

## Software migration of the CMS ECAL Detector Control System during the CERN Large Hadron Collider Long Shutdown II

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During the second long shutdown (LS2) of the CERN Large Hadron Collider (LHC), the Detector Control System (DCS) of the Compact Muon Solenoid (CMS) Electromagnetic Calorimeter (ECAL) is undergoing a large software upgrade at various levels. The ECAL DCS supervisory system has been reviewed and extended to migrate the underlying software toolkits and platform technologies to the latest versions. The resulting software will run on top of a new computing infrastructure, using the WinCC Open Architecture (OA) version 3.16 and newly developed communication drivers for some of the hardware. The ECAL DCS has been configured and managed from a different control version system and stored with more modern encoding and file formats. A new set of development guidelines has been prepared for this purpose, including conventions and recommendations from the CMS Central DCS and CERN Joint Controls Project (JCOP) framework groups. The large list of modifications also motivated the revision and reorganization of the software architecture, which is needed to resolve and satisfy additional software dependencies. Many modifications also aimed to improve the installation process, anticipating in some cases works for the next long shutdown upgrade.

**Primary authors:** JIMENEZ ESTUPINAN, Raul (ETH Zurich (CH)); MARCHESE, Luigi (ETH Zurich (CH)); DI CALAFIORI, Diogo (ETH Zurich (CH)); Prof. DISSERTORI, Guenther (ETH Zurich (CH)); LUSTERMANN, Werner (ETH Zurich (CH)); DJAMBAZOV, Lubomir (ETH Zurich (CH)); FAY, Jean (Institut de Physique Nucléaire de Lyon (FR)); AUFFRAY HILLEMANN, Etienne (CERN); JOVANOVIĆ, Dragoslav (University of Belgrade (RS)); BAILLEUX, David (University of Notre Dame (US)); ADŽIĆ, Peter (University of Belgrade (RS)); MILENOVIĆ, Predrag (University of Belgrade (RS))

**Presenter:** JIMENEZ ESTUPINAN, Raul (ETH Zurich (CH))

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