

LHC EXPERIMENT-ACCELERATOR DATA EXCHANGE WORKING GROUP
(LEADE)

Minutes of the 9th Meeting held on 31 March 2003

Present: R. Assmann, N. Ellis, D. Evans, L. Fernandez-Hernando, P. Graftstrom, N. Hilleret, M. Huhtinen, B. Jeanneret, R. Jones, A. Morsch, B. Muratori, R. Schmidt, A. Smith, W. Smith, E. Tsesmelis

1. INTRODUCTION

The minutes of the 8th Meeting were approved without modification.

2. UPDATING THE USER REUIREMENTS FOR THE LHC DATA EXCHANGE
(R. Jones)

R. Jones presented a summary of data that AB-BDI can produce and communicate to the experiments on the CERN-wide Data Interchange Protocol (DIP). The data to be produced serves the requirements of the experiments. Two outstanding issues remain to be clarified. As the individual 2D bunch size may require a separate communication channel, the experiments were asked if this data is needed at the rate reported. In addition, measurement of the beam loss with the Beam Loss Monitors at the location of the TAS as an average value rather than bunch-by-bunch needs confirmation.

It was also noted that separate signals from the BPTX monitors will also be available. D. Evans reiterated that the read-out electronics for the ALICE T0 detector may serve the needs of the BPTX. A report will be given at a future LEADE meeting.

Action: D. Evans

A similar study for data measured by the experiments and communicated to the machine is being prepared and will be discussed at the next meeting of LEADE.

Action: N. Ellis, P. Grafstrom, W. Smith

A report on the status of the Trigger, Timing and Control (TTC) electronics, including requirements in the underground areas for rack space, will be reported at a future meeting of LEADE.

3. ORIENTATION OF THE INNER TRIPLET BEAM SCREENS

(N. Hilleret)

N. Hilleret reported on the schedule of installation for the beam screens in the inner triplets at IR1 and IR5. The first installation will determine the beam screen orientations at IR1 and IR5. First inner triplet installation will be that at IR1 in October 2004, with the corresponding beam screens to be inserted in their respective inner triplets in July 2004. To meet these milestones, all documentation, including drawings, must be complete by the end of 2003. Any changes to the orientation of the beam screens from their current baseline scenario of being vertical at IR1 and horizontal at IR5, would require approval of an associated Engineering Change Request (ECR). This would be possible as long as it is done before July 2004 but changes to the documentation will be billed if requested after the end of 2003.

A request was made for N. Mokhov to continue his evaluation of the power density deposition in the forward region and in particular in the inner triplets. Specifically, the systematic uncertainties of the estimations should be elaborated further.

Action: N. Mokhov

4. LUMINOUS REGION IN HEAVY-ION COLLISIONS

(B. Muratori)

B. Muratori reported on the size of the luminous region for the case of heavy-ion operation at the LHC. Several scenarios were studied, including operation with and without squeezed optics, various cases of bunch length increases, various beam crossing angles and with two or three experiments running.

For the case of non-squeezed optics with a 20% bunch increase, a 300 μ rad crossing angle and with 3 running experiments, 95% of the luminosity is within ± 9 cm around the IP.

Further details may be found at </afs/cern.ch/user/b/bmuratori/public/lumi/ions>.

In view of the present uncertainty in the bunch length increase, the RF group of the LHC is encouraged to continue their studies to reduce its expected range.

Action: AB-RF

5. PROTECTION ELEMENTS AT INJECTION AT IR2/IR8

(B. Jeanneret)

B. Jeanneret reported on the protection elements at injection at IR2 and IR8. Accidents caused by failure of the MKI transient kicker magnet will spray the beam on the TDI in front of the D1 magnet. The TDI is not expected to prevent D1 from quenching and the TCDD absorber will be installed to protect further the D1. These

injection lines elements will also protect the inner triplets as well as the ALICE and LHCb experiments.

Work in progress includes further detailed studies of the machine protection by the elements on the injection lines and a functional specification for the injection line and the first LHC turn will be available in June 2003.

6. A.O.B.

Meetings of the WG will be held on the following Mondays starting at **16:00** in the **Conference Room Bat. 14-4-030**.

Remaining Provisional Dates for 2003 Meetings:

12 May

7 July

18 August

13 October

10 November

15 December