



Contribution ID : 178

Type : **Poster**

DAQ system for the BBC Detector Based on a Microservice Architecture

Tuesday, 27 October 2026 19:25 (5)

The BBC is a component of the SPD detector at the NICA collider. In the context of a multichannel architecture comprising up to 256 silicon photomultipliers with readout electronics based on the FERS-5200 system, continuous real-time monitoring of the detector status becomes essential.

This work proposes the DAQ system implemented on a microservice architecture, which overcomes the limitations of the CAEN open-source control and readout software Janus. This system includes a modified process (JanusC) that outputs data to a stream, a converter to a packet-based data format (raw2b), an event-merging process (ems), a file-writing process (writer), as well as a converter to the ROOT representation (b2r) and a configurable histogrammer (r2h). The DAQ system is controlled by the supervisor process with GUI written on the Python language using the Makefile, which describes the system's processes interaction. The system's operation has been verified using cosmic muons with four sectors of the BBC prototype, as well as on the Nuclotron beam with two sectors. The developed solution is suitable for operation at the BBC prototyping stage and can be adapted for other scintillation detectors (f.e. ZDC) with channel-by-channel signal readout.

Primary author(s) : SOLONBEKOV, Matvej

Presenter(s) : SOLONBEKOV, Matvej

Session Classification : Poster session

Track Classification : High energy physics: experiment