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How we test the CERN Power Converter Control Libraries (CANCELLED)

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The Converter Control Software (CCS) section of the CERN Electrical Power Converter Group (TE-EPC) is responsible for the software that controls the power converters for most of CERNs magnet circuits. In 2010, a project was started to create a set of C libraries that implement the core functions needed for the regulation of current in a magnet circuit, and the generation of reference functions. The first versions of these libraries have been operational in the LHC and the PSB since 2012. Now, with new accelerators such as HIE-ISOLDE and Linac4 being commissioned, additional functionality is needed and a major upgrade to the converter control libraries is ongoing. Two test programs have been developed in parallel with the libraries, one is single-threaded and the other multi-threaded. Both can work interactively or in a batch mode. The multi-threaded program supports commands that allow assertions to be tested, with results reported using Test Anything Protocol. This enables test scripts to be written, which are run automatically when commits are pushed to git as part of the section's global continuous integration system. After a brief introduction to the libraries, this presentation will show how a simple set of assertions and other supporting commands have allowed an investment in test scripts that will assure the quality of these vital libraries in the long term.

Availability

Both days

Will you need the training center (Workshops)?

No

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