

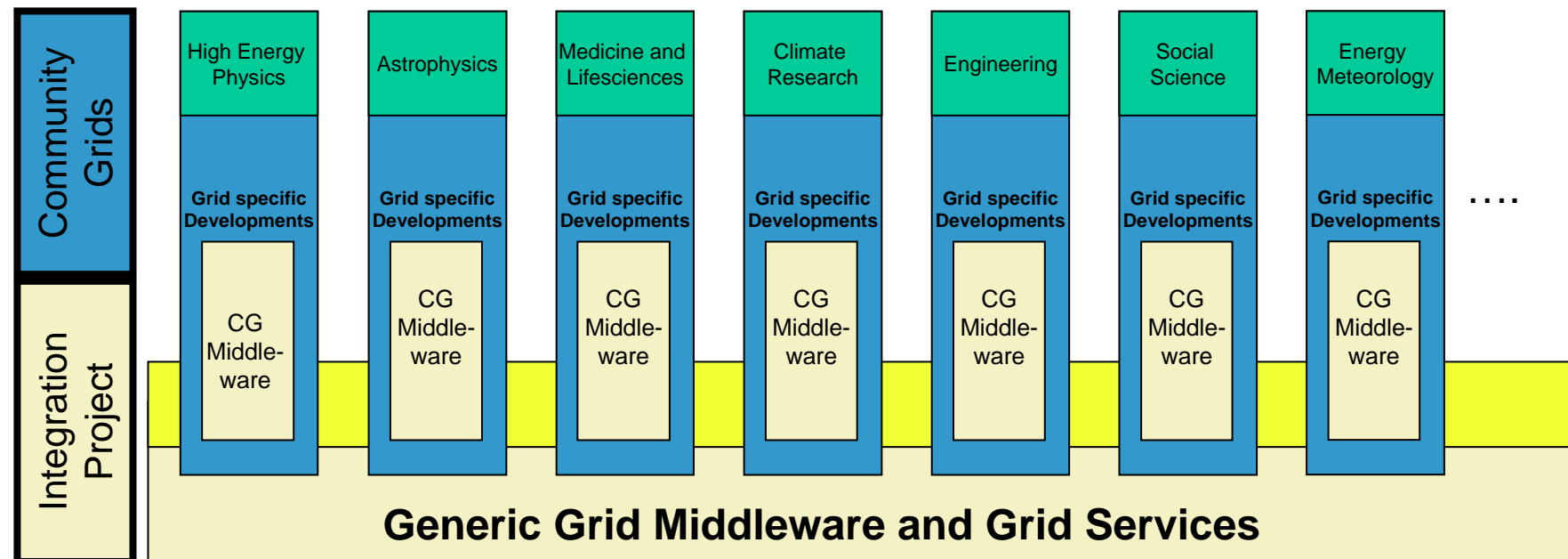
D-Grid – Overview

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D-Grid Project Structure

- Today: 8 projects
- 7 community projects:
 - High Energy Physics, Astrophysics, Medicine and Lifesciences, Climate Research, Engineering, Social Science, Energy Meteorology
- D-Grid Integration Project (DGI)
 - Establishment of a generally usable platform for e-Science



[T. Fieseler, W. Gürich ISGC 2007]

DGI Structure

1. Grid Software

- Globus
- Unicore
- LCG / gLite
- GridSphere
- Data Management
- VO Management

2. Core Grid: set up and operation

- Ressource and application integration
- Operations and support
- Ressource descriptions and benchmarking
- Monitoring
- Accounting
- Billing

3. Network and Security

- Network extensions for D-Grid
- Alternative transport protocols
- Authentication and authorization
- Firewalls
- Grid CERT services

4. Project Management

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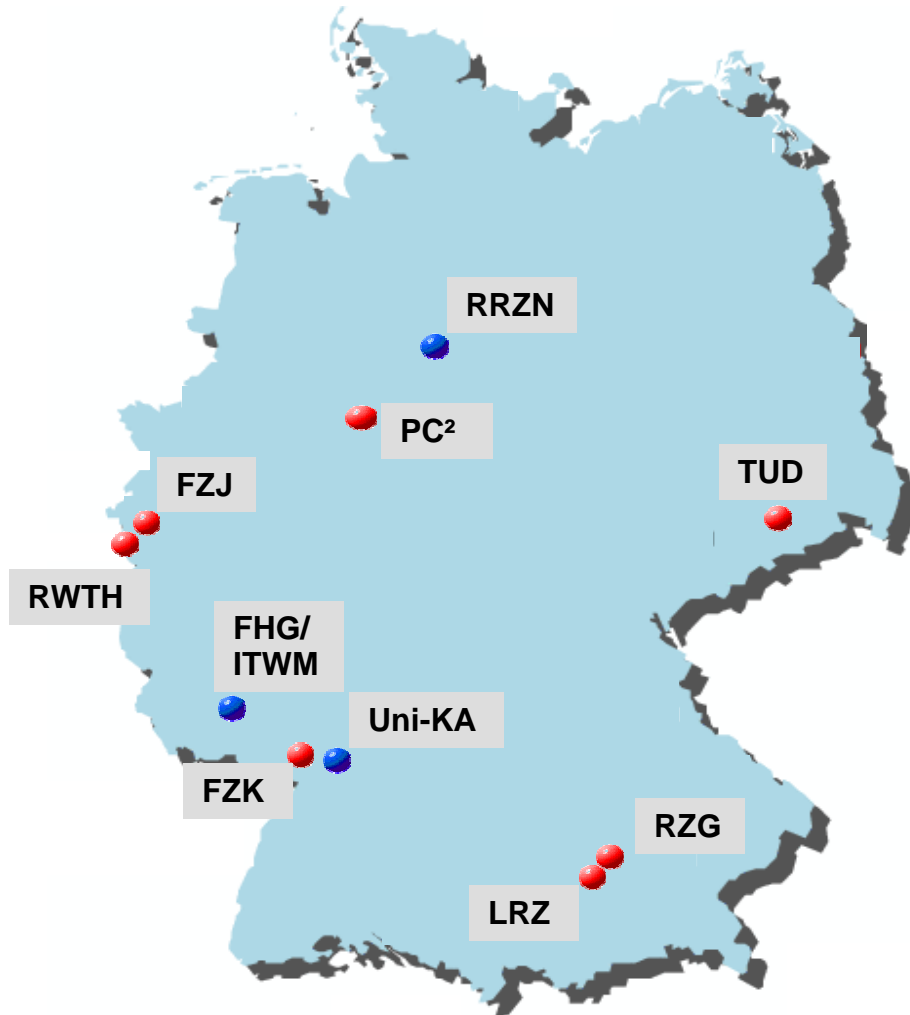
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D-Grid Ressource Providers (Core Grid)

Status 2005/2006



Site	Resource	Amount
FZJ/ZAM	IBM Supercomputer with 8,5 TFlops STK data robot system with 2,8 PByte	32 CPUs 300 TByte
FZK/IWR	8 nodes Opteron 2x2.2 GHz 8 processors of a system NEC SX-5 1 p630 with 4 processors 1 SX-6i to do tests 2 nodes Opteron 2x2.2 GHz to do tests	100% 50% 50% 50%
LRZ	SGI high performance system with 20 TFlop/s Intel IA32 and IA 64 Cluster, IBM p690, SunFire 80	5% 5% 5%
MPI/RZG	IBM supercomputer with 4,5 TFlops, PC cluster with 2 TFlops Data robot system with 8 PByte	32 CPUs 400 TByte
PC²	Cluster of 400 Xeon 64 Bit processors, high performance visualization and FPGAs	10%
RWTH/RZ	2 SunFire 6900 with 24 UltraSPARC IV each	100%
TU-Dresden/ZIH	SGI O2K(56 proc)/O3K(192 proc.) : T3E (64 proc): PC cluster with 30 processors, end off 2005: new system with 1000 proc.	10% 20% 20% 2%
Uni-H/RRZN	PC-Cluster mit 64 CPUs	assoc.
Uni-KA	PC-Pool	assoc.
FHG/ITWM		assoc.

[T. Fieseler, W. Gürich 2006]

Extra Investment



[K.-P. Mickel 2006]

- End of 2006 D-Grid got 5 million Euro for additional hardware:
 - Compute Ressources
 - Storage Ressources
- 2012 Cores
- 4.2 TByte RAM
- ~ 2 PByte Storage

- 24 additional partners

D-Grid Ressources at LRZ

- SGI Altix
 - Intel Itanium2 Montecito Dual Core
 - 9728 Cores
 - 62 TFlops/s
 - 36 TByte Memory

- Linux Cluster
 - 32 and 64 bit Systems:
Pentium, Opteron, Nocona and
Itanium 2
 - 500 Cores
 - 3 TFlops/s
 - ~ 1.8 TByte Memory



DGI Outlook

- DGI Phase 1, Duration: 9/2005 until 9/2007
- Sustainability assurance from all partners:
 - Infrastructure will be operated beyond the end of funding phase

- DGI will be funded for further three years
- Now: Application phase two (DGI-2)