

# (2018-09-19/20) ROC Validation Workshop

## Goals

- Identify and specify the validation activities related to the ROC. (See organisation\_notes\_v02 at the bottom of the page for more details).

## Date

19 sept. 2018 to 20 sept. 2018

## Location

CNES site, Toulouse (France)

DEMENTHON 007 (with telecon system)

## Attendees





See organisation\_notes\_v02 at the bottom of the page

## Agenda

See organisation\_notes\_v02 at the bottom of the page

## Discussion items

Item	Who	Notes	Action-Items
Welcome	X. Bonnin	<ul style="list-style-type: none"><li>• <a href="#">roc_validation_workshop_intro_v01.pdf</a></li></ul>	
RPW ground segment validation plan overview	S.Lion	<ul style="list-style-type: none"><li>• <a href="#">introduction-validation.pdf</a></li></ul>	
Information from ECSS on tests	D. Bagot	<ul style="list-style-type: none"><li>• <a href="#">Information from ECSS on tests - D.Bagot - 1.0.pdf</a></li></ul>	

<p>Discussions on ROC validation activities: ROC fonctions validation, ROC software validation, ROC interface validation, ROC data validation</p>	<p>All</p>	<ul style="list-style-type: none"> <li>Validation procedure <ul style="list-style-type: none"> <li>REQ-ROC-SSS-0152 too long --&gt; need to split RSSS requirement between retrieving and processing</li> </ul> </li> <li>Determine/write the validation procedures <ul style="list-style-type: none"> <li>Responsibilities: Sonny Lion (SL)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li><b>Action Xavier: split the REQ-ROC-SSS-0152 into two requirements</b> <div data-bbox="1146 201 1485 489">  <b>ROCMAN-73 -</b>  Jira project doesn't exist or you don't have permission to view it. </div> </li> <li><b>Action Sonny (with the support of Xavier): Finish the write of the "roc_validation_activities_v02.xls" Excel file</b> <div data-bbox="1146 573 1485 861">  <b>ROCMAN-74 -</b>  Jira project doesn't exist or you don't have permission to view it. </div> </li> <li><b>Action Sonny: Once the Excel file is completed, then update the Validation Plan in consequence</b> <div data-bbox="1146 930 1485 1218">  <b>ROCMAN-75 -</b>  Jira project doesn't exist or you don't have permission to view it. </div> </li> </ul>
<p>Discussion on RPW science data validation (ROC, THR, BIAS, LFR, SCM, TDS): description, task, workflow validation, human resources / team, responsibilities, constraints, anomalies, .. etc.</p>	<p>All</p>		<ul style="list-style-type: none"> <li><b>Action Milan: Send an email to Alexis Rouillard and the MADAWG concerning the qualif_flag level definition in the SOL-SGS-TN-0009_2_2 document.</b> <div data-bbox="1146 1402 1485 1690">  <b>ROCMAN-76 -</b>  Jira project doesn't exist or you don't have permission to view it. </div> </li> </ul>

- Data validation
    - Formal validation - How to?
      - ROC checks automatically the metadata and structure
      - Can also automate the checking of val\_min/val\_max (out of range values)?
      - When formal validation is done global attribute "Validate = 1" (validate flag)
  - Science quality?
  - Idea:
    - Check if a value is lower than the sensitivity
    - Check if a value is constant
    - Check for discontinuities
- Teams are in charge of determining the quality flag
- If quality of the records is enough -> The ROC can set the validate flag to 2
- ROC is responsible for the bitmask
- Science quality verification procedure:
- Add a piece of software in the RCS to compute the quality flag
  - in case of problem -> generate a report to be sent to the scientist in charge
- SCM
- Problem : Only one quality flag for each x,y,z record (no quality flag by axis)
- Reference frame
    - Add rotation matrix in the L1 data -> we need to process ancillary data

- **Action RCS teams: Define criteria to determine the quality flag**



**ROCMAN-77 -**

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- **Action RCS teams: Fill the Excel sheets provided by the ROC and send it to XB**



**ROCMAN-78 -**

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- **Action Xavier : Send a document that allows RCS teams to list the expected values for the bitmask**



**ROCMAN-79 -**

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- **Action RCS teams: Determinate the bitmask content required to define the science quality flag**



**ROCMAN-80 -**





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- **Action Xavier: Determine the full procedures for each data product/team**



**ROCMAN-81 -**

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			<ul style="list-style-type: none"> <li>• <b>Action SCM team: See how to set the quality flag for each X,Y,Z axis records</b></li> </ul> <div>  <b>ROCMAN-82 -</b>  Jira project doesn't exist or you don't have permission to view it. </div>
Discussion on RPW flight validation: description, task, workflow validation, human resources / team, responsibilities, constraints, anomalies, .. etc.	All	<ul style="list-style-type: none"> <li>• <a href="#">roc_validation_workshop_flight_validation_intro_v01.pdf</a></li> <li>• ROC has prepared specific Excel sheets for the in-flight validation activities of RPW. The main idea is to list all the activities and related relevant information in order to prepare these tasks (to ensure nothing has been forgotten)</li> <li>• COMMISSIONING validation activity: <ul style="list-style-type: none"> <li>◦ The reaction wheels filtering should be added somewhere (during interference campaign or antenna rolls?)</li> <li>◦ A 8th RPW activity should be asked to MOC to test the nominal working of RPW before the Cruise Phase (CP). Especially, all modes should be tested and run for enough long time (~24h) and nominal modes with other IS instruments should be run. If possible the SBM_DETECTION should be activated (but quick downlink of selective data is not guarantee for now during the NECP and CP phases)</li> <li>◦ What about the inter-instrument communication (IIC) validation? Done during NECP or CP? Functional part (checking TM exchanged via S20 should be possible, but it would be difficult for the detection part without event).</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Action Xavier: Verify with MOC/SOC if IIC/S20 flight validation campaign is planned and when</b></li> </ul> <div>  <b>ROCMAN-83 -</b>  Jira project doesn't exist or you don't have permission to view it. </div> <ul style="list-style-type: none"> <li>• <b>Action Xavier: Prepare and submit to MOC the 8th activity for RPW</b></li> </ul> <div>  <b>ROCMAN-84 -</b>  Jira project doesn't exist or you don't have permission to view it. </div> <ul style="list-style-type: none"> <li>• <b>Action teams: submit to the ROC (Xavier) a preliminary version of the "&lt;XXXXX&gt;_flight-validation_V&lt;YYY&gt;.xls"</b></li> </ul> <div>  <b>ROCMAN-85 -</b>  Jira project doesn't exist or you don't have permission to view it. </div>
Splinter session RPW flight configurations	RPW lead Col teams + Diane and Antonio	<ul style="list-style-type: none"> <li>• <b>COMMISSIONING</b></li> </ul> <hr/> <ul style="list-style-type: none"> <li>◦ During commissioning HK at least every second (or even higher cadence if possible)</li> <li>◦ iBoom deployment : In order to synchronize snapshots between LFR and TDS, TDS will increase the time between two snapshots to 11s (instead of 10s)</li> </ul>	

- Antenna + I-Boom + interference campaign : all sub systems in SBM1+normal mode. Same configuration for LFR and TDS for each campaign.
- LFR : temps entre 2 snapshots 22s
- TDS : 1 snapshot chaque seconde + 1 triggered toutes les 11s —> un snapshot every 11s, one simultaneously with LFR, one without LFR
- SCM agrees with LFR config
- LFR wants to add during interference campaign a configuration to test the reaction wheels effect.
- The LFR document for interference campaign has been transferred to the Bias team for filling its own doc.

#### • LOW RATE

- The daily 10 min. of SURVEY\_BURST mode do not take too much telemetry rate (<5%) so we can let it. But the SBM1 mode has significant telemetry rate.
- For LFR, the main goal is to have the higher cadence as possible for the BP.
- TDS has no specific constraint
- 2 configs for low rate :

1)

- LFR :
  - no SBM,
  - 10 min of SURVEY\_BURST,
  - time between two snapshots 1800s;
  - time between two ASM : 3600s,
  - time between BP : 8s;
  - time between 2 products : 40s
- TDS :
  - Time between 2 RSWF : 1800s;
  - Time between 2 TSWF : 7200s

—> cf calculator LOW RATE 1 (TODO : Put the ref)

2)

- LFR :
  - SBM1 activated
  - 10 min of SURVEY\_BURST,
  - time between two snapshots 3600s;
  - time between two ASM : 3600s,
  - time between BP : 16s;
  - time between 2 products : 60s

—> cf calculator LOW RATE 2 (TODO : Put the ref)

#### • Update Calculator

LFR calibration : snapshots every 22 s (change in LFR software in progress). This will have a slight impact on the data rate because currently the same configuration is kept in NORMAL-DEFAULT: 1 snapshot every 300s

- All team will provide word files about antenna, I-Boom and Interference campaign before the end of next week

 **ROCOPE-217 -**  
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- Action Antonio : Put on Git the two calculator sheets for the low-rate config.





 **ROCOPE-218 -**  
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- Action Diane : Send the calculator sheets with the two low rate config to LFR and SCM (TDS already has them).

 **ROCOPE-219 -**  
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view it.

- Action Antonio : Put on Confluence the page with all the nominal configs (as well as the fixed parameters) and send the url to the teams.

 **ROCOPE-220 -**  
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			<ul style="list-style-type: none"> <li>• Action Diane : Add LFR calibration in the calculator sheet (because in low-rate we stay in default for the calibration)</li> </ul> <div>  <b>ROCOPE-221</b> -  Jira project doesn't exist or you don't have permission to view it. </div>
Splinter session : ROC validation traceability	CNES + Stéphane Papais + Sonny Lion	<p><b>1. Sonarqube - Code Analysis</b></p> <p>Actions to be carried out by LESIA (Sonny Lion) with Stéphane Papais support :</p> <ul style="list-style-type: none"> <li>- Finalize metrics according to CNES specifications document</li> <li>- Installation of Sonarqube on the ROC Dev platform =&gt; November 2018</li> <li>- Objective on Sonarqube: implement for the RSS3 validation campaign =&gt; End of December 2018</li> <li>- Tests reports perimeter : based on RSS3 =&gt; Music (Faust / Figaro), ROC-SGSE, LLVM</li> </ul> <p>Actions to be taken by Dominique Bagot:</p> <ul style="list-style-type: none"> <li>- Realize the code analysis with Sonarqube on RSS3 =&gt; December 2018</li> </ul> <p><b>2. Validation Plan</b></p> <p>Actions to be carried out by LESIA (Sonny) :</p> <ul style="list-style-type: none"> <li>▪ Define the scope that will be part of the validation campaign and list the associated requirements (RSS3)</li> <li>▪ Complete the validation plan with the different test procedures (test case)</li> <li>▪ Complete the traceability matrix between the RSS3 and the test plans =&gt; Sonny Lion with the support of Stéphane Papais</li> <li>▪ Make the links between the different unit tests / integration and the test procedures (test case) =&gt; Sonny Lion</li> <li>▪ Identify / distinguish the testers (technical or functional (beta tester)) =&gt; cf. example of the Taranis project</li> <li>▪ Referencing unit tests / integration</li> </ul>	<ul style="list-style-type: none"> <li>• Action Sonny (with support of Stéphane): <ul style="list-style-type: none"> <li>◦ Finalize the metrics according to the CNES Quality requirements doc.</li> </ul> <div>  <b>ROCMAN-86</b>  - Jira project doesn't exist or you don't have permission to view it. </div> <li>◦ Install Sonarqube in the ROC dev. machine</li> <li>◦ Prepare Sonarqube to be used for the RSS3 validation "rehearsal" campaign</li> </li></ul> <div>  <b>ROCMAN-87</b>  - Jira project doesn't exist or you don't have permission to view it. </div> <div>  <b>ROCMAN-88</b>  - Jira project doesn't exist or you don't have permission to view it. </div>

- Action Dominique : Do an analysis of the ROC code with Sonarqube in prevision of the RSS3 release



**ROCMAN-89 -**

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- Action Sonny:
  - Define the perimeter for the RSS3 validation campaign (and associated requirements)



**ROCMAN-90**

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- Complete the validation plan with the test procedures (test cases)



**ROCMAN-91**

- Jira project doesn't exist or you don't have permission to view it.

- Complete the traceability matrux between RSSS and the test plans (with the support of Stéphane)



**ROCMAN-92**

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- **Link the unit/integration tests and the test cases**



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- **Identify the actors for the validation campaign**



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- **Make reference for the unit /integration tests**



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Conclusion		<p><b>1) Schedule :</b></p> <ul style="list-style-type: none"> <li>▪ RSS3 campaign validation Schedule : November 2018 (to be confirmed)</li> <li>▪ PTF delivery of RSS3 to CNES : mid-December 2018 This delivery will contain : <ul style="list-style-type: none"> <li>▪ Software</li> <li>▪ Documentation (updated documents) : At least the delivered versions for the specifications and validation workshops</li> </ul> </li> <li>▪ The LESIA emphasizes that it is difficult to advance (due to the HR resources constraints / lack of a developer) to develop the tools and to write and to update documentation.</li> </ul> <p><b>2) Actions to be taken into account following the validation workshop:</b></p> <p><b>a)</b> Reminder of the actions/issues from specifications workshop and its deadlines to be followed (and documents identified to be updated) =&gt; see meeting note Spécifications workshop</p> <p><b>b)</b> The validation workshop allowed to define a roadmap for ROC validation activities :</p> <ul style="list-style-type: none"> <li>▪ Each team (consortium member) have to complete validation activities in excel files. The LESIA will follow up this action =&gt; deadline : mid-December 2018.</li> <li>▪ The LESIA complete the validation plan from excel files =&gt; deadline : end of december 2018</li> </ul> <p><b>c) Question :</b> is it necessary to organize monthly teleconf with extended participants (CNES, LESIA, LeadCol, Instrument scientis) to follow up the previous point (=&gt; <b>point b</b>) =&gt; consistency of actions / roadmaps</p> <p><b>d) Question :</b> is it necessary to organize a next validation workshop ?</p> <p><b>e)</b> For the next Consortium Meeting in Kiruna (March 2019), it is important and necessary to add the topics related to ground segment activities (requirements, development, validation, data products, sciences data and validation, tools, development progress, ESA interfaces, ...) : <b>plenary sessions and splinter sessions to be added in agenda.</b></p> <p>=&gt; Xavier will discuss it with Milan</p> <p><b>3) Validation plan final version :</b> scheduled for <b>RSS4VC (2019)</b>. The LESIA have to ensure the consistency between requirements, implementation, validation and tests.</p>	
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## Action items

- Cf. <https://jira-lesia.obspm.fr/secure/RapidBoard.jspx?rapidView=67>

key summary type created updated due assignee reporter priority status resolution



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[View these issues in Jira](#)

## Attached items

- [roc\\_validation\\_workshop#1\\_organisation\\_notes\\_v02.rtf](#)
- [example of excel file for tests.xlsx](#)
- Cluster example for data validation: [cefmdd-rules.xlsx](#)
- [ROCValidationWorkshop#1\\_DataPack\\_V1.zip](#)

