eHealth

# VIROLAB

Information Society Technologies

*A virtual laboratory for decision support in viral disease treatment*

# GridSpace Engine

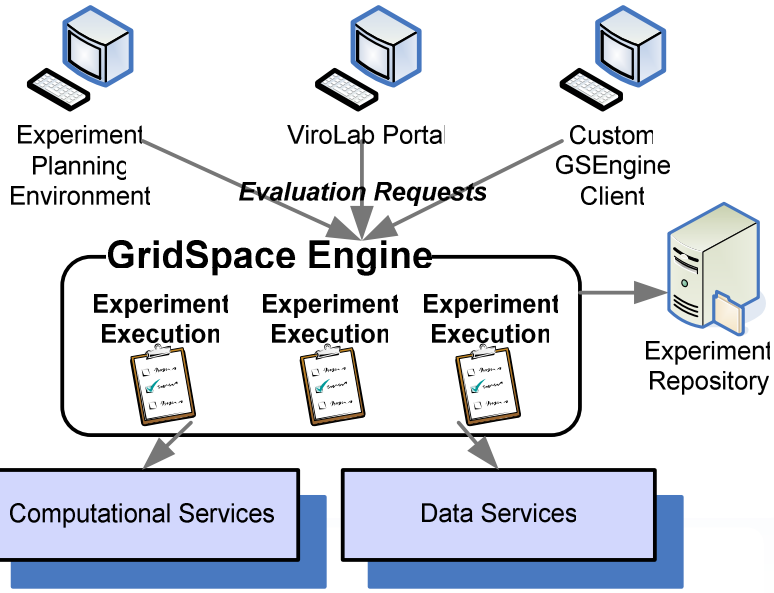
http://virolab.cyfronet.pl

## 1. Objectives

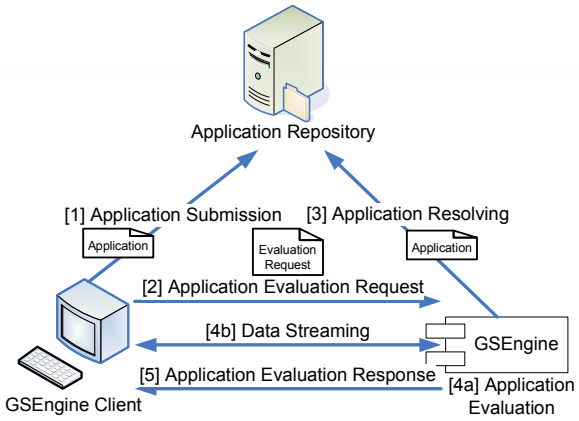
- **To provide the engine for experiment execution in virtual laboratory**
- **To cover Grid fabric complexity by a convenient and uniform way of experiment launching**

## 2. Virtual laboratory user perspective

- Entry point to Virtual Laboratory for experiment executors and users of other specific services
- Environment that enables access to computation and data sources
- Integrated with **Experiment Repository**
- Specialized tools of **Experiment Planning Environment IDE** and Experiment Management Interface portlet of **ViroLab Portal** built upon it




## 3. Usage scenario



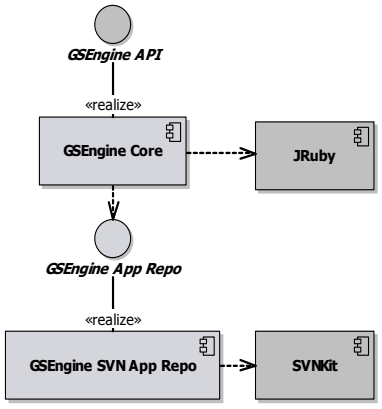

### Evaluation request

- Configuration of the runtime environment (e.g. Grid Resource Registry, GridSpace Application Optimizer configuration, policies to apply, user context etc.)
- Information needed in order to extract experiment plan from arbitrary location (e.g. Experiment Repository)

## 4. Runtime environment perspective

- **Grid Operation Invoker** enabling access to Grid fabric
- **Data Access Client** enabling access to distributed data sources
- Session management of the experiment execution
- The scope of the **user context** (e.g. security credentials) as well as **experiment execution context** (e.g. experiment correlation identifier)
- Monitoring of the course of experiment

## 5. Architecture




- **Core** – evaluator based on Java implementation of Ruby interpreter (JRuby)
- **Extractors** that get remotely staged experiments plans
- **AppRepo** – generic repository of GScript application code
- Subversion (SVN)-based **Experiment Repository client** which implements AppRepo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**References**

(1) Peter M.A. Sloot, Ilkay Altintas, Marian Bubak, Charles A. Boucher: "From Molecule to Man: Decision Support in Individualized E-Health"; IEEE Computer Society,vol 39, no.11, pp. 40-46, Nov., 2006

(2) Tomasz Bartynski, Marian Bubak, Tomasz Gubala, Maciej Malawski: "Universal Grid Client: Grid Operation Invoker"; Proceedings of International Conference of Parallel Processing and Applied Mathematics (PPAM'07), Gdansk, September 2007, LNCS (to appear).



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