Summary of the CLHEP workshop CERN, Jan 27-31

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Overview

- History of CLHEP
- Editors
- Packages
- 2003 Workshop
  - Organisation
  - Conclusions
- Summary

CLHEP history

- Class library for HEP
- Initiated at CHEP 1992 by Leif Lonnblad
- HEP-specific foundation and utility classes
  - Random number generators
  - Physics vectors
  - Geometry
  - Linear algebra
  - "STL" (AList, …)
  - Histograms (HBook wrappers)

Releases

CLHEP 1.0	May 1997
CLHEP 1.1	08/12/1997
CLHEP 1.2	05/02/1998
CLHEP 1.3	28/07/1998
CLHEP 1.4	20/04/1999
CLHEP 1.5	08/05/2000
CLHEP 1.6	20/10/2000
CLHEP 1.7	15/06/2001
CLHEP 1.8	01/06/2002 – current release

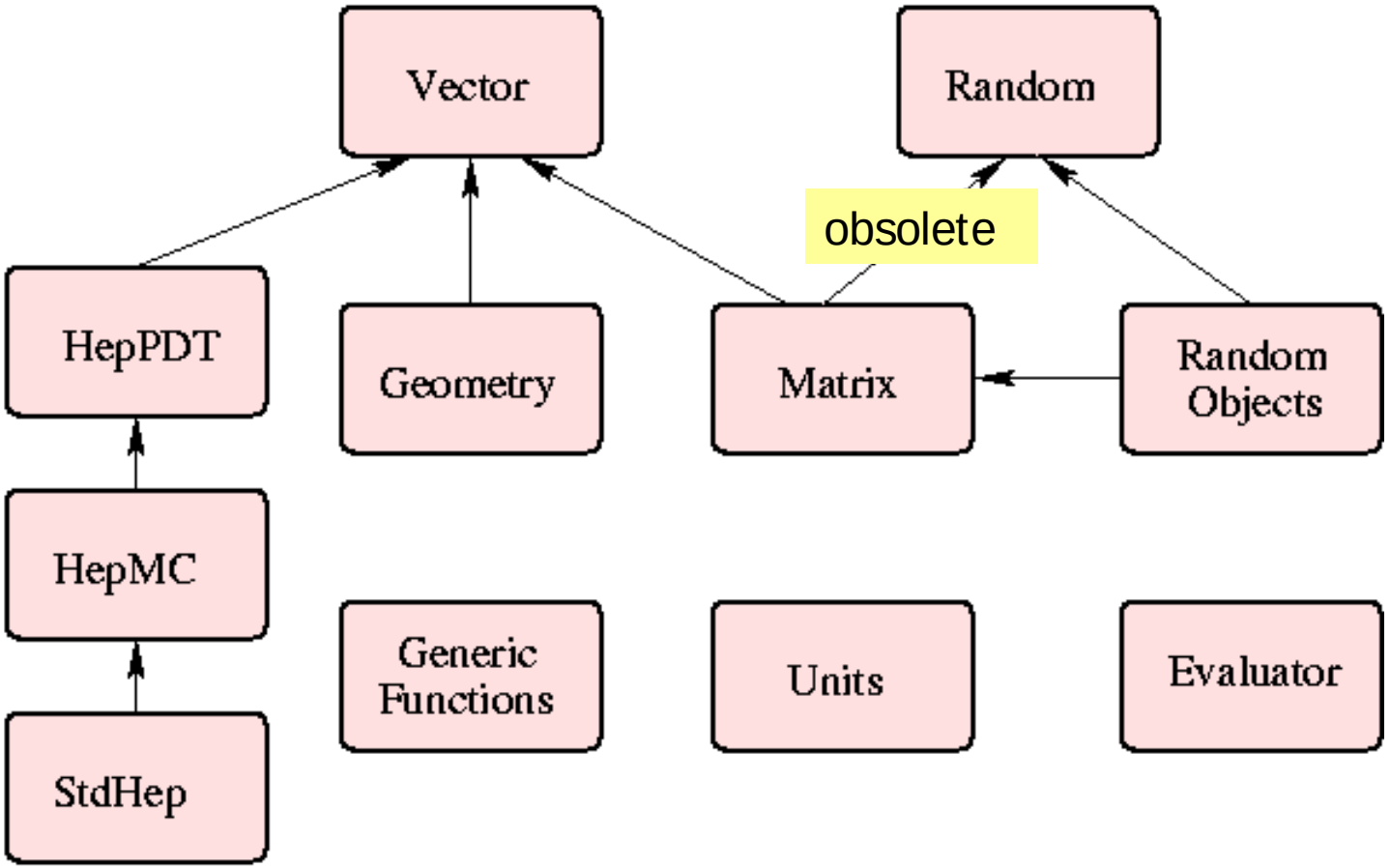
CLHEP workshops

- May 1996 (CERN)
- November 1996 (CERN)
- June 2000 (FNAL)
- January 2003 (CERN)

CLHEP editors

- CLHEP is managed by a number of editors. These are currently (in alphabetic order):
  - Joe Boudreau, University of Pittsburgh
  - Gabriele Cosmo, CERN
  - Mark Fischler, FNAL
  - Lynn Garren, FNAL
  - Bob Jacobsen, LBL (BaBar)
  - Nobu Katayama, KEK (Belle)
  - Leif Lönnblad, Lund
  - Andreas Pfeiffer, CERN
  - Evgueni Tcherniaev, CERN

Packages and their dependencies



Workshop Jan 27-31, 2003

- Organized in eight individual sessions (plus time for discussions)
- Discussions around organizational issues
  - Splitting in individual packages
  - use autoconf tools to create shared and static libs
  - Use of external s/w in packages
    - Boost (headers so far, libs are hard to build)
    - GNU Scientific Library (GSL)
  - Release scheduling and related issues
  - Namespace(s)

Workshop Jan 27-31, 2003

- Presentations on various topics
  - ZOOM and CLHEP
  - LCG SEAL
  - feedback from experiments
  - CMS vector/geometry package
  - Statistical Testing
  - Ublas
  - GSL (Computing Seminar)
  - Pythia-7
  - StdHep, HepMC and HepPDT
  - Gblib
- Very constructive atmosphere !

Workshop conclusions (I)

- CLHEP will be split in separate libs (per package)
  - Autoconf tools will be introduced
- Namespaces will be introduced
  - E.g., CLHEP::Geometry::Point3D
  - Issue with "importing" packages needs to be solved
- For backward compatibility a version 1.9 will be created (and maintained until 2.1) parallel to 2.0 without the new namespaces
- Agreement to allow Boost and/or GSL to be used in packages of CLHEP
  - Build should succeed for packages which do not depend on these.

Workshop conclusions (II)

- The offer from LCG to make use of the LCG infrastructure (Savannah, CVS, testing tools, nightly builds, lib distribtution, …) for hosting CLHEP is accepted (Thanks !)
  - Savannah project and new CVS repository already created
- Documentation will be updated
  - Reference doc through doxygen
  - User Guide (s) will be updated/written, a common "CLHEP Users Guide" will be created from the individual ones.

Workshop conclusions (III)

- Proposed new packages
  - CMS vector/geometry package will be evaluated (with T.Todorov as proposed editor)
    - Integration with Leif's "Lorentz5Vector"
  - From Pythia-7: "Kinematics" package
  - Linear Algebra: follow activities in Mathlib project and review in summer
- Release schedule
  - Release by CVS tags
  - Create libraries about every 6 month in Q1 and Q3
  - Bugfix releases asap in form of CVS tags

Summary

- Very constructive workshop
- Several important issues brought up by users were addressed (and solutions found)
- Close relationship with LCG (through SEAL) has been established
- More info (including links to the talks on the program page of the workshop) at: http://cern.ch/clhep