First
European Globus Community Forum Meeting

Florian Zrenner (zrenner@lrz.de)

Slides from Dr. Helmut Heller (heller@lrz.de)

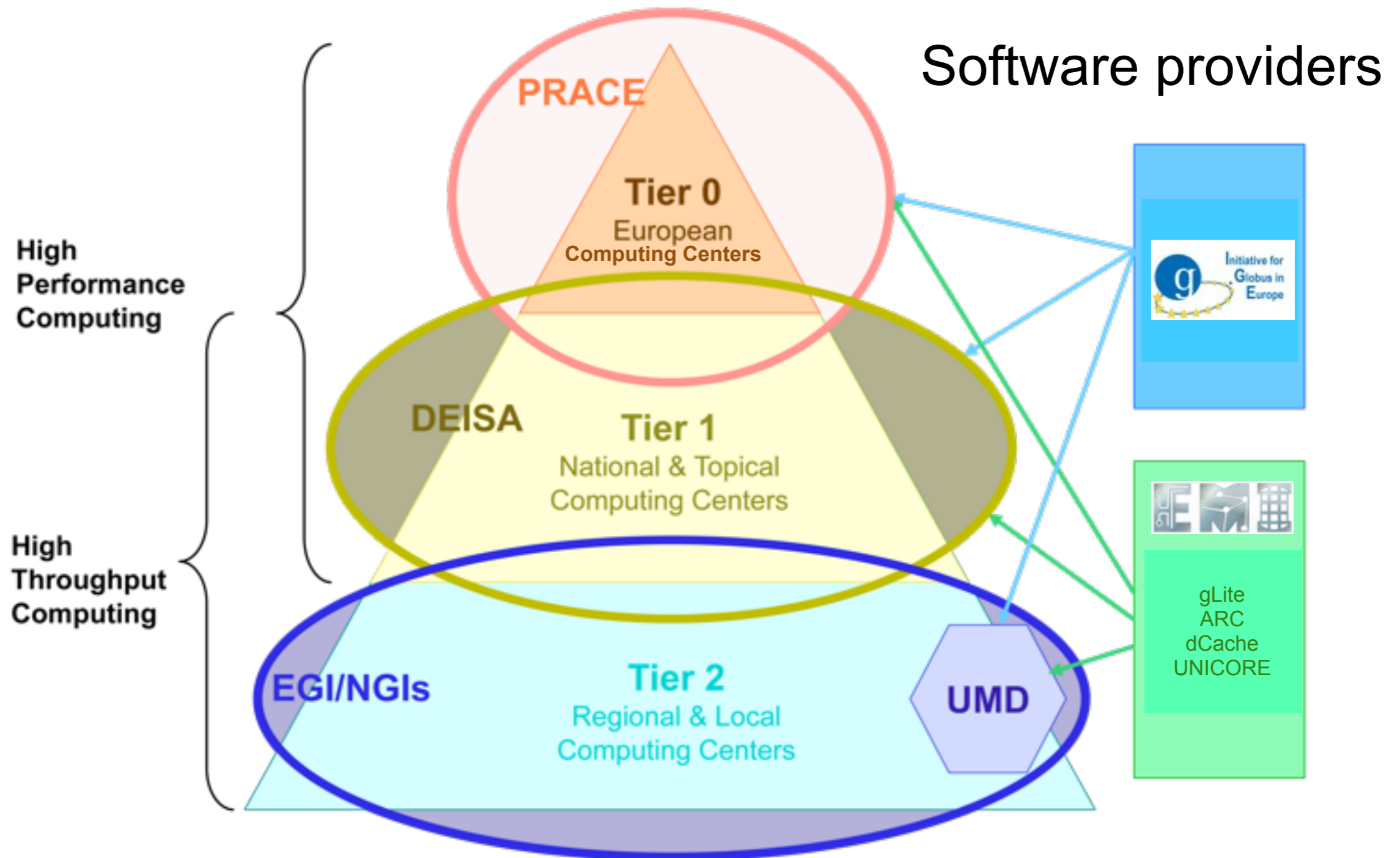Leibniz Supercomputing Centre (LRZ), Munich, Germany

September 7th, 2011

- The European Grid Ecosystem

- Initiative for Globus in Europe (IGE)

  – what are we?

  – where do we fit into the big picture?
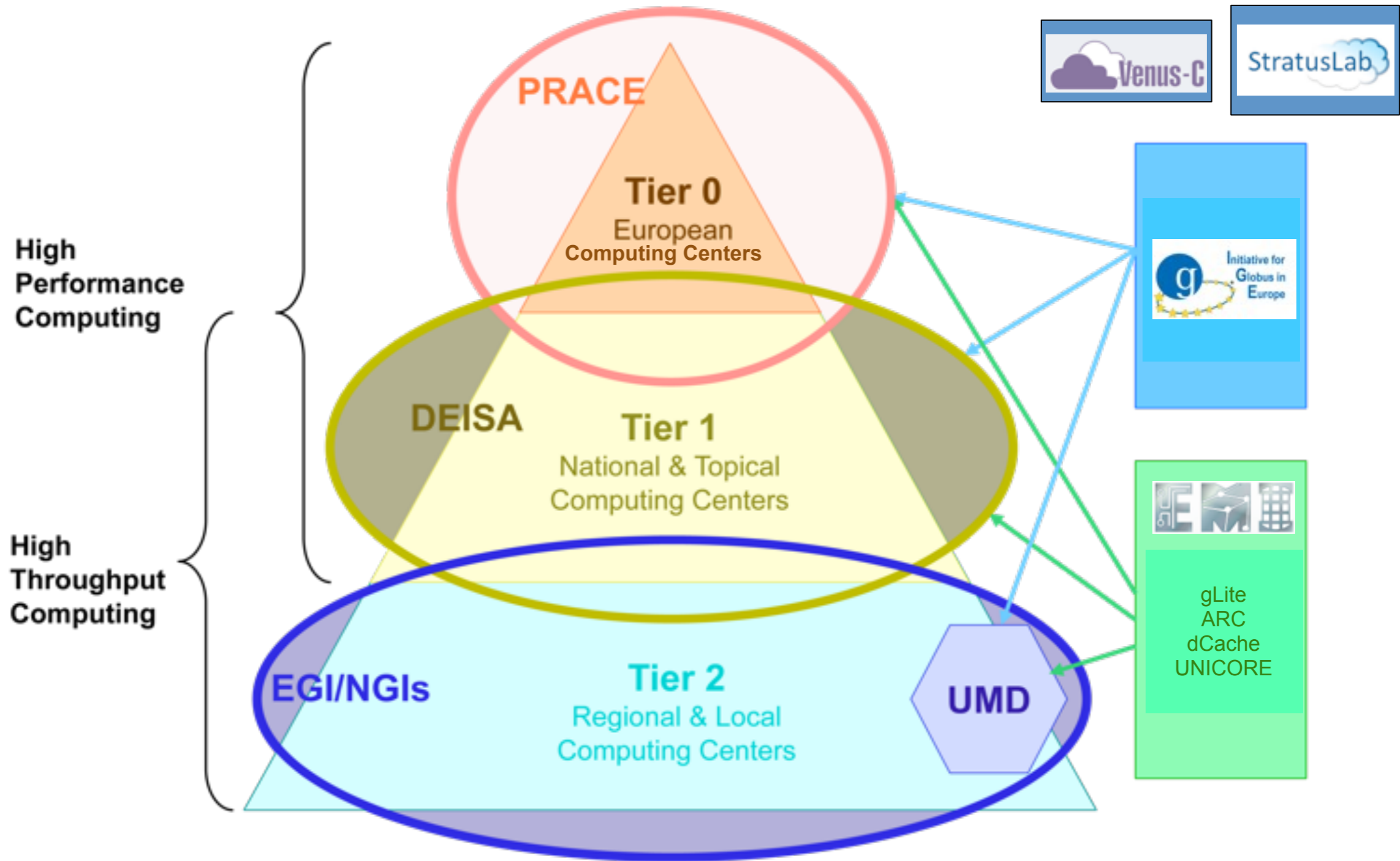
- First success stories
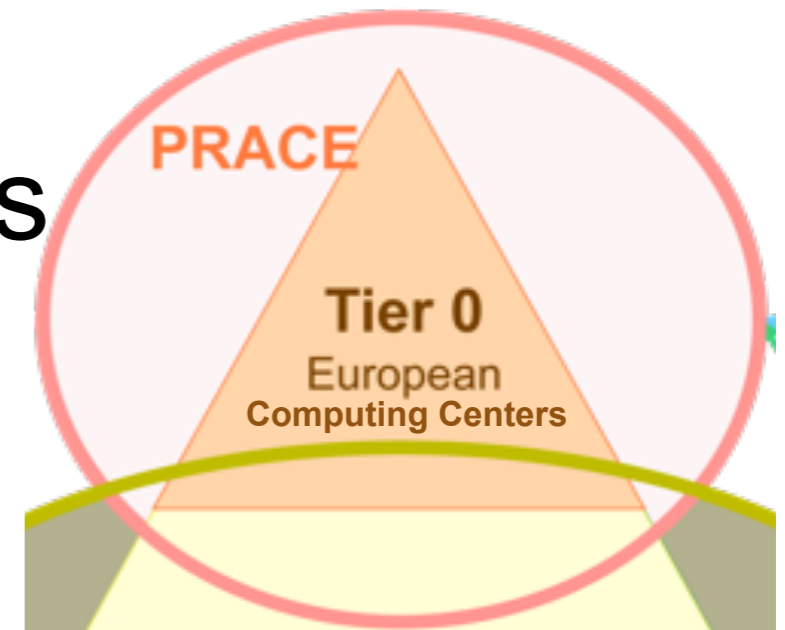
- Summary

The European Grid Ecosystem

Software providers

# The European Grid Ecosystem

Tier-0: PRACE-1IP

- PRACE: Top level HPC, Petaflop computing
- Six European supercomputers of highest performance

- Globus tools used:
  - **Gsissh** for interactive access
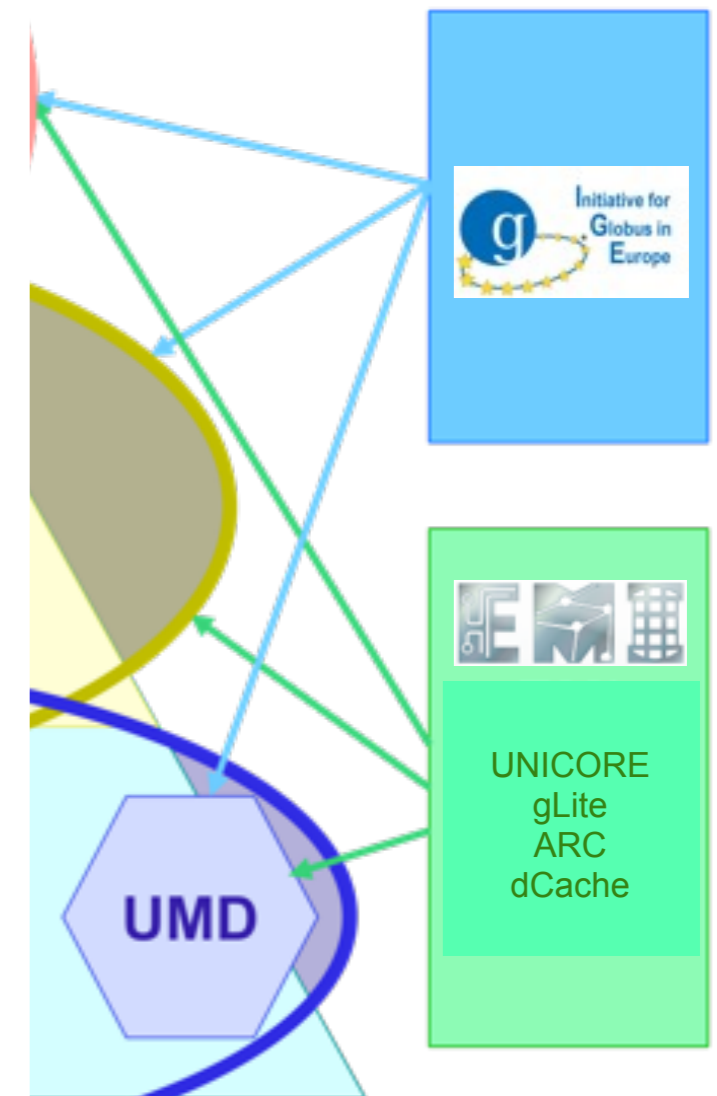 - **GridFTP** for high speed data transfer

- Globus tools used in PRACE

  – **Gsissh** as primary interactive access method to PRACE through Gsissh door nodes

  – **GridFTP** as primary high performance data transfer tool through door nodes to GPFS

  – **MyProxy** @ LRZ

  – **GRAM** (GT5) available on request

5

Tier-2: EGI
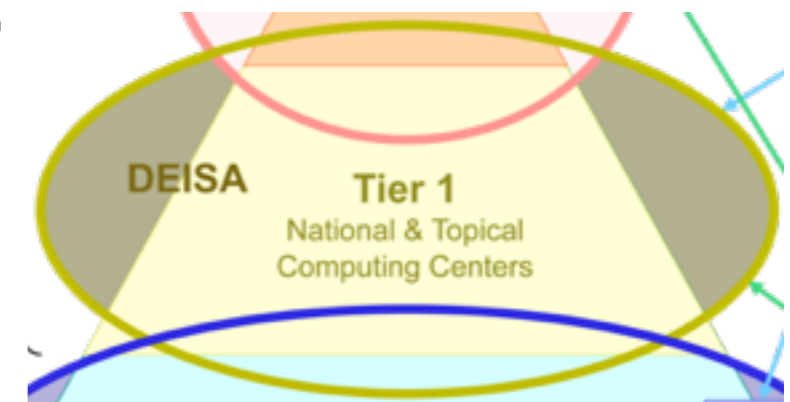
- IGE is a middleware provider and will bring Globus components into UMD

  – Service Level Agreement (SLA)

    signed with EGI

- Service provider for European Grids

- Third level support for Globus in Europe

- Globus can act as bridge between tiers

UNICORE
gLite
ARC
dCache

UMD

IGE Vision

IGE Vision

Help Scientists in the European Research Area

IGE Vision

Help Scientists in the European Research Area

- Coordination of widespread European
  Globus development and operation activities

7

IGE Vision

Help Scientists in the European Research Area

- Coordination of widespread European Globus development and operation activities

IGE Vision

Help Scientists in the European Research Area

- Coordination of widespread European
  Globus development and operation activities

IGE Vision

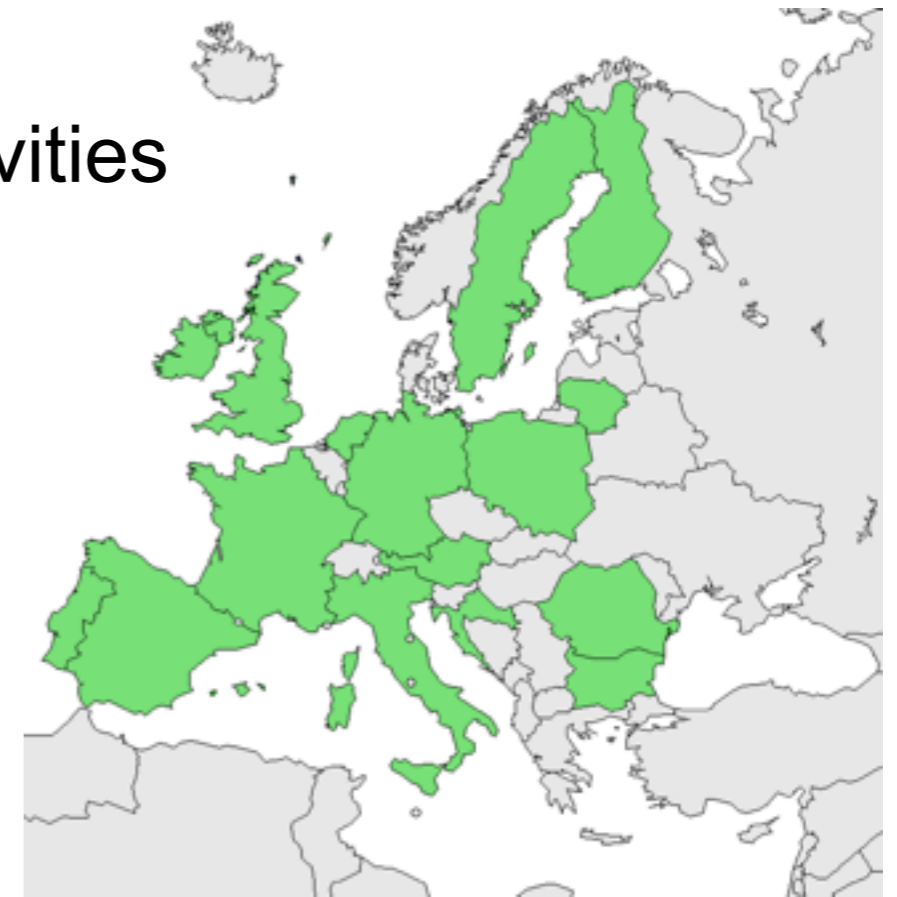## Help Scientists in the European Research Area

- Coordination of widespread European Globus development and operation activities

- Central point of contact in Europe for Globus

- Add the European perspective to Globus

- Globus service provider for European e-Infrastructures such as EUIndiaGrid, EGI, PRACE

IGE Vision

Help Scientists in the European Research Area

- Coordination of widespread European Globus development and operation activities
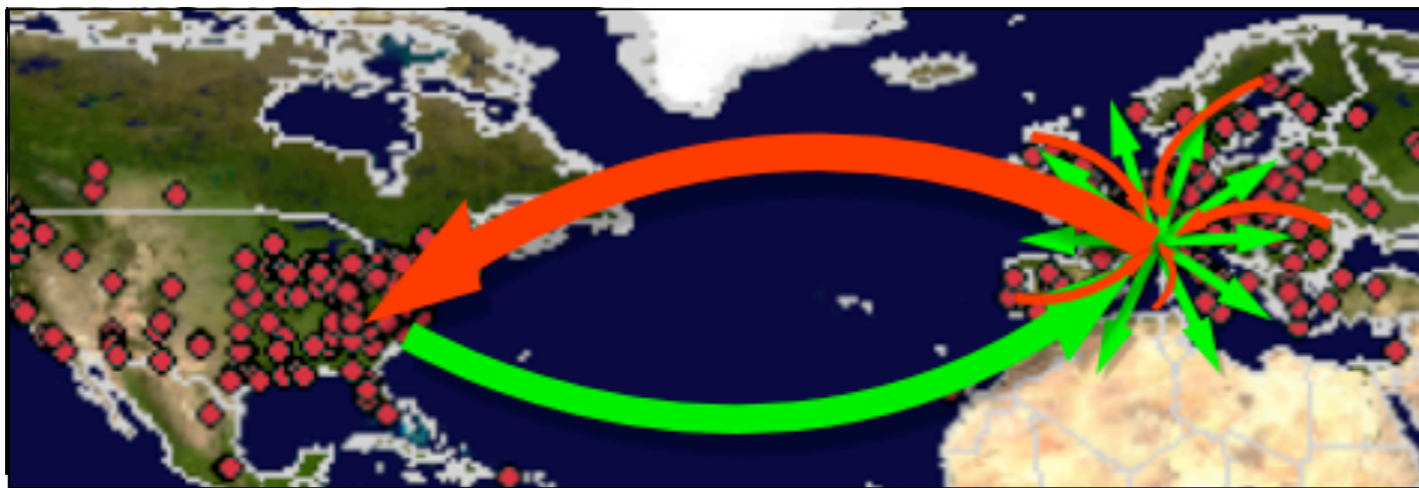

- Central point of contact in Europe for Globus

- Add the European perspective to Globus

- Globus service provider for European e-Infrastructures such as EUIndiaGrid, EGI, PRACE

IGE Partners

- Leibniz Supercomputing Centre, Coordinator (LRZ)
- Technische Universität Dortmund (TUDO)
- University of Southampton (SOTON)
- The University of Edinburgh (EPCC)
- Poznan Supercomputing and Networking (PSNC)
- GridwiseTech (GWT)
- Technical University Cluj-Napoca (UTCN)
- Complutense University of Madrid (UCM)
- Uppsala University (UU)
- National Inst. for Nuclear and High Energy Physics (NIKHEF)
- The University of Chicago (UC)

8

Objectives 1

- **Coordination** of European Globus activities
- **Bundle** European input to Globus
- Introduce **adjustments** critical for Europe into Globus **code base**
- Act as **Globus service provider** for European Grids like DEISA, PRACE, and EGI
- **Standardization**, **training**, **promotion**, and **documentation**
- Organize **Globus Europe conference** and **Globus community forum**

- **Coordination** of European Globus activities
- **Bundle** European input to Globus
- Introduce **adjustments** critical for Europe into Globus **code base**
- Act as **Globus service provider** for European Grids like DEISA, PRACE, and EGI
- **Standardization**, **training**, **promotion**, and **documentation**
- Organize **Globus Europe conference** and **Globus community forum**

9

Development Cycle

- IGE will perform software adaptions to European requirements on demand
- New PDCA cycle every 6 months
- Tasks:
  - AdHoc-GSI integration
  - porting GridWay to GT5
  - porting OGSA-DAI to GT5
  - VOMS, LCAS/LCMAPS site access control
  - OGSA-BES/JSDL enhancements to work with GT5
  - Gsissh-Term improvements

T4.2

Adaption Selection ⟹ Design   T4.4-T4.8

Development with Code Reviews

Testing

Deployment

11
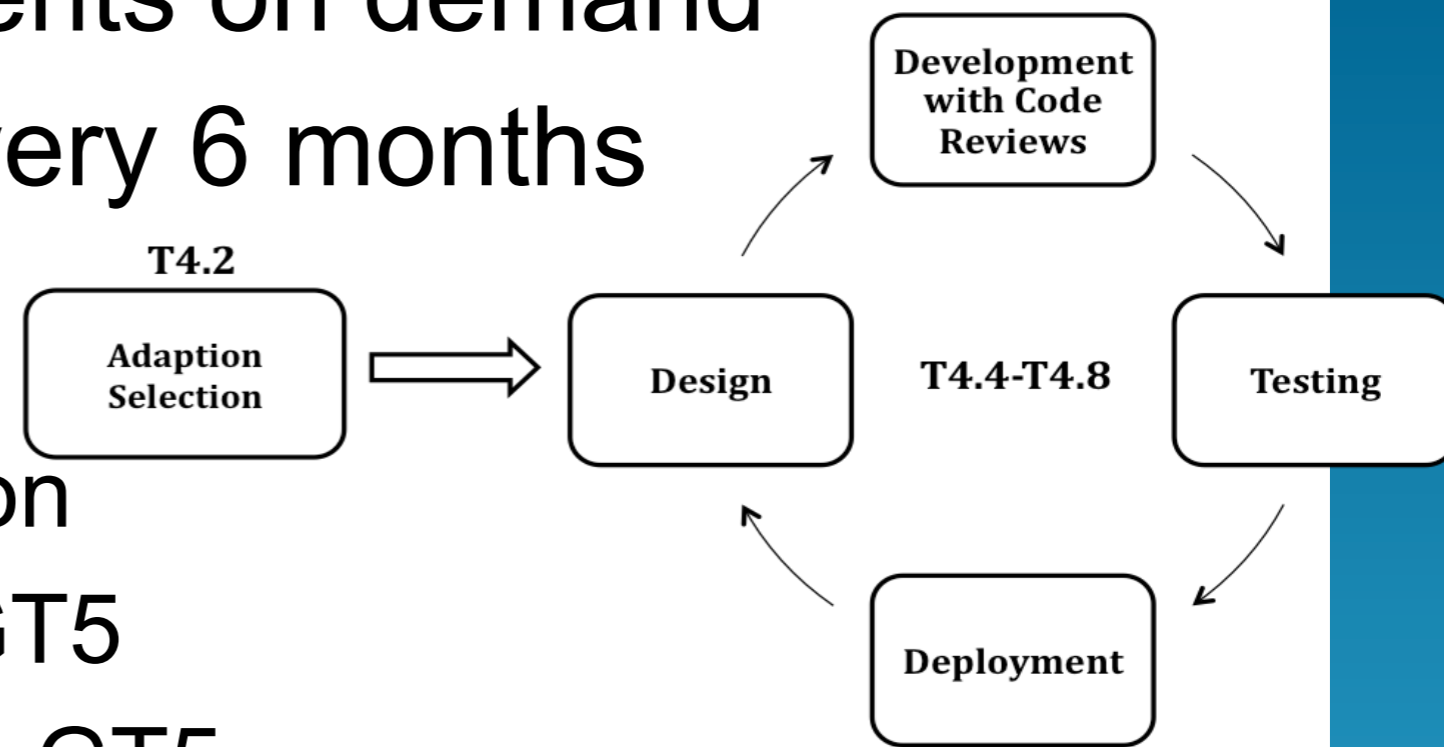
Interactions with other DCIs

- EGI
  - IGE is Globus software provider
  - training, support, SLAs, MoUs
- EDGI
  - get Globus to run on top of EDGI for NGI-UK
  - develop gateway from Globus GRAM to EDGI
- StratusLab
  - Globus Grid services on top of cloud
  - investigate dynamic Grid deployment (submit VMs through GRAM)
  - using StratusLab for workshops
- PRACE
  - Globus support, training, SW development

1st Success Story: the Problem

- DEISA supports the VPH VC which wants to use GT5 GRAM to submit jobs with their SAGA-based software (no support for WS-GRAM)

- Many machines in DEISA are IBM-brand with LoadLeveler (LL) batch scheduler

- IBM does not provide a GT5 LL-adaptor, thus SARA's computer could not be used

13

1st Success Story: the Solution

- SARA (Rob van der Wal) contacted **IGE**
- Within WP4 of IGE
  - Eduardo Huedo from Universidad Complutense de Madrid (UCM) offered to have a look
  - but he had no access to an IBM machine
- IGE connected Rob and Eduardo
- Together they ported GT4 LL-adaptor to GT5.0.1
- SARA is now offering GT5 GRAM to VPH

14

2st Success Story: Training

- GridKa Summer School 2010
- Joint European DCI Summer School
  - July 11 to 16th, 2011
  - Budapest, Hungary
- GridKa Summer School 2011
  - Karlsruhe, Germany

3th Success Story: GUI for globusonline.org

- Orchestration of file transfer through new service **globusonline.org**
- IGE developing a drag&drop GUI

4th Success Story: Globus.org Mirror

- Objectives of Globus.org mirror
  - increase reliability
  - decrease transatlantic data transfer
  - decrease European response times
  - provide world wide load balancing
- Access: **http://globus.org.eu/toolkit**
- More in separate talk later today

5th Success Story: First Software Release IGE V1.0

- Re-packaging Globus 5.0.4 for EGI
- Adding missing items like
  - native binary packages for Linux distros
  - man pages
  - build instructions
  - XML description of release (needed by EGI)
- Access through our Hub, download area
  http://www.ige-project.eu/downloads

6th Success Story: European Statistics Collector

- Globus tools send usage info, containing IP addresses back to a statistics collector
  - unless disabled by setting an environment variable
- Since IPs are considered privacy relevant data, sending them outside Europe is problematic
- IGE set up a European collector and will only forward anonymized data to the US

7th Success Story: EGCF!

- First European Globus Community Forum meeting in Munich on May 18th, 2011
- GlobusEUROPE take place on 19 September 2011 in Lyon
  - colocated with the EGI Technical Forum

Summary

- Vision: **One-stop shop** for Globus in Europe
  Advance research in Europe
- Bundle and coordinate European Globus efforts: **usage** and **development**
- Develop and contribute missing functionality
- Service provider for European Grids
- Third level support for Globus in Europe
- Promote Globus usage in Europe
- First GlobusEurope conference in Lyon on September 19th, 2011 (with EGI TF)

- **http://www.ige-project.eu**

- **Trouble ticket system: http://rt.ige-project.eu**
  - **Login: guest / Password: guest**

- email: **info@ige-project.eu**
- Duration: 30 months
- Start date: October 1st, 2010