



Contribution ID: 235

Type: **oral presentation**

CMS Detector Description: New Developments

Wednesday 29 September 2004 17:10 (20 minutes)

The CMS Detector Description Database (DDD) consists of a C++ API and an XML based detector description language. DDD is used by the CMS simulation (OSCAR), reconstruction (ORCA), and visualization (IGUANA) as well by test beam software that relies on those systems. The DDD is a sub-system within the COBRA framework of the CMS Core Software. Management of the XML is currently done using a separate Geometry project in CVS.

We give an overview of the DDD integration and report on recent developments concerning detector description in CMS software:

- The ability of client software to describe sub-detectors by providing an algorithm plug-in in C++ based on SEAL plug-in facilities. A typical algorithm plug-in makes use of the DDD API to describe detector properties. Through the API seamless access to data defined via the XML description language is ensured.
- An Oracle schema was recently developed and the database populated by a DDD application. The geometrical structure of the detector is seen as a skeleton to which conditions or configuration data can be attached.
- A C++ streaming mechanism to output the geometry as binary files was developed. This representation can be read into memory much more rapidly than the XML files can be parsed.

The DDD API shields clients from each of the possible input sources. Even the simultaneous use of several different input sources is possible through various configuration options in the framework COBRA.

Author: CASE, M. (UNIVERSITY OF CALIFORNIA, DAVIS)

Co-authors: MUHAMMAD, A.J. (University of the West of England); AERTS, A.T.M. (Eindhoven University of Technology); LIENDL, M. (CERN)

Presenter: CASE, M. (UNIVERSITY OF CALIFORNIA, DAVIS)

Session Classification: Core Software

Track Classification: Track 3 - Core Software