



D-Grid and the Integration of New Communities

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D-Grid at a Glance



Building a National e-Infrastructure for Research and Industry

- 01/2003: Pre-D-Grid Working Groups → Recommendation to Government
 - 09/2005: D-Grid-1: early adopters, 'Services for Science'
 - 01/2007: D-Grid-2: new communities, 'Service Grids'
 - 01/2008: D-Grid-3: Service Grids for research and industry
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- D-Grid-1: 25 MEuro > 100 Orgs > 200 researchers
 - D-Grid-2: 25 MEuro > 50 addl Orgs > 200 addl researchers
 - D-Grid-3: Call in May 2007

➤ Important:

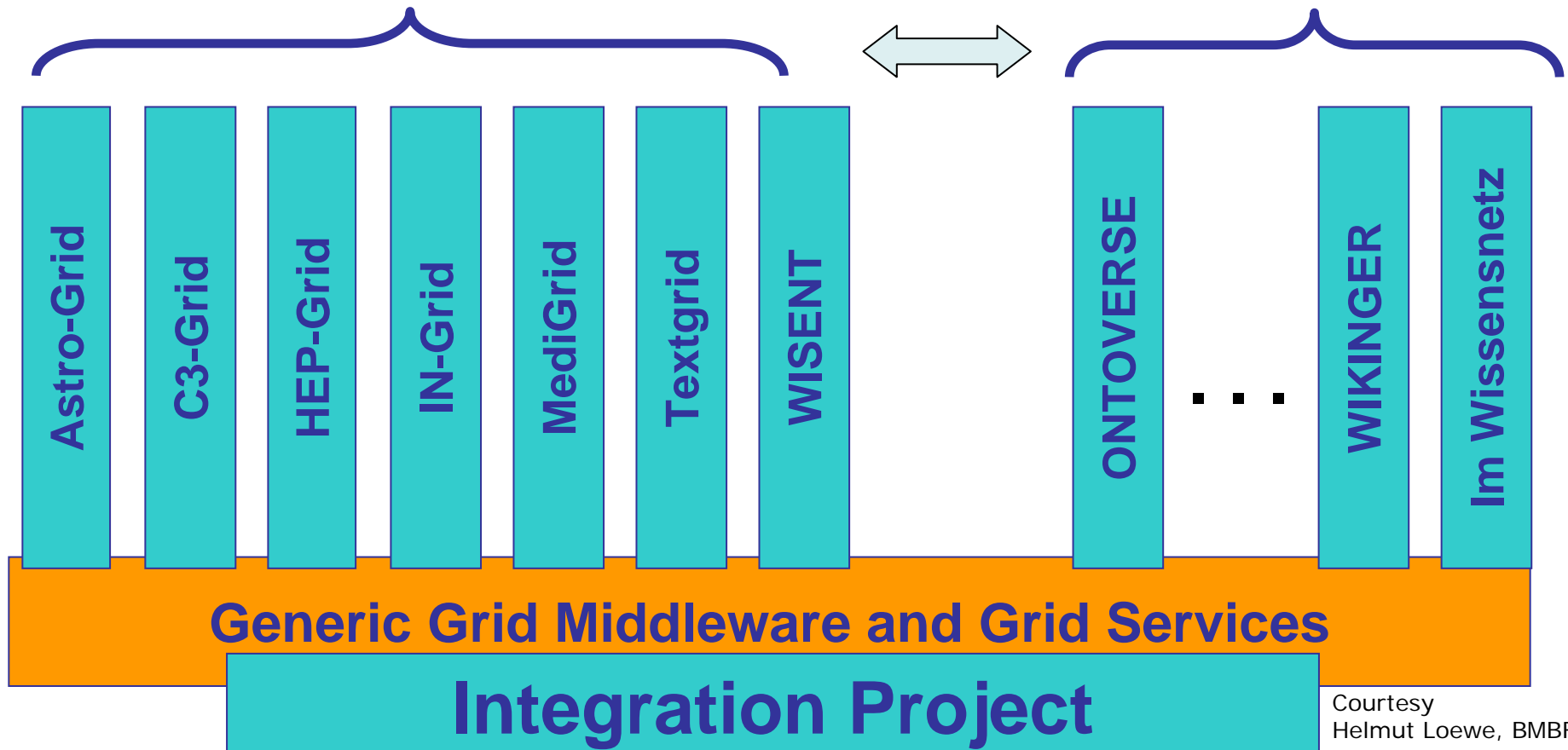
- Sustainable production grid infrastructure after the end of the funding
- Integration of new communities
- Evaluating business models for grid services

D-Grid



D-Grid-1

Knowledge Management



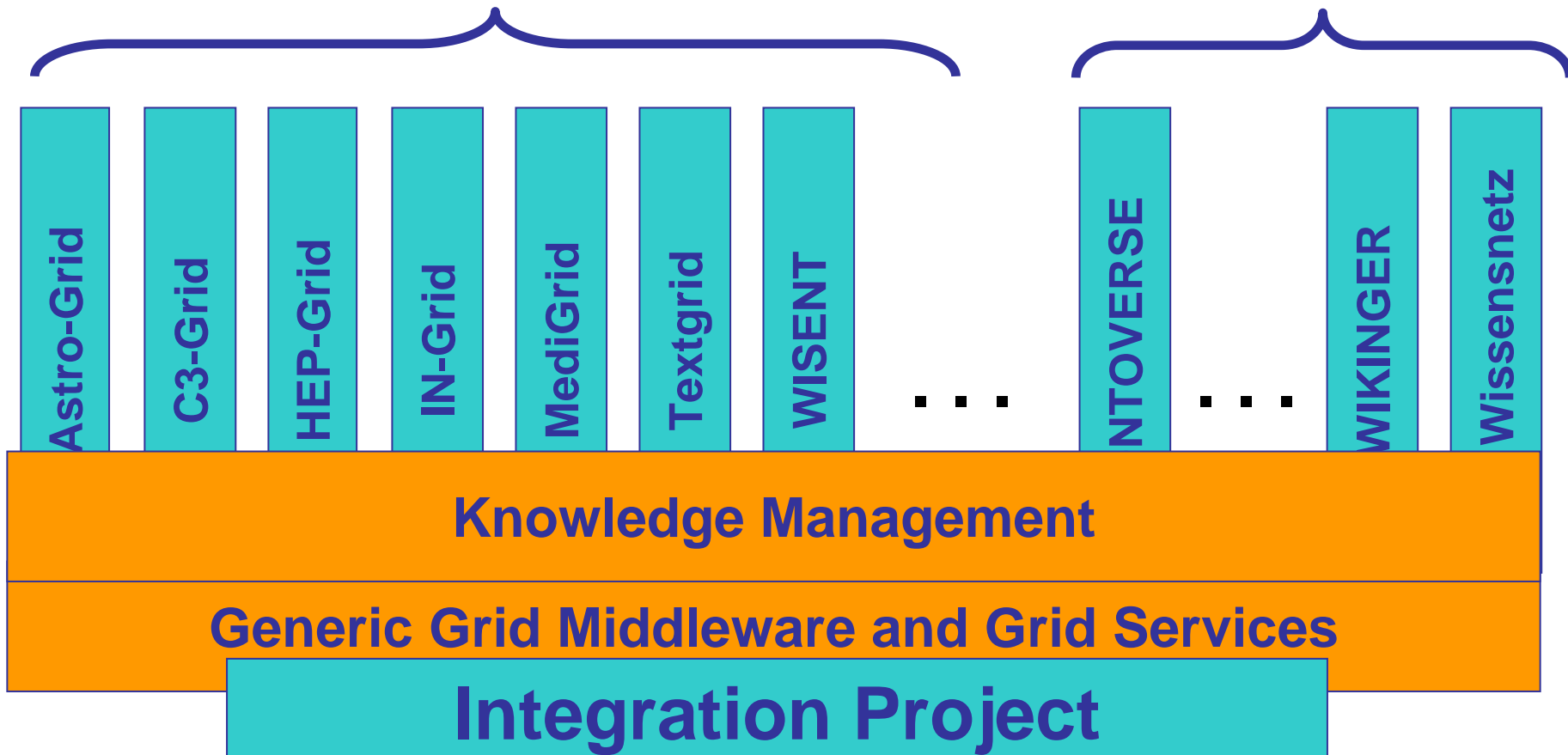
Courtesy
Helmut Loewe, BMBF

D-Grid



D-Grid-1 + 2 + 3

Knowledge Management

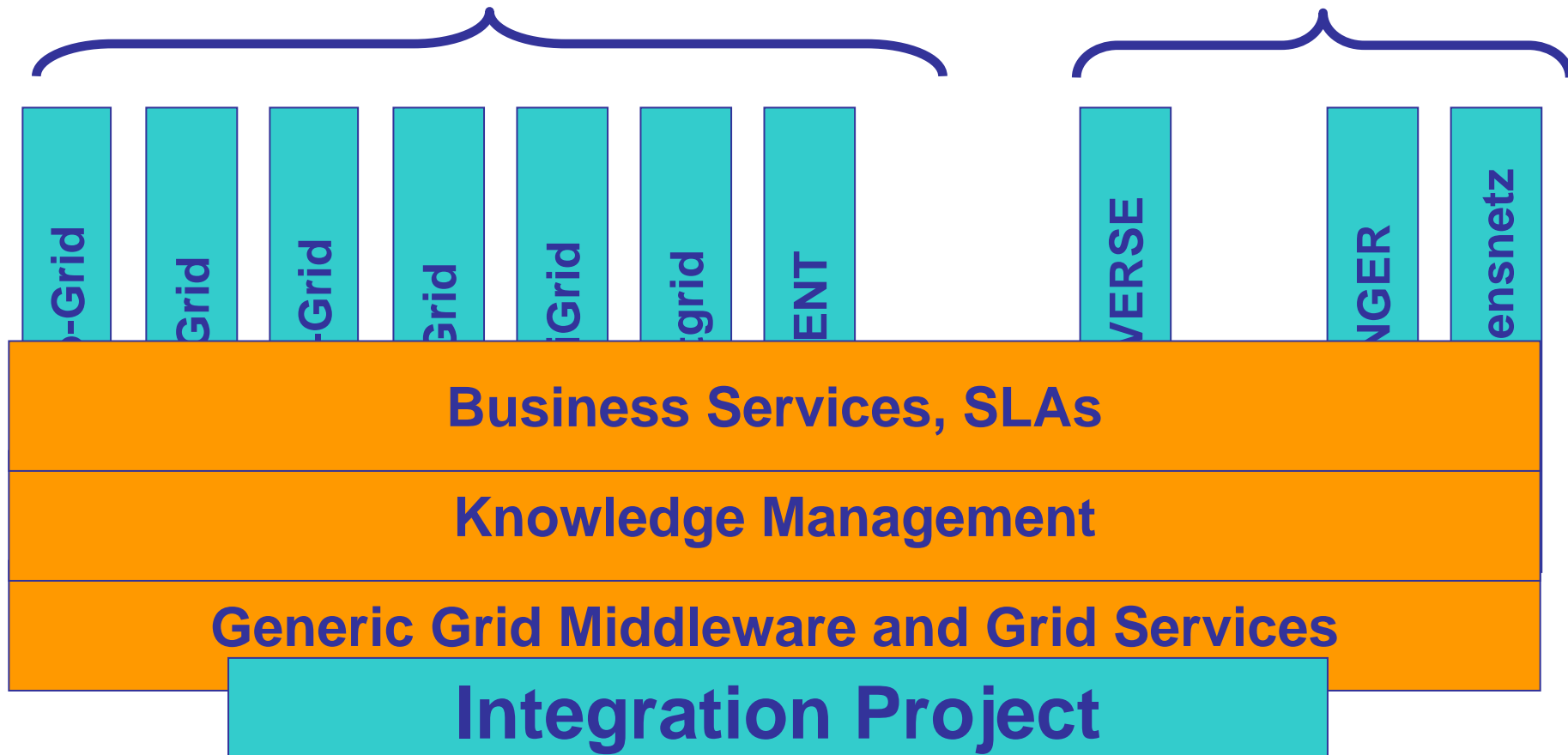


D-Grid



D-Grid-1 + 2 + 3

Knowledge Management

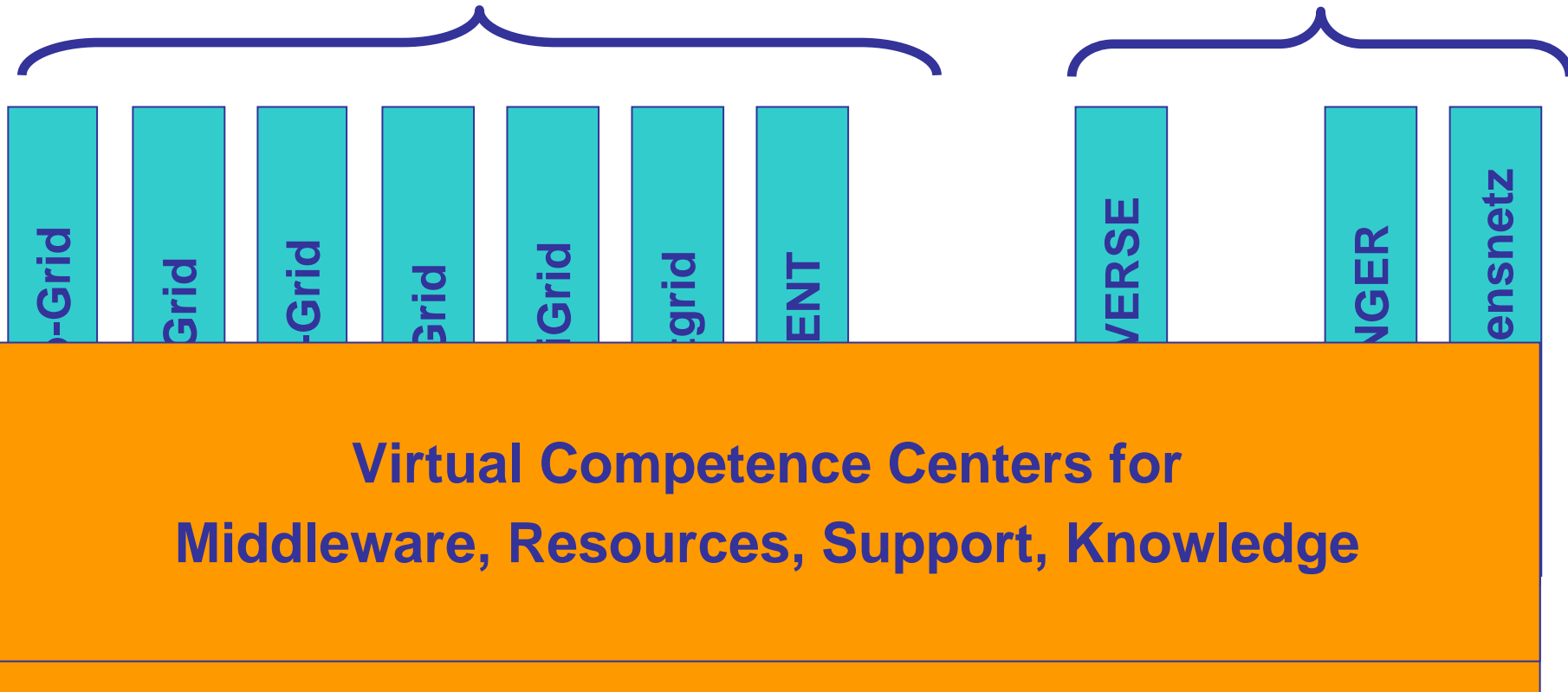


D-Grid



D-Grid-1 + 2 + 3

Knowledge Management



Core D-Grid Infrastructure



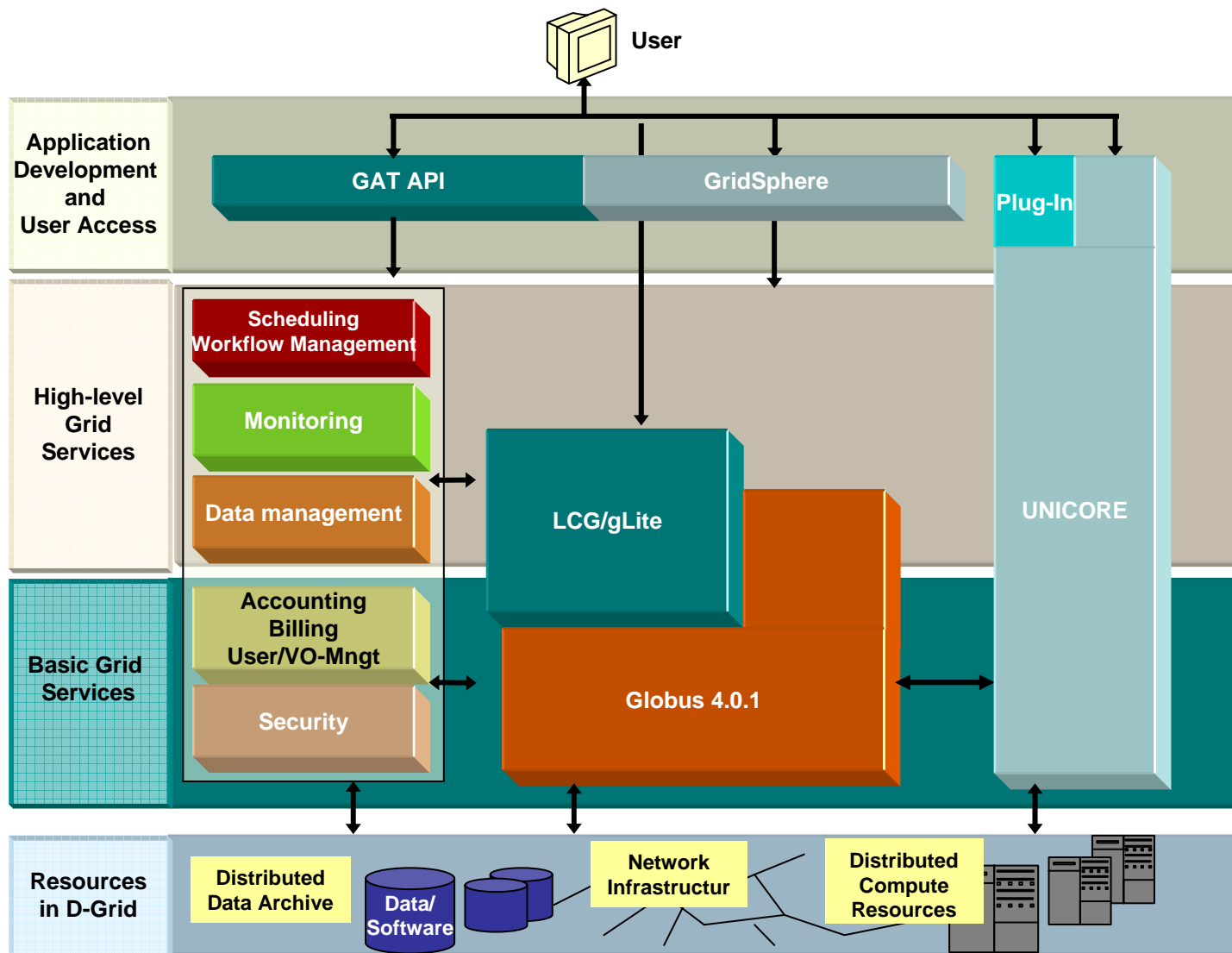
Objective:

- establishment and operation of a **scalable** Core D-Grid infrastructure by the D-Grid integration project (DGI)
- evaluation of **interoperability** and performance of resources
- Build a grid infrastructure so **everybody** can join → integration of new communities

The Core D-Grid comprises:

- Acquisition and integration of compute and storage resources
- Implementation and provision of middleware (Globus, gLite, UNICORE)
- Attachment of storage robots to the storage element of the D-Grid software (dCache, SRM/SRB)
- Admission of users to resources and applications (AA)
- Operation of a virtual Grid Operating Center (GOC)

D-Grid Middleware



Attract New Communities by Providing:



- **Continuity:** Grid infrastructure should be modified and improved in large cycles only: applications depend on infrastructure !
- **Sustainability:** Funding should be available after end of project, to guarantee services, support and continuous improvement.
- **Interoperability:** Use open-source software and standards especially in the infrastructure and application middleware layer.
- **Collaboration:** between infrastructure developers and the applications, to best utilize grid services and to avoid application silos.
- **User-Friendliness:** for easy adoption for new communities. Infrastructure group should offer installation, operation and support services.
- **Grid Services:** Centers of Excellence should specialize on specific services, e.g. integration of new communities, grid operation, utility services, training, support, etc.
- **Attract Industry:** has to be industry-driven. Push from outside, even with govmnt funding, is not promising. Success comes only from real needs e.g. through already existing collaborations between research and industry
 - ➔ Evangelisation

D-Grid-2 Projects



- Grid-based platform for VOs in the **Construction** industry
- **Financial** Business Grid: A service grid architecture for the financial service industry
- Grid-based collaboration among **Aerospace** research and industry
- **Automotive**: Cooperative product design and development in simulation and production data management
- Grid-based **Enterprise Information Systems**, integration & orchestration in commercial IT systems
- **Geographical Data** infrastructure for providing and processing data and simulation for catastrophes, noise, and navigation
- Distributed analysis + exploration of **Multimedia** archives
- Grid-based **IT services** for research and education
- Horizontal integration of resource and service **Monitoring**
- Grid support for small institutions and **SMEs**

D-Grid: 'Supporting' New Communities



- Govt is changing policies for resource acquisition (HBFG !) to enable (enforce) a service model
- 2nd Call: Focus on Service Provisioning for Sciences & Industry
- D-Grid is application and user-driven, not infrastructure-driven
- Focus on implementation and production, not grid research, in a multi-technology environment (Globus, Unicore, gLite, etc)
- D-Grid is THE Core of the German e-Science Initiative

Summary

Steps towards Integration of New Communities

- Procedure so far: First, send proposal to D-Grid-2/3/4 Call
- If approved, join D-Grid Welcome Workshops/Trainings
- Download D-Grid software stack on your system and connect
- Your choice: Globus, gLite, Unicore
- Get support from our D-Grid Operation Centre (coming soon)
- Share (part of) your resources with D-Grid
- Port your application/s on D-Grid infrastructure
- Develop/port/integrate app-specific middleware and tools
- Become a member of the D-Grid Steering Committee
- Develop your core community first, but then scale out
- What else ?

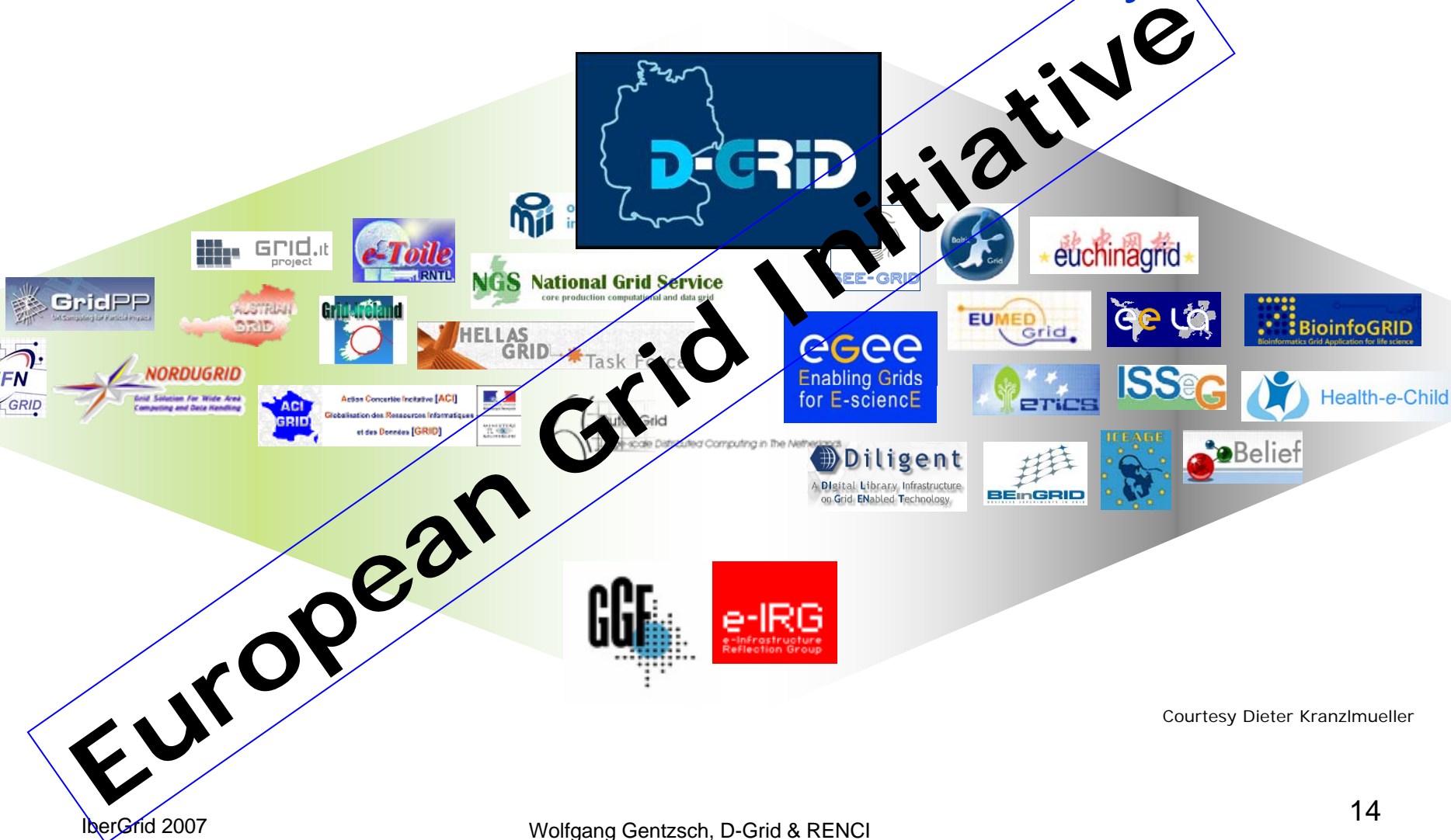
➔ I am here to learn more from how You do it ☺

Last but not least: D-Grid itself is Part of the International Grid Community



Courtesy Dieter Kranzlmüller

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Courtesy Dieter Kranzlmüller



The Grid Engine



The Combustion Engine



The Steam Engine

Thank You !

Slides are available

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