

A slide titled "Overview" in red, accompanied by a small circular icon. The Fujitsu logo is in the top right. A green horizontal bar runs across the middle. Below the bar is a bulleted list of topics: "Background of Unicore and EuroGrid", "Unicore Architecture", "EuroGrid Aims", "EuroGrid Extended Technology", "The EuroGrid Client", and "The Way Forward". At the bottom left is the EuroGrid logo, and at the bottom center is the copyright notice "Fujitsu Laboratories of Europe © 2002".

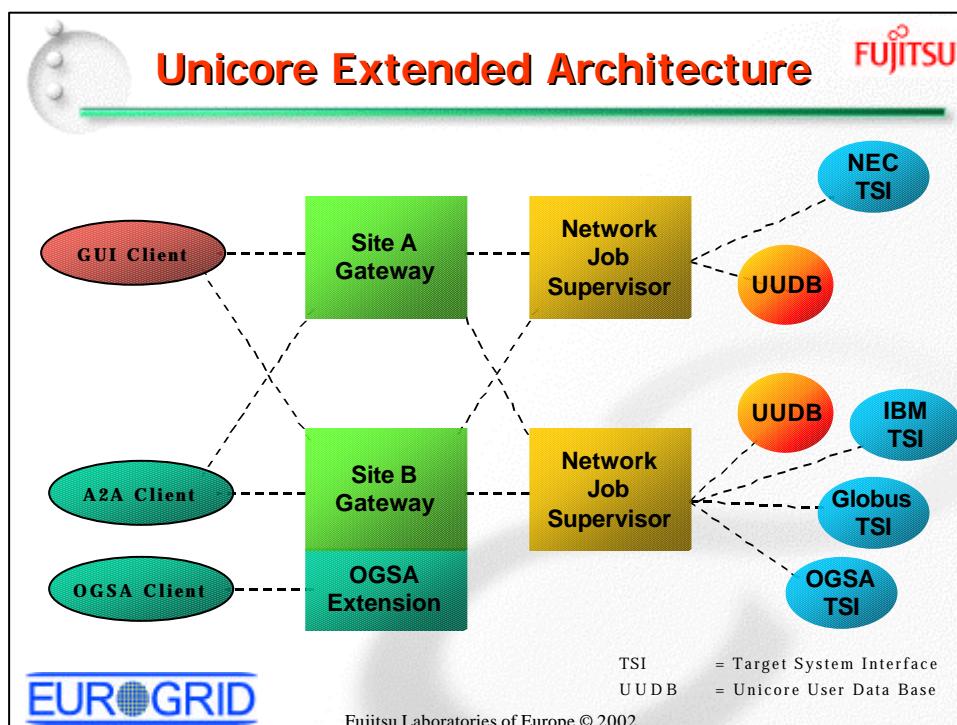
Background

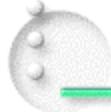
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- **History**
 - Conceived in 1997
 - Fecit project promoted by Dr. K. Uchida
 - UNICORE and UNICORE Plus BMBF Projects
 - EuroGrid and GRIP EC Projects
 - RealityGrid UK e-Science Project
 - Varied Commercial Projects
- **Focus on Seamless Computing**
- **Open Source and Online Demo Site**
 - www.unicore.org
- **OGSA Compliant Demonstrator**
 - June 7th 2002, First release.
 - September 4th 2002:
 - Fast Track Demonstrator in RealtyGrid (UK e-Sciecnce).
www.sve.man.ac.uk/Research/AtoZ/RealityGrid/AHM2002/

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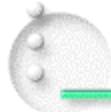
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 **EuroGrid Aim** 

**Build a European Grid Infrastructure
Providing Users
Seamless and Secure Access
to
High Performance Computing Resources
to
Advance Computational Science in Europe.**

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 **Structure of EuroGrid Project** 

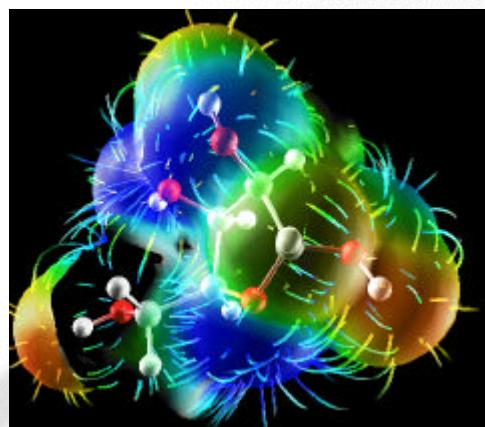
- **Application GRIDS:**
 - Application-specific interfaces and evaluation of GRID solutions
 - Real world problem domains
 - Bio-GRID
 - Meteo-GRID
 - CAE-GRID
- **HPC GRID Infrastructure:**
 - Connect HPC centres using UNICORE technology
- **Development and Integration of New Components**
 - Technology Upgrade
- **Dissemination and Exploitation**

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Bio-Grid

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- A GRID for Biomolecular Simulations
- Develop interfaces to existing biological and chemical codes



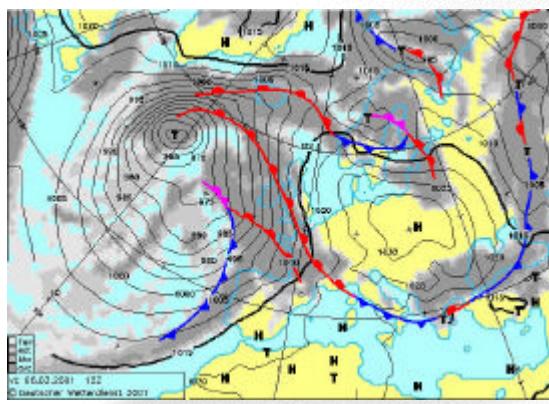
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Meto-Grid

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- A Relocatable Weather Prediction Model from DWD
- Goal:
Weather prediction on-demand ASP



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CAE-Grid

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- **Coupled Structural & Electromagnetic Aircraft Simulation**
- **Goal:**
HPC portal for engineers at EADS, Daimler-Chrysler, and partners

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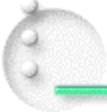
HPC-Grid

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- **Demonstrate a European HPC GRID**
- **Develop New GRID Applications**
- **Agree on:**
 - Security Standards
 - User Certification
 - Access Policies
 - ...
- **Enable Sharing of Know-How**

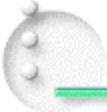
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 **EuroGrid Extended Technology** 

- **Interactive Access Extension**
 - Allows standard terminal style interaction.
 - Unicore Single Sign-on
 - Complete multi-site authentication & authorization.
 - Includes “Interactive Batch”.
- **High Performance File Transfer**
 - Support for partial and parallel file transfer.
- **File Streaming**
 - Logically a Unix “pipe”.
 - Connect systems to data sources (e.g. telescope).

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 **EuroGrid Resource Broker** 

- **Current or Very Soon**
 - Resource request check prior to submit.
 - Multi site brokering is “simulated” on the client.
 - Checks disk space requirements in real time.
 - Naive estimate of time until execution.
 - Return “Tickets” which the client incorporates into job.
- **From Early 2003**
 - Tickets can have a modified/refined resource set which must be associated with the job for the Ticket to be accepted.
 - Server verifies any presented tickets.
 - Server side brokering for other servers.
 - Dynamic brokering at execution time.

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The EuroGrid Client

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WorkFlow

Do Construct

If Construct

Complex Dependencies

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Plugins

The screenshot shows the CPMD Plugin & Wizard interface. It features a main window titled "CPMD Wizard 1.1.3 [C:\CPMD\monocharge\test.wiz]" with tabs like File, Help, Response, CPMDBuilder, System-Main, Kacmar, System-Tools, PMD, Atoms, DFT, Properties, QM9-Main, Optimizer, Molecular Dynamics, Diagnostics, Free-Energy, and Mining. A secondary window titled "Change charges of atoms..." is open, showing a list of atoms with their current charges and a dropdown menu for "Change charge of atoms...". Another window titled "Monocharge or partial monocharge" is also visible, containing numerical data tables and selection buttons.

**CPMD
Plugin & Wizard**

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Plugin Development

The screenshot displays a slide titled "Plugin Development" with a bulleted list under each category:

- Very Seamful: Scripts**
 - Different for every system
- Seamful: Command Task**
 - Path to command
 - Environment variables
- Seamless: Resource**
 - Fully abstracted
 - No system/site differences
 - Application metadata
- Ideal: Plugin**
 - User's view of application
 - Not a computer,
but a solution
- Client Development**
 - A few Java classes
 - GUI
 - Plugin start/stop
 - Data container
 - Use Client Functions
 - Job management
 - Resource editor
 - Examples available
- System Development**
 - Install application
 - Edit of server data base
 - Application location
 - Environment

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The Way Forward

THE POSSIBILITIES ARE INFINITE

- **A Complete GRID Solution Today**
 - Fujitsu Server + Pallas Client +
 - Plugins (from Fujitsu, 3rd Parties, Home Grown, ...)
- **Bespoke GRID Applications on Demand**
 - Fujitsu Server and C2C Client
- **Toward the Open Grid Services Architecture**
 - In progress today at Fujitsu Labs Europe

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