



CMS PPS and TOTEM Activities during TS2 and Revalidation



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**MPP Meeting
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PPS detectors -> service work during TS2-2018

- Si-pixel:
 - > sensor/chip needs refreshing during TS2 (position change of sensor/chip rel. to beam)
 - mechanical procedure as last year and during TS1-2018
 - https://indico.cern.ch/event/664150/contributions/2712585/attachments/1519220/2372600/CT-PPS_TS2_LMC.pdf

lifting of 210 far horizontal -> 0.5 mm -> final position +1.0 mm
lowering of 220 far horizontal -> 0.5 mm -> final position 0.0 mm } After TS2 2018

- Service work on electronics components
- Optional : install scope(s) in tunnel – removed after re-validation (3 bunches)
 - > needs short access to tunnel (as after TS1)
- -> LHC IMPACT TS2 created -> 116548 (saved by not yet sent)

10/07/2018

TRES meeting 10.7.2018 CMS-PPS J.Baechler

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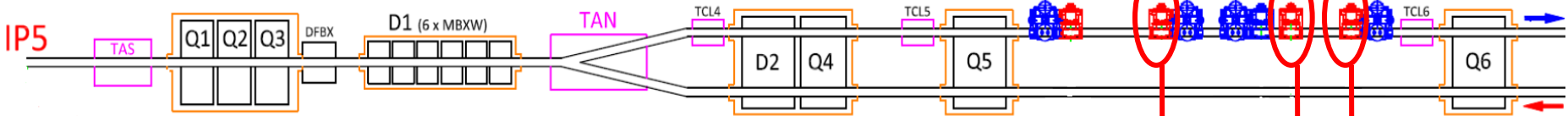
+ Replacement of detector package in cylindrical pot 56-220-C-H (XRPH.E6R5.B1)



TS2 Interventions on XRPs



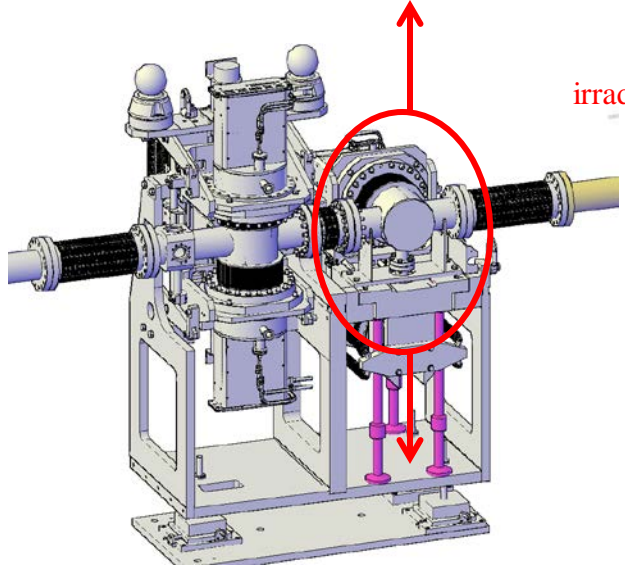
XRPH/V.[x]6R5.B1: [x] =



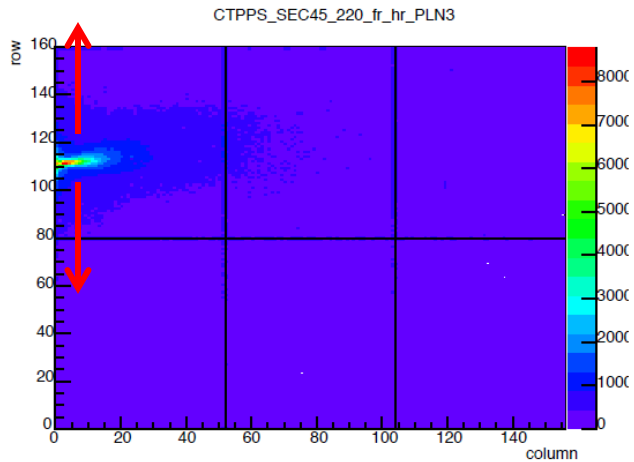
Horizontal XRP units:

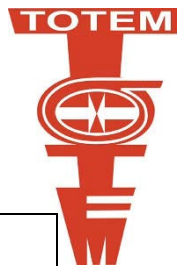
- Lift by 0.5 mm (45 and 56)
- Replace detector package (56 only)
- Lower by 0.5 mm (45 and 56)

Lifting / Lowering:



irradiated spot to be moved vertically





TS2 schedule and work package

LHC groups involved:

LHC coordination
LHC vacuum
LHC x-ray
LHC Radio Protection

Vertical change of RP210 - 220 horizontal far (4/5 and 5/6)

The Roman Pots which are changed in their vertical position are:

sector 4/5:

210 far horizontal: XRPT1.B6L5.B2 collim. name = XRPH.D6L5.B2

220 far horizontal: XRPT1.A6L5.B2 collim. name = XRPH.B6L5.B2

sector 5/6:

210 far horizontal: XRPT2.B6R5.B1 collim. name = XRPH.D6R5.B1

220 far horizontal: XRPT2.A6R5.B1 collim. name = XRPH.B6R5.B1

The bellow interconnecting was x-rayed after the position change during TS1-2018 ->

if the proposed vertical variation during TS2 is ok for the vacuum group, we need only X-ray after the position change



Alignment and Revalidation



- 5 horizontal pots are touched in TS2 (D6L5, B6L5, D6R5, E6R5, B6R5)
- They need to be realigned after TS2
- Then loss maps as usual
- No interlock components are touched
- Additional calibration data needed
 - details under discussion
 - to be communicated via CMS runcoordination → LPC



Additional Material

We can guarantee by this method that the whole movement trajectory will be very accurate, within tolerances 0.1 mm vertical and radial. Several mechanical tests and measurement have been performed.

