
Generator Services planning meeting

Witek Pokorski

25.05.2007

Outline

- Introduction
 - Progress report
 - Planning for the next 6 months
 - Summary
-

Introduction

- Previous (first) Generator Services planning meeting on the 20th October 2006
 - slides and minutes available from
 - <http://indico.cern.ch/conferenceDisplay.py?confId=7384>
 - project mandate reviewed
 - agreement on some changes in the project organization
 - Purpose of the present meeting
 - to review the progress since last meeting
 - to plan the work for next 6 months
-

Work-packages

- generator libraries repository [GENSER]
 - testing and validation of generators [VALIDATION]
 - first level support [SUPPORT]
 - event record and particle properties [HEPMC]
 - event database [MCDB]
-

Highlights of last meeting decisions

- restructure GENSER
 - move away from SCRAM
 - release generators individually (no monolithic package)
 - increase number of tests (cover all the generators)
 - reduce effort invested in MCDB to maintenance level
 - re-design the project web page, improve user support and communication
 - table of supported generators/versions
 - savannah portal
-

GENSER progress report (1/5)

- move to the new structure completed
 - generators released individually
 - no restriction on generators' code structure (SCRAM not used anymore)
 - generators installed in 'lcg externals'
 - all new versions released with no delay
 - generators/versions requested by experiments installed (see Generator Services web page)
 - only exception [MC@NLO](#) - not a typical generator, comes as an executable not a library, changing the process requires rebuilding the executable
 - solution proposed by LHCb (restructuring of the code)
 - would require us to maintain it
-

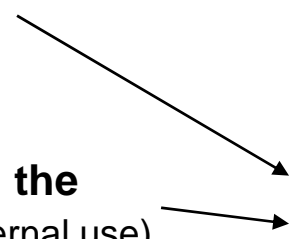
GENSER progress report (2/5)

`/afs/cern.ch/sw/lcg/external/MCGenerators`

created LCG tar files with sources and binaries

original tar files downloaded from the authors web pages (for GENSER internal use)

`/sherpa`
`/herwig++`
`/herwig`
`/pythia6`
`/pythia8`
`.....`
`/distribution/..`
`/tarFiles/..`



- **generators released in 'lcg/external' in MCGenerators directory**
 - **NO GENSER_X_Y_Z directory there**
-

GENSER progress report (3/5)

- for each package we have version directories

sherpa/1.0.8

 /1.0.9

 /....

pythia6/410

pythia6/410.2

...

- for each version we have source directory and platform directories

sherpa/1.0.8/share/.....(source tree)

sherpa/1.0.8/slc3_ia32_gcc323/lib/...

sherpa/1.0.8/slc3_ia32_gcc323/include/...

...

GENSER progress report (4/5)

- proposed at the last meeting to have GENSER_2_0_0 package with soft links to new structure
 - did not seem to be needed anymore
 - it was not implemented
 - no need for 'global' releases
 - generators released individually
 - for CMT users interface packages for all generators implemented
 - /afs/cern.ch/sw/lcg/app/releases/LCGCMT/LCGCMT_52/LCG_GeneratorsInterfaces/
-

GENSER progress report (5/5)

- EvtGen

- only one version (provided by LHCb) kept now within GENSER
 - original (unsupported) version removed from GENSER
 - GENSER follows LHCb release of EvtGen

- summary for GENSER

- 17 generators installed
 - 30 versions in total
 - binaries for 3 platforms
-

VALIDATION progress report

- all the tests from GENSER_1_4_1 have been adapted for the new structure
 - new tests have been implemented
 - in particular for Sherpa, Herwig++, Jimmy, Pythia6
 - all generators covered
 - additional tests requested by the experiments
 - b-physics specific tests for LHCb
 - list of all test results on the web
 - global table with all tests
 - comparison of different versions for each generator
-

SUPPORT progress report

- web page re-designed
 - <http://lcgapp.cern.ch/project/simu/generator/>
 - table of supported generators
 - page dedicated to tests/validation
 - Savannah portal created
 - no activity so far
 - direct discussions via email between experiments and GENSER team
 - TWiki based FAQ pages (following Michelangelo suggestion)
 - development started for a few generators
-

HEPMC progress report (1/2)

- HepMC stable and extensively used by the experiments
 - still two parallel versions maintained by Lynn
 - HepMC 1.x.y - depending on CLHEP
 - HepMC 2.x.y - standalone
 - a few minor releases since last meeting
 - Lars Sonnenschein (MCNet) joined the effort to work on HepMC
 - validating HepMC 2.x.y with different generators
 - testing ROOT I/O with HepMC 2.x.y
-

HEPMC progress report (2/2)

- a new release of HepPDT following request from CMS
 - contains now particle table with all particle definitions but no decay information
 - based closely on Pythia particle definitions



MCDB progress report

- MCDB available to use
 - effort reduced to maintenance level
 - CMS is the main user
 - simple API developed together with CMS
-

Milestones overview

GENSER_1	27/10/2006	revise the list of supported generators	DONE
GENSER_2	20/12/2006	move the supported generators to the new structure (including SHERPA)	DONE
GENSER_3	30/04/2007	include new versions of supported generators	DONE
VALIDATION_1	20/11/2006	prepare a list of test/validation	DONE
VALIDATION_2	30/04/2007	implement new tests	ONGOING
SUPPORT_1	01/11/2006	setup Savannah portal for Generator Services and advertise it to experiments	DONE
MCDB_1	30/11/2006	complete the MCDB documentation	DONE
MCDB_2	22/12/2006	present new development in MCDB to experiments and get concrete feedback concerning the use of MCDB	DONE
HEPMC_1	22/12/2006	HepMC2 testing and feedback from experiments	ONGOING

Manpower review

- effort put to reduce rotation of people and increase overlaps
 - GENSER, VALIDATION, SUPPORT
 - Mikhail Kirsanov, Alexander Toropin, Alexander Polyarush, Oleg Zenin (~1.6 FTE)
 - W.P. (0.5 FTE)
 - HEPMC
 - Lynn Garren, Lars Sonnenschein (MCNet contribution)
 - MCDB
 - Lev Dudko, Sergey Belov, Evgeny Galkin (~0.5 FTE)
-

Proposed planning

- no changes in the general structure of the project
 - CERN LCG effort invested mainly in GENSER and VALIDATION (and SUPPORT)
 - MCDB effort only for minimal maintenance
 - HEPMC maintenance/development assured by L.Garren (Fermilab)
 - MCNet contribution (L.Sonnenschein) in further development of HepMC
 - provide specific help for experiments on integration and validation of generators within their environment
 - W.P. contributing to ATLAS Photos interface
 - planned contribution to CMS validation
-

GENSER proposed plans

- continue releasing new versions of generators
 - re-investigate the possibility of installation of MC@NLO (interaction with authors needed)
 - study the possibility to provide Windows binaries
 - request from LHCb
-

VALIDATION proposed plans

- complete implementation of tests requested by the experiments
 - extend the scope of the tests to generate distributions (pT, etc)
 - web pages with automatically generated distributions
 - simple validation against data?
 - see talk by O. Zenin at Monthly Meeting on 7th of February
 - collaboration with Rivet/CEDAR?
-

SUPPORT proposed plans

- further improvement of the web page (mainly validation)



HEPMC proposed plans

- further testing of HepMC 2.x.y
 - goal: stop development of HepMC 1.x.y
 - re-evaluation of HepPDT including the latest development
 - dedicated meeting + email discussion
-

MCDB proposed plans

- maintenance only



Proposed milestones

GENSER_1	01/12/2007	include new versions of supported generators
GENSER_2	01/09/2007	provide windows binaries for main generator(s)
GENSER_3	01/09/2007	study possible integration of MC@NLO
VALIDATION_1	01/08/2007	implement tests requested by LHCb
VALIDATION_2	01/11/2007	implement tests dedicated to CMS and ATLAS validation
VALIDATION_3	01/09/2007	provide web interface to distributions/histograms from the tests
VALIDATION_4	01/10/2007	get Rivet running within GENSER
HEPMC_1	01/09/2007	complete HepMC2 testing with ROOT I/O
HEPMC_2	01/12/2007	move to HepMC2 (ATLAS and LHCb)

Summary

- changes discussed at the last planning meeting largely implemented
 - the three LHC experiments have moved to the new GENSER structure
 - more focus on validation/testing
 - still suffering a bit from the rotation of people but effort put to build a solid team with overlapping visits
 - next planning meeting ~end November 2007
-