Contribution ID: **13** Type: **Standard talk**

Leveraging MRF system for Fast Beam Interlock applications

Saturday 20 September 2025 14:30 (20 minutes)

The distributed architecture of MRF timing systems provides a fitting platform for implementing interlock functions with low latency. In the Fast Beam Interlock (FBI) system developed for Nusano, input statuses from Event Receivers (EVRs) are transmitted to the Event Master (EVM), combined into logical flags and propagated to EVR outputs.
This enables fast and configurable propagation of critical signals across the accelerator. Because timing hardware is already near important equipment and connected via fiber optics, the approach minimizes additional infrastructure and leverages the existing MRF network. Upgrades to FPGA firmware and EPICS software extend the system to provide the required interlock functionality.

Author: PERUSKO, Luka (Cosylab)

Presenter: PERUSKO, Luka (Cosylab)

Session Classification: Standard talks

Track Classification: IOC Support