ROC General Status

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- **ROC status**

- ROC development updates

- Validation test activities

- Exploitation plan during Commissioning and Early Cruise Phase

ROC activity road map

- RCS integration — Feb-Oct. 2019

- ROC-MOC DDS/GFTS implementation — May-July 2019

- SVT1-A test — 2 May 2019

- E2E-1 test — June 2019

- RCS "ready-for-flight" version release — Oct. 2019

- ROC V4 pre-release ("RSS4") — Oct 2019

- SVT1-B test — 9 Aug. 2019

- ROC Validation Campaign #4 (RSS4VC) — Oct. 2019

- ROC "Acceptance Review" — Dec. 2019

- ROC V4 final release ("RSS4") — Jan. 2020

- ROC status

- **ROC development updates**

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SOLO RPW data processing (1/2)

- **Done**

  - L1/L1R/L2 skeleton/master CDF V05 have been released on DataPool Git repository (compliant with [SOL-SGS-TN-0009 V2.4], complete Bias sweep/current skeletons, fixing bugs reported from EMC data analysis)

  - Retrieving RPW raw data from MOC (TmRaw, TcReport)

  - Loading MOC Mission Information Base (MIB)

  - Processing RPW LL01 TNR Low latency data correctly

- **In progress**

  - Producing first set of RPW L1/HK CDF with RODP for checking (!!)

  - Compute OBT->UTC using SPICE kernels (done but to be tested)

  - New RPW L1 LFR BP1/BP2 CDF (done but to be tested)

  - Produce BIAS L1 products (sweep and current)

  - Process SBM1/SBM2 data as expected during mission

  - Produce daily summary reports (TC reports, event log, instrument status)

SOLO RPW data processing (2/2)

- **To be done**
  - Coordinate systems in RPW CDF data production
  - QUALITY_BITMASK (at L1) and VALIDATE (at L2) global attribute value setting
  - OBS_ID/SOOP_TYPE global attribute value setting
  - HFR List mode processing
  - Quicklook production
  - Automatizing main pipeline processes

- **To be fixed**
  - SENSOR_CONFIG value in HFR calibration L1 CDF (reported by Antonio)
  - SAMPS_PER_CH value in TDS LFM-RSWF L1 CDF (reported by Eric, ROC-SGSE_L1R_RPW-TDS-LFM-RSWF-E_73525cd_CNE_V03.CDF)

RPW ground data production

- **Instance of ROC-SGSE V3.2.0 has been deployed on the ROC production server**

- **V03 RPW L1/HK CDF from EMC campaign are available in the ROC Web site:**

  - https://rpw.lesia.obspm.fr/roc/data/private/devtest/rpw/emc/roc-sgse/

  - Full set (22th and 23th of May)

  - Generated with V05 CDF skeletons

- **Data from IIC test on ETB will be processed with ROC-SGSE and made available on the ROC Web server**

- **V03 RPW L1/HK CDF from thermal calibrations have been re-processed. Need to be checked and published on the ROC Web server.**

- **RCS software and data product status (see teams' presentations)**

- **Integrating RCS into ROC pipelines is almost completed (thanks to all teams!).**

- **What's next?**

    - Fix latest 'hard-coded parts' in the interface

    - Implement missing L1R/L2 data products

    - Conclude on the calibration table CDF convention

    - Ensure that the ROC can deploy RCS and test the execution in an automated way

RPW Calibration Software status (2/2)

RCS	Integration status	Comment
THR_CALBAR	OK	Compliant with RCS ICD 1.2 Successfully tested on ROC-SGSE
LFR_CALBUT	OK	Compliant with RCS ICD 1.2 Successfully tested on ROC-SGSE
TDS_CALBA	Command line interface not fully compliant + missing compliant test data	Normalization with RCS ICD 1.2 in progress
SCMCAL	OK	Compliant with RCS ICD 1.2 Successfully tested on ROC-SGSE
BICAS	OK	Compliant with RCS ICD 1.2 Successfully tested on ROC-SGSE

- ROC status

- ROC development updates

- **Validation test activities**

- Exploitation plan during Commissioning and Early Cruise Phase

Test campaign : SVT1 context

- SVT1 tests in 2 sessions:
  - SVT1A : May 2nd : 4h of test and 4h of software upgrade
  - SVT1B : August 9th : 2h of test and 1h of software upgrade

- Main goal : Validate, from an operation point of view, all the processes : test of all commands, generation of PDOR, MDOR, software patches, communication between teams and MOC, and between MOC and SC. **No science generated.**

- Tests were run on the **PFM** model

- Data available in:

  - https://rpw.lesia.obspm.fr/roc/data/private/devtest/esa/SVT1-A (wrong time tagging)

  - https://rpw.lesia.obspm.fr/roc/data/private/devtest/esa/SVT1-B (wrong time tagging)

SVT1B Test Status

Actions :

- Retest of failed TCs during SVT1A -> Success : Most of issues have been corrected or understood.

- Perform last EEPROM software upgrade for DAS and LFR (redundant side, EEPROM 2) -> Success

Remaining issues

- Identify why no TDS triggered snapshots were produced and dumped during tests -> Waiting for data

Test campaign : End-to-End 1

- E2E-1 in June: Simulate one typical week of operations and one week with several configuration changes (no TC execution on PFM or

- Inputs: RPW IORs (TC sequence timeline) sent to SOC at the end of April

- Purpose:

  - For MOC/SOC: to test the complete uplink chain between Instrument teams, SOC and MOC

  - For ROC: to check compliance of IORs

- Results: Success

- Next E2E-2 planned before nominal phase

ROC V4 validation campaign [RSS4VC] - 1/2

- **ROC team will run a validation tests of its infrastructure on October (21-25)**

- **Will be tested:**

  - The production of L0, L1/HK CDF from raw data with ROC-SGSE and RODP

  - The production of L1R/L2 CDF with RCS (called with ROC-SGSE and RODP)

  - The generation of IOR/PDOR/MDOR/TC sequences with MUSIC Web GUI

- **Will not be tested:**

  - Interfaces with SOC/MOC (tested during specific campaigns)

  - Production of some L1 products (Bias sweep/current)

  - Low Latency data production (tested with SOC)

  - Operation request interfaces with Bias and LFR team (BOICD, LOICD)

  - Data visualisation/monitoring tools at ROC

  - SBM selection tool

- It is expected that RCS Teams support test campaigns (i.e., point of contact in case of software failure)

- Final check before launch of the RPW data products is also required

- Related activities will be detailed during the RCS splinter session tomorrow afternoon

- ROC status

- ROC development updates

- Validation test activities

- **Exploitation plan during Commissioning and Early Cruise Phase**

- **CNES (until end of commissioning)**

  - Overall responsibilities

  - System validation

- **ROC**

  - Main interface with MOC (ESOC) to retrieve RPW-related data and to submit commands

  - Ensure operation activities: instrument commanding, monitoring of resources (telemetry bit rate/volume, power)

  - Make available asap RPW raw telemetry, tc report and SolO ancillary data

  - Make available within 24h* processed RPW data (L0, L1, HK, L2, quicklooks, daily reports, TestLog) to RPW Teams

- **RPW Sub-system Teams**

  - Analyse incoming data and support sub-system validation

  - Deliver up-to-date RPW calibration software and/or calibration tables to the ROC

From the reception of TM at ROC

- **ROC retrieves data from MOC and SOC**

  - Every 24h for nominal data flow

  - ASAP in one shot for special operations (deployment, SFT, calibration rolls, EMC)

- **Retrieved data are dispatched between partners:**

  - Raw data for CNES

  - Raw + processed + ancillary data for RPW Teams

  - Additional Testlog export for ROC and flight software Teams at LESIA
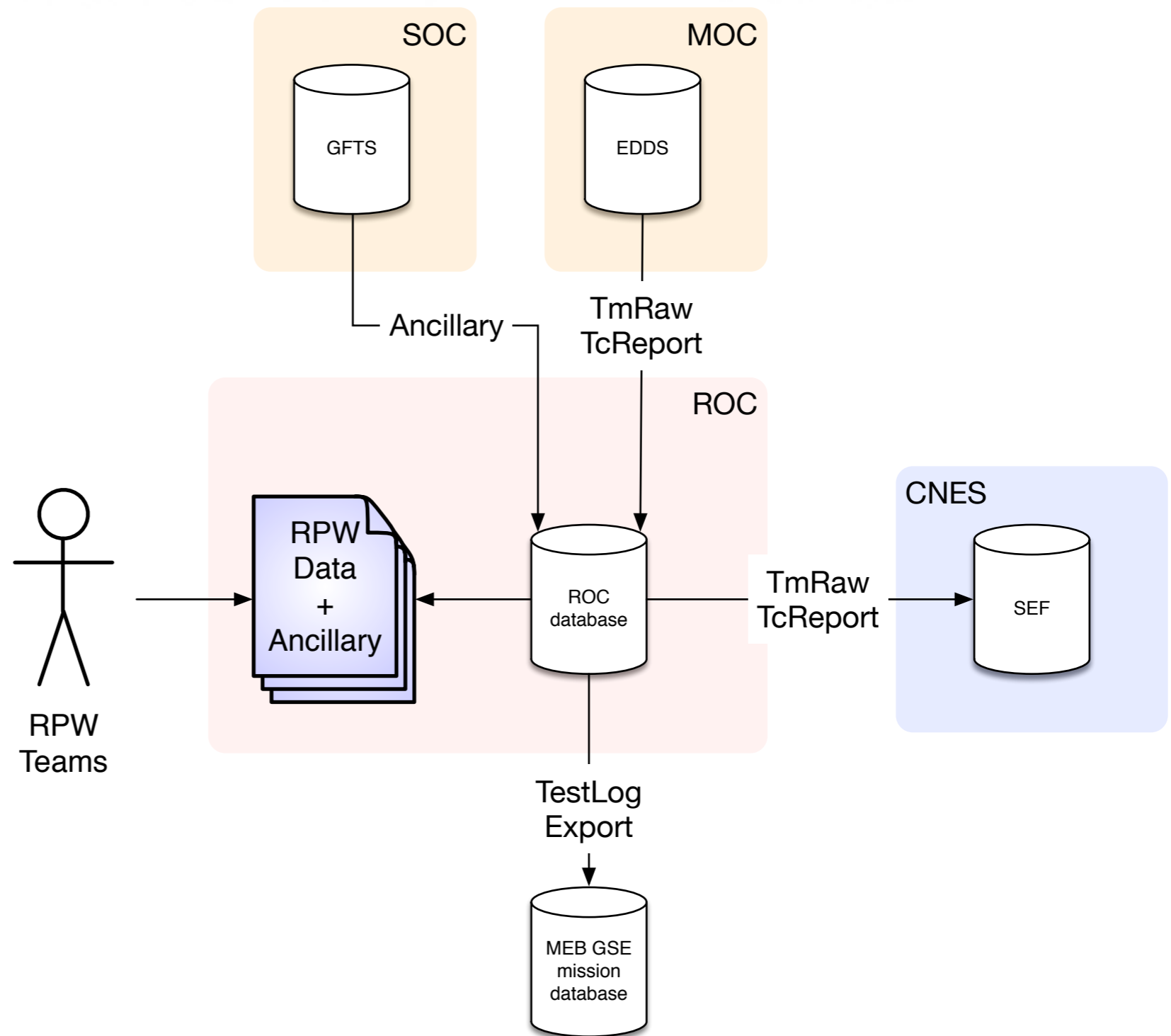
During commissioning:
- No interactive 'real-time' operations
- May have latency to downlink science data (>24h)

Data delivery location

- RPW nominal flow data (within 24h):

  - https://rpw.lesia.obspm.fr/roc/data/private/solo/rpw/data/

- RPW NECP special operation data (one shot):

  - https://rpw.lesia.obspm.fr/roc/data/private/devtest/rpw/necp/

- SolO ancillary data:

  - https://rpw.lesia.obspm.fr/roc/data/private/solo/esa/soc/spice/

- Public data (after 3 months):

  - http://soardev.esac.esa.int/soar-int/#home (dev. version)

- Backup of public data at LESIA:

  - https://rpw.lesia.obspm.fr/roc/data/pub/solo/rpw/data/

- Information and related documentations:

  - https://rpw.lesia.obspm.fr/about-data/

Early Cruise Phase - Reminder

- **MOC**

  - 24 hours monitoring of the instrument (from instructions given by RPW team)

  - System monitoring only (HK, events, FDIR)

  - Can take the decision to switch-off the instrument if require

  - Direct interaction with instrument team for special operations (software upgrade, contingency procedures, gravity assistance manoeuvres)

  - Make available raw data via the Data Dissemination System (DDS)

- **SOC**

  - Coordinate the science operation planning with the SWT/SOWG (see https://issues.cosmos.esa.int/solarorbiterwiki/pages/viewpage.action?pageId=34047195)

  - Provide science operation planning inputs (events + resource allocation) + mission ancillary data

  - Retrieve and transmit to the MOC instrument operation requests (IOR ; containing sequences of TC) from payload teams - (1 IOR every three weeks during cruise phase)

  - Run the Low Latency data processing pipelines and make available related products (LL01/LL02/LL03 data)

Early Cruise Phase - Reminder

- **ROC**

  - Instrument commanding

  - Operations-related monitoring (commanding, data bit rate/volume resources) during working hours only

  - No SBM selection (but tests will be planned)

  - Overall HK/science data visualisation

  - RPW data production and distribution

- **RPW sub-system Teams**

  - Analysis/checking of their sub-system data

  - Parametrization (Bias current, LFR k-coeff, SBM detection rate, software patching)

  - Delivering up-to-date RPW calibration software and/or calibration tables to the ROC

  - Supporting investigations in case of anomaly

- **CNES**

  - No operational activity after commissioning. (LESIA takes the full responsibility of the instrument exploitation.)