L1/Velo OO Migration Plans

- Team members
- Migration plan
- Feedback

Team members:

- Core development
  - Bruce Hay (CERN)
- L1 trigger algorithms
  - Roland Richter (Heidelberg)
  - Pawel Jalocha (Cracow)
  - Frank Fiedler (CERN)
  - Bruce Hay (CERN)

Short of manpower for core development - welcome help.

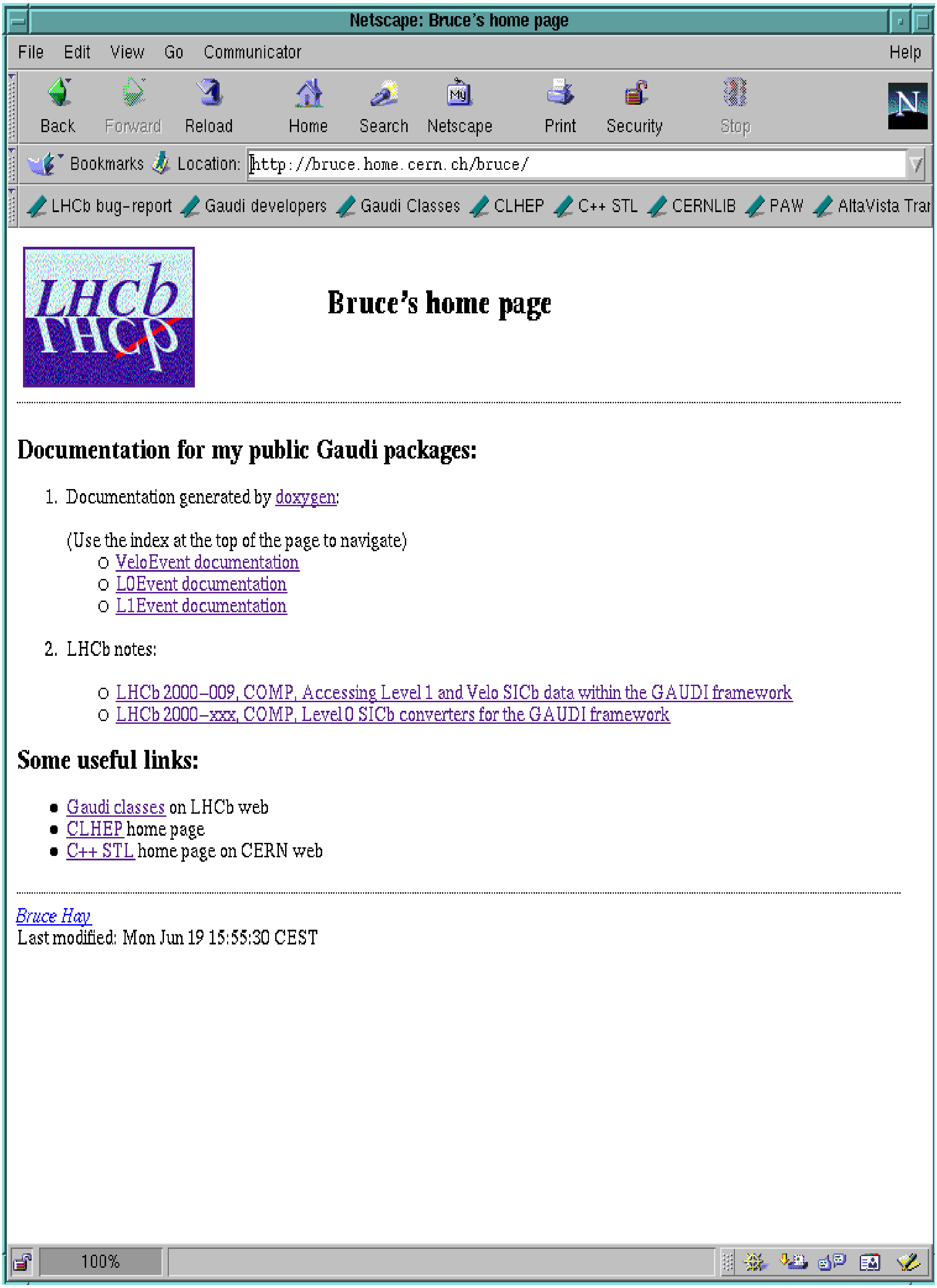
Migration plan: Data model

- existing data model (as presented in last software meeting) is an almost exact copy of the SICb data model for L1 & Velo
  [all documentation can be found at http://cern.ch/bruce]
- automatic code documentation using doxygen
- Currently plan to review all classes in our data model

Class	Contents	Timescale
MCVeloHit	Entry/exit points, etc. from MC tracking	July/August 2000
RawVeloHit	Digitised hits in Silicon strips	July/August 2000
VeloCluster	Reconstructed R/Phi cluster	July/August 2000

then carry on with 2D/3D tracks, vertices - completed by September.

http://cern.ch/bruce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Bruce's home page

Documentation for my public Gaudi packages:

1. Documentation generated by doxygen:

   (Use the index at the top of the page to navigate)
   - VeloEvent documentation
   - L0Event documentation
   - L1Event documentation

2. LHCb notes:

   - LHCb 2000-009, COMP, Accessing Level 1 and Velo SICb data within the GAUDI framework
   - LHCb 2000-xxx, COMP, Level 0 SICb converters for the GAUDI framework

Some useful links:

- Gaudi classes on LHCb web
- CLHEP home page
- C++ STL home page on CERN web

Bruce Hay
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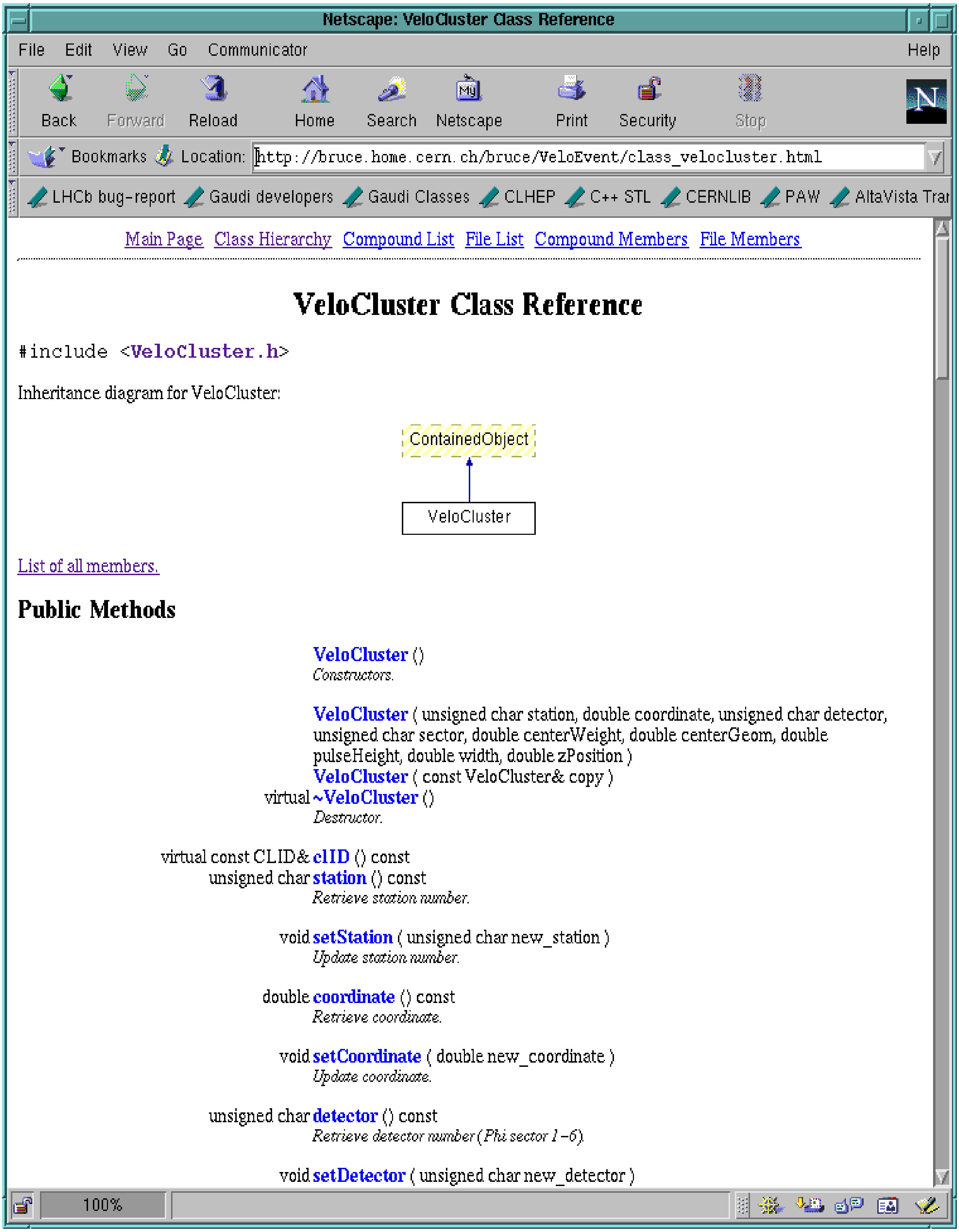
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Main Page Class Hierarchy Compound List File List Compound Members File Members
ContainedObject
VeloCluster
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VeloCluster Class Reference

`#include <VeloCluster.h>`

Inheritance diagram for VeloCluster:

List of all members.

Public Methods

VeloCluster ()
Constructors.

VeloCluster (unsigned char station, double coordinate, unsigned char detector, unsigned char sector, double centerWeight, double centerGeom, double pulseHeight, double width, double zPosition)

VeloCluster (const VeloCluster& copy)

virtual **~VeloCluster** ()
Destructor.

virtual const CLID& **clID** () const

unsigned char **station** () const
Retrieve station number.

void **setStation** (unsigned char new_station)
Update station number.

double **coordinate** () const
Retrieve coordinate.

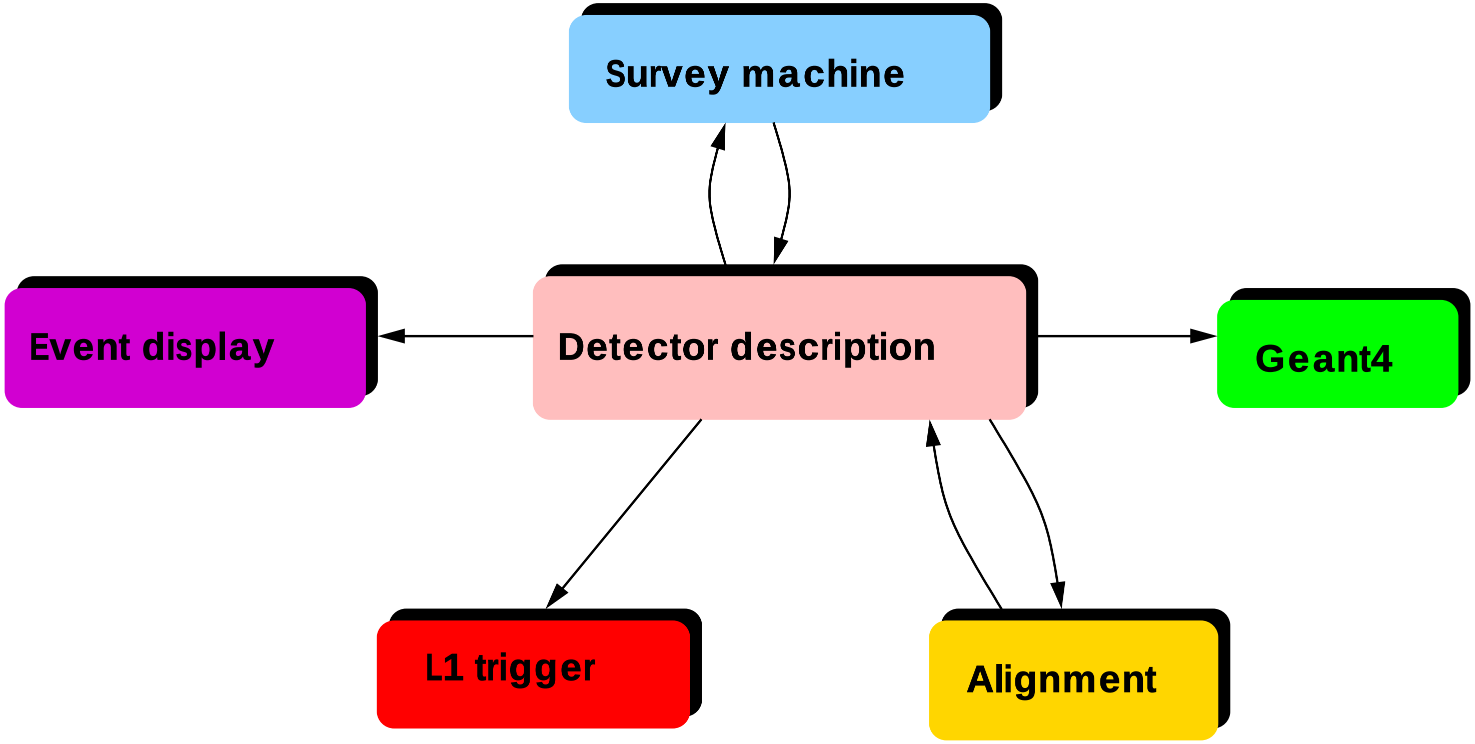
void **setCoordinate** (double new_coordinate)
Update coordinate.

unsigned char **detector** () const
Retrieve detector number (Phi sector 1-6).

void **setDetector** (unsigned char new_detector)

Migration plans: detector description

- current XML description too static?



Proposal: describe volumes & materials separately from alignment. We plan to have a working meeting on this starting September 4. (Liverpool/ NIKHEF/CERN). *New Velo detector will be implemented.*

Migration plans:

- Digitisation
  - requires geometry
  - will implement new features
    noise
    inefficiency
    charge diffusion
  - start design now - completed after Geometry description (+2 months)
- Reconstruction
  - cluster reconstruction: start design now - completed after Geometry description (+2 months)
  - 2D/3D tracks, vertices? In SICb these were the same objects as the L1 tracks and vertices. What to implement for L1 emulation only or for offline use?

Feedback:

- Manpower
  - with testbeam and detector optimisation a priority we are unable to commit people to OO migration at the moment
- Commonality/uniformity of approach
  - to avoid a lot of rewriting later we would like to see certain things better specified
  - standardisation of access to data objects: no fancy containers/objects
  - standard method for linking to MC: inheritance or reference tables
  - stick to naming conventions
- Workshops rather than meetings
  - to arrive at a concensus and common approaches more easily and quickly than in a distributed environment
  - hands-on approach to aid transfer of information to the implementors