

RPW system

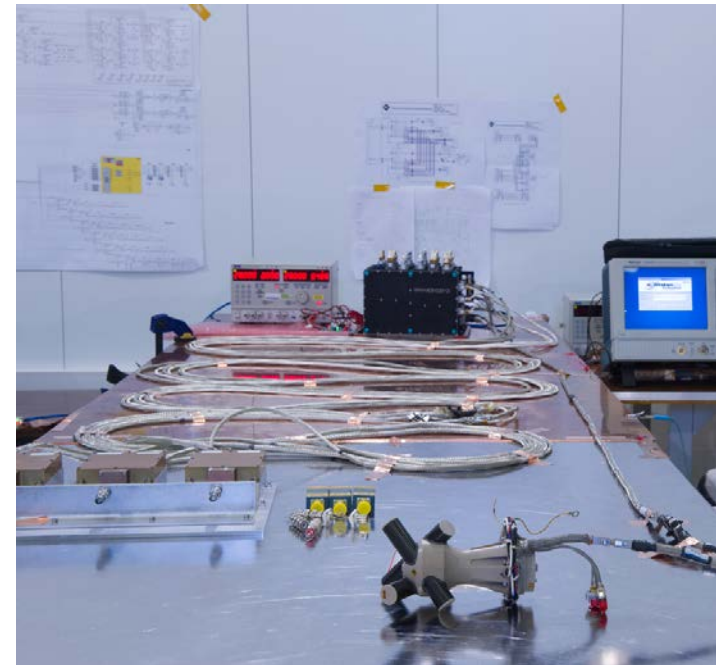
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Emmanuel Guilhem
DCT/PO/EU
ALTRAN

SUMMARY

- **Validations on PFM**
- **Delta calibration**
- **Activities to come**



Validations on PFM (1)

- Validation of R3++ new functionalities
 - ◆ Fully validated at SW level on simulators by LESIA
 - ◆ Validation of the nominal cases at RPW PFM level by CNES
 - ◆ Reaction wheels filtering
 - » no issue encountered
 - » Next step : I/F validation at S/C level (test name : IIC-7)
 - ◆ PAS filtering
 - » no issue encountered
 - » Next step : During commissioning phase a dedicated operation shall be planned in order to tune the PAS filtering function
- FDIR
 - ◆ Fully validated at SW level on simulators by LESIA
 - ◆ I/F between Hardware and software verified on PFM by CNES
 - » Each kind of internal FDIR verified for each analyser
 - » Verification of the restoration mode and context
 - ◆ no issue encountered



Validations on PFM (2)

- Electrical I/F with S/C

- ◆ validated at several levels:

- » Analyzer levels : LVPS and DPU,
 - » Sub unit level : MEB
 - » At RPW level

- ◆ The tests have verified :

- » SpW I/F requirements
 - » Primary power I/F requirements
 - » Analogic commands (HV-HPC and BSM) I/F requirements
 - » LVDS Overvoltage

- ◆ All the results are compliant, except two minor NCs:

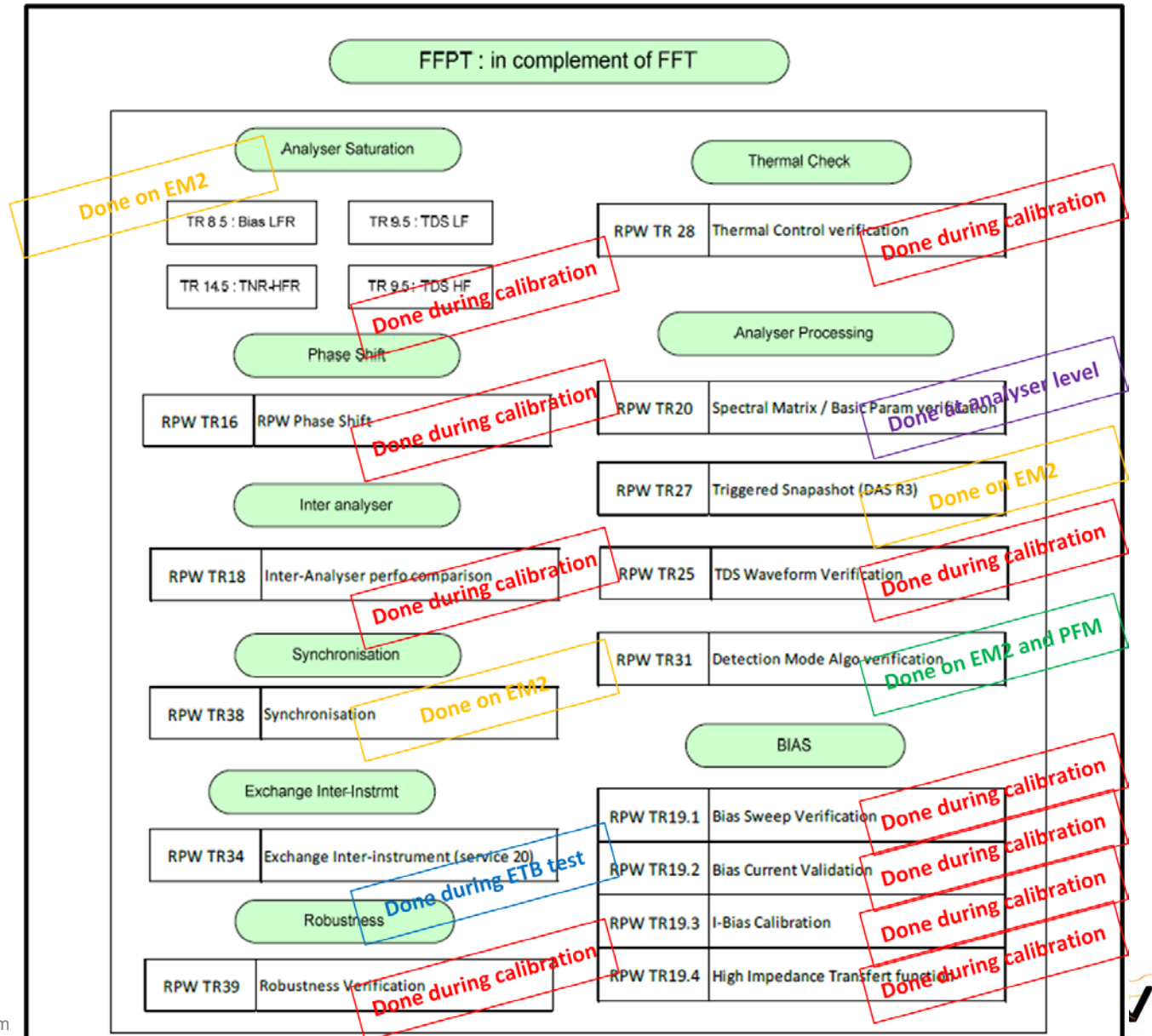
- » HV-HPC susceptibility to μ pulses time $> 25\mu\text{sec}$
 - » Primary interface impedance $22\mu\text{F}$ (due to new order on TDS filter)

- Other

- ◆ Pictures of the setup are available
 - ◆ Coupon from the antenna are available



Validations on PFM (3)



Delta calibration

● Objectives

- ◆ Redo BIAS calibration with the new LFR PFM2 FPGA (without DC offset issue)
- ◆ Redo THR calibration with the new preamplifier combination (see NC 289 circular permutation of the HF preamplifiers)
- ◆ Redo LFR and TDS calibration with improved GSE time resolution
- ◆ Redo LFR and TDS_LFM calibration with the double Helmholtz coils instead of the injection caps (investigations on eye issue).

● Status

- ◆ All tests are done.
- ◆ The results have been provided to ROC team.
- ◆ Waiting for science feedback.



Activities to come

- S/C, Antenna, and EM2 tests
 - ◆ Described on Eric's and Pascale's slides
- Operations
 - ◆ Provide a new document : RPW operations during commissioning
 - » Exhaustive list of all the operations to be done with RPW for commissioning phases
 - » Due date November 2017.
- Ground segment
 - ◆ Support to ROC development team (Dési Raulin)
- Performances
 - ◆ After the free field tests on QM antennas all the results will be available to write the performance document
 - ◆ Collaboration between Milan and CNES team
 - ◆ Due date : November 2017
- User manual
 - ◆ A new version of the document will be provided to ESA for the Antenna delivery
- Investigations on NCs
 - ◆ Support to analyzer team

