
Generator Services planning meeting

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Outline

- Progress report and plans
 - GENSER and validation
 - HepMC
 - MCDB
 - Summary
 - Discussion
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New website

■ <http://sftweb.cern.ch/generators/>

- updated and cleaned up content
 - (some things may still be under construction)
- clearer structure
- links to validation directly from the table of the generators
 - 'old' GENSER validation
 - 'new' HepMC Analysis tool based validation
- feedback and suggestions welcome

Generator services Login

H.A. \rightarrow $\tau \tau \rightarrow$ two jets + X, 60 fb⁻¹

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Project

- Generer
- Validation
- Event Record (HepMC)
- Event Database (MCDB)

Search

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Generator Services Project [Printer-friendly version](#) [PDF version](#)

The Generator Services project collaborates with Monte Carlo (MC) generators authors and with LHC experiments in order to prepare validated LCG compliant code for both the theoretical and experimental communities at the LHC, sharing the user support duties, providing assistance for the development of the new object-oriented generators and guaranteeing the maintenance of the older packages on the LCG supported platforms.

Project consists of the generators repository, validation, HepMC record and MCDB event databases.

alpgen	2.1.4	2.1.3e	2.1.3d.2	2.1.3d	2.1.3b	2.1.3
	2.1.2	2.1.1				
baurmc	1.0					
blackmax	2.02.0					
cascade	2.2.04	2.2.0	2.0.1	1.2.10		
charybdis	1.003hp	1.003h	1.003			
charybdis2	1.0.3					
evtgenlhc	10.0	9.1	8.16	8.15.1	8.15	8.14
hei	1.2	2010-09-26				
herwig	6.520	6.520.2	6.510	6.510.2	6.510.3	
herwig++	2.5.0	2.4.2	2.4.1	2.4.0	2.3.2	2.3.1
	2.3.0	2.2.1	2.2.0	2.1.4	2.1.2	2.1.1
	2.1.0	2.0.3	2.0.2	2.0.1		
hijing	1.36.a.2	1.36.a	1.383bs.2			
hvdjet	1.7	1.6	1.5	1.4	1.3	1.2

GENSER - Progress report (1/2)

- ~60 new generators/versions installed over the last year
 - experiments regularly requesting new generators
 - installation done according to the needs
 - platforms
 - slc4 (getting obsolete now)
 - slc5 (32/64bit), gcc4.3
 - MacOSX 10.6 (32/64bit), gcc4.2
 - builds for MacOSX now done for the new generators/versions
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GENSER - Progress report (2/2)

- generators now built with two versions of HepMC
 - 2.03.11 in the 'old' MCGenerators directory
 - 2.06.03 in the parallel MCGenerators_HepMC2.06.03
 - experiments are encouraged to move to 2.06
 - LCGCMT configuration with generator interfaces pointing to MCGenerators_HepMC2.06.03 for CMT users
 - dedicated nightly builds slot dev3
 - builds with HepMC2.06
 - can be used for testing head revision of HepMC
 - currently just building Pythia8 generator for testing
 - specific HepMC tests can (should) be added
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GENSER - Progress report (3/3)

- bootstrap script to create 'mirrors' of GENSER
 - allows to install generators 'a la' GENSER on your local machine
 - debugged, improved
 - now working on MacOSX
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GENSER - Plans

- continue installation of new generators/version
 - moving GENSER repository (internal tools) to SVN
 - implement another 'lightweight' bootstrap script
 - different approach from the existing bootstrap script
 - relies on the prepared tarfiles in /distribution directory
 - more convenient (less overhead) to install for instance individual generators on a laptop
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Validation - Progress report

- validation results linked from the table of generators
 - HepMC Analysis Tool based validation now done routinely for the new versions of the generators
 - gradually filling up the web pages with validation for older versions of generators
 - b-bbar specific tests (originally implemented in GENSER), moved to HepMCAnalysis Tool
 - part of the last release
 - MCPLOTS (Peter Skands) project progressing very well
 - very nice synergy between MCPLOTS and Generator Services
 - Rivet-based validation (could be extended to other tools)
 - page in production
 - large number of validation plots available
 - continuously improving and extending the functionality
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Validation - Plans

- extend the coverage of HepMC Analysis Tool tests to other generators
 - implements tests for newly added generators

 - continue participating to the development of MCPLOTS
 - new Rivet analysis
 - new generators/versions
 - 'user' custom configurations
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HepMC – Status

Lynn Garren

- **Current production releases**
 - 2.03.11 (June 2009)
 - 2.06.04 (January 2011)
 - More checking for problems in ASCII input
 - **Latest bug fix release**
 - 2.06.05 (April 2011)
 - Improvements in the tests
 - Source code only unless binaries requested
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HepMC Issues/Plans

- Problems with libtool again
 - MacOSX libtool embeds full path in shared libraries
 - Trying to find a workaround
 - ROOT I/O
 - HepMC needs some internal changes to play nicely with ROOT
 - No change to user interface
 - Dedicated meeting June 15
 - Proposal will be available
 - <http://lcgapp.cern.ch/project/simu/HepMC/>
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MCDB – status report

Lev Dudko

- MCDB has a status of CMS production service and is integrated with the standard monitoring systems
- MCDB hardware (lcgapp07) is located in IT under the standard IT hardware support for production servers
- MCDB server OS is under the QUATTOR management system
- LEMON is used to monitor the MCDB server
<http://lemonweb.cern.ch/lemon-web/info.php?entity=lcgapp07>
 - ◆ There are about 100 monitoring and 60 exceptions (automatic reaction to the problem with corresponding metric)
- MCDB service is available in SLS status representation system <http://sls.cern.ch/sls/service.php?id=MCDB>

MCDB – Usage statistics

- ◆ MCDB samples are available for all experiments, but the main user is CMS
 - ◆ Current statistics:
 - 1629 Articles
 - 19977 files (3 TB in total, Sizes: 0-71GB, average file size is 154 MB)
 - 94 Authors
 - ◆ MCDB team provides necessary support for CMS users
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MCDB – Development plans

- ◆ Storage subsystem (CMS request)
 - Consider to move to another storage system
 - ◆ Move from MySQL to ORACLE (CMS request)
 - ◆ Improvements and bugfixing of WEB interface
 - ◆ Improvements and bugfixing in the Uploading interface
 - ◆ MCDB API and libmcdb:
 - Full support of HepML 0.2 specifications
 - Help to improve CMSSW interface (MCDBSource)
 - ◆ Improve Logging subsystem in MCDB
 - ◆ Extend LEMON/SLS tests if necessary
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Milestones from last meeting

GENSER_1	01/12/2010	include new versions of supported generators	DONE
GENSER_2	01/12/2010	continue porting specific generators to MacOSX	DONE
VALIDATION_1	01/12/2010	automatise HepMC Analysis Tool tests	DONE
VALIDATION_2	01/12/2010	extend Rivet validation	DONE IN MCPLOTS
TUNNING_1	01/12/2010	install tuning tools in GENSER repository	ONGOING
TUNNING_2	01/12/2010	implement prototype web page with tunes	DONE
HEPMC_1	01/12/2010	provide ROOT I/O optional library	ONGOING
MCDB_1	01/12/2010	moving MCDB to new server	DONE

Proposed milestones

GENSER_1	01/06/2012	include new versions of supported generators
GENSER_2	01/08/2011	lightweight bootstrap script
GENSER_3	01/07/2011	migrate GENSER CVS to SVN
VALIDATION_1	01/12/2011	extend HepMC analysis tests to other generators
VALIDATION_2	01/08/2011	add missing tests for new generators
HEPMC_1	01/06/2012	implement changes for ROOT I/O
MCDB_1	01/12/2011	(consider to) move to different storage system
MCDB_2	01/06/2012	(consider to) move to Oracle DB

Summary

- project running according to the plan
 - GENSER stable
 - validation constantly extended
 - nice synergy with MCPLOTS (P.Skands)
 - experiments do need to migrate to new HepMC
 - ROOT I/O developments in HepMC to be discussed at the dedicated meeting on the 15/07
 - MCDB needs to have reliability assured
 - extended monitoring, different storage system, Oracle DB
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