

# GridKa Database Services

Overview about our activities  
and possible tasks in 3D

Rainer Kupsch 13.12.2004 in  
LCG-3D Kickoff-Workshop

# Forschungszentrum Karlsruhe



# Forschungszentrum Karlsruhe

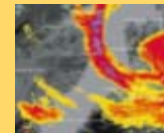
One of the biggest research institutions in Europe with 3500 employees in 5 Research areas:

Structure of matter



- **Structure of matter**

Earth and Environment



- **Sustainability and Technology**
- **Atmosphere and Climate**

Health



- **Biomedical Research**
- **Regenerative Medicine**

Energy



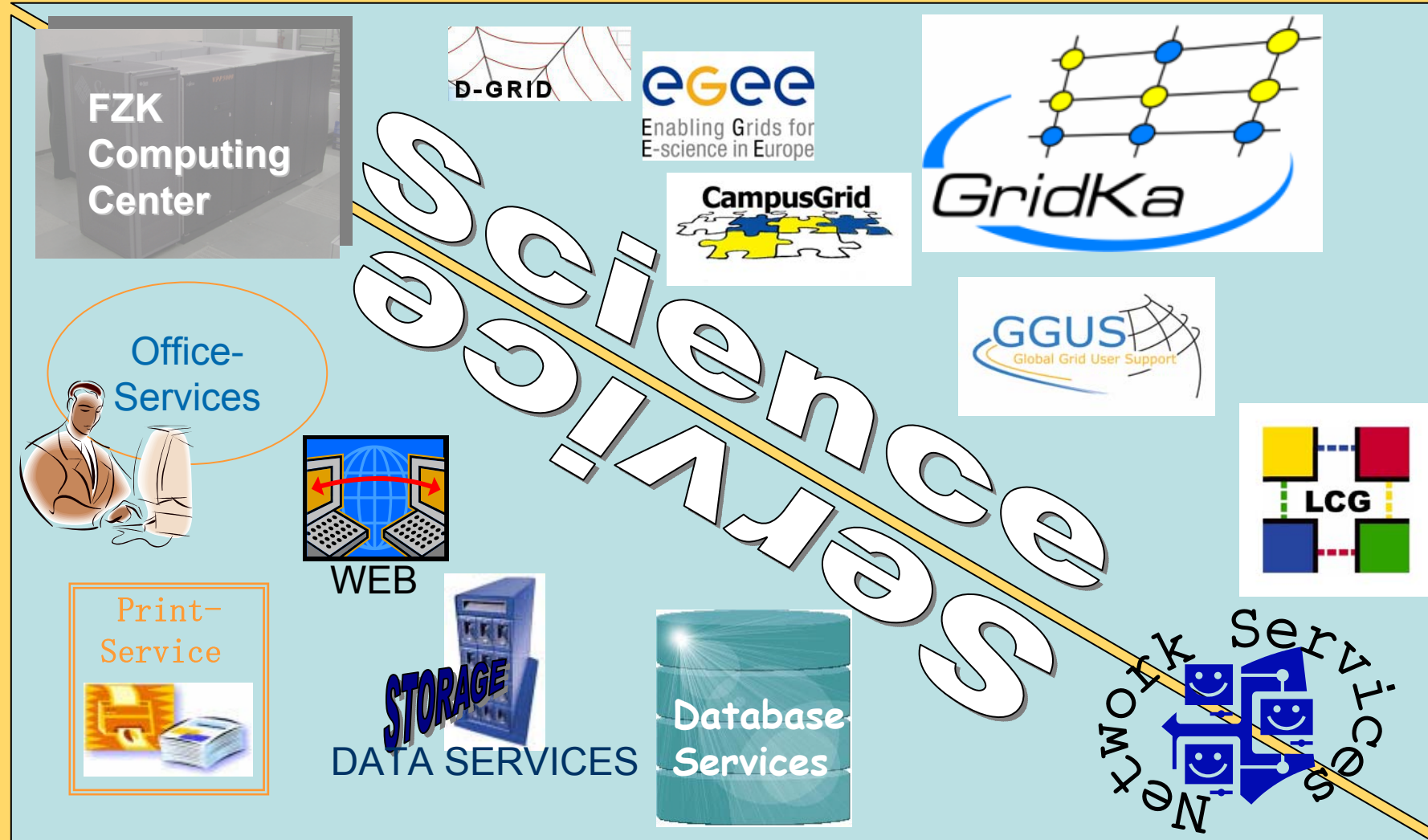
- **Nuclear Fusion**
- **Nuclear Safety Research**
- **Efficient Energy Conversion**

Key Technologies



- **Microsystem Technologies**
- **Nanotechnology**
- **Scientific Computing**

# Institute for Scientific Computing (IWR)



# Database Services for FZK

- ▶ Oracle Server 9i - Solaris
- ▶ Oracle Cluster 9i (2 Processors) - Solaris
- ▶ Oracle Cluster 10g (4 Processors) - Linux RedHat
- ▶ Base for:
  - Hosting of external (FZK-)Applications
  - Accounting for IWR Services
  - Action Request System (Remedy)
  - GGUS HelpDesk System (Remedy)
  - Master Database (Meta Directory of people)



# Database Services for CampusGrid

- ▶ Scope of *CampusGrid*
  - Fusion of heterogeneous platforms/architectures (SuperUX, AIX, Linux, Windows) in a **Grid**
- ▶ Challenges:
  - Global file system
  - Unique User Management
  - Job Scheduler and Resource Broker
- ▶ Setup of a (scalable) Oracle 10g RAC for:
  - Grid Information Service
  - Request Broker
  - Monitoring System (R-GMA)
  - Performance Tests with Infiniband connection
  - User Management
  - Simulation of a global file system in Oracle?
  - Using DB-Grid standards (OGSA-DAI) and WebServices
- ▶ Co-operation with Oracle



# Database Services for D-Grid

(not yet decided)

## ▶ German Grid initiative (D-Grid)

– Promotion of:

- Community projects (e.g. HEP)
- One Integration project

– IWR-Application for promotion of “Database Services for Grid”

- Extension of Grid standards (OGSA-DAI) and WebServices
- Consideration of the requirements of Community projects
- Use of CampusGrid resources and Oracle Clusters

## ▶ Co-operation with Oracle



# Database Services within LCG 3D

- ▶ Co-operation on service definition and implementation in 3D
- ▶ Test of Oracle installation kit on RAC
- ▶ Installation of a Oracle RAC 10g on Linux RedHat exclusively for 3D replication and applications
  - 4 processors
  - SAN connection

## Timetable

- ▶ Starting at end of January
- ▶ As a first step no connection to GridKa
- ▶ Install and test 3D proposed procedures





# Staff



**Rainer Kupsch**  
(Dipl. Math.)

**Institute for Scientific Computing (IWR)**  
**Deputy Head of Institute**  
**Head of Department DASI**  
(Data-Service, Application, System monitoring and Infrastructure)

Tel ++49-(0)7247-82-5636, Fax ++49-(0)7247-82-4972, eMail [kupsch@iwr.fzk.de](mailto:kupsch@iwr.fzk.de)

**responsibility: Oracle-DBA / Coordinative Leader**

**Dr. Doris Wochele**  
(Dipl. Phys.)

**Institute for Scientific Computing (IWR)**  
**Deputy Head of Department DASI**  
**Head of Group Information Management and Applications**

Tel ++49-(0)7247-82-5647, Fax ++49-(0)7247-82-4972, eMail [doris.wochele@iwr.fzk.de](mailto:doris.wochele@iwr.fzk.de)

**responsibility: Oracle-DBA**



thanks for your attention