

EDGeS

EDGeS Bridge technology to interconnect EGEE and BOINC grids

Peter Kacsuk
kacsuk@sztaki.hu
MTA SZTAKI

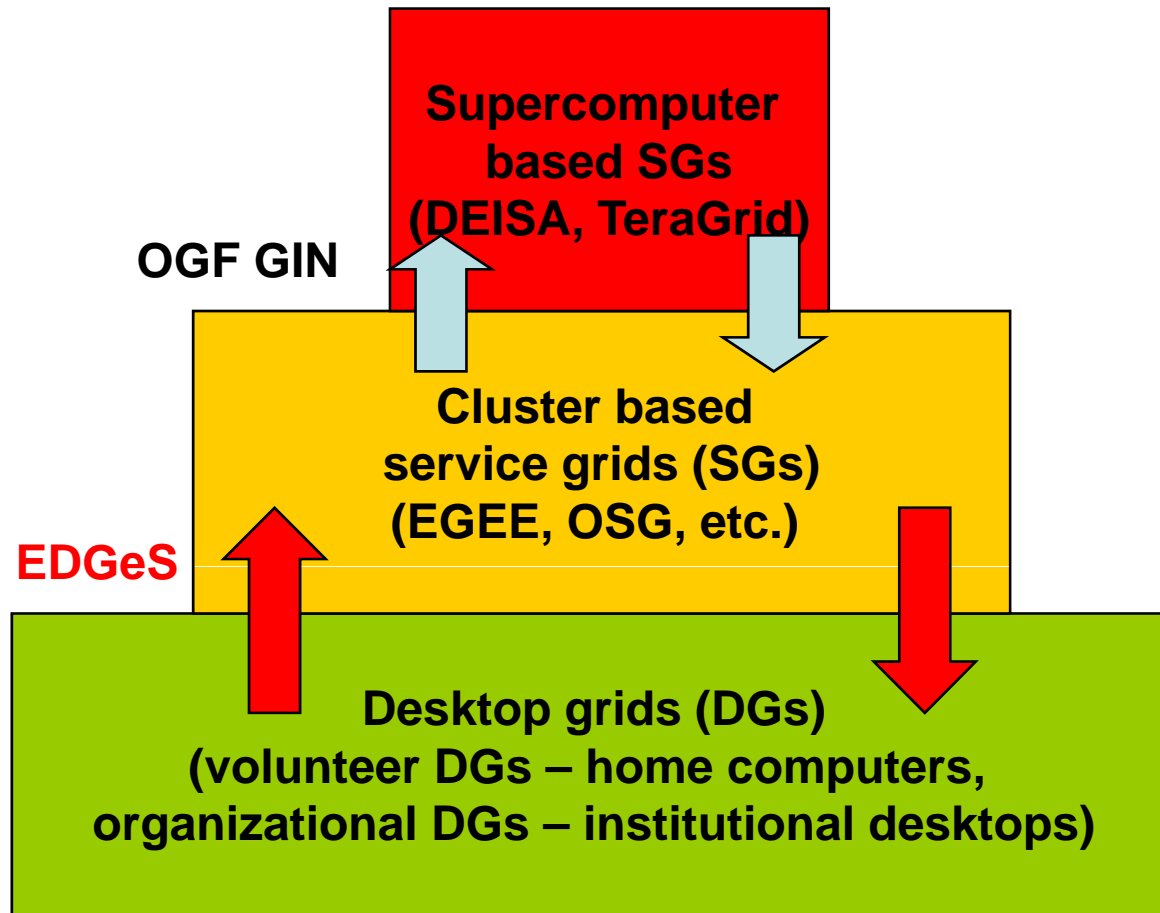


The EDGeS project receives Community research funding





The problem we address



- Very expensive,
- small number of sites and large number of CPUs
- MPI apps
- Moderately expensive,
- moderate number of sites and CPUs
- any apps
- Inexpensive,
- very large number of CPUs (~100K – 1M)
- Bag of task apps



What is EDGeS?

EDGeS: Enabling Desktop Grids for e-Science

1. EDGeS is a 2-year FP7 project started on the 1st of January 2008
 - Research on integrating (bridging) SGs and DGs
 - Creates infrastructure
 - Provides services
2. EDGeS is an infrastructure
 - EDGeS VO interconnected with various DGs
 - Application repository
3. EDGeS is a service for
 - Application porting and validation

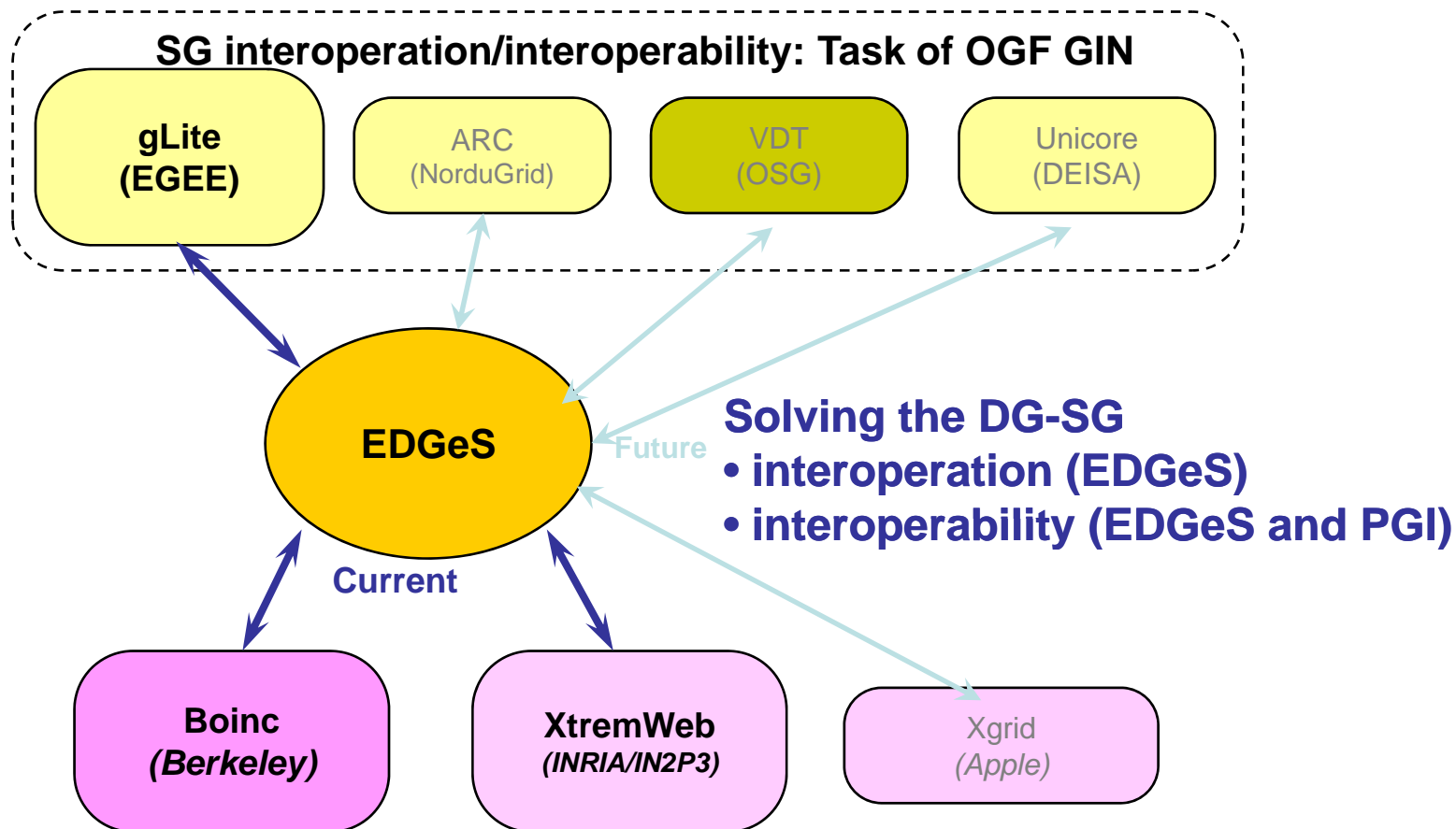


Project partners

Partic. No.	Participant name	Participant short name	Country
1	Computer and Automation Research Institute of the Hungarian Academy of Sciences	MTA SZTAKI	Hungary
2	Centro de Investigaciones Energéticas Medio Ambientales y Tecnológicas	CIEMAT	Spain
3	Foundation for the Development of Science and Technology in Extremadura	Fundecyt	Spain
4	The French National Institute for Research in Computer Science and Control	INRIA	France
5	University of Westminster	UoW	UK
6	Cardiff University	CU	UK
7	Faculty of Sciences and Technology of the University of Coimbra	FCTUC	Portugal
8	Stichting AlmereGrid	AlmereGrid	The Netherlands
9	Centre National de la Recherche Scientifique - Institut National de Physique Nucleaire et de Physique des Hautes Energies	IN2P3	France

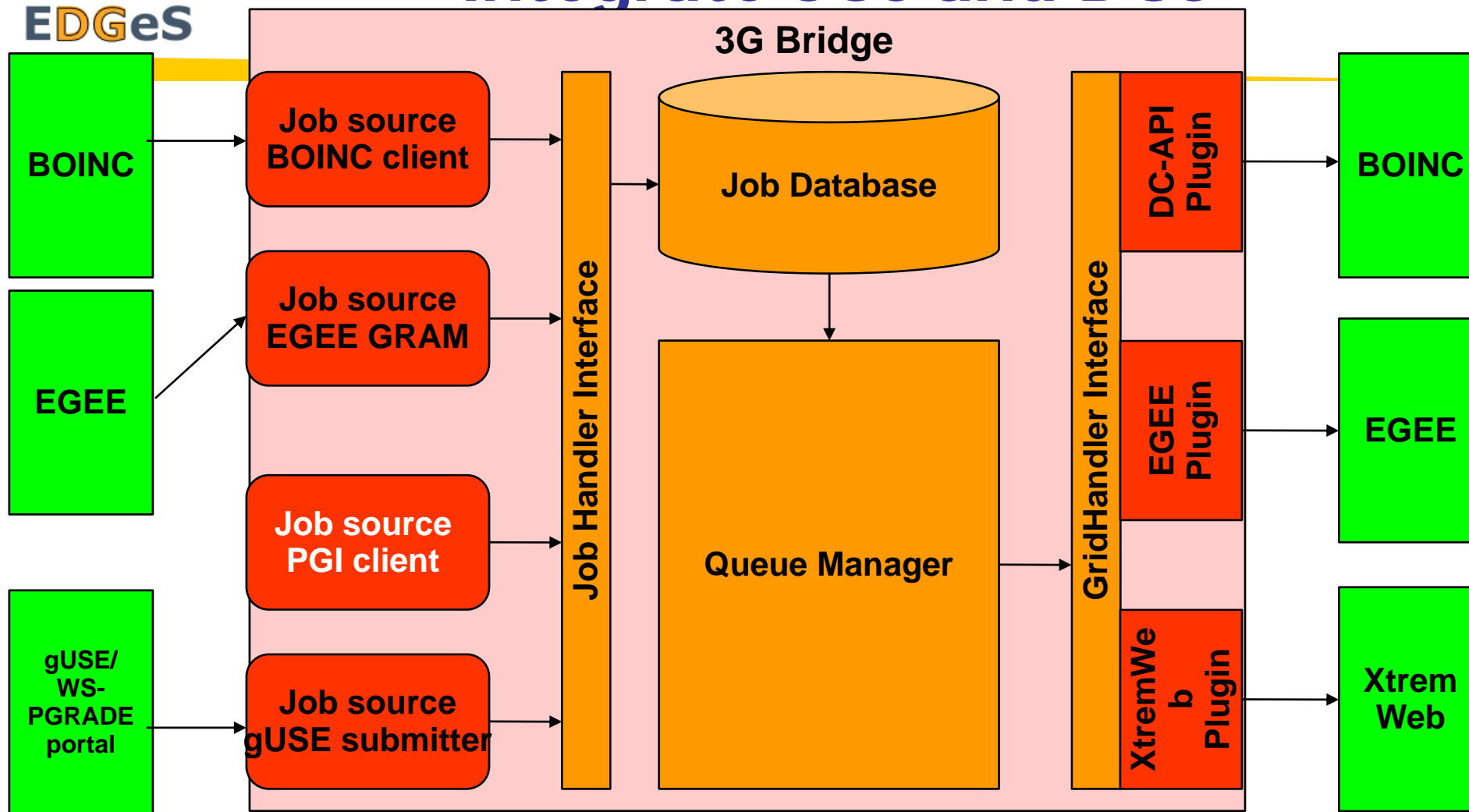


Integration of SG and DG systems



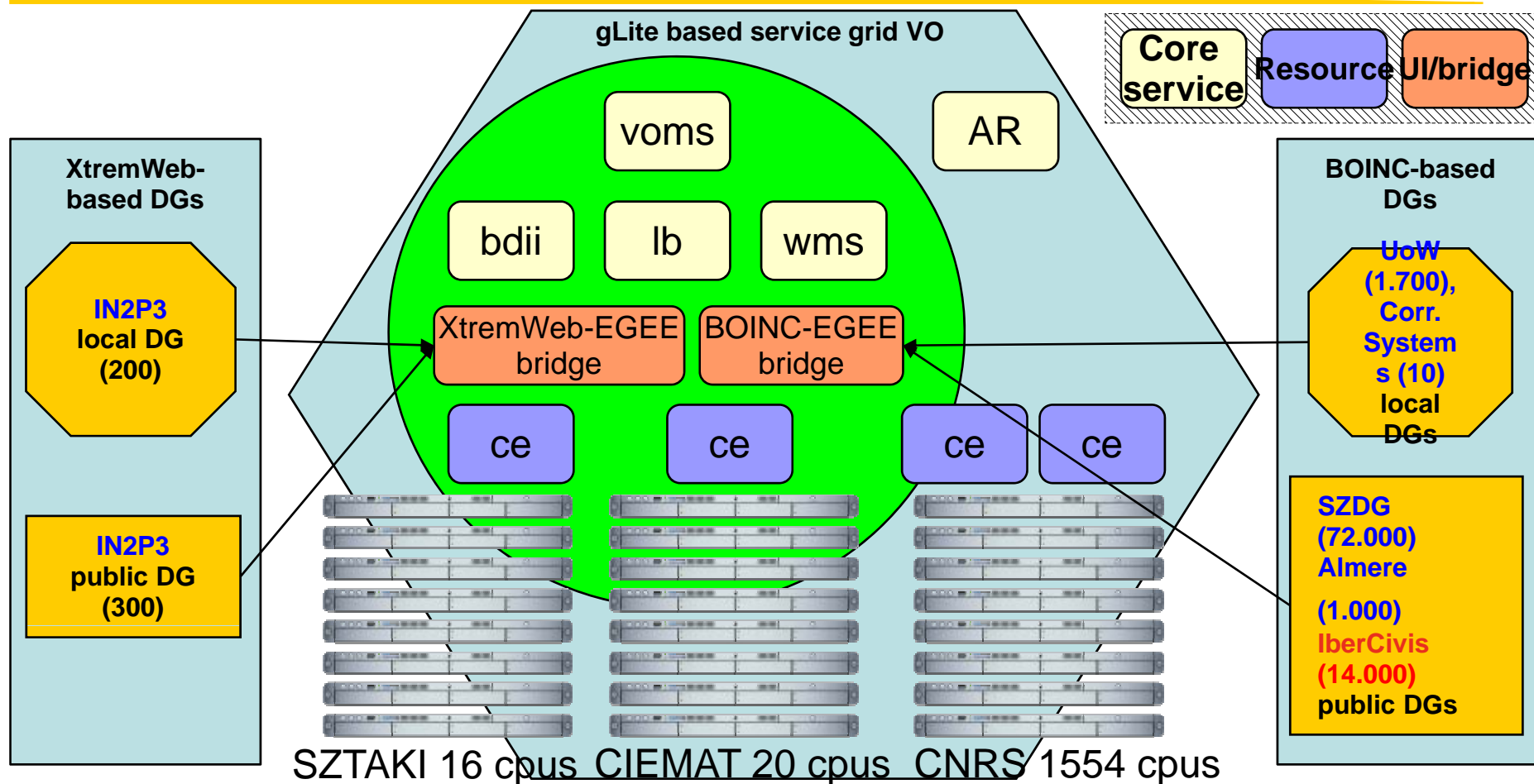


Generic Grid-Grid (3G) Bridge to integrate SGs and DGs



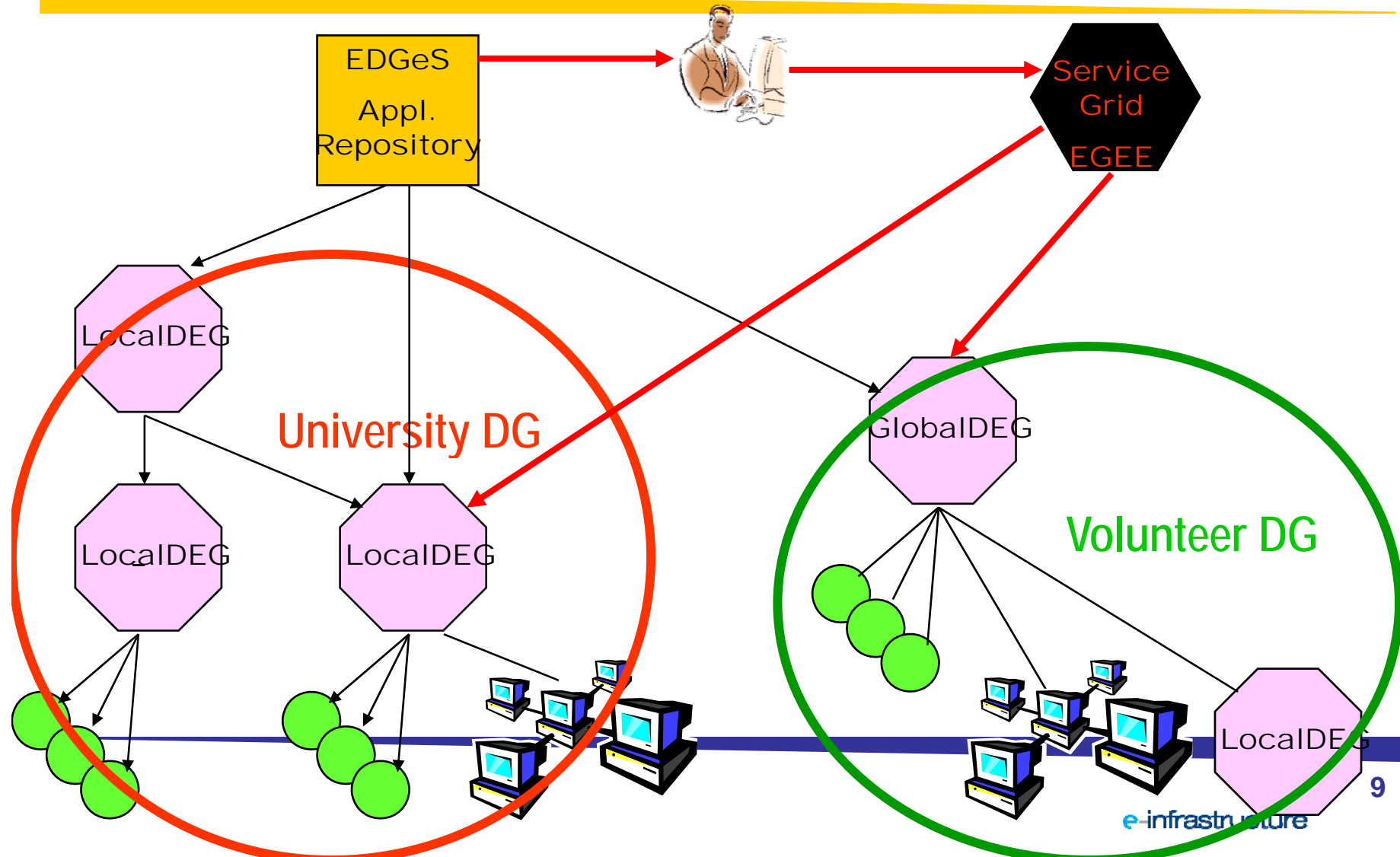


Production DG-EGEE Infrastructure



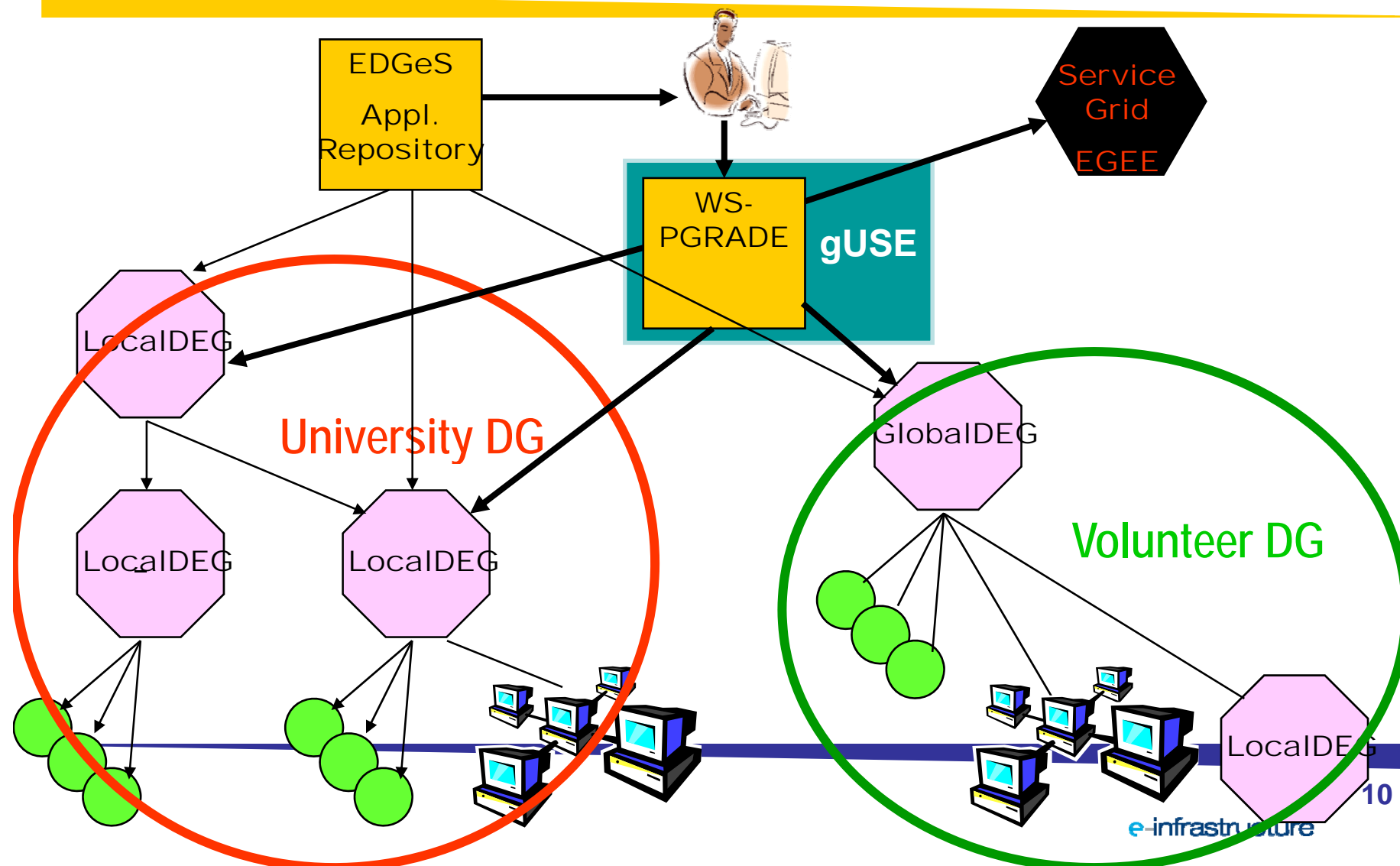


EGEE User access to various grids



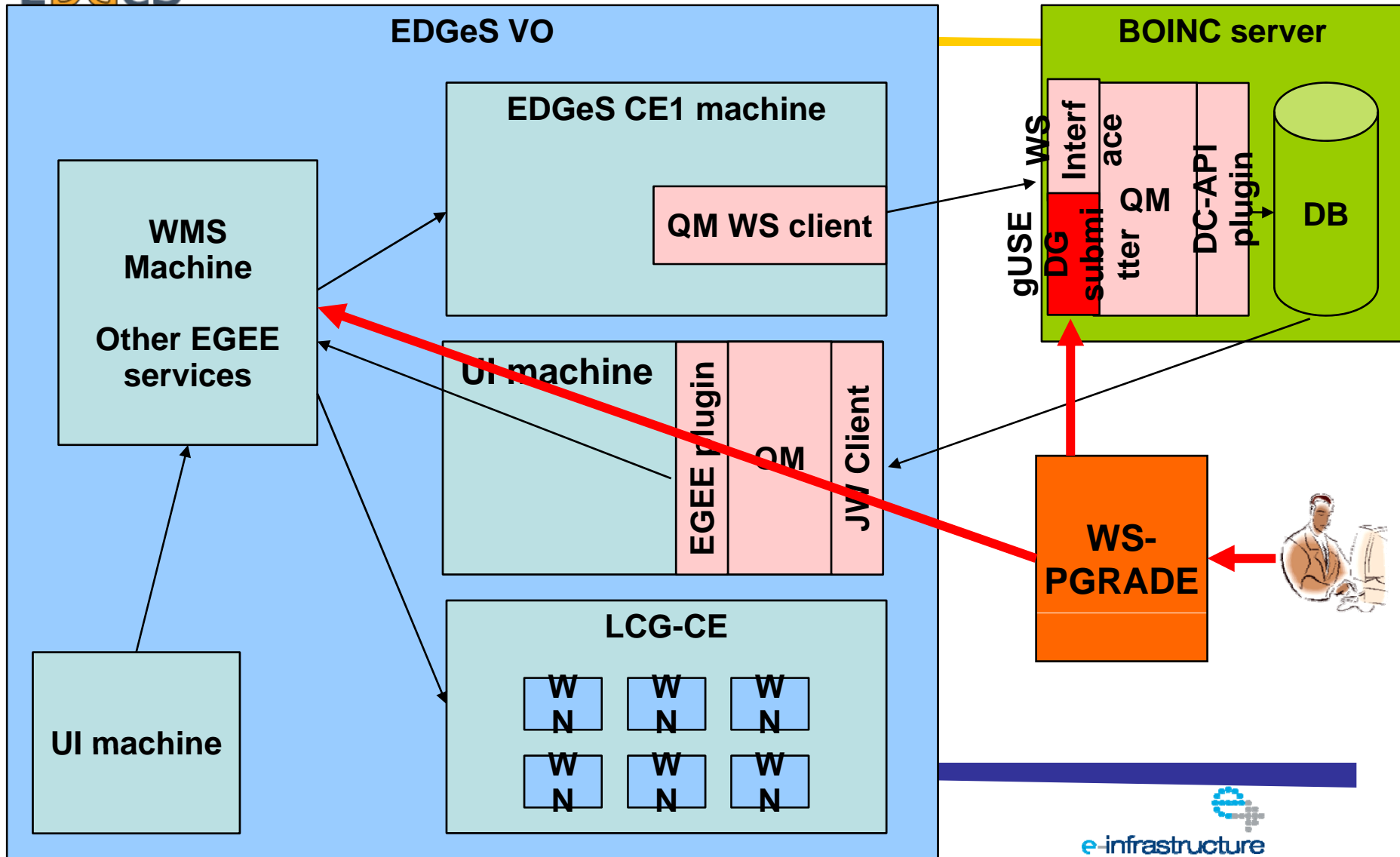


User access to various grids





Accessing EDGeS by WS-PGRADE portal





Applications ported by EDGeS

Application	Organisation	Runs on Desktop Grid	Runs on EGEE (EDGes VO)
Video Stream Analysis in a Grid Environment (VISAGE)	Correlation Systems Ltd - Israel	✓	✓
Digital Alias-free Signal Processing	University of Westminster	✓	✓
Protein Molecule Simulation using Autodock	University of Westminster	✓	✓
E-Marketplace Model Integrated with Logistics (EMMIL)	SZTAKI	✓	✓



Applications ported by EDGeS

Application	Organisation	Runs on Desktop Grid	Runs on EGEE (EDGes VO)
Anti-cancer Drug Design (CancerGrid)	SZTAKI	✓	✓
Cellular Automata based Laser Dynamics (CALD)	University of Seville and University of Westminster	✓	✓
Signal and Image Processing using GT4 Tray	Forschungszentrum Karlsruhe	✓	
Analysis of Genotype Data (Plink)	Atos Origin	✓	



Applications ported by EDGeS

Application	Organisation	Runs on Desktop Grid	Runs on EGEE (EDGes VO)
Distributed Audio Retrieval using TRIANA (DART)	Cardiff University	✓	✓
Fusion Plasma Application (ISDEP)	BIFI	✓	
3-D Video Rendering using Blender	University of Westminster	✓	
Profiling Hospitals in the UK based on Patient Readmission Statistics	University of Westminster	✓	



NA1: MoUs with other projects

- ▶ Signed MoU with EGEE III
 - ▶ Jointly select EGEE applications that should be migrated to EDGeS
 - ▶ Collaboration in porting these apps to EDGeS
 - ▶ EGEE support for the establishment and operation of the EDGeS VO
 - ▶ Organizing joint events (summer school, user forum meetings)
- ▶ Signed MoU with EELA-2
- ▶ Prepared MoUs with
 - ▶ IberCivis DG
 - ▶ SEE-GRID-SCI
 - ▶ Univ. of Houston (Virtual Prairie DG)





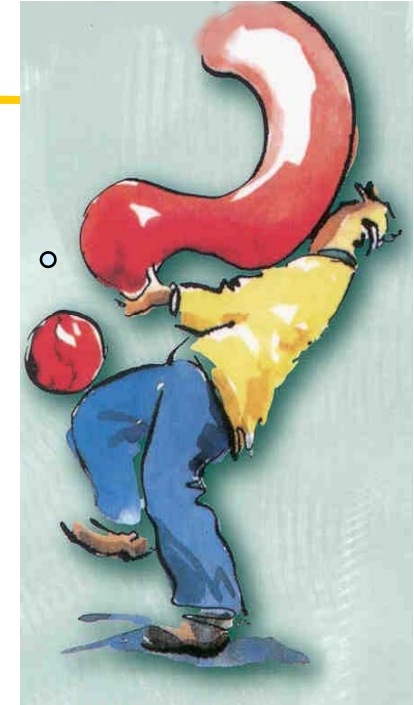
Summary

- EDGeS connects
 - BOINC or XtremWeb DGs
 - and gLite based SGs
- **EDGeS is an open infrastructure:**
 - Any BOINC or XtremWeb DG can join
 - Any gLite based SG can join
- **Any EGEE user can access EDGeS**
- Any EGEE VO can be extended with DGs based on EDGeS bridge technology
- EDGeS helps any EGEE user community in porting their applications into EDGeS



Thank you for your attention ...

Any
questions?



For more information please visit the EDGeS Website:

Join the EDGeS User & Industry Forum here!

<http://www.edges-grid.eu/>

Please contact us if you need support in porting your application to EDGeS!

Email: kacsuk@sztaki.hu