

MPWG 9 March 2007

- Minutes
- Remote setting of LHC BLM thresholds (L. Ponce)
- Updates on (safe) LHC parameters (R. Schmidt)
- AOB

The Encoding Scheme for the LHC Energy and Intensity over the Timing System

Meeting of 26th February 2007

Presents: R.Schmidt, J-J-Gras, P.Odier, A.Butterworth, N.Voumard, J.Serrano, J.Lewis,
B.Todd & B.Puccio.

Here are the proposals coming from this meeting...
(Bruno Puccio)

LHC Energy encoding scheme

Will be distributed to the different LHC users in the following way:

- Timing Event encoded as '**0x1405pppp**' (pppp is the 16-bit payload)
- Encoded in 120 MeV unit.
Hence, for the flat-top energy of 7Tev the payload will be encoded as '0xE3DD'.
- The distribution rate will be fixed to 10 Hz.
- In case of transmission failure, the default value will be '**0xFFFF**'
(equivalent to 7.864Tev)

The energy is used to set BLM thresholds, and for other applications in Machine Protection Systems

Beam Intensity encoding scheme

The Intensity of the two beams will be distributed in the following way:

- Timing Events encoded as:

 - '0x1406pppp' (for Beam 1)

 - '0x1407pppp' (for Beam 2).

- The information will be encoded in $10E10$ unit.

Hence, a Pilot beam will be encoded '0x0000'

*and (for ex.) a nominal beam intensity of $3*10E14$ will be encoded as '0x7530'.*

- The distribution rate will be fixed to 10 Hz.

- In case of transmission failure, the default value will be '0xFFFF'

*(equivalent to $6.5*10E14$)*

The intensity is not used in Machine Protection Systems

Layout for Safe Machine Parameters distribution via the Timing

(idea from 7/8/2006 + Revision 26/02/2007)

