

## **CMS experiment Detector Control System**

The main purpose of the Detector Control System (DCS) is to ensure the correct operation of the CMS experiment, so that high quality data is taken with the apparatus. The scope of the DCS includes all subsystems involved in the control and monitor of the detector, its active elements, the electronics on and off the detector and the overall environment. The control application behaviours of all sub-detectors and support services are modelled as Finite State Machine (FSM) nodes, using the FSM toolkit provided by the JCOP framework.

The FSM is a central part of the DCS. It is a distributed system and comprises all control applications dedicated to sub-detectors, communicating via the PVSS proprietary network protocol.

In this presentation, we will give a short introduction of the various tools and applications of the DCS of the CMS experiment and an overview of the PVSS JCOP framework, with an emphasis on the FSM. An analysis of the current FSM system will also be presented.

The presentation will also give an outline of the structure and the overall logic of the behaviour of the CMS detectors. The possibility of the development of an automated analysis tool for the optimization of the FSMs will be discussed. The main goal of this tool will be the homogeneity and consistency of the whole system.