Title: LHCb Experiment Control System: Web Tools.

Description: LHCb's Experiment Control System handles the configuration, monitoring and operation of all experimental equipment involved in the various activities of the experiment. Millions of parameters originating from a large variety of equipment, ranging from commercial power supplies to sophisticated home made electronics, have to be collected, stored and presented to the physicists operating the experiment. The scale of the system requires the control system to run distributed over hundreds of computers in a coherent and coordinated, hierarchical, fashion.

A commercial industrial-strength SCADA (Supervisory Control and Data Acquisition) System - Siemens WinCC-OA - has been chosen as the basis for the development. WinCC-OA has been complemented by another tool - SMI++ - combining a rule-based approach with Finite State Machine methodology, providing a very convenient mechanism for the modelling and automation of large scale, high complexity, installations.

In order to provide easy access to Control System information to the community of LHCb users, the applicant would investigate, test and deploy a mechanism to make available the WinCC-OA User Interfaces on the Web.

Training value: The trainee will be part of the central LHCb Online team, responsible for providing tools and expertise to all the sub-system developers in the experiment and will gain experience with technologies used in industrial control and their application to the control and automation of very large distributed systems.

Skills needed: Proficiency in C and C++ languages, Experience with Linux and Windows. Experience with the deployment of Web servers would be an advantage

Contacts:

Luis.Granado.Cardoso@cern.ch