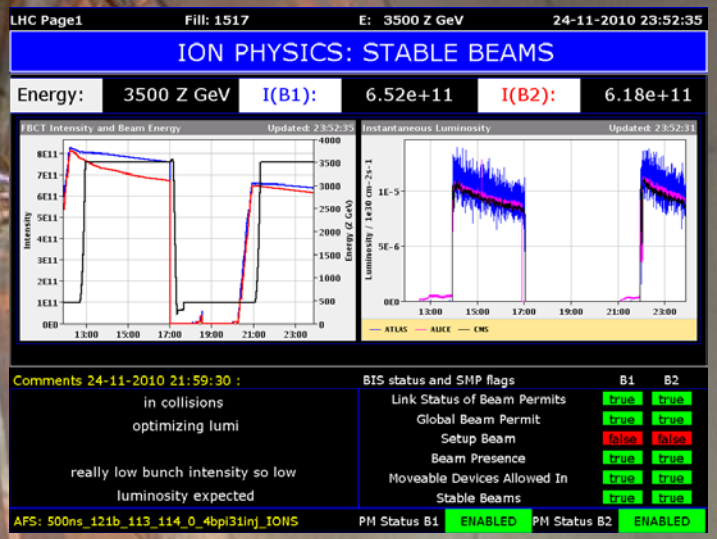
LHC Page 1

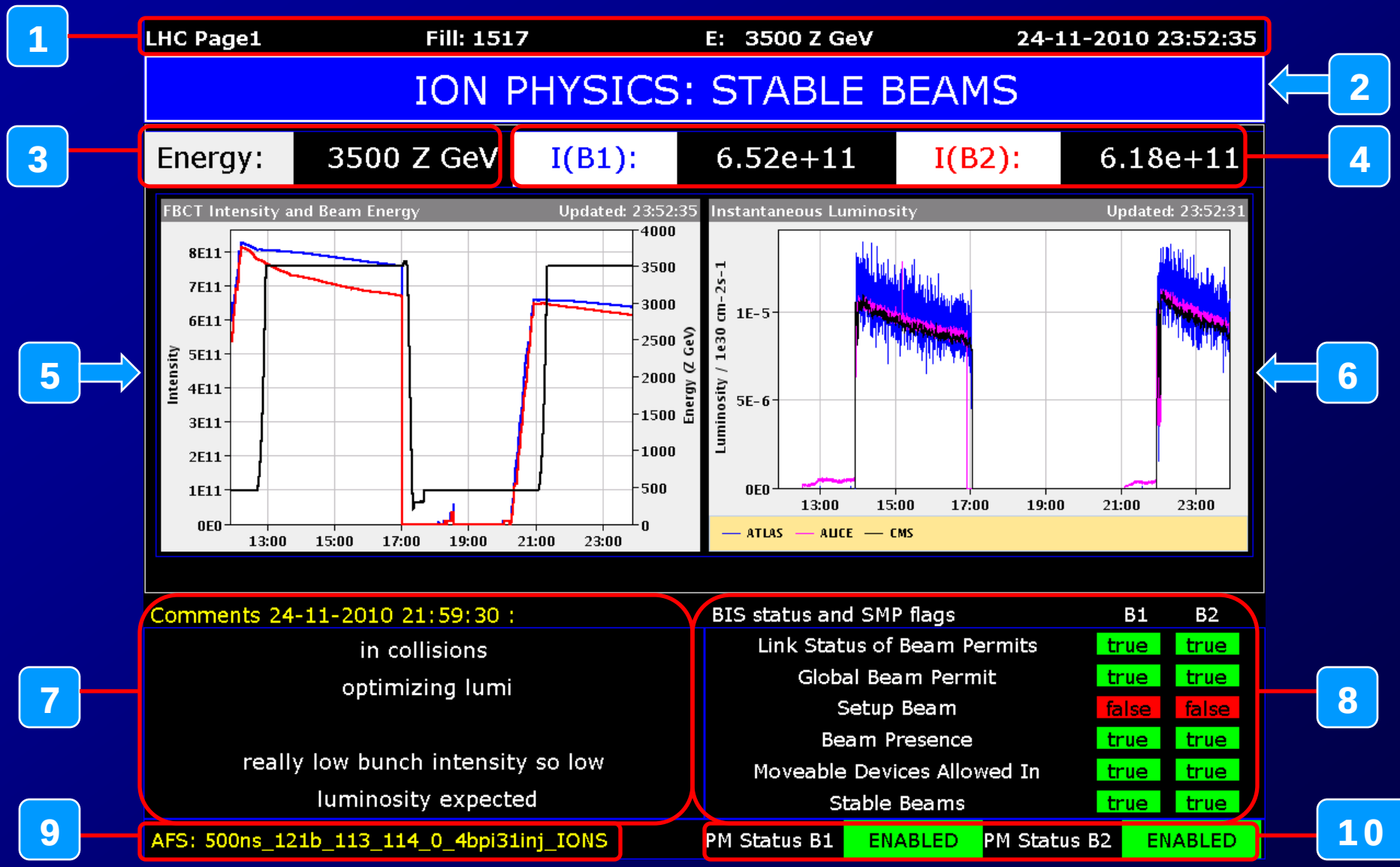

LHC Page1
Fill: 1517
E: 3500 Z GeV
24-11-2010 23:52:35
ION PHYSICS: STABLE BEAMS
Energy:
3500 Z GeV
I(B1):
6.52e+11
I(B2):
6.18e+11
FBCT Intensity and Beam Energy
Updated: 23:52:35
Instantaneous Luminosity
Updated: 23:52:31
Comments 24-11-2010 21:59:30 :
in collisions
optimizing lumi
really low bunch intensity so low luminosity expected
BIS status and SMP flags
B1
B2
Link Status of Beam Permits
Global Beam Permit
Setup Beam
Beam Presence
Moveable Devices Allowed In
Stable Beams
AFS: 500ns_121b_113_114_0_4bpi3inj_IONS
PM Status B1
ENABLED
PM Status B2
ENABLED

Introduction

The main online status display of the LHC is called LHC Page 1. It shows at any given moment the state of the machine together with its most important beam parameters, i.e. accelerator and beam modes, beam energy, beam currents etc.
The display of Page1 is mode driven, i.e. the display changes with the modes of the LHC.
The following pages explain in detail the data which is displayed for each mode.

The common parts are only explained on the first slide.

Ion Physics – STABLE BEAMS



Ion Physics – STABLE BEAMS

1. Header:
   Page name, fill number, beam energy (Z: atomic number), date and time
2. Concatenation of LHC accelerator mode and its beam mode
   For further details, consult: https://edms.cern.ch/document/1070479/1.3
3. Beam energy, as displayed in the header
4. Beam intensity for B1 and B2 measured with a DC current transformer
5. Plot of beam intensities (B1 in blue, B2 in red) and beam energy (black)
6. Plot of instantaneous luminosities provided by ALICE, ATLAS and CMS
7. CCC - operator comments describing current state and activities
8. Status of BIS (Beam Interlock System) and SMP (Safe Machine Parameter) flags
9. Name of active filling scheme (AFS):
   Bunch spacing _ bunches/beam _ # colliding bunches IP1/5 _ # colliding bunches IP2 _ # colliding bunches IP8 _ # bunches/injection _ # injections / beam
10. Status of post mortem timing trigger per beam

Ion Physics – INJECTION PHYSICS BEAM

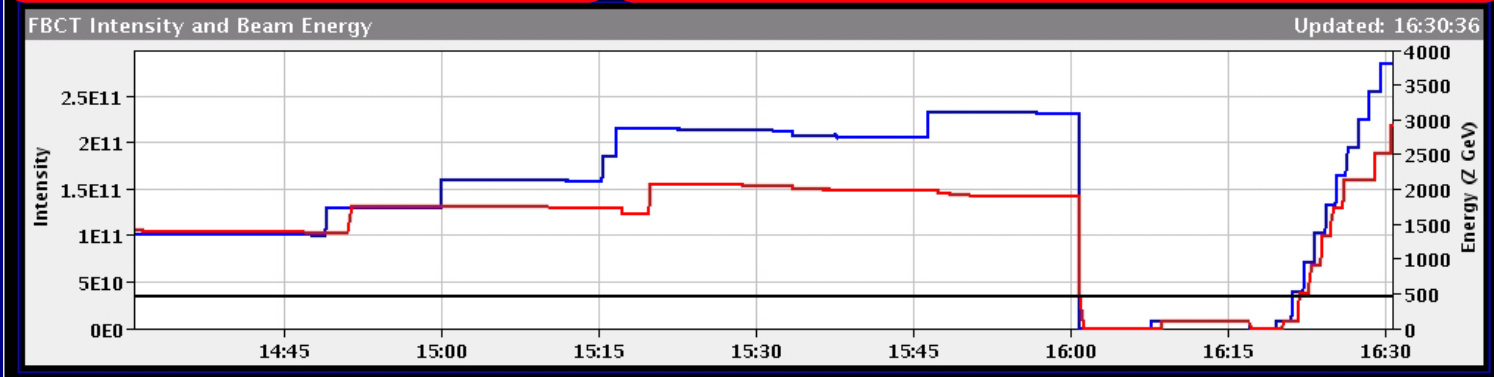
LHC Page1 | Fill: 1520 | E: 450 Z GeV | 25-11-2010 16:30:36

ION PHYSICS: INJECTION PHYSICS BEAM

1 | BCT TI2: 0.00e+00 | I(B1): 2.85e+11 | BCT TI8: 2.61e+10 | I(B2): 2.17e+11 | 2

3 | TED TI2 position: BEAM | TDI P2 gaps/mm up: 9.97 down: 7.96 | 4

TED TI8 position: BEAM | TDI P8 gaps/mm up: 8.70 down: 8.83



Comments 25-11-2010 16:19:33 :

filling

BIS status and SMP flags	B1	B2
Link Status of Beam Permits	false	false
Global Beam Permit	true	true
Setup Beam	true	true
Beam Presence	true	true
Moveable Devices Allowed In	false	false
Stable Beams	false	false

AFS: 500ns_121b_113_114_0_4bpi31inj_IONS | PM Status B1: ENABLED | PM Status B2: ENABLED

Ion Physics – INJECTION PHYSICS BEAM

1. Beam current transformer measurements in TI2 (transfer line between SPS and LHC for B1) and beam current measurement in ring 1

2. Beam current transformer measurements in TI8 (transfer line between SPS and LHC for B2) and beam current measurement in ring 2

3. Position of beam stoppers in TI2 and TI8:
   BEAM = out of beam trajectory
   DUMP = in beam trajectory, i.e. stopping beam

4. Upstream and downstream gap openings of TDIs (injection protection devices)
   Values between 8 - 10mm means they are at injection settings.