

The Commissioning of the LHC Beam Interlock System

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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 LHC. The requirement for rapid response time of the BIS is coupled with very high safety constraints, as whilst providing a secure and robust protection. The system should not be a source of unnecessary beam dumps.

After a brief reminder of the architecture and the technological choices, this presentation shows the sequence of the steps which leads to the commissioning of the Beam Interlock System. At the end of this phase, the system is fully tested from any connected User System to the LHC Beam Dumping System interface. The presentation describes how the commissioning is firstly performed in stand-alone mode through extensive checks from any User System connection to the Beam Permit generation. The second part of the commissioning involves each connected User Systems in order to guarantee their own beam dump request capability.

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