PS report W9 / Beam commissioning status

Alexander, Denis on behalf of the PS OP and coordinators team.
Main items of Week 9

- Phasing of C200 MHz
- Phasing of C40/C80 MHz
- Energy Matching with PSBooster on INDIV
- TT2 SEMFil fits problem solved
- BLM measurements in TT2.
- Min/Max of DFA tested successfully.
- Broken Digitizer of WCM03 after a power cycle.
- BTP kick response OK -> logical.BTP.DHZ10 linked to FGC device.
- F16.BVTs kick response show an inversion of polarity.
- KFA71 : m11,m12 synchronized.
- PS / SPS synchro tested on Thursday.
- Checked KFAs effect on MTE extraction.
- nTOF emittance measurements.
- First iteration of energy matching with SPS
**LHCINDIV for SPS**

- Energy matching with PSB (all rings Ok) BinjPS=1330G, BejPSB=11344G
- Injection, Transition, High Energy orbit correction, Ejection optimization, bunch rotation.
- Energy matching with SPS (first iteration done this morning).
- BLM (Ring + TT2 enable)

**MTE Core only for SPS**

- Injection, Transition, Ejection.
- 200 MHz component optimisation
Full MTE (4 islands + core)

- Setup up to 1.3e13 ppp
- several tests on MTE extraction took place to better understand the individual effect of each of the kicker used to extract the beam.
- losses in SS14 reduced with BFA9P (vacuum chamber represents a horizontal aperture restriction during fast bump around MU13)
- Good shadowing TPS15/SMH16, good 200MHz structure.
nTOF beam for commissioning ($I_p=200e10$, large emittances)

- Setup up for **200e10 ppp**
- several measurements to qualify **beam size** during the week-end.
- $E_h \approx 9$, $E_v \approx 6$
- Investigation in PS, how to make it larger ($\approx 7$) in the vertical plane.
## Status of beams

<table>
<thead>
<tr>
<th>Fixed target beams</th>
<th>Status</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>SFTPRO (core only)</td>
<td>Operational</td>
<td>Ready and tested ( \text{up to } 2 \cdot 10^{12} \text{ p/p} )</td>
</tr>
<tr>
<td>SFTPRO (5 turn extraction)</td>
<td>Operational</td>
<td>Ready ( \text{up to } 1 \cdot 10^{13} \text{ p/p} ), a bot lossy above this intensity.</td>
</tr>
<tr>
<td>AD</td>
<td>Not started</td>
<td>-</td>
</tr>
<tr>
<td>TOF</td>
<td>Basic setup</td>
<td>Beam to D3 at around ( 2 \cdot 10^{12} \text{ p/b} ) ()</td>
</tr>
<tr>
<td>EAST</td>
<td>Not started</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LHC-type beams</th>
<th>Status</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>LHCPROBE, LHCINDIV</td>
<td>Operational</td>
<td>-</td>
</tr>
<tr>
<td>LHC25 (72b)</td>
<td>setup on going</td>
<td>Mostly ready, last splitting and bunch rotation with C40/C80MHz still to be setup.</td>
</tr>
<tr>
<td>LHC25 (12b or 24b)</td>
<td>Not started</td>
<td>-</td>
</tr>
<tr>
<td>LHC25 BCMS (48b)</td>
<td>Not started</td>
<td>-</td>
</tr>
<tr>
<td>AWAKE</td>
<td>Not started</td>
<td>-</td>
</tr>
</tbody>
</table>
Questions and Comments

PS Coordinator of week 10: Alexander Huschauer

AD and nTOF DSO tests planned on Friday Morning! No beam!

**9:00 Daily Zoom meeting during beam commissioning**

Web address: [https://cern.zoom.us/j/9372114100?pwd=L29BcmI0UENCdFBRSytXYVcrM1B4Zz09](https://cern.zoom.us/j/9372114100?pwd=L29BcmI0UENCdFBRSytXYVcrM1B4Zz09)
Meeting ID: 937 211 4100
Passcode: 525463
Follow-ups

_no LASER alarm when C10 drop down. -> **Raul contacted Carlos/Pierre**
_F16.BVT calibration curve inverted. -> **done in YASP config file**
_ensure that energy matching has been propagated to all beams we currently use (check also in PSB)
_follow-up of injection trajectories of all beams
_request from Matt: array in the WS for the voltage step setting of the DFAs so we can send all steps simultaneously -> **OP issue created -> APS-9481**
_Wesley's working point application: **Sara and Cedric will work on the deployment**
_Makerule stable phase to propagate setting to 10MHz cavities -> Denis
_JMAD file for optics in EAST AREA
_TT2 BPM offset to be updated in FESA class.
_EAST Beam permit to be signed by Friday evening. (11 March)