

## Structure of MPS Commissioning:

- Write documents per system
  - Written by
    - System responsible for major systems – members of this working group
    - Members of this working group also for 'minor systems' - like the example of the vacuum system
  - Approve in edms by members of this working group
  - Individual tests to appear in MTF
- For each system the same specific stages to appear in the test document
  - Allows to make a horizontal cut for operation of the machine in a certain stage

## Structure

<i>System</i>	<b>BIS</b>	<b>LBDS</b>	....	<b>Vacuum</b>
<i>Phase</i>		= ...refer		
<b>Hardw. Comm.</b>	.... Test 12.8.10 ....			Test 5.1.3.1 .... BIS 12.8.10
....				
<b>Nominal Beam</b>		Order in one phase	.... 6. Test 5.8.3 ...	
		7. Test 1.3.4		

# Systems

- See previous meetings
  - Including some interfaces, to be completed...
- Main systems:
  - Beam Interlock System: Bruno, Ben
  - BLM: Bernd, Laurette, Barbara
  - Collimators: Ralph, Stephano
  - Beam Dump: Brennan, Jan
  - Injection System: Jorg, Verena
  - PIC – QPS – WIC – FMCM: Markus
- Other Systems
  - Vacuum (ongoing), Safe Beam Parameters, Access, Software Interlocks, CCC interlock, 'movable objects', experiments, RF & feedback, aperture kicker, fast beam lifetime,...

# Phases

- Hardware Commissioning
  - Ideally refer to tests already defined in edms documents and MTF or they will need to be defined
  - **Only select tests which concern Machine Protection**
- Cold Checkout
  - System tests
- With beam
  - Below damage threshold at 450 GeV:  $1 \cdot 10^{12}$
  - *156 bunches at 450 GeV :  $1.5 \cdot 10^{13}$  (likely to do this?)*
  - Below damage threshold at 7 TeV:  $1 \cdot 10^{10}$
  - 43 bunches at 7 TeV :  $1.7 \cdot 10^{12}$
  - 156 bunches at 7 TeV :  $1.5 \cdot 10^{13}$
  - 936 bunches nominal at 7 TeV :  $1.0 \cdot 10^{14}$
  - 2808 bunches at 7 TeV :  $3.0 \cdot 10^{14}$

## Link to other Systems

- This section in the vacuum document was extremely useful to check the 'logic'
  - Good to keep it as separate section
- Tests of a functionality mentioned here should always refer to tests already detailed for the system it links to
  - Is this always true??
  - Should not need to detail the tests here but refer to other document, in which the phase is assigned
- Link between systems to be described by the client system

## ...and now

- Start document describing the tests for ALL the main systems
  - Use format as for vacuum system
    - *If agreed I stick a template with the phases on the Website this afternoon*
  - Don't forget the interfaces to the other systems
    - Discuss with responsible person of other systems to refer to the tests of functionality of other system 'you' need
      - Discuss outside this meeting, results reported in the meeting
    - Test of link between systems: to be described by the client system
  - Mention explicitly if there is a certain order of tests relating to other systems
- **Document ready for approval / discussion in 6 weeks!**
- Discuss progress /outstanding problems at the next meeting in 3 weeks
  - Including 'update' on MTF structure
- 'Other systems' to follow...