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Ethernet as a Fieldbus: Scaling Distributed Systems Interfacing with EPICS and ACNET

Tuesday, 25 April 2023 14:40 (20 minutes)

In order to increase data acquisition rates and to lower complexity at the embedded level, Fermilab Instrumentation is developing a Ethernet field bus to communicate with a centralized middle layer utilizing Redis. Each embedded node will stream data to the middle layer where post processing can be done via micro services in containers. All data, including raw and processed wave forms, will then be presented to the control system. This architecture allows for easy scalability, lowers complexity, and allows easy adaptation to current (ACNET) and future controls systems (EPICS).

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