



A service oriented architecture to integrate external earthsystem data centres into the grid

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Motivation

Grid as a common platform

- Connect external data sources with complex metadata to the grid

- Share data, that is produced in the grid, with traditional community

Climate research is data & collaboration intensive

- Models use and produce diverse data
- Data is needed and analysed by scientists of diverse disciplines

Climate data is organized heterogeneously

- Data vary tremendously in description detail and accessibility
- Data are stored in heterogeneous, organisational separated data centres

Architecture

Interconnecting legacy systems and grid resources

- Modular SOA to flexibly integrate external data sources with complex metadata into the grid
- Collaboration with German C3Grid[1] to integrate climate community

Standards to hide implementation details

- Authentication & and data discovery

Webportal

- Data description

ISO 19115/19139

- Metadata harvesting

OAI-PMH

- Data & processing request

WS Interface

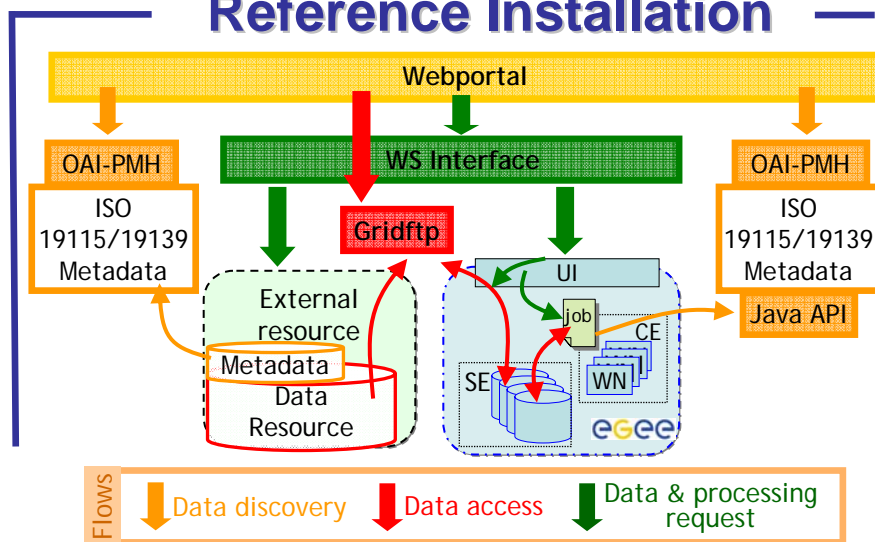
- Data access

Gridftp

- Metadata provenance

Java API

Reference Installation



Current Status

Besides EGEE, 8 earth science data centres are connected so far. Cooperation with British NDG[2] and US-American ESG[3] is ongoing.

Added value

Grid Perspective

Connect to off-grid communities:

- expose data on the grid to external community
- offer interfaces to use external data in the grid

Provider Perspective

To expose data resource to grid:

- transfer metadata to ISO format
- connect local data access to WS interface
- deliver data to a gridftp storage

User Perspective

Use and process data of various sources:

- consistently discover data from various sources
- select a subset and directly download it, or upload it to EGEE
- trigger offered processing with automatic republishing of results in ISO
- or use update interface to automatically republish own processing results in ISO