Contribution ID: **2231** Contribution code: **THPA070** Type: **Poster Presentation**

Advancements of ELBE timing system upgrade

Thursday, 11 May 2023 16:30 (2 hours)

Modern Big physics experiments call for optimizations of machines in various aspects. Integration of an advanced control system is one of them, and timing system as controls'backbone is most often required to be upgraded significantly or even designed and implemented anew. The complexity of experiments at HZDR ELBE and the range of varieties of its instruments and subsystems is combined with top-notch performance requirements. These, coupled with hardware obsolescence, dictate an implementation of a new timing system. It must generate trigger patterns in a range from a single shot on demand up to 26 MHz CW which requires a universal and complex implementation of the pattern composition and validity checks. The system must be compatible with all existing timing triggering patterns and must provide configuration options for new features. The design of such timing solution drives further adaptation and modification of the event-based timing system built on MRF HW. As a result, we realized the new Control Software with an extended range of functionalities. While maintaining the common functionality we made it suitable for the most demanding experiments today.

Funding Agency

Footnotes

I have read and accept the Privacy Policy Statement

Yes

Primary authors: HROVATIN, Rok (Cosylab); OVEN, Ziga (Cosylab)

Co-authors: JUSTUS, Matthias (Helmholtz-Zentrum Dresden-Rossendorf); LEGAT, Uros (Cosylab); KRMPOTIC, Luka (Cosylab); KUNTZSCH, Michael (Helmholtz-Zentrum Dresden-Rossendorf); PERUSKO, Luka (Cosylab); ROJEC, Ursa (Cosylab); SCHWARZ, Andreas (Helmholtz-Zentrum Dresden-Rossendorf); ZENKER, Klaus (Helmholtz-Zentrum Dresden-Rossendorf)

Presenter: HROVATIN, Rok (Cosylab)

Session Classification: Thursday Poster Session

Track Classification: MC6: Beam Instrumentation, Controls, Feedback and Operational Aspects: MC6.T24: Timing and Synchronization