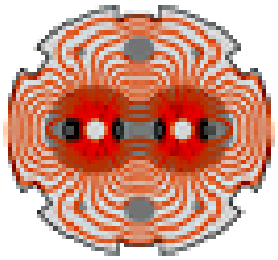

Contribution ID: **10** Type: **not specified**

Architecture, Design, and Realisation of the LHC Beam Interlock System

Tuesday 12 April 2005 09:30 (30 minutes)

The Beam Interlock System (BIS) forms the backbone of the LHC Machine Protection System, allowing 100's of distributed User Systems to inhibit beam operation and request Beam Dump from all around the 28 km circumference of the LHC. The time response of the BIS is in the order of only 100s of microseconds from any connected User System to the LHC Beam Dumping System. The rapid time response requirement of the BIS is coupled with very high safety constraints, dependability is a key issue, as whilst providing a secure and robust protection, it should not be a source of unnecessary beam dumps.
This presentation begins by describing the system level architecture of the LHC BIS, the sub-system technological choices are then explained. As safety is of the highest priority, the preliminary results of the BIS dependability analysis are then shown, and as a summary, the expected worst-case activation time of the system is demonstrated.

Author: Dr TODD, Benjamin (CERN)

Presenter: Dr TODD, Benjamin (CERN)

Session Classification: Interlocking

Track Classification: Interlocking