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Containerized EPICS-based Detector Control System for the mini-Compressed Baryonic Matter(mCBM) experiment

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The Compressed Baryonic Matter (CBM) experiment dedicated to the study of the properties of the strongly interacting matter is now under construction at the Facility for Anti-proton and Ion Research (FAIR) in Darmstadt.

In order to optimize the performance of experimental subsystems, a small-scale mCBM demonstrator was installed for the test purposes. As the future Silicon Tracking System (STS) is one of the core detection systems of the CBM, the mSTS is now subject of the intensive investigation.

The CBM's Detector Control System (DCS) focuses on supervision of the detector operation conditions, provides tracking of its vital parameters, data storage, and ensures a safe operation of the mSTS. A novel approach based on the containerization was implemented for these purposes. An Experimental Physics and Industrial Control System (EPICS) based system was configured and deployed in order to control, monitor and store process variables (PVs) associated with the hardware.

In this presentation, we will present the results from the beam-test campaigns in 2020-2022, which allowed us to evaluate the performance of its soft- and hardware components.

Author: BAJDEL, Marcel

Co-authors: FELDBAUER, Florian (H); Mr ZUMBRUCH, Peter (GSI Helmholtzzentrum für Schwerionenforschung GmbH)

Presenter: BAJDEL, Marcel

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