

# MPP meeting 16 December 2011

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## Original agenda:

- Summary of RP meeting of 2<sup>nd</sup> December – D.Wollmann
- Operational Procedure for Abort Gap cleaning – J.Uythoven
- Changes of BLM system for 2012 run – C.Zamantzas
- AOB

## Present:

M. Koratzinos (TE/MPE), M. Zerlauth (TE/MPE), E. B. Holzer (BE/BI), J. Wenninger (BE/OP), E. Nebot (BE/BI), B. Dehning (BE/BI), M. Sapinski (BE/BI), S. Redaelli (BE/OP), D. Wollmann (TE/MPE), T. Baer (BE/OP), J. Uythoven (TE/ABT), W. Bartmann (TE/ABT), L. Ponce (BE/OP), A. Verweij (TE/MPE), V. Boccone (EN/STI), G. Papotti (BE/OP), R. Schmidt (TE/MPE), C. Zamantzas (BE/BI), P. Fassnacht (PH/ADO), S. Wenig (PH/ADO).

## Minutes:

### Summary of MP meeting on Roman Pot operation (02.12.2011) (D. Wollmann)

Daniel presented a summary of the review on the Roman Pot operation of December 2<sup>nd</sup>. Seven presentations were analyzed by Daniel.

- I. Introduction: Roman Pots and Machine Protection (R. Schmidt). The conclusion of this presentation was that high luminosity operation of Roman Pots in physics setting is not acceptable.
- II. Status of FLUKA machine models from the RP locations to the DS for IP1 and IP5 (V. Boccone). Roman Pot FLUKA model needed. Contact person?
- III. Description of the HW system (M. Deile).  
Ruediger commented that even if there is no emergency button on the CCC to extract the RP, changing the beam mode to unstable beams will do it. A change in the procedure to avoid RP to go out when in HOME position should be implemented.  
The use-case of PXI reboots should be included in the procedure, and only take place when all RPs are in HOME position (key-panel to cut as well motor power when LVDTs are by-passed)

Stefano disagreed about the absence of warning levels for the new limits. He said that the system was design to be simple. He doesn't think that the system needs to be changed from the current situation.

Concerning the PXI crashes, Patrick confirmed that the RP will go out. Markus asked if it will be the same if the PXI doesn't communicate. Stefano answered that he isn't sure if this was checked during the machine commissioning.

Commissioning procedure for RPs needs to be updated with respective changes agreed during the review (Action: M.Deile)

Stefano pointed out that OP didn't know that TOTEM was going to be bricolage.

IV. Software and Controls for RP (S. Ravat).

A filter or a combination of home and stopper signals should be implemented to mitigate the crosstalk.

V. Operational Procedures (S. Redaelli).

Rudiger proposed to set the RP at 25mm ( $>200\sigma$ ) for the loss maps so they can be operated at 25mm during 2012. Stefano commented that Ralph wants to avoid setting up the parameters with loss maps.

## Operational Procedures for Abort Gap Cleaning (J. Uythoven)

Jan presented the operational procedures for the Abort Gap Cleaning.

If the AG population is important an increment of IP3 losses should be seen. Jan commented that there is delay of aprox. 15min between it is being populated and the BLM losses. Ruediger proposed to further close collimators in IP3. Losses in IP3 are a few percentage of the damage thresholds (2%) but the problem is downstream in the TCT were the leakage is higher and the thresholds are lower. At some moment the beam will be dumped because of TCT losses. Stefano pointed that we are a factor 60-20 away from the TCT thresholds for the current luminosity (there is no danger). Jan to check as well the TCT signals for bigger abort gap populations (IR1 and IR5). Ralph anyway proposed to increase the TCS/TCT thresholds for the whole 2011 run.

Ruediger proposed moving BLM thresholds anticipating 4TeV. Barbara will make a meeting in January for the threshold working group.

Ruediger proposed to make a strong statement for LS1 and have a reliable (SIL 1 or 2) BSRA. Jan commented that the aim is to have after LS1 an automatic AGK switch on and beam dump based on BSRA. Markus said that the proposal should be uploaded to EDMS and then circulated.

## LHC BLM system: Changes foreseen for the 2012 run (C. Zamantzas)

Christos showed the list of changes introduced during 2011 in the BLM system and the presented a proposal for additions and modifications for 2012.

Ruediger said that the FPGA program must be validated to avoid any risk of introducing mistakes. Christos commented that FPGA changes are conservative. Concerning the new buffer, he still needs to find a way to push the data without using too many resources. In case they are not 100% confident with it, it will not be included. Christos pointed out that they pass a test bench that last 2weeks before being released.

A reduced number of LIC monitors will be installed, to gain some confidence and get some experience, on the magnets with more triggers. An IC will also be kept on the magnets. For LS1 more LICs will be added.

New monitors, to locate UFOs, to be installed in some cells with a high rate. FLUKA simulations already started.

For DirectBLMs, thresholds should be reduced. (Eduardo: we could reduce a factor of 2)

SW changes related to MP should be written in a document and signed. Christos proposed to add a field "it is possible to revert the changes" in the document.

## AOB

Send mail to MPP members for change tracking in MPS website (Action: M.Zerlauth)

Proposal for MPS-SW changes (Action M.Zerlauth) -> Use case of PIC config changes for 2012 run

Beta\* transmission is going to change for 2012 run, ie instead of 10cm the new unit for transmission over the MTG will be 1cm to improve granularity (in 16 bits). Only client is collimation.

Beam Presence Flag: Current Threshold is somewhere  $<1e9$ . There are cases were BPF is TRUE with no beam. Jorg proposes an increase of another factor of 2 -> Will check the data and announce/request during next MPP

CNGS target required re-matched optics for the full LHC bunch extractions. Is getting less intensity than specified -> increase Beta\* a fator of 3-4 -> requires new optics. There is one camera left that can be used. Optics will change at the end of the line for matching.

MKI individual temperature probes -> temperature interlock per beam.

Sensitivity range for interlock BPMs at point 6 -> during the checkout the limits should be re-determined. Make the bunch count to work again.