Innovation First @ CERN

Computing for Finance

Computing for Finance

A CERN openlab / EGEE event

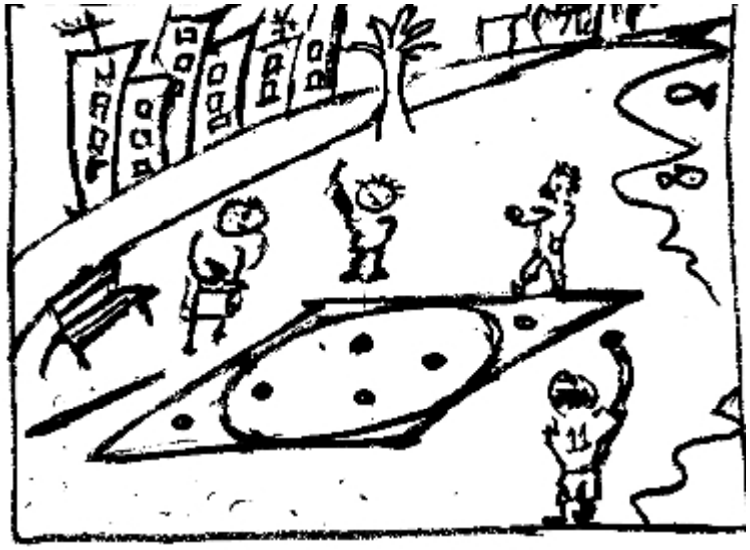
PARTNERS

CONTRIBUTORS

Some definitions (1)

High Performance Computing (HPC):
Supercomputers or dedicated clusters with thousands of processors working together

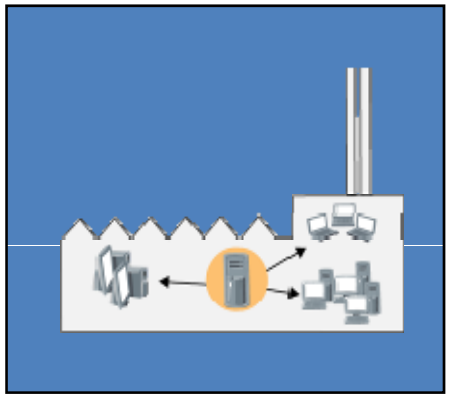
Monte Carlo algorithm:
Repetitive simulations using randomized starting conditions to characterize complex systems



Some definitions (2)

Grid Computing:

- **Enterprise Grids** share computing resources within one company.
- **Volunteer computing** links together public computers (SETI@home).
- **Scientific Grids** link together major computing centres around the globe.



Elevator Pitches

Six2 Software Integration eXperts – Marc-Elian Begin

Constellation Technologies – Robert Harakaly

ROOT – Rene Brun

CERN Alumni – Claudio Parrinello

Six² Software Integration eXperts

- Build and Test: hosting service and shrink-wrapped product
- Challenge: an inter-operable set of services
  - High-end financial companies, with complex database interfaces & third-party packages, needing to work harmoniously together
  - Large spectrum of companies
- Our solution automates the Build and Test procedures with the following benefits:
  - Lower cost
  - Faster time to market
  - Reduction of risk
- Seeking early evaluators / field testers
- Looking for seed money to customise solution and start marketing operations
- Contact: Marc-Elian Bégin (meb@sixsq.com - www.sixsq.com)

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CONSTELLATION TECHNOLOGIES, Ltd.

Ultimate Virtualization

robert.harakaly@constellationtechnologies.com

Registered in 2007 in UK, with offices in UK and Switzerland

Start-up using technology from CERN, currently fund raising.

Products:

- Compute resource virtualization solutions based on virtualization and grid technologies

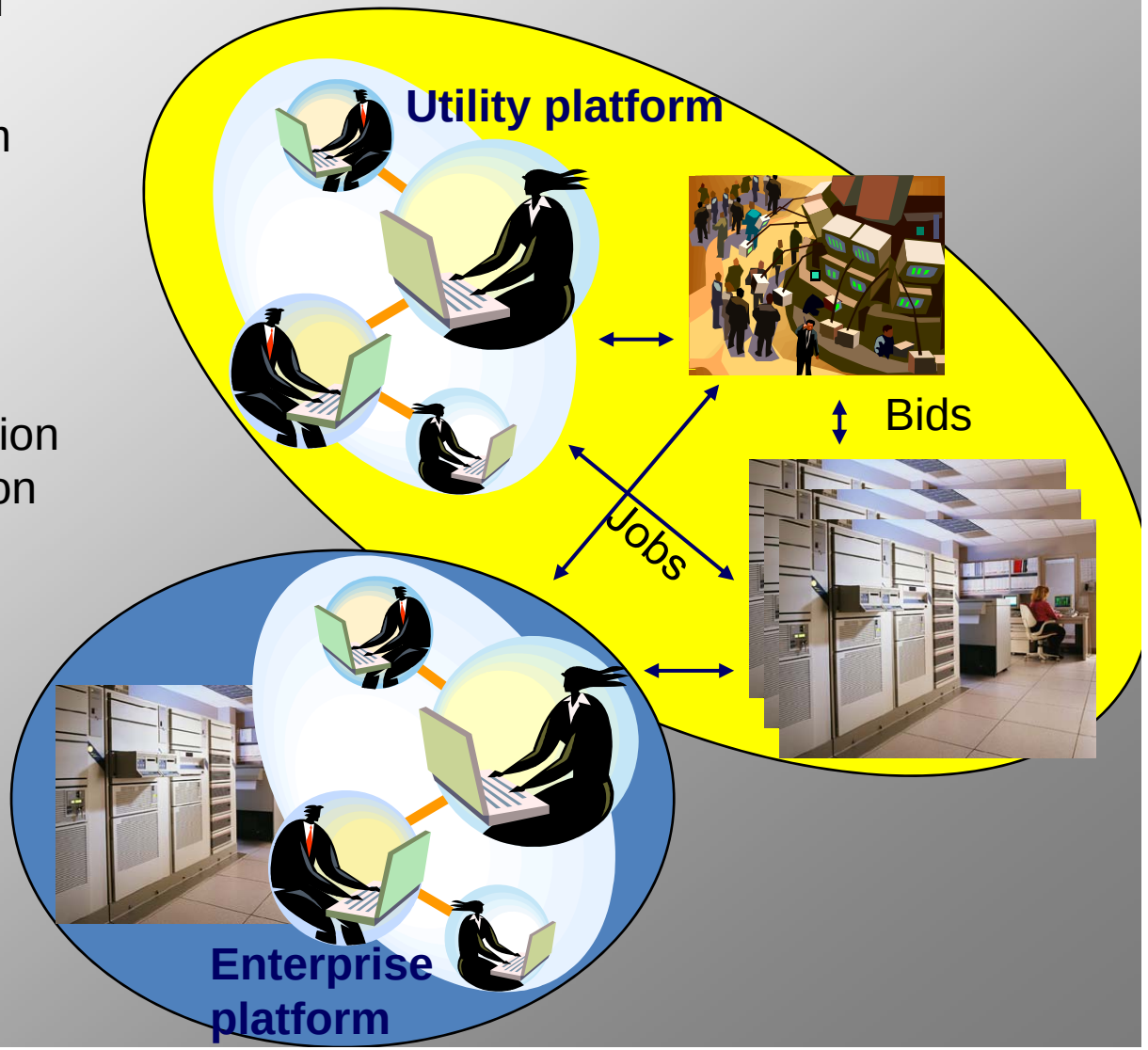
- SLA trading platform

Partners & Customers:

- Financial sector

- Engineering

- others



ROOT

An Object-Oriented
Data Analysis Framework

Rene Brun & Fons Rademakers,
Physics Department, Software
Development for Experiments
http://root.cern.ch/

"ROOT has been used extensively over the last 8 years at Renaissance Technologies to perform financial research and made important contributions to the competitive edge of this hedge fund.

ROOT provides a toolbox like R or MATLAB for statistical analysis but allows a more rapid implementation of research into a production environment by using C++ also for prototyping ideas in macros. In addition, ROOT has the tools to store and filter massive amounts of data in an efficient way.

Traditionally, the high-energy physics community has supplied the finance industry with many researchers. The new generation of physicists at CERN will be trained in looking for small signals in a large background with ROOT." **Eddy Offermann , Renaissance Technologies, Long Island N.Y.**

- Other users in financial sector include **SmartQuant,** a financial software company developing a framework for quantitative strategies trading and automation .
- Collaboration discussions underway with a major Swiss Bank.

CERN Alumni

CERN will soon launch an Alumni programme, aimed at people who have participated in a significant way to CERN's activities in the past and retain a keen interest in CERN and its scientific mission.

If you are interested, contact claudio.parrinello@cern.ch

Event Programme

- **Michael Yoo**, Managing Director, Head of the Technical Council, UBS
  Overview of High Performance Computing in the Financial Industry
- **Fred Gedling**, Technology Officer EMEA and Senior Vice President Global Services, DataSynapse *Grid in the Commercial World*
- **Adam Vile**, Head of Grid, HPC and Technical Computing, Excelian Ltd.
  Opportunities for gLite in finance and related industries
- **Daniel Egloff,** Head of Financial Engineering Computing Unit, Zürich Cantonal Bank, *From Monte Carlo to Wall Street*
- **Q&A Panel with all speakers**