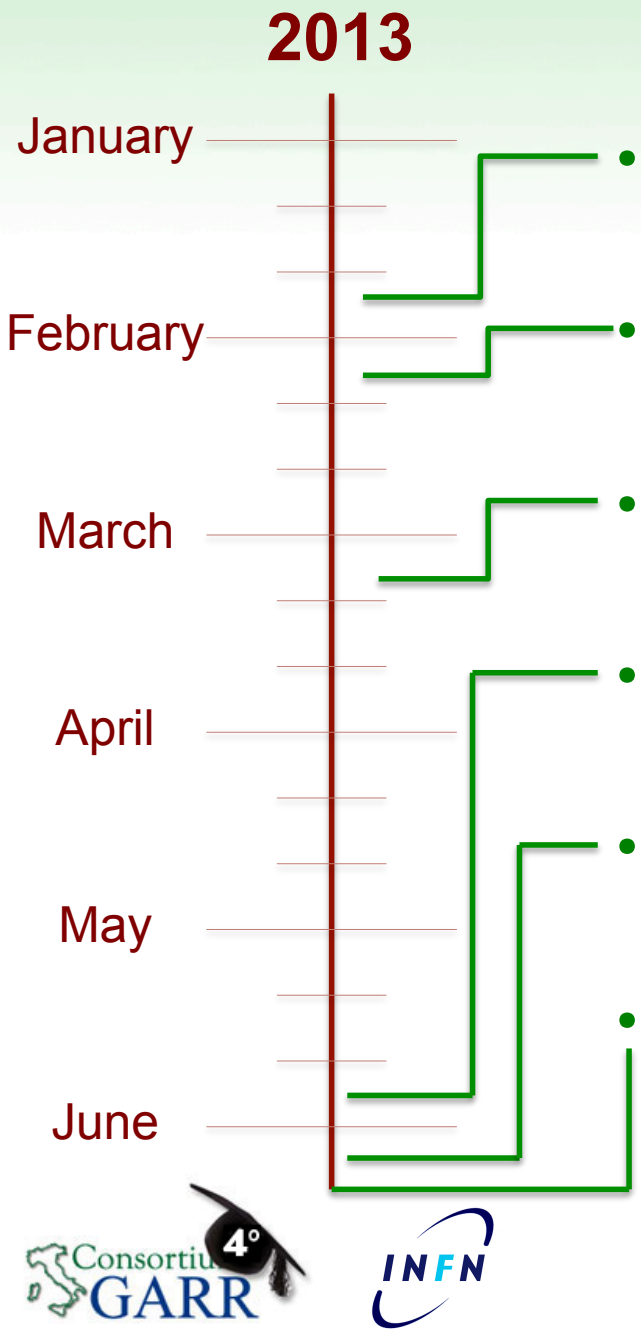
GARR Science Gateway

Esempio di utilizzo di un framework per la creazione di portali web 2.0.

4° Borsisti Day *– 13/09/2013*

Timeline



- Liferay version upgarde from 6.0.6 to 6.1.1
- Migration of SG's services to GARR (garr-sg.ct.infn.it → sgw.garr.it)
- GARR SG becomes a SP of IDEM and EDUGAIN Federations
- Two new applications available on the SG
- Tutorial on Science Gateways: using and developing applications
- Designing and implementing e-Infrastructure & Data Service

GARR Science Gateway services

GrIDP Federation
http://gridp.garr.it

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http://gridp.garr.it

Social Netowrks Bridge
http://idpsocial.garr.it

GARR Science Gateway
http://sgw.garr.it

eTokenServer
http://sg-etoken.garr.it

MySQL server

GrIDP & IDPOPEN

New more intuitive interface

Logout from Shibboleth

Increasing the number of applications: iort_therapy

IBFM
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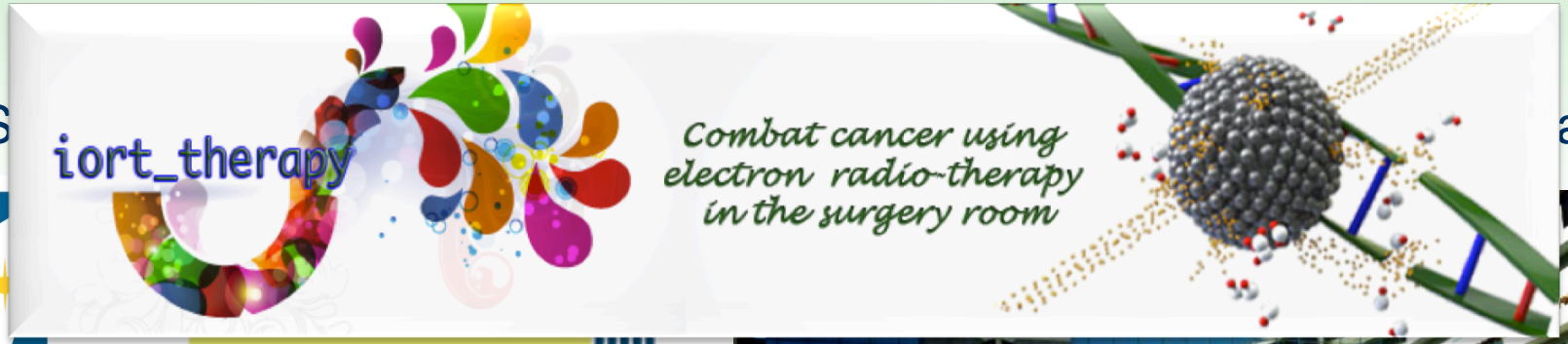
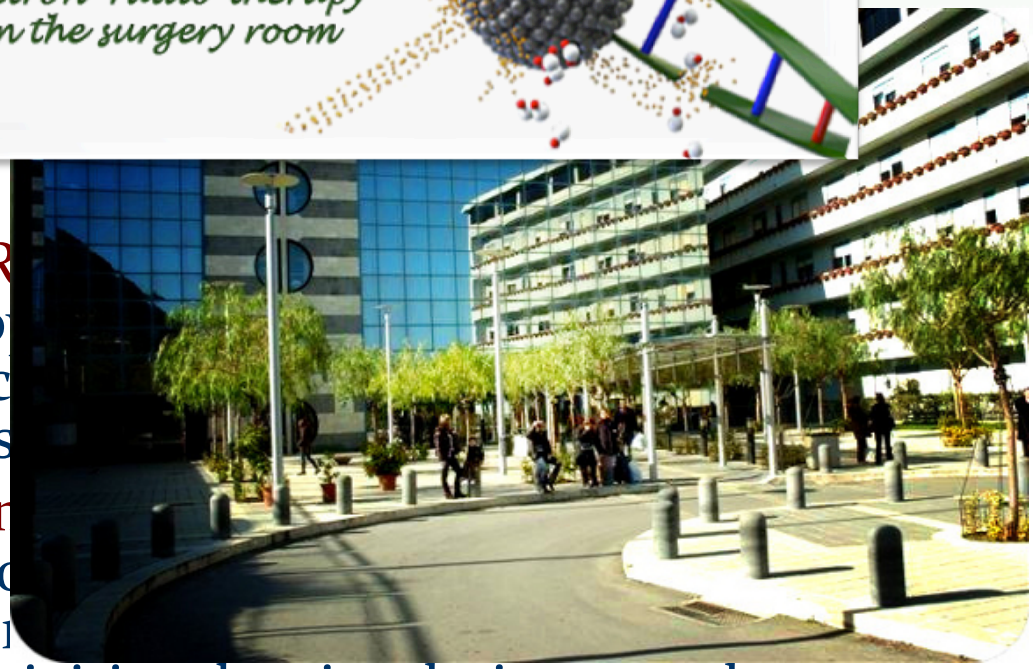


CEFALU'

Fondazione Istituto San Raffaele
G. Giglio di Cefalù



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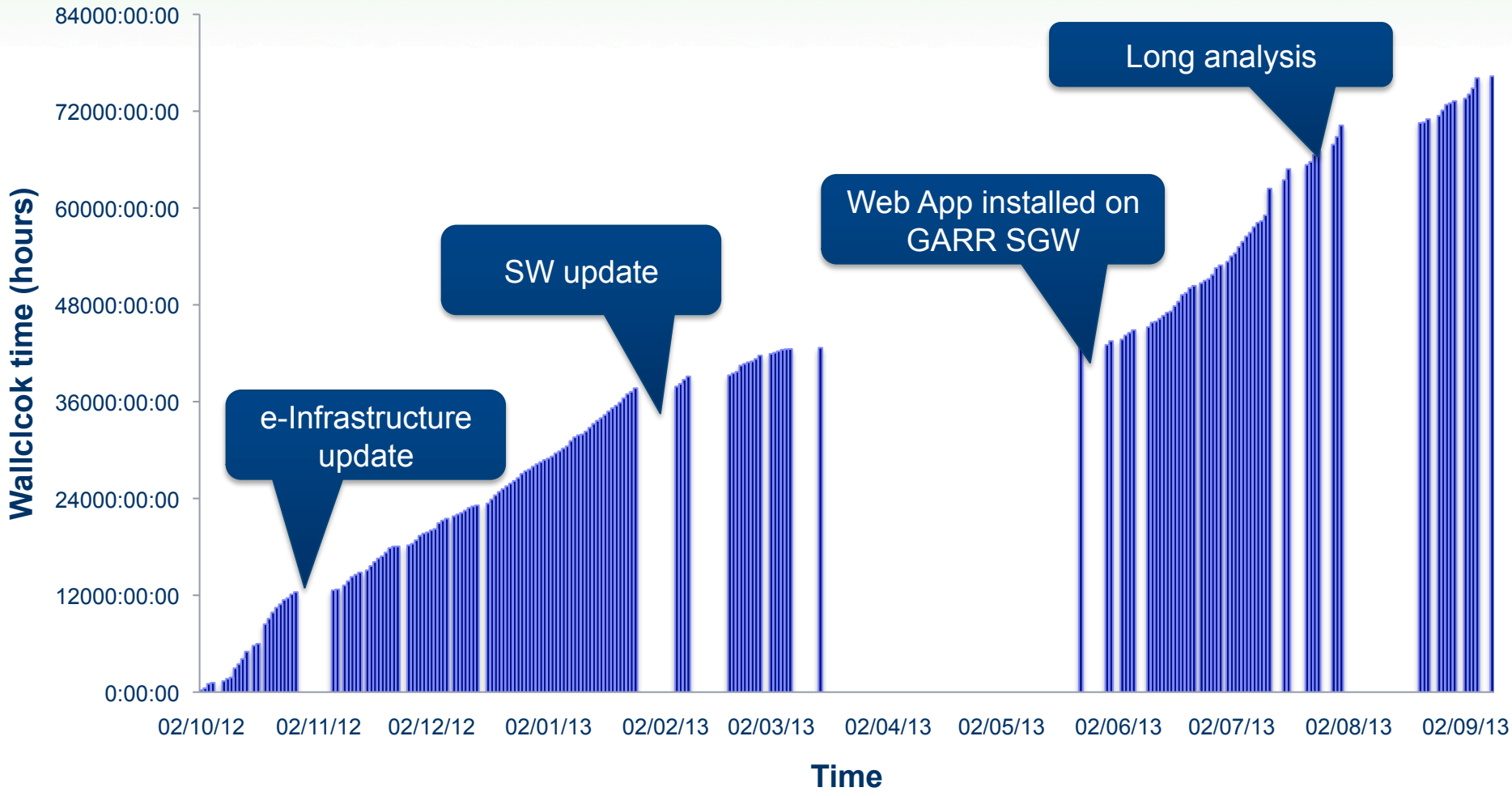
advanced radiation therap
treatment of tumors, direc
the removing of tumor tiss

- The use of Monte Carlo sir
design the beam collimatic
radioprotection characther
leakages. In the clinical activities the simulations can be used to commissioning of the linac and in the optimization of the therapeutic dose and patient radioprotection.

Wallclock Time used **> 76.000 h**
Jobs submitted **> 11.000**
Raw data produced **≅ 140 GB**

Iort_therapy statistics

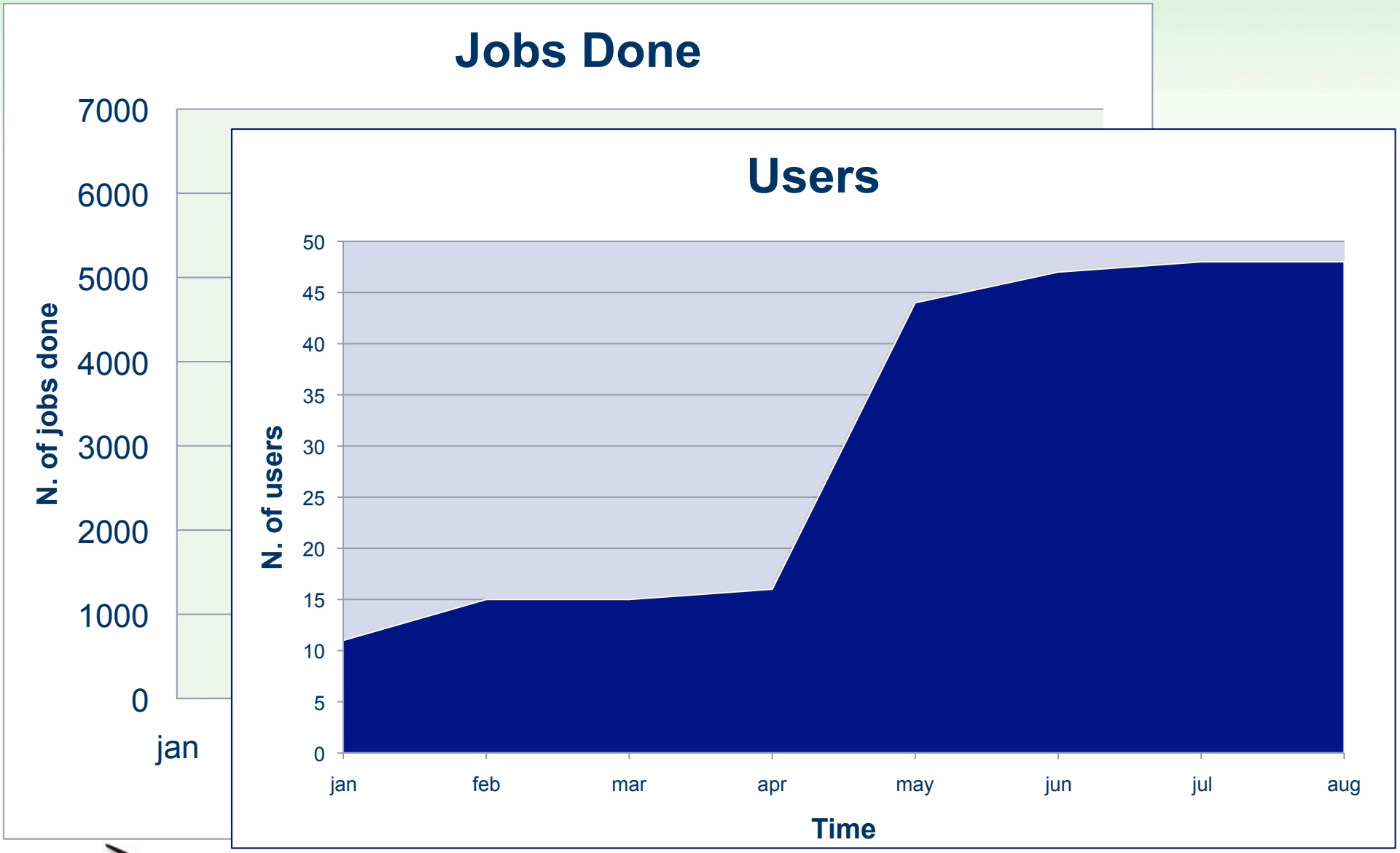
Wallclock time in the selected period



Increasing the number of applications: FRATT

- The application simulates the FRATT (FRAgmentation in Thick Targets) experimental setup performed at LNS-INFN. The simulation reproduces the fragmentation of carbon ions in tissue equivalent targets (i.e. bone, lung and muscle). When the simulation has finished, a comparison between experimental and simulated data is also provided.

GARR Science Gateway: Global Statistics



Tutorial on GARR Science Gateway

- Events addressing two different kind of users: generic user and developer.
- Slides and material containing examples offered to participants.
- Use case and different scenario presented.
- 9 people from GARR staffs attended the 4 days event.
- All material, including video recorded session, is available on GARR Indico.

e-Infrastructure & Data Service

- Data Engine architecture has been redesigned in order to act as a Service instead of working as single standalone application.
- Modular attachable resources available to the SG thanks to the straight coupled service that allows read/write data from several e-Infrastructures.

e-Infrastructure Service

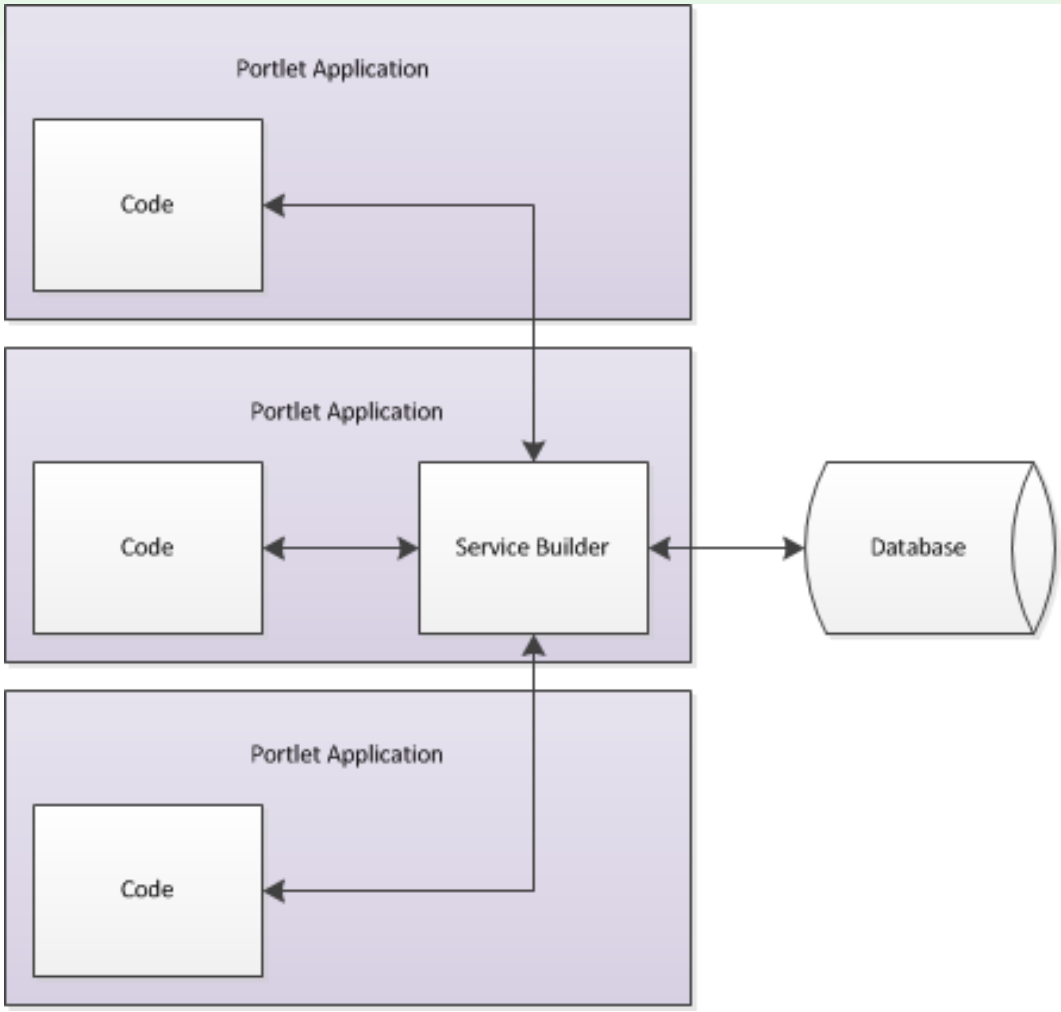
- Four different kind of e-Infrastructure identified:
  - Local
  - Remote
  - Grid
  - Cloud
- Possibility of defining different Policy and Quota according e-infrastructures/users availability/needs
- Default and favorite e-Infrastructures selectable
- Disaster recovery and (cross) file replica.

Data Services

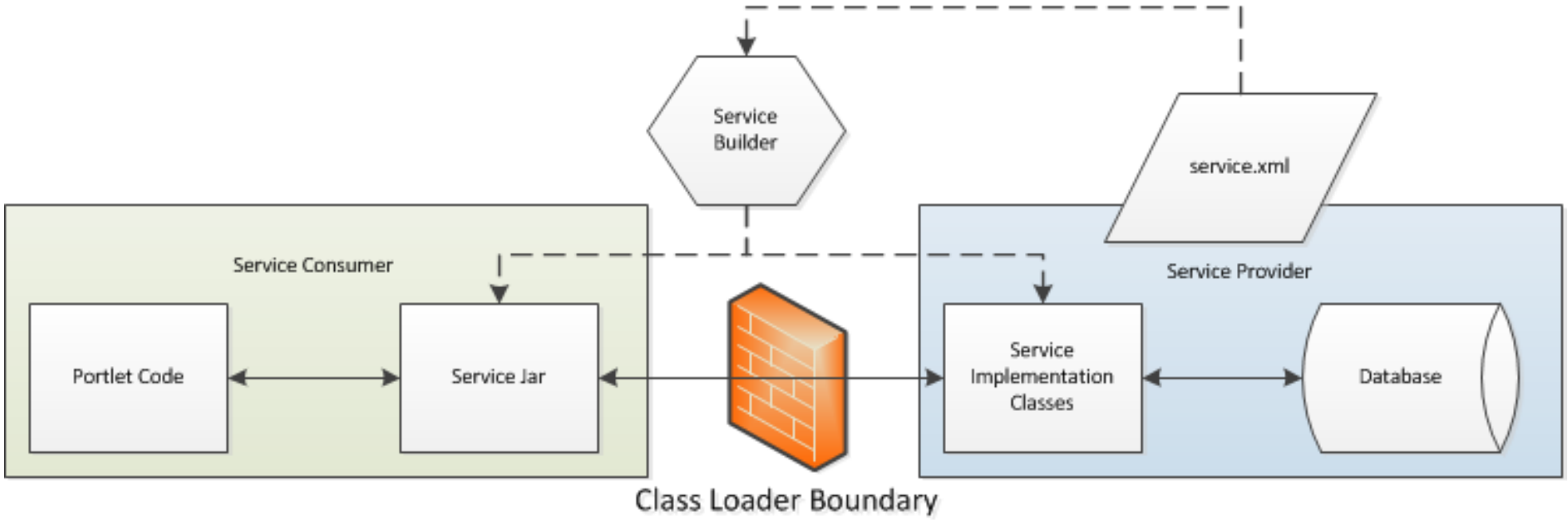
- Business logic related to file management totally independent from the underneath technology
- All the common features associated to file provided: create, copy, delete, move and sharing.

The Service Builder Solution

Service Builder provides a single point to share code (DB access and business logic) to independent portlets, resolving the caching, resource, and synchronization issues.



Service Builder Architecture Overview



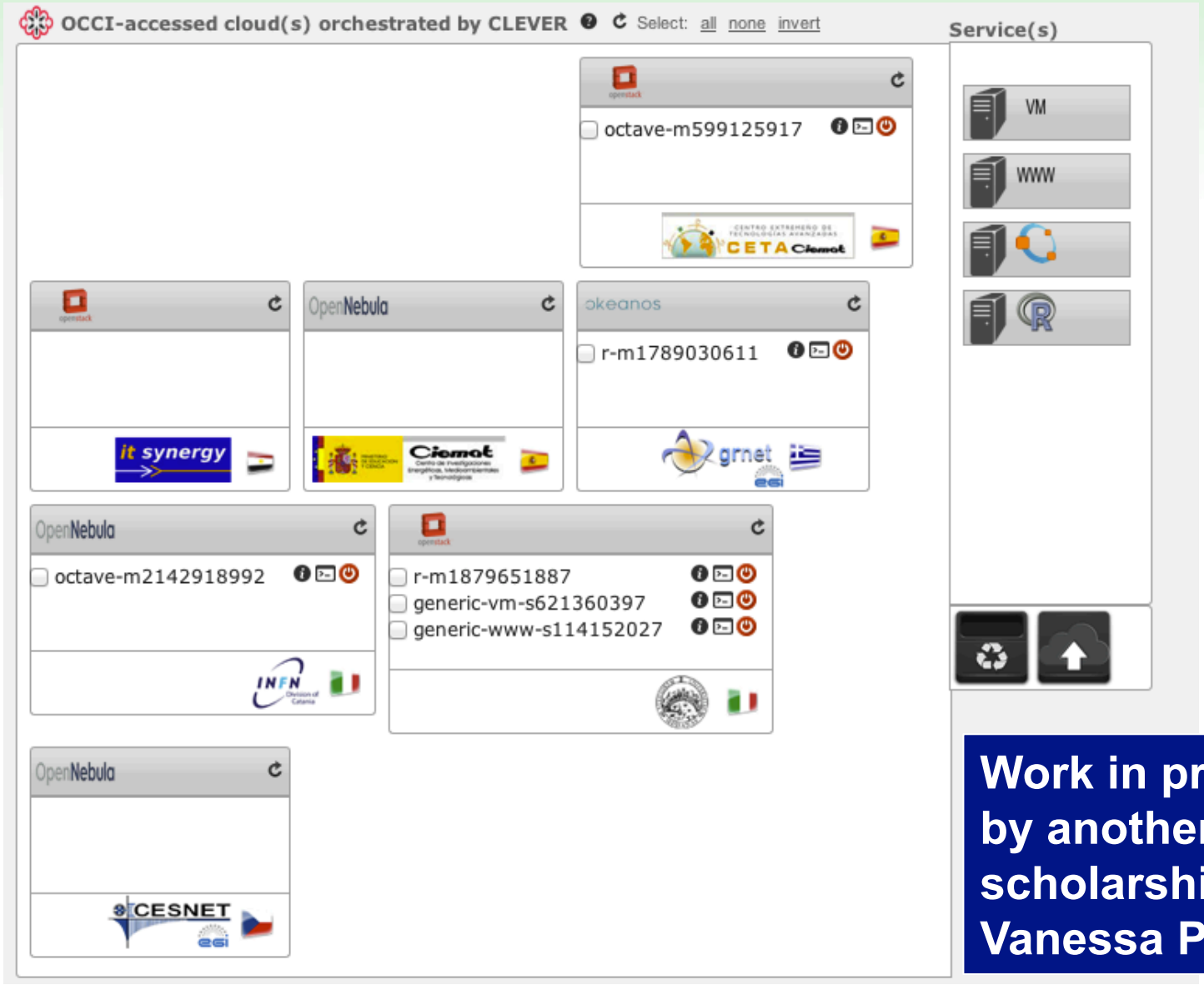
e-Infrastructure Service status

Features	Status
Local e-Infrastructure Management	Complete
Grid e-Infrastructure Management	In progress
Remote e-Infrastructure Management	TO DO
Cloud e-Infrastructure Management	TO DO
Quota	TO DO
Policy	TO DO
Replica	TO DO

Data Service status

Features	Status
Add File	Complete
Remove File	Complete
Copy File	In progress
Add Folder	Complete
Remove Folder	In progress
File Sharing	TO DO
API to support remote management	TO DO
Web Interface	In progress

My Cloud (cloud interoperability based on OCCI Standard



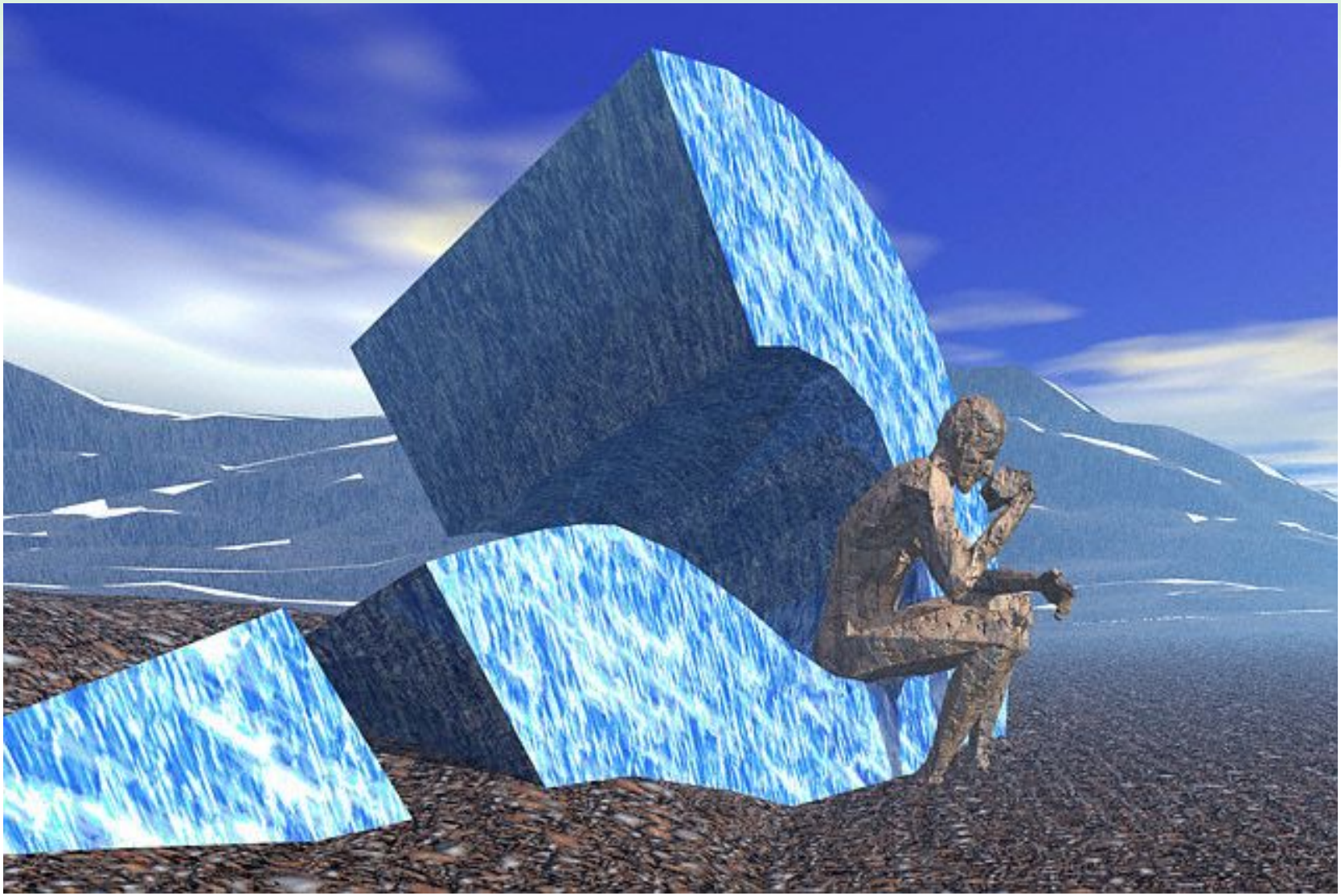
Work in progress by another GARR scholarship: Vanessa Privitera

Future Works

- In about a month GARR Science Gateway users will be able to store files in two different e-Infrastructures.
- Evaluating the possibility of an integration between the Data Service and GARRBOX
- Data produced on grid or other e-Infrastructures will be available directly on the SG **(strongly requested by the supported communitie)**

References & Acknowledgments

- GARR Science Gateway: https://sgw.garr.it
- GrIDP Federation: http://gridp.garr.it
- IDPOPEN: https://idpopen.garr.it
- Social Netowrks Bridge: https://idpsocial.garr.it
- Tutorial on Science Gateways: using and developing applications: http://agenda.garr.it/event/SG-AppDev-20130603
- IORT_Therapy works: I Fazio t al. (2012). DOSE DISTRIBUTION CHANGES WITH SHIELDING DISC MISALIGNMENTS AND WRONG ORIENTATIONS IN BREAST IOERT: A MONTE CARLO – GEANT4 STUDY. In: ISIORT 7th International Conference of the International Society for Intraoperative Radiation Therapy (ISIORT). Baveno, Italy, June 22-24, 2012
- C. Casarino et al. "A GEANT4 Web-based Application to Support Intra-Operative Electron Radio-Therapy using the European Grid Infrastructure", Proceedings of the 5th International Workshop on Science Gateways, CEUR Workshop Proceedings, ISSN 1613-0073, http://ceur-ws.org/Vol-993/
- C. Casarino et al. "A GEANT4 Web-based Application to Support Intra-Operative Electron Radio-Therapy using the European Grid Infrastructure", Concurrency and Computation: Practice and Experience, in preparation

- R. Barbera, supervisor of the project.
- Special thanks to M. Fargetta for the support in the e-Infrastructure Service

Questions ?