The beta release of the LCG generator repository (GENSER)

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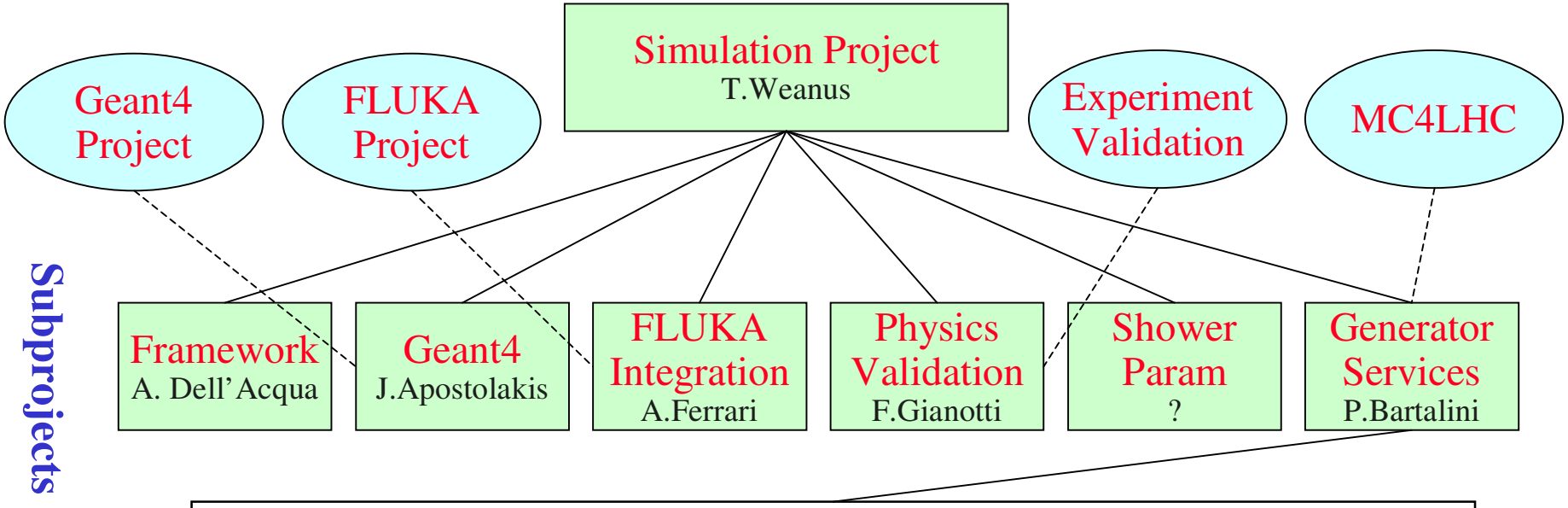
Simulation project in LCG-APP



Work packages

- GENERATOR LIBRARY
- STORAGE, EVENT INTERFACES AND PARTICLE SERVICES
- COMMON EVENT FILES, EVENT DATA BASE
- TUNING AND VALIDATION OF EVENT GENERATORS

Beta release of GENSER

Release is ready by September 30 (milestone)!

Overview

- What's new in the next release
- Basic principles of GENSER
- How to use GENSER
- Feedback from users
- Interactions with MC authors
- Further plans
- Links, paths, contact persons

Previous releases of GENSER

- GENSER_0_0_1:
  - released on August 15, 2003
  - for the rh73_gcc2952 platform only
  - PYTHIA, version 6.217
  - HERWIG, version 6.500
  - ISAJET, version 7.67
- GENSER_0_0_2:
  - released on August 21, 2003
  - the rh73_gcc32 platform is now supported
  - the first documentation was written
  - beta-testing by ALICE and CMS groups

Release of GENSER_0_0_3:

- Platforms rh73_gcc2952 and rh73_gcc32 are OK now (user can choose)
- The problems with shared libraries have been solved (user can choose)
- Directory structure has been changed
- Several bugs have been fixed
- HIJING was successfully installed
- The installed version have been proposed by the authors and/or by the beta testers
- Additional versions could be installed

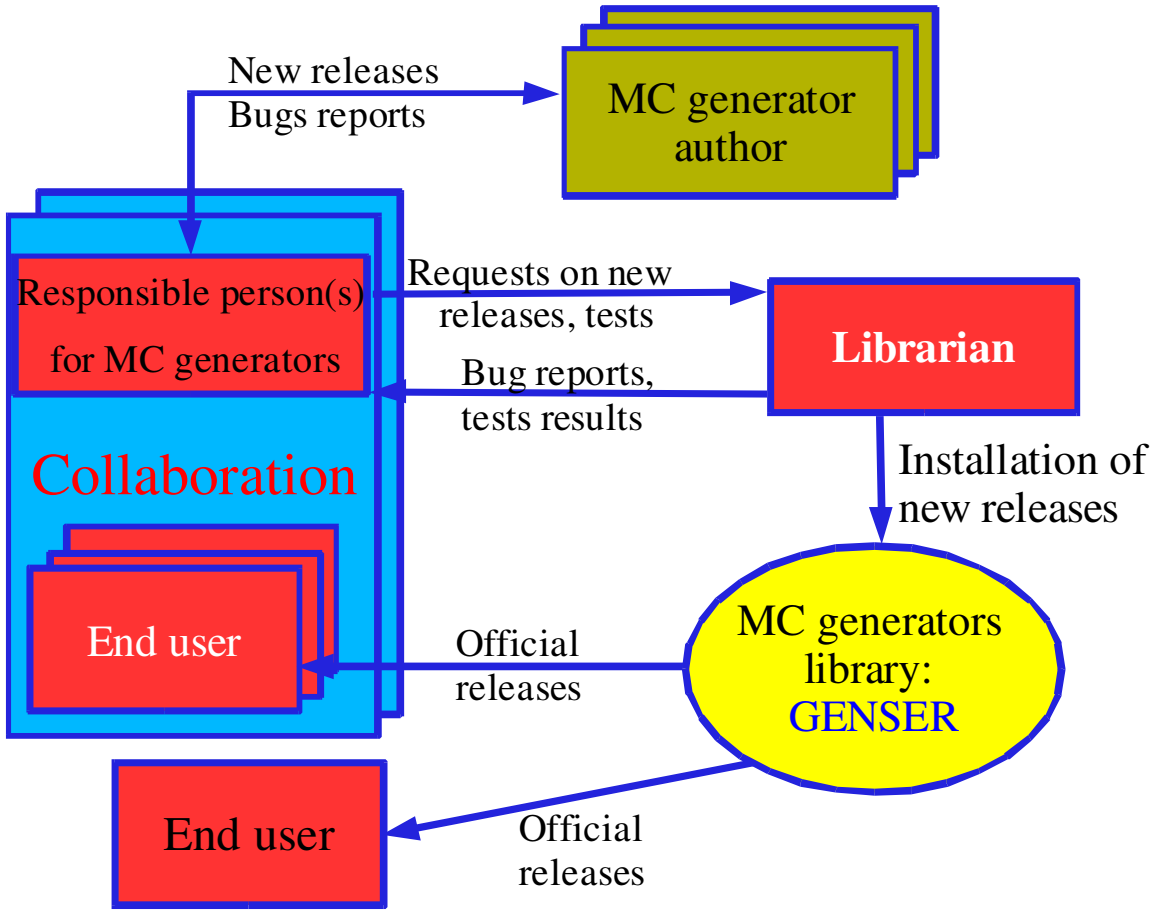
Release details

1) SCRAM configuration fixing:
   - allow users to change default tools settings
   - running on lxplus without problems
2) HERWIG:
   - include new versions (6.503, 6.504)
   - fix the bug with splitting its source code
3) PYTHIA:
   - include the new version (6.220)
4) HIJING:
   - add this generator to GENSER (needs by ALICE)
   - include versions (1.36, 1.37, 1.383)
5) Documentation, feedback from users...

Purposes of GENSER

- Convenient system for the end user
- Easy way of installation & compilation
- Source codes provided
- Fast drawback if something is wrong
- Different platforms support
- New versions, interactions with authors

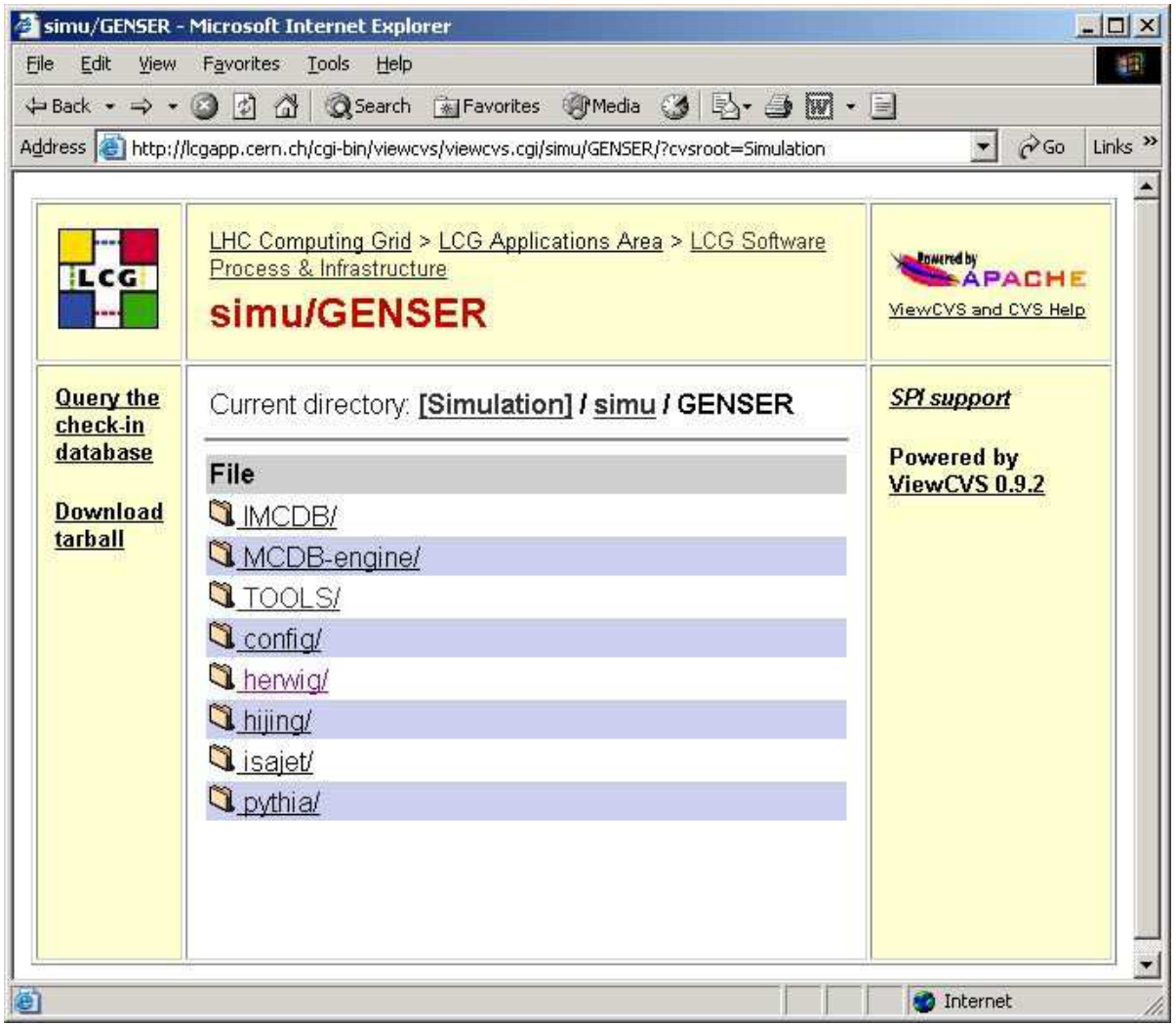
GENSER as a generator library



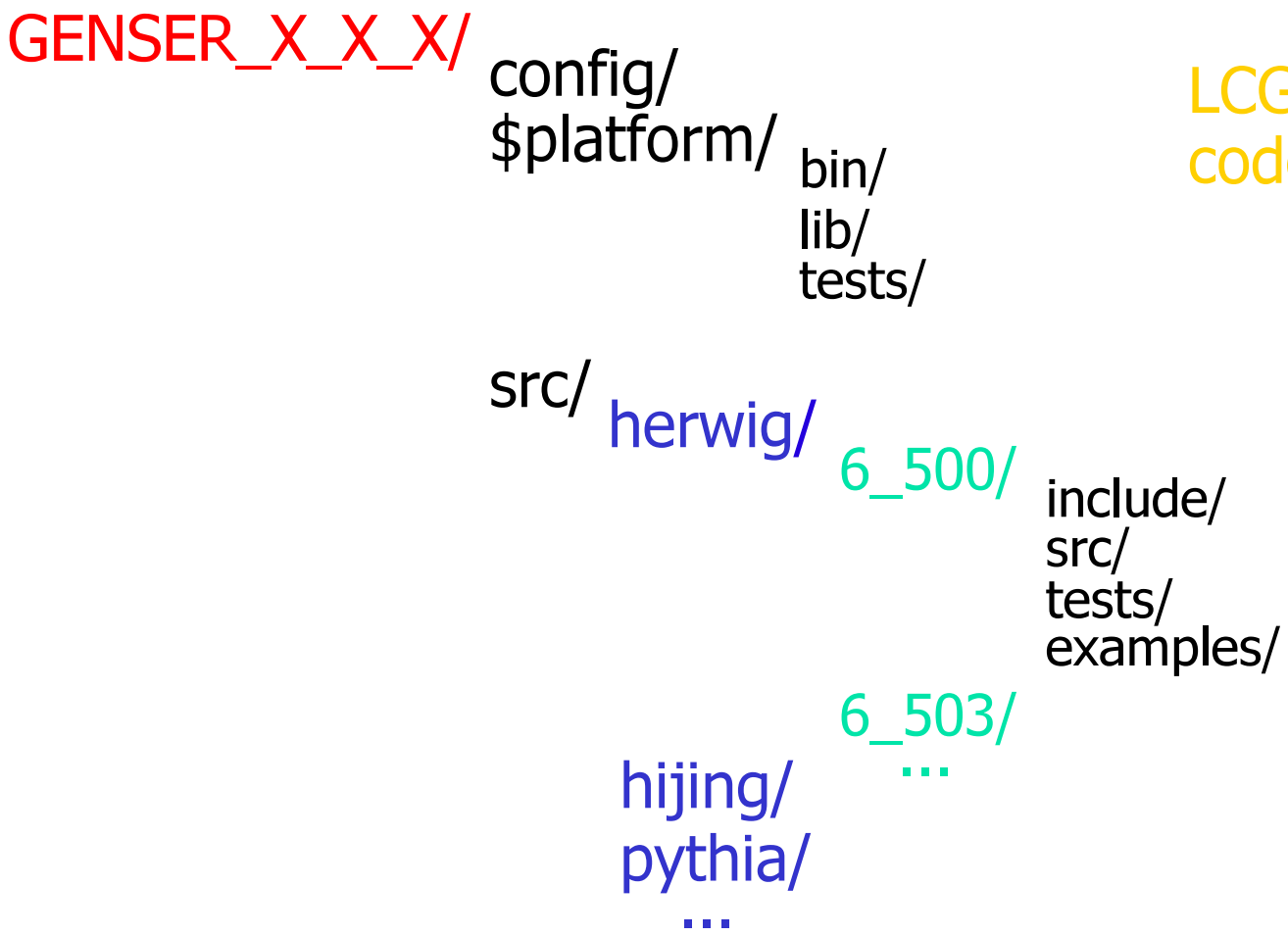
GENSER features

- Based on SCRAM technology
- Strict directories structure
- All generators will be kept in one place
- Possibility to use GENSER CVS repository as the development environment for some subpackages (MCDB project for example)
- Bugs in generators could be easily fixed
- Could be used without SCRAM as well
- Possible external installation for some generators

CVS repository



Structure of GENSER



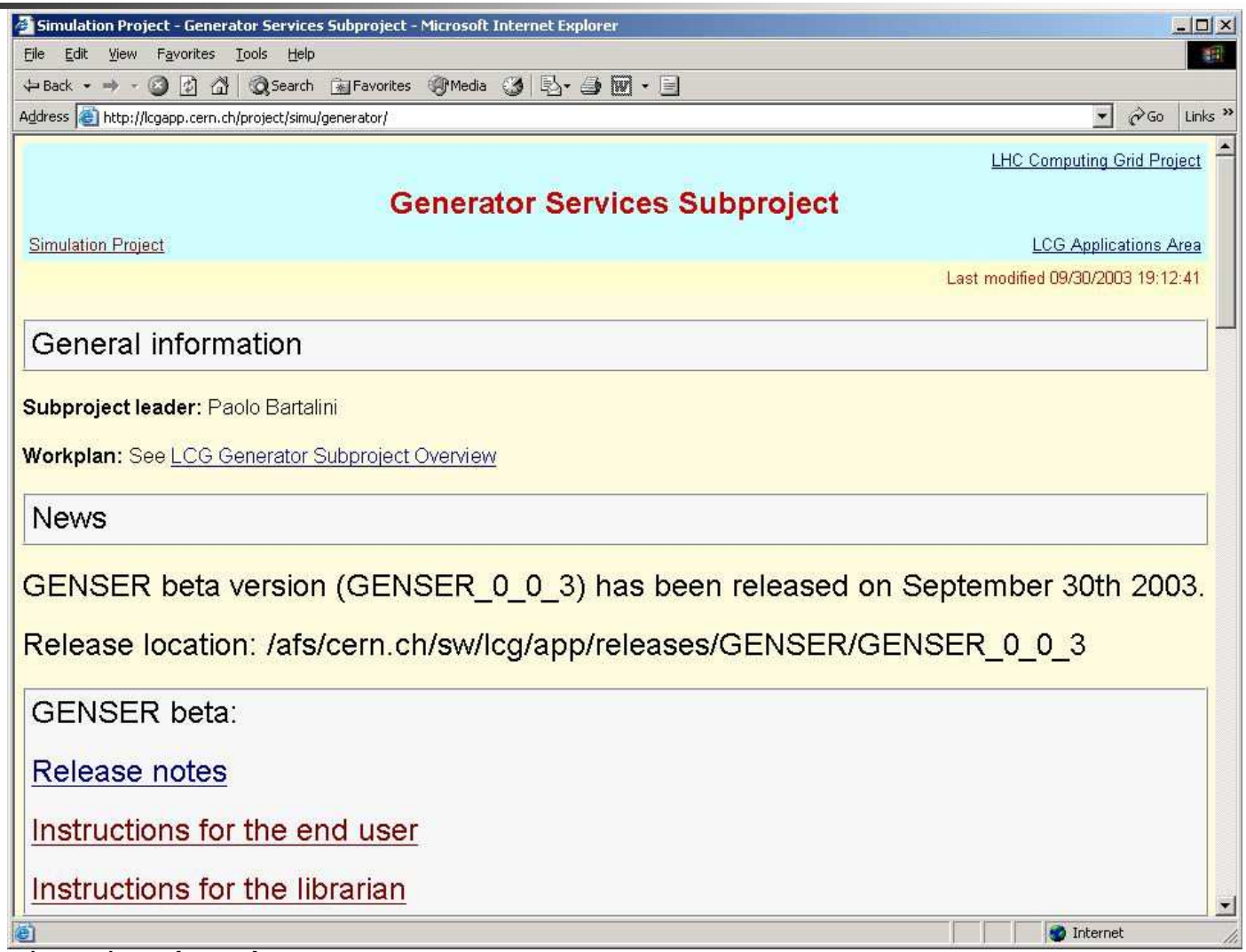
LCG policy on project code structure

How to use

1. Setup environment variables
2. Get the list of installed projects
   - scram list
3. Make installation in easy way
   - scram project GENSER GENSER_0_0_3
4. Copy examples/code sources
5. Make compilation in easy way
   - scram build
6. Run your program

⇨ Help is also available at GENSER release area!

GENSER home page



Current status

- PYTHIA
  - 6.217
  - 6.220
  - documentation
  - examples
- HERWIG
  - 6.500
  - 6.503
  - 6.504
  - documentation
  - examples
- ISAJET
  - 7.67
  - documentation
  - examples
- HIJING
  - 1.36
  - 1.37
  - 1.383
  - documentation
- MCDB
- TOOLS
  - CVS pass. encryptor
  - FORTRAN code splitter

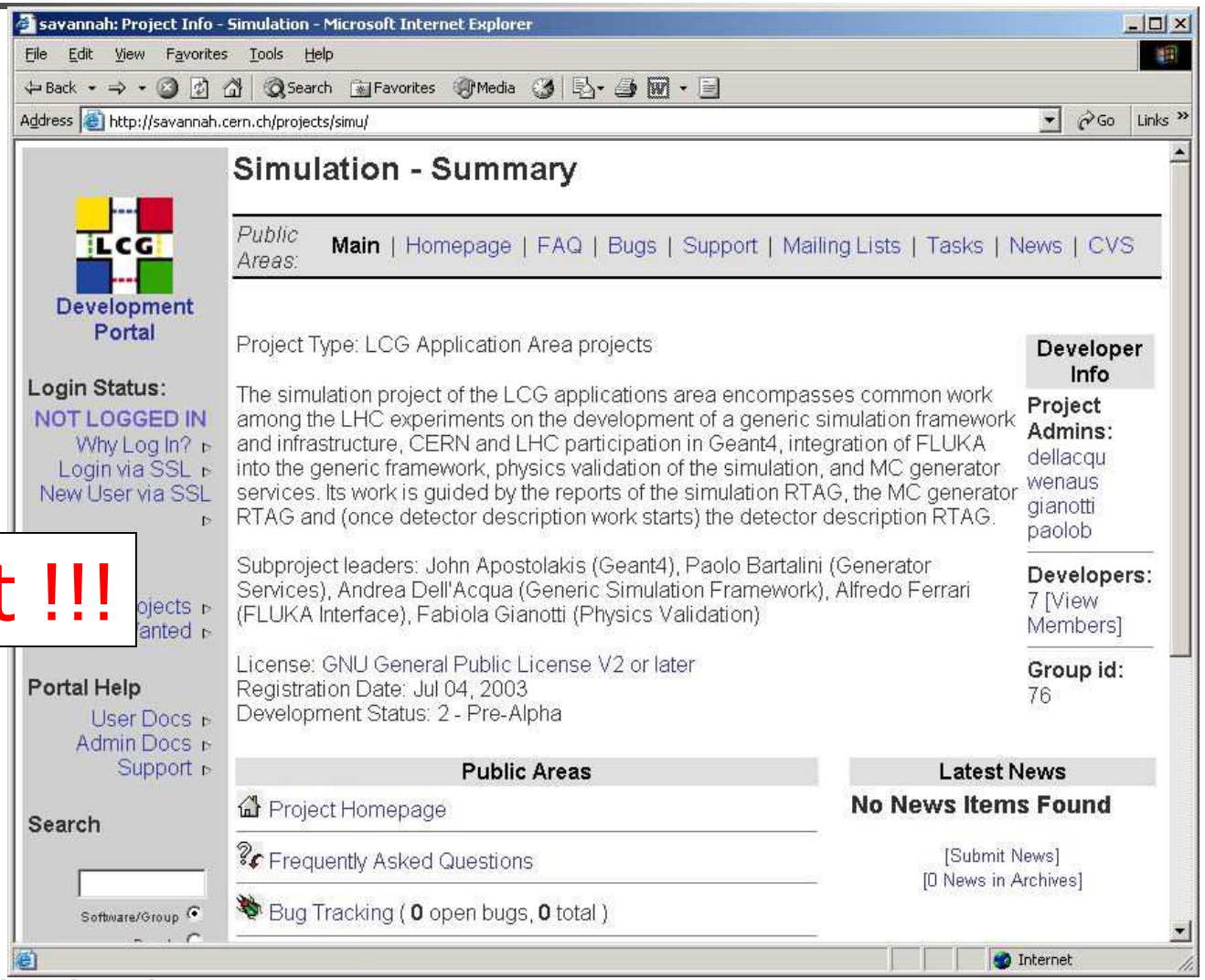
User's feedback

- GENSER release 0_0_2 was tested by CMS and ATLAS
- Some bugs were found. It have been fixed in the release 0_0_3
- Some suggestions have been received (regarding versions of generators, bug fixing procedure, structure of GENSER etc.)
- The first experience was positive!

Feedback details

- ATLAS (G. Stavropoulos)
  - Pythia: successfully interfaced
  - IsaJet: successfully interfaced
  - Herwig: more difficult to interface
    - Dummy routines should be built in a separate library
- CMS (F. Moortgat)
  - Fast and easy installation
  - Very fast compiling
  - Test of linking Pythia to FAMOS (CMS fast simulation software) works fine

Savannah development portal



Just use it !!!

Interactions with authors

- PYTHIA: Torbjorn Sjostrand
  - Version 6.220 was recommended as the "default"
  - Version 6.3 should be stabilized
  - It might be done by Christmastime (and becomes present!)
- HERWIG: Peter Richardson
  - Version 6.504 was recommended as the "default"
  - Generous help in finding the code splitting bug
- Sherpa: Frank Krauss
  - Alpha version was kindly provided to test in GENSER
  - Generous help in solving problems with the installation
  - Providing examples for testing Sherpa
  - Sherpa has been installed as external package

Further plans

- Add second priority generators:
  - ALPGEN, COMPHEP, DPMJET, EVTGEN, GRACE, HEPMC, LHAPDF, MADGRAPH, MCDB, NEXUS, PHOJET, PHOTOS, SFM & TAUOLA
  - We have already got well established contacts with the authors and experienced users of ALPGEN and COMPHEP
- Examine the possibility of inclusion of the first C++ generator (Sherpa) in GENSER
- The evaluation of GENSER as development environment (Frank Krauss)
- Persistency for the event data base (MCDB)
- Interact with users and authors. Feedbacks.

Organizational issues

CDS Agenda Home > Projects > LHC Computing Grid > Physics Generators

- minutes of meetings, slides of presentations

Applications area mailing list:

project-lcg-simu@cern.ch

Meetings:

- Kick off meeting (mini-workshop): 20 June 2003
- During MC4LHC workshop (in July)
- The 2nd LCG Generator Meeting: 31 July 2003
- The 3rd LCG Generator Meeting: 25 September 2003
- Last Thursday of the month at 5 PM in 32-1-A24 (VRVS connection in Desert or in Island room)
- October meeting is anticipated to Thursday 16th (not confirmed)

The current GENSER structure and the plans for its future evolution have been approved by the MC4LHC Steering Group!

Additional information

Useful paths and links:

- GENSER release area:
  - /afs/cern.ch/sw/lcg/app/releases/GENSER
- SPI external packages:
  - /afs/cern.ch/sw/lcg/external
- SPI index web page:
  - http://spi.cern.ch/indexpage.html

Contact persons in experiments:

- George Stavropoulos (ATLAS)
- Filip Moortgat (CMS)
- Andreas Morsch (ALICE)
- Witold Pokorski (LHCB)

Additional information

WEB links:

- GENSER home page:
  - http://lcgapp.cern.ch/project/simu/generator/
- CVS repository:
  - http://lcgapp.cern.ch/cgi-bin/viewcvs/viewcvs.cgi/simu/GENSER/?cvsroot=Simulation
- Savannah portal:
  - http://savannah.cern.ch/projects/simu/

GENSER team:

- Paolo Bartalini (paolo.bartalini@cern.ch)
- Alexander Sherstnev (sherstnv@theory.sinp.msu.ru)
- Sergey Makarychev (semak@itep.ru)
- Ilya Seluzhenkov (expected at October 14...)