



Contribution ID: 25

Type: 20-minute talk

LANSCE migration to an all-EPICS control system as enabled by Data Access EPICS, Industrial I/O, and lvPortDriver

Thursday, 27 April 2023 11:00 (20 minutes)

After 50 years of operation, the LANSCE Control System is now an entirely EPICS control system. The original RICE (Remote Instrumentation and Control Equipment) system was replaced mainly by two types of EPICS IOCs National Instrument's (NI) cRIO and a 2-form factor (VPX/cPCI crate) supporting three capabilities. Slow controls/monitoring use our Industrial I/O software, with EPICS device support talking to the FPGA via NI's C application programming interface. Intercepting beam diagnostics use our lvPortDriver to interface between LabVIEW real-time software and the EPICS IOC. VPX/cPCI systems use an EPICS IOC running on a soft-core processor implemented in the FPGA fabric. The soft-core IOCs have a special version of the channel access server (Data Access) that allows filtering of subscription updates. I will describe each architecture (including some recent improvements) and compare hardware and software lifecycle challenges for the various systems.

Please select if talk will be in person or on zoom

In person

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