ROC project operations plan

X.Bonnin

RPW operations preparation strategy

- Operations preparation overall strategy:

  1. List the RPW routine/non-routine operations planned over the mission

  2. For each specific operation, identify the expertise required, then build a dedicated RPW operations working group (ROWG) gathering the relevant people.

  3. Each ROWG will then to prepare the RPW operation specification

  4. Operations specifications outputs are then submitted to the ROC, which will perform the flight procedures creation, validation and submission to the MOC.

- Defined in the ROC operations management plan (OMP)

RPW operations timeline
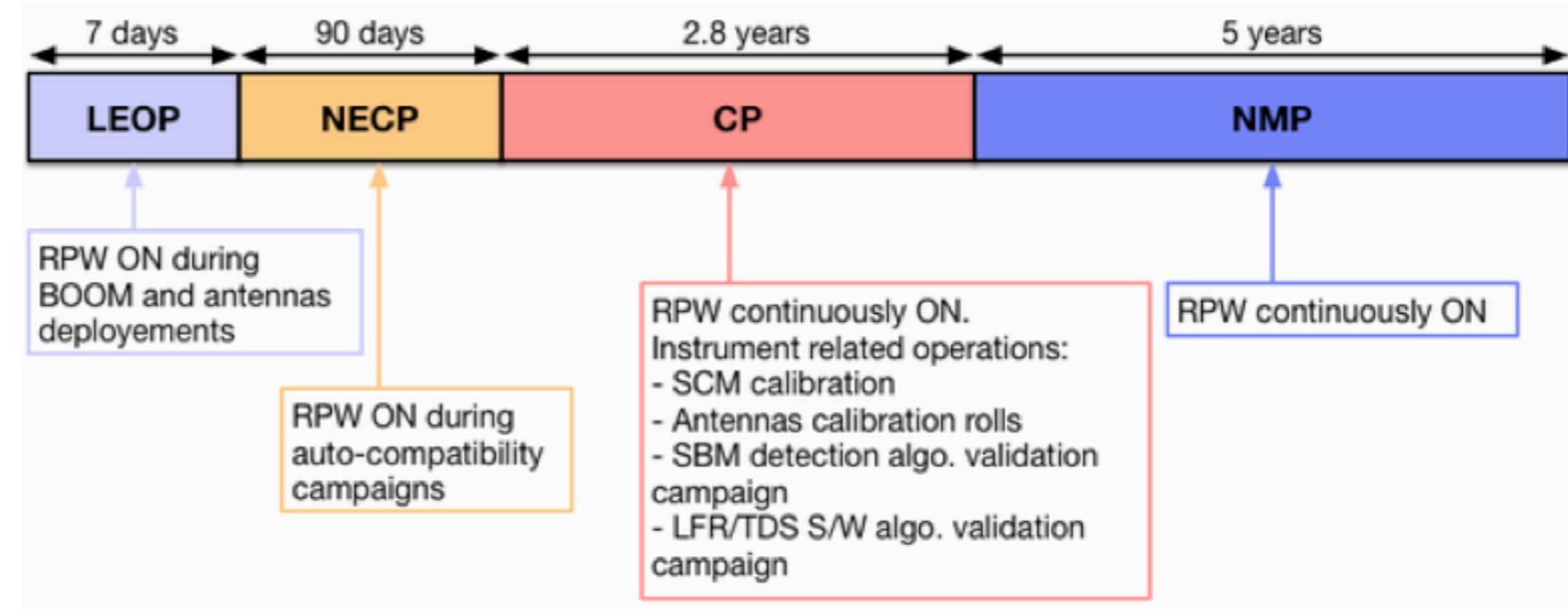
LEOP

- ANT & Boom deployments

NECP

- Instrument auto-compatibility interference campaign

- RPW-PAS filtering tune campaign

- TDS/LFR internal algo. validation campaign (planned during CP in RPW User manual)

- SBM algo. validation (planned during CP in RPW User manual)

- SPICE HSD Z-ANT bending effect characterization

CP

- Calibration rolls

- SCM calibration (earth-lobe)

- SBM selective downlink operations life-cyle validation

- Bias operations life-cycle validation

- Routine operations (including regular Bias current setting and SBM selective downlink)

- Non-routine (flight patching, contingency recovery)

Instrument Operations Timeline

7 days	90 days	2.8 years	5 years
LEOP	NECP	CP	NMP

RPW ON during BOOM and antennas deployements

RPW ON during auto-compatibility campaigns

RPW continuously ON. Instrument related operations:
- SCM calibration
- Antennas calibration rolls
- SBM detection algo. validation campaign
- LFR/TDS S/W algo. validation campaign

RPW continuously ON

ROC will have to check with RPW teams that this list is exhaustive

Dedicated data packages (procedures, specification) for LEOP, NECP, CP routine, CP non-routine operations

RPW operations preparation schedule

- Operations preparation is driven by the SOV/SVT planning and expected inputs:

  - SVT0 data package - First set of nominal procedures (switch-on/off, enter science default state, etc.) —> CP routine operation data package

  - SVT1 data package - Set of procedures for LEOP/NECP/CP operations —> LEOP/NECP/CP non-routine operation data package + RPW User Manual + Instrument state model (ISM)

  - SOV "CP end-to-end tests" data package - procedures and IORs to run the SOWG10 LTP exercice operations timeline (will use procedure from CP routine operations data package)

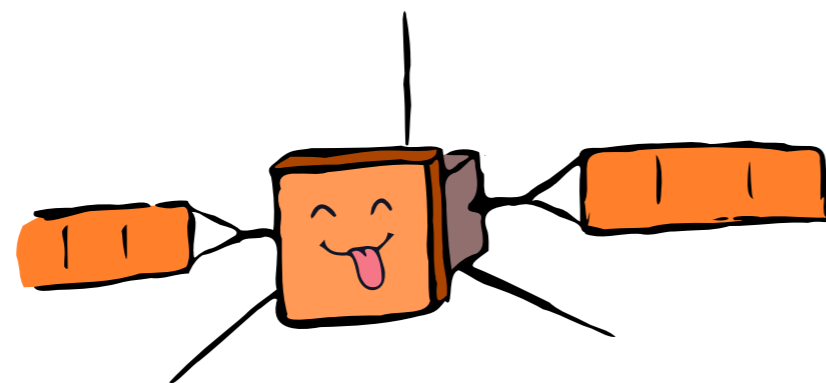# RPW operations validation overall strategy

- ROC will use the MEB EM1 setup at LESIA to validate the flight procedures (TC sequences) for the operations

- Generation of C-SGSE scripts from MUSIC containing the procedures to validate

- Run the C-SGSE script via the MEB GSE

- Analyse TC/TM flows generated during the run and check expected data (procedure vs actual TC/TM) matching and behavior (TM data rate) - Will be done with the ROC-SGSE
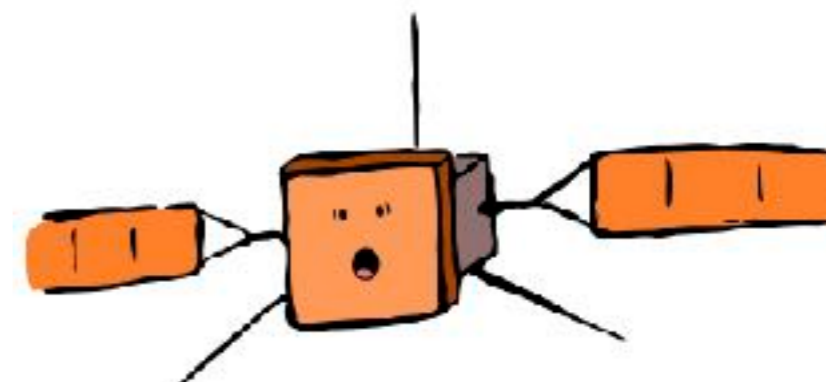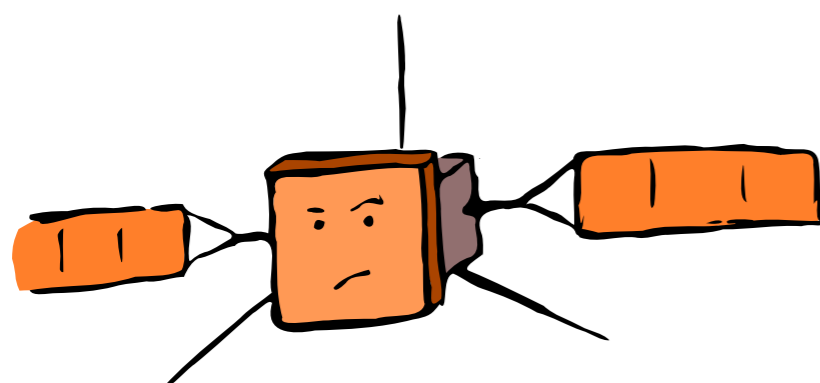
- Instrument configuration + PW versus procedures (TC sequence) allowed transition

- Defined for HOT (PA heaters OFF) and COLD case (PA heaters ON)

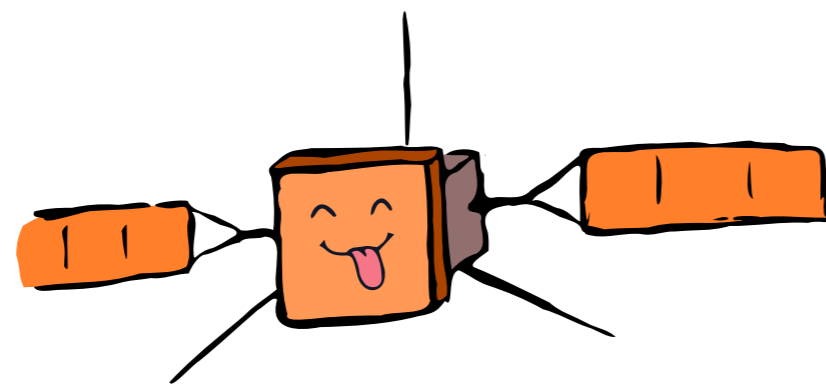- To be delivered to the MOC for instrument power modeling control

Operational hot phase (the heating average power is considered)

Mode	Cons. (W)	Transition to Mode via Sequence	Transition from Mode	Transition to Mode	Remarks
IW_PW_OFF	0				RPW off antenna PAs and SCM heaters are controlled by the S/C
IW_PW_SAFE	4.5	AIWF001A AIWF002A	IW_PW_OFF	IW_PW_SAFE	RPW off antenna PAs and SCM heaters are controlled by the S/C
IW_PW_STANDBY	5.3	AIWF011A	IW_PW_SAFE	IW_PW_STANDBY	RPW off antenna PAs and SCM heaters are controlled by the S/C
IW_PW_SERVICE_EQ_ON	15.2	AIWF010A	IW_PW_STANDBY	IW_PW_SERVICE_EQ_ON	Only the power of SCM heaters is included since controlled by RPW

To be continued…

Extra slides