

MPP meeting 27 May 2011

Original agenda:

- 1) Additional CIBU connection for LBDS in IR6 - Proposed implementation + timeline (N.Magnin)
- 2) H/V decomposition of beam losses - current implementation + first preliminary results (A.Marsili)
- 3) Status of direct BLMs in IR6 - first measurements and outlook for connection to LBDS (B.Holzer/E.Nebot)
- 4) AOB

Present:

B.Todd (TE/MPE), B.Dehning (BE/BI), G.Papotti (BE/OP), J.Blanco (TE/MPE), M.Solfaroli (BE/OP), R.Schmidt (TE/MPE), S.Wagner (TE/MPE), A.Siemko (TE/MPE), M.Deile (PH/TOT), S.Wenig (PH/ADO), L.Ponce (BE/OP), B. Puccio (TE/MPE), E. Carlier (TE/ABT), E. B. Holzer (BE/BI), N.Moguin (TE/ABT), M. Solfaroli (BE/OP), A. Marsili (BE/BI), E. Nebot (BE/BI), F. Burkart (BE/ABP), A. Di Mauro (PH/AID).

Minutes:

Additional CIBU connection for LBDS in IR6

Nicolas presented a proposal for a new link between LBDS and BIC via a CIBU in point 6. The motivation for this is having a better post operational diagnostics for the LBDS. The issue arises when one of the systems connected to the TSU cards triggers. The beam will be dump immediately but the dump event will arrive 50ms later due to the SCSS card cycle. The SCSS card is the one connecting the LBDS to the BIC via a PLC. He remarked that there is **not a safety problem**.

The solution involves developing and installing a new card (BOOT card) in the LBDS that will open the BIC after a trigger event in the LBDS. The foreseen schedule is 3 weeks from the design phase to the installation.

Bruno: need to pull cables plan to install next TS (4th of July for 5 days)

Rudiger: What happens if the PLC gives green (OK) but it has a fault and we inject and ramp? Etienne explained that they use fail safe PLC. In addition the injection permit is controlled by the TSU and not the PLC so the TSU needs to be armed to give the injection permit. This functionality was modified after the 1st design because originally it was connected to the SCSS.

Rudiger: Is there anything to change concerning the XPOC sanity checks. Ben commented that it would be interesting to add an extra check that tests that the CIBU connected via the SCSS opens 50ms after the new one for those special cases.

Direct Dump BLMs (E. Nebot)

Eduardo introduced the direct dump (DD) BLMs. Four monitors are installed (green and yellow in the slide). Threshold setting (a potentiometer) requires access. Threshold is 630Gy/s currently but DD is not connected to LBDS. Last 2 weeks of data show spikes, but these spikes are 100 times below threshold.

Comparison of signals: between signals with /without filters. Correlation of ADC counts with Gy/s: linear trend, but UA63_CH2 (DCDQA beam 2) under investigation; top in the slide is RS01 bottom RS09. Using the 11ms filter, some non-linearity can be seen.

Conclusions: Four IC detectors are in place acting as direct dump (DD) monitors instead of SEMs. They are currently not connected to LBDS. Rudiger: When should they be connected? First understand the correlation which is not good. Rudiger: can we have these data in the BML display?

Separation of losses (Aurelien Marsili)

Aurelien presented the subject of his thesis: Separation of horizontal and vertical losses. The motivation is to identify the beam loss mechanism responsible for a specific beam loss. Idea is to decompose an unknown loss profile into well known loss scenarios. He considers four loss scenarios – resonance crossing for 2 planes and 2 beams. H and V losses look very similar apart from close to the TCP.

He has tried different methods, with different pros and cons. Distinction between B1 and B2 is clear, but between V and H more difficult. Nevertheless, V and H separation algorithm got it right in 24 out of 28 cases.

He then showed a typical fill (21st of May, data from stable beam to dump) where every second he decomposes the profile in a (B1,B2 vs H, V) plane. Plot is a bit confusing since colour denotes time. It shows that losses start being B1H and finish by B2H. Next things to do: try different fills. The time for data query and processing was a worry, but it now stands to 3-4 hours for a 10-hour fill. This is work in progress.

AOB (Di Mauro):

Antonello brought up the solenoid trip of Alice (Sunday afternoon 3:42pm) Following the solenoid trip, backgrounds went up in Alice with the result of tripping some of their subdetectors. Some minutes later, there was a dump request from the RF system (arc detected), presumed independent from the solenoid trip. Should we consider dumping the beams if the solenoid trips? Jorg: no, only dump on losses. In this specific incident, the effect of the trip on the orbit was negligible. (The increased background seen was probably due to the loss of protection provided by the solenoid). Antonello mentioned that Alice is now implementing a ramp down of subdetectors when their solenoid trips. Ruediger: will have another look at the data.