VOCE
and P-GRADE for NA3 (and NA4)

Peter Kacsuk, Krisztian Karoczkai, Gabor Hermann, Daniel Drotos, Zoltan Farkas, Adrian Toth, Gergely Sipos, Norbert Podhorszki
MTA SZTAKI

Dan Kouril, Miroslav Ruda, Jan Svec,
Jiri Kosina, Jiri Chudoba, Jan Kmunicek, Ludek Matyska
Masaryk University

www.eu-egee.org

Information Society

Generic EGEE problem

- **Requirements for more user and application development training courses than we can deliver**
- **Lack of t-infrastructures**
- **The (Genius, GILDA) training and application support service in NA3 and NA4 is a bottleneck**
- **Our objective in the CE region is to reduce this bottleneck of EGEE by introducing the (P-GRADE, VOCE) t-infrastructure**
  - first in the CE region
  - and then generally for the whole EGEE community
- **The first good experience: EGEE Grid Summer School, Budapest, July 2005**
  - Large success of training VOCE and P-GRADE (at that time without connecting them)
  - Many students from the SEE-Grid region sponsored by UNESCO

Strategic objectives of VOCE

- **VOCE - Virtual Organization for Central Europe**
- **To create a volunteer Grid**
- **To enable fast joining for Grid newcomers**
- **Generic application portfolio**
  - Support for a wide range of application areas
  - Incubation of new applications
- **Advantageous utilization for training purposes**
  - Functional interface with P-GRADE portal
  - Dedicated resources for a t-infrastructure
- **Better support for users**
  - Application-oriented support
  - Support of individual users and groups

VOCE Status

- **Current status**
  - provides a complete and independent grid infrastructure
  - officially registered as the "Regional VO" for Central European region (see CIC portal)
- **Solutions provided**
  - to interconnect VOCE with **P-GRADE portal**
  - flexible framework - **CHARON system** – is available for applications & job management (see demo on Wednesday)
  - **AFS installation** available for easy integration with local national Grid projects (currently used on Czech farms & UI)
  - **parallel execution support** will be ready in very near future (weeks)

VOCE Status

- **VOCE & specific activities**
  - NA3 & NA4
    - VOCE is an **application generic** virtual organization
    - currently is used for computational chemistry, numerical computations, vizualizations, and astrophysics
    - suitable for training purposes (especially together with the **P-GRADE portal** interface)
  - SA1
    - VOCE can serve as a test case for lighthweight way of setting and running essential grid services in reasonable time
    - utilization for **setting up of new application-centric VOs** (not necessarily in CE region only)
  - JRA1
    - provides feedback for middleware developers especially for IT/CZ cluster

VOCE Status

- **Infrastructure elements overview**
  - elementary infrastructure (WMS, CE, WNs, SE) fully functional and configured to accept users from CE and other regions

UI	skurut4.cesnet.cz
MyProxy	skurut3.cesnet.cz
RB	skurut3.cesnet.cz
VOCE LDAP	meta-ldap.cesnet.cz
VOCE VOMS	odorn.ics.muni.cz (temporary solution for tests)
GENIUS portal	https://skurut4.cesnet.cz/ (uses GILDA MyProxy server)
P-GRADE portal	hgportal.hpcc.sztaki.hu

  - access to UI using GSISSH, UI account is created automatically after registration to VOCE

User concerns of Grid systems

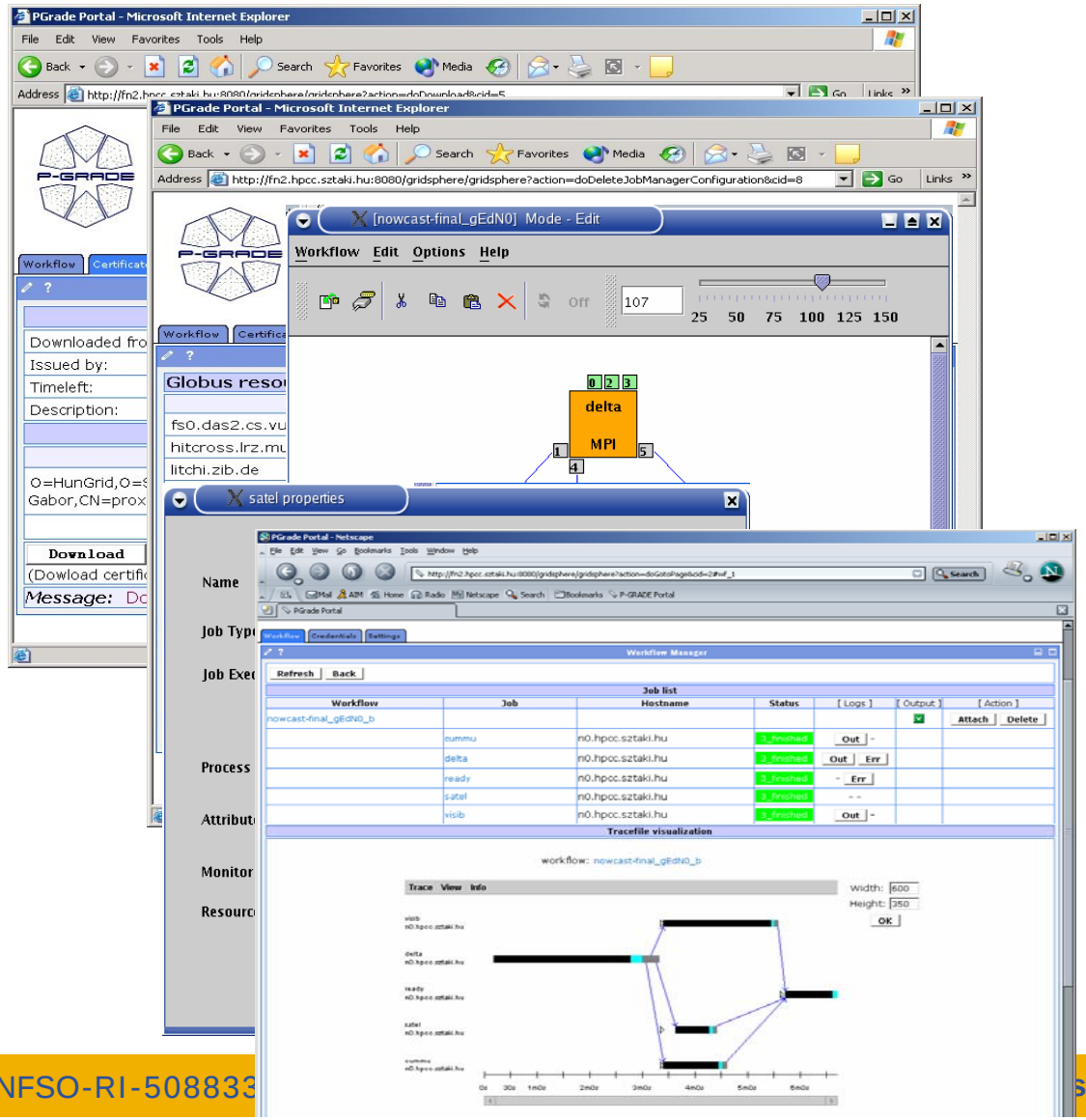
- **How to cope with the variety of these Grid systems?**
- **How to develop/create new Grid applications?**
- **How to execute Grid applications?**
- **How to observe the application execution in the Grid?**
- **How to tackle performance issues?**
- **How to port legacy applications**
  - to Grid systems
  - between Grid systems?
- **How to execute Grid applications over several Grids in a transparent way?**

What does the user want?

- **Fast development of Grid workflow application**
- **Various workflow components:**
  - Sequential code
  - MPI code
  - Legacy code
- **Parallel execution of workflow components in the Grid**
- **Simultaneous execution of workflow components in different Grids**
- **Monitored execution of a workflow in the Grid**
- **To port applications among Grids**

P-GRADE technology could be an answer for the users

P-GRADE portal in a nutshell



Proxy management

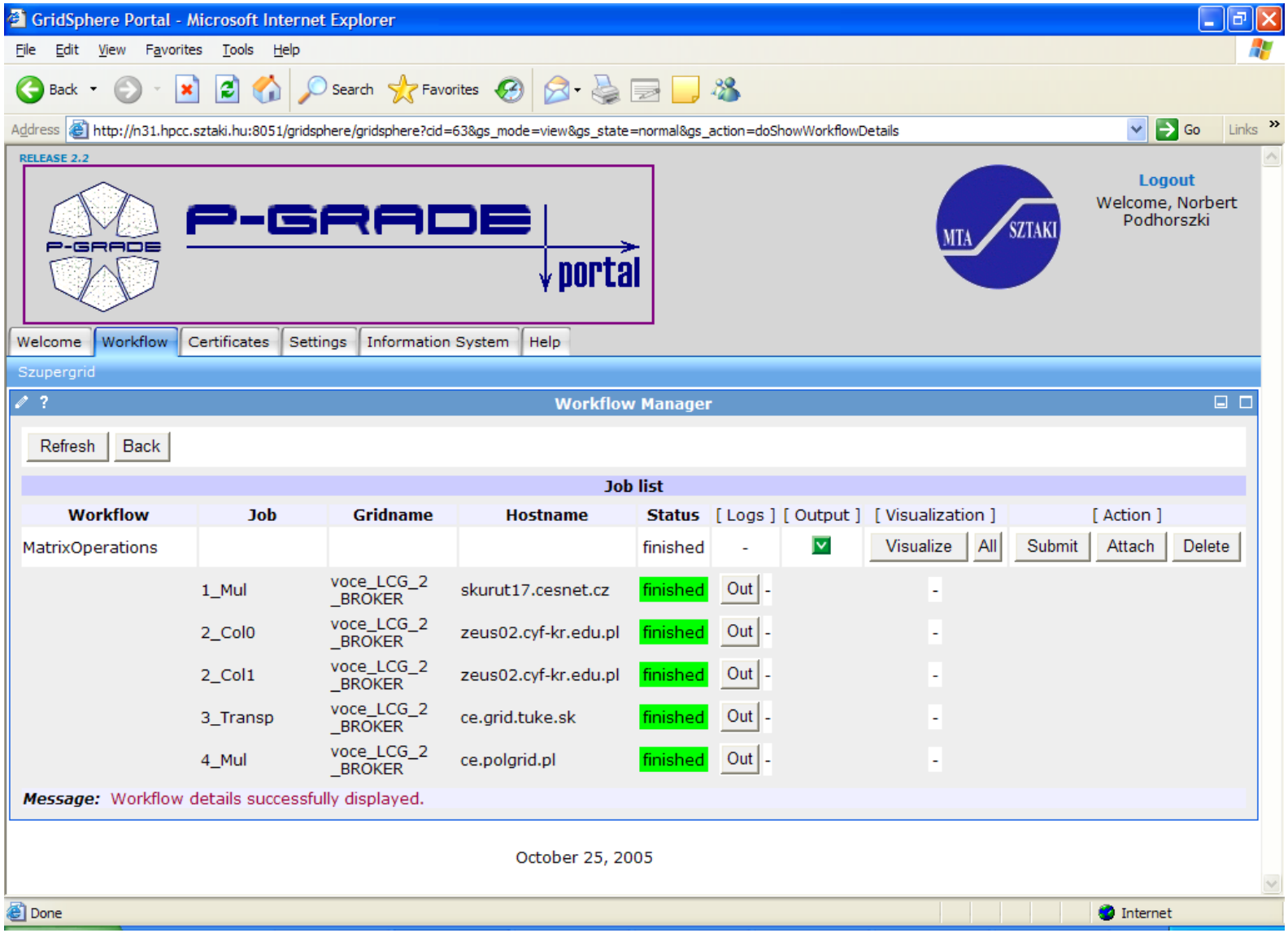
Definition of Grid resources

Workflow creation

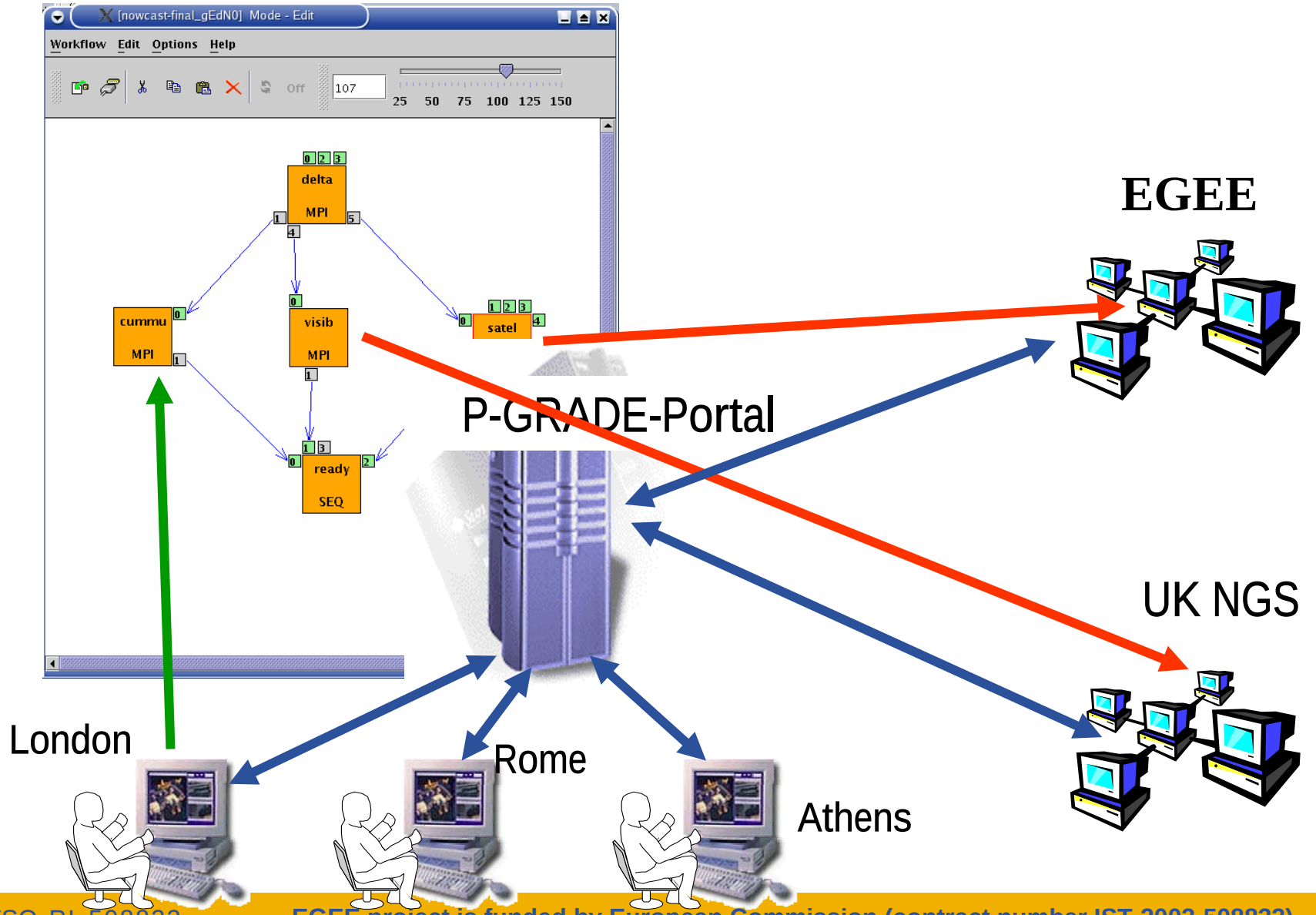
Job mapping to Grid resources

Workflow management and execution visualization

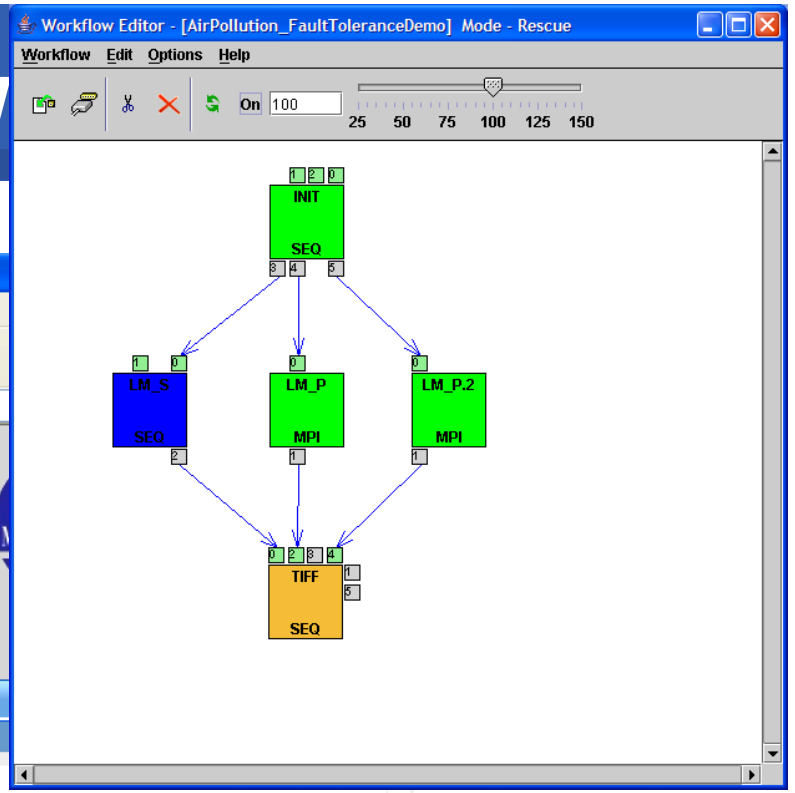
EGEE broker support



Multi-Grid portal



Fault-tolerant w



GridSphere Portal - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites

Address http://hgportal.hpcc.sztaki.hu:9080/gridsphere/gridsphere?cid=63&gs_mode=view&gs_state=normal&gs_action=doGotoPage

RELEASE 2.2

P-GRADE portal

Welcome | Workflow | Certificates | Settings | Information System | Help

Szupergrid

Workflow Manager

Refresh Back

Job list

Workflow	Job	Gridname	Hostname	Status	[Logs]	[Output]	[Visualization]	[Action]
AirPollution_FaultToleranceDemo				rescue	Err	N/A	Visualize All	Rescue Abort Attach
	INIT	seegrid_of_EGEE	ce01.grid.acad.bg	finished	- -		-	
	LM_P	hungrid_of_EGEE	n40.hpcc.sztaki.hu	finished	Out -		-	
	LM_P.2	hungrid_of_EGEE	n40.hpcc.sztaki.hu	finished	Out -		Visualize	
	LM_S	SZTAKI-GRID	n0.hpcc.sztaki.hu	error	Out Err		-	
	TIFF	seegrid_of_EGEE	grid-ce.ii.edu.mk	submitted	- -		-	

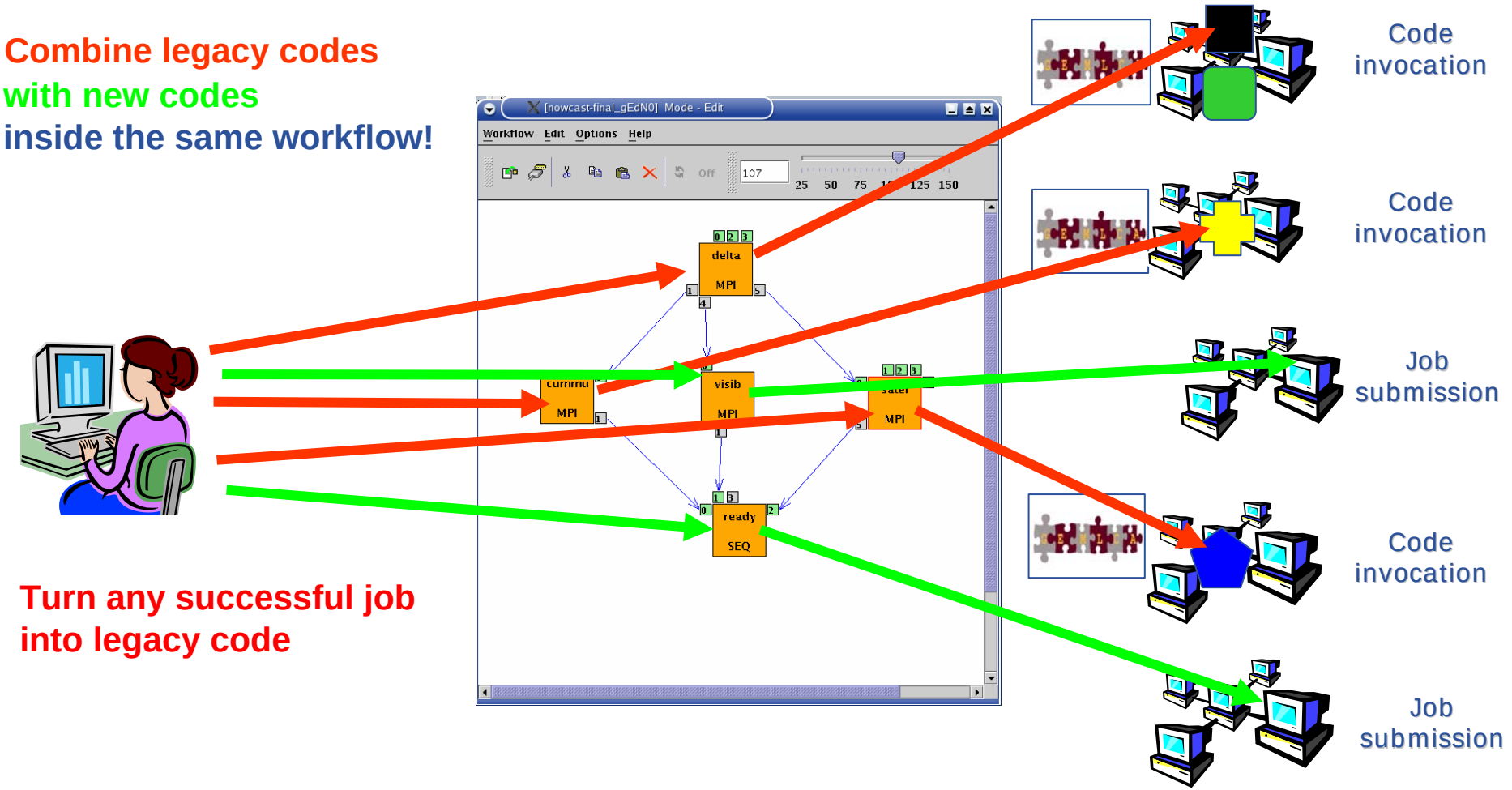
Message: Job list refreshed.

October 24, 2005

Done Internet

Combining legacy and non-legacy components

Combine legacy codes
with new codes
inside the same workflow!



Turn any successful job
into legacy code

P-GRADE Portal: References

- **Access: www.lpds.sztaki.hu/pgportal**
- **Official portal service of**
  - SEE-GRID infrastructure
  - HUNGRID infrastructure
- **P-GRADE portal runs as service for**
  - UK National Grid Service
- **P-GRADE portal is available for**
  - Hungarian ClusterGrid
  - GridLab testbed

Industrial take-up

- **Companies who are interested in commercializing P-GRADE portal:**
  - Compusys (UK)
  - GridWise (Poland)
  - Hungarian Telecom (Hungary)
  - SATYAM (India)

Conclusions

- **Tremendous needs for NA3 to extend training activities**
- **Tremendous needs for NA4 to extend application support activities**
- **With (P-GRADE, VOCE) we can duplicate the services provided by (Genius, GILDA)**
- **Taking P-GRADE from SEEGRID demonstrates a real synergy and collaboration between EGEE and other EU projects**
- **Industrial take-up of P-GRADE demonstrates that Industrial Forum of EGEE can benefit from projects like EGEE and SEEGRID**
- **P-GRADE portal can also support the large data challenge experiments like ATLAS due to its**
  - legacy code support and
  - Multi-Grid support
- **Live demonstration of (P-GRADE, VOCE) during the afternoon demo**