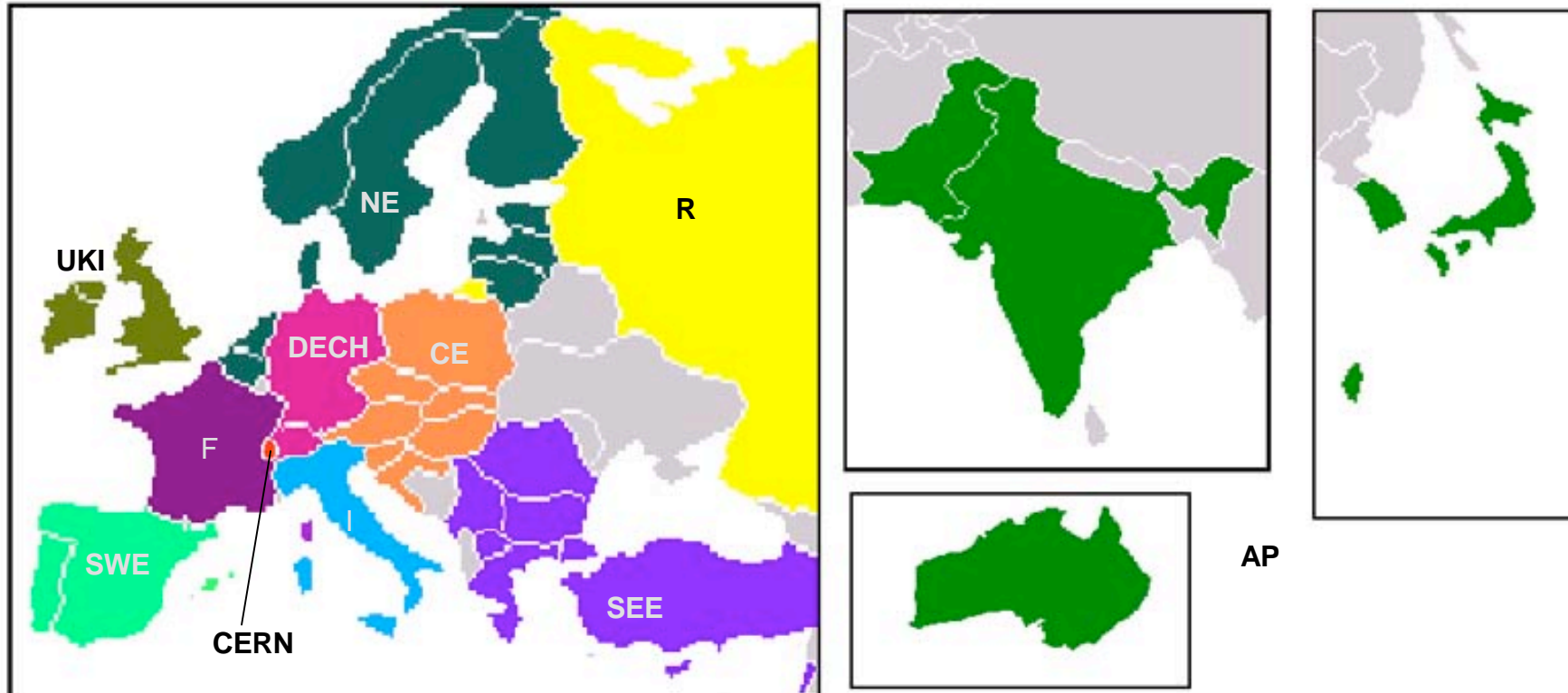
- 27,285,498 jobs run (23% increase wrt previous quarter)
- 9060 CPU years (79,400,477 kSI2k hours)

Operational Infrastructure: organisation



OCC and ROCs

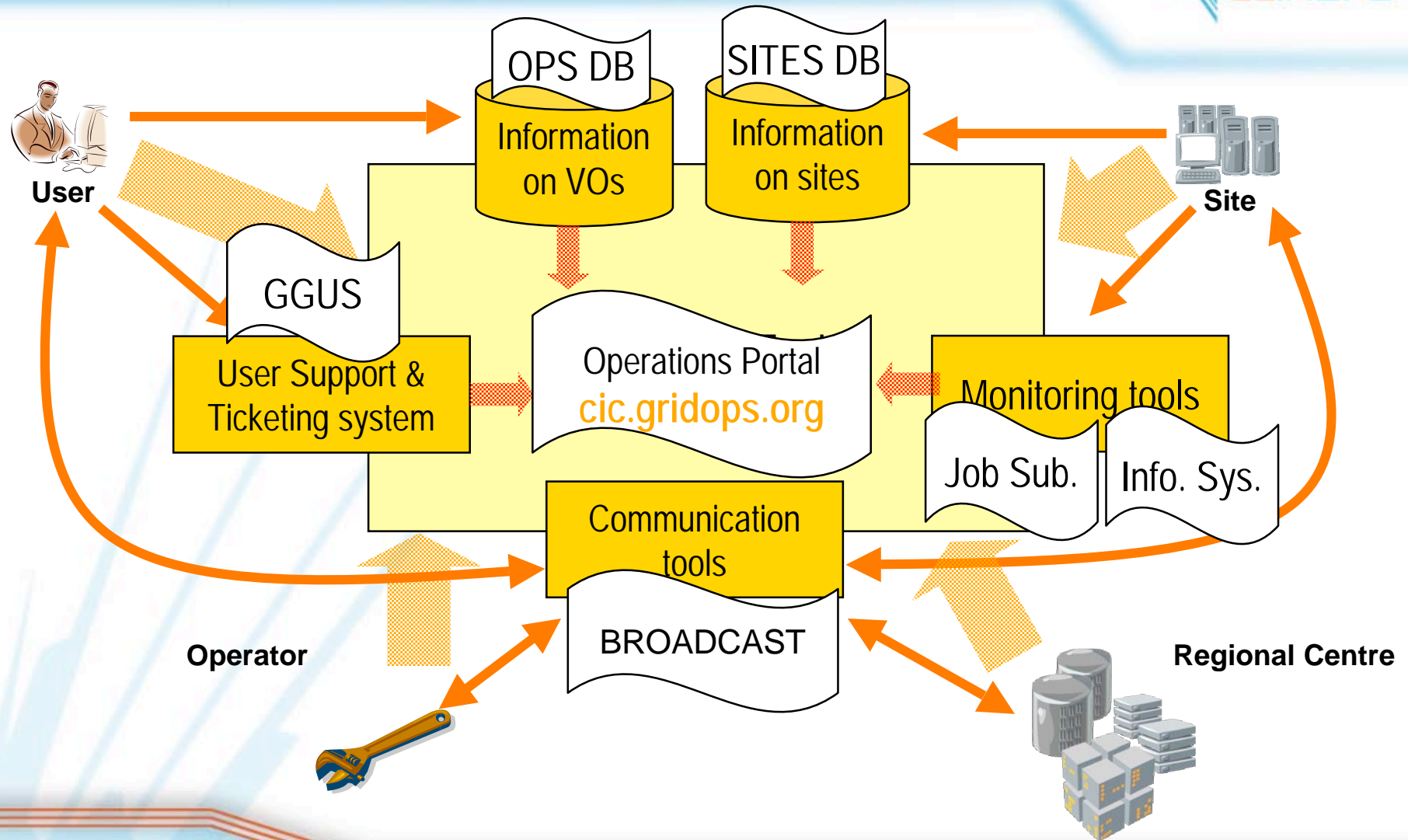
OCC: Operational Coordination Centre
ROC: Regional Operations Centre



AP: AsiaPacific CE: Central Europe CERN(ROC+OCC) DECH: Germany / Switzerland FR: France I: Italy
NE: Northern Europe SEE: South Eastern Europe SWE: South West Europe R: Russia UKI: United Kingdom / Ireland

Source: <https://cic.gridops.org/index.php?section=roc&page=gettingstarted>

Operational Infrastructure: tools



Source: Presentation "EGEE Operational Procedures", held in Pretoria, South Africa by David Bouvet – IN2P3-CC



Other aspects

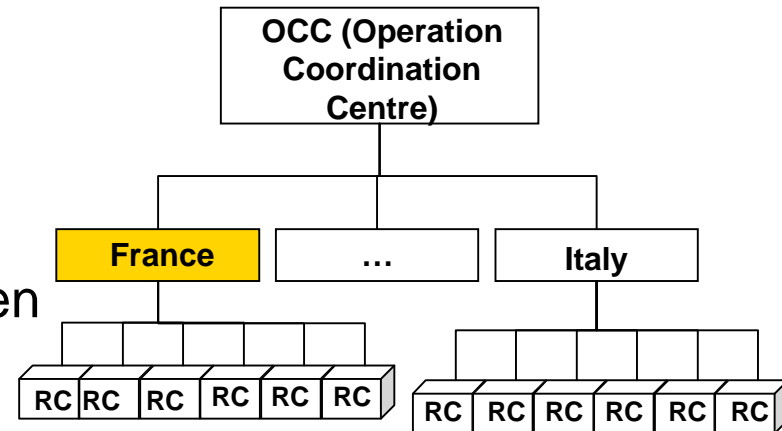


- Annual project and user conferences
- Quarterly face to face meetings of several Operations groups (grid operators, ROC managers, workgroup leaders)
- Bi monthly Operations management phone conferences
- Weekly joint Operations phone conferences with WLCG/OSG
- Workgroups, an excerpt:
 - Operations Automation Team (OAT)
 - User support group (GGUS/USAG)
 - Grid operators (COD)
 - Security (OSCT)

EGEE ROC to NGI... what's a ROC



- Site representative of a region/federation
 - Assistance to sites/RC in the region
 - Site middleware deployment coordination
 - Communication channel between project and sites
- Regional security management
- Regional monitoring
- Incident support and follow-up
- Sites certification
- Users training



Source: Presentation "EGEE Operational Procedures", held in Pretoria, South Africa by David Bouvet – IN2P3-CC

EGEE ROC to NGI... ROC France



- Roughly 20 FTEs, more than 40 people actually working
- Coordination done at CCIN2P3 at Lyon/Villeurbanne
- In addition to standard ROC duties (see previous slide):
 - Coordination of Grid operators (COD)
 - Development, maintenance, and hosting of the Operations portal (CIC portal)
 - Project representation in several committees (GOCDDB advisory group, OAT, Resource Allocation Group)
 - Representation of EGEE France in a project board

▶ Alternatives after the end of the project



- **LCG only - a theoretical case**
As there is no successor for EGEE yet, LCG is obliged to plan for the case without one. However, whilst CERN can live with HEP only, many other sites can't.
- **A Set of NGIs**
Various national grid infrastructures may start evolving from the current situation with a central coordination only for their LCG part (if any), interoperability and interoperations suffering from this.
- **EGI**
To keep national infrastructures interoperable, a central coordination as aimed by EGI is necessary.



LCG only - a theoretical case (1)



- LCG is structured using data distribution and computational tasks as criteria
 - Tier-0: CERN, raw data creation, storage and distribution
 - Tier-1s: 11 centres, each receiving 20 % raw data by supported experiment (ALICE, ATLAS, CMS, LHCb) + Monte Carlo simulation, event reconstruction, data distribution (to tier-2s, also to tier-1s)
 - Tier-2s: simulation, data analysis



LCG only - a theoretical case (2)



- Every experiment has its own production control
But none controls site operations
- Every experiment has its own data transfer control
But none controls network
- LCG develops its own operations procedures
This might allow for “LCG only” operations after the end of EGEE-III
- BUT: many tier-1s and tier-2s receive also non LCG funds and are obliged to serve non HEP communities
Consequently, a parallel operational infrastructure creates additional overhead



A Set of NGIs



- Single country ROCs evolve into NGIs (France, Italy)
- Multiple country ROCs either split (Central Europe) or continue their cooperation (probably all the other ones)
- LCG is centrally coordinated, but there are only 11 tier-1s in the world and potentially about 40 NGIs in Europe alone
 - The majority of the grid initiatives will either die or evolve in their own way if there is no overall coordination
 - Interoperation and interoperability become an issue for international scientific collaborations outside HEP



EGI: Introduction



- EGI-DS
 - The design of EGI is developed by a separate project, EGI-DS
- EGI will consist of
 - NGIs (38 have stated their interest)
 - Evolving from current ROCs
 - EGI.org
 - “Virtual” centralisation of coordination with a small team geographically in one place, plus other central functions delegated to NGIs



EGI: EGI.org Tasks



- Provide:
 - Inter-domain interoperation in the pan-European infrastructure, i.e. to keep a consistent operational model across European countries (example: incident on site in one country creating operational problems in another one)
 - Ease of access and effective usage of the infrastructure by international user communities (e. g. standard user interface)
- “Virtual” centralisation:

Central tasks can be **delegated** to one or more NGIs or other organizations as deemed necessary (examples in EGEE: grid operator, pre-production, GOADB...)
- EGI.org Operational Unit will be responsible of:
 - Coordination
 - Running those central tasks where central operation is preferred

Based on presentation “The EGI Blueprint: Grid Operations and Security”, conference EGEE’08, Tiziana Ferrari



EGI: NGI International Tasks






- Technical services under the responsibility of the NGI which are needed to:
 - Support international user communities
 - Ensure cooperation with EGI.org and other NGIs
 - Allow the integration, operation and sharing of NGI resources at international level, respecting standards and specifications as defined by EGI or others (e. g. OGF)
 - Examples: monitoring of sites supporting international VOs, non national accounting, file catalogs for international VOs...
- Note: NGI tasks to support local user communities and to satisfy local needs are out of the scope of EGI

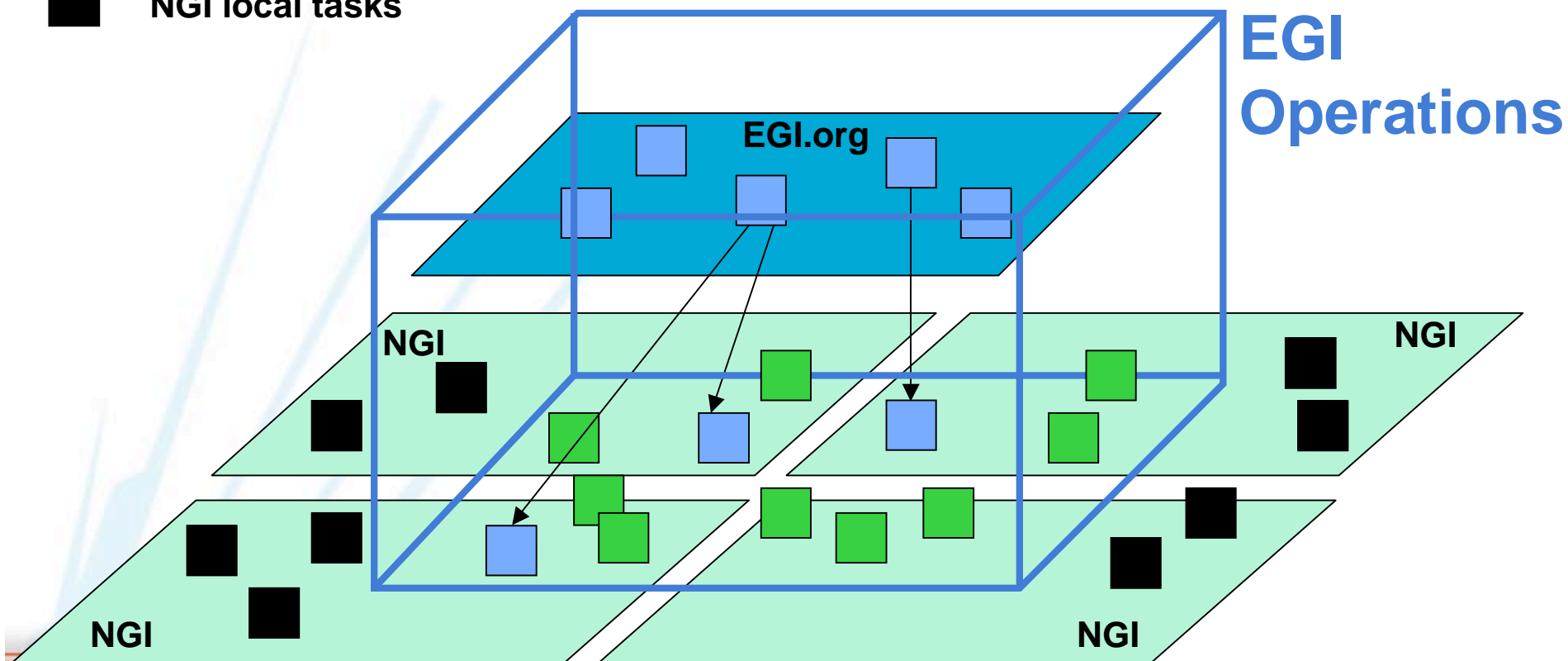


EGI: EGI Operations



EGI.org tasks + NGI international tasks

-  EGI.org tasks
-  NGI international tasks
-  NGI local tasks



Based on presentation "The EGI Blueprint: Grid Operations and Security", conference EGEE'08, Tiziana Ferrari



EGI: Funding



- EGI.org tasks:
 - Initially fully funded by the EC
 - After transition also sustained by the NGIs (for example via service charges)
 - EGI.org tasks are a service bundle which must be provided in year one of EGI
- NGI international tasks:
 - **EC and NGI co-funding** to promote the integration of NGIs resources into the European e-Infrastructure
- NGI local infrastructure:
 - National IT resources and user communities, NGI management are supported by national funding agencies



Links



- EGEE-III: <http://www.eu-egee.com/>
- GGUS: <http://gus.fzk.de/>
- GOCDDB: <https://goc.gridops.org/>
- Gstat: <http://goc.grid.sinica.edu.tw/gstat/>
- Operations portal: <http://cic.gridops.org/>
- Institut des Grilles (begin of French NGI):
<http://www.idgrilles.fr>
- EGI-DS: <http://web.eu-egi.eu/>