



**omii europe**  
open middleware infrastructure institute

## **Delivering Grid Interoperability**

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# Outline

- **Macro view – What is the project trying to achieve? (4)**
- **The project organisation and structure (3)**
- **The role of standards in grid interoperability (3)**
- **Micro view – Standardised Components from OMII-Europe (11)**
- **Putting OMII-Europe components together to deliver real grid interoperability (5)**
- **Summary (3)**

# The big picture

- **A definition of e-Science...**
  - “*e-Science is about global collaboration in key areas of science and the **next generation infrastructure** that will enable it*”
- **‘Next generation infrastructures’ represented by Grids**
  - Foundation for seamless and secure collaborations over networks



- National Grid infrastructures: UK NGI, D-Grid, others

- **New science will require the combined resources of all existing infrastructures**

# Problem is e-Infrastructure Islands

- **E.g., DEISA Grid (Supercomputing/HPC community)**
  - Non WS-based UNICORE 5: **Proprietary jobs (AJO/UPL)**
  - No Virtual Organization Membership (VOMS), Full X.509
  - Suitable for parallel scientific jobs (MPI, many interactions)
- **E.g., EGEE Grid (mainly HEP community + others)**
  - Non WS-based gLite: **Proprietary jobs (JDL)**
  - Proxy-based X.509 security, but proprietary VOMS support
  - Suitable for embarrassingly parallel jobs (few interactions)
- **Scientists cannot use one middleware to access both (Little adoption of standards)**

End-users  
via clients  
& portals



**GOAL: Transparency  
of Grids for end-users**

Emerging  
Open  
Standards




**„Interoperability highway“  
based on open standards**

Grid  
Middlewares



Grid  
Resources



ERROR: stackunderflow  
OFFENDING COMMAND: ~  
STACK: