



omii europe
open middleware infrastructure institute

**Bridges for e-infrastructure –
a view from the OMII-Europe project**

Mike Mineter
NeSC-TOE



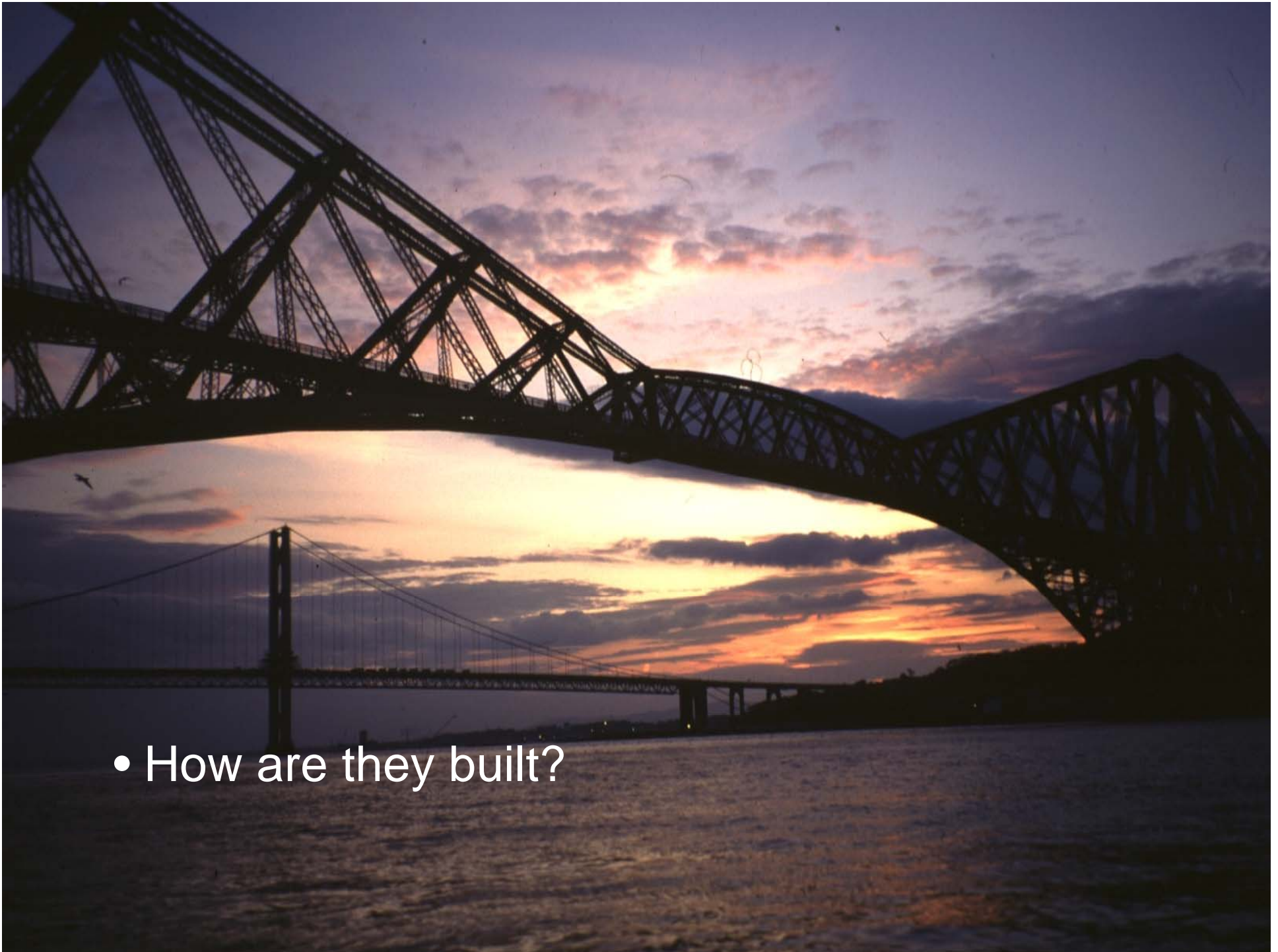
Goal of talk

- **To give understanding of the wider context in which EGEE/SEE-GRID operates**
 - Multiple grids and diverse middleware in production use
 - Emerging standards
 - Interoperability



Bridges in infrastructure...

- What do they enable?



- How are they built?

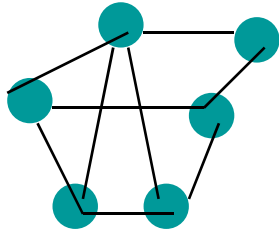


•How easy are they to use?

Overview of OMII-Europe

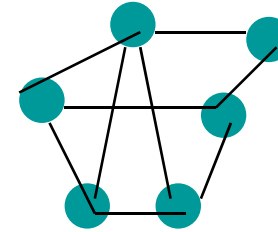
- **Bridge-building with OMII-Europe**
 - **What do these bridges enable?**
 - **How are they built?**
 - **How easy are they to use?**
 - **When will they be ready to use?**
 - Most release dates after ~September.
Project is only just 1 year old!
 - Happy Birthday to us!

Grid Islands



UNICORE

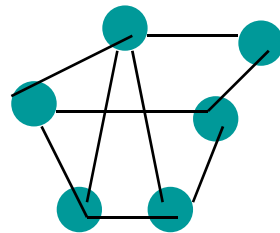
**Isolate:
Data**



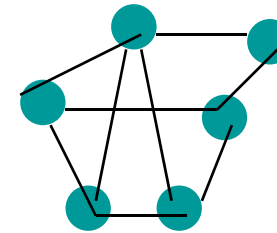
CROWN

Computers

Expertise

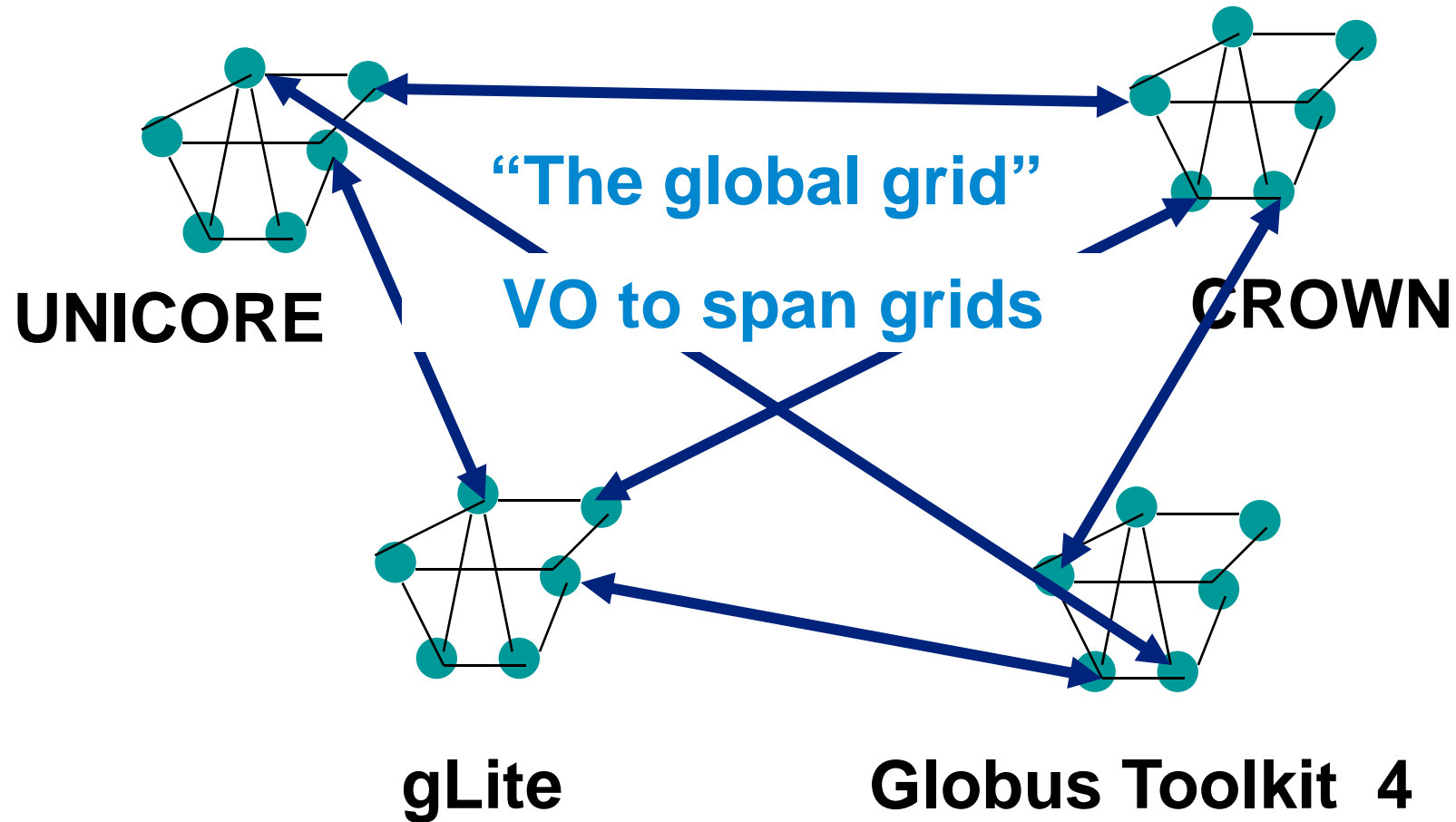


gLite

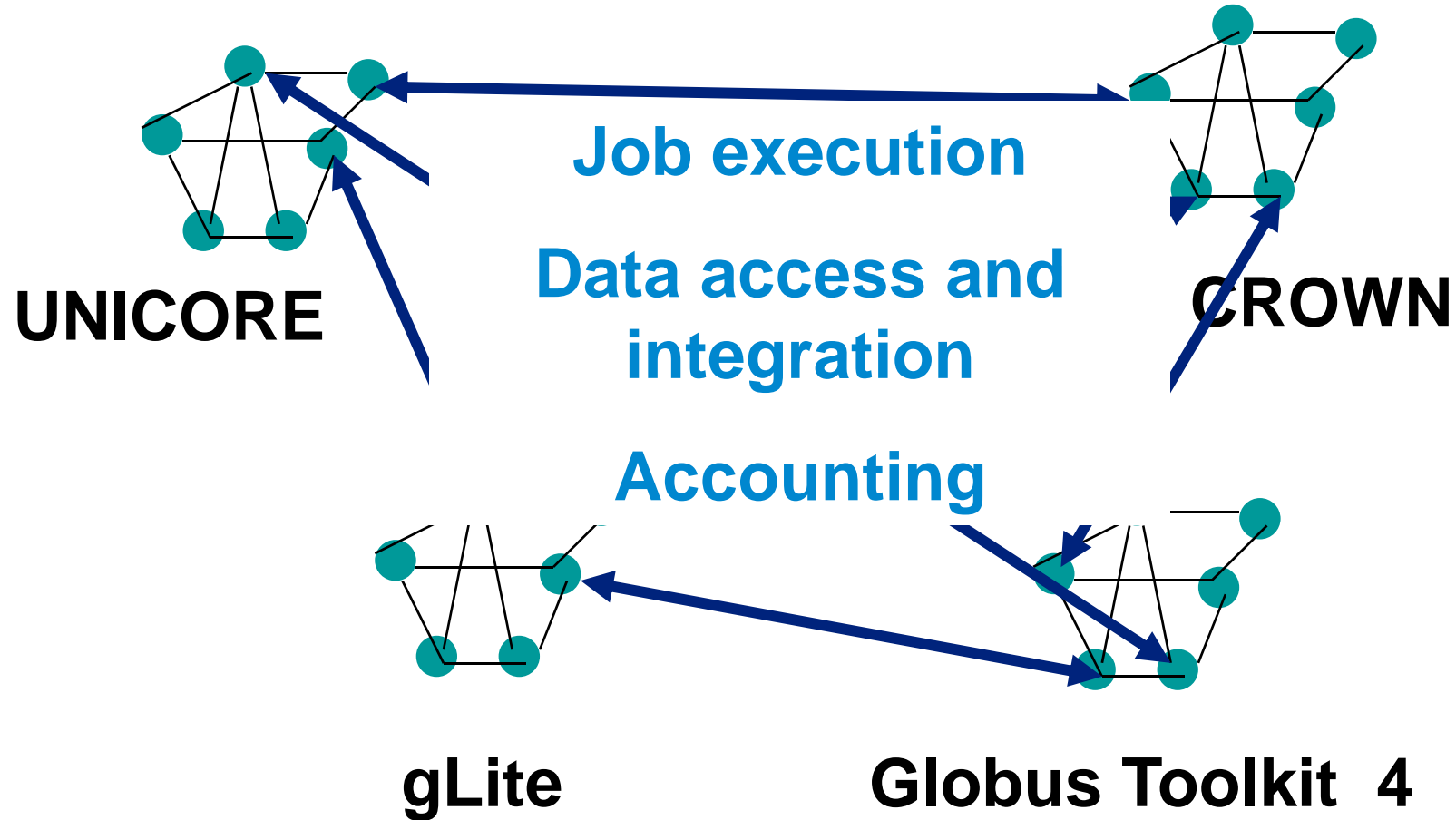


Globus Toolkit 4

Bridges – to enable...



Bridges – for interoperability



Bridges – How are they built?



Bridges – How are they built?

Components based on standards:

OGSA Basic Execution Service

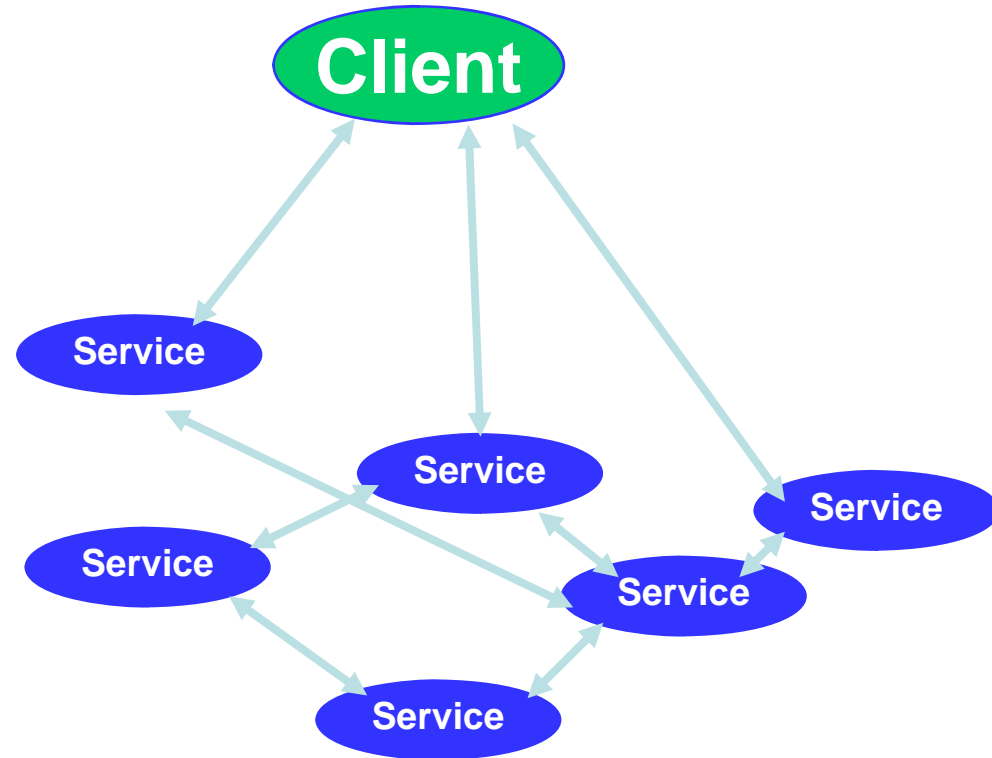
OGSA Data Access & Integration
Services

OGSA Resource Usage Service

OGSA: Open Grid Services Architecture

Service orientation – software components that are...

- Accessible across a network
- Loosely coupled, defined by the messages they receive / send
- Service description that can be used to create client software
- Based on standards (for which tools do / could exist)
- Developed in anticipation of new uses



October 2001 View

Web Services

Grid Technology

- Commerce
- Standards
- Tools

Grid Services

- Research driven
 - Data-intensive
 - Compute intensive
 - Collaboration – sharing of resources
- Trust:
opening resources

Open Grid Services Architecture

OMII-Europe components

- **Basic Execution Service**
 - Execution of job in JSDL:
“Job Submission Description Language”
 - E.g. OGSA-BES interface being developed for EGEE Compute Elements.

Hello World in JSDL

```
<?xml version="1.0" encoding="UTF-8"?>
<jSDL:JobDefinition
  xmlns:jSDL="http://schemas.ggf.org/2005/11/jSDL"
  xmlns:jSDL-posix="
    http://schemas.ggf.org/jSDL/2005/11/jSDL-posix">
  <jSDL:JobDescription>
    <jSDL:Application>
      <jSDL-posix:POSIXApplication>
        <jSDL-posix:Executable>
          /bin/echo
        <jSDL-posix:Executable>
        <jSDL-posix:Argument>hello</jSDL-posix:Argument>
        <jSDL-posix:Argument>world</jSDL-posix:Argument>
      </jSDL-posix:POSIXApplication>
    </jSDL:Application>
  </jSDL:JobDescription>
</jSDL:JobDefinition>
```

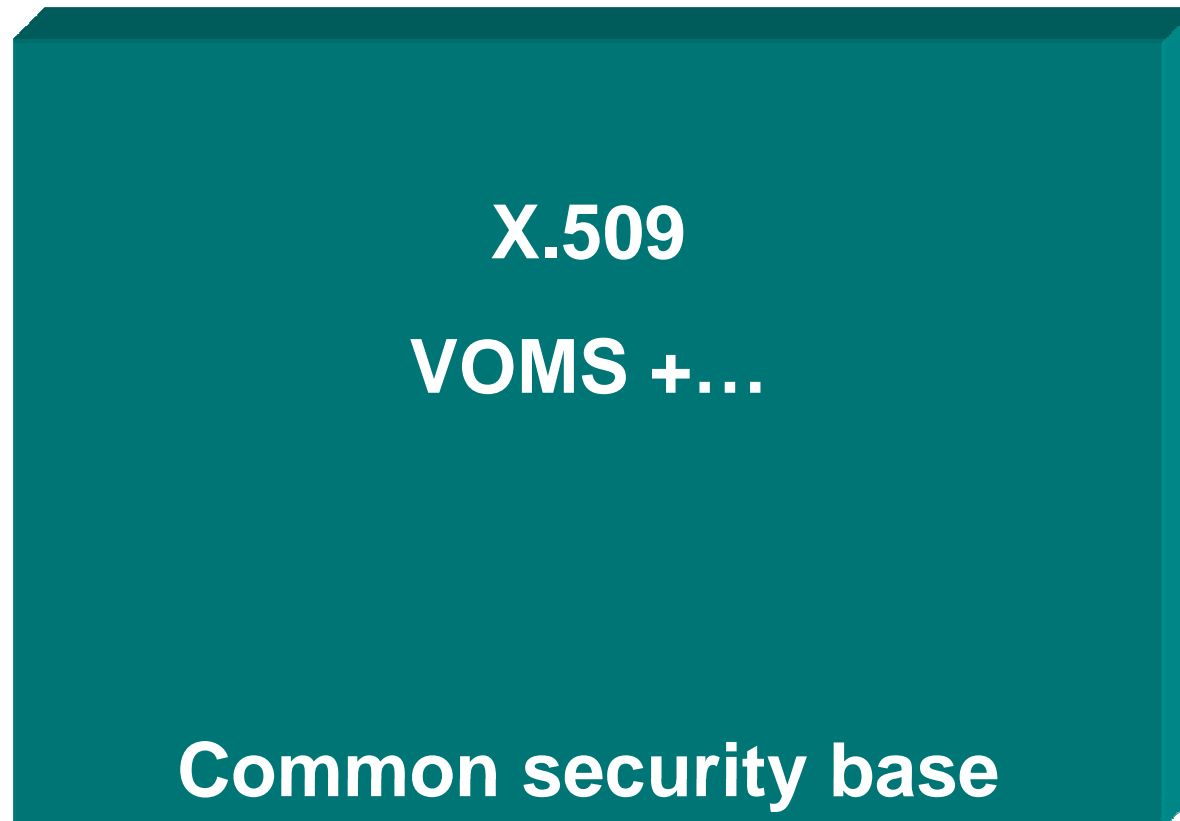
OMII-Europe components

- **Basic Execution Service**
- **Data Access and Integration**
 - Expose data to grid users
 - “Activities” support computation close to data
 - OMII-Europe porting OGSA-DAI to gLite, UNICORE, CROWN
- **Resource Usage Service**
 - Gather accounting data from diverse resources on different grids

Bridges – How are they built?



Bridges – How are they built?



VOMS in OMII-Europe

- **VOMS: to manage VO membership as basis for Authorisation**
 - Used by gLite: communicate VO attributes in proxy extensions
 - **Permits delegation**
- **In OMII-Europe: also will communicate in “Security Assertion Markup Language (SAML)”**
 - standard from OASIS

Components – How easy are they to use?



Components – How easy are they to use?



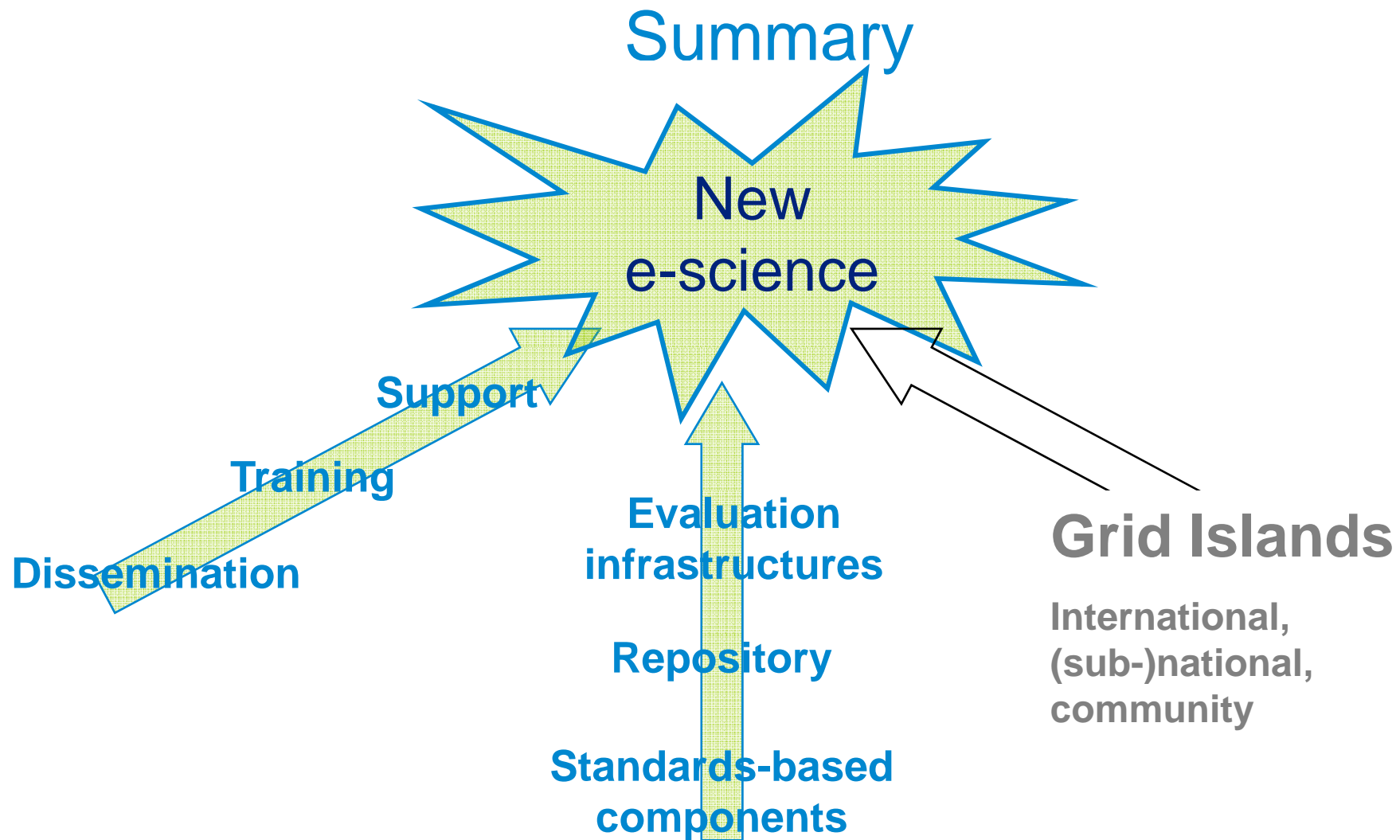
Evaluation Infrastructures

- **Ready for you to try different middleware**
- **New OMII-Europe components will be installed on these**
- **<http://support.omii-europe.org>**

Middleware	Site
Globus Toolkit 4.0.3	Edinburgh
UNICORE 5, UNICORE 6	FZJ
gLite 3.0 (EGEE)	PSNC
gLite 3.1 (EGEE)	INFN
OMII-UK Release 3.2	SOTON
CROWN Grid	BU and TU

What will OMII-Europe deliver?

- **Repository of open-source, quality assured software services for EGEE, Globus, UNICORE and CROWNgrid**
 - Objective: Some services bundled with major grid distributions
 - Initial integration work with EGEE, UNICORE and Globus
- **Evaluation infrastructure to “test” services**
- **User support and training for services**



Thank you!

<http://omii-europe.org>

