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A public data service for the Beam Interlock Systems at CERN - current status and future plans

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The Beam Interlock System (BIS) is the backbone of the machine protection system in CERN's accelerator chain, ensuring that the beams are safely transported through the injector chain and circulated in the Large Hadron Collider. A new version of the BIS is currently under development and planned to be deployed in the SPS, LHC and the North Area experimental zone during the Long Shutdown 3 (LS3), while the recently installed BIS in LINAC4 and the PSB will remain in place. As a result, the current and the new system will be operated in parallel, and it is primordial that both systems can be supervised and monitored in the same way by the operation crews, the system experts, and reliability engineers. Consequently, it is planned to provide a data service with a unique API for both systems. This data service will leverage UCAP and chain transformations to expose data for anyone to consume, and to be logged as time series in NXCALS.
This paper recalls the current implementation of the BIS supervision. It then presents the solution that was developed with UCAP and the benefits of the chain of transformations. It then reviews the performance and limitations of this implementation, and details the future plans.

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Footnotes

I have read and accept the Privacy Policy Statement

Yes

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