HepMC status

Witek Pokorski
21.01.2014

Recent releases

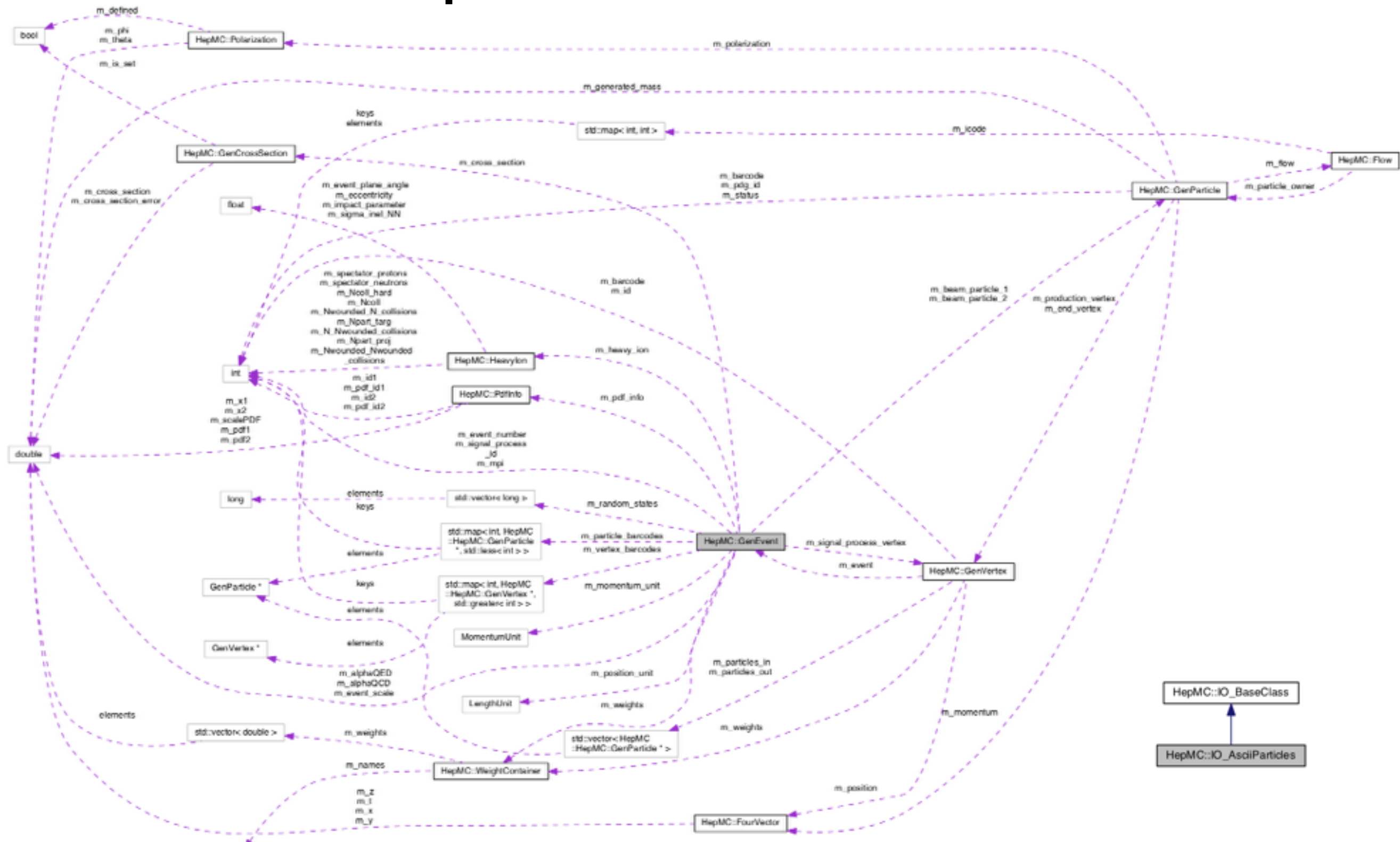|	Release	Date	Notes
HepMC	2.06.09	2012-06-05	HepMC 2.06.09 Improve build documentation Restore autoconf build option UNLESS building with Visual C++ Windows installation instructions **No source code has changed**
HepMC	2.06.08	2012-02-16	HepMC 2.06.08 **because of requested changes in 2.06, IO_GenEvent::use_input_units() was not setting units for an input stream. This bug affected only 2.06.x and is now fixed** GenEvent::define_units() can be used when the units in an event do not match the default units. Define_units() does not convert momenta or length. Add more testing of the Units functionality.
HepMC	2.06.07	2012-01-11	HepMC 2.06.07 **Cmake is now the preferred build method for all platforms.** fix a typo in the error report for GenEvent::use_length_unit (sr #125496) **Local variables in some headers have been renamed to avoid warnings when compiling with -Wshadow: GenParticle.h, GenVertex.h, PdfInfo.h, SimpleVector.h, SimpleVector.icc** (sr #125483) add examples/pythia8

Used by LHC experiments
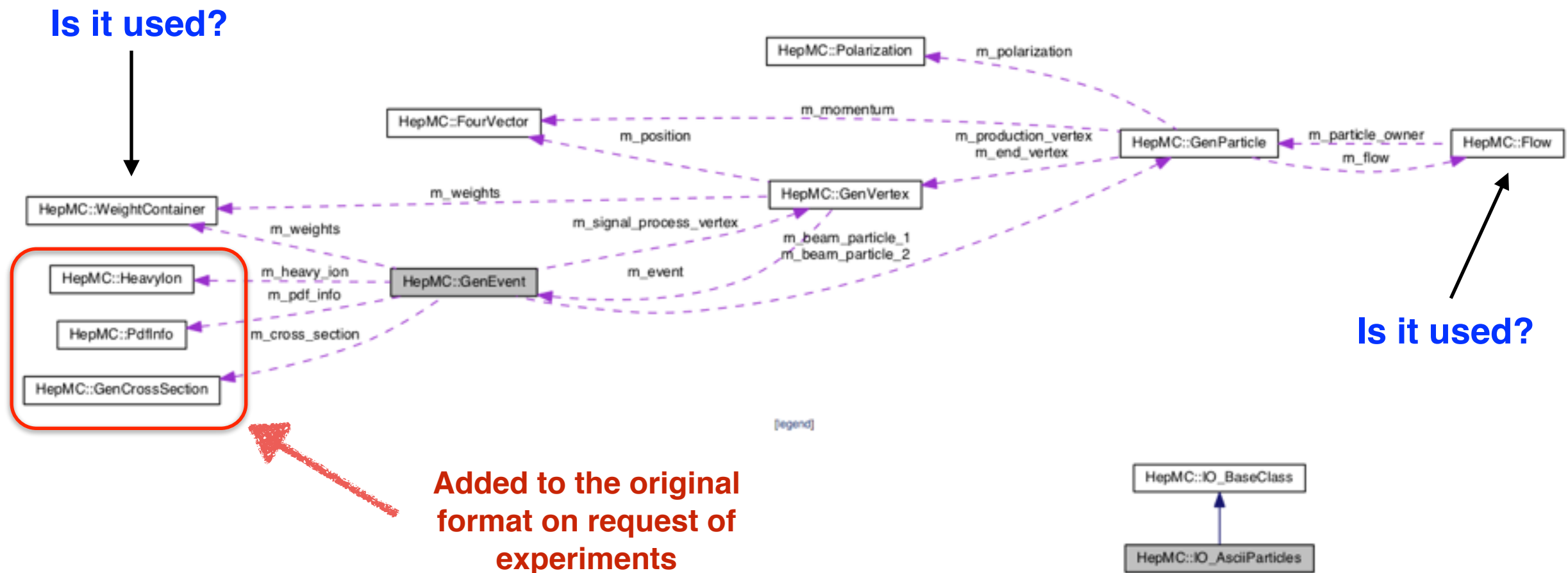
ChangeLog

```
-------------------------  HepMC-2.06.08  -------------------------

2012-02-16  Lynn Garren

    * src/GenEventStreamIO.cc: make sure we check the stream units
      if there is no unit line in the event header
    * test/testHepMC.cc.in: verify unit behavior

2012-02-10  Lynn Garren

    * cmake/Modules/HepMCVariables.cmake: deal with Windows

    * HepMC/GenEvent.h: add define_units()

    -------------------------  HepMC-2.06.07  -------------------------

2012-01-09  Lynn Garren

    * remove all VCMakefile.in files
    * Use cmake to build for Windows
    * cmake is now the preferred build method

2012-01-05  Lynn Garren

    * src/GenEvent.cc: fix a typo in error report for GenEvent::use_length_unit

    * examples/pythia8: add main31 and main32 from pythia8

2012-01-05  Lynn Garren

    * GenParticle.h, GenVertex.h, PdfInfo.h, SimpleVector.h, SimpleVector.icc:
      Rename local variables to avoid shadowing class variables.
      This problem surfaces when compiling with -Wshadow.
```

HepMC Classes

HepMC Classes (no STL)

Open bugs

HepMC - a C++ Event Record for Monte Carlo Generators - Bugs: Browse Items

Group   Main | Homepage | Download | Docs | Support | Source Code | Bugs | Tasks | News

(+) Display Criteria

6 matching items - Items 1 to 6

Item ID	Summary	Submitted On	Assigned To	Submitted By
#101885	GenParticle and parent_type	2013-06-27 10:17	garren	wbell
#99706	How to tell if a generated_mass has been set?	2013-01-08 18:51	abuckley	abuckley
#99606	IO_AsciiParticles should take an ostream& constructor argument	2012-12-21 15:13	abuckley	abuckley
#99417	Const iterator version of GenVertex::particles_begin/end(range) missing and constness inconsistency	2012-12-12 17:28	abuckley	abuckley
#87085	particle_iterator doesn't seem to work with BOOST_FOREACH	2011-09-24 17:22	abuckley	dpmorrison
#41613	Fill PdfInfo object in IO_HEPEVT, IO_HERWIG	2008-09-15 17:01	garren	abuckley

Open requests

HepMC - a C++ Event Record for Monte Carlo Generators - Tasks: Browse Items

Group | Main | Homepage | Download | Docs | Support | Source Code | Bugs | **Tasks** | News

(+) Display Criteria

10 matching items - Items 1 to 10

Item ID ⬆	Summary	Submitted On	Assigned To	Submitted By
#41098	HepMC cross-platform persistency (Reflex dictionaries)	2013-04-10 17:18	garren	davidlt
#40903	Add event centrality to heavy ion field	2013-03-27 16:48	garren	None
#40902	Filter out HEPEVT padding particles when filling HepMC from IO_HEPEVT	2013-03-27 16:38	abuckley	abuckley
#40901	Clarify role of barcodes	2013-03-27 16:32	abuckley	abuckley
#40900	Need better ways to examine IO_GenEvent object state	2013-03-27 16:29	abuckley	abuckley
#40899	Reduce size of bundled event dumps	2013-03-27 16:28	dgrell	abuckley
#40898	Speed up HepMC file reader	2013-03-27 16:25	garren	demine
#40896	Provide functions to reduce an event to its physical entries	2013-03-27 16:06	abuckley	abuckley
#40895	Introduce compressed HepMC format proposal from Les Houches	2013-03-27 16:04	dgrell	None
#40894	Store (multiple) generator+version info on GenEvent	2013-03-27 15:59	abuckley	lmijovic

Migration to GIT

- HepMC SVN repository (now obsolete) cloned to GIT

- new developers given direct access to repository

- Simulation Project within CERN PH/SFT acting (for the moment) as librarian/release manager

  - all this can be, of course, changed/improved

New repository

commit   ‡ ? search: [   ] ☐ re

summary | shortlog | log | commit | commitdiff | tree

description	HepMC Event Record
owner	hepmc-lib
last change	Sun, 17 Nov 2013 05:08:12 +0000 (06:08 +0100)
URL	https://:@git.cern.ch/kerberos/HepMC #With valid kerberos credentials
	https://git.cern.ch/reps/HepMC #LDAP authentication
	http://git.cern.ch/cernpub/HepMC #CERN Public link - Only clone
	http://git.cern.ch/pub/HepMC #Public link - Only clone

shortlog

2013-11-17	Andy Buckley	Added more iterator access methods on GenVertex `master`	commit	commitdiff	tree	snapshot
2013-11-17	Andy Buckley	More inlining	commit	commitdiff	tree	snapshot
2013-11-17	Andy Buckley	More inlining	commit	commitdiff	tree	snapshot
2013-11-17	Andy Buckley	Adding vertices() and particles() aliases on GenEvent.	commit	commitdiff	tree	snapshot
2013-11-17	Andy Buckley	GenRanges clean-up and auto-including at the foot of...	commit	commitdiff	tree	snapshot
2013-11-17	Andy Buckley	More tidying, inlining and comments/plans in GenEvent	commit	commitdiff	tree	snapshot
2013-11-17	Andy Buckley	Tidying up, noting todos, and really inlining functions...	commit	commitdiff	tree	snapshot
2013-11-16	Andy Buckley	Merging in code tiding changes from hg branch.	commit	commitdiff	tree	snapshot
2013-10-16	Witold Pokorski	test commit to git, no code change	commit	commitdiff	tree	snapshot
2013-03-29	garren	notes for centrality fix `trunk`	commit	commitdiff	tree	snapshot

9

Integration within LCG software infrastructure (PH/SFT group)

- HepMC can now profit from the infrastructure developed for LCG software

  - 'Nightly builds'

    - automatic check-out from repository and builds

      - multiple platforms

      - several tags

  - Testing

    - automatic running of tests every night

Nightly builds and tests

CTests

Testing started on 2014-01-16 14:35:10

Site Name: lxbsp0516.cern.ch
Build Name: x86_64-slc5-gcc43-opt
Total time: 31m 18s 280ms
OS Name: Linux
OS Platform: x86_64
OS Release: 2.6.18-238.5.1.el5
OS Version: #1 SMP Wed Mar 2 15:08:52 CET 2011
Compiler Version: unknown

68 tests passed.

Name	Status	Time
agile_orig_test1	Passed	1s 100ms
crmc_orig_test	Passed	1m 1s 750ms
debug-symbols-test	Passed	5m 26s 360ms
evtgen-1.1.0_test1	Passed	11s 550ms
evtgen-1.2.0_test1	Passed	11s 740ms
hepmcanalysis-build	Passed	3s 800ms
hepmcanalysis_test_hepmcreader	Passed	600ms
hepmcanalysis_test_pythia6	Passed	1s 400ms
hepmc_tests	Passed	4s 930ms
herwigpp_orig_test1	Passed	38s 990ms
herwigpp_orig_test2	Passed	40s 620ms
herwigpp_thepeg_test	Passed	6m 38s 740ms
hijing_orig_test1	Passed	1s
hydjet_test1	Passed	38s 540ms
jhu_orig_test_C	Passed	200ms
jhu_orig_test_F	Passed	300ms

Test: hepmc_tests (Passed)
Build: x86_64-slc6-gcc48-opt (lcgapp07.cern.ch) on 2014-01-19 12:09:00
Repository revision: 5747

Show Command Line
Show Test Time Graph
Show Failing/Passing Graph

Test output

```
Test project /build/electric_commander/lcg-builds/release/x86_64-slc6-gc
      Start  1: testHepMC.sh
 1/11 Test  #1: testHepMC.sh ..................... Passed    2.38 sec
      Start  2: testStreamIO.sh
 2/11 Test  #2: testStreamIO.sh .................. Passed    1.13 sec
      Start  3: testHepMCIteration.sh
 3/11 Test  #3: testHepMCIteration.sh ............ Passed    0.27 sec
      Start  4: testMass.sh
 4/11 Test  #4: testMass.sh ...................... Passed    0.32 sec
      Start  5: testFlow.sh
 5/11 Test  #5: testFlow.sh ...................... Passed    0.07 sec
      Start  6: testPrintBug.sh
 6/11 Test  #6: testPrintBug.sh .................. Passed    0.08 sec
      Start  7: testPolarization.sh
 7/11 Test  #7: testPolarization.sh .............. Passed    0.09 sec
      Start  8: testSimpleVector
 8/11 Test  #8: testSimpleVector ................. Passed    0.01 sec
      Start  9: testUnits
 9/11 Test  #9: testUnits ........................ Passed    0.04 sec
      Start 10: testMultipleCopies
10/11 Test #10: testMultipleCopies ............... Passed    0.17 sec
      Start 11: testWeights
11/11 Test #11: testWeights ...................... Passed    0.01 sec

100% tests passed, 0 tests failed out of 11

Total Test time (real) =   4.62 sec
```

Developers

- so far

  - A. Buckley

  - W.P.

- volunteers very welcome…

HepMC evolution

- easy part: HepMC 2

  - we continue with minor releases, fully backwards compatible

- difficult part: HepMC 3

  - complete re-write

  - what can be achieved without breaking backwards compatibility?

    - will you be very upset if we break backwards compatibility……..?

Conclusion

- HepMC is a 'de facto' standard event record

  - current version used HepMC 2.06.08

- stable and working, but need for some improvements and development

- setting up HepMC collaboration

  - more community-driven

  - more open to external contributions

- aiming for new major release (HepMC 3.00.00) by summer 2014