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Development of Streaming and a Generalized Hybrid DAQ Model for the CODA Data Acquisition System and Jefferson Lab Experiments

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The CODA Data Acquisition system is a software toolkit developed in conjunction with both custom and commercial hardware to support the general experimental program at Jefferson Lab. This includes larger complex DAQ systems in the four primary experimental halls as well as more basic developmental test bed systems. Recent developments for CODA have been focused on support for streaming (triggerless) front-end operation. The goal has been to integrate streaming data as seamlessly as possible with the existing pipelined trigger operation such that both can be run individually or even simultaneously. This is made possible in part by the existing JLAB clock/trigger distribution system. In addition, two key new CODA "components" have been developed. The first is an FPGA-based Readout Control (ROC) component that compliments the existing software ROC. The second is a software Event Management Unit (EMU) which serves as a stream "aggregator" and interface to back-end online processing. We will discuss the details of these new components, their features, performance metrics and some experimental results and expectations for experiment support using this new generalized hybrid DAQ model.

Minioral

Yes

IEEE Member

Yes

Are you a student?

No

Primary authors: ABBOTT, David; DONG, Hai (Jefferson Lab); GU, Jianhui; GYURJYAN, Vardan; JAS-TRZEMBSKI, Ed (Jefferson Lab); MOFFIT, Bryan (Jefferson Lab); RAYDO, Ben (Jefferson Lab); TIMMER, Carl (Jefferson Lab)

Presenter: RAYDO, Ben (Jefferson Lab)

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