

RSS3VC Test Plan

Doc. ref.: **ROC-GEN-SYS-PLN-XXXX-LES**

Issue
01

Revision
00

Date: December 12, 2018

SOLAR ORBITER



RSS3VC Test Plan

ROC-GEN-SYS-PLN-XXXX-LES

Iss.01, Rev.00

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Authorised by	Date	Signature

CLASSIFICATION

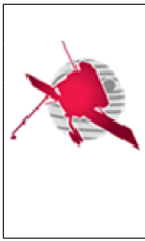
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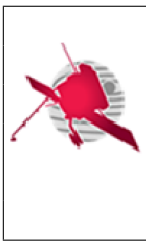
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Change Record

Issue	Rev.	Date	Authors	Modifications
0	0	04/02/2016	X. Bonnin	First draft
1	0	07/11/2017	S. Lion	Sphinx conversion - validation approach - risks identification and mitigation

Acronym List

Acronym	Definition
CCSDS	Consultative Committee for Space Data Systems
CDF	Common Data Format
CUC	CCSDS Unsegmented time Code
HF	High Frequency
ICD	Interface Control Document
LF	Low Frequency
LL	Low Latency
MEB	Main Electronic Box
PA	Pre-Amplifier
RLLP	RPW Low Latency Pipeline
ROC	RPW Operation Centre
ROT	RPW Operation Toolkit
RPW	Radio and Plasma Waves instrument
SCM	Search Coil Magnetometer
SGS	Science Ground Segment
SGSE	Software Ground Support Equipment
SOC	Science Operation Centre
TDS	Time Domain Sampler
THR	Thermal Noise and High Frequency Receivers
ssh	Secure Shell
SWF	Snapshot Waveform
XML	eXtended Markup Language



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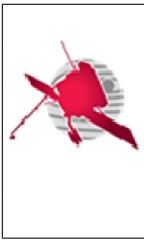
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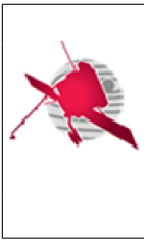
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1 General

1.1 Scope of the document

This document presents the test plan related to the ROC Software System release 3 validation campaign (RSS3VC).

It presents the design, organization and definition of the validation tests performed during the RSS3VC.


1.2 Applicable Documents

Tab. 1.1: Applicable documents

Mark	Reference/Iss/Rev	Title of the document	Authors	Date
AD1	ROC-GEN-SYS-PLN-00040-LES/2/1	ROC Verification and Validation Plan (RVVP)	Sonny Lion	DD/MM/YYYY
AD2	ROC-GEN-SYS-PLN-00069-LES/1/0	ROC Pipelines Test Plan	Sonny Lion	DD/MM/YYYY
AD3	ROC-GEN-SYS-PLN-00070-LES/1/0	ROC MUSIC Test Plan	Sonny Lion	DD/MM/YYYY
AD4	ROC-GEN-OTH-NTT-00036-LES/1/0	ROC Project Glossary of terms	Xavier Bonnin	13/09/2017

1.3 Reference Documents

This document is based on the documents listed in the following table:

	<h1>RSS3VC Test Plan</h1>	Doc. ref.: ROC-GEN-SYS-PLN-XXXX-LES	
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Tab. 1.2: Reference documents

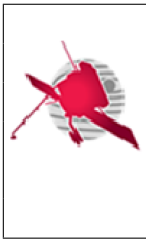
Mark	Reference/Iss/Rev	Title of the document	Authors	Date
RD1	ROC-GEN-SYS-SPC-00026-LES/1/1	ROC Software System Specification (RSSS)	Xavier Bonnin	11/2017
RD2	SOL-ESC-PL-00001/1/1	Solar Orbiter Mission Implementation Plan (MIP)	Ignacio Tanco	31/12/103
RD3	ROC-GEN-SYS-SPC-00036-LES/1/1	ROC Software System Design Document (RSSDD)	Xavier Bonnin	11/2017
RD4	SOL-SGS-TN-0006/1/0	SOC Engineering Guidelines for External Users (SEGU)	Richard Carr	04/03/2015
RD5	SOL-ESC-IF-05010/1/2	Planning Interface Control Document (PLID)	L.Michienzi	07/2015
RD6	SOL-SGS-ICD-0006/1/1	Extended Flight Events and Communications Skeleton (E-FECS) file ICD	C.Watson	24/03/2017
RD7	SOL-SGS-ICD-0003/0/6	Solar Orbiter Instrument Operation Request Interface Control Document (IOR ICD)	C.Watson	25/01/2016
RD8	SOL-SGS-ICD-0007/1/0	Solar Orbiter Telemetry Corridor ICD	C.Watson	14/03/2017
RD9	SOL-SGS-TN-0017/0/2	SOC-Provided Ancillary Data for Solar Orbiter	A.Walsh	18/09/2017
RD10	ROC-PRO-PIP-ICD-00037-LES/1/1	RPW Calibration Software Interface Control Document (RCS ICD)	Manuel Duarte, Xavier Bonnin	11/2017
RD11	ROC-GEN-SYS-NTT-00019-LES/2/0	ROC Engineering Guidelines for External Users (REGU)	Xavier Bonnin	11/2017
RD12	ROC-GEN-SYS-NTT-00008-LES/1/3	ROC Engineering Guidelines (REG)	Xavier Bonnin	09/11/2016

1.4 About this document

1.4.1 Access policy

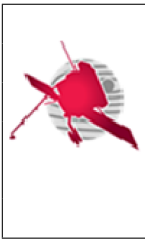
The present document is accessible without any restriction.

Any modification of this document must be approved by the RPW Ground Segment Project Manager before publication.

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1.4.2 Terminology

All terms used in this document, and which are not listed in the table below must follow the definition in [AD4].



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2 Test design

2.1 Objectives and perimeter

The objective of the RSS3VC is to perform the validation of the ROC Software System version 3 (RSS3). The RSS3 is expected to be released prior to the ESA System Validation Test #1 (SVT1) and End-to-end test #1 (E2E-1).

The RSS3VC is not a formal validation campaign, but a rehearsal in preparation to the RSS version 4 validation campaign (RSS4VC), which is planned at launch - 6 months. The objectives is, thus, not to fully validate the system, but to ensure that the ROC is capable of performing validation campaign on a reduced set of tests.

The RSS3VC tests cover the validation of the requirements listed in the ROC Verification and Validation Plan (RVVP) [AD1] for the RSS3.

2.2 Overview

According to the RVVP, the RSS3VC tests are designed to validate the following RSS units:

- MUSIC-FIGARO prototype VX.Y.Z (TBD) version
- MUSIC-FAUST prototype VX.Y.Z (TBD) version
- RODP preliminary VX.Y.Z (TBD) version

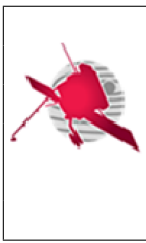
The RSS3VC tests design relies on the ROC pipelines test plan [AD2] and MUSIC test plan [AD3].

2.3 Responsibilities

RSS validation overall responsibilities are presented in the RVVP [AD1].

2.3.1 ROC responsibilities

The ROC responsibilities in the RSS3VC are:



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- RPW Ground Segment Project Manager
 - Approved the RSS3VC Test Plan
 - Approved the RSS3VC Test Report
- RPW Ground Segment Product Assurance Manager
 - Verify/check the RSS3VC Test Plan and Reports
 - Verify/check the code analysis
 - Generate the traceability matrices
- RPW Ground Segment Software Validation Engineer
 - Write the RSS3VC Test Plan
 - Write the RSS3VC Test Report
 - Supervize the RSS3VC
- RPW Ground Segment Operation Engineer
 - Participate to the RSS3VC as a beta-tester for the FIGARO/FAUST tool validation
- RPW Ground Segment Software Engineer
 - Participate to the RSS3VC as a tester for the RODP pipeline validation

2.3.2 RPW teams responsibilities

The other RPW teams are not involved in this campaign. It includes the teams in charge of the RPW Calibration Software (RCS).

2.3.3 CNES responsibilities

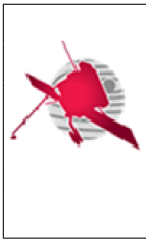
The CNES has no formal responsibility about the RSS3VC. Nevertheless a support is expected in order to:

- Verify the RSS3VC Test Plan
- Verify the RSS3VC Test Report
- Analyze the RSS3 code metrics

Especially, the CNES will participate to RSS3VC TRR/TRB-like meetings.

2.3.4 ESA responsibilities

The ESA teams are not involved in this campaign.



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2.4 Environment

2.4.1 Hardware

Main hardware resources needed to perform the RSS3VC validation tests are presented in the RVVP [AD1].

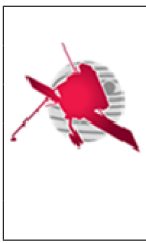
2.4.2 Software

Main software resources needed to perform the RSS3VC validation tests are presented in the RVVP [AD1].

2.5 Prerequisites of the tests

Before starting the RSS3VC tests:

- An instance of the MUSIC-FIGARO VX.Y.Z and MUSIC-FAUST VX.Y.Z shall be up-and-running on the roc-dev.obspm.fr server.
- An instance of the RODP VX.Y.Z shall be up-and-running on the roc-dev.obspm.fr server.
- RSS3VC test data shall be saved in the expected location
- RSS3VC testcard files shall be available in the expected location
- A snapshot of the RSS3VC software environment shall be saved



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3 Test organization

3.1 Overview

The RSS3VC

3.2 Schedule

The RSS3VC is planned between December 17th and 21th, 2018.

The RSS3VC schedule will have to take into consideration the availability of the involved actors.


Table below gives the detailed schedule.

Tab. 3.1: RSS3VC schedule

Step	Due date
RSS3VC readiness meeting (not a formal TRR)	19/11/2018
RSS3VC tests start	17/12/2018
RSS3VC tests end	21/12/2018
RSS3VC results meeting (not a formal TRB)	TBD

3.3 Responsibility

Table below lists the responsibility of people involved in the RSS3VC tests.

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Tab. 3.2: RSS3VC test responsibility


Entity	Role description	Name	Email
CNES	ROC quality support (metric analysis with Sonarqube)	Dominique Bagot	do-minique.bagot@obspm.fr
ROC	RPW Ground Segment Operation Engineer (FIGARO/FAUST beta-tester)	Diane Bérard	di-ane.berad@obspm.fr
ROC	RPW Ground Segment Project Manager	Xavier Bonnin	xavier.bonnin@obspm.fr
ROC	RPW Ground Segment Software Validation Engineer	Sonny Lion	sonny.lion@obspm.fr
ROC	RPW Ground Segment Software Engineer (RODP tester)	Quynh Nhu Nguyen (TBC)	quynh-nhu.nguyen@obspm.fr
ROC	RPW Ground Segment Product Assurance Manager	Stéphane Papais	Stephane.PAPAIS@nexeya.com
CNES	RPW ground segment development support	Desi Raulin	desi.raulin@cnes.fr

3.4 Test Readiness Review (TRR)

No formal Test Readiness Review (TRR) is planned before the RSS3VC. Nevertheless, an internal meeting (or telecon) between involving people (see section 3.3) will have to be organized at least one week prior to the campaign, to ensure that everything is ready.

3.5 Test Review Board (TRB)

No formal Test Review Board (TRB) is planned after the RSS3VC. Nevertheless, an internal meeting (or telecon) between involving people (see section 3.3) will have to be organized to analyze the campaign results and prepare the RSS4VC.

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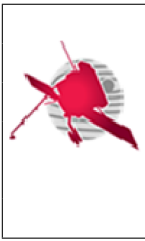
4 Test definition

The list of testcard files to be applied during the RSS3VC is summarized below. The convention related to the testcard is presented in the RVVP.

The RSS3VC testcard files are stored in the ROC DMS in TBD.

Tab. 4.1: RSS3VC testcards.

Testcard filename	Related test case ID	Version	Author	Description	Related requirements
ROC-DATA_PROD-010-LZ-01-RSS3VC.xml	ROC-DATA_PROD-010-LZ	01	X.Bonnin	Test the production of RPW LZ files with the ROC software	REQ-ROC-CIRD-0040
ROC-DATA_PROD-020-L0-01-RSS3VC.xml	ROC-DATA_PROD-020-L0	01	X.Bonnin	Test the production of RPW L0 files with the ROC software	REQ-ROC-CIRD-0050
ROC-DATA_PROD-030-L1-01-RSS3VC.xml	ROC-DATA_PROD-030-L1	01	X.Bonnin	Test the production of RPW L1 files with the ROC software	REQ-ROC-CIRD-0060
ROC-DATA_PROD-040-HK-01-RSS3VC.xml	ROC-DATA_PROD-040-HK	01	X.Bonnin	Test the production of RPW HK files with the ROC software	REQ-ROC-CIRD-0090
ROC-RPW_COM-050-STP_PROD-01-RSS3VC.xml	ROC-RPW_COM-050-STP_PROD	01	S.Lion	Test the production of STP IOR files with the ROC software	REQ-ROC-CIRD-0260
ROC-RPW_COM-100-SEQ_PROD-01-RSS3VC.xml	ROC-RPW_COM-100-SEQ_PROD	01	S.Lion	Test the production of RPW TC sequence files with the ROC software	REQ-ROC-CIRD-0310
ROC-RPW_COM-110-SEQ_TEST-01-RSS3VC.xml	ROC-RPW_COM-110-SEQ_TEST	01	S.Lion	Test the execution of TC sequences with the ROC and MEB GSE software	REQ-ROC-CIRD-0320



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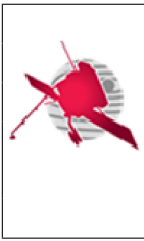
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5 List of TBC/TBD/TBWS

(TBW)



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6 Distribution list

(TBW)