Contribution ID: **22**   Type: **Oral**

Review of the open source EtherCAT Motion Control Framework

Sunday, 8 October 2023 15:00 (15 minutes)

The open source EtherCAT Motion Control (ECMC) framework originally developed at the European Spallation Source is a real-time Ethernet-based fieldbus system for distributed and synchronized systems. ECMC is built on top of the open source Etherlab master to communicate with and control EtherCAT devices, and is available as an EPICS module. The ECMC framework together with commercially available hardware is now in use at several light source facilities for digital and analog input/output and motion control for low to mid-performance applications. Here, we review the basic hardware and software requirements for a minimal EtherCAT system, the ECMC framework itself, the interface between ECMC and EPICS, and several supported motor operating modes. We will also review basic functionalities such as positioning, homing, limits, and PID loop tuning, and how more advanced features such as multi-axes synchronization, triggering, and interlocking can be used. Some recently added features will be presented as well.

Topic

Other

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Session Classification: Overflow and Discussion

Track Classification: Please click on session to see scheduled talks.: EPICS Core and Device Support