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Enabling Grids for E-sciencE

User, Operations and VO Support in EGEE

WLCG Tier 2 Workshop, 12-14 June 2006

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Information Society
and Media

- **User education**

- **Simple access to a broad range of information**

- **Day-to-day support for the users of grid data, compute, networking and VO specific services**

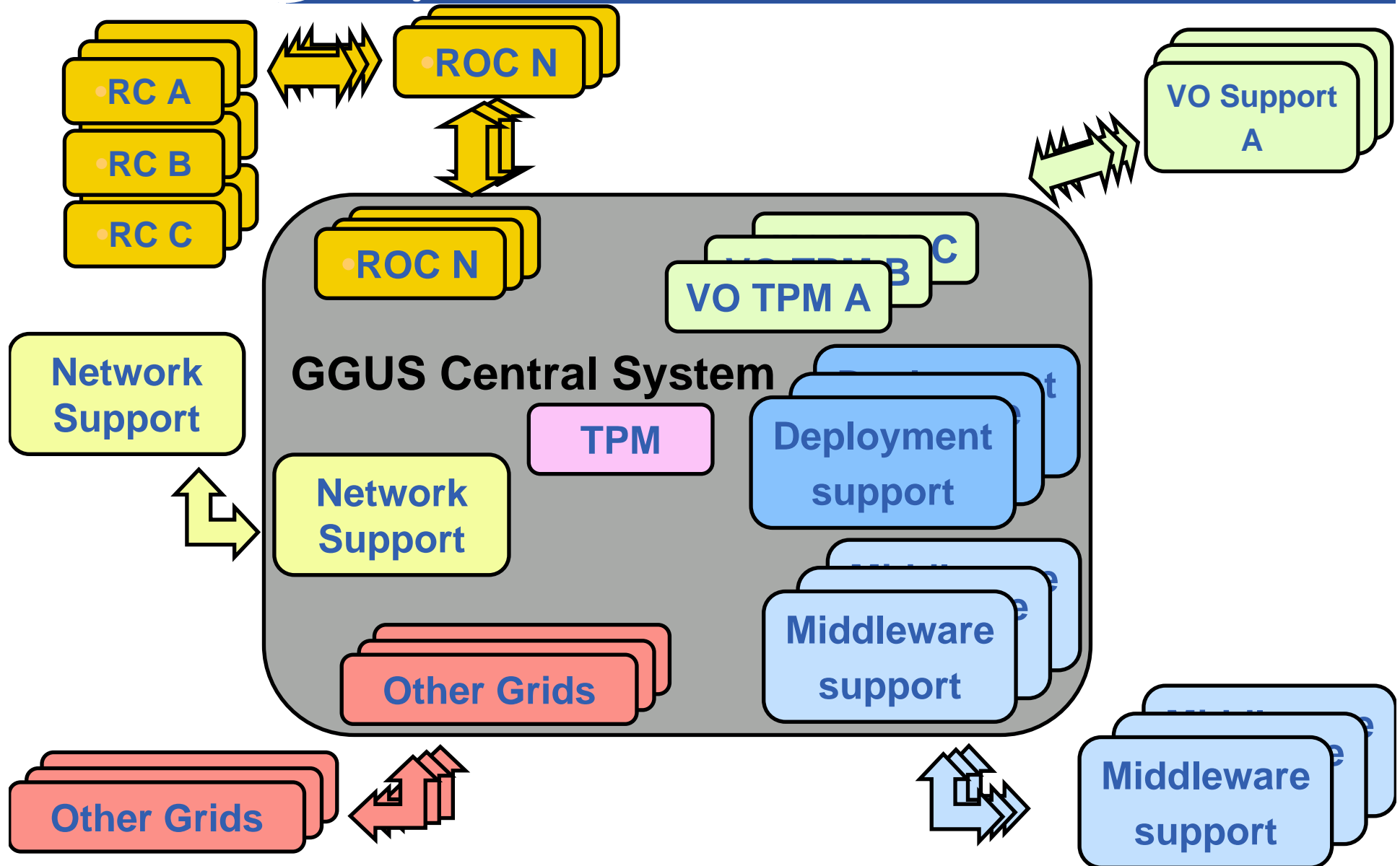- **Application integration and support**

Enabling Grids for E-sciencE

- **Distributed nature of the Grid :** experts located everywhere, sometimes in specific centres; spread of resources and services; different policies and laws.

- **Variety of users :** beginners, system administrators, operators, network specialists, Virtual Organization communities

- **Variety of applications :** high energy physics, biomedical, earth observation, astrophysics, computational chemistry, etc.
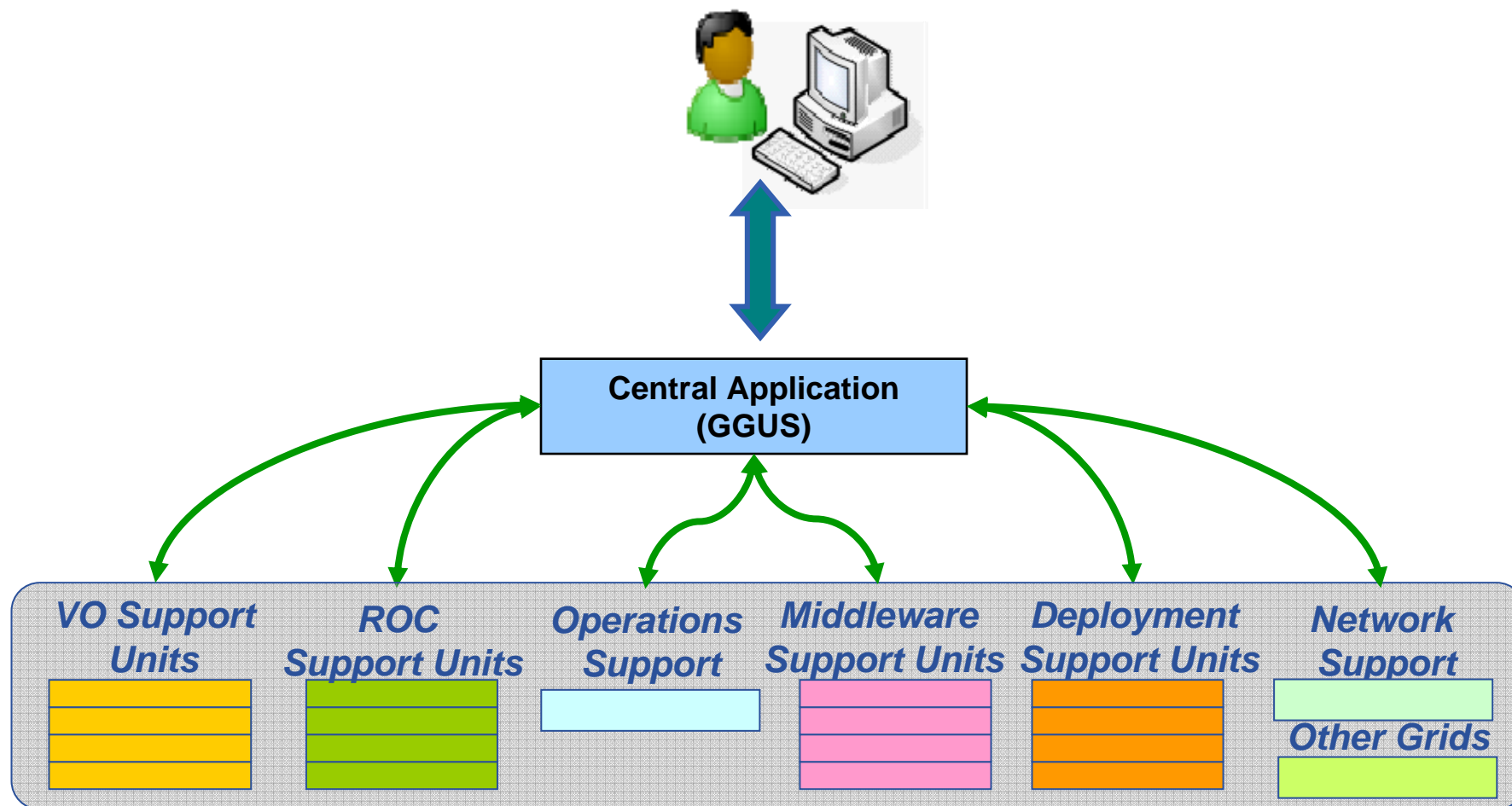
- **A single access point for support**

- **Correct, complete and responsive support**

- **A portal with a well structured sources of information and updated documentation concerning the VO or the set of services involved**

- **Tools to help resolve problems (search engines, monitoring applications, resources status, etc.)**

- **Integrated interfaces with other Grid infrastructures' support systems**

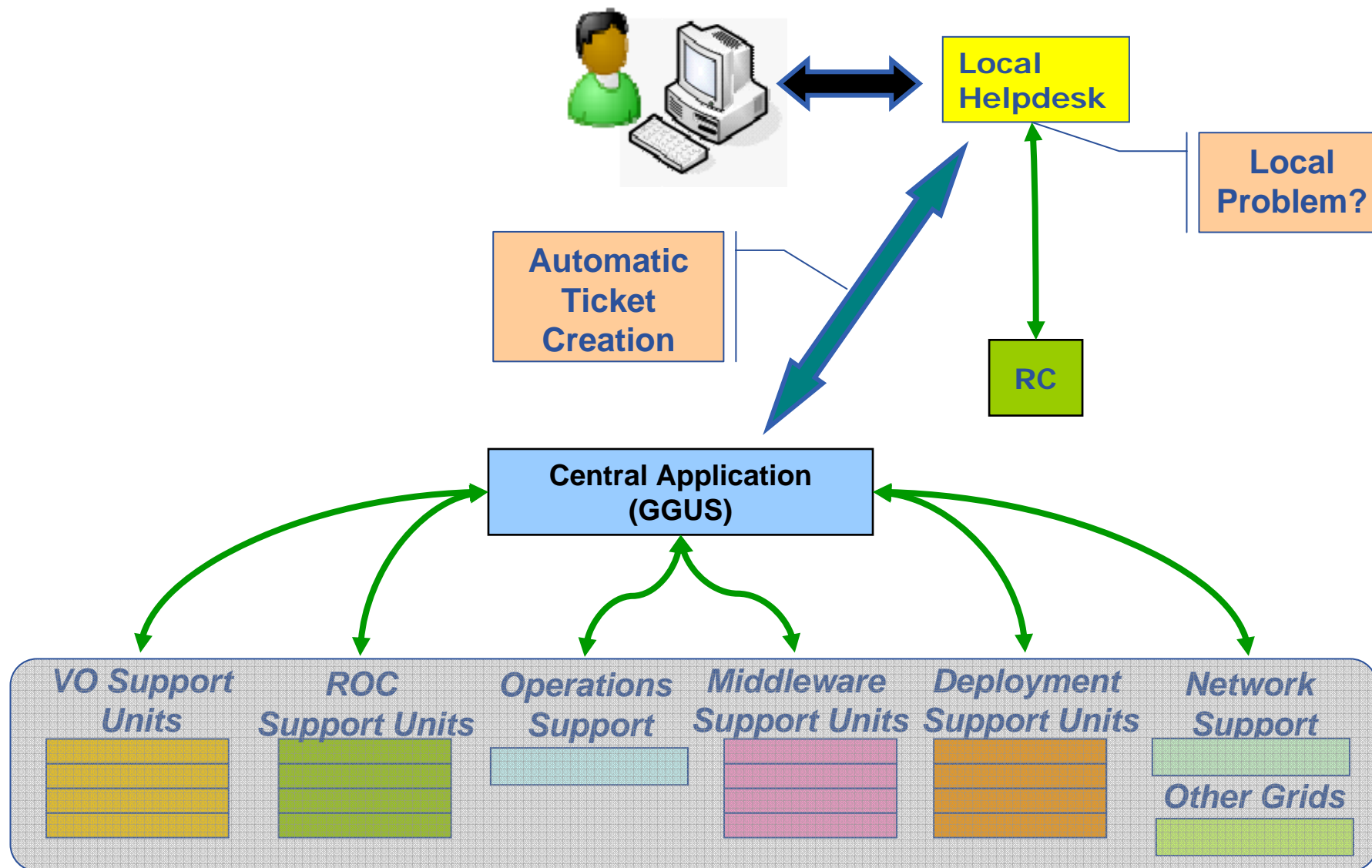**Enabling Grids for E-sciencE**

- **Global Grid User Support (GGUS) is the EGEE support infrastructure for Grid users, deployment and operation problems**

- **It offers a large variety of services to satisfy user needs at all levels**

- **It does not substitute but integrate existing infrastructures and coordinates support efforts**

Enabling Grids for E-sciencE
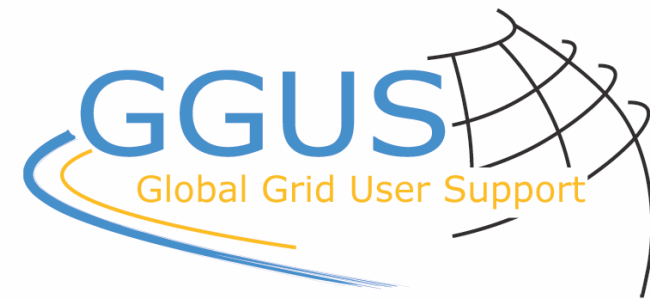
- **GGUS starts in 2003 as a prototype support system in LHC**

- **The plan was to cover 24x7 by 3 teams in different time zones**

- **GGUS was conceived to be a Single Point Of Contact**

- **Strictly hierarchical structure in LCG (tier model)**

- **Transition to EGEE meant migration to a different operations model: The federative approach**

- **11 Regional Operation Centres instead of a Grid Operation Centre**

- **Different approach was needed in user support also**

RC A

RC B

RC C

ROC N

VO Support A

GGUS Central System

ROC N

VO TPM C

VO TPM B

VO TPM A

Network Support

Network Support

TPM

Deployment support

Middleware support

Other Grids

Other Grids

Middleware support

Enabling Grids for E-sciencE

Local Helpdesk

Local Problem?

Automatic Ticket Creation

RC

Central Application (GGUS)

VO Support Units

ROC Support Units

Operations Support

Middleware Support Units

Deployment Support Units

Network Support

Other Grids

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Enabling Grids for E-sciencE

First Line Support
- TPM + VO TPM

Services Support Units
- VO Support Units
- ROC Support Units

External Support Units
- Other Grid Infrastructures
- Network Support

Software Support Units
- Middleware Support Units
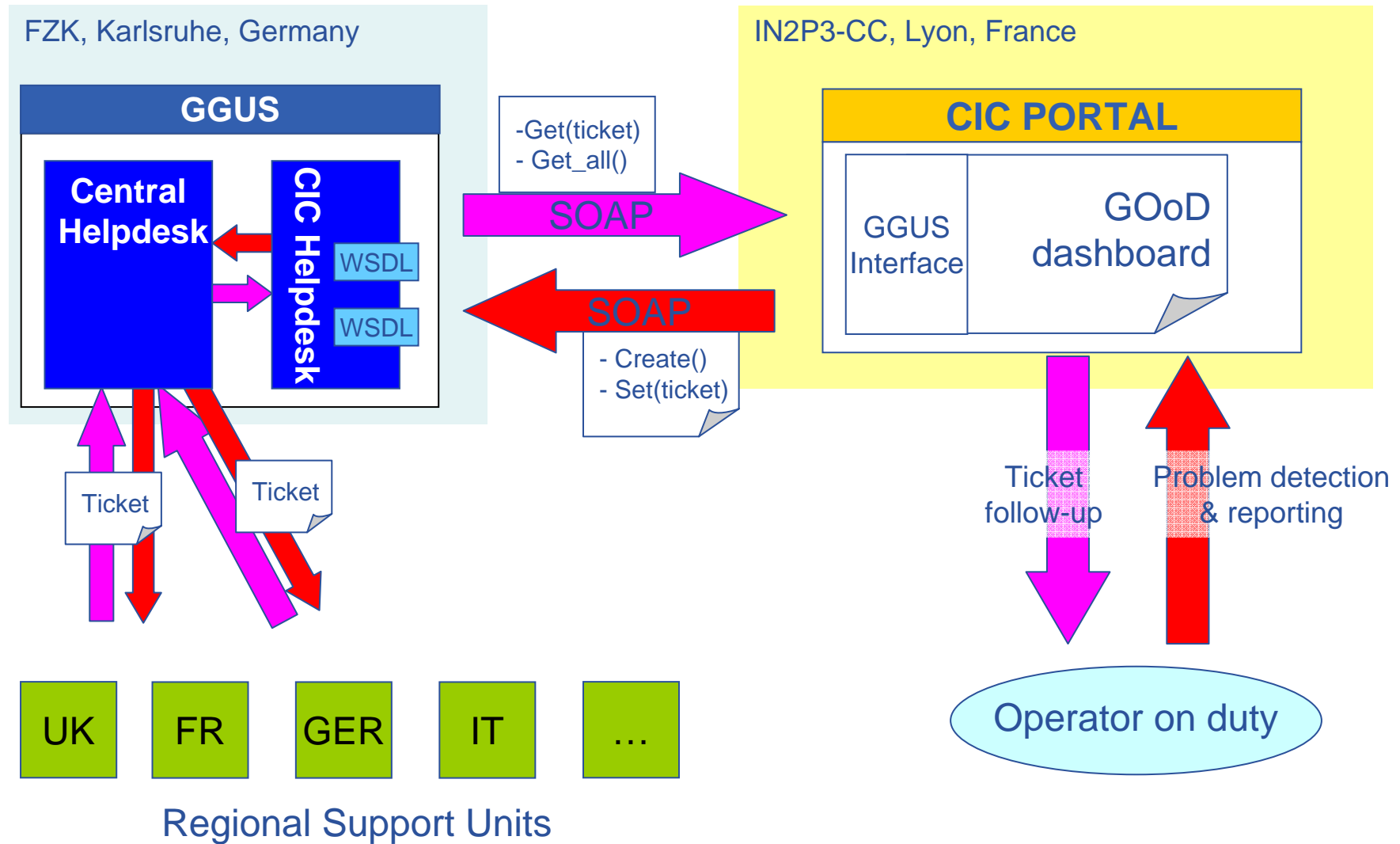- Deployment Support Units

- **Purpose/role**
  - Detect problems by monitoring the grid
  - Report them by creating and assigning GGUS tickets
  - Provide help and follow-up on problems

- **Operations Support teams : "GOoD"**
  - Currently 6 teams (CERN, France, Italy, UK, Russia, Taiwan)
  - Weekly shift

- **CIC-Portal/GGUS interface**
  - Based on Web services at GGUS side
  - "GOoD dashboard": graphic user interface for operators, hosted at IN2P3 Computing Centre (Lyon, France)

FZK, Karlsruhe, Germany

IN2P3-CC, Lyon, France

GGUS

Central Helpdesk

CIC Helpdesk

WSDL

WSDL

-Get(ticket)
- Get_all()

SOAP

SOAP

- Create()
- Set(ticket)

CIC PORTAL

GGUS Interface

GOoD dashboard

Ticket

Ticket

Ticket follow-up

Problem detection & reporting

UK   FR   GER   IT   …

Regional Support Units

Operator on duty

- **Ticket Processing Managers (TPM) :**
  Generic grid experts as first line support

- **VO TPMs:**
  First line support for VOs

- **Specialized Support:**
  Middleware, Deployment
  Specialized VO Support

- **ROCs and RCs:**
  Local support and services

- **ENOC:**
  Network support

- **GGUS provides a single entry point for reporting problems and dealing with the grid.**

- **GGUS offers a portal where users can find up-to-date documentation, and search engines to find answers to resolved problems and examples.**

- **Common solutions are stored in the GGUS knowledge database and Wiki pages are compiled for frequent or undocumented problems/features.**

- **GGUS offers hot lines for users and supporters and a VRVS chat room for supporters to make the entire support infrastructure more efficient for users.**

- **GGUS is interfaced with other grids' support infrastructures such as OSG (and NorduGrid).**

- **GGUS is used for daily operations to monitor the grid and keep it healthy. Specific user problems can be directly communicated to the Grid Operations and broadcasted to the entire grid community.**

Enabling Grids for E-sciencE

- **Supporters are not dedicated to GGUS. Some times it is difficult to ensure responsiveness.**

- **Supporters are concentrated in a few locations.**

- **Some area of specialized support is still uncovered because of missing human resources. GGUS still provides generic support via the TPMs.**

- **Scalability is constrained by the availability of supporters.**

- **Limited experience in handling a large number of tickets. At the moment GGUS has successfully handled 200 tickets per day.**

Enabling Grids for E-sciencE

- **VOs are not always happy with the level and accuracy of support offered by GGUS: it is absolutely necessary that supporters understand deeply the problem reported and react soon.**

- **VOs are not satisfied with the GGUS response time. We need to come up with a "Service Level Agreement" also for GGUS. Supporters need to follow the rules and give GGUS the correct level of priority in their list of tasks.**

- **We need to train more people to have deep knowledge of the Grid middleware so that they can act as Grid specialists to shield the developers from giving support.**
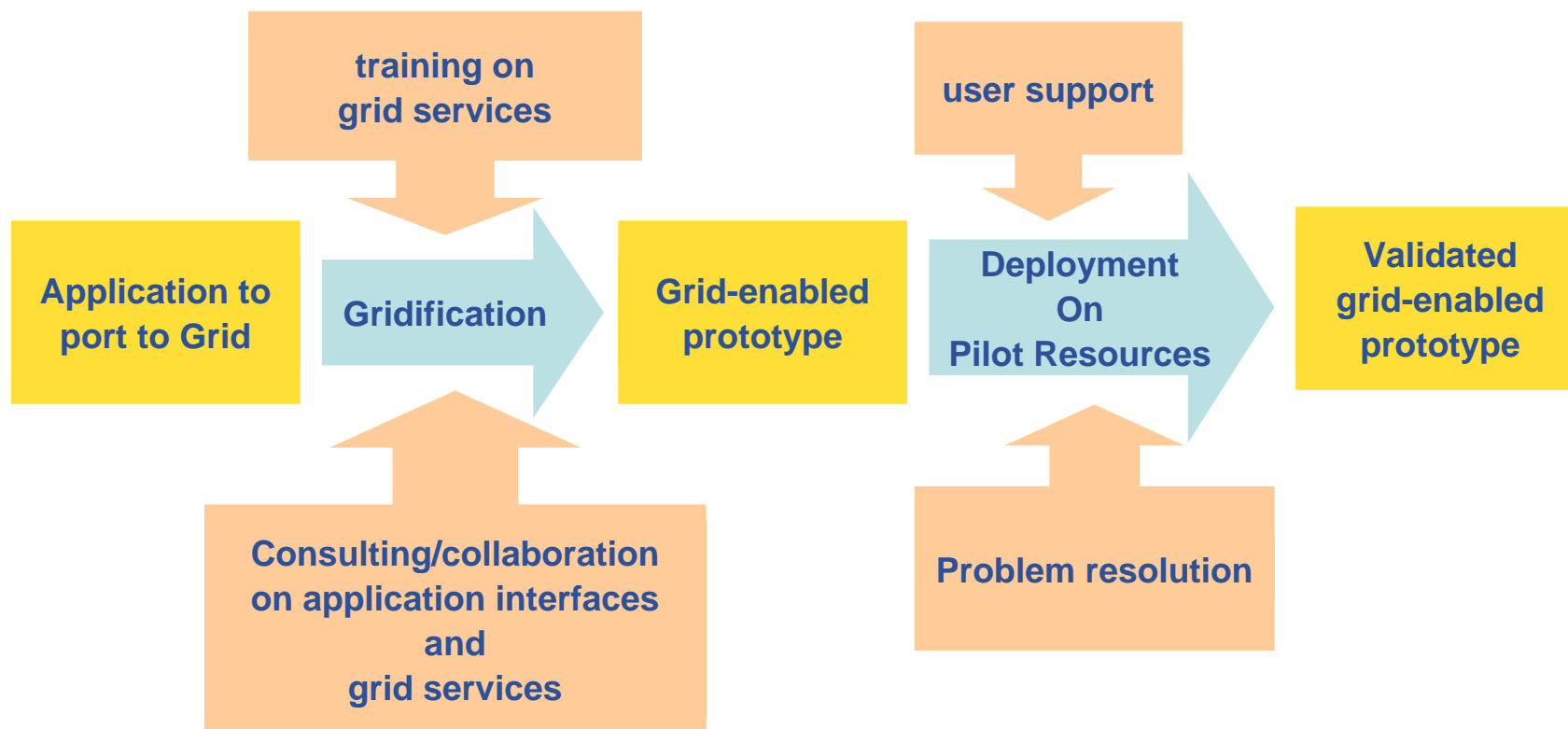
VO Support in EGEE
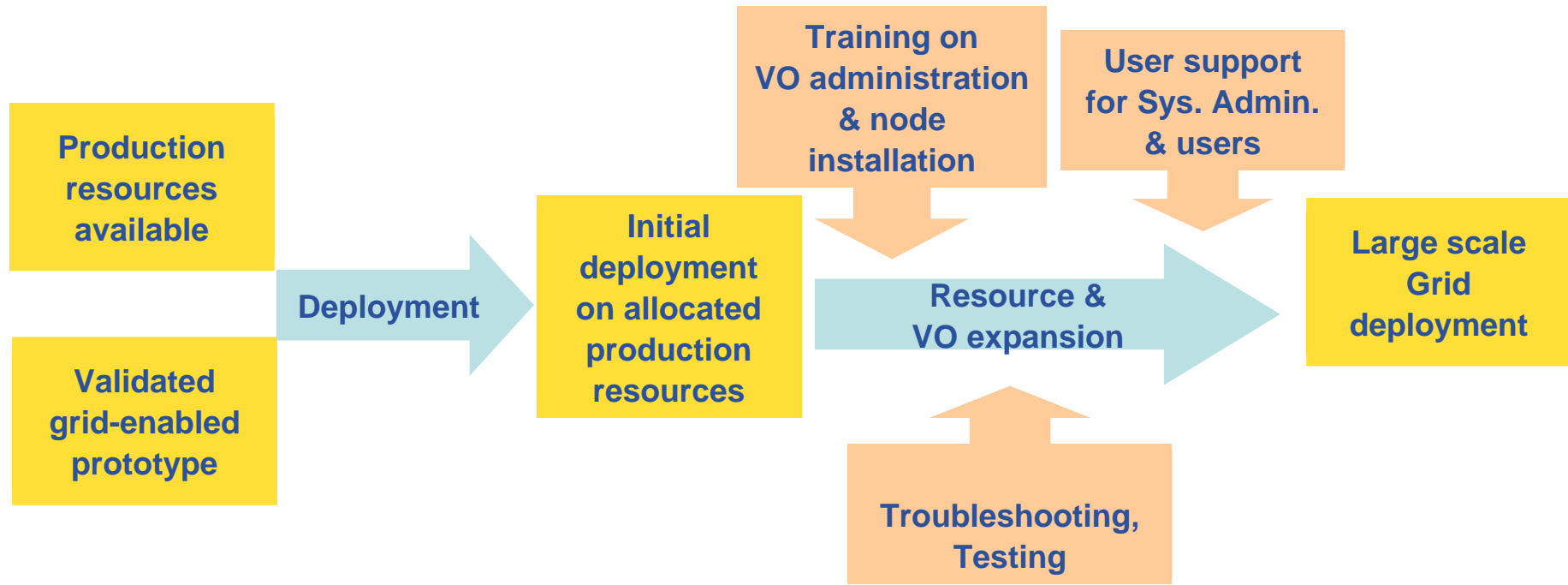
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- **Help integrating user applications with the grid middleware**

- **Experts knowledgeable of the particular application in use and who can discuss with the user to better understand what he/she is trying to achieve**

- **Examples, templates, specific distributions for software of interest**

- **Connection with the grid developers and the deployment and operation teams**

- **Assistance during production use of the grid infrastructure**

- **A good example of VO support has been provided by the Experiment Integration Support (EIS) Team for LHC VOs**

- **The EIS members acquire a good inside knowledge of the Grid middleware and quite some experience with the experiment software infrastructure**

- **They interact with VO experts, suggest solutions, participate to coordination meetings to better understand problems, concentrate on Grid activities, have direct connections with middleware developers and operation teams**

- **EIS assists the experiments during production exercises, detect and report problems at the sites, are part of the GGUS support infrastructure for the VOs they work with**

training on
grid services

user support

Application to
port to Grid

Gridification

Grid-enabled
prototype

Deployment
On
Pilot Resources

Validated
grid-enabled
prototype

Consulting/collaboration
on application interfaces
and
grid services

Problem resolution

Production resources available

Validated grid-enabled prototype

Deployment

Initial deployment on allocated production resources

Training on VO administration & node installation

User support for Sys. Admin. & users

Resource & VO expansion

Large scale Grid deployment

Troubleshooting, Testing

Enabling Grids for E-sciencE

Some of the tasks can be covered and sometimes fulfilled more efficiently by GGUS:

- **Generic Grid User Support**
  - Usage of Grid middleware
  - Errors interpretation
  - Missing features

- **Site contact**
  - Reporting site configuration problems

- **Services interruption and misbehaviour**

- **Installation and configuration assistance**

- **VO Grid Software Support**

Enabling Grids for E-sciencE

- **WLCG VOs have requested to be in the first line support in order to efficiently detect VO specific problems and address them appropriately.**

- **The GGUS VO TPM is therefore an LCG experiment software expert who can understand problems reported by other members of the collaboration and address them appropriately to either Grid experts or to experiment specific people.**

- **Some VO have asked for the VO TPMs not to be directly in the first line support: most problems reported are clearly Grid problems that can be solved and addressed by generic TPMs.**

- **The VO TPM can either solve the problem or address it to the GGUS generic TPM or to a ROC or to a Grid middleware specialist.**

- **WLCG VOs supporters are of 2 kinds:**
  - VO TPMs who commit to assist users in sorting out the cause of the problem reported: VO specific or Grid problems. They can solve the problems if able to.
  - Experiment Software Specialists who can be contacted by the VO TPMs to solve a reported problem. These people are normally not part of GGUS support teams.

- **WLCG VO supporters can be geographically located everywhere. They can also provide support locally at a ROC.**

- **GGUS VO supporters can coordinate with GGUS TPMs and ask them for help. They can have direct contact with middleware developers via GGUS.**

Enabling Grids for E-sciencE

- **Limited engagement of existing VOs in the implementation of GGUS. The present VOs have found it difficult to provide people for involvement with this work.**

- **Small VOs do not have the resources to implement their part of the model. GGUS still provides support for the VO at generic Grid level.**

- **VO supporters are not dedicated to GGUS. Some times it is difficult to ensure responsiveness.**

- **VO Support tends to exist in only a small number of locations, with a small number of supporters.**

- **Interactive EIS-like support is always preferred and should be present whenever possible.**

- **Organise dedicated meetings to coordinate VO support. VO supporters should participate actively to GGUS support coordination activities (ESC monthly meetings).**