

Main Systems of the MPS and their Interfaces

- Main Systems of the MPS
 - Beam Interlock System (BIS)
 - 2 Ring Systems
 - Considered below
 - 2 Injection Systems
 - Additional interfaces not treated below
 - LHC Beam Dumping System (LBDS)
 - Beam Loss Monitors (BLMs)
 - Collimation System
 - QPS & PIC, WIC, FMCM
- Other systems which will also need procedures for commissioning
 - Vacuum, Access System, FMCM, Software Interlocks, CCC interlock, 'movable objects', Experiments, RF & Feedback, Aperture Kicker, Fast Beam Life time
 - Get this list in detail from the interfaces of the BIS (Bruno's talk)

Interfaces: Beam Interlock System

- Many Interfaces
- Bruno's talk

Interfaces: LBDS

- Dipole Power Converters: 4 x DCCT
 - Beam Energy -> Safe Beam Flag
- Q4
- Direct BLMs
- RF
 - Abort gap
 - Frequency = energy
- Orbit
 - Position beam dump region, interface via BIS
 - Position at TCDQ
 - Energy
- Collimators (besides TCDQ, TCDS TCSG)
- BIS (both ways)
- Management of Critical Settings
- Injection System - MKI
- Access System
- Control System – XPOC
- Mains monitoring - UPS

Interfaces: BLMs

- BIS
 - Beam permit info
 - Tool to disable single monitors
- Beam Energy
- PM trigger – timing system
- Management of Critical Settings
- LBDS for dedicated monitors
- Fast data transfer for setting up collimators
 - Communication to collimation control system, trigger for data transfer
- BLMs LSS6 for XPOC of LBDS

Interfaces: Collimators

- BIS
- Optics / Energy
 - Download function?
- Orbit (BPMs / feedback)
- BLMs (for alignment)

Interfaces: QPS & PIC – WIC - FMCM

- BIS
- Cryogenics
- Power Converters
- AUG
- UPS
- Survey of mains via FMCM?
- Discharge switches

What is next?

- Make a more detailed analysis of *MPS specific* system functionality and details of their interfaces for the main systems
- Everybody to do for 'their' system (main systems)
 - Make presentation for feedback
 - Make reference documentation
 - Plus the injection system BIS (VK, JW)
 - Followed by the 'other systems' -> Start with Vacuum System (LP, BP)
- Continue with the steps on how to test these functionalities and interfaces. Determine test conditions.
 - Without beam
 - With beam
- Check availability / produce the description of individual system tests and Hardware Commissioning tests (LHC hardware commissioning)

Mandate etc.

- Produce the detailed (= step by step) description of the commissioning procedures of the LHC Machine Protection System and record the test results.
- Timescale: First version by June / July 2007.
- Format
 - How do we store test description and results?
 - Propose same system as for LHC Hardware Commissioning
 - Description of tests in edms
 - Results of test in mtf
 - Talk next meeting by Blanca...