

ROC Validation Workshop

Flight validation activities



solar orbiter



- ROC has started to prepare the inputs for ESA SVT-1 planned on Spring 2019
- According to ESA, all instrument TCs shall be tested during SVT-1
- RPW TC sequences for near-Earth commissioning (NECP) and cruise phase (CP) - including contingency and patching - are supposed to be delivered to ESA by end of September 2018 (request to extend to mid-October). All sequences will have to be
- ROC is working with RPW teams to define instrument configurations timelines for these two phases
- Additionally, the ROC plans to start the implementation of the functionalities related to the NECP and CP activities (operations, validation, monitoring, data production and visualization) on 2019.

RPW activities during NECP

ID	Description	Purpose
RPW-1	RPW first switching-on	Check the good health of the instrument after launch and before next operations
RPW-2	I-BOOM deployment	Monitor the I-BOOM deployment
RPW-3	ANT deployments (x3)	Measure receiver background and monitor the deployments of the RPW antennas
RPW-4	ANT calibration rolls	Compute the ANT effective vectors
RPW-5	SCM noise measurement (TBC)	Compute the SCM background noise
RPW-6	Inter-instrument interference campaign	Check system behavior and science performance when other instruments work
RPW-7	RPW-PAS filtering tune campaign	Checking RPW-PAS filtering

RPW validation activities during NECP

- Based on these operations, we need to define:
 - The validation activities at system and sub-system levels
 - Required input data to validate the operations and the instrument (system and science)
 - Success criteria
 - The tasks and responsibilities
 - The needs in terms of resources (human and material)
 - Expected outputs/deliverables

RPW NECP validation approach

RPW activities during commissioning are coordinated by CNES

Type of validation activity	Near real-time (at MOC)	Post-mortem
Science validation (performed by RPW PI and Lead Col teams)		RPW-1, RPW-2, RPW-3, RPW-4, RPW-5, RPW-6, RPW-7
System validation (performed by CNES)	RPW-1, RPW-2, RPW-3	RPW-6, RPW-7
Operation validation (performed by ROC)	RPW-1, RPW-2, RPW-3	RPW-4, RPW-5, RPW-6, RPW-7

Actors	Responsibilities / tasks
CNES	<ul style="list-style-type: none">- Overall RPW Commissioning responsibility- Ensures the instrument validation at system level- Writes the RPW commissioning report- Represents RPW at the commissioning review
ROC	<ul style="list-style-type: none">- Main interface between MOC and RPW teams during NECP operations (data retrieval/processing/dissemination, command/control)- Ensure the operation execution, verification and reporting- Support CNES and other RPW teams in the validation activities-
RPW PI	<ul style="list-style-type: none">- Approve the science validation plan (TBC)
RPW instrument scientist	<ul style="list-style-type: none">- Coordinate the science validation activities (TBC)- Write the science validation plan (TBC)
RPW Lead Col teams	<ul style="list-style-type: none">- Support CNES for the validation of the science performance for their own sub-system- Participate to the writing of the RPW science validation plan (TBC)- Participate to the writing of the RPW commissioning report

RPW validation activities during CP

- RPW operation-related validation activities during CP*:
 - SBM selective downlink life-cycle
 - BIAS current setting life-cycle
 - Other? MAG Roll and Remote-sensing checkout windows opportunities (RSCW)

* *Time order of operations are TBC*