Contribution ID: **36** Type: **Oral presentation to parallel session**

DD4hep: A General Purpose Detector Description Toolkit

Thursday 17 October 2013 13:30 (20 minutes)

The geometry, and in general, the detector description is an essential component for the development of the data processing applications in high-energy physics experiments. We will present a generic detector description toolkit, describing the guiding requirements and the architectural design for the main components of the toolkit, as well as the main implementation choices. The design is strongly driven by easy use of the toolkit: developers of detector descriptions and applications using them should provide minimal information and minimal specific code to achieve the desired result. The toolkit has been built reusing already existing components such as the ROOT geometry package, the GDML interchange format and corresponding converters. The toolkit provides missing functional elements and interfaces to offer a complete and coherent detector description solution suitable for the simulation of particle collisions in a detector, the reconstruction and the physics analysis. A natural integration to Geant4, the detector simulation program used in high-energy physics is provided.

Primary author: FRANK, Markus (CERN)

Co-authors: Dr GAEDE, Frank (DESY IT); Dr MATO VILA, Pere (CERN)

Presenter: FRANK, Markus (CERN)

Session Classification: Event Processing, Simulation and Analysis

Track Classification: Event Processing, Simulation and Analysis