Trainee's Project Report

Job Code	PH1221
Department	PH
Discipline	Computing
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Description

TileCal (Tile Calorimeter) is a sub-system of the ATLAS experiment, one of the experiments of the LHC collider. In every big experiment nowadays databases play crucial role and it's very important to keep all the information about detector in well-organized database. In case of TileCal, database should contain various sets of calibration constants, special reconstruction coefficients, description of pulse shapes, noise values etc. Those parameters are usually different for different readout channels and they are changing with time, so database application need to keep track of all the changes, "remember" constants used in online processing and keep several versions of constants for offline processing. All the calibration parameters which are changing with time called 'conditions data' and the ATLAS offline software use the product developed in IT division at CERN called Conditions DB / COOL to store those conditions data. During this work the applicant will study this database and the various tools to work with the database and will write new software in C++ and python languages which will store and retrieve all the TileCal conditions data in COOL database. Primary goal will be to provide software (libraries) which will be part of ATLAS offline reconstruction program. A second task will be to develop standalone applications with graphical user interface to browse TileCal data in Conditions DB.

Special Requirements

Computer Scientist or physicist with good knowledge of C++ and familiar with python language

Training Value

Work in a big team of scientists and software engineers. Development of software using modern programming languages, latest database technologies and graphics applications