

Introduction

Intro - PS Orbit – BWS – CPS BCT – CPS Tune – PS SEM Grids – Conclusions

- We know that a lot of things were working well from the start and we'll just concentrate here on the issues even if it looks worse than it should...

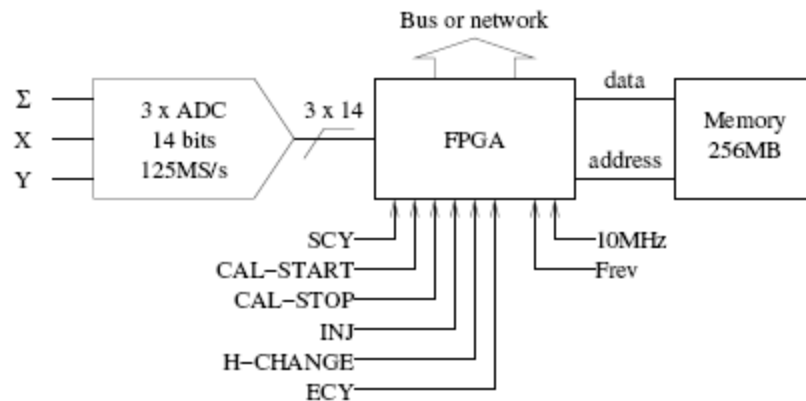
PS Orbit

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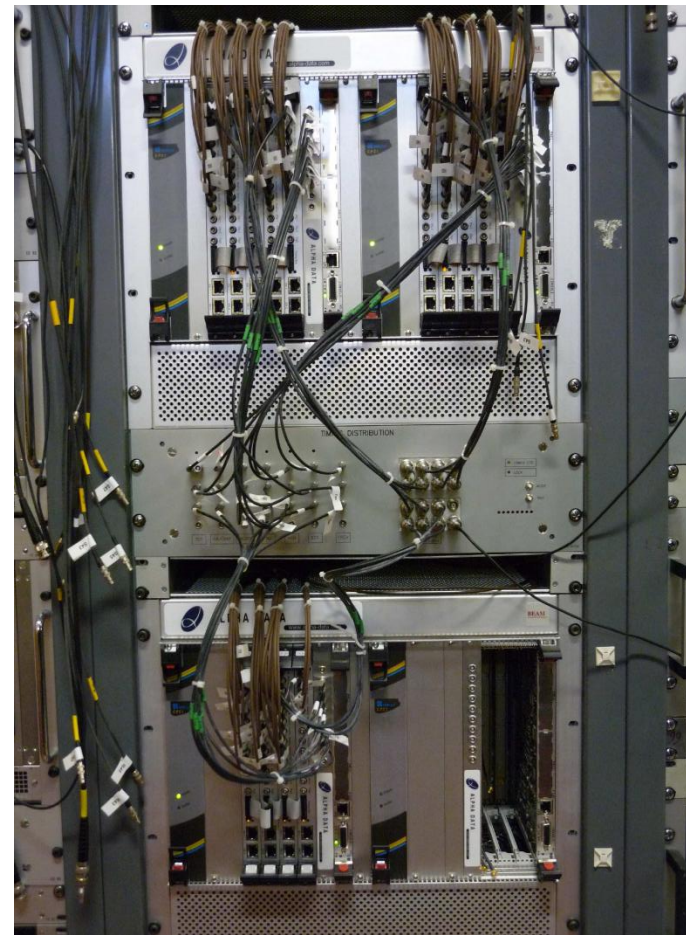
New TMS (Trajectory Measurement System)
Works in parallel to old CODD system

New system measures all bunch trajectories
all along the acceleration cycle but only 200K
data points can be requested by the user
(5000 turns of 1 bunch or 625 turns for an h=8
Beam with all buckets filled)

Synchronization and integration in FPGA



Goal: Get the new system into fully operational
state, which allows decommissioning of CODD



PS Orbit

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- Already available in CCC in // with the old system. First results look good.
- Still to be done for OP green light
 - Configuration for each cycle (BI – in progress)
 - Commissioning of gain control via new FESA class (BI&OP – first attempt next long MD)
 - Commissioning of YASP on each cycle (OP - ?)
 - Simple and efficient phase adjustment functionality on OP GUI (BI&OP – in progress)
- In //, development and test of the dedicated OP GUI for trajectories (OP/BI)

CPS BWS ...

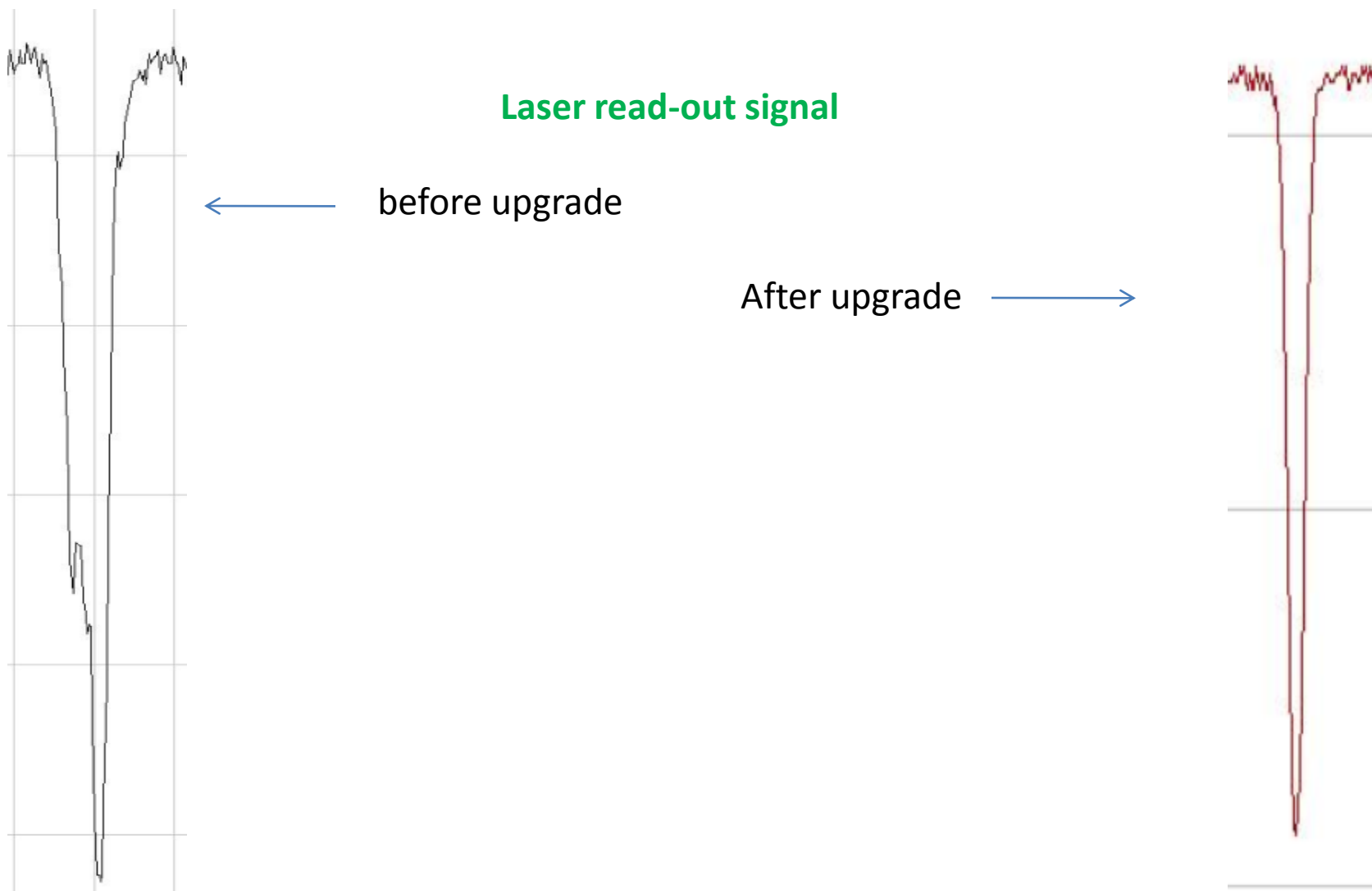
PS Orbit – BWS – CPS BCT – CPS Tune – PS SEM Grids – Conclusions

- PSB/PS BWS:
 - **Firmware issues** (offsets, status register corruption, gate issues): new firmware version gave good results on the test bench. **Will be deployed this week.**
 - **PSBH2 calibration error not yet understood**: We have to redo the tests with the new release of Elliot's application.
 - **Overall instabilities seen from OP**: We agreed with OP & CO to stop modifying Elliot's GUI until the system is reliable and behaving like it should. **Elliot and Ana will use the coming day to make the current version work reliably.**
 - **PS 20 m/s scans not possible**: fixing this would imply a big investment from BI/BL. We would like to postpone this effort to 2010 if possible and see precisely with OP if we can not find alternatives/compromises there.

- PSB/PS BWS:
 - **Calibration windows:** the current calibration window (+/- 30 mm) is too small for MTE in the PS. **We deployed new calibration LUT extended (linear fit) to +/- 50mm.** OP will make tests with bumps to check the precision of these extrapolations.
 - **Improvements on calibration bench:** Mechanical/optical improvements have been done on the bench leading to **significant improvement of the read out signal during calibration.** **We'll now study ways to extend calibration window for PS horizontal scanners**

CPS BWS

PS Orbit – **BWS** – CPS BCT – CPS Tune – PS SEM Grids – Conclusions



SPS BWS

PS Orbit – BWS – CPS BCT – CPS Tune – PS SEM Grids – Conclusions

- SPS BWS:
 - Overall Reliability Issue: Elliot & Ana will also check and fix SPS side this week.
 - HW issues: We still have a lot of HW issues on SPS (519 H/V Rot on old SPS electronics and 416 H/V on new electronics are working. 414 Rot, 517 Lin and 521 Lin, all on old electronics are not working yet). We now have a correct understanding and control of the new electronics despite Jan's absence. This is not yet the case for the old one. We'll use SPS access foreseen during next long MD to understand and fix the maximum we can. 517 case, that even Jan could not fix when he was here, looks bad. We have more hope for the other cases.
 - Calibration issues: We used theoretical values for 416 calibration and OP sees an error there (using bump method). We propose to use the results from OP calibration check to set our calibration for this device.

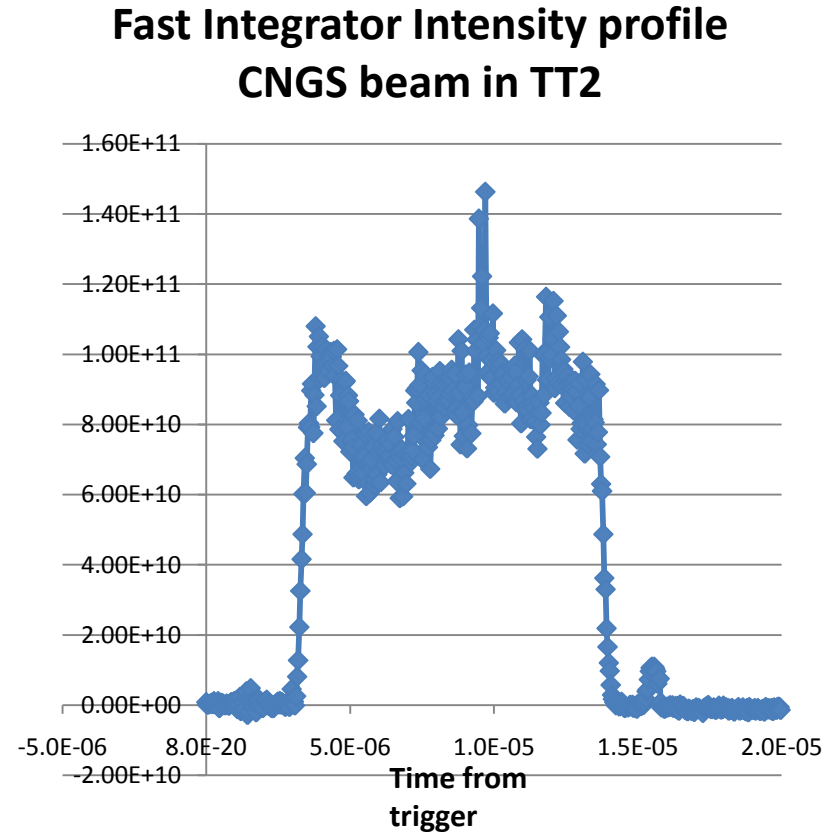
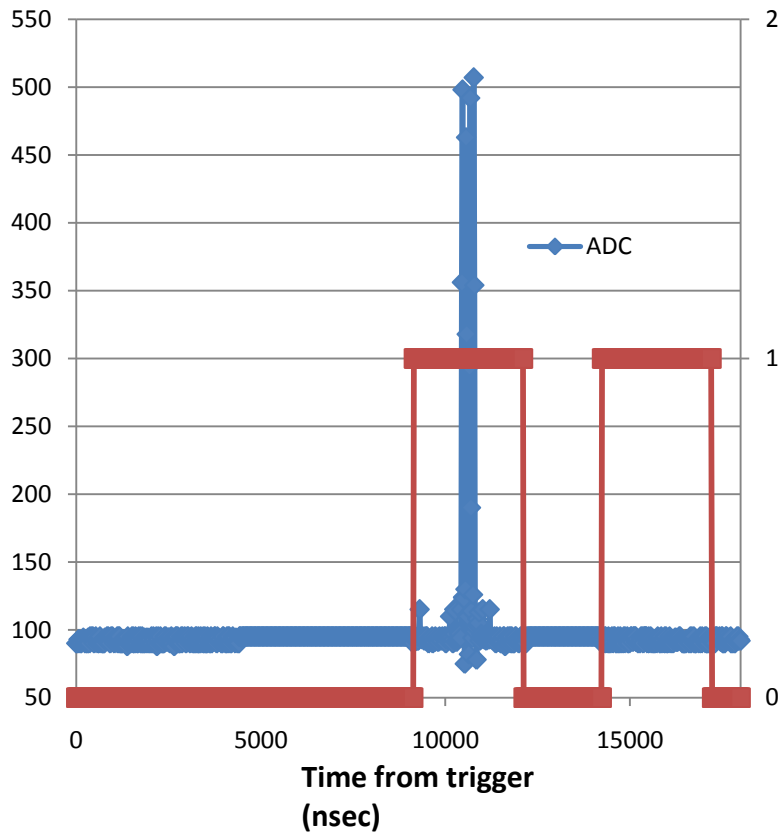
CPS BCT

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- Transfer line transformer electronics consists of analogue integrator, sample and hold + ADC
- Electronics is obsolete, no spares.
- To be replaced by TRIC (Transformer Integrator Card)
 - VME card with 2 analogue input stages, 200 MHz ADC, FPGA + memory.
 - Current + charge calibrator on board
 - Different firmware versions for transfer line, 1000 turns ...
- Card now installed in Booster ejection line, TT2 and nTOF and tests are slowly progressing

CPS BCT

PS Orbit – BWS – **CPS BCT** – CPS Tune – PS SEM Grids – Conclusions



- On Booster we run old and new electronics in parallel for comparison
- Some issues (calibration) still to be solved
- Device by device implementation and test starting with Booster ejection transformers
- May need new application

- Some problems seen at the beginning of the year mainly due to wrong settings in the application (which is complex)
- Discrepancies with sample application solved
- At the moment no further problems are known and the BBQ system is considered operational

PS SEM Grids

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- PS injection SEM Grids have been upgraded to PLC and FESA control/acquisition. They need to be commissioned. We (BI/OP/CO) have a 4 hour slot for this next long MD (16/06)
- PS extraction (TT2) SEM grids are still under the old system but the new one is ready for commissioning (we need ½ hour surface intervention to swap from one to the other). We (BI/OP/CO) have a second 4 hour slot for this next long MD. Depending on the result (including YASP behavior), we'll decide at the end of the MD to keep or not the new version in operation.
- New system already operational on PSB measurement line and ISOLDE.

PS SEM Grids

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- “We know that a lot of things are working well from the start and we’ll just concentrate here on the issues even if it looks more bad than it should ...”
- The problem areas are mainly with devices where major changes have been made. Of course BI does not like this situation and we do everything we can to improve it.
- Our objective is to fix most of the problems to reach a correct state before the summer holiday period to be able concentrate our efforts on LHC afterwards.
- We thank you for your support and understanding and invite you to invite us back end of July to see if we succeeded.