The Detector Control System of the CMS Experiment at CERN

Wolfgang Funk

CERN

Abstract

Abstract: The detector control system (DCS) of CMS, one of the big future experiments at LHC, comprises two different classes of items to control: one is the "classical" slow control like HV, LV, gas, cooling, etc..

The second class of items is the control of downloading all necessary constants and programs to the front-ends and the control of taking of detector control data with the front end electronics of the read out of each subdetector.

All four LHC experiments decided some years ago to try to do as much as possible together in building their respective DCS system. This was manifested in the creation of JCOP (joint controls project). The basic ideas of the common framework were first, to have a common platform for all controls within each experiment and secondly to use commercial components where ever possible for hard- and software in order to economise manpower for development.

JCOP tried to follow these lines and already selected some industrial components for hard- and software. One of these items is a commercial SCADA (supervisory controls and data acquisition) system.

This sophisticated software tool includes all the features of a supervisory system such as alarms, trending, security, etc.. It is object orientated and completely scalable up to the huge number of parameters which have to be controlled in this big new experiment. The presentation will describe in detail the tasks of DCS and the envisaged implementations.