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OR32 - The crucial role of the Software Interlock System at CERN's Super Proton Synchrotron

Tuesday, 12 September 2023 11:00 (30 minutes)

"The SPS accelerates beams at intensities and energies which are potentially damaging to the machine and therefore machine protection interlocks are essential.

A rigid system of hardware interlocks is required to reliably avoid these dangerous circumstances, however, with the multicycling nature of CERN's accelerator complex today a flexible, software based system with more complex logic is also required to cater for all of the different operating modes, scenarios and configurations by continually monitoring key device states and parameters based upon a predetermined logic. By its nature the software interlock system immediately highlights any abnormal condition and as such often significantly reduces time needed for fault diagnosis.

This presentation will describe the SIS (Software Interlock System) and its interface which is widely used for both protection and diagnostics in all Cern accelerators."

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