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Enabling Grids for E-sciencE

EGEE-II

Bob Jones

CERN

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4th EGEE Conference

Pisa

24-28 October 2005

www.eu-egee.org

Information Society

Enabling Grids for E-sciencE

- **Aim of EGEE:**

  "to establish a seamless European Grid infrastructure for the support of the European Research Area (ERA)"

- **Achievements of EGEE:**
  - Exceeding almost all final goals
  - Scope expanded beyond Europe

- **Transition EGEE → EGEE-II**
  - EGEE conceived as first two years of four-year plan
 - Services continuously available

- **EGEE-II start:**
  - → Full capacity from day one
  - → Large-scale, production-quality infrastructure
  - → Supporting a wide range of applications
  - → Staff with extensive knowledge of Grid technology

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- **Manage and operate production Grid infrastructure for the European Research Area**
- **Interoperate with e-Infrastructure projects around the globe**
- **Contribute to Grid standardisation efforts**

- **Support applications deployed from diverse scientific communities**
  - High Energy Physics
  - Biomedicine
  - Earth Sciences
  - Astrophysics
  - Computational Chemistry
  - **Fusion**
  - Geophysics (supporting the Industrial application, EGEODE)
  - Finance, Multimedia
  - . . . . .

- **Reinforce links with the full spectrum of interested industrial partners**
- **Disseminate knowledge about the Grid through training**

- **Prepare for a permanent/sustainable European Grid Infrastructure (in a GÉANT2-like manner)**
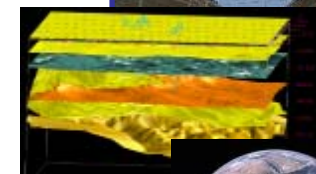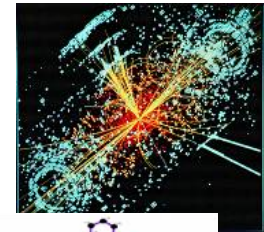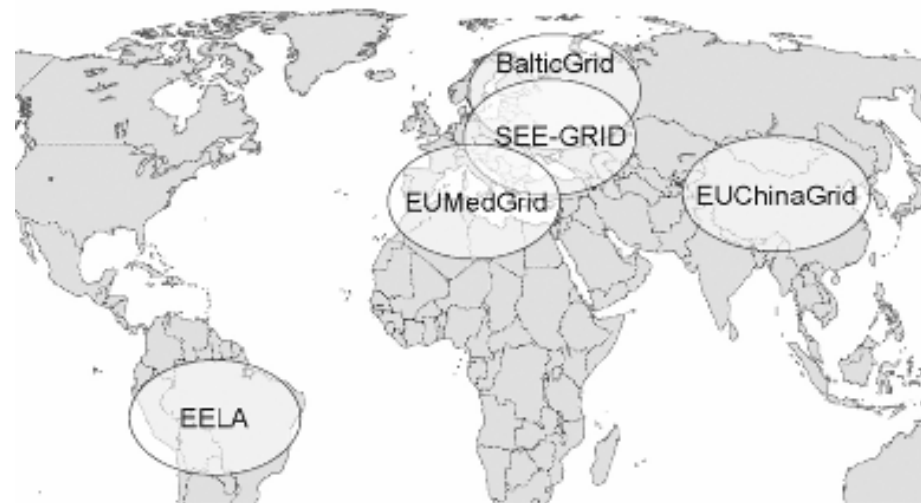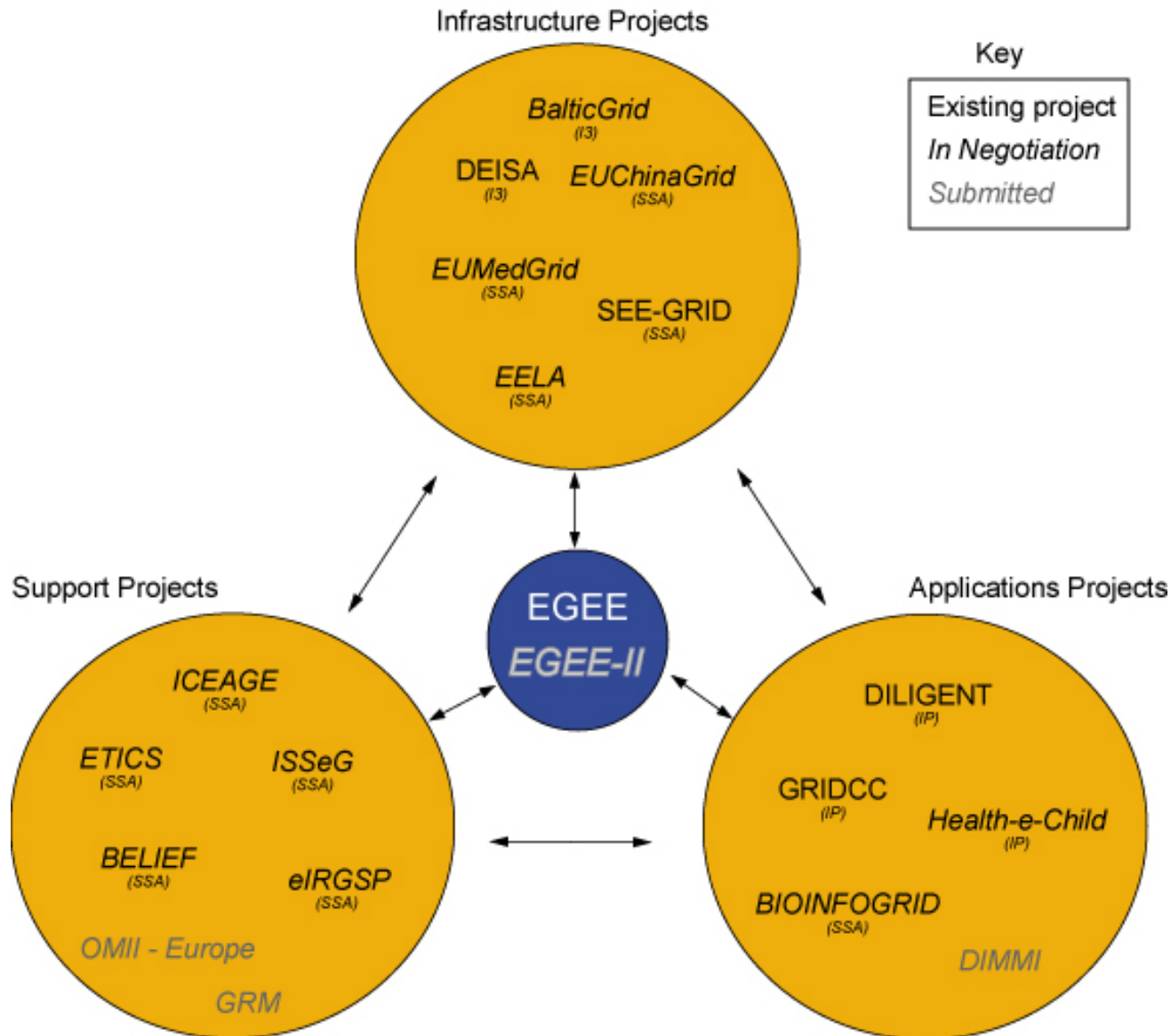
- **More than 90 partners**
- **32 countries**
- **12 federations**
- → **Major and national Grid projects in Europe, USA, Asia**

+ 27 countries through related projects:
  - BalticGrid
  - SEE-GRID
  - EUMedGrid
  - EUChinaGrid
  - EELA

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- **Similar structure to EGEE**
- **Increased focus on :**
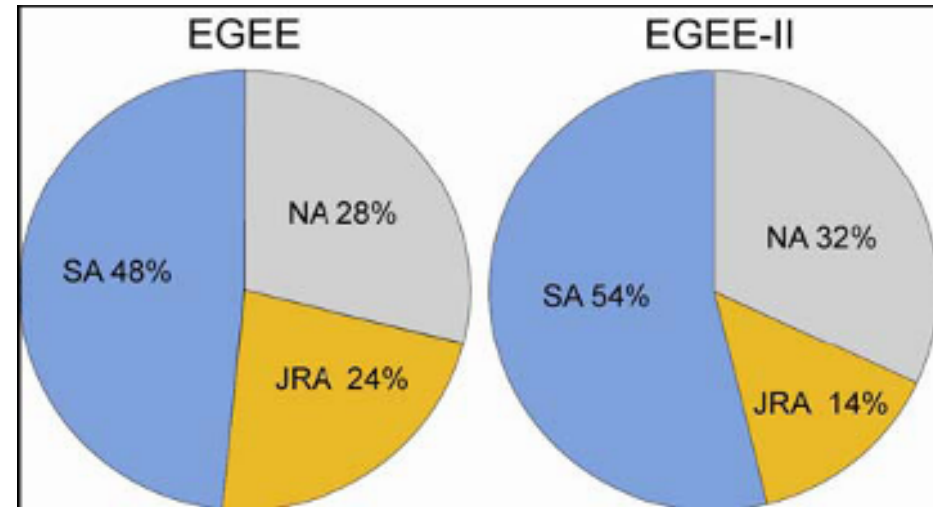- **Services:**
  - New countries joining
  - New activity for sw integration and testing

- **Networking**
  - Increase support for applications
  - Reinforce outreach, dissemination and training
    - Closer links to industry (CERN openlab project)
   - Extend coverage to all regions
- **Coordination:**
  - Technical Coordination Group (TCG)
  - User Information Group (UIG)

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- **Networking Activities (NA1-NA5)**
  - Management, Dissemination, Training, User support, Cooperation
  - → Growth of the infrastructure user base

- **Service Activities**
  - Operate and maintain a working, sustainable infrastructure
  - New: SA3 – Integration, Testing and Certification
  - → EGEE-II as core service provider

- **Joint Research Activities**
  - Reengineering of Grid middleware (more mature)
  - Quality Assurance for whole project
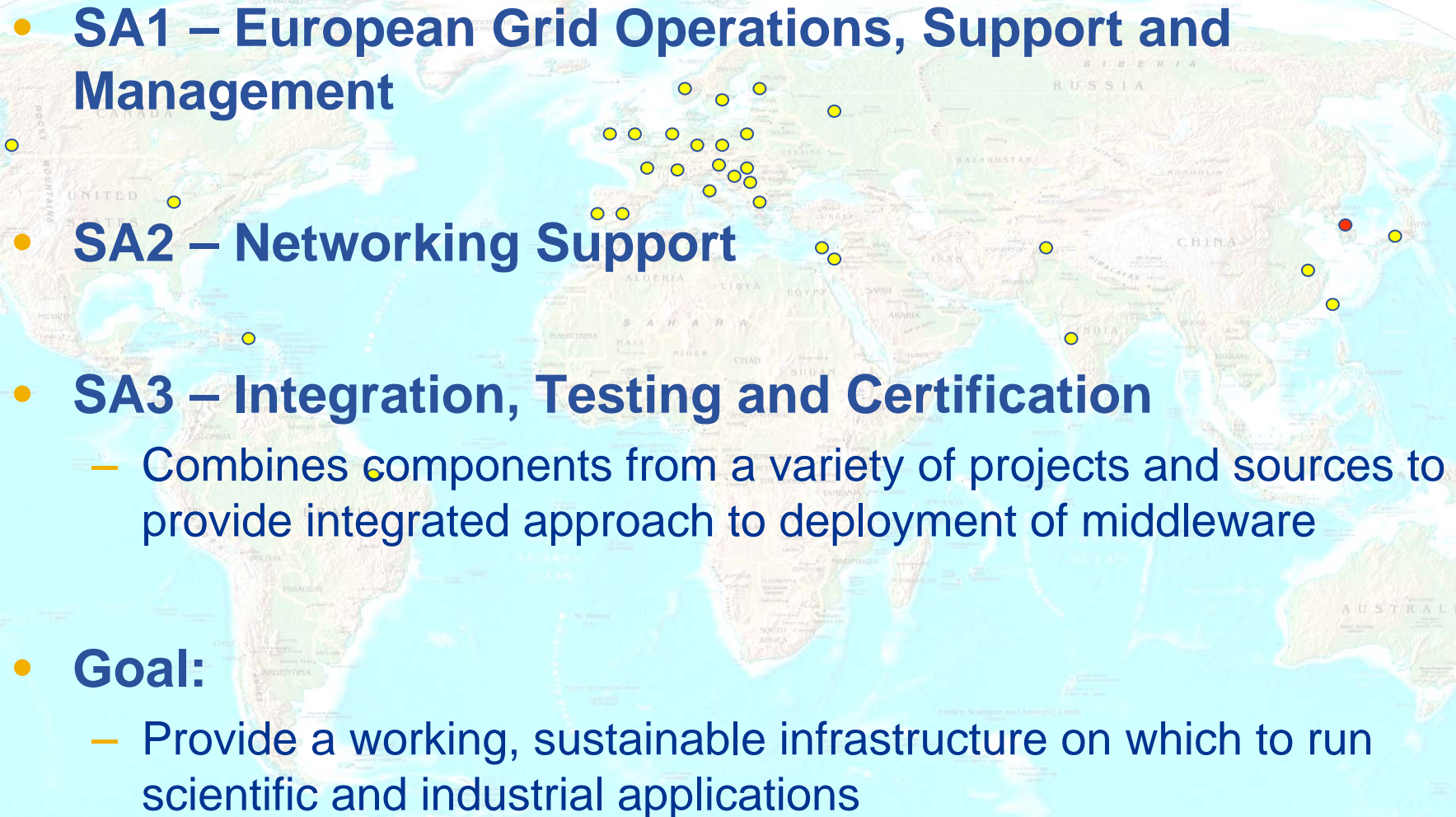   incl. Security Coordination Group (SCG)

- **All Activities work in concert to drive the Virtuous Cycle**
- *Field-tested* **and refined during EGEE**

Enabling Grids for E-sciencE
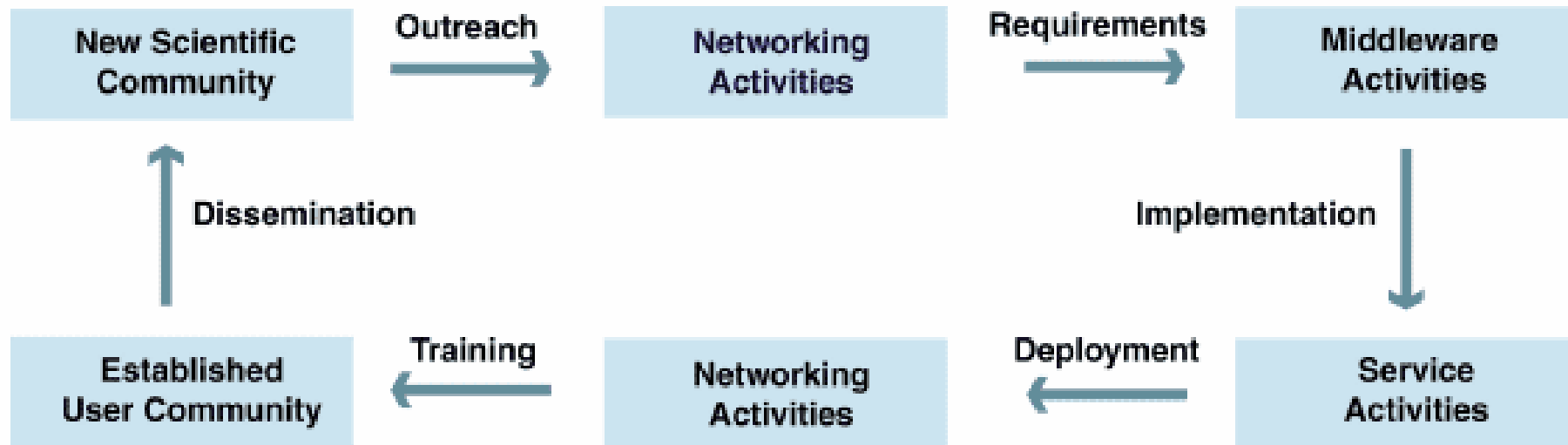
- **NA1 – Project Management**
- **NA2 – Dissemination, Outreach & Communication**
- **NA3 – User Training and Induction**
- **NA4 – Application Identification and Support**
- **NA5 – Policy and International Cooperation**

- **Goals:**
  - To ensure proper and effective management
  - To provide dissemination of EGEE-II opportunities to wide range of potential users
  - To enable integration of new users, train and guide them
  - To promote international collaboration in and outside the EU

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- **SA1 – European Grid Operations, Support and Management**

- **SA2 – Networking Support**

- **SA3 – Integration, Testing and Certification**
  - Combines components from a variety of projects and sources to provide integrated approach to deployment of middleware

- **Goal:**
  - Provide a working, sustainable infrastructure on which to run scientific and industrial applications

- **JRA1 – Re-engineering of Grid middleware**
    - Shift from development to incremental improvement mode
    - Reflects the more mature status of the middleware

- **JRA2 – Quality assurance**
    - Builds on the quality process and tools of EGEE
    - Introduce partner metrics in each activity
    - Includes managing of security efforts through Security Coordination Group

EGEE activities

JRA3: Security - in JRA1 & SA1, coordination in JRA2

JRA4: Network Research - in JRA1

Middleware in EGEE-II

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Applications

Higher-Level Grid Services

Workload Management

Replica Management

Visualization

Workflows

Grid economies

etc.

- **Provide specific solutions for supported applications**
- **Host services from other projects**
- **More rapid changes than Foundation Grid Middleware**
- **Deployed as application software using procedure provided by grid operations**

Foundation Grid Middleware

Security model and infrastructure

Computing (CE) & Storage Elements (SE)

Accounting

Information providers and monitoring

- **Application independent**
- **Evaluate/adhere to new stds**
- **Emphasis on robustness/stability over new functionality**
- **Deployed as a software distribution by grid operations**

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- **Foundation grid middleware and selected high-level services are supported directly within EGEE**
- **Application and high-level services from other sw providers will be incorporated**
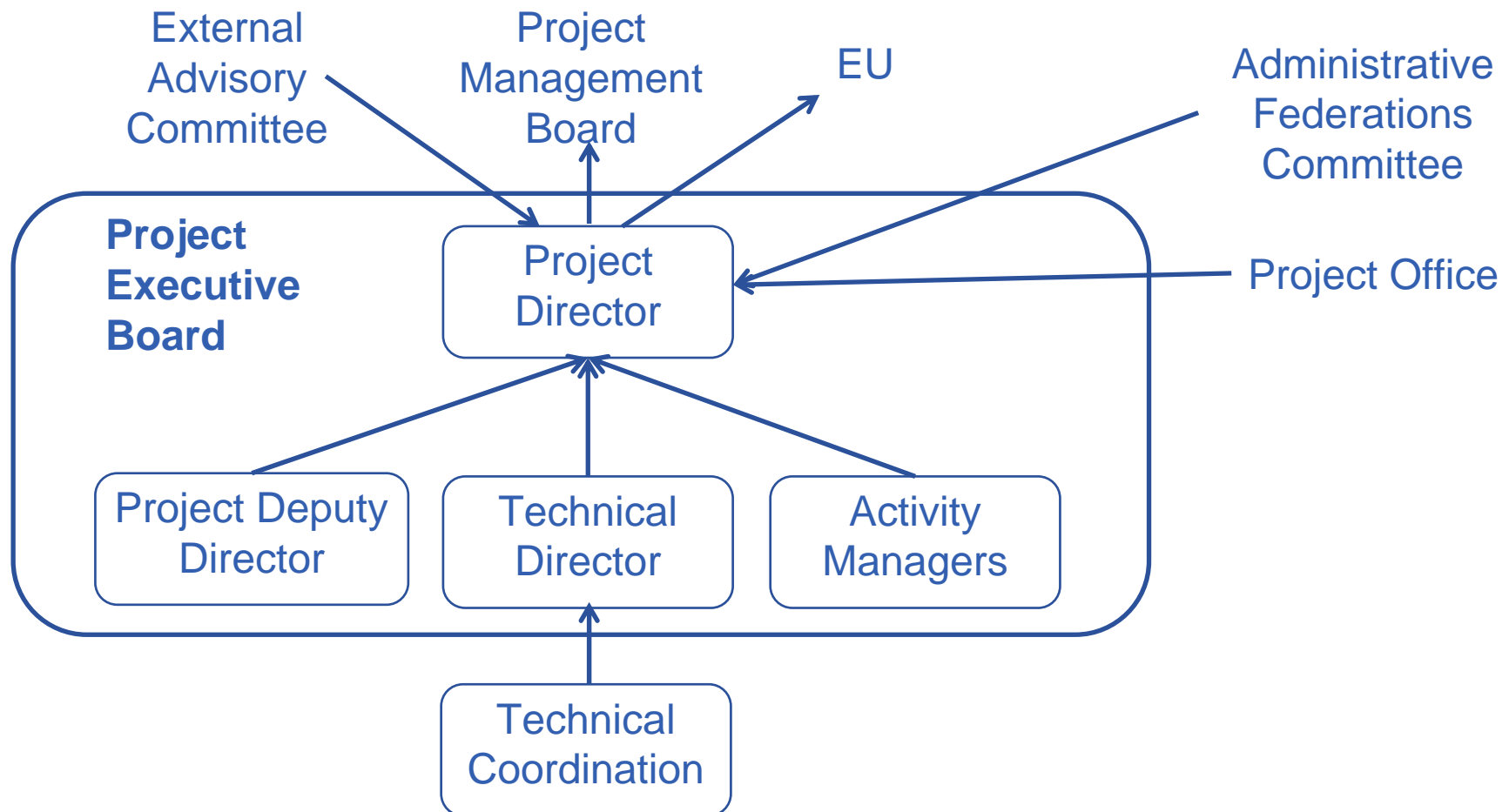
Other sw providers

high-level services

components

components

releases

components

Production

Pre-production

Testing/ Integration

Support/ Development

SA1

SA3

JRA1
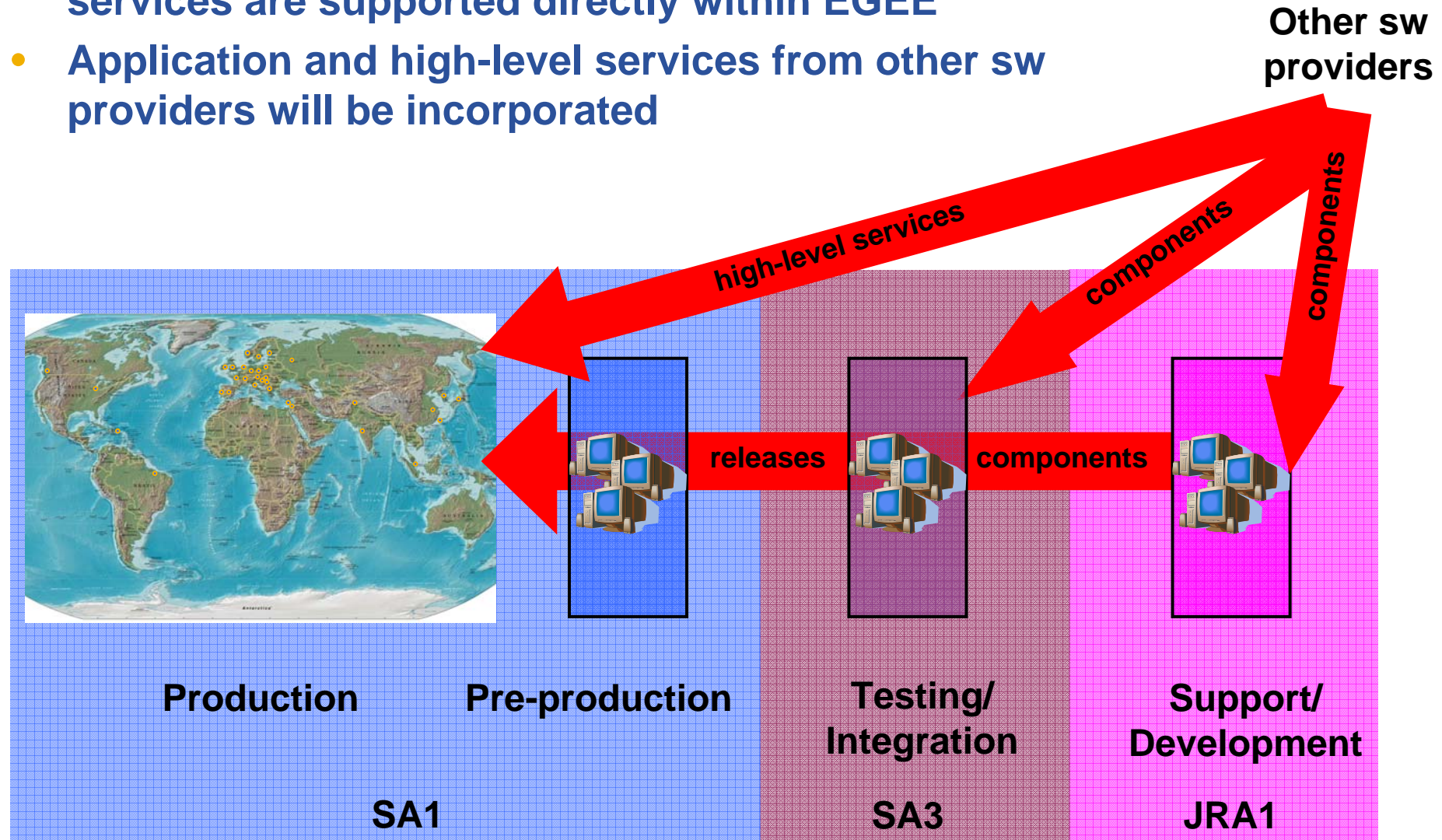
- **Challenge: large consortium**
  - → Clearly defined management structure
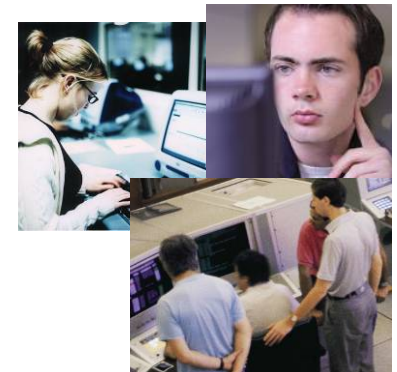 - → Clear reporting lines

- **For Industry**
  - As a partner
    - Tune the project to industrial needs and pass on knowledge
  - As a user
    - R&D
  - As a provider
    - Transfer knowledge on how to provide Grid services
  - As affiliate
    - Industry Forum: feedback, exchange of knowledge
    - **Expanded and now in NA2**
    - **Link to CERN OpenLab project for practical work**

- **Long-term benefits to the public**
  - Raising awareness of the Grid
  - Early establishment of a European Grid infrastructure

CERN openlab for DataGrid applications

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1st April 2006 **EGEE-II start**

May 2006 **EGEE final review &**

EGEE-II all-activity meeting

Sept 2006 **1st Project Conference**

Q1 2007 **1st User Forum event**

May 2007 **EGEE-II periodic review**

Autumn 2007 **2nd Project Conference**

Q1 2008 **2nd User Forum event**

31st March 2008 **EGEE-II completion**

May 2008 **EGEE-II final review**

Set-up EGEE-II structures (Tech Coord, User Forum etc.)

Prepare organisation to manage sustainable infrastructure

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- **Pisa conference**
  - Clarify exact roles/responsibilities for partners
  - New EGEE_II partners have been invited to the conference
- **Hearing meeting 7th November**
  - Respond to specific questions
- **Negotiations**
  - November to Q1 2007
  - Need to prepare Technical Annex (Description of work)
- **Consortium Agreement (CA)**
  - Update for expanded consortium
- **Contract & CA**
  - To be signed before EGEE-II start-date

But first we have to successfully complete EGEE

Pass the focused technical review in December

Pass the final review in May 2006