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A Web-based application for the collection, management and release of Alignment and Calibration configurations used in data processing at the Compact Muon Solenoid experiment

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The Compact Muon Solenoid (CMS) experiment makes a vast use of alignment and calibration measurements in several data processing workflows: in the High Level Trigger, in the processing of the recorded collisions and in the production of simulated events for data analysis and studies of detector upgrades. A complete alignment and calibration scenario is factored in approximately three-hundred records, which are updated independently and can have a time-dependent content, to reflect the evolution of the detector and data taking conditions. Given the complexity of the CMS condition scenarios and the large number (50) of experts who actively measure and release calibration data, in 2015 a novel web-based service has been developed to structure and streamline their management: the cmsDbBrowser. cmsDbBrowser provides an intuitive and easily accessible entry point for the navigation of existing conditions by any CMS member, for the bookkeeping of record updates and for the actual composition of complete calibration scenarios. This paper describes the design, choice of technologies and the first year of usage in production of the cmsDbBrowser.

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