http://www.grid-support.ac.uk

http://www.ngs.ac.uk

P-GRADE and GEMLCA

http://www.nesc.ac.uk/

http://www.pparc.ac.uk/

http://www.eu-egee.org/

Enhancing useability

- NGS has deployed low-level tools: these are reliable and give a production service but a user interacts at a low level with resources.
- GOSC had no adequate alternatives.
- Need for higher abstractions & tools is evident
- Example: P-GRADE and GEMLCA, developed at SZTAKI, Hungary and University of Westminster are made available to NGS users
  - www.cpc.wmin.ac.uk/gemlca
  - www.lpds.sztaki.hu/pgportal
  - www.cpc.wmin.ac.uk/ngsportal
- Important to Grid Alliance: Brunel - Westminster

P-GRADE Portal and GEMLCA

Grid Execution Management for Legacy Code Applications

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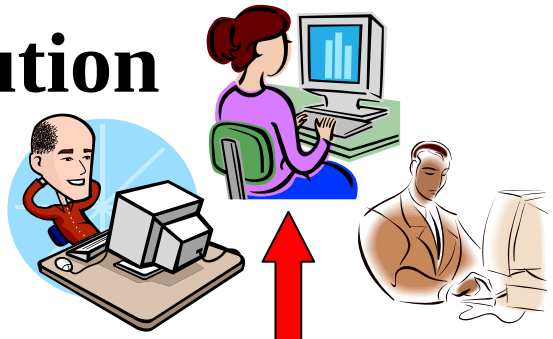
The P-GRADE solution



User-friendly
Web interface

NGS National Grid Service
core production computational and data grid

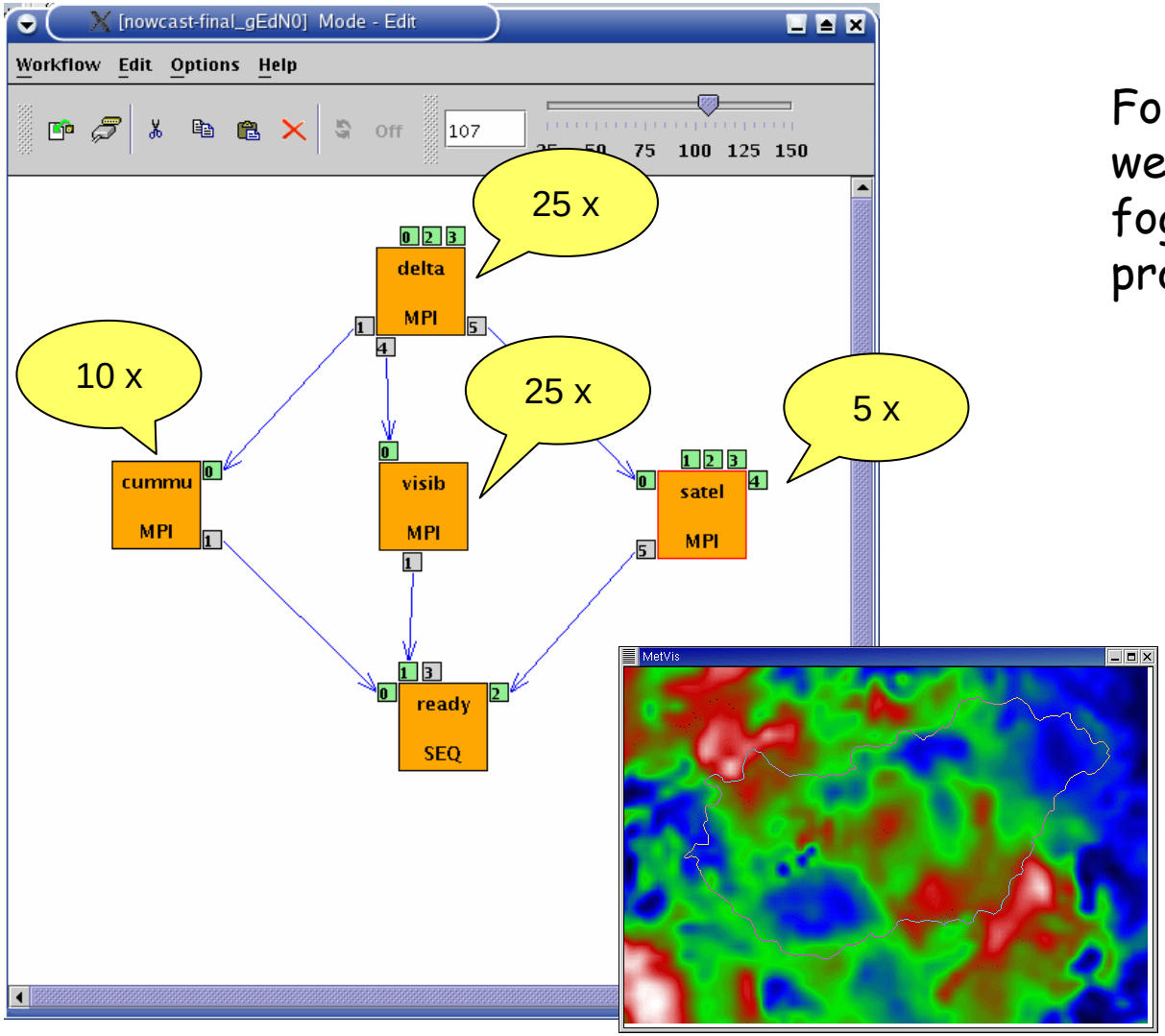
Leeds
Oxford
GT2
Manchester
Rutherford

P-GRADE portal

Portal server at UoW

Ultra-short range weather forecast

(Hungarian Meteorology Service)



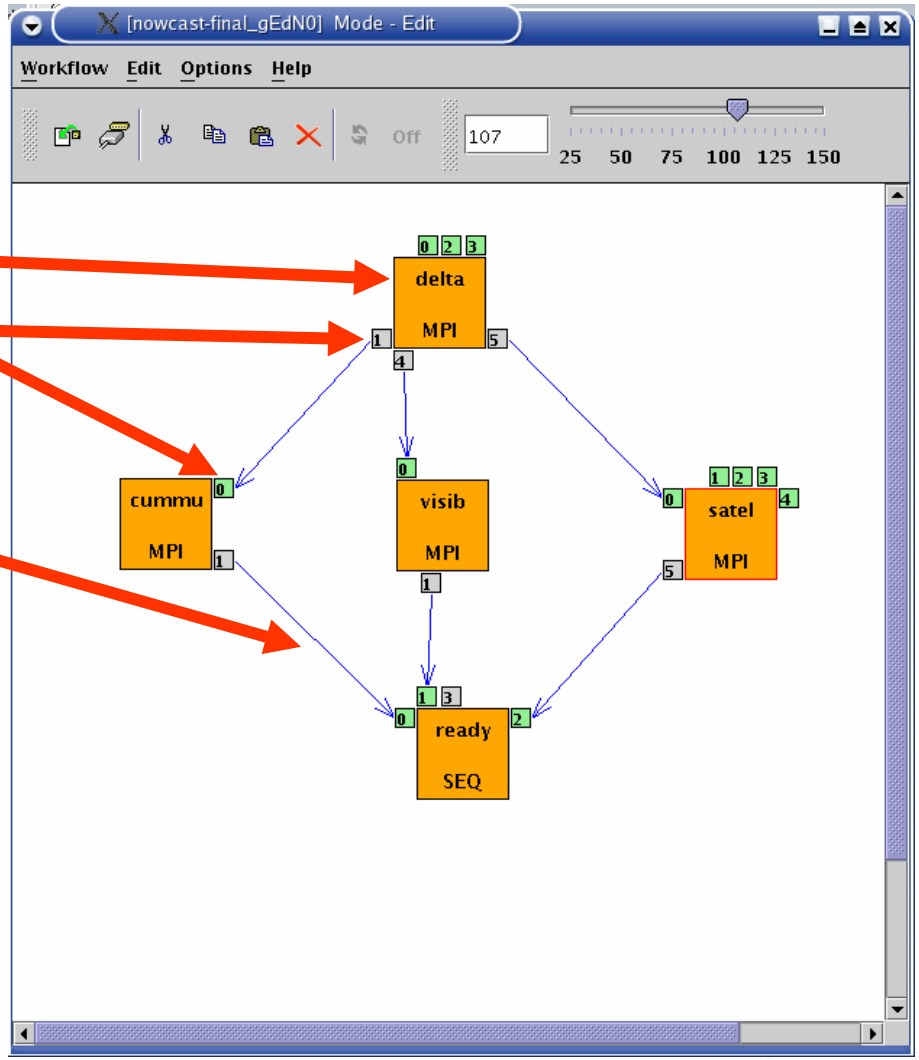
Forecasting dangerous weather situations (storms, fog, etc.), crucial task in the protection of life and property

Processed information: surface level measurements, high-altitude measurements, radar, satellite, lightning, results of previous computed models

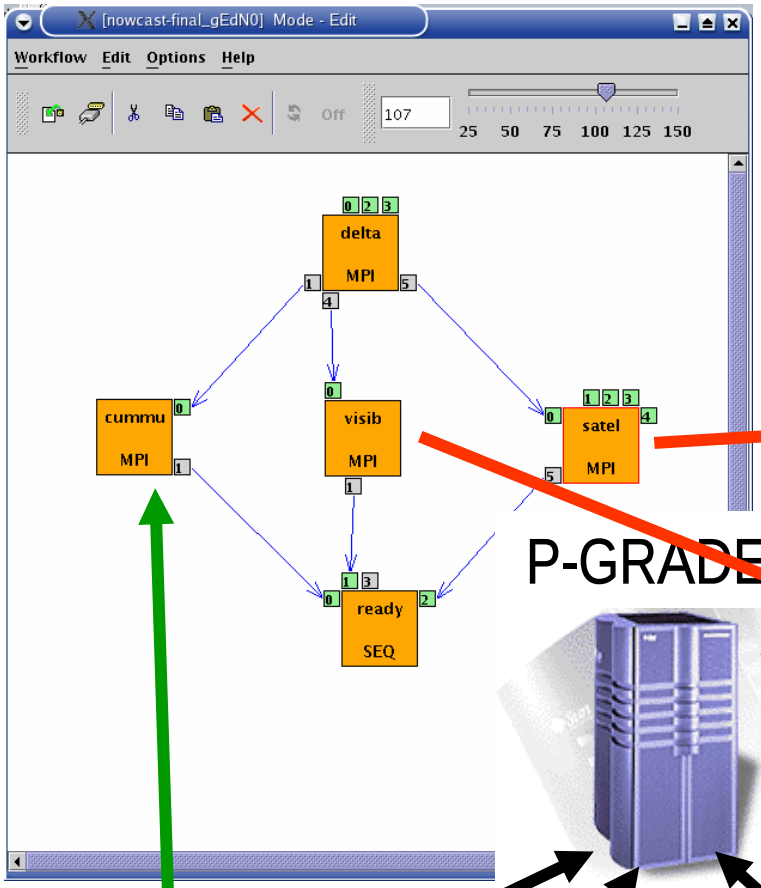
Requirements:
- Execution time < 10 min
- High resolution (1km)

What is a P-GRADE Portal workflow?

- **a directed acyclic graph (DAG) where**
  - Nodes represent jobs (executable batch programs)
  - Ports represent input/output files the jobs expect/ produce
  - Arcs represent file transfer between the jobs
- **semantics of the workflow:**
  - A job can be executed if all of its input files are available
    - **local input files**: on the portal server
    - **remote input files**: at Grid storage service providers

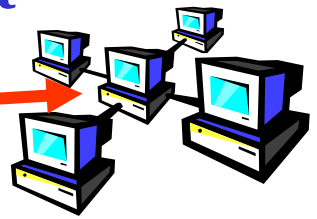


Multi-Grid P-GRADE Portal



Different jobs of a workflow can be executed in different grids

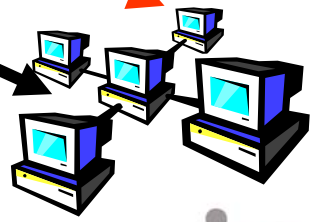
EGEE Grid
e.g. VOCE



P-GRADE-Portal

The portal can be connected to multiple grids

UK NGS

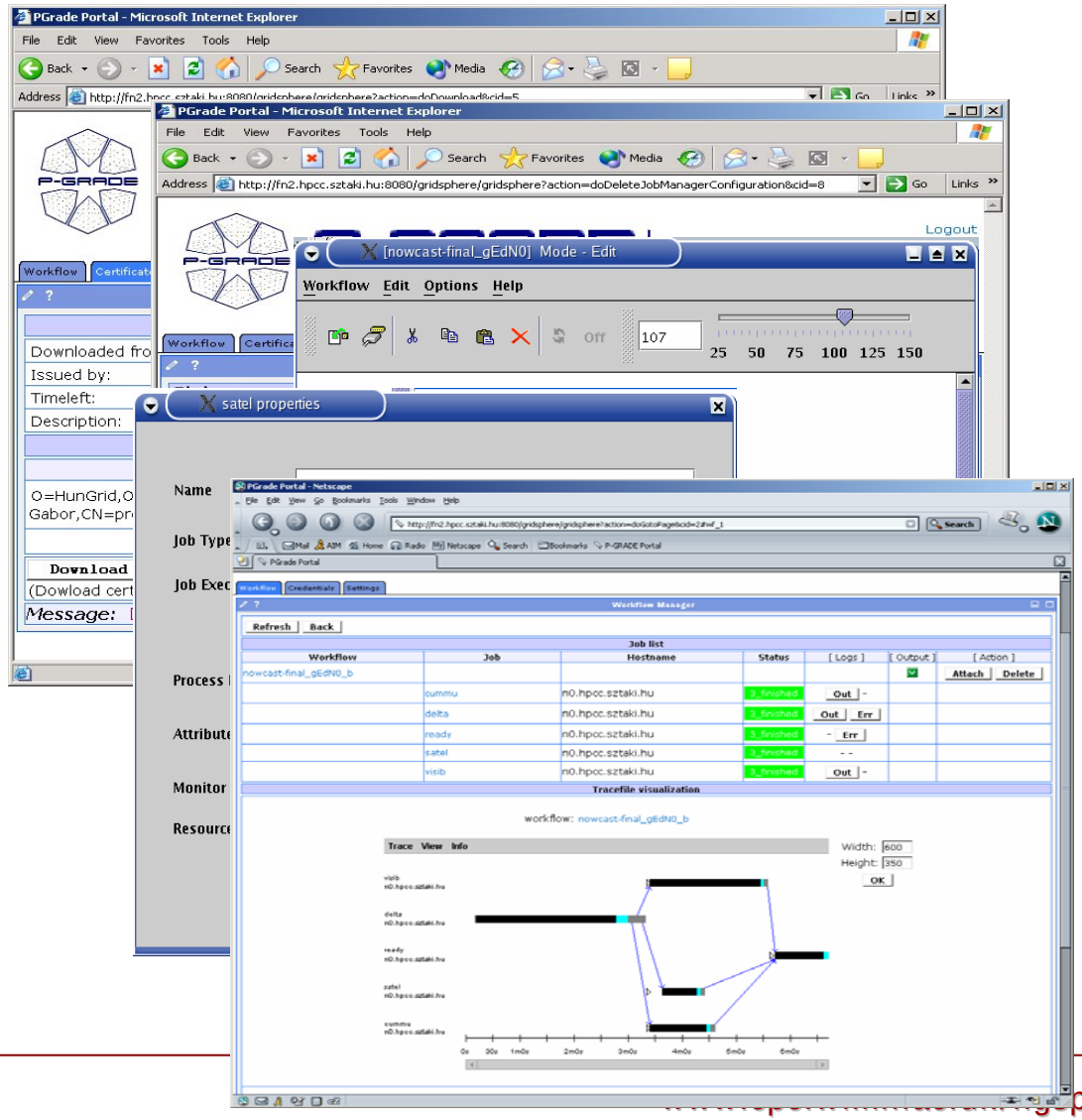


London

Rome

Athens

P-GRADE portal in a nutshell



Proxy management

Grid resources management

Workflow creation

Job mapping to Grid resources

Workflow management and

execution visualization

GEMLCA objectives

- **To deploy legacy code applications as Grid services without reengineering the original code and minimal user effort**

GEMLCA

- **To create Grid workflows where components can also be legacy code applications**
- **To make these functions available from a Grid Portal**

GEMLCA & P-GRADE Portal Integration

GEMLCA repository