Status of GAUDI

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20th October 1999
Preparation of Release 3

◆ Developing new functionality in the GAUDI
  – See next slides

◆ Changes in development environment
  – Deployment of CMT in NT
  – Bug tracking tool
    » We cannot wait any longer. An open source solution is being deployed.

◆ Documentation
  – User’s guide needs many corrections and improvements.
  – Architecture document needs to be updated.
Framework

- Support for shareable libraries *(M. Frank & P. Mato)*
  - The goal is simplification of usage of GAUDI
  - Dynamic loading of libraries. The concrete services, algorithms and converters will be selected at run time (typically using the JobOptions file)
  - The main program should become trivial.
  
  Status: Basically, it works but need some polishing and testing in Unix

- Histograms based on HTL *(P. Binko)*
  - The histogram service has been re-implemented using the recently released HTL (Histogram Template Library) from LHC++.
  - The old functionality unchanged.
  - New type of histograms.
  
  Status: It is ready.
Framework (2)

- Improved version of JobOptions text format (S. Probst)
  - More user friendly
  - Application Configuration

(Status: Almost ready)
Event Model and I/O

- **Strategy for resolving event data links to support loading on demand** *(M. Frank)*
  - The strategy is to use “smart pointers”
  - When de-referenced the corresponding pointed object is loaded if not in the transient data store.
  
  🔄 Status: It is ready.

- **The event model has been updated using “smart pointers”** *(P. Binko)*
  
  🔄 Status: It is almost finished.

- **Added new classes for VELO clusters** *(M. Boulianov)*
  
  🔄 Status: Being added to the repository.

- No yet decided interface and implementation of n-tuples
- Need to try new version of ROOT instead of RIO
Detector Description

- Description of materials (R. Chytracek)
  - Elements, Isotopes and Mixtures
    ✅ Status: Ready

- Description of geometry (I. Belyaev)
  - Generic geometry model. Logical and physical volumes, solids, shapes...
  - Location of 3D points, transformations, ...
    ✅ Status: Few more days of work

- Persistency representation (R. Chytracek)
  - Based in XML. Development of a document type definition (DTD).
  - Converters using a XML parser. Generic and specific converters.
    ✅ Status: We know how to do it
Geometry Description Model

Data Processing Application

Algorithms

Conversion services

Other representations

Transient detector store

DetElem

Geom

Calib

Slow

Projection view: version & event time

Persistent Detector Description (DDDB)

DetElem

Geom

Calib

Slow

Editors

Detector Data Producers

Update persistency

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Transient Geometry Model

Detector Description

- DetElement
- ReadOut
- Calibration
- DataObject
- IGeometry
- IReadOut
- ICalibration

Geometry

- LogicalVolume
- PhysicalVolume
- Solid
- ISolid

Material

- Material
- IMaterial
- Mixture
- Element

Specific detector description questions from algorithms.
Visualization

- Integration of OPACS (Open Scientist) *(P. Maley)*
  - Simple event display based on OPACS
  - Implemented as a Display service, an Conversion service and a number of Converters.

  Status: Proof of concept. More work is needed to be usable.
Summary

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