RPW IGST 4_2 DATAPACK RELEASE

Date	oct. 12, 2017
Demandes	0 issues

Summary

Preparation of the IGST 4_2 data package for RPW:

- The IGST 4_2 is planned to be run on the ETB with MEB EM2 on April 2018
- ISM doc. to be delivered at MOC before 15 janv. 2018
- Procedure/sequence to be delivered at MOC before 16 févr. 2018.
- MEB EM2 with IDB 4.3.3 will be used on ETB during test, however the procedures/sequences must be written using the PFM IDB 4.3.3 version (indicating clearly where there are discrepancies between the two versions).
- Presence of 1-2 max. people from RPW at ESOC during test is strongly recommended by MOC

Interlocutors are:

- Sylvain Lodiot at MOC

Main features of the release

- Preparation of the RPW flight procedures/sequences for:
  - Switch-on,
  - Ping,
  - exercise the different modes and changes between them (test the state model in the ORCD),
  - dump with S6 of one of the instrument memories,
  - generate science if possible,
  - ~~Text S22 (context saving) if applicable~~ (Not applicable for RPW)
  - Switch-off.

- Preparation of the related RPW Instrument State Model (ISM) doc.

Description of the data package

- List of RPW flight sequences (SQ) Excel files (one file per sequence), named as the sequence convention in the FOP Plan (FOPP) doc. The SQ files must be gathered by procedure (one directory per proceduce named as the procedure convention defined in the FOPP). The procedure directories must be grouped by type "FCP", "CRP" or "COM" (one directory per type).
- The RPW ISM doc. in pdf format
- The RPW MU updated with the procedure/sequences.
- A README.rst text file providing information about the content of the package
- a CHANGELOG.rst providing the changes history.

The name of the data package must be delivered as a zip file, named as: RPW_IGST4-2_DATAPACK_IssueXX_RevYY.zip, where XX and YY are the issue and revision of the data pack.

Main constraints

IGST RPW-related setup

The IGST will be run on the ETB with the RPW EM2.

In terms of command/control the RPW IDB (V4.3.3) is the same for EM1, EM2 and PFM, <u>nevertheless the FDIR triggering threshold values can be different between the 3 models! This has to be taken account when validated the test results.</u>

Moreover there is no SCM and PA-HF/ANT sensor on the ETB/RPW-EM2 setup, in consequence during the IGST :

- **Switching ON SCM shall be prohibited**
- **BIAS HV shall be not ENABLE**
- **BIAS current setting/sweeping/calibration shall not be performed**
- **Switching ON PA HF shall be prohibited**

ⓘ

> ### ⓘ NOTE
>
> According to Sylvain Lodiot (see comments at the bottom of the page) the corresponding prohibited TCs in the sequences must be clearly indicated with the **[not for the EM2 on the ETB]** comment.

Status of the data package

Sequences status

IGST mandatory sequences

The table gives the list of critical sequences required to perform the IGST test.

Sequence name	Description	Category	Status	Comment
AIWF001A	From SAFE mode switch OFF the RPW prime power interface (UNIT_A and UNIT_B) via OBCP.	Nominal switch OFF via OBCP	Delivered	
AIWF002A	From SAFE mode switch OFF the RPW prime power interface (UNIT_A and UNIT_B) via manual.	Other OFF procedures	Delivered	
AIWF002B	Switch OFF the RPW prime power interface (UNIT_A) via OBCP from the SAFE mode	Other OFF procedures	Delivered	
AIWF010A	Boot RPW DBS in prime power interface (UNIT_A) via OBCP	Nominal switch ON via OBCP	Delivered	
AIWF011A	Boot RPW DBS in prime power interface (UNIT_A) via manual	Nominal switch ON via manual	Delivered	
AIWF030A	Boot RPW DAS from EEPROM1 (default), EEPROM2, RAM	Modes transition	Delivered	
AIWF031A	Enter SERVICE mode and switch on RPW equipment	Nominal Switch On equipment	Delivered	
AIWF032A	Configure HK period	Configuration DPU and DAS	Delivered	
AIWF032B	Load DPU and DAS common parameters	Configuration DPU and DAS	Delivered	
AIWF032C	Load DPU and DAS power parameters	Configuration DPU and DAS	Delivered	
AIWF032D	Configure Bias High Voltage parameter	Configuration DPU and DAS	Delivered	
AIWF032E	Configure parameters for monitoring temperature	Configuration DPU and DAS	Delivered	
AIWF032F	Configure Waveform parameters	Configuration DPU and DAS	Delivered	
AIWF032G	Configure SBM1 parameters	Configuration DPU and DAS	Delivered	
AIWF032H	Configure SBM2 parameters	Configuration DPU and DAS	Delivered	
AIWF032I	Configure SC potential computation algorithm	Configuration DPU and DAS	Delivered	
AIWF032J	Clear HK counter	Configuration DPU and DAS	Delivered	
AIWF032K	Enable HK parameter report generation	Configuration DPU and DAS	Delivered	
AIWF035A	Enter in SCIENCE SURVEY_NORMAL submode	Modes transition Science	Delivered	
AIWF035B	Enter in SCIENCE SURVEY_BURST submode	Modes transition Science	Delivered	
AIWF035C	Enter in SBM_DETECTION mode	Modes transition Science	Delivered	
AIWF037A	Configure THR for the RPW SCIENCE SURVEY_NORMAL mode.	Configuration THR	Delivered	
AIWF037B	Configure THR for the RPW SCIENCE SURVEY_BURST mode.	Configuration THR	Delivered	
AIWF037C	Load calibration parameters for THR	Configuration THR	Delivered	
AIWF038A	Load common parameters of TDS	Configuration TDS		
AIWF038B	Configuration of TDS for SBM1 mode	Configuration TDS		

AIWF038C	Configuration of TDS for SBM2 mode	Configuration TDS		
AIWF038D	Configure TDS LFM parameters	Configuration TDS		
AIWF038E	Configure TDS for the RPW SCIENCE SURVEY_NORMAL mode.	Configuration TDS		
AIWF038F	Configure TDS for the RPW SCIENCE SURVEY_BURST mode	Configuration TDS		
AIWF039A	Configuration of LFR for SBM1 mode	Configuration LFR		
AIWF039B	Configuration of LFR for SBM2 mode	Configuration LFR		
AIWF039C	Load common parameters of LFR	Configuration LFR		
AIWF039D	Configure LFR for the RPW SCIENCE SURVEY_NORMAL mode.	Configuration LFR		
AIWF039E	Configure LFR for the RPW SCIENCE SURVEY_BURST mode.	Configuration LFR		
AIWF040A	Configure the Bias (mode, and relay) for the RPW SCIENCE mode.	Configuration Bias		
AIWF041A	Enable Compression	Compression		
AIWF041B	Disable Compression	Compression		
AIWF042A	Switch the converter (CONV)	Switch On equipment		
AIWF042B	BOOT LFR from EEPROM1 (default), EEPROM2 and RAM + Enabled Verif Boot	Switch On equipment		
AIWF042C	BOOT THR from EEPROM1 (default), EEPROM2 and RAM + Enabled Verif Boot	Switch On equipment		
AIWF042D	BOOT TDS from EEPROM1 (default), EEPROM2 and RAM + Enabled Verif Boot	Switch On equipment		
AIWF042E	Switch ON BIAS	Switch On equipment		
AIWF042F	PA Switch ON	Switch On equipment		
AIWF042G	SCM switch ON	Switch On equipment		
AIWF043A	Enter SERVICE mode	Enter SERVICE Mode		
AIWF044A	Enter in SCIENCE SURVEY_BACKUP submode	Enter Science BACKUP Mode		
AIWF045A	Enter in RPW STANDBY mode from any other mode (except OFF)	Enter STANDBY Mode		
AIWF046A	Go to SAFE mode (DBS) with TC_DPU_RESET command	Enter SAFE Mode		
AIWF260A	Dump DPU memory (TC_DPU_DUMP_MEMORY - Service 6)	Memory dump (S6)		
AIWF370A	Run a test connection (PUS, Service 17) with the TC_DPU_TEST_CONNECTION {ZIW00012} (i.e. "ping")	"ping" (PUS, Service 17)		

Extra sequences (required for the E2E 0th test)

Additionally to the sequences above, the following sequences shall not be run during the IGST, but are required to perform the E2E 0th test performed by the SOC (see RPW E2E-0 TEST DATAPACK RELEASE for more details).

Sequence name	Description	Category	Status	Comment
AIWF033A	Internal Calibration for LFR	Calibration	Delivered	
AIWF033B	BIAS Calibration	Calibration	Delivered	
AIWF033C	Run THR internal calibration	Calibration	Delivered	
AIWF033D	Configure and execute the BIAS sweep	Calibration	Delivered	
AIWF034A	Dump LFR, TDS, THR parameters	Dump	Delivered	
AIWF036A	Configuration Bias currents	Configuration Bias Currents	Delivered	

ISM status

Version	Status	Comment	Checking
1.0	Delivered	Delivered with the datapack 1.0	
1.1	Delivered	Delivered with datapack 1.1.	☑ Does the ISM is consistent with the list of delivered sequences? ☑ Does the ISM fully cover the delivered sequences (and transitions)?
1.2	Delivered	Delivered with datapack 1.2	

Data package delivery status

Version	Status	Delivery date	Comment	Checking
1.0	Delivered	27 déc. 2017	Delivered to Sylvain Lodiot (MOC). See feedbacks in ⚠ ROCOPE-81 - Jira project doesn't exist or you don't have permission to view it.	
1.1	Delivered	16 févr. 2018	Delivered to Sylvain Lodiot (MOC).	☑ Is the new naming convention for the sequences compliant? ☑ Does the list of sequences is consistent with what has been decided with the MOC? ☑ Does the RPW UM is up-to-date? ☑ Does the datapack is complete?
1.2	Delivered	28 févr. 2018	Delivered to Sylvain Lodiot (MOC). See feedbacks in ⚠ ROCOPE-126 - Jira project doesn't exist or you don't have permission to view it.	

Expected documentation

Related-release testing & validation

Related-release open questions

Question	Answer	Severity	Comment
Do the sequences related to the routine operations (Bias sweeping, calibrations, etc.) will be tested during the IGST?	No (especially, the BIAS sweeping/calibration/current setting shall not be run if BIAS HV is DISABLE)	Low	
What is the configuration of the flight software (DBS, DAS) at boot? Is the TM_DPU_OBC_HK generation ENABLE or DISABLE?		Medium	

Attached items

- chgt_seq_FCP_DB3_xb2_AV1.xlsx
- IGST4_2_plan_rpw_v1.4.xlsx

Related-release JIRA issues

key	summary	type	created	updated	due	assignee	reporter	priority	status	resolution

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

View these issues in Jira