



# Sample Project: ECAL Data Acquisition System of the CMS experiment

Code	PH2346
Programme	TRAIN-PTES
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## Title

ECAL Data Acquisition System of the CMS experiment

## Description

The CMS experiment is preparing for the new LHC run at higher energy starting in the Spring 2015. The Electromagnetic Calorimeter (ECAL) is one of the four major CMS detection systems responsible for the measurement of electrons and photons. The ECAL comprises about 80 thousand scintillating crystals readout by avalanche photodiodes and dedicated electronics. About 10 thousand high-speed optical links transmit the data from the detector to the ECAL trigger and data acquisition and system, implemented in special hardware modules. This hardware is controlled and monitored by a large distributed software system.

The new LHC beam conditions impose a substantial upgrade of the hardware and software infrastructure of the ECAL trigger and data acquisition system. The selected candidate will be integrated in the ECAL team responsible for this work, participating in the software development, detector commissioning and experiment operation. This project offers an unique opportunity to participate in a major scientific enterprise, in the largest proton collider and particle detectors ever build, aiming at new physics discoveries that the higher LHC energy could make possible.

## Skills

Information Technologies: Building web applications (e.g. with jQuery, HTML5), Developing distributed computing systems (e.g. clusters, batch systems). Programming Languages: C, C++, Python, SQL, PL/SQL or similar

## Disciplines

Information Technologies

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