



## Welcome to the 1<sup>st</sup> Akogrimo Public Workshop

### Agenda



<http://www.mobilegrids.org>

- 9:45—10:15 Akogrimo Overview
  - Stefan Wesner, HLRS
- 10:15—11:00 The Daidalos approach to a future mobile infrastructure,
  - Hans Werner Bitzer, T-Systems
- 11:00—11:30 Break
- 11:30—11:50 Acquisition, Storage, and Provision of Access Network Information with Nexus
  - Stephan Lück, IKR University of Stuttgart
- 11:50—12:15 Trust Modeling and Evaluation in Nexus
  - Andreas Gutscher, IKR, University of Stuttgart
- 12:15—13:00 Business View of Akogrimo
  - Dr. Martin Hafner, University Hohenheim
- 13:00-14:15 Lunch
- 14:15-15:00
- The Akogrimo Architecture
  - Jürgen Jähnert, RUS
- 15:00-15:45 Integrated Prototype and Demo Overview
  - Víctor Villagra, UPM
- 15:45– 18:00 Demonstration of the prototypes
  - Group 1 Akogrimo Infrastructure Prototype
  - Group 2 Akogrimo Graphical Evolution Tool



## Access to Knowledge through the Grid in a Mobile World

Stefan Wesner

*High Performance Computing Centre Stuttgart  
Deputy Director*

*Akogrimo Project Manager*

### Akogrimo facts




<http://www.mobilegrids.org>

- A European Research Project with a duration of ~3 years and an overall effort of ~1200 PM and an overall budget of 10,5 M€
- 13 Partners from industry and academia including 3 Telecom Operators and large IT service providers
  - TelCos: Telefónica I+D, Telenor, Portugal Telecom through IT-Aveiro
  - IT Industry: ATOSOrigin, Datamat
  - SMEs: CRMPA, BOC
  - Research: RUS and HLRS, UPM, UniZh, CCLRC, NTUA, UHOH
- Project Start: July 2004
- Info: <http://www.mobilegrids.org>

<http://www.mobilegrids.org>

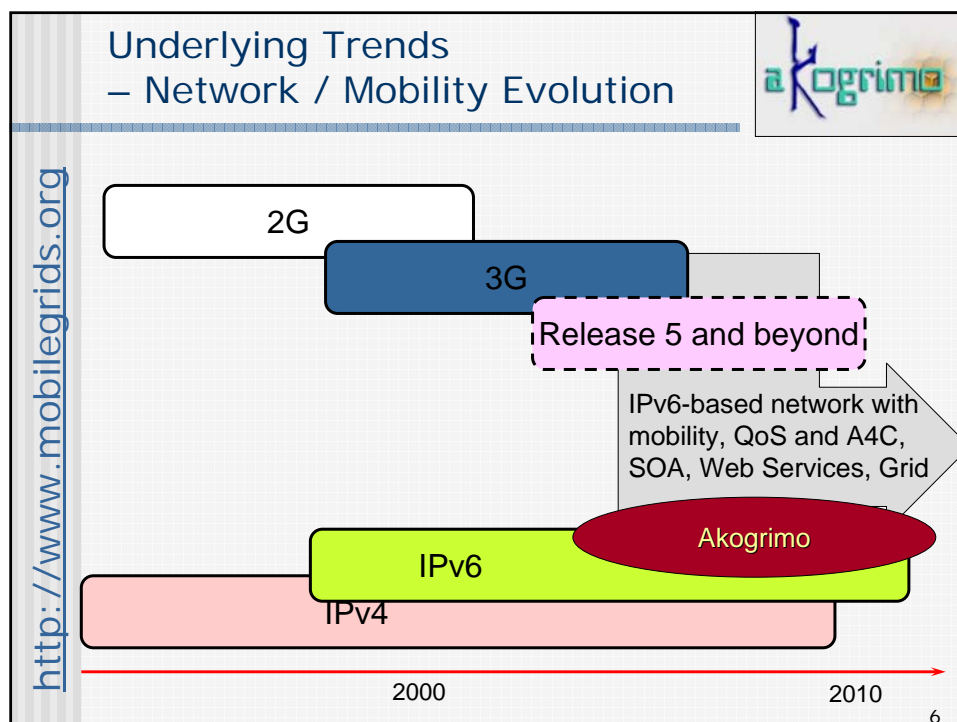
## Underlying Trends

### – Network View



- Two parallel developments:
  - Success of 2G Mobile Networks in Europe and Far East
  - Internet success story
  - Migration of voice and data networks
  - Before they have finished we can observe two additional Migration stories:
    - Mobile networks meet broadcast
    - Service Oriented Architecture meets telecommunication

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## Underlying Trends - Next Generation Grids



<http://www.mobilegrids.org>

- To overcome the limitations of current grid technology, NGGs need to be†:
  - Transparent and reliable
  - Open to wide user and provider communities
  - Persistent, pervasive and ubiquitous
  - Secure, with trust across multiple domains
  - Easy to use, configure and manage
  - Standards based
  - Person-centric
  - Scalable
- † These were the findings of the EC's NGG expert group: see [ftp://ftp.cordis.lu/pub/ist/docs/ngg\\_eg\\_final.pdf](ftp://ftp.cordis.lu/pub/ist/docs/ngg_eg_final.pdf)

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## So is there THE Grid?



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- Grids for eScience are well understood concept of sharing of mainly compute and data resources
  - Large efforts such as EGEE or DEISA will lead to a further consolidation in this area
- The current picture of the Grid and business is very complex
  - Many companies have their own "Grid"
    - What the company needs for their compute cluster
  - The word "Grid" is used in many different contexts
- Grid for Science does not meet the needs of business from several viewpoints
  - Security, Manageability, Regulatory, ...

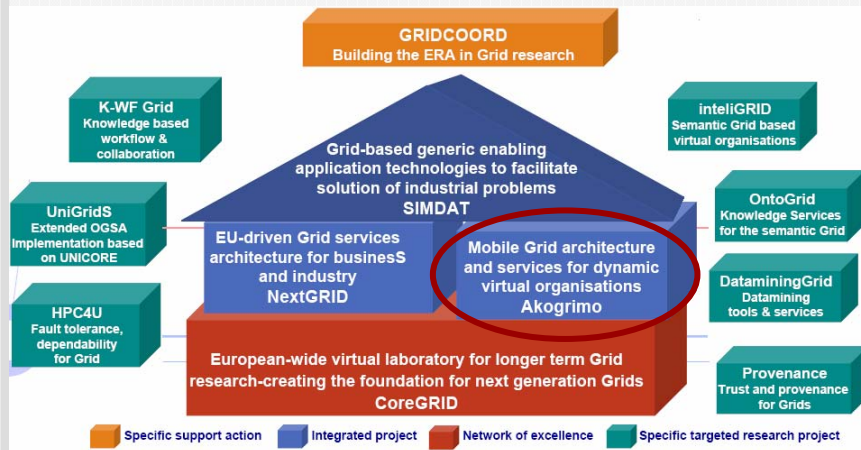
**THE GRID**

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## The Grid House (no call5 projects)



<http://www.mobilegrids.org>



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## The Akogrimo Vision



<http://www.mobilegrids.org>

*To produce a breakthrough in current practices for Grids with the creation of a distributed, mobile and pervasive environment to make it a business proposition for Telecom Operators and Service Providers*

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## Akogrimo: Key Questions



<http://www.mobilegrids.org>

- Can the introduction of GRID/Web Services technology enable added value in Telecom-oriented network infrastructure?
- Can the extension of the Grid-based Virtual Organisation paradigm for users in all aspects of their daily life: ad-hoc, everywhere, anytime feed a new market for telcos ?
- Does Mobile Grid meet the requirements of complex problems (eBusiness, eLearning, eHealth, ... ?

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## Project Objectives



<http://www.mobilegrids.org>

- Realize a layered Next Generation Grid middleware
  - *architecture* and
  - *reference implementation*
  - enabling *cross-layer co-operation* from network through Grid up to the application layer
  - for a *large number* of *nomadic and mobile users*
- Demonstrate the capabilities with challenging applications
- Develop Elaborated Business Models for this new platform
- Provide Supporting Tools for developers

Concepts, patterns, services

Exploit e.g. the Network Identity, Location, Operator Contracts, ...

Design for proof the

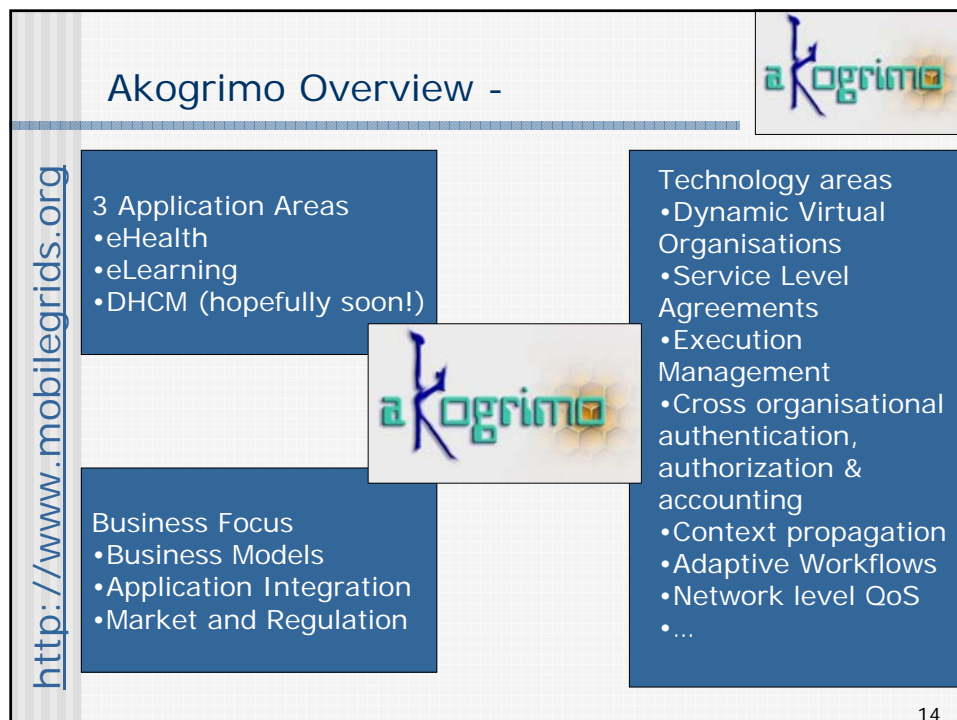
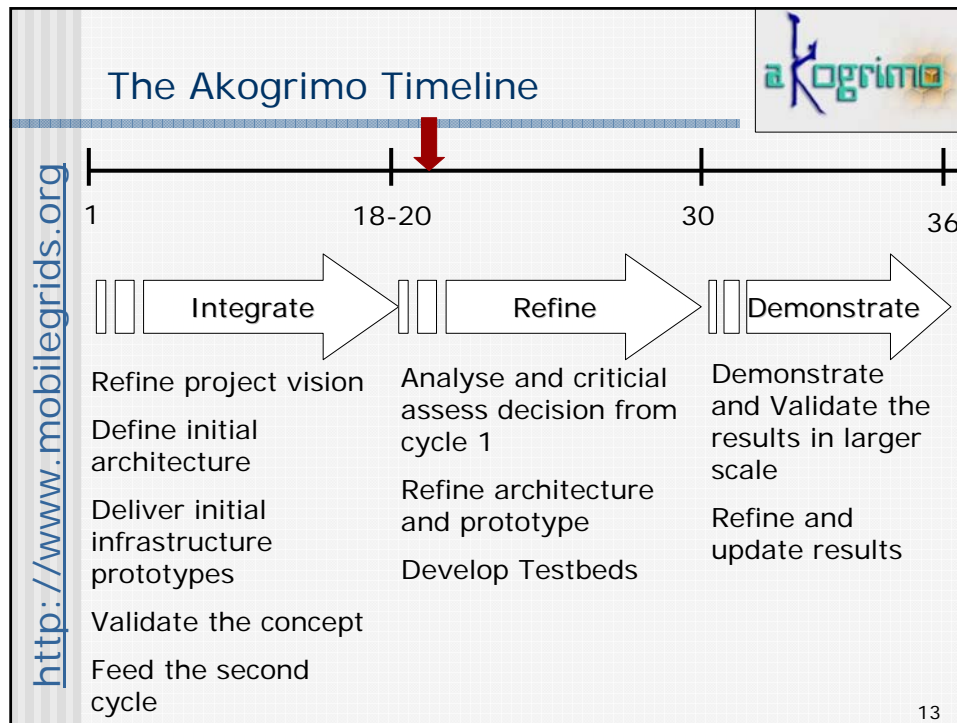
Ensure that the framework offers

Basis for Technology Providers and Consultants from the consortium

Make the Grid *the* service provider

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Thank you!

Any questions?

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## Underlying trend - The Grid is evolving



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- The **metacomputer** is a network of heterogeneous, computational resources linked by software in such a way that they can be used as easily as a personal computer.  
(L. Smarr and C.E. Catlett, „Metacomputing“, Communications of the ACM 35/6, 45-52, **1992**.)
- A **computational grid** is a hardware and software infrastructure that provides dependable, consistent, pervasive, and inexpensive access to high-end computational capabilities.  
(Ian Foster & Carl Kesselman, „The Grid“, MK, **1998**.)



## Underlying trend

- The Grid is evolving



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- **"Grid Problem"**, which we define as flexible, secure, coordinated resource sharing among dynamic collections of individuals, institutions, and resources.  
(Ian Foster, Carl Kesselman and Steven Tuecke, "The Anatomy of the Grid", ..., **2001**.)
- **"A Grid provides an abstraction for resource sharing and collaboration action across multiple administrative domains..."**  
(Source: NGG Expert Group, 16 June **2003**  
"European Grid Research 2005-2010)