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BC-SIM-TN-004

SIMBIO-SYS FOP update after NECP

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Approvation

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Document compared to BC-SIM-TN-001-SIMBIOSYS_FOPs_Description

Date	Affected Pages and Sections	Change description
05/12/2018	All	First FOP definition
12/05/2019	Editorial and references update. Section 3.3.6: SS-FCP-005 updated HRIC TEC set point Section 3.3.9: SS-FCP-008 updated STC TEC set point Section 0: SS-FCP-101 updated HRIC FPAN window coordinates Section 3.3.19: SS-FCP-102 updated HRIC window #2 coordinates Section 3.3.20: SS-FCP-103 updated HRIC window #1, #2 and #3 coordinates Section 3.3.26: SS-FCP-124 updated HRIC TEC set point Section 3.3.32: SS-FCP-201 updated HRIC FPAN window coordinates Section 3.3.33: SS-FCP-202 updated HRIC window #2 coordinates Section 3.3.34: SS-FCP-203 updated HRIC window #1, #2 and #3 coordinates Section 3.3.52: SS-FCP-317 updated STC number of windows to acquire and the window #3 compression box size Section 3.3.55: SS-FCP-321 updated default parameters and STC CBD Section 3.3.56: SS-FPC-322 updated STC CBD Section 3.3.57: SS-FPC-323 updated STC CBD Section 3.3.58: SS-FPC-324 updated STC CBD Section 3.3.61: SS-FPC-331 updated STC CBD and default values of RT and window #1 coordinates Section 3.3.62: SS-FCP-332 updated STC CBD, window #1 size and default parameters. Section 3.3.63: SS-FCP-333 updated STC CBD Section 3.3.64: SS-FCP-334 updated STC CBD Section 3.3.65: SS-FCP-335 updated STC CBD Section 3.3.71: SS-FCP-364 updated STC TEC set point Section 3.4.3: SS-TST-010 removed HRIC PE, TEC and detector switch-on/off and fix HK generation frequency to 1s Section 3.4.4: SS-TST-011 updated HRIC TEC set point Section 3.4.5: SS-TST-020 removed STC PE, TEC and detector switch-on/off, fix HK generation frequency to 1s and reduce science acquisitions Section: 3.4.6: SS-TST-021 updated STC TEC set point Section 3.4.7: SS-TST-031 unfix VIHI shutter, Lamp and LED activation current. (for details compare with [RD.2]).	FOP release

1 Introduction

1.1 Scope

This document, in according to the Spectrometers and Imagers for MPO BepiColombo Integrated Observatory SYStem (SIMBIO-SYS) Technical Note, Layout and Data flow agreement detailed in [RD.1], all the Flight Operation Procedures (FOPs) SIMBIO-SYS to be used during the operational phases of the instrument. This issue represents a review of [RD.2] considering all the improvements made after the Near Earth Commissioning Phase (NECP)[RD.4] and before ICO1 phase.
Differently from the date in the header, present Technical Note refers to activities performed between December 2018 and June 2019 (ICO1,dNECP) partially anticipated in [RD.4].

1.2 Reference Document

[RD.1] BC-SIM-TN-003 Reports_And_Notes_Layout 10.20371/INAF/TechRep/36
[RD.2] BC-SIM-GAF-MA-002 SIMBIO-SYS FM User Manual (2017)
[RD.3] BC-SIM-TN-001-SIMBIOSYS_FOPs_Description_Issue1, 10.20371/INAF/TechRep/15
[RD.4] BC-SIM-TR-005 SIMBIO-SYS NECP Test Report 10.20371/INAF/TechRep/42
[RD.5] BC-ASD-SP-00176_1_4 SIMBIO URD
[RD.6] BC-SIM-GAF-IC-003
[RD.7] BC-SIM-GAF-IC-002
[RD.8] BC-ASD-TN-00407_5_Standard_S12S19 issue 5
[RD.9] BC-ASD-MA-00024 TCS Subsystem UM issue 6.1
[RD.10] BC-SIM-TR-003 - STC NECP Report, 10.20371/INAF/TechRep/26

1.3 Acronyms

ASW	Application SoftWare
BSW	Boot SoftWare
CRP	CRitical Procedures
CU	Compression Unit
ENG	ENGineering procedure
FCP	Flight Control Procedure
FOP	Flight Operation Procedures
FPGA	Field Programmable Gate Array
HRIC	High spatial Resolution Imaging Channel
ME	Main Electronics
OBCP	On-Board Control Procedure
PE	Proximity Electronics
SIMBIO-SYS	Spectrometers and Imagers for MPO BepiColombo Integrated Observatory SYStem
SPW	SpiceWire
SSMM	Solid State Mass Memory

STC	STereo imaging Channel
TC	TeleCommand
TM	TeleMetry
TST	TeST procedures
VIHI	VIsible and Hyper-spectral Imaging channel

1.4 Document organization

This document is organized in sections whose topics are listed as follows:

- Section 2– FOPs definition, with a brief description of the type and application context of all SIMBIO-SYS FOPs
- Section 3 – all SIMBIO-SYS procedures (i.e., CRP, ENG, FCP and TST) description
- Section 4 – Conclusions, with a brief discussion of possible updates of the SIMBIO-SYS FOPs database

2 SIMBIO-SYS FOP definition and description

During all operative phases the SIMBIO-SYS instrument will be commanded through proper sequence of commands which are sent to the MPO Space-Craft (S/C) using FOP. These can be grouped into 4 distinct types depending on the application context:

- CRitical Procedure (CRP): to be used for safety command the instrument
- ENGineering procedure (ENG): to be used for SW update, memory check and HK management
- Flight Control Procedure (FCP): to be used for the scientific usage of the channel
- TeST procedure (TST): special procedure to be used for specific test during all the operative phases

In the following paragraphs, all the SIMBIO-SYS FOPs are described grouped as listed above.

3 SIMBIO FOP

3.1 CRP

3.1.1 Summary

CRitical Procedures (CRP)				
ID	**Name and description**	**SIMBIO-SYS status**		
		Start	**End**	**Duration [s]**
SIMBIO-SYS Emergency Switch Off by OBCP (SS-CRP-001)	**SIMBIO-SYS Emergency Switch Off by OBCP** (SS-CRP-001) To trigger execution of the SIMBIO-SYS Emergency OFF OBCP.	Any	ME and all channels OFF.	00:02:03
SIMBIO-SYS Reset Output Buffer (SS-CRP-002)	**SIMBIO-SYS Reset Output Buffer** (SS-CRP-002) To reset the SIMBIO-SYS TM output buffer.	Any	Unchanged	00:00:00
SIMBIO-SYS Run Diagnostic Mode (SS-CRP-003)	**SIMBIO-SYS Run Diagnostic Mode** (SS-CRP-003) Starts the ME Diagnostic Mode, then each of the three channel diagnostics can be started.	ME in ASW started mode	Unchanged	00:01:30
SIMBIO-SYS HRIC Simulated Readout (SS-CRP-004)	**SIMBIO-SYS HRIC Simulated Readout** (SS-CRP-004) To simulate HRIC detector science dataflow with a fixed pattern or an increasing counter.	ME is ON, HRIC PE OFF	Unchanged	TBD
SIMBIO-SYS STC Simulated Readout (SS-CRP-005)	**SIMBIO-SYS STC Simulated Readout** (SS-CRP-005) To simulate STC detector science dataflow with a fixed pattern or an increasing counter.	ME is ON, STC PE OFF	Unchanged	TBD
SIMBIO-SYS VIHI Simulated Readout (SS-CRP-006)	**SIMBIO-SYS VIHI Simulated Readout** (SS-CRP-006) To simulate VIHI detector science dataflow with a fixed pattern or an increasing counter.	ME is ON, VIHI PE OFF	Unchanged	TBD
SIMBIO-SYS Reaction to TM Out of Limits (SS-CRP-007)	**SIMBIO-SYS Reaction to TM Out of Limits** (SS-CRP-007) Lists the actions required in case some SIMBIO-SYS TM parameter goes Out-Of-Limit.	Any	Unchanged unless the Emergency	TBD

			Switch-OFF is commanded	
SIMBIO-SYS Reaction to TM non-nominal Events (SS-CRP-008)	**SIMBIO-SYS Reaction to TM non-nominal Events** (SS-CRP-008) Lists the actions required in case a non-nominal event is received from SIMBIO-SYS.	Any	Unchanged	TBD
SIMBIO-SYS Manual Switch On (SS-CRP-009)	**SIMBIO-SYS Manual Switch** On (SS-CRP-009) To manually switch on SIMBIO-SYS on its Nominal or Redundant Interface.	SIMBIO-SYS OFF	ME ON under ASW control, all channels OFF	TBD
SIMBIO-SYS Manual Switch Off (SS-CRP-010)	**SIMBIO-SYS Manual Switch Off** (SS-CRP-010) To power OFF the SIMBIO-SYS ME. The Graceful Switch OFF TC precedes the LCL OFF TCs in order to avoid inadvertent abrupt power OFF of the Detectors and PEs.	Any	All electronics are OFF, S12 and S19 for SIMBIO-SYS are disabled.	TBD
SIMBIO-SYS Enable or Disable Science TM (SS-CRP-011)	**SIMBIO-SYS Enable or Disable Science TM** (SS-CRP-011) To enable or disable the forwarding of SIMBIO-SYS Science Telemetry from the SIMBIO-SYS Compression Unit to the S/C SSMM.	ME ON, forwarding of Science telemetry enabled or disabled	ME ON, forwarding of Science telemetry modified as commanded	TBD
Enabling or Disabling of S19 recovery (SS-CRP-012)	**Enabling or Disabling of S19 recovery** (SS-CRP-012) To enable or disable the Service 19 recovery action(s) associated to SIMBIO-SYS.	Any	Status of SIMBIO-SYS S19 recovery modified	TBD

3.1.2 SIMBIO-SYS Emergency Switch Off by OBCP (SS-CRP-001)

3.1.2.1 Objectives

The aim of this FOP is to trigger execution of the SIMBIO-SYS Emergency OFF On-Board Control Procedure (OBCP) named KSS04008EMOF in [RD.5]. This OBCP shall normally be triggered by FDIR via S12/S19 and not by this procedure.

3.1.2.2 Summary of Constraints

None

3.1.2.3 Spacecraft Configuration

Start of Procedure	End of Procedure
Any	SIMBIO ME and channels OFF, SIMBIO SPW links off, SIMBIO LCLs open.

3.1.2.4 Reference File(s)

3.1.2.4.1 Input Command Sequences

None

3.1.2.4.2 Output Command Sequences

ASSC001A

3.1.2.5 Input parameters

None

3.1.2.6 TC sequence

Relative Time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSC001A	ZCD00C02	PCG0C011	Number of Monitoring	2
			PCG0C012	User Monitoring ID	82
			PCG0C012	User Monitoring ID	83
00:00:02		ZSSK4008	PKK00093	Shutdown	DNEL

3.1.2.7 Configuration Control Information

Date	FOP Issue	Version	Description
21/02/2017	1	1	Created
24/02/2017	2	2	Title changed.
02/05/2017	0.2	2.01	Title modified, added comments on OBCP Start / Stop event packets from DMS
05/12/2017	1	3	Updated AND references.
06/08/2018	3	4	CR205 - Management of DMS monitoring services 82 and 83 on SIMBIO-SYS 3.5 V and 5 V supply that were added after OBCP development.

3.1.3 SIMBIO-SYS Reset Output Buffer (SS-CRP-002)

3.1.3.1 Objectives

The aim of this FOP is to reset the SIMBIO-SYS TeleMetry (TM) Output Buffer.

3.1.3.2 Summary of Constraints

Some TM shall be lost.

3.1.3.3 Spacecraft Configuration

Start of Procedure	End of Procedure
Any	Unchanged

3.1.3.4 Reference File(s)

3.1.3.4.1 Input Command Sequences

None

3.1.3.4.2 Output Command Sequences

ASSC002A

3.1.3.5 Input parameters

None

3.1.3.6 TC sequence

Relative Time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSC002A	ZSS02128	-	-	-

3.1.3.7 Configuration Control Information

Date	FOP Issue	Version	Description
20/04/2016	0.1	1	Created

3.1.4 SIMBIO-SYS Run Diagnostic Mode (SS-CRP-003)

3.1.4.1 Objectives

The aim of this FOP is to starts the Main Electronic (ME) Diagnostic Mode, then each of the three channel diagnostics can be started. The default duration for each channel simulation is set here to 30s but can be easily changed modifying the release time of the "Stop Diagnostic Mode" TeleCommand (TC).
The diagnostic telemetry is dummy science actually generated by the ME. Finally, the diagnostic of ME is turned off.
Like in Science, HRIC and STC can be used in mosaic mode, while VIHI channels has only "continuous" science mode.
If **MOSAIC MODE is selected** (by setting appropriately the parameters in the TC to start the HRIC or STC diagnostic) the required number of Science simulation with the related repetition time will be created by the ME.
As soon as the required images are acquired, the ME will automatically stop the simulation and switch to HRIC/STC idle diagnostic mode.
So, **if MOSAIC MODE is selected**, the "Stop Diagnostic Mode" TC for that channel should NOT be uplinked.

3.1.4.2 Summary of Constraints

The ME must be in Application SoftWare (ASW) started mode before starting the procedure, otherwise the TC to enter diagnostic mode shall be discarded.

3.1.4.3 Spacecraft Configuration

Start of Procedure	End of Procedure
ME in ASW started mode	Unchanged

3.1.4.4 Reference File(s)

3.1.4.4.1 Input Command Sequences

None

3.1.4.4.2 Output Command Sequences

ASSC003A
ASSC003B
ASSC003C
ASSC003D
ASSC003E

3.1.4.5 Input parameters

None

3.1.4.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSC003A	ZSS17005	-	-	-
00:00:00	ASSC003B	ZSS17120	PSS01601	repetition time HRIC	1115
			PSS01602	NbrAcq	65535
			PSS01101	start row pixel w1	906
			PSS00501	start strip pixel w1	3
			PSS01102	end row pixel w1	1289
			PSS00502	end strip pixel w1	26
			PSS00205	Compression box dim	3
			PSS00601	Compression ratio w1	0
			PSS08008	Priority	0
00:00:30		ZSS17121	-	-	-
00:00:00	ASSC003C	ZSS17220	PSS01629	repetition time STC	1115
			PSS01602	NbrAcq	65535
			PSS01101	start row pixel w1	906
			PSS00501	start strip pixel w1	3
			PSS01102	end row pixel w1	1289
			PSS00502	end strip pixel w1	26
			PSS00205	Compression box dim	3
			PSS00601	Compression ratio w1	0
			PSS08008	Priority	0
00:00:30		ZSS17221	-	-	-
00:00:00	ASSC003D	ZSS17320	PSS01631	VIHI Repetition time	40
			PSS01632	VIHI starting row pixel	6
			PSS01633	VIHI Starting colum pixel	6
			PSS01634	VIHI End row pixel	197
			PSS01635	VIHI End colum pixel	133
			PSS00205	Compression box dim	1
			PSS00601	Compression ratio w1	0
			PSS08008	Priority	0
00:00:30		ZSS17321	-	-	-
00:00:00	ASSC003E	ZSS17006	-	-	-

3.1.4.7 Configuration Control Information

Date	FOP Issue	Version	Description
20/04/2016	0.1	1	Created

3.1.5 SIMBIO-SYS HRIC Simulated Readout (SS-CRP-004)

3.1.5.1 Objectives

The aim of this FOP is to simulate HRIC detector science dataflow with a fixed pattern or an increasing counter. The type of reading is selected by the sequence formal parameter. The "simulated science" is commanded using the normal science TC but specifying parameter "LS Bit 1 PE mode" = 1.
The ASW sends the Start Science TC to the Proximity Electronics (PE) with flag "test Mode"; the PE does not program the detector but simulates the detector by generating fixed/ counter pattern. The ME handles the incoming "simulated science" as "nominal science" and applies the editing/ compression as specified by the user in the Start Science TC.
The "Simulated science acquisition" allows to test the science generation and traffic towards S/C limiting the items under test to ME CPCU + ME CU + PE without the detector (that is being simulated).

3.1.5.2 Summary of Constraints

None

3.1.5.3 Spacecraft Configuration

Start of Procedure	End of Procedure
ME is ON, HRIC PE (channel) Off	Unchanged

3.1.5.4 Reference File(s)

3.1.5.4.1 Input Command Sequences

None

3.1.5.4.2 Output Command Sequences

ASSC004A

3.1.5.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSC004A	PSS01606	Value to be write	XC004A01	0

3.1.5.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSC004A	ZSS17101	PSS08006	On/Off	On
Auto		ZSS17107	PSS01605	PE HRIC Addr	0
			PSS01606	Value to be write	XC004A01
00:00:05		ZSS17104	-	-	-
00:00:05		ZSS17106	PSS01605	PE HRIC Addr	TEST_PATTERN_ADD*
Auto		ZSS17102	PSS01501	integration time	4
			PSS01601	repetition time HRIC	223
			PSS01602	NbrAcq	65535
			PSS00202	binning factor w2	0

			PSS00201	binning factor w1	0
			PSS00301	number of windows	1
			PSS00204	binning factor w4	0
			PSS00203	binning factor w3	0
			PSS01101	start row pixel w1	920
			PSS00501	start strip pixel w1	0
			PSS01102	end row pixel w1	1559
			PSS00502	end strip pixel w1	31
			PSS01103	start row pixel w2	0
			PSS00503	start strip pixel w2	10
			PSS01104	end row pixel w2	0
			PSS00504	end strip pixel w2	1
			PSS01105	start row pixel w3	0
			PSS00505	start strip pixel w3	0
			PSS01106	end row pixel w3	0
			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS00205	Compression box dim	3
			PSS00601	Compression ratio w1	32
			PSS00602	Compression ratio w2	0
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00101	LS bit1 PE mode	1
			PSS08008	Priority	0
Auto		ZSS17109	-	-	-
Auto		ZSS17101	PSS08006	On/Off	0

* for more details see [RD.6].

3.1.5.7 Configuration Control Information

Date	FOP Issue	Version	Description
28/09/2016	0.2	1	Created

3.1.6 SIMBIO-SYS STC Simulated Readout (SS-CRP-005)

3.1.6.1 Objectives

The aim of this FOP is to simulate STC detector science dataflow with a fixed pattern or an increasing counter. The type of reading is selected by the sequence formal parameter. The "simulated science" is commanded using the normal science TC but specifying parameter "LS Bit 1 PE mode" = 1.
The ASW sends the Start Science TC to the PE with flag "test Mode"; the PE does not program the detector but simulates the detector by generating fixed/ counter pattern. The ME handles the incoming "simulated science" as "nominal science" and applies the editing/ compression as specified by the user in the Start Science TC.
The "Simulated science acquisition" allows to test the science generation and traffic towards S/C limiting the items under test to ME CPCU + ME CU + PE without the detector (that is being simulated).

3.1.6.2 Summary of Constraints

None

3.1.6.3 Spacecraft Configuration

Start of Procedure	End of Procedure
ME is ON, STC PE (channel) Off	Unchanged

3.1.6.4 Reference File(s)

3.1.6.4.1 Input Command Sequences

None

3.1.6.4.2 Output Command Sequences

ASSC005A

3.1.6.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSC005A	PSS01606	Value to be write	XC005A01	0

3.1.6.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSC005A	ZSS17201	PSS08006	On/Off	On
Auto		ZSS17207	PSS01607	PE STC Addr	0
			PSS01606	Value to be write	XC005A01
00:00:05		ZSS17204			
00:00:05		ZSS17206	PSS01607	PE STC Addr	TEST_PATTERN_ADD*
Auto		ZSS17202	PSS01501	integration time	4
			PSS01629	repetition time STC	1440
			PSS01602	NbrAcq	65535
			PSS00301	number of windows	2
			PSS01101	start row pixel w1	438
			PSS00501	start strip pixel w1	10

			PSS01102	end row pixel w1	821
			PSS00502	end strip pixel w1	22
			PSS01103	start row pixel w2	1227
			PSS00503	start strip pixel w2	10
			PSS01104	end row pixel w2	1610
			PSS00504	end strip pixel w2	22
			PSS01105	start row pixel w3	0
			PSS00505	start strip pixel w3	0
			PSS01106	end row pixel w3	0
			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS01109	start row pixel w5	0
			PSS00509	start strip pixel w5	0
			PSS01110	end row pixel w5	0
			PSS00510	end strip pixel w5	1
			PSS01111	start row pixel w6	0
			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dim	1
			PSS00601	Compression ratio w1	32
			PSS00602	Compression ratio w2	32
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00605	Compression ratio w5	0
			PSS00606	Compression ratio w6	0
			PSS00101	LS bit1 PE mode	1
			PSS08008	Priority	0
Auto		ZSS17209			
Auto		ZSS17201	PSS08006	On/Off	0

* for more details see [RD.6].

3.1.6.7 Configuration Control Information

Date	FOP Issue	Version	Description
28/09/2016	0.2	1	Created

3.1.7 SIMBIO-SYS VIHI Simulated Readout (SS-CRP-006)

3.1.7.1 Objectives

The aim of this FOP is to simulate VIHI detector science dataflow with a fixed pattern or an increasing counter. The type of reading is selected by the sequence formal parameter. The "simulated science" is commanded using the normal science TC but specifying parameter "LS Bit 1 PE mode" = 1.
The Application SW sends the Start Science TC to the PE with flag "test Mode"; the PE does not program the detector but simulates the detector by generating fixed/ counter pattern. The ME handles the incoming "simulated science" as "nominal science" and applies the editing/ compression as specified by the user in the Start Science TC.
The "Simulated science acquisition" allows to test the science generation and traffic towards S/C limiting the items under test to ME CPCU + ME CU + PE without the detector (that is being simulated).

3.1.7.2 Summary of Constraints

None

3.1.7.3 Spacecraft Configuration

Start of Procedure	End of Procedure
ME is ON, VIHI PE (channel) Off	Unchanged

3.1.7.4 Reference File(s)

3.1.7.4.1 Input Command Sequences

None

3.1.7.4.2 Output Command Sequences

ASSC006A

3.1.7.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSC006A	PSS01606	Value to be write	XC006A01	0

3.1.7.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSC006A	ZSS17301	PSS08006	On/Off	On
Auto		ZSS17307	PSS01637	PE VIHI Addr	0
			PSS01606	Value to be write	XC006A01
00:00:05		ZSS17304			
00:00:05		ZSS17306	PSS01637	PE VIHI Addr	TEST PATTERN ADD*
Auto		ZSS17302	PSS01630	VIHI integration time	117
			PSS01631	VIHI Repetition time	8
			PSS01632	VIHI starting row pixel	4
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	259
			PSS01635	VIHI End column pixel	259

			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	0
			PSS00207	Spatial binning VIHI	1
			PSS00208	Binning sequence of frame	1
			PSS00209	Spectral editing	2
			PSS03207	VIHI Spare 32	0
			PSS00205	Compression box dim	1
			PSS00601	Compression ratio w1	1
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	1
			PSS08008	Priority	0
Auto		ZSS17309			
Auto		ZSS17301	PSS08006	On/Off	0

* for more details see [RD.6].

3.1.7.7 Configuration Control Information

Date	FOP Issue	Version	Description
28/09/2016	0.2	1	Created

3.1.8 SIMBIO-SYS Reaction to TM Out of Limits (SS-CRP-007)

3.1.8.1 Objectives

The aim of this FOP is to lists the actions required in case some SIMBIO-SYS TM parameter goes Out-Of-Limit.

3.1.8.2 Summary of Constraints

None

3.1.8.3 Spacecraft Configuration

Start of Procedure	End of Procedure
Any	Unchanged unless the Emergency Switch-Off is commanded

3.1.8.4 Reference File(s)

3.1.8.4.1 Input Command Sequences

None

3.1.8.4.2 Output Command Sequences

ASSC007A

3.1.8.5 Input parameters

None

3.1.8.6 TC sequence

None

3.1.8.7 Configuration Control Information

Date	FOP Issue	Version	Description
14/12/2017	1	1	Created

3.1.9 SIMBIO-SYS Reaction to TM non-nominal Events (SS-CRP-008)

3.1.9.1 Objectives

The aim of this FOP is to lists the actions required in case a non-nominal event is received from SIMBIO-SYS.

3.1.9.2 Summary of Constraints

None

3.1.9.3 Spacecraft Configuration

Start of Procedure	End of Procedure
Any	Unchanged

3.1.9.4 Reference File(s)

3.1.9.4.1 Input Command Sequences

None

3.1.9.4.2 Output Command Sequences

ASSC008A

3.1.9.5 Input parameters

None

3.1.9.6 TC sequence

None

3.1.9.7 Configuration Control Information

Date	FOP Issue	Version	Description
14/12/2017	1	1	Created

3.1.10 SIMBIO-SYS Manual Switch On (SS-CRP-009)

3.1.10.1 Objectives

The aim of this FOP is to manually switch on SIMBIO-SYS on its Nominal or Redundant Interface.
The procedure includes steps to:

- time synchronize the Boot SoftWare (BSW)
- verify BSW version
- load ASW FLIGHT version
- time synchronize ASW
- verify ASW version

THE PROCEDURE IS SUPPOSED TO RUN IN A NON NOMINAL SITUATION, THEREFORE THE FINAL ACTIVATION OF ANY MONITORING AND EVENT ACTION ENTRY IS OPTIONAL AS PER PI INPUTS.
The sequence of power up and related TM time-stamp is the following (email from Vincent Carlier, 23 March 2016):
At the power-on of SIMBIO-SYS, the FPGA companion chip of the RTC takes around 4 seconds to power-up with a timeout of 5 seconds. During this situation the SpaceWire (SpW) link is not activated by SIMBIO-SYS. S/C is in Auto Start mode and waits SIMBIO-SYS to start the SpW link. Thus nothing happens from SIMBIO-SYS at this stage, any telecommand can simply not be received by SIMBIO-SYS.
When the FPGA power-up is completed (or the timeout expires), the SpW link is activated. The two TM (5,1) "SIMB BSW report" and "SIMB Mode Change" are sent immediately. These two TMs are always unsynchronized. The OBT field is the init value (1273536000) + ~80ms.
From now another timeout of 5 seconds is started. SIMBIO-SYS waits the Time Update Service 9 Telecommand TC(9,129) from S/C.
If the TC Time Updated is received before the end of the timeout, the OBT is updated at the next Time Code and the first HK report TM(3,25) is sent to S/C synchronized before the end of the timeout.
If the timeout expires SIMBIO-SYS sends the first HK report TM(3,25) unsynchronized (OBT value = 1273536000 + ~5s).

3.1.10.2 Summary of Constraints

SSMM in OPERA mode, SIMBIO Temperature within given limits

3.1.10.3 Spacecraft Configuration

Start of Procedure	End of Procedure
SIMBIO-SYS OFF	SIMBIO-SYS ME ON under ASW control, all channels OFF

3.1.10.4 Reference File(s)

3.1.10.4.1 Input Command Sequences

None

3.1.10.4.2 Output Command Sequences

ASSC009A
ASSC009B
ASSC009C
ASSC009D

3.1.10.5 Input parameters

None

3.1.10.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSC009A	ZSM00297	PSM00302	SpW I/F E/D	Enabled
			PSM00303	SpW I/S	Nominal
			PSM00304	P/L ID	SYMBIO-SYS
Auto		ZPW01065			
00:00:06		ZCD00982	PCD09821	User Process ID	50
			PCD09822	Time Update Period sec	0
00:00:00	ASSC009B	ZSM00297	PSM00302	SpW I/F E/D	Enabled
			PSM00303	SpW I/S	Redundant
			PSM00304	P/L ID	SYMBIO-SYS
Auto		ZPW01149			
00:00:06		ZCD00982	PCD09821	User Process ID	50
			PCD09822	Time Update Period sec	0
00:00:00	ASSC009C	ZSS00605	PSS06060	Memory ID	ONCHIP_RAM
			PSS06065	Start Address	A0008318
			PSS06067	Length of Dump Block	3
Auto		ZSS17003	PSS03205	address of image in EEPR	10040000
			PSS03202	Length of Image	120872
			PSS03206	Destination addr in RAM	1074790400
00:00:05		ZSS17002	PSS03201	address of image in RAM	40100000
			PSS03202	Length of Image	120872
			PSS03203	CRC value	55350
Auto		ZSS17001	PSS03201	address of image in RAM	40100000
00:00:03		ZCD00982	PCD09821	User Process ID	50
			PCD09822	Time Update Period sec	0
Auto		ZSS00605	PSS06060	Memory ID	ONCHIP_RAM
			PSS06065	Start Address	A0008318
			PSS06067	Length of Dump Block	3
Auto		ZSS00605	PSS06060	Memory ID	RAM
			PSS06065	Start Address	40114140
			PSS06067	Length of Dump Block	3
Auto		ZSS00605	PSS06060	Memory ID	RAM
			PSS06065	Start Address	40000F34
			PSS06067	Length of Dump Block	3
00:00:00	ASSC009D	ZCD00C01	PCG0C011	Number of Monitoring	2
			PCG0C012	User Monitoring ID	82
			PCG0C012	User Monitoring ID	83
Auto		ZCD01304	PCG13041	Number of Actions	1
			PCG13042	PID emitter of Event	10

			PCG13012	Event Identifier	13121
Auto		ZCF00C01	PCG0C011	Number of Monitoring	4
			PCG0C012	User Monitoring ID	205
			PCG0C012	User Monitoring ID	206
			PCG0C012	User Monitoring ID	207
			PCG0C012	User Monitoring ID	208
Auto		ZCF01304	PCG13041	Number of Actions	1
			PCG13042	PID emitter of Event	12
			PCG13012	Event Identifier	21611

3.1.10.7 Configuration Control Information

Date	FOP Issue	Version	Description
20/04/2016	0.1	1	Created
23/08/2017		2	Reporter has auto-corrected SS-CRP-009 procedure.
05/12/2017	1	3	Database realignment.
06/08/2018	3	4	CR205 - Management of DMS monitoring 82 and 83 on SIMBIO-SYS 3.5 V and 5 V supply that were added after OBCP development.

3.1.11SIMBIO-SYS Manual Switch Off (SS-CRP-010)

3.1.11.1 Objectives

The aim of this FOP is to power OFF the SIMBIO-SYS ME. The Graceful Switch Off TC precedes the LCL OFF TCs in order to avoid inadvertent abrupt power OFF of the Detectors and PEs.

3.1.11.2 Summary of Constraints

None

3.1.11.3 Spacecraft Configuration

Start of Procedure	End of Procedure
Any	All SIMBIO-SYS electronics are OFF, S12 and S19 for SIMBIO are disabled, both SIMBIO SpaceWire Interfaces are disabled.

3.1.11.4 Reference File(s)

3.1.11.4.1 Input Command Sequences

None

3.1.11.4.2 Output Command Sequences

ASSC010A
ASSC010B

3.1.11.5 Input parameters

None

3.1.11.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSC010A	ZSS17007			
00:00:00	ASSC010B	ZCF00C02	PCG0C011	Number of Monitoring	4
			PCG0C012	User Monitoring ID	205
			PCG0C012	User Monitoring ID	206
			PCG0C012	User Monitoring ID	207
			PCG0C012	User Monitoring ID	208
Auto		ZCF01305	PCG13041	Number of Actions	1
			PCG13042	PID emitter of Event	12
			PCG13012	Event Identifier	21611
Auto		ZCD00C02	PCG0C011	Number of Monitoring	2
			PCG0C012	User Monitoring ID	82
			PCG0C012	User Monitoring ID	83
Auto		ZCD01305	PCG13041	Number of Actions	1
			PCG13042	PID emitter of Event	10
			PCG13012	Event Identifier	13121
00:00:01		ZSM00297	PSM00302	SpW I/F E/D	Disabled
			PSM00303	SpW I/S	Nominal
			PSM00304	P/L ID	SYMBIO-SYS
			PSM00302	SpW I/F E/D	Disabled

			PSM00303	SpW I/S	Redundant
			PSM00304	P/L ID	SYMBIO-SYS
Auto		ZPW01064			
00:00:01		ZPW01148			

3.1.11.7 Configuration Control Information

Date	FOP Issue	Version	Description
29/09/2016	0.2	1	Created
23/08/2017		2	Reporter has auto-corrected SS-CRP-010 procedure.
05/12/2017	1	3	Database realignment.
06/08/2018	3	4	CR205 - Management of DMS monitoring 82 and 83 on SIMBIO-SYS 3.5 V and 5 V supply that were added after OBCP development.

3.1.12SIMBIO-SYS Enable or Disable Science TM (SS-CRP-011)

3.1.12.1 Objectives

The aim of this FOP is to enable or disable the forwarding of SIMBIO-SYS Science TM from the SIMBIO-SYS CU to the SSMM. Note: at any SIMBIO-SYS channel power-on, science telemetry is enabled by default.

3.1.12.2 Summary of Constraints

None. Note that all active SIMBIO-SYS channels shall be affected.

3.1.12.3 Spacecraft Configuration

Start of Procedure	End of Procedure
SIMBIO-SYS forwarding of Science telemetry enabled or disabled	SIMBIO-SYS forwarding of Science telemetry modified as commanded.

3.1.12.4 Reference File(s)

3.1.12.4.1 Input Command Sequences

None

3.1.12.4.2 Output Command Sequences

ASSC011A
ASSC011B

3.1.12.5 Input parameters

None

3.1.12.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSC011A	ZSS02101			
00:00:00	ASSC011B	ZSS02102			

3.1.12.7 Configuration Control Information

Date	FOP Issue	Version	Description
20/04/2016	0.1	1	Created

3.1.13Enabling or Disabling of S19 recovery (SS-CRP-012)

3.1.13.1 Objectives

The aim of this FOP is to enable or disable the Service 19 recovery action(s) associated to SIMBIO-SYS.

3.1.13.2 Summary of Constraints

Disabling the recovery actions can endanger the instrument: disabling only to be performed after agreement with SIMBIO-SYS PI. This procedure is consistent with [RD.8] and shall have to be modified with the next release of the TN.

3.1.13.3 Spacecraft Configuration

Start of Procedure	End of Procedure
Any	Status of SIMBIO S19 recovery modified.

3.1.13.4 Reference File(s)

3.1.13.4.1 Input Command Sequences

None

3.1.13.4.2 Output Command Sequences

ASSC012A
ASSC012B

3.1.13.5 Input parameters

None

3.1.13.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSC012A	ZCF01304	PCG13041	Number of Actions	1
			PCG13042	PID emitter of Event	12
			PCG13012	Event Identifier	21611
Auto		ZCF01306	-	-	-
00:00:00	ASSC012B	ZCF01305	PCG13041	Number of Actions	1
			PCG13042	PID emitter of Event	12
			PCG13012	Event Identifier	21611
Auto		ZCF01306	-	-	-

3.1.13.7 Configuration Control Information

Date	FOP Issue	Version	Description
29/03/2017	0.2	1	Created

3.2 ENG

3.2.1 Summary

ENGineering procedures (ENG)				
ID	**Name and description**	**SIMBIO-SYS status**		
		Start	**End**	**Duration [s]**
SIMBIO-SYS SW Maintenance (SS-ENG-001)	**SIMBIO-SYS SW Maintenance** (SS-ENG-001) To perform OBSW maintenance on SIMBIO-SYS. Nominally, all sequences shall be uplinked using PDORs and MDORs.	SIMBIO-SYS OFF	SIMBIO ME ON, new SW version running	TBD
SIMBIO-SYS HRIC Read - Write Address (SS-ENG-002)	**SIMBIO-SYS HRIC Read - Write Address** (SS-ENG-002) To read or write the contents of a HRIC FPGA address.	ME is ON, HRIC is ON	Unchanged	TBD
SIMBIO-SYS STC Read - Write Address (SS-ENG-003)	**SIMBIO-SYS STC Read - Write Address** (SS-ENG-003) To read or write the contents of an STC FPGA address.	ME is ON, STC is ON	Unchanged	TBD
SIMBIO-SYS VIHI Read - Write Address (SS-ENG-004)	**SIMBIO-SYS VIHI Read - Write Address** (SS-ENG-004) To read or write the contents of a VIHI FPGA address.	ME is ON, VIHI is ON	Unchanged	TBD
SIMBIO-SYS Enable - Disable HKs (SS-ENG-005)	**SIMBIO-SYS Enable - Disable HKs** (SS-ENG-005) To enable or disable the generation of a SIMBIO HK packet.	SIMBIO-SYS is ON	Unchanged	TBD
SIMBIO-SYS HRIC TEC Cooling Test (SS-ENG-007)	**SIMBIO-SYS HRIC TEC Cooling Test** (SS-ENG-007) To test the functionality of the TEC for HRIC.	ME is ON, HRIC is ON	Unchanged	TBD
SIMBIO-SYS STC TEC Cooling Test (SS-ENG-008)	**SIMBIO-SYS STC TEC Cooling Test** (SS-ENG-008) To test the functionality of the TEC for STC.	ME is ON, STC is ON	Unchanged	TBD
SIMBIO-SYS VIHI TEC Cooling Test (SS-ENG-009)	**SIMBIO-SYS VIHI TEC Cooling Test** (SS-ENG-009) To test the functionality of the TEC for VIHI.	ME is ON, VIHI is ON	Unchanged	TBD
SIMBIO-SYS Connection Test and Max Length TC (SS-ENG-011)	**SIMBIO-SYS Connection Test and Max Length TC** (SS-ENG-011) To verify TC capability to SIMBIO by uplink of a service 17 connection test or a "dummy content" max length TC.	SIMBIO ON and under ASW control	Unchanged	TBD

SIMBIO-SYS check SW version and ASW Flight vs Lab version (SS-ENG-012)	**SIMBIO-SYS check SW version and ASW Flight vs Lab version** (SS-ENG-012) To check the SW version of BSW and ASW, and to verify whether ASW has been loaded from the Flight or from the Laboratory EEPROM image.	ME is ON	Unchanged	TBD

3.2.2 SIMBIO-SYS SW Maintenance (SS-ENG-001)

3.2.2.1 Objectives

The aim of this FOP is to perform On-Board SoftWare (OBSW) maintenance on SIMBIO-SYS. Nominally, all sequences shall be uplinked using Payload Direct Operation Request (PDOR) and Memory Direct Operation Request (MDOR).

3.2.2.2 Summary of Constraints

Can be run as standalone starting from SIMBIO LCL OFF. The MDORs (and PDORs) to be uplinked must have been received.

3.2.2.3 Spacecraft Configuration

Start of Procedure	End of Procedure
SIMBIO LCL OFF, both SpaceWire links disabled	SIMBIO ME ON, new SW version running

3.2.2.4 Reference File(s)

3.2.2.4.1 Input Command Sequences

None

3.2.2.4.2 Output Command Sequences

ASSE001A
ASSE001B
ASSE001C
ASSE001D
ASSE001E
ASSE001F
ASSE001G

3.2.2.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSE001A	PKK00021	Nominal Redundant	XE001A01	Nominal
	PKK00103	EEPROM_START_ADDRESS	XE001A02	
	PKK00104	IMG_LENGTH	XE001A03	
	PKK00105	RAM_START_ ADDRESS	XE001A04	
	PKK00106	CRC_VALUE	XE001A05	
ASSE001B	PSS06060	Memory ID	XE001B01	
	PSS06065	Start Address	XE001B02	
	PSS06067	Length of Dump Block	XE001B03	
ASSE001D	PSS03201	address of image in RAM	XE001D01	
	PSS03202	Length of Image	XE001D02	
	PSS03203	CRC value	XE001D03	
ASSE001E	PSS03201	address of image in RAM	XE001E01	
	PSS03202	Length of Image	XE001E02	
	PSS03204	Destination address EEPR	XE001E03	
ASSE001F	PKK00021	Nominal Redundant	XE001F01	Nominal

	PKK00102	ASW Start	XE001F02	
	PKK00103	EEPROM_START_ADDRESS	XE001F03	
	PKK00104	IMG_LENGTH	XE001F04	
	PKK00105	RAM_START_ ADDRESS	XE001F05	
	PKK00106	CRC_VALUE	XE001F06	
	PSS06060	Memory ID	XE001F07	
	PSS06065	Start Address	XE001F08	
	PSS06068	num of bytes to check	XE001F09	
ASSE001G	PKK00021	Nominal Redundant	XE001G01	0
	PKK00102	ASW Start	XE001G02	
	PKK00103	EEPROM_START_ADDRESS	XE001G03	
	PKK00104	IMG_LENGTH	XE001G04	
	PKK00105	RAM_START_ ADDRESS	XE001G05	
	PKK00106	CRC_VALUE	XE001G06	

3.2.2.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSC012A	ZSSK4000	PKK00021	Nominal Redundant	XE001A01
			PKK00102	ASW Start	No ASW Start
			PKK00103	EEPROM_START_ADDRESS	XE001A02
			PKK00104	IMG_LENGTH	XE001A03
			PKK00105	RAM_START_ ADDRESS	XE001A04
			PKK00106	CRC_VALUE	XE001A05
00:00:00	ASSC012B	ZSS00605	PSS06060	Memory ID	XE001B01
			PSS06065	Start Address	XE001B02
			PSS06067	Length of Dump Block	XE001B03
00:00:00	ASSC012C	ZSS01701			
00:00:00	ASSC012D	ZSS17002	PSS03201	address of image in RAM	XE001D01
			PSS03202	Length of Image	XE001D02
			PSS03203	CRC value	XE001D03
00:00:00	ASSC012E	ZSS17004	PSS03201	address of image in RAM	XE001E01
			PSS03202	Length of Image	XE001E02
			PSS03204	Destination address EEPR	XE001E03
00:00:00	ASSC012F	ZSSK4001			
Auto		ZSSK4000	PKK00021	Nominal Redundant	XE001F01
			PKK00102	ASW Start	XE001F02
			PKK00103	EEPROM_START_ADDRESS	XE001F03
			PKK00104	IMG_LENGTH	XE001F04
			PKK00105	RAM_START_ ADDRESS	XE001F05
			PKK00106	CRC_VALUE	XE001F06
Auto		ZSS00609	PSS06060	Memory ID	XE001F07
			PSS06065	Start Address	XE001F08
			PSS06068	num of bytes to check	XE001F09
00:00:00	ASSC012G	ZSSK4001			
Auto		ZSSK4000	PKK00021	Nominal Redundant	XE001G01
			PKK00102	ASW Start	XE001G02
			PKK00103	EEPROM_START_ADDRESS	XE001G03
			PKK00104	IMG_LENGTH	XE001G04
			PKK00105	RAM_START_ ADDRESS	XE001G05
			PKK00106	CRC_VALUE	XE001G06

3.2.2.7 Configuration Control Information

Date	FOP Issue	Version	Description
29/09/2016	0.2	1	Created
23/08/2017		2	Reporter has auto-corrected SS-ENG-001 procedure.
05/12/2017	1	3	Updated all references, FP introduced.
08/02/2018	2	4	As per CR-017: use of TC ZSSY0602 and clarification on MDOR utilization.

3.2.3 SIMBIO-SYS HRIC Read - Write Address (SS-ENG-002)

3.2.3.1 Objectives

The aim of this FOP is to read or write the contents of a HRIC FPGA address. There is a limited number of addresses available for this operation, see appendix to this procedure. The values that can be written and the associated functionality are listed in [RD.7] Table 3.7.2.3-2 PE Addresses contents.

Notes

Differently from other uploaded parameters (i.e. VIHI Bias Detector parameters which remain in the PE RAM until the PE is switched off) when the TEC parameters have been uploaded, they are written in the CPCU RAM, so they remain available up to the next SIMBIO-SYS switch off (see [RD.2] Section 8.3.1.10 and 8.3.1.16).

3.2.3.2 Summary of Constraints

The "WRITE ADDRESS" command must be followed by a "CONFIRM" command (included in this procedure).

3.2.3.3 Spacecraft Configuration

Start of Procedure	End of Procedure
HRIC is ON	HRIC is ON, some working parameter possibly modified

3.2.3.4 Reference File(s)

3.2.3.4.1 Input Command Sequences

None

3.2.3.4.2 Output Command Sequences

ASSE002A
ASSE002B

3.2.3.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSE002A	PSS01605	PE HRIC Addr	XE002A01	
ASSE002B	PSS01605	PE HRIC Addr	XE002B01	
	PSS01606	Value to be write	XE002B02	

3.2.3.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSE002A	ZSS17106	PSS01605	PE HRIC Addr	XE002B01
00:00:00	ASSE002B	ZSS17107	PSS01605	PE HRIC Addr	XE002C01
			PSS01606	Value to be write	XE002C02
00:00:05		ZSS17104			

3.2.3.7 Configuration Control Information

Date	FOP Issue	Version	Description
28/09/2016	0.2	1	Created

3.2.4 SIMBIO-SYS STC Read - Write Address (SS-ENG-003)

3.2.4.1 Objectives

The aim of this FOP is to read or write the contents of an STC FPGA address. There is a limited number of addresses available for this operation, see appendix to this procedure. The values that can be written and the associated functionality are listed in [RD.7] Table 3.7.2.3-2 PE Addresses contents.

Notes

Differently from other uploaded parameters (i.e. VIHI Bias Detector parameters which remain in the PE RAM until the PE is switched off) when the TEC parameters have been uploaded, they are written in the CPCU RAM, so they remain available up to the next SIMBIO-SYS switch off (see [RD.2] Section 8.3.1.10 and 8.3.1.16).

3.2.4.2 Summary of Constraints

The "WRITE ADDRESS" command must be followed by a "CONFIRM" command (included in this procedure).

3.2.4.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC is ON	STC is ON, some working parameter possibly modified

3.2.4.4 Reference File(s)

3.2.4.4.1 Input Command Sequences

None

3.2.4.4.2 Output Command Sequences

ASSE003A
ASSE003B

3.2.4.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSE003A	PSS01607	PE STC Addr	XE003A01	
ASSE003B	PSS01607	PE STC Addr	XE003B01	
	PSS01606	Value to be write	XE003B02	

3.2.4.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSE003A	ZSS17206	PSS01607	PE STC Addr	XE003B01
00:00:00	ASSE003B	ZSS17207	PSS01607	PE STC Addr	XE003C01
			PSS01606	Value to be write	XE003C02
00:00:05		ZSS17204			

3.2.4.7 Configuration Control Information

Date	FOP Issue	Version	Description
28/09/2016	0.2	1	Created

3.2.5 SIMBIO-SYS VIHI Read - Write Address (SS-ENG-004)

3.2.5.1 Objectives

The aim of this FOP is to read or write the contents of a VIHI FPGA address. There is a limited number of addresses available for this operation, see appendix to this procedure. The values that can be written and the associated functionality are listed in [RD.7] Table 3.7.2.3-4 PE Addresses contents.

Notes

Differently from other uploaded parameters (i.e. STC/HRIC TEC parameters) which been uploaded, they are written in the CPCU RAM, so they remain available up to the next SIMBIO-SYS switch off, VIHI Bias Detector parameters will remain in the PE RAM until the PE is switched off (see [RD.2] Section 8.3.1.10 and 8.3.1.16).

3.2.5.2 Summary of Constraints

The "WRITE ADDRESS" command must be followed by a "CONFIRM" command (included in this procedure).

3.2.5.3 Spacecraft Configuration

Start of Procedure	End of Procedure
VIHI is ON	VIHI is ON, some working parameter possibly modified

3.2.5.4 Reference File(s)

3.2.5.4.1 Input Command Sequences

None

3.2.5.4.2 Output Command Sequences

ASSE004A
ASSE004B

3.2.5.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSE004A	PSS01637	PE VIHI Addr	XE004A01	
ASSE004B	PSS01637	PE VIHI Addr	XE004B01	
	PSS01606	Value to be write	XE004B02	

3.2.5.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSE004A	ZSS17306	PSS01637	PE VIHI Addr	XE004B01
00:00:00	ASSE004B	ZSS17307	PSS01637	PE VIHI Addr	XE004C01
			PSS01606	Value to be write	XE004C02
00:00:05		ZSS17304			

3.2.5.7 Configuration Control Information

Date	FOP Issue	Version	Description
28/09/2016	0.2	1	Created

3.2.6 SIMBIO-SYS Enable - Disable HKs (SS-ENG-005)

3.2.6.1 Objectives

The aim of this FOP is to enable or disable the generation of a SIMBIO HK packet. The TM generation should always be enabled except for special cases.

3.2.6.2 Summary of Constraints

None

3.2.6.3 Spacecraft Configuration

Start of Procedure	End of Procedure
SIMBIO is ON	SIMBIO is ON, HK generation modified

3.2.6.4 Reference File(s)

3.2.6.4.1 Input Command Sequences

None

3.2.6.4.2 Output Command Sequences

ASSE005A
ASSE005B

3.2.6.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSE005A	PSS08003	SID	XE005A01	
ASSE005B	PSS08003	SID	XE005B01	

3.2.6.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSE005A	ZSS00305	PSS08003	SID	XE004B01
00:00:00	ASSE005B	ZSS00306	PSS08003	SID	XE004C01

3.2.6.7 Configuration Control Information

Date	FOP Issue	Version	Description
28/09/2016	0.2	1	Created

3.2.7 SIMBIO-SYS HRIC TEC Cooling Test (SS-ENG-007)

3.2.7.1 Objectives

The aim of this FOP is to test the functionality of the ThermoElectric Cooler (TEC) for HRIC.

3.2.7.2 Summary of Constraints

SIMBIO ASW started, HRIC detector ON.

3.2.7.3 Spacecraft Configuration

Start of Procedure	End of Procedure
Some TEC configuration	TEC configuration Modified

3.2.7.4 Reference File(s)

3.2.7.4.1 Input Command Sequences

None

3.2.7.4.2 Output Command Sequences

ASSE007A
ASSE007B

3.2.7.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSE007A	PSS01603	STC HRIC Temp set point	XE007A01	2811

3.2.7.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSE007A	ZSS17103	PSS08006	On/Off	1
			PSS01603	STC HRIC Temp set point	XE007A01
00:00:00	ASSE007B	ZSS17103	PSS08006	On/Off	0
			PSS01603	STC HRIC Temp set point	2811

3.2.7.7 Configuration Control Information

Date	FOP Issue	Version	Description
28/09/2016	0.2	1	Created

3.2.8 SIMBIO-SYS STC TEC Cooling Test (SS-ENG-008)

3.2.8.1 Objectives

The aim of this FOP is to test the functionality of the TEC for STC.

3.2.8.2 Summary of Constraints

SIMBIO ASW started, STC detector ON.

3.2.8.3 Spacecraft Configuration

Start of Procedure	End of Procedure
Some TEC configuration	TEC configuration Modified

3.2.8.4 Reference File(s)

3.2.8.4.1 Input Command Sequences

None

3.2.8.4.2 Output Command Sequences

ASSE008A
ASSE008B

3.2.8.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSE008A	PSS01603	STC HRIC Temp set point	XE008A01	2799

3.2.8.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSE008A	ZSS17203	PSS08006	On/Off	1
			PSS01603	STC HRIC Temp set point	XE008A01
00:00:00	ASSE008B	ZSS17203	PSS08006	On/Off	0
			PSS01603	STC HRIC Temp set point	2799

3.2.8.7 Configuration Control Information

Date	FOP Issue	Version	Description
28/09/2016	0.2	1	Created

3.2.9 SIMBIO-SYS VIHI TEC Cooling Test (SS-ENG-009)

3.2.9.1 Objectives

The aim of this FOP is to test the functionality of the TEC for VIHI.

3.2.9.2 Summary of Constraints

SIMBIO ASW started, VIHI detector ON.

3.2.9.3 Spacecraft Configuration

Start of Procedure	End of Procedure
Some TEC configuration	TEC configuration Modified

3.2.9.4 Reference File(s)

3.2.9.4.1 Input Command Sequences

None

3.2.9.4.2 Output Command Sequences

ASSE009A
ASSE009B

3.2.9.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSE009A	PSS01636	VIHI Temp set point	XE009A01	3372

3.2.9.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSE009A	ZSS17303	PSS08006	On/Off	1
			PSS01636	VIHI Temp set point	XE009A01
00:00:00	ASSE009B	ZSS17303	PSS08006	On/Off	0
			PSS01636	VIHI Temp set point	3372

3.2.9.7 Configuration Control Information

Date	FOP Issue	Version	Description
28/09/2016	0.2	1	Created
17/10/2017	1	2	Updated value of FP XE009A01 as per mail A. Cicchetti 13/09/2017 11:20

3.2.10SIMBIO-SYS Connection Test and Max Length TC (SS-ENG-011)

3.2.10.1 Objectives

The aim of this FOP is to verify TC capability to SIMBIO by uplink of a service 17 connection test or a "dummy content" max length TC.

3.2.10.2 Summary of Constraints

None

3.2.10.3 Spacecraft Configuration

Start of Procedure	End of Procedure
SIMBIO ON and under ASW control	Unchanged

3.2.10.4 Reference File(s)

3.2.10.4.1 Input Command Sequences

None

3.2.10.4.2 Output Command Sequences

ASSE011A
ASSE011B

3.2.10.5 Input parameters

None

3.2.10.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSE011A	ZSS01701			
00:00:00	ASSE011B	ZSS01728			

3.2.10.7 Configuration Control Information

Date	FOP Issue	Version	Description
28/09/2016	0.2	1	Created

3.2.11 SIMBIO-SYS check SW version and ASW Flight vs Lab version (SS-ENG-012)

3.2.11.1 Objectives

The aim of this FOP is to check the SW version of BSW and ASW, and to verify whether ASW has been loaded from the Flight or from the Laboratory EEPROM image.

3.2.11.2 Summary of Constraints

The BSW check must be performed before starting ASW.
The ASW check must be performed after the ASW is started at address 0x40100000.
The addresses and check values provided are valid for the ASW version 2.6.001 and BSW version 2.1.i3 , as per BC-SIM-ORS-MA-002 April 6 2016.

3.2.11.3 Spacecraft Configuration

Start of Procedure	End of Procedure
SIMBIO ME ON(ASW loaded for ASW checks)	Unchanged

3.2.11.4 Reference File(s)

3.2.11.4.1 Input Command Sequences

None

3.2.11.4.2 Output Command Sequences

ASSE012A
ASSE012B

3.2.11.5 Input parameters

None

3.2.11.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSE012A	ZSS00605	PSS06060	Memory ID	ONCHIP_RAM
			PSS06065	Start Address	A0008318
			PSS06067	Length of Dump Block	3
00:00:00	ASSE012B	ZSS00605	PSS06060	Memory ID	ONCHIP_RAM
			PSS06065	Start Address	A0008318
			PSS06067	Length of Dump Block	3
			PSS06060	Memory ID	RAM
			PSS06065	Start Address	40114140
			PSS06067	Length of Dump Block	3
			PSS06060	Memory ID	RAM
			PSS06065	Start Address	40000F34
			PSS06067	Length of Dump Block	3

3.2.11.7 Configuration Control Information

Date	FOP Issue	Version	Description
07/03/2017		1	Created
07/03/2017	0.2	2	Structure modified

3.3 FCP

3.3.1 Summary

Flight Control Procedure (FCP)				
ID	**Name and description**	**Procedure status**		
		Start	**End**	**Duration [s]**
SIMBIO-SYS ME Switch On by OBCP (SS-FCP-001)	**SIMBIO-SYS ME Switch On by OBCP** (SS-FCP-001) To trigger execution of the SIMBIO ME Switch On OBCP.	Any	If successful: SIMBIO LCL and ME on selected side is ON, ASW is started or not as per invocation parameter. If not successful: state depends on the error detected, see Table 1	TBD
SIMBIO-SYS ME Switch Off by OBCP (SS-FCP-002)	**SIMBIO-SYS ME Switch Off by OBCP** (SS-FCP-002) To trigger execution of the SIMBIO ME Switch Off OBCP.	Any	If successful: SIMBIO LCLs OFF. If not successful: state depends on the error detected, see Table 2	TBD
SIMBIO-SYS HK Report Collection interval (SS-FCP-003)	**SIMBIO-SYS HK Report Collection interval** (SS-FCP-003) To redefine the generation frequency of the SIMBIO HK TM.	ME ON	ME ON, HK generation interval modified	TBD
SIMBIO-SYS HRIC Off by OBCP (SS-FCP-004)	**SIMBIO-SYS HRIC Off by OBCP** (SS-FCP-004) To trigger execution of the SIMBIO HRIC Graceful Shutdown OBCP.	Any	If successful: HRIC is OFF. If not successful: state depends on the error detected, see Table 3	TBD
SIMBIO-SYS HRIC PE Detector TEC on by OBCP (SS-FCP-005)	**SIMBIO-SYS HRIC PE Detector TEC on by OBCP** (SS-FCP-005) To trigger execution of the SIMBIO HRIC Switch ON OBCP.	ME should be ON (Checked by OBCP)	If successful: HRIC PE, detector and TEC are ON. If not successful: state depends on the error	TBD

			detected, see Table 4	
SIMBIO-SYS HRIC Start-Stop Science (SS-FCP-006)	**SIMBIO-SYS HRIC Start-Stop Science** (SS-FCP-006) To Start or Stop science generation for the HRIC sensor.	HRIC in STANDBY vs SCIENCE	HRIC in SCIENCE vs STANDBY	TBD
SIMBIO-SYS STC Off by OBCP (SS-FCP-007)	**SIMBIO-SYS STC Off by OBCP** (SS-FCP-007) To trigger execution of the SIMBIO STC Graceful Shutdown OBCP.	Any	If successful: STC is OFF. If not successful: state depends on the error detected, see Table 5	TBD
SIMBIO-SYS STC PE Detector TEC On by OBCP (SS-FCP-008)	**SIMBIO-SYS STC PE Detector TEC On by OBCP** (SS-FCP-008) To trigger execution of the SIMBIO STC Switch ON OBCP.	ME should be ON (Checked by OBCP)	If successful: STC PE, detector and TEC are ON. If not successful: state depends on the error detected, see Table 6	TBD
SIMBIO-SYS STC Start-Stop Science (SS-FCP-009)	**SIMBIO-SYS STC Start-Stop Science** (SS-FCP-009) To Start or Stop science generation for the STC sensor.	STC in STANDBY vs SCIENCE	STC in SCIENCE vs STANDBY	TBD
SIMBIO-SYS VIHI Off by OBCP(SS-FCP-010)	**SIMBIO-SYS VIHI Off by OBCP**(SS-FCP-010) To trigger execution of the SIMBIO VIHI Graceful Shutdown OBCP	Any	If successful: VIHI is OFF. If not successful: state depends on the error detected, see Table 7	TBD
SIMBIO-SYS VIHI Detector TEC On by OBCP (SS-FCP-011)	**SIMBIO-SYS VIHI Detector TEC On by OBCP** (SS-FCP-011) To trigger execution of the SIMBIO VIHI Switch ON OBCP.	ME should be ON (Checked by OBCP)	If successful: VIHI PE, detector and TEC are ON. If not successful: state depends on the error detected, see Table 8	TBD
SIMBIO-SYS VIHI Start-Stop Science (SS-FCP-012)	**SIMBIO-SYS VIHI Start-Stop Science** (SS-FCP-012) To Start or Stop science generation for the VIHI sensor.	VIHI in STANDBY vs SCIENCE	VIHI in SCIENCE vs STANDBY	TBD
SIMBIO-SYS VIHI Shutter Calibr –	**SIMBIO-SYS VIHI Shutter Calibr –LAMP and LED** (SS-FCP-013)	VIHI Channel ON,	VIHI Channel ON,	TBD

LAMP and LED (SS-FCP-013)	To operate the VIHI shutter, Calibration Lamp, Calibration LED.	some configuration of Calibration loads	Calibration load status modified	
SIMBIO-SYS Upload of Parameters (SS-FCP-014)	**SIMBIO-SYS Upload of** Parameters (SS-FCP-014) To modify, up to the next UploadParam TC to the same channel, or up to SIMBIO-SYS power off, the specified parameter and value for one SIMBIO channel.	Some value of a SIMBIO Channel configurable on board parameter	Modified value of a SIMBIO Channel configurable on board parameter	TBD
SIMBIO-SYS Set NECP-CRUISE or STD thermal control thresholds (SS-FCP-015)	**SIMBIO-SYS Set NECP-CRUISE or STD thermal control** thresholds (SS-FCP-015) Prior to SIMBIO-SYS power ON in NECP or Cruise check-out, the instrument needs to be heated up to reach the PEs operational temperature range. This is done by increasing the settings of TCS heater line 22 (heater switching thresholds) at least two hours before planned ME switch ON.	Some TCS line 22 heater threshold setting.	TCS line 22 Threshold setting modified.	TBD
SIMBIO-SYS HRIC Science Acq Short Integr (SS-FCP-100)	**SIMBIO-SYS HRIC Science Acq Short Integr** (SS-FCP-100) Command science acquisition with short integration and all free parameters.	HRIC in Science or Standby Mode	HRIC in Science Mode	TBD
SIMBIO-SYS HRIC Science Acq Short Integr FPAN filter (SS-FCP-101)	**SIMBIO-SYS HRIC Science Acq Short Integr FPAN** filter (SS-FCP-101) Command science acquisition with short integration in the FPAN filter.	HRIC in Science or Standby Mode	HRIC in Science Mode	TBD
SIMBIO-SYS HRIC Science Acq Short Integr BB Filters (SS-FCP-102)	**SIMBIO-SYS HRIC Science Acq Short Integr BB Filters** (SS-FCP-102) Command science acquisition with short integration using all BB filters.	HRIC in Science or Standby Mode	HRIC in Science Mode	TBD
SIMBIO-SYS HRIC Science Acq Short Integr all filters (SS-FCP-103)	**SIMBIO-SYS HRIC Science Acq Short Integr all** filters (SS-FCP-103) Command science acquisition with short integration using all filters.	HRIC in Science or Standby Mode	HRIC in Science Mode	TBD
SIMBIO-SYS HRIC Stop Science Acq (SS-FCP-110)	**SIMBIO-SYS HRIC Stop Science** Acq (SS-FCP-110) Command stopping acquisition.	HRIC in Science Mode	HRIC in Science Mode	TBD
SIMBIO-SYS HRIC Channel Power ON (SS-FCP-120)	**SIMBIO-SYS HRIC Channel Power ON** (SS-FCP-120) Power-on the HRIC Channel.	HRIC PE OFF	HRIC PE ON	TBD
SIMBIO-SYS HRIC Channel Power OFF (SS-FCP-121)	**SIMBIO-SYS HRIC Channel Power** OFF (SS-FCP-121) Power-off the HRIC Channel.	HRIC PE ON HRIC Detector OFF	HRIC PE OFF	TBD

SIMBIO-SYS HRIC Detector Power ON (SS-FCP-122)	**SIMBIO-SYS HRIC Detector Power ON** (SS-FCP-122) Switch-on the HRIC Detector.	HRIC Detector OFF	HRIC Detector ON	TBD
SIMBIO-SYS HRIC Detector Power OFF (SS-FCP-123)	**SIMBIO-SYS HRIC Detector Power OFF** (SS-FCP-123) Switch-off the HRIC Detector.	HRIC Detector ON	HRIC Detector OFF	TBD
SIMBIO-SYS HRIC TEC Power On (SS-FCP-124)	**SIMBIO-SYS HRIC TEC Power** On (SS-FCP-124) Switch-on the HRIC TEC.	HRIC TEC OFF	HRIC TEC ON	TBD
SIMBIO-SYS HRIC TEC Power Off (SS-FCP-125)	**SIMBIO-SYS HRIC TEC Power Off** (SS-FCP-125) Switch-off the HRIC TEC.	HRIC TEC ON	HRIC TEC OFF	TBD
SIMBIO-SYS HRIC Read Address (SS-FCP-126)	**SIMBIO-SYS HRIC Read Address** (SS-FCP-126) Read HRIC address.	Any	Unchanged	TBD
SIMBIO-SYS HRIC Write Address (SS-FCP-127)	**SIMBIO-SYS HRIC Write Address** (SS-FCP-127) Write HRIC address.	Any	HRIC PE modified address value	TBD
SIMBIO-SYS HRIC Science Acq Short Integr Xwindow (SS-FCP-199)	**SIMBIO-SYS HRIC Science Acq Short Integr Xwindow** (SS-FCP-199) Command science acquisition with short integration using x-window (see STC)	HRIC in Science or Standby Mode	HRIC in Science Mode	TBD
SIMBIO-SYS HRIC Science Acq Long Integr ALL FREE (SS-FCP-200)	**SIMBIO-SYS HRIC Science Acq Long Integr ALL FREE** (SS-FCP-200) Command science acquisition with long integration and all free.	HRIC in Science or Standby Mode	HRIC in Science Mode	TBD
SIMBIO-SYS HRIC Science Acq Long Integr FPAN filter (SS-FCP-201)	**SIMBIO-SYS HRIC Science Acq Long Integr FPAN filter** (SS-FCP-201) Command science acquisition with long integration in the FPAN filter.	HRIC in Science or Standby Mode	HRIC in Science Mode	TBD
SIMBIO-SYS HRIC Science Acq Long Integr BB filters (SS-FCP-202)	**SIMBIO-SYS HRIC Science Acq Long Integr BB filters** (SS-FCP-202) Command science acquisition with long integration using all BB filters.	HRIC in Science or Standby Mode	HRIC in Science Mode	TBD
SIMBIO-SYS HRIC Science Acq Long Integr all filters (SS-FCP-203)	**SIMBIO-SYS HRIC Science Acq Long Integr all** filters (SS-FCP-203) Command science acquisition with long integration using all filters.	HRIC in Science or Standby Mode	HRIC in Science Mode	TBD
SIMBIO-SYS HRIC Science Acq Long Integr Xwindow (SS-FCP-299)	**SIMBIO-SYS HRIC Science Acq Long Integr Xwindow** (SS-FCP-299) Command science acquisition with long integration using x-window (see STC).	HRIC in Science or Standby Mode	HRIC in Science Mode	TBD
SIMBIO-SYS STC Science SURF	**SIMBIO-SYS STC Science SURF FREE** (SS-FCP-300)	STC in Science or	STC in Science Mode	TBD

FREE (SS-FCP-300)	User Defined acquisition. It commands the acquisition of a maximum of 6 Windows.	Standby Mode		
SIMBIO-SYS STC Science SURF SINGLE PANH (SS-FCP-301)	**SIMBIO-SYS STC Science SURF SINGLE PANH** (SS-FCP-301) It commands the acquisition of a X+PANH	STC in Science or Standby Mode	STC in Science Mode	TBD
SIMBIO-SYS STC Science SURF SINGLE PANL (SS-FCP-302)	**SIMBIO-SYS STC Science SURF SINGLE PANL** (SS-FCP-302) It commands the acquisition of a X+PANL	STC in Science or Standby Mode	STC in Science Mode	TBD
SIMBIO-SYS STC Science SURF SINGLE 750 (SS-FCP-303)	**SIMBIO-SYS STC Science SURF SINGLE 750** (SS-FCP-303) It commands the acquisition of a X+F750	STC in Science or Standby Mode	STC in Science Mode	TBD
SIMBIO-SYS STC Science SURF SINGLE 420 (SS-FCP-304)	**SIMBIO-SYS STC Science SURF SINGLE** 420 (SS-FCP-304) It commands the acquisition of a X+F420	STC in Science or Standby Mode	STC in Science Mode	TBD
SIMBIO-SYS STC Science SURF SINGLE 550 (SS-FCP-305)	**SIMBIO-SYS STC Science SURF SINGLE** 550 (SS-FCP-305) It commands the acquisition of a X+F550	STC in Science or Standby Mode	STC in Science Mode	TBD
SIMBIO-SYS STC Science SURF SINGLE 920 (SS-FCP-306)	**SIMBIO-SYS STC Science SURF SINGLE** 920 (SS-FCP-306) It commands the acquisition of a X+F920	STC in Science or Standby Mode	STC in Science Mode	TBD
SIMBIO-SYS STC Science SURF NOMINAL GM (SS-FCP-307)	**SIMBIO-SYS STC Science SURF NOMINAL GM** (SS-FCP-307) It commands the acquisition of Global Mapping Mode X+PANH+PANL	STC in Science or Standby Mode	STC in Science Mode	TBD
SIMBIO-SYS STC Science SURF NOMINAL CM (SS-FCP-308)	**SIMBIO-SYS STC Science SURF NOMINAL CM** (SS-FCP-308) It commands the acquisition of Color Mode: X+750+420+550+920	STC in Science or Standby Mode	STC in Science Mode	TBD
SIMBIO-SYS STC Science STAR FREE (SS-FCP-310)	**SIMBIO-SYS STC Science STAR** FREE (SS-FCP-310) User Defined acquisition (for high IT). It commands the acquisition of a maximum of 6 windows.	STC in Science or Standby Mode	STC in Science Mode	TBD
SIMBIO-SYS STC Science STAR FREE (SS-FCP-311)	**SIMBIO-SYS STC Science STAR** FREE (SS-FCP-311) It commands the acquisition of a X+PANH (for high IT)	STC in Science or Standby Mode	STC in Science Mode	TBD
SIMBIO-SYS STC Science STAR	**SIMBIO-SYS STC Science STAR SINGLE PANL** (SS-FCP-312)	STC in Science or	STC in Science Mode	TBD

SINGLE PANL (SS-FCP-312)	It commands the acquisition of a X+PANL (for high IT)	Standby Mode		
SIMBIO-SYS STC Science STAR SINGLE 750 (SS-FCP-313)	**SIMBIO-SYS STC Science STAR SINGLE** 750 (SS-FCP-313) It commands the acquisition of a X+F750 (for high IT)	STC in Science or Standby Mode	STC in Science Mode	TBD
SIMBIO-SYS STC Science STAR SINGLE 420 (SS-FCP-314)	**SIMBIO-SYS STC Science STAR SINGLE** 420 (SS-FCP-314) It commands the acquisition of a X+F420 (for high IT)	STC in Science or Standby Mode	STC in Science Mode	TBD
SIMBIO-SYS STC Science STAR SINGLE 550 (SS-FCP-315)	**SIMBIO-SYS STC Science STAR SINGLE** 550 (SS-FCP-315) It commands the acquisition of a X+F550 (for high IT)	STC in Science or Standby Mode	STC in Science Mode	TBD
SIMBIO-SYS STC Science STAR SINGLE 920 (SS-FCP-316)	**SIMBIO-SYS STC Science STAR SINGLE 920** (SS-FCP-316) It commands the acquisition of a X+F920 (for high IT)	STC in Science or Standby Mode	STC in Science Mode	TBD
SIMBIO-SYS STC Science STAR GM (SS-FCP-317)	**SIMBIO-SYS STC Science STAR** GM (SS-FCP-317) It commands the acquisition of a X+PANH+PANL (for high IT).	STC in Science or Standby Mode	STC in Science Mode	TBD
SIMBIO-SYS STC Science STAR CM (SS-FCP-318)	**SIMBIO-SYS STC Science STAR CM** (SS-FCP-318) **[*]** It commands the acquisition of Color Mode: X+750+420+550+920 (for high IT)	STC in Science or Standby Mode	STC in Science Mode	TBD
SIMBIO-SYS STC Out Filters SURF X (SS-FCP-320)	**SIMBIO-SYS STC Out Filters SURF X** (SS-FCP-320) **[*]** It commands the acquisition of WindowX.	STC in Science or Standby Mode	STC in Science Mode	TBD
SIMBIO-SYS STC Out Filters SURF BAND CENTRAL (SS-FCP-321)	**SIMBIO-SYS STC Out Filters SURF BAND** CENTRAL (SS-FCP-321) It commands the acquisition of central vertical band of the Detector.	STC in Science or Standby Mode	STC in Science Mode	TBD
SIMBIO-SYS STC Out Filters SURF BAND LEFT (SS-FCP-322)	**SIMBIO-SYS STC Out Filters SURF BAND** LEFT (SS-FCP-322) It commands the acquisition of left vertical band of the Detector.	STC in Science or Standby Mode	STC in Science Mode	TBD
SIMBIO-SYS STC Out Filters SURF BAND RIGHT (SS-FCP-323)	**SIMBIO-SYS STC Out Filters SURF BAND RIGHT** (SS-FCP-323) It commands the acquisition of the right vertical band of the Detector.	STC in Science or Standby Mode	STC in Science Mode	TBD
SIMBIO-SYS STC Out Filters SURF	**SIMBIO-SYS STC Out Filters SURF BAND RIGHT** (SS-FCP-324) It commands the acquisition of half high region of the Detector (Along track 0-1023).	STC in Science or Standby Mode	STC in Science Mode	TBD

BAND RIGHT (SS-FCP-324)				
SIMBIO-SYS STC Out Filters SURF HALF LOW (SS-FCP-325)	**SIMBIO-SYS STC Out Filters SURF HALF LOW** (SS-FCP-325) It commands the acquisition of the HALF low region of the Detector (1024-2047 along track).	STC in Science or Standby Mode	STC in Science Mode	TBD
SIMBIO-SYS STC Out Filters STAR X (SS-FCP-330)	**SIMBIO-SYS STC Out Filters STAR X** (SS-FCP-330) It commands the acquisition of WindowX (for high IT).	STC in Science or Standby Mode	STC in Science Mode	TBD
SIMBIO-SYS STC Out Filters STAR BAND CENTRAL (SS-FCP-331)	**SIMBIO-SYS STC Out Filters STAR BAND CENTRAL** (SS-FCP-331) It commands the acquisition of central vertical band of the Detector. (for high IT)	STC in Science or Standby Mode	STC in Science Mode	TBD
SIMBIO-SYS STC Out Filters STAR BAND LEFT (SS-FCP-332)	**SIMBIO-SYS STC Out Filters STAR BAND LEFT** (SS-FCP-332) It commands the acquisition of left vertical band of the Detector (for high IT)	STC in Science or Standby Mode	STC in Science Mode	TBD
SIMBIO-SYS STC Out Filters STAR BAND RIGHT (SS-FCP-333)	**SIMBIO-SYS STC Out Filters STAR BAND RIGHT** (SS-FCP-333) It commands the acquisition of right vertical band of the Detector (for high IT)	STC in Science or Standby Mode	STC in Science Mode	TBD
SIMBIO-SYS STC Out Filters STAR HALF HIGH (SS-FCP-334)	**SIMBIO-SYS STC Out Filters STAR HALF HIGH** (SS-FCP-334) It commands the acquisition of half high region of the Detector (Along track 0-1023) for high IT.	STC in Science or Standby Mode	STC in Science Mode	TBD
SIMBIO-SYS STC Out Filters STAR HALF HIGH (SS-FCP-335)	**SIMBIO-SYS STC Out Filters STAR HALF HIGH** (SS-FCP-335) It commands the acquisition of the HALF low region of the Detector (1024-2047 along track) for high IT	STC in Science or Standby Mode	STC in Science Mode	TBD
SIMBIO-SYS STC COMBINATIONS STAR FULL FOV (SS-FCP-350)	**SIMBIO-SYS STC COMBINATIONS STAR FULL FOV** (SS-FCP-350) It commands the acquisitions of all the 6 filters of STC F750+F420+PANH+PANL+F550+F920 (for high IT).	STC in Science or Standby Mode	STC in Science Mode	TBD
SIMBIO-SYS STC Chan Power On (SS-FCP-360)	**SIMBIO-SYS STC Chan Power On** (SS-FCP-360) Power-on the STC Channel	STC PE OFF	STC PE ON	TBD
SIMBIO-SYS STC Chan Power Off (SS-FCP-361)	**SIMBIO-SYS STC Chan Power Off** (SS-FCP-361) Power-off the STC Channel	STC PE ON STC Detector OFF	STC PE OFF	TBD

SIMBIO-SYS STC Detector Power ON (SS-FCP-362)	**SIMBIO-SYS STC Detector Power ON** (SS-FCP-362) Power-on the STC Detector	STC detector OFF	STC detector ON	TBD
SIMBIO-SYS STC Detector Power OFF (SS-FCP-363)	**SIMBIO-SYS STC Detector Power** OFF (SS-FCP-363) Power-off the STC Detector	STC detector ON	STC detector OFF	TBD
SIMBIO-SYS STC TEC Power ON (SS-FCP-364)	**SIMBIO-SYS STC TEC Power** ON (SS-FCP-364) Power-on the STC TEC	STC TEC OFF	STC TEC ON	TBD
SIMBIO-SYS STC TEC Power OFF (SS-FCP-365)	**SIMBIO-SYS STC TEC Power** OFF (SS-FCP-365) Power-off the STC TEC	STC TEC ON	STC TEC OFF	TBD
SIMBIO-SYS STC Read Address (SS-FCP-366)	**SIMBIO-SYS STC Read Address** (SS-FCP-366) STC Read Address	Any	Unchanged	TBD
SIMBIO-SYS STC Write Address (SS-FCP-367)	**SIMBIO-SYS STC Write Address** (SS-FCP-367) STC Write Address	Any	Some STC address modified	TBD
SIMBIO-SYS STC STOP SCIENCE (SS-FCP-368)	**SIMBIO-SYS STC STOP** SCIENCE (SS-FCP-368) Command stopping acquisition.	STC Science mode	STC Standby mode	TBD
SIMBIO-SYS VIHI Thermal Control On (SS-FCP-500)	**SIMBIO-SYS VIHI Thermal Control** On (SS-FCP-500) Power-on the VIHI TEC	VIHI TEC OFF	VIHI TEC ON	TBD
SIMBIO-SYS VIHI Thermal Control Off (SS-FCP-501)	**SIMBIO-SYS VIHI Thermal Control Off** (SS-FCP-501) Power-off the VIHI TEC	VIHI TEC ON	VIHI TEC OFF	TBD
SIMBIO-SYS VIHI Detector On (SS-FCP-502)	**SIMBIO-SYS VIHI Detector** On (SS-FCP-502) Power-on the VIHI Detector	VIHI Detector OFF	VIHI Detector ON	TBD
SIMBIO-SYS VIHI Detector Off (SS-FCP-503)	**SIMBIO-SYS VIHI Detector Off** (SS-FCP-503) Power-off the VIHI Detector	VIHI Detector ON	VIHI Detector OFF	TBD
SIMBIO-SYS VIHI Detector On and TEC On (SS-FCP-504)	**SIMBIO-SYS VIHI Detector On and TEC On** (SS-FCP-504) Power-on the VIHI Detector and TEC	VIHI Detector and TEC OFF	VIHI Detector and TEC ON	TBD
SIMBIO-SYS VIHI Detector Off and TEC Off (SS-FCP-505)	**SIMBIO-SYS VIHI Detector Off and TEC Off** (SS-FCP-505) Power-off the VIHI Detector and TEC	VIHI Detector and TEC ON	VIHI Detector and TEC OFF	TBD
SIMBIO-SYS VIHI Read Address (SS-FCP-506)	**SIMBIO-SYS VIHI Read Address** (SS-FCP-506) VIHI Read Address	Any	Unchanged	TBD

SIMBIO-SYS VIHI Write Address (SS-FCP-507)	**SIMBIO-SYS VIHI Write Address** (SS-FCP-507) VIHI Write Address	Any	Some VIHI address value modified	TBD
SIMBIO-SYS VIHI Manual dark acquisition (SS-FCP-508)	**SIMBIO-SYS VIHI Manual dark** acquisition (SS-FCP-508) To perform dark acquisitions in case the dark macro is not available	VIHI Stand-by	Unchanged	TBD
SIMBIO-SYS VIHI Science Mode Variable IT (SS-FCP-512)	**SIMBIO-SYS VIHI Science Mode Variable IT** (SS-FCP-512) VIHI Science with variable integration time	VIHI in Standby or Science mode	VIHI in Science mode	TBD
SIMBIO-SYS VIHI Science Fixed IT 137us (SS-FCP-513)	**SIMBIO-SYS VIHI Science Fixed IT 137us** (SS-FCP-513) VIHI Science with integration time fixed at 137 us	VIHI in Standby or Science mode	VIHI in Science mode	TBD
SIMBIO-SYS VIHI Stop Science (SS-FCP-514)	**SIMBIO-SYS VIHI Stop Science** (SS-FCP-514) Stops VIHI Science acquisitions	VIHI in Science Mode	VIHI in Standby mode	TBD
SIMBIO-SYS Power-on VIHI Channel (SS-FCP-515)	**SIMBIO-SYS Power-on VIHI Channel** (SS-FCP-515) Power-on VIHI Channel	VIHI in Science Mode	VIHI in Standby mode	TBD
SIMBIO-SYS Power-off VIHI Channel (SS-FCP-516)	**SIMBIO-SYS Power-off VIHI Channel** (SS-FCP-516) Power-off VIHI Channel	VIHI PE ON VIHI Detector OFF	VIHI PE OFF	TBD

[*] *FCPs (so marked) demonstrated to need future updates. See each FCP section for more details.*

3.3.2 SIMBIO-SYS ME Switch On by OBCP (SS-FCP-001)

3.3.2.1 Objectives

The aim of this FOP is to trigger execution of the SIMBIO-SYS ME Switch On OBCP named KSS04000MEON in [RD.5]. The OBCP shall normally be triggered by the Mission Planning process using the command sequence defined by this procedure.
Essentially: the current condition is checked, the SPW link enabled, the LCL on selected side is closed, the BSW is synchronized with OBT, a connection test TC is verified, ME status is checked, ASW is started if requested, ASW is synchronized with OBT, final condition is checked. For more details see [RD.5].

3.3.2.2 Summary of Constraints

None

3.3.2.3 Spacecraft Configuration

Start of Procedure	End of Procedure
Any	If successful: SIMBIO LCL and ME on selected side is ON, ASW is started or not as per invocation parameter. If not successful: state depends on the error detected, see Table 1

3.3.2.4 Reference File(s)

3.3.2.4.1 Input Command Sequences

None

3.3.2.4.2 Output Command Sequences

ASSF001A

3.3.2.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF001A	PKK00021	Nominal Redundant	XF001A01	Nominal
	PKK00102	ASW Start	XF001A02	ASW Start
	PKK00103	EEPROM_START_ADDRESS	XF001A03	10040000
	PKK00104	IMG_LENGTH	XF001A04	120872
	PKK00105	RAM_START_ ADDRESS	XF001A05	40100000
	PKK00106	CRC_VALUE	XF001A06	55350

3.3.2.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF001A	ZSSK4000	PKK00021	Nominal Redundant	XF001A01
			PKK00102	ASW Start	XF001A02
			PKK00103	EEPROM_START_ADDRESS	XF001A03
			PKK00104	IMG_LENGTH	XF001A04
			PKK00105	RAM_START_ ADDRESS	XF001A05
			PKK00106	CRC_VALUE	XF001A06
00:01:20		ZCD00C01	PCG0C011	Number of Monitoring	2
			PCG0C012	User Monitoring ID	82
			PCG0C012	User Monitoring ID	83

3.3.2.7 Configuration Control Information

Date	FOP Issue	Version	Description
21/02/2017		1	Created
24/02/2017		2	Editorial
02/05/2017	0.2	2.01	Title modified, added comments on OBCP Start / Stop event packets from DMS.
17/10/2017	1	3	Updated FP default values as per mail A. Cicchetti 13/09/2017 11:20
06/08/2018		4	CR205 - Management of DMS monitorings 82 and 83 on SIMBIO-SYS 3.5 V and 5 V supply that were added after OBCP development
06/08/2018	3	5	CR 205 - Added Subschedule ID.

3.3.3 SIMBIO-SYS ME Switch Off by OBCP (SS-FCP-002)

3.3.3.1 Objectives

The aim of this FOP is to trigger execution of the SIMBIO-SYS ME Switch Off OBCP named KSS04001MEOF in [RD.5]. The OBCP shall normally be triggered by the Mission Planning process using the command sequence defined by this procedure.
Essentially: the current condition is checked, the three channels graceful switch off OBCPs are sequentially started, LCLs are opened and the final condition is checked. For more details see [RD.5].

3.3.3.2 Summary of Constraints

None

3.3.3.3 Spacecraft Configuration

Start of Procedure	End of Procedure
Any	If successful: SIMBIO LCLs OFF. If not successful: state depends on the error detected, see Table 2

3.3.3.4 Reference File(s)

3.3.3.4.1 Input Command Sequences

None

3.3.3.4.2 Output Command Sequences

ASSF002A

3.3.3.5 Input parameters

None

3.3.3.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF002A	ZCD00C02	PCG0C011	Number of Monitoring	2
			PCG0C012	User Monitoring ID	82
			PCG0C012	User Monitoring ID	83
00:00:02		ZSSK4001			

3.3.3.7 Configuration Control Information

Date	FOP Issue	Version	Description
21/02/2017		1	Created
02/05/2017	0.2	1.01	Title modified, added comments on OBCP Start / Stop event packets from DMS.
23/08/2017		2	Reporter has auto-corrected SS-FCP-002 procedure.
05/12/2017	1	3	Version realignment after autocorrects.
06/08/2018		4	CR205 - Management of DMS monitoring 82 and 83 on SIMBIO-SYS-SYS 3.5 V and 5 V supply that were added after OBCP development.
06/08/2018	3	5	CR 205 - Added Subschedule ID.

3.3.4 SIMBIO-SYS HK Report Collection interval (SS-FCP-003)

3.3.4.1 Objectives

The aim of this FOP is to redefine the generation frequency of the SIMBIO HK TM.

3.3.4.2 Summary of Constraints

None

3.3.4.3 Spacecraft Configuration

Start of Procedure	End of Procedure
SIMBIO ME ON	SIMBIO ME ON, HK generation interval modified

3.3.4.4 Reference File(s)

3.3.4.4.1 Input Command Sequences

None

3.3.4.4.2 Output Command Sequences

ASSF003A

3.3.4.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF003A	PSS08003	SID	XV003A01	255
	PSS08004	Collection Interval	XV003A02	80

3.3.4.6 TC sequence

Relative tim	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF003A	ZSS00329	PSS08003	SID	XV003A01
			PSS08004	Collection Interval	XV003A02

3.3.4.7 Configuration Control Information

Date	FOP Issue	Version	Description
20/04/2016	0.1	1	Created
12/09/2016		2	Modified sequence flags and MPS info.
12/09/2016	0.2	3	Sched flag set to N
17/10/2017		4	Updated Default value of FP XV003A02 as per mail A. Cicchetti 13/09/2017 11:20
20/11/2017	1	5	Changed SID selection to 255s

3.3.5 SIMBIO-SYS HRIC Off by OBCP (SS-FCP-004)

3.3.5.1 Objectives

The aim of this FOP is to trigger execution of the SIMBIO-SYS HRIC Graceful Shutdown OBCP named KSS04005HGOF in [RD.5]**.** The OBCP shall normally be triggered by the Mission Planning process using the command sequence defined by this procedure.
Essentially: the current condition is checked, the TEC is switched OFF, the detector is switched OFF (twice, if needed), the channel (PE) is switched OFF. If nominal completion is achieved, an event is generated to inform the ME OFF OBCP that HRIC is now OFF. For more details see [RD.5].

3.3.5.2 Summary of Constraints

None

3.3.5.3 Spacecraft Configuration

Start of Procedure	End of Procedure
Any	If successful: HRIC is OFF. If not successful: state depends on the error detected, see Table 3

3.3.5.4 Reference File(s)

3.3.5.4.1 Input Command Sequences

None

3.3.5.4.2 Output Command Sequences

ASSF004A

3.3.5.5 Input parameters

None

3.3.5.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF004A	ZSSK4005			

3.3.5.7 Configuration Control Information

Date	FOP Issue	Version	Description
24/02/2017		1	Created
24/02/2017		2	Editorial.
02/05/2017	0.2	2.01	Title modified, added comments on OBCP Start / Stop event packets from DMS.

3.3.6 SIMBIO-SYS HRIC PE Detector TEC on by OBCP (SS-FCP-005)

3.3.6.1 Objectives

The aim of this FOP is to trigger execution of the SIMBIO-SYS HRIC Switch ON OBCP named KSS04002HRSC in [RD.5].The OBCP shall normally be triggered by the Mission Planning process using the command sequence defined by this procedure.
Essentially: the current condition is checked, the PE is switched ON, the detector is switched ON and finally the TEC is switched ON with its setpoint. For more details see [RD.5].

3.3.6.2 Summary of Constraints

None

3.3.6.3 Spacecraft Configuration

Start of Procedure	End of Procedure
ME should be ON (Checked by OBCP)	If successful: HRIC PE, detector and TEC are ON. If not successful: state depends on the error detected, see Table 4

3.3.6.4 Reference File(s)

3.3.6.4.1 Input Command Sequences

None

3.3.6.4.2 Output Command Sequences

ASSF005A

3.3.6.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF005A	PKK00107	TempSetPoint	XF005A01	AEF

3.3.6.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF005A	ZSSK4005	PKK00107	TempSetPoint	XF005A01

3.3.6.7 Configuration Control Information

Date	FOP Issue	Version	Description
24/02/2017		1	Created
02/05/2017	0.2	1.01	0.21.01 Title modified, added comments on OBCP Start / Stop event packets from DMS
08/04/2019	3.2	2	3.22 CR-478 As per Post-NECP FOP update v8 re. Email Michele Zusi 28 March 2019. The XF005A01 default parameter value was updated to AEF from AFB (as reported in [RD.2]; for details see [RD.4]).

3.3.7 SIMBIO-SYS HRIC Start-Stop Science (SS-FCP-006)

3.3.7.1 Objectives

The aim of this FOP is to Start or Stop science generation for the HRIC sensor of SIMBIO-SYS.

3.3.7.2 Summary of Constraints

SIMBIO HRIC must be in either STANDBY mode (to go to SCIENCE) or in-SCIENCE mode (to go to STANDBY).

3.3.7.3 Spacecraft Configuration

Start of Procedure	End of Procedure
SIMBIO HRIC in STANDBY vs SCIENCE	SIMBIO HRIC in SCIENCE vs STANDBY

3.3.7.4 Reference File(s)

3.3.7.4.1 Input Command Sequences

None

3.3.7.4.2 Output Command Sequences

ASSF006A
ASSF006B

3.3.7.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF006A	PSS01501	integration time	XF006A01	
	PSS01601	repetition time HRIC	XF006A02	
	PSS01602	NbrAcq	XF006A03	
	PSS00202	binning factor w2	XF006A04	
	PSS00201	binning factor w1	XF006A05	
	PSS00301	number of windows	XF006A06	
	PSS00204	binning factor w4	XF006A07	
	PSS00203	binning factor w3	XF006A08	
	PSS01101	start row pixel w1	XF006A09	
	PSS00501	start strip pixel w1	XF006A10	
	PSS01102	end row pixel w1	XF006A11	
	PSS00502	end strip pixel w1	XF006A12	
	PSS01103	start row pixel w2	XF006A13	
	PSS00503	start strip pixel w2	XF006A14	
	PSS01104	end row pixel w2	XF006A15	
	PSS00504	end strip pixel w2	XF006A16	
	PSS01105	start row pixel w3	XF006A17	
	PSS00505	start strip pixel w3	XF006A18	
	PSS01106	end row pixel w3	XF006A19	
	PSS00506	end strip pixel w3	XF006A20	
	PSS01107	start row pixel w4	XF006A21	
	PSS00507	start strip pixel w4	XF006A22	

	PSS01108	end row pixel w4	XF006A23	
	PSS00508	end strip pixel w4	XF006A24	
	PSS00205	Compression box dimension	XF006A25	
	PSS00601	Compression ratio w1	XF006A26	
	PSS00602	Compression ratio w2	XF006A27	
	PSS00603	Compression ratio w3	XF006A28	
	PSS00604	Compression ratio w4	XF006A29	
	PSS00101	LS bit1 PE mode	XF006A30	

3.3.7.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par reference
00:00:00	ASSF006A	ZSS17102	PSS01501	integration time	XF006A01
			PSS01601	repetition time HRIC	XF006A02
			PSS01602	NbrAcq	XF006A03
			PSS00202	binning factor w2	XF006A04
			PSS00201	binning factor w1	XF006A05
			PSS00301	number of windows	XF006A06
			PSS00204	binning factor w4	XF006A07
			PSS00203	binning factor w3	XF006A08
			PSS01101	start row pixel w1	XF006A09
			PSS00501	start strip pixel w1	XF006A10
			PSS01102	end row pixel w1	XF006A11
			PSS00502	end strip pixel w1	XF006A12
			PSS01103	start row pixel w2	XF006A13
			PSS00503	start strip pixel w2	XF006A14
			PSS01104	end row pixel w2	XF006A15
			PSS00504	end strip pixel w2	XF006A16
			PSS01105	start row pixel w3	XF006A17
			PSS00505	start strip pixel w3	XF006A18
			PSS01106	end row pixel w3	XF006A19
			PSS00506	end strip pixel w3	XF006A20
			PSS01107	start row pixel w4	XF006A21
			PSS00507	start strip pixel w4	XF006A22
			PSS01108	end row pixel w4	XF006A23
			PSS00508	end strip pixel w4	XF006A24
			PSS00205	Compression box dimension	XF006A25
			PSS00601	Compression ratio w1	XF006A26
			PSS00602	Compression ratio w2	XF006A27
			PSS00603	Compression ratio w3	XF006A28
			PSS00604	Compression ratio w4	XF006A29

			PSS00101	LS bit1 PE mode	XF006A30
00:00:00	ASSF006A	ZSS17109	-	-	-

3.3.7.7 Configuration Control Information

Date	FOP Issue	Version	Description
20/04/2016	0.1	1	Created

3.3.8 SIMBIO-SYS STC Off by OBCP (SS-FCP-007)

3.3.8.1 Objectives

The aim of this FOP is to trigger execution of the SIMBIO-SYS STC Graceful Shutdown OBCP named KSS04006SGOF in [RD.5]. The OBCP shall normally be triggered by the Mission Planning process using the command sequence defined by this procedure.
Essentially: the current condition is checked, the TEC is switched OFF, the detector is switched OFF (twice, if needed), the channel (PE) is switched OFF. If nominal completion is achieved, an event is generated to inform the ME OFF OBCP that STC is now OFF. For more details see [RD.5].

3.3.8.2 Summary of Constraints

None

3.3.8.3 Spacecraft Configuration

Start of Procedure	End of Procedure
Any	If successful: STC is OFF. If not successful: state depends on the error detected, see Table 5

3.3.8.4 Reference File(s)

3.3.8.4.1 Input Command Sequences

None

3.3.8.4.2 Output Command Sequences

ASSF007A

3.3.8.5 Input parameters

None

3.3.8.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF007A	ZSSK4006			

3.3.8.7 Configuration Control Information

Date	FOP Issue	Version	Description
24/02/2017		1	Created
24/02/2017		2	Editorials
02/05/2017	0.2	2.01	Title modified, added comments on OBCP Start / Stop event packets from DMS

3.3.9 SIMBIO-SYS STC PE Detector TEC On by OBCP (SS-FCP-008)

3.3.9.1 Objectives

The aim of this FOP is to trigger execution of the SIMBIO-SYS STC Switch ON OBCP named KSS04003SRSC in [RD.5]. The OBCP shall normally be triggered by the Mission Planning process using the command sequence defined by this procedure.
Essentially: the current condition is checked, the PE is switched ON, the detector is switched ON and finally the TEC is switched ON with its setpoint. For more details see [RD.5].

3.3.9.2 Summary of Constraints

None

3.3.9.3 Spacecraft Configuration

Start of Procedure	End of Procedure
ME should be ON (Checked by OBCP)	If successful: STC PE, detector and TEC are ON. If not successful: state depends on the error detected, see Table 6

3.3.9.4 Reference File(s)

3.3.9.4.1 Input Command Sequences

None

3.3.9.4.2 Output Command Sequences

ASSF008A

3.3.9.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF008A	PKK00107	TempSetPoint	XF008A01	AFB

3.3.9.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF008A	ZSSK4003	PKK00107	TempSetPoint	XF008A01

3.3.9.7 Configuration Control Information

Date	FOP Issue	Version	Description
24/02/2017		1	Created
05/02/2017	0.2	1.01	Title modified, added comments on OBCP Start / Stop event packets from DMS.
04/08/2019	0.2	1.02	CR-478 As per Post-NECP FOP update v8 re. Email Michele Zusi 28 March 2019.
04/08/2019	3.2	2	CR-478 As per Post-NECP FOP update v8 re. Email Michele Zusi 28 March 2019 (repeated modif due to MOIS issue) The XF008A01 default parameter value was updated to AFB from AEF (as reported in [RD.2]; for details see [RD.4])

3.3.10SIMBIO-SYS STC Start-Stop Science (SS-FCP-009)

3.3.10.1 Objectives

The aim of this FOP is to Start or Stop science generation for the STC sensor of SIMBIO-SYS.

3.3.10.2 Summary of Constraints

SIMBIO STC must be in either STANDBY mode (to go to SCIENCE) or in SCIENCE mode (to go to STANDBY).

3.3.10.3 Spacecraft Configuration

Start of Procedure	End of Procedure
SIMBIO STC in STANDBY vs SCIENCE	SIMBIO STC in SCIENCE vs STANDBY

3.3.10.4 Reference File(s)

3.3.10.4.1 Input Command Sequences

None

3.3.10.4.2 Output Command Sequences

ASSF009A
ASSF009B

3.3.10.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF009A	PKK00107	TempSetPoint	XF008A01	
	PSS01501	integration time	XF009A01	
	PSS01629	repetition time STC	XF009A02	
	PSS01602	NbrAcq	XF009A03	
	PSS00301	number of windows	XF009A04	
	PSS01101	start row pixel w1	XF009A05	
	PSS00501	start strip pixel w1	XF009A06	
	PSS01102	end row pixel w1	XF009A07	
	PSS00502	end strip pixel w1	XF009A08	
	PSS01103	start row pixel w2	XF009A09	
	PSS00503	start strip pixel w2	XF009A10	
	PSS01104	end row pixel w2	XF009A11	
	PSS00504	end strip pixel w2	XF009A12	
	PSS01105	start row pixel w3	XF009A13	
	PSS00505	start strip pixel w3	XF009A14	
	PSS01106	end row pixel w3	XF009A15	
	PSS00506	end strip pixel w3	XF009A16	
	PSS01107	start row pixel w4	XF009A17	
	PSS00507	start strip pixel w4	XF009A18	
	PSS01108	end row pixel w4	XF009A19	
	PSS00508	end strip pixel w4	XF009A20	
	PSS01109	start row pixel w5	XF009A21	
	PSS00509	start strip pixel w5	XF009A22	

	PSS01110	end row pixel w5	XF009A23	
	PSS00510	end strip pixel w5	XF009A24	
	PSS01111	start row pixel w6	XF009A25	
	PSS00511	start strip pixel w6	XF009A26	
	PSS01112	end row pixel w6	XF009A27	
	PSS00512	end strip pixel w6	XF009A28	
	PSS00205	Compression box dimension	XF009A29	
	PSS00601	Compression ratio w1	XF009A30	
	PSS00602	Compression ratio w2	XF009A31	
	PSS00603	Compression ratio w3	XF009A32	
	PSS00604	Compression ratio w4	XF009A33	
	PSS00605	Compression ratio w5	XF009A34	
	PSS00606	Compression ratio w6	XF009A35	
	PSS00101	LS bit1 PE mode	XF009A36	
	PSS08008	Priority	XF009A37	

3.3.10.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF009A	ZSS17202	PKK00107	TempSetPoint	XF008A01
			PSS01501	integration time	XF009A01
			PSS01629	repetition time STC	XF009A02
			PSS01602	NbrAcq	XF009A03
			PSS00301	number of windows	XF009A04
			PSS01101	start row pixel w1	XF009A05
			PSS00501	start strip pixel w1	XF009A06
			PSS01102	end row pixel w1	XF009A07
			PSS00502	end strip pixel w1	XF009A08
			PSS01103	start row pixel w2	XF009A09
			PSS00503	start strip pixel w2	XF009A10
			PSS01104	end row pixel w2	XF009A11
			PSS00504	end strip pixel w2	XF009A12
			PSS01105	start row pixel w3	XF009A13
			PSS00505	start strip pixel w3	XF009A14
			PSS01106	end row pixel w3	XF009A15
			PSS00506	end strip pixel w3	XF009A16
			PSS01107	start row pixel w4	XF009A17
			PSS00507	start strip pixel w4	XF009A18
			PSS01108	end row pixel w4	XF009A19
			PSS00508	end strip pixel w4	XF009A20
			PSS01109	start row pixel w5	XF009A21
			PSS00509	start strip pixel w5	XF009A22
			PSS01110	end row pixel w5	XF009A23
			PSS00510	end strip pixel w5	XF009A24
			PSS01111	start row pixel w6	XF009A25
			PSS00511	start strip pixel w6	XF009A26
			PSS01112	end row pixel w6	XF009A27
			PSS00512	end strip pixel w6	XF009A28

			PSS00205	Compression box dimension	XF009A29
			PSS00601	Compression ratio w1	XF009A30
			PSS00602	Compression ratio w2	XF009A31
			PSS00603	Compression ratio w3	XF009A32
			PSS00604	Compression ratio w4	XF009A33
			PSS00605	Compression ratio w5	XF009A34
			PSS00606	Compression ratio w6	XF009A35
			PSS00101	LS bit1 PE mode	XF009A36
			PSS08008	Priority	XF009A37
00:00:00	ASSF009B	ZSS17209			

3.3.10.7 Configuration Control Information

Date	FOP Issue	Version	Description
20/04/2016	0.1	1	Created
12/09/2016	0.2	2	Changed MPS info for stop science sequence.

3.3.11SIMBIO-SYS VIHI Off by OBCP(SS-FCP-010)

3.3.11.1 Objectives

The aim of this FOP is to trigger execution of the SIMBIO-SYS VIHI Graceful Shutdown OBCP named KSS04007VGOF in [RD.5]. The OBCP shall normally be triggered by the Mission Planning process using the command sequence defined by this procedure.
Essentially: the current condition is checked, the TEC is switched OFF, the detector is switched OFF (twice, if needed), the channel (PE) is switched OFF. If nominal completion is achieved, an event is generated to inform the ME OFF OBCP that VIHI is now OFF. For more details see [RD.5].

3.3.11.2 Summary of Constraints

None

3.3.11.3 Spacecraft Configuration

Start of Procedure	End of Procedure
Any	If successful: VIHI is OFF. If not successful: state depends on the error detected, see Table 7

3.3.11.4 Reference File(s)

3.3.11.4.1 Input Command Sequences

None

3.3.11.4.2 Output Command Sequences

ASSF010A

3.3.11.5 Input parameters

None

3.3.11.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF010A	ZSSK4007			

3.3.11.7 Configuration Control Information

Date	FOP Issue	Version	Description
24/02/2017		1	Created
24/02/2017		2	Editorials
02/05/2017	0.2	2.01	Title modified, added comments on OBCP Start / Stop event packets from DMS.

3.3.12SIMBIO-SYS VIHI Detector TEC On by OBCP (SS-FCP-011)

3.3.12.1 Objectives

The aim of this FOP is to trigger execution of the SIMBIO-SYS VIHI Switch ON OBCP named KSS04004VRSC in [RD.5]. The OBCP shall normally be triggered by the Mission Planning process using the command sequence defined by this procedure.
Essentially: the current condition is checked, the PE is switched ON, the detector is switched ON and finally the TEC is switched ON with its setpoint. For more details see [RD.5].

3.3.12.2 Summary of Constraints

None

3.3.12.3 Spacecraft Configuration

Start of Procedure	End of Procedure
ME should be ON (Checked by OBCP)	If successful: VIHI PE, detector and TEC are ON. If not successful: state depends on the error detected, see Table 8

3.3.12.4 Reference File(s)

3.3.12.4.1 Input Command Sequences

None

3.3.12.4.2 Output Command Sequences

ASSF011A

3.3.12.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF011A	PKK00107	TempSetPoint	XF011A01	D2C

3.3.12.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF011A	ZSSK4004	PKK00107	TempSetPoint	XF011A01

3.3.12.7 Configuration Control Information

Date	FOP Issue	Version	Description
24/02/2017		1	Created
02/05/2017	0.2	1.01	Title modified, added comments on OBCP Start / Stop event packets from DMS
17/10/2017	2	2	Updated value of FP XF011A01 as per mail A. Cicchetti 13/09/2017 11:20
03/11/2017	1	3	T set point FP modified to 3372

3.3.13SIMBIO-SYS VIHI Start-Stop Science (SS-FCP-012)

3.3.13.1 Objectives

The aim of this FOP is to Start or Stop science generation for the VIHI sensor of SIMBIO-SYS.

3.3.13.2 Summary of Constraints

SIMBIO VIHI must be in either STANDBY mode (to go to SCIENCE) or in SCIENCE mode (to go to STANDBY).

3.3.13.3 Spacecraft Configuration

Start of Procedure	End of Procedure
SIMBIO VIHI in STANDBY vs SCIENCE	SIMBIO VIHI in SCIENCE vs STANDBY

3.3.13.4 Reference File(s)

3.3.13.4.1 Input Command Sequences

None

3.3.13.4.2 Output Command Sequences

ASSF012A
ASSF012B

3.3.13.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF012A	PSS01630	VIHI integration time	XF012A01	
	PSS01631	VIHI Repetition time	XF012A02	
	PSS01632	VIHI starting row pixel	XF012A03	
	PSS01633	VIHI Starting column pixel	XF012A04	
	PSS01634	VIHI End row pixel	XF012A05	
	PSS01635	VIHI End column pixel	XF012A06	
	PSS00104	Dark subtraction status	XF012A07	
	PSS00105	Dark_Acquisition	XF012A08	
	PSS00207	Spatial binning VIHI	XF012A09	
	PSS00208	Binning sequence of frame	XF012A10	
	PSS00209	Spectral editing	XF012A11	
	PSS03207	VIHI Spare 32	XF012A12	
	PSS00205	Compression box dimension	XF012A13	
	PSS00601	Compression ratio w1	XF012A14	
	PSS00106	Dark Macro	XF012A15	
	PSS00101	LS bit1 PE mode	XF012A16	
	PSS08008	Priority	XF012A17	

3.3.13.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF012A	ZSS17302	PSS01630	VIHI integration time	XF012A01
			PSS01631	VIHI Repetition time	XF012A02
			PSS01632	VIHI starting row pixel	XF012A03
			PSS01633	VIHI Starting column pixel	XF012A04
			PSS01634	VIHI End row pixel	XF012A05
			PSS01635	VIHI End column pixel	XF012A06
			PSS00104	Dark subtraction status	XF012A07
			PSS00105	Dark_Acquisition	XF012A08
			PSS00207	Spatial binning VIHI	XF012A09
			PSS00208	Binning sequence of frame	XF012A10
			PSS00209	Spectral editing	XF012A11
			PSS03207	VIHI Spare 32	XF012A12
			PSS00205	Compression box dimension	XF012A13
			PSS00601	Compression ratio w1	XF012A14
			PSS00106	Dark Macro	XF012A15
			PSS00101	LS bit1 PE mode	XF012A16
			PSS08008	Priority	XF012A17
00:00:00	ASSF012B	ZSS17309			

3.3.13.7 Configuration Control Information

Date	FOP Issue	Version	Description
20/04/2016	0.1	1	Created

3.3.14SIMBIO-SYS VIHI Shutter Calibr –LAMP and LED (SS-FCP-013)

3.3.14.1 Objectives

The aim of this FOP is to operate the VIHI shutter, Calibration Lamp, Calibration LED. The setpoints of each operation are available as formal parameters, the default value being set as per GAF inputs.

3.3.14.2 Summary of Constraints

VIHI calibration loads (Lamp, LED and shutter) may be switched on only when VIHI PE and Detector are ON. Otherwise the Lamp/LED/Shutter On TC are ignored by the PE.
Moreover, ONLY ONE of these three loads can be active at any time.

3.3.14.3 Spacecraft Configuration

Start of Procedure	End of Procedure
VIHI Channel ON, some configuration of Calibration loads	VIHI Channel ON, Calibration load status modified

3.3.14.4 Reference File(s)

3.3.14.4.1 Input Command Sequences

None

3.3.14.4.2 Output Command Sequences

ASSF013A
ASSF013B
ASSF013E
ASSF013C
ASSF013D
ASSF013F

3.3.14.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF013A	PSS01638	Shutter set point	XF013A01	1000
ASSF013C	PSS01639	Lamp set point	XF013C01	3500
ASSF013E	PSS01640	LED current setpoint	XF013E01	2000

3.3.14.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par reference
00:00:00	ASSF013A	ZSS17311	PSS08006	On/Off	On
			PSS01638	Shutter set point	XF013A01
00:00:00	ASSF013B	ZSS17311	PSS08006	On/Off	Off
			PSS01638	Shutter set point	71
00:00:00	ASSF013C	ZSS17312	PSS08006	On/Off	On
			PSS01639	Lamp set point	XF013C01
00:00:00	ASSF013D	ZSS17312	PSS08006	On/Off	Off
			PSS01639	Lamp set point	71

00:00:00	ASSF013E	ZSS17313	PSS08006	On/Off	On
			PSS01640	LED current setpoint	XF013E01
00:00:00	ASSF013F	ZSS17313	PSS08006	On/Off	Off
			PSS01640	LED current setpoint	71

3.3.14.7 Configuration Control Information

Date	FOP Issue	Version	Description
20/04/2016	0.1	1	Created
12/09/2016		2	Modified typo in MPS info for the OFF sequences. Added comment on electrical current range required by calibration sources.
24/02/2017	0.2	3	Title changed.
17/10/2017	1	4	Updated and removed some FPs as per mail A. Cicchetti 13/09/2017 11:20.

3.3.15 SIMBIO-SYS Upload of Parameters (SS-FCP-014)

3.3.15.1 Objectives

The aim of this FOP is to modify, up to the next UploadParam TC to the same channel, or up to SIMBIO-SYS power off, the specified parameter and value for one SIMBIO channel.

Notes

Differently from other uploaded parameters (i.e. STC/HRIC TEC parameters) which been uploaded, they are written in the CPCU RAM, so they remain available up to the next SIMBIO-SYS switch off, VIHI Bias Detector parameters will remain in the PE RAM until the PE is switched off (see [RD.2] Section 8.3.1.10 and 8.3.1.16).

3.3.15.2 Summary of Constraints

SIMBIO ME ON, ASW started. Channel can be off.

3.3.15.3 Spacecraft Configuration

Start of Procedure	End of Procedure
Some value of a SIMBIO Channel configurable on board parameter	Modified value of a SIMBIO Channel configurable on board parameter.

3.3.15.4 Reference File(s)

3.3.15.4.1 Input Command Sequences

None

3.3.15.4.2 Output Command Sequences

ASSF014A
ASSF014C
ASSF014B

3.3.15.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF014A	PSS08007	HRIC param ID	XF014A01	3
	PSS01604	parameter value	XF014A02	0
ASSF014B	PSS08010	STC param ID	XF014B01	3
	PSS01604	parameter value	XF014B02	0
ASSF014C	PSS08011	VIHI param ID	XF014C01	3
	PSS01604	parameter value	XF014C02	0

3.3.15.6 TC sequence

Relative time	Sequence	TC Name	TC par name	TC par description	TC par reference
00:00:00	ASSF014A	ZSS17105	PSS08007	HRIC param ID	XF014A01
			PSS01604	parameter value	XF014A02
00:00:05		ZSS17104			
00:00:00	ASSF014B	ZSS17105	PSS08010	STC param ID	XF014B01
			PSS01604	parameter value	XF014B02
00:00:05		ZSS17104			
00:00:00	ASSF014C	ZSS17105	PSS08011	VIHI param ID	XF014C01
			PSS01604	parameter value	XF014C02
00:00:05		ZSS17104			

3.3.15.7 Configuration Control Information

Date	FOP Issue	Version	Description
20/04/2016	0.1	1	Created
08/06/2018	3	2	CR-133 Added default values for FPs, removed man dispatch flag from second TC in each sequence.

3.3.16 SIMBIO-SYS Set NECP-CRUISE or STD thermal control thresholds (SS-FCP-015)

3.3.16.1 Objectives

Prior to SIMBIO-SYS power ON in NECP or Cruise check-out, the instrument needs to be heated up to reach the PEs operational temperature range. This is done by increasing the settings of TCS heater line 22 (heater switching thresholds) at least two hours before planned ME switch ON.

At the end of SIMBIO activities, after the ME is switched OFF, heater settings must be restored to cruise values in order to save power (about 18 W).

The reference document for this procedure is [RD.9].

3.3.16.2 Summary of Constraints

None

3.3.16.3 Spacecraft Configuration

Start of Procedure	End of Procedure
Some TCS line 22 heater threshold setting.	TCS line 22 Threshold setting modified.

3.3.16.4 Reference File(s)

3.3.16.4.1 Input Command Sequences

None

3.3.16.4.2 Output Command Sequences

ASSF015A
ASSF015B

3.3.16.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF015A	PCFA6841	Heater line Index in TCT	XF005A01	22
	PCFA6841	Heater line Index in TCT	XF005A01	22
	PCFA6841	Heater line Index in TCT	XF005A01	22
	PCFP6866	Low temp threshold ANP	XF005A02	4
	PCFP6867	High temp threshold ANP	XF005A03	5
	PCFA6841	Heater line Index in TCT	XF005A01	22
	PCFA6841	Heater line Index in TCT	XF005A01	22
ASSF015B	PCFA6841	Heater line Index in TCT	XF005A01	22
	PCFA6841	Heater line Index in TCT	XF005A01	22
	PCFP6866	Low temp threshold ANP	XF005A02	-15
	PCFP6867	High temp threshold ANP	XF005A03	-13
	PCFA6841	Heater line Index in TCT	XF005A01	22
	PCFA6841	Heater line Index in TCT	XF005A01	22

3.3.16.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par reference
00:00:00	ASSF015A	ZCF0A687	PCFA6841	Heater line Index in TCT	XF005A01
00:00:05		ZCF0A685	PCFA6841	Heater line Index in TCT	XF005A01
00:00:05		ZCFY0102	PCFA6841	Heater line Index in TCT	XF005A01
			PCFP6866	Low temp threshold ANP	XF005A02
			PCFP6867	High temp threshold ANP	XF005A03
00:00:05		ZCF0A687	PCFA6841	Heater line Index in TCT	XF005A01
00:00:05		ZCF0A684	PCFA6841	Heater line Index in TCT	XF005A01
00:00:00	ASSF015B	ZCF0A687	PCFA6841	Heater line Index in TCT	XF005A01
00:00:05		ZCF0A685	PCFA6841	Heater line Index in TCT	XF005A01
00:00:05		ZCFY0102	PCFA6841	Heater line Index in TCT	XF005A01
			PCFP6866	Low temp threshold ANP	XF005A02
			PCFP6867	High temp threshold ANP	XF005A03
00:00:05		ZCF0A687	PCFA6841	Heater line Index in TCT	XF005A01
00:00:05		ZCF0A684	PCFA6841	Heater line Index in TCT	XF005A01

3.3.16.7 Configuration Control Information

Date	FOP Issue	Version	Description
06/08/2018	3	1	Created

3.3.17 SIMBIO-SYS HRIC Science Acq Short Integr (SS-FCP-100)

3.3.17.1 Objectives

The aim of this FOP is to command science acquisition with short integration and all free parameters.

3.3.17.2 Summary of Constraints

SIMBIO-SYS. in ASW mode.

3.3.17.3 Spacecraft Configuration

Start of Procedure	End of Procedure
HRIC in Science or Standby Mode	HRIC in Science Mode

3.3.17.4 Reference File(s)

3.3.17.4.1 Input Command Sequences

None

3.3.17.4.2 Output Command Sequences

ASSF100A

3.3.17.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF100A	PSS01501	integration time	XF100A01	50
	PSS01601	repetition time HRIC	XF100A02	250
	PSS01602	NbrAcq	XF100A03	1
	PSS00202	binning factor w2	XF100A04	1
	PSS00201	binning factor w1	XF100A05	0
	PSS00301	number of windows	XF100A06	4
	PSS00204	binning factor w4	XF100A07	1
	PSS00203	binning factor w3	XF100A08	1
	PSS01101	start row pixel w1	XF100A09	470
	PSS00501	start strip pixel w1	XF100A10	0
	PSS01102	end row pixel w1	XF100A11	1109
	PSS00502	end strip pixel w1	XF100A12	31
	PSS01103	start row pixel w2	XF100A13	2
	PSS00503	start strip pixel w2	XF100A14	0
	PSS01104	end row pixel w2	XF100A15	385
	PSS00504	end strip pixel w2	XF100A16	31
	PSS01105	start row pixel w3	XF100A17	1194
	PSS00505	start strip pixel w3	XF100A18	0
	PSS01106	end row pixel w3	XF100A19	1577
	PSS00506	end strip pixel w3	XF100A20	31
	PSS01107	start row pixel w4	XF100A21	1662
	PSS00507	start strip pixel w4	XF100A22	0
	PSS01108	end row pixel w4	XF100A23	2045
	PSS00508	end strip pixel w4	XF100A24	31

	PSS00205	Compression box dimension	XF100A25	2
	PSS00601	Compression ratio w1	XF100A26	32
	PSS00602	Compression ratio w2	XF100A27	32
	PSS00603	Compression ratio w3	XF100A28	32
	PSS00604	Compression ratio w4	XF100A29	32
	PSS08008	Priority	XF100A30	0

3.3.17.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par reference
00:00:00	ASSF100A	ZSS17102	PSS01501	integration time	XF100A01
			PSS01601	repetition time HRIC	XF100A02
			PSS01602	NbrAcq	XF100A03
			PSS00202	binning factor w2	XF100A04
			PSS00201	binning factor w1	XF100A05
			PSS00301	number of windows	XF100A06
			PSS00204	binning factor w4	XF100A07
			PSS00203	binning factor w3	XF100A08
			PSS01101	start row pixel w1	XF100A09
			PSS00501	start strip pixel w1	XF100A10
			PSS01102	end row pixel w1	XF100A11
			PSS00502	end strip pixel w1	XF100A12
			PSS01103	start row pixel w2	XF100A13
			PSS00503	start strip pixel w2	XF100A14
			PSS01104	end row pixel w2	XF100A15
			PSS00504	end strip pixel w2	XF100A16
			PSS01105	start row pixel w3	XF100A17
			PSS00505	start strip pixel w3	XF100A18
			PSS01106	end row pixel w3	XF100A19
			PSS00506	end strip pixel w3	XF100A20
			PSS01107	start row pixel w4	XF100A21
			PSS00507	start strip pixel w4	XF100A22
			PSS01108	end row pixel w4	XF100A23
			PSS00508	end strip pixel w4	XF100A24
			PSS00205	Compression box dimension	XF100A25
			PSS00601	Compression ratio w1	XF100A26
			PSS00602	Compression ratio w2	XF100A27
			PSS00603	Compression ratio w3	XF100A28
			PSS00604	Compression ratio w4	XF100A29
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF100A30

3.3.17.7 Configuration Control Information

Date	FOP Issue	Version	Description
10/17/2017		1	Created
10/17/2017	1	2	Added TM check

5/25/2018	3	3	CR-121 SIMBIO-SYS Team FOP update request V03

3.3.18SIMBIO-SYS HRIC Science Acq Short Integr FPAN filter (SS-FCP-101)

3.3.18.1 Objectives

The aim of this FOP is to command science acquisition with short integration in the FPAN filter.

3.3.18.2 Summary of Constraints

SIMBIO-SYS in ASW mode.

3.3.18.3 Spacecraft Configuration

Start of Procedure	End of Procedure
HRIC in Science or Standby Mode	HRIC in Science Mode

3.3.18.4 Reference File(s)

3.3.18.4.1 Input Command Sequences

None

3.3.18.4.2 Output Command Sequences

ASSF101A

3.3.18.5Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF101A	PSS01501	integration time	XF101A01	50
	PSS01601	repetition time HRIC	XF101A02	140
	PSS01602	NbrAcq	XF101A03	1
	PSS00601	Compression ratio w1	XF101A04	1
	PSS08008	Priority	XF101A05	0

3.3.18.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par reference
00:00:00	ASSF101A	ZSS17102	PSS01501	integration time	XF101A01
			PSS01601	repetition time HRIC	XF101A02
			PSS01602	NbrAcq	XF101A03
			PSS00202	binning factor w2	0
			PSS00201	binning factor w1	0
			PSS00301	number of windows	1
			PSS00204	binning factor w4	0
			PSS00203	binning factor w3	0
			PSS01101	start row pixel w1	938
			PSS00501	start strip pixel w1	0
			PSS01102	end row pixel w1	1577
			PSS00502	end strip pixel w1	31
			PSS01103	start row pixel w2	0
			PSS00503	start strip pixel w2	0
			PSS01104	end row pixel w2	0

			PSS00504	end strip pixel w2	1
			PSS01105	start row pixel w3	0
			PSS00505	start strip pixel w3	0
			PSS01106	end row pixel w3	0
			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS00205	Compression box dimension	3
			PSS00601	Compression ratio w1	XF101A04
			PSS00602	Compression ratio w2	0
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF101A05

3.3.18.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created
17/10/2017	1	2	Added TM check
04/08/2019	3	3	CR-478 As per Post-NECP FOP update v8 re. Email Michele Zusi 28 March 2019. The FPAN window coordinates (i.e., PSS01101 and PSS01102were updated (for details compare with [RD.2]).

3.3.19SIMBIO-SYS HRIC Science Acq Short Integr BB Filters (SS-FCP-102)

3.3.19.1 Objectives

The aim of this FOP is to command science acquisition with short integration using all BB filters.

3.3.19.2 Summary of Constraints

SIMBIO-SYS in ASW mode.

3.3.19.3 Spacecraft Configuration

Start of Procedure	End of Procedure
HRIC in Science or Standby Mode	HRIC in Science Mode

3.3.19.4 Reference File(s)

3.3.19.4.1 Input Command Sequences

None

3.3.19.4.2 Output Command Sequences

ASSF102A

3.3.19.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF102A	PSS01501	integration time	XF102A01	100
	PSS01601	repetition time HRIC	XF102A02	100
	PSS01602	NbrAcq	XF102A03	1
	PSS00202	binning factor w2	XF102A04	1
	PSS00201	binning factor w1	XF102A05	1
	PSS00203	binning factor w3	XF102A06	1
	PSS00205	Compression box dimension	XF102A07	2
	PSS00601	Compression ratio w1	XF102A08	32
	PSS00602	Compression ratio w2	XF102A09	32
	PSS00603	Compression ratio w3	XF102A10	32
	PSS08008	Priority	XF102A11	0

3.3.19.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par reference
00:00:00	ASSF102A	ZSS17102	PSS01501	integration time	XF102A01
			PSS01601	repetition time HRIC	XF102A02
			PSS01602	NbrAcq	XF102A03
			PSS00202	binning factor w2	XF102A04
			PSS00201	binning factor w1	XF102A05
			PSS00301	number of windows	3
			PSS00204	binning factor w4	0
			PSS00203	binning factor w3	XF102A06
			PSS01101	start row pixel w1	2

			PSS00501	start strip pixel w1	0
			PSS01102	end row pixel w1	385
			PSS00502	end strip pixel w1	31
			PSS01103	start row pixel w2	470
			PSS00503	start strip pixel w2	0
			PSS01104	end row pixel w2	853
			PSS00504	end strip pixel w2	31
			PSS01105	start row pixel w3	1662
			PSS00505	start strip pixel w3	0
			PSS01106	end row pixel w3	2045
			PSS00506	end strip pixel w3	31
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS00205	Compression box dimension	XF102A07
			PSS00601	Compression ratio w1	XF102A08
			PSS00602	Compression ratio w2	XF102A09
			PSS00603	Compression ratio w3	XF102A10
			PSS00604	Compression ratio w4	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF102A11

3.3.19.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017	1	1	Created
04/08/2019	3.2	2	CR-478 As per Post-NECP FOP update v8 re. Email Michele Zusi 28 March 2019. The window #2 coordinates (i.e., PSS01103 and PSS01104) were updated (for details compare with [RD.2]).

3.3.20 SIMBIO-SYS HRIC Science Acq Short Integr all filters (SS-FCP-103)

3.3.20.1 Objectives

The aim of this FOP is to command science acquisition with short integration using all filters.

3.3.20.2 Summary of Constraints

SIMBIO-SYS in ASW mode.

3.3.20.3 Spacecraft Configuration

Start of Procedure	End of Procedure
HRIC in Science or Standby Mode	HRIC in Science Mode

3.3.20.4 Reference File(s)

3.3.20.4.1 Input Command Sequences

None

3.3.20.4.2 Output Command Sequences

ASSF103A

3.3.20.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF103A	PSS01501	integration time	XF103A01	50
	PSS01601	repetition time HRIC	XF103A02	200
	PSS01602	NbrAcq	XF103A03	1
	PSS00601	Compression ratio w1	XF103A04	32
	PSS00602	Compression ratio w2	XF103A05	32
	PSS00603	Compression ratio w3	XF103A06	32
	PSS00604	Compression ratio w4	XF103A07	32
	PSS08008	Priority	XF103A08	0

3.3.20.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par reference
00:00:00	ASSF103A	ZSS17102	PSS01501	integration time	XF103A01
			PSS01601	repetition time HRIC	XF103A02
			PSS01602	NbrAcq	XF103A03
			PSS00202	binning factor w2	1
			PSS00201	binning factor w1	0
			PSS00301	number of windows	4
			PSS00204	binning factor w4	1
			PSS00203	binning factor w3	1
			PSS01101	start row pixel w1	2
			PSS00501	start strip pixel w1	0
			PSS01102	end row pixel w1	385
			PSS00502	end strip pixel w1	31

			PSS01103	start row pixel w2	470
			PSS00503	start strip pixel w2	0
			PSS01104	end row pixel w2	853
			PSS00504	end strip pixel w2	31
			PSS01105	start row pixel w3	938
			PSS00505	start strip pixel w3	0
			PSS01106	end row pixel w3	1321
			PSS00506	end strip pixel w3	31
			PSS01107	start row pixel w4	1662
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	2045
			PSS00508	end strip pixel w4	31
			PSS00205	Compression box dimension	2
			PSS00601	Compression ratio w1	XF103A04
			PSS00602	Compression ratio w2	XF103A05
			PSS00603	Compression ratio w3	XF103A06
			PSS00604	Compression ratio w4	XF103A07
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF103A08

3.3.20.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017	1	1	Created
25/05/2018	3	2	CR-121 SIMBIO-SYS Team FOP update request V03.
04/08/2019	3.2	3	CR-478 As per Post-NECP FOP update v8 re. Email Michele Zusi 28 March 2019. The window #1, #2 and #3 coordinates (i.e., PSS01101, PSS01102, PSS01103, PSS01104, PSS01105 and PSS01106) were updated (for details compare with [RD.2]).

3.3.21 SIMBIO-SYS HRIC Stop Science Acq (SS-FCP-110)

3.3.21.1 Objectives

The aim of this FOP is to command stopping acquisition .

Notes

If continuous mode is used, it stops the acquisitions and the RT granularity which should delay the execution of the subsequent TCs.

3.3.21.2 Summary of Constraints

SIMBIO-SYS in ASW mode, HRIC in SCIENCE mode.

3.3.21.3 Spacecraft Configuration

Start of Procedure	End of Procedure
HRIC in Science Mode	HRIC in Science Mode

3.3.21.4 Reference File(s)

3.3.21.4.1 Input Command Sequences

None

3.3.21.4.2 Output Command Sequences

ASSF110A

3.3.21.5 Input parameters

None

3.3.21.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF110A	ZSS17109			

3.3.21.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017	1	1	Created

3.3.22SIMBIO-SYS HRIC Channel Power ON (SS-FCP-120)

3.3.22.1 Objectives

The aim of this FOP is to power-on the HRIC Channel.

3.3.22.2 Summary of Constraints

SIMBIO-SYS in ASW mode.

3.3.22.3 Spacecraft Configuration

Start of Procedure	End of Procedure
HRIC PE OFF	HRIC PE ON

3.3.22.4 Reference File(s)

3.3.22.4.1 Input Command Sequences

None

3.3.22.4.2 Output Command Sequences

ASSF120A

3.3.22.5 Input parameters

None

3.3.22.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF120A	ZSS17101	PSS08006	On/Off	1

3.3.22.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created
03/11/2017	1	2	Revised TM check

3.3.23 SIMBIO-SYS HRIC Channel Power OFF (SS-FCP-121)

3.3.23.1 Objectives

The aim of this FOP is to power-off the HRIC Channel.

3.3.23.2 Summary of Constraints

SIMBIO-SYS in ASW mode.
HRIC Detector must be off.

3.3.23.3 Spacecraft Configuration

Start of Procedure	End of Procedure
HRIC PE ON	HRIC PE OFF

3.3.23.4 Reference File(s)

3.3.23.4.1 Input Command Sequences

None

3.3.23.4.2 Output Command Sequences

ASSF121A

3.3.23.5 Input parameters

None

3.3.23.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF121A	ZSS17101	PSS08006	On/Off	0

3.3.23.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created

3.3.24 SIMBIO-SYS HRIC Detector Power ON (SS-FCP-122)

3.3.24.1 Objectives

The aim of this FOP is to switch-on the HRIC Detector

3.3.24.2 Summary of Constraints

HRIC PE ON

3.3.24.3 Spacecraft Configuration

Start of Procedure	End of Procedure
HRIC Detector OFF	HRIC Detector ON

3.3.24.4 Reference File(s)

3.3.24.4.1 Input Command Sequences

None

3.3.24.4.2 Output Command Sequences

ASSF122A

3.3.24.5 Input parameters

None

3.3.24.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF122A	ZSS17110	PSS08006	On/Off	1

3.3.24.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created
17/10/2017	1	2	Correction of MPS

3.3.25SIMBIO-SYS HRIC Detector Power OFF (SS-FCP-123)

3.3.25.1 Objectives

The aim of this FOP is to switch-off the HRIC Detector.

3.3.25.2 Summary of Constraints

HRIC PE and Detector ON.

3.3.25.3 Spacecraft Configuration

Start of Procedure	End of Procedure
HRIC Detector ON	HRIC Detector OFF

3.3.25.4 Reference File(s)

3.3.25.4.1 Input Command Sequences

None

3.3.25.4.2 Output Command Sequences

ASSF123A

3.3.25.5 Input parameters

None

3.3.25.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF123A	ZSS17110	PSS08006	On/Off	0

3.3.25.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created
03/11/2017	1	2	TM check modified

3.3.26 SIMBIO-SYS HRIC TEC Power On (SS-FCP-124)

3.3.26.1 Objectives

The aim of this FOP is to switch-on the HRIC TEC.

3.3.26.2 Summary of Constraints

HRIC PE ON.

3.3.26.3 Spacecraft Configuration

Start of Procedure	End of Procedure
HRIC TEC OFF	HRIC TEC ON

3.3.26.4 Reference File(s)

3.3.26.4.1 Input Command Sequences

None

3.3.26.4.2 Output Command Sequences

ASSF124A

3.3.26.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF124A	PSS01603	STC HRIC Temp set point	XF124A01	2799

3.3.26.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF124A	ZSS17103	PSS08006	On/Off	1
			PSS01603	STC HRIC Temp set point	XF124A01

3.3.26.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created
03/11/2017	1	2	FP format changed to Dec (was Hex)
08/04/2019	3.2	3	CR-478 As per Post-NECP FOP update v8 re. Email Michele Zusi 28 March 2019. The XF124A01 default parameter value was updated to 2799 from 2811 (as reported in [RD.2]; for details see [RD.4])

3.3.27 SIMBIO-SYS HRIC TEC Power Off (SS-FCP-125)

3.3.27.1 Objectives

The aim of this FOP is to switch-off the HRIC TEC.

3.3.27.2 Summary of Constraints

HRIC PE and HRIC TEC ON.

3.3.27.3 Spacecraft Configuration

Start of Procedure	End of Procedure
HRIC TEC ON	HRIC TEC OFF

3.3.27.4 Reference File(s)

3.3.27.4.1 Input Command Sequences

None

3.3.27.4.2 Output Command Sequences

ASSF125A

3.3.27.5 Input parameters

None

3.3.27.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF125A	ZSS17103	PSS08006	On/Off	0
			PSS01603	STC HRIC Temp set point	0

3.3.27.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created
03/11/2017	1	2	FP on Temp Set Point removed

3.3.28 SIMBIO-SYS HRIC Read Address (SS-FCP-126)

3.3.28.1 Objectives

The aim of this FOP is to read HRIC address.

3.3.28.2 Summary of Constraints

HRIC PE ON.

3.3.28.3 Spacecraft Configuration

Start of Procedure	End of Procedure
Any	Unchanged

3.3.28.4 Reference File(s)

3.3.28.4.1 Input Command Sequences

None

3.3.28.4.2 Output Command Sequences

ASSF126A

3.3.28.5 Input parameters

None

3.3.28.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF126A	ZSS17106	PSS01605	PE HRIC Addr	XF126A01

3.3.28.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created

3.3.29 SIMBIO-SYS HRIC Write Address (SS-FCP-127)

3.3.29.1 Objectives

The aim of this FOP is to write HRIC address.

3.3.29.2 Summary of Constraints

HRIC PE ON.

3.3.29.3 Spacecraft Configuration

Start of Procedure	End of Procedure
Any	HRIC PE modified address value

3.3.29.4 Reference File(s)

3.3.29.4.1 Input Command Sequences

None

3.3.29.4.2 Output Command Sequences

ASSF127A

3.3.29.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF127A	PSS01605	PE HRIC Addr	XF127A01	0
	PSS01606	Value to be write	XF127A02	0

3.3.29.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF127A	ZSS17107	PSS01605	PE HRIC Addr	XF127A01
			PSS01606	Value to be write	XF127A02
00:00:05		ZSS17104			

3.3.29.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created

3.3.30SIMBIO-SYS HRIC Science Acq Short Integr Xwindow (SS-FCP-199)

3.3.30.1 Objectives

The aim of this FOP is to command science acquisition with short integration using x-window (see STC).

3.3.30.2 Summary of Constraints

HRIC PE ON.

3.3.30.3 Spacecraft Configuration

Start of Procedure	End of Procedure
HRIC in Science or Standby Mode	HRIC in Science Mode

3.3.30.4 Reference File(s)

3.3.30.4.1 Input Command Sequences

None

3.3.30.4.2 Output Command Sequences

ASSF199A

3.3.30.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF199A	PSS01501	integration time	XF199A01	50
	PSS01601	repetition time HRIC	XF199A02	140

3.3.30.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par reference
00:00:00	ASSF199A	ZSS17102	PSS01501	integration time	XF199A01
			PSS01601	repetition time HRIC	XF199A02
			PSS01602	NbrAcq	15
			PSS00202	binning factor w2	0
			PSS00201	binning factor w1	0
			PSS00301	number of windows	1
			PSS00204	binning factor w4	0
			PSS00203	binning factor w3	0
			PSS01101	start row pixel w1	100
			PSS00501	start strip pixel w1	3
			PSS01102	end row pixel w1	163
			PSS00502	end strip pixel w1	4
			PSS01103	start row pixel w2	0
			PSS00503	start strip pixel w2	0
			PSS01104	end row pixel w2	0
			PSS00504	end strip pixel w2	1

			PSS01105	start row pixel w3	0
			PSS00505	start strip pixel w3	0
			PSS01106	end row pixel w3	0
			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	1
			PSS00602	Compression ratio w2	0
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0

3.3.30.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017	1	1	Created

3.3.31SIMBIO-SYS HRIC Science Acq Long Integr ALL FREE (SS-FCP-200)

3.3.31.1 Objectives

The aim of this FOP is to command science acquisition with long integration and all free.

3.3.31.2 Summary of Constraints

HRIC PE ON.

3.3.31.3 Spacecraft Configuration

Start of Procedure	End of Procedure
HRIC in Science or Standby Mode	HRIC in Science Mode

3.3.31.4 Reference File(s)

3.3.31.4.1 Input Command Sequences

None

3.3.31.4.2 Output Command Sequences

ASSF200A

3.3.31.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF200A	PSS015B1	integration time 1ms	XF200A01	33096
	PSS01601	repetition time HRIC	XF200A02	250
	PSS01602	NbrAcq	XF200A03	1
	PSS00202	binning factor w2	XF200A04	1
	PSS00201	binning factor w1	XF200A05	0
	PSS00301	number of windows	XF200A06	4
	PSS00204	binning factor w4	XF200A07	1
	PSS00203	binning factor w3	XF200A08	1
	PSS01101	start row pixel w1	XF200A09	470
	PSS00501	start strip pixel w1	XF200A10	0
	PSS01102	end row pixel w1	XF200A11	1109
	PSS00502	end strip pixel w1	XF200A12	31
	PSS01103	start row pixel w2	XF200A13	2
	PSS00503	start strip pixel w2	XF200A14	0
	PSS01104	end row pixel w2	XF200A15	385
	PSS00504	end strip pixel w2	XF200A16	31
	PSS01105	start row pixel w3	XF200A17	1194
	PSS00505	start strip pixel w3	XF200A18	0
	PSS01106	end row pixel w3	XF200A19	1577
	PSS00506	end strip pixel w3	XF200A20	31
	PSS01107	start row pixel w4	XF200A21	1662
	PSS00507	start strip pixel w4	XF200A22	0
	PSS01108	end row pixel w4	XF200A23	2045
	PSS00508	end strip pixel w4	XF200A24	31
	PSS00205	Compression box dimension	XF200A25	2
	PSS00601	Compression ratio w1	XF200A26	32

	PSS00602	Compression ratio w2	XF200A27	32
	PSS00603	Compression ratio w3	XF200A28	32
	PSS00604	Compression ratio w4	XF200A29	32
	PSS08008	Priority	XF200A30	0

3.3.31.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par reference
00:00:00	ASSF200A	ZSS171B2	PSS01501	integration time	XF200A01
			PSS01601	repetition time HRIC	XF200A02
			PSS01602	NbrAcq	XF200A03
			PSS00202	binning factor w2	XF200A04
			PSS00201	binning factor w1	XF200A05
			PSS00301	number of windows	XF200A06
			PSS00204	binning factor w4	XF200A07
			PSS00203	binning factor w3	XF200A08
			PSS01101	start row pixel w1	XF200A09
			PSS00501	start strip pixel w1	XF200A10
			PSS01102	end row pixel w1	XF200A11
			PSS00502	end strip pixel w1	XF200A12
			PSS01103	start row pixel w2	XF200A13
			PSS00503	start strip pixel w2	XF200A14
			PSS01104	end row pixel w2	XF200A15
			PSS00504	end strip pixel w2	XF200A16
			PSS01105	start row pixel w3	XF200A17
			PSS00505	start strip pixel w3	XF200A18
			PSS01106	end row pixel w3	XF200A19
			PSS00506	end strip pixel w3	XF200A20
			PSS01107	start row pixel w4	XF200A21
			PSS00507	start strip pixel w4	XF200A22
			PSS01108	end row pixel w4	XF200A23
			PSS00508	end strip pixel w4	XF200A24
			PSS00205	Compression box dimension	XF200A25
			PSS00601	Compression ratio w1	XF200A26
			PSS00602	Compression ratio w2	XF200A27
			PSS00603	Compression ratio w3	XF200A28
			PSS00604	Compression ratio w4	XF200A29
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF200A30

3.3.31.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created
14/11/2017	1	2	Integration time modified to 33096
25/05/2018	3	3	33CR-121 SIMBIO-SYS Team FOP update request V03

3.3.32SIMBIO-SYS HRIC Science Acq Long Integr FPAN filter (SS-FCP-201)

3.3.32.1 Objectives

The aim of this FOP is to command science acquisition with long integration in the FPAN filter.

3.3.32.2 Summary of Constraints

HRIC PE ON.

3.3.32.3 Spacecraft Configuration

Start of Procedure	End of Procedure
HRIC in Science or Standby Mode	HRIC in Science Mode

3.3.32.4 Reference File(s)

3.3.32.4.1 Input Command Sequences

None

3.3.32.4.2 Output Command Sequences

ASSF201A

3.3.32.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF201A	PSS015B1	integration time 1ms	XF201A01	33096
	PSS01601	repetition time HRIC	XF201A02	140
	PSS01602	NbrAcq	XF201A03	1
	PSS00601	Compression ratio w1	XF201A04	1
	PSS08008	Priority	XF201A05	0

3.3.32.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par reference
00:00:00	ASSF201A	ZSS171B2	PSS01501	integration time	XF201A01
			PSS01601	repetition time HRIC	XF201A02
			PSS01602	NbrAcq	XF201A03
			PSS00202	binning factor w2	0
			PSS00201	binning factor w1	0
			PSS00301	number of windows	1
			PSS00204	binning factor w4	0
			PSS00203	binning factor w3	0
			PSS01101	start row pixel w1	938
			PSS00501	start strip pixel w1	0
			PSS01102	end row pixel w1	1577
			PSS00502	end strip pixel w1	31
			PSS01103	start row pixel w2	0
			PSS00503	start strip pixel w2	0
			PSS01104	end row pixel w2	0

			PSS00504	end strip pixel w2	1
			PSS01105	start row pixel w3	0
			PSS00505	start strip pixel w3	0
			PSS01106	end row pixel w3	0
			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS00205	Compression box dimension	3
			PSS00601	Compression ratio w1	XF201A04
			PSS00602	Compression ratio w2	0
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF201A05

3.3.32.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created
14/11/2017	1	2	Integration time modified to 33096
08/04/2019	3.2	3	CR-478 As per Post-NECP FOP update v8 re. Email Michele Zusi 28 March 2019. The FPAN window coordinates (i.e., PSS01101 and PSS01102) were updated (for details compare with [RD.2]).

3.3.33SIMBIO-SYS HRIC Science Acq Long Integr BB filters (SS-FCP-202)

3.3.33.1 Objectives

The aim of this FOP is to command science acquisition with long integration using all BB filters.

3.3.33.2 Summary of Constraints

HRIC PE ON.

3.3.33.3 Spacecraft Configuration

Start of Procedure	End of Procedure
HRIC in Science or Standby Mode	HRIC in Science Mode

3.3.33.4 Reference File(s)

3.3.33.4.1 Input Command Sequences

None

3.3.33.4.2 Output Command Sequences

ASSF202A

3.3.33.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF202A	PSS015B1	integration time 1ms	XF202A01	33096
	PSS01601	repetition time HRIC	XF202A02	160
	PSS01602	NbrAcq	XF202A03	1
	PSS00202	binning factor w2	XF202A04	1
	PSS00201	binning factor w1	XF202A05	1
	PSS00203	binning factor w3	XF202A06	1
	PSS00205	Compression box dimension	XF202A07	2
	PSS00601	Compression ratio w1	XF202A08	32
	PSS00602	Compression ratio w2	XF202A09	32
	PSS00603	Compression ratio w3	XF202A10	32
	PSS08008	Priority	XF202A11	0

3.3.33.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par reference
00:00:00	ASSF202A	ZSS171B2	PSS01501	integration time	XF202A01
			PSS01601	repetition time HRIC	XF202A02
			PSS01602	NbrAcq	XF202A03
			PSS00202	binning factor w2	XF202A04
			PSS00201	binning factor w1	XF202A05
			PSS00301	number of windows	3
			PSS00204	binning factor w4	0
			PSS00203	binning factor w3	XF202A06
			PSS01101	start row pixel w1	2

			PSS00501	start strip pixel w1	0
			PSS01102	end row pixel w1	385
			PSS00502	end strip pixel w1	31
			PSS01103	start row pixel w2	470
			PSS00503	start strip pixel w2	0
			PSS01104	end row pixel w2	853
			PSS00504	end strip pixel w2	31
			PSS01105	start row pixel w3	1662
			PSS00505	start strip pixel w3	0
			PSS01106	end row pixel w3	2045
			PSS00506	end strip pixel w3	31
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS00205	Compression box dimension	XF202A07
			PSS00601	Compression ratio w1	XF202A08
			PSS00602	Compression ratio w2	XF202A09
			PSS00603	Compression ratio w3	XF202A10
			PSS00604	Compression ratio w4	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF202A11

3.3.33.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created
14/11/2017	1	2	Integration time modified to 33096
25/05/2018	3	3	CR-121 Simbio Team FOP update request V03
08/04/2019	3.2	4	CR-478 As per Post-NECP FOP update v8 re. Email Michele Zusi 28 March 2019. The window #2 coordinates (i.e., PSS01103 and PSS01104) were updated (for details compare with [RD.2]).

3.3.34 SIMBIO-SYS HRIC Science Acq Long Integr all filters (SS-FCP-203)

3.3.34.1 Objectives

The aim of this FOP is to command science acquisition with long integration using all filters.

3.3.34.2 Summary of Constraints

HRIC PE ON.

3.3.34.3 Spacecraft Configuration

Start of Procedure	End of Procedure
HRIC in Science or Standby Mode	HRIC in Science Mode

3.3.34.4 Reference File(s)

3.3.34.4.1 Input Command Sequences

None

3.3.34.4.2 Output Command Sequences

ASSF203A

3.3.34.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF203A	PSS015B1	integration time 1ms	XF203A01	33096
	PSS01601	repetition time HRIC	XF203A02	200
	PSS01602	NbrAcq	XF203A03	1
	PSS00601	Compression ratio w1	XF203A04	32
	PSS00602	Compression ratio w2	XF203A05	32
	PSS00603	Compression ratio w3	XF203A06	32
	PSS00604	Compression ratio w4	XF203A07	32
	PSS08008	Priority	XF203A08	0

3.3.34.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par reference
00:00:00	ASSF203A	ZSS171B2	PSS01501	integration time	XF203A01
			PSS01601	repetition time HRIC	XF203A02
			PSS01602	NbrAcq	XF203A03
			PSS00202	binning factor w2	1
			PSS00201	binning factor w1	0
			PSS00301	number of windows	4
			PSS00204	binning factor w4	1
			PSS00203	binning factor w3	1
			PSS01101	start row pixel w1	2
			PSS00501	start strip pixel w1	0
			PSS01102	end row pixel w1	385
			PSS00502	end strip pixel w1	31

			PSS01103	start row pixel w2	470
			PSS00503	start strip pixel w2	0
			PSS01104	end row pixel w2	853
			PSS00504	end strip pixel w2	31
			PSS01105	start row pixel w3	938
			PSS00505	start strip pixel w3	0
			PSS01106	end row pixel w3	1321
			PSS00506	end strip pixel w3	31
			PSS01107	start row pixel w4	1662
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	2045
			PSS00508	end strip pixel w4	31
			PSS00205	Compression box dimension	2
			PSS00601	Compression ratio w1	XF203A04
			PSS00602	Compression ratio w2	XF203A05
			PSS00603	Compression ratio w3	XF203A06
			PSS00604	Compression ratio w4	XF203A07
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF203A08

3.3.34.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created
14/11/2017	1	2	Integration time modified to 33096
25/05/2018	3	3	CR-121 Simbio Team FOP update request V03
08/04/2019	3.2	4	CR-478 As per Post-NECP FOP update v8 re. Email Michele Zusi 28 March 2019. The window #1, #2 and #3 coordinates (i.e., PSS01101, PSS01102, PSS01103, PSS01104, PSS01105 and PSS01106) were updated (for details compare with [RD.2]).

3.3.35SIMBIO-SYS HRIC Science Acq Long Integr Xwindow (SS-FCP-299)

3.3.35.1 Objectives

The aim of this FOP is to command science acquisition with long integration using x-window (see STC).

3.3.35.2 Summary of Constraints

HRIC PE ON.

3.3.35.3 Spacecraft Configuration

Start of Procedure	End of Procedure
HRIC in Science or Standby Mode	HRIC in Science Mode

3.3.35.4 Reference File(s)

3.3.35.4.1 Input Command Sequences

None

3.3.35.4.2 Output Command Sequences

ASSF299A

3.3.35.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF299A	PSS015B1	integration time 1ms	XF299A01	33096
	PSS01601	repetition time HRIC	XF299A02	140

3.3.35.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par reference
00:00:00	ASSF299A	ZSS171B2	PSS01501	integration time	XF299A01
			PSS01601	repetition time HRIC	XF299A02
			PSS01602	NbrAcq	15
			PSS00202	binning factor w2	0
			PSS00201	binning factor w1	0
			PSS00301	number of windows	1
			PSS00204	binning factor w4	0
			PSS00203	binning factor w3	0
			PSS01101	start row pixel w1	100
			PSS00501	start strip pixel w1	3
			PSS01102	end row pixel w1	163
			PSS00502	end strip pixel w1	4
			PSS01103	start row pixel w2	0
			PSS00503	start strip pixel w2	0
			PSS01104	end row pixel w2	0
			PSS00504	end strip pixel w2	1

			PSS01105	start row pixel w3	0
			PSS00505	start strip pixel w3	0
			PSS01106	end row pixel w3	0
			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	1
			PSS00602	Compression ratio w2	0
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0

3.3.35.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created
14/11/2017	1	2	Integration time modified to 33096

3.3.36SIMBIO-SYS STC Science SURF FREE (SS-FCP-300)

3.3.36.1 Objectives

The aim of this FOP is to command STC user Defined acquisition. It commands the acquisition (with short IT) of a maximum of 6 Windows.

3.3.36.2 Summary of Constraints

STC PE ON.

3.3.36.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC in Science or Standby Mode	STC in Science Mode

3.3.36.4 Reference File(s)

3.3.36.4.1 Input Command Sequences

None

3.3.36.4.2 Output Command Sequences

ASSF300A

3.3.36.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF300A	PSS01501	integration time	XF300A01	0
	PSS01629	repetition time STC	XF300A02	30
	PSS01602	NbrAcq	XF300A03	10
	PSS00301	number of windows	XF300A04	1
	PSS01101	start row pixel w1	XF300A05	100
	PSS00501	start strip pixel w1	XF300A06	3
	PSS01102	end row pixel w1	XF300A07	163
	PSS00502	end strip pixel w1	XF300A08	4
	PSS01103	start row pixel w2	XF300A09	0
	PSS00503	start strip pixel w2	XF300A10	0
	PSS01104	end row pixel w2	XF300A11	0
	PSS00504	end strip pixel w2	XF300A12	1
	PSS01105	start row pixel w3	XF300A13	0
	PSS00505	start strip pixel w3	XF300A14	0
	PSS01106	end row pixel w3	XF300A15	0
	PSS00506	end strip pixel w3	XF300A16	1
	PSS01107	start row pixel w4	XF300A17	0
	PSS00507	start strip pixel w4	XF300A18	0
	PSS01108	end row pixel w4	XF300A19	0
	PSS00508	end strip pixel w4	XF300A20	1
	PSS01109	start row pixel w5	XF300A21	0
	PSS00509	start strip pixel w5	XF300A22	0
	PSS01110	end row pixel w5	XF300A23	0
	PSS00510	end strip pixel w5	XF300A24	1
	PSS01111	start row pixel w6	XF300A25	0
	PSS00511	start strip pixel w6	XF300A26	0

	PSS01112	end row pixel w6	XF300A27	0
	PSS00512	end strip pixel w6	XF300A28	1
	PSS00205	Compression box dimension	XF300A29	1
	PSS00601	Compression ratio w1	XF300A30	1
	PSS00602	Compression ratio w2	XF300A31	1
	PSS00603	Compression ratio w3	XF300A32	1
	PSS00604	Compression ratio w4	XF300A33	1
	PSS00605	Compression ratio w5	XF300A34	1
	PSS00606	Compression ratio w6	XF300A35	1
	PSS00101	LS bit1 PE mode	0	
	PSS08008	Priority	XF300A36	0

3.3.36.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF300A	ZSS17202	PSS01501	integration time	XF300A01
			PSS01629	repetition time STC	XF300A02
			PSS01602	NbrAcq	XF300A03
			PSS00301	number of windows	XF300A04
			PSS01101	start row pixel w1	XF300A05
			PSS00501	start strip pixel w1	XF300A06
			PSS01102	end row pixel w1	XF300A07
			PSS00502	end strip pixel w1	XF300A08
			PSS01103	start row pixel w2	XF300A09
			PSS00503	start strip pixel w2	XF300A10
			PSS01104	end row pixel w2	XF300A11
			PSS00504	end strip pixel w2	XF300A12
			PSS01105	start row pixel w3	XF300A13
			PSS00505	start strip pixel w3	XF300A14
			PSS01106	end row pixel w3	XF300A15
			PSS00506	end strip pixel w3	XF300A16
			PSS01107	start row pixel w4	XF300A17
			PSS00507	start strip pixel w4	XF300A18
			PSS01108	end row pixel w4	XF300A19
			PSS00508	end strip pixel w4	XF300A20
			PSS01109	start row pixel w5	XF300A21
			PSS00509	start strip pixel w5	XF300A22
			PSS01110	end row pixel w5	XF300A23
			PSS00510	end strip pixel w5	XF300A24
			PSS01111	start row pixel w6	XF300A25
			PSS00511	start strip pixel w6	XF300A26
			PSS01112	end row pixel w6	XF300A27
			PSS00512	end strip pixel w6	XF300A28
			PSS00205	Compression box dimension	XF300A29
			PSS00601	Compression ratio w1	XF300A30
			PSS00602	Compression ratio w2	XF300A31
			PSS00603	Compression ratio w3	XF300A32

			PSS00604	Compression ratio w4	XF300A33
			PSS00605	Compression ratio w5	XF300A34
			PSS00606	Compression ratio w6	XF300A35
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF300A36

3.3.36.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created
03/11/2017	1	2	FP field in Sequence header reformatted to have all values visible
18/09/2018	3.1	3	CR-245 Update request from SIMBIO-SYS V06 aug 28 2018

3.3.37 SIMBIO-SYS STC Science SURF SINGLE PANH (SS-FCP-301)

3.3.37.1 Objectives

The aim of this FOP is to command STC acquisition with short IT of a X+PANH.

3.3.37.2 Summary of Constraints

STC PE ON.

3.3.37.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC in Science or Standby Mode	STC in Science Mode

3.3.37.4 Reference File(s)

3.3.37.4.1 Input Command Sequences

None

3.3.37.4.2 Output Command Sequences

ASSF301A

3.3.37.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF301A	PSS01501	integration time	XF301A01	0
	PSS01629	repetition time STC	XF301A02	38
	PSS01602	NbrAcq	XF301A03	10
	PSS00503	start strip pixel w2	XF301A04	9
	PSS00504	end strip pixel w2	XF301A05	22
	PSS00601	Compression ratio w1	XF301A06	1
	PSS00602	Compression ratio w2	XF301A07	1
	PSS08008	Priority	XF301A08	0

3.3.37.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF301A	ZSS17202	PSS01501	integration time	XF301A01
			PSS01629	repetition time STC	XF301A02
			PSS01602	NbrAcq	XF301A03
			PSS00301	number of windows	2
			PSS01101	start row pixel w1	100
			PSS00501	start strip pixel w1	3
			PSS01102	end row pixel w1	163
			PSS00502	end strip pixel w1	4
			PSS01103	start row pixel w2	437
			PSS00503	start strip pixel w2	XF301A04
			PSS01104	end row pixel w2	820
			PSS00504	end strip pixel w2	XF301A05
			PSS01105	start row pixel w3	0

			PSS00505	start strip pixel w3	0
			PSS01106	end row pixel w3	0
			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS01109	start row pixel w5	0
			PSS00509	start strip pixel w5	0
			PSS01110	end row pixel w5	0
			PSS00510	end strip pixel w5	1
			PSS01111	start row pixel w6	0
			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	XF301A06
			PSS00602	Compression ratio w2	XF301A07
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00605	Compression ratio w5	0
			PSS00606	Compression ratio w6	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF301A08

3.3.37.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017	1	1	Created
28/05/2018	3	2	CR-121 SIMBIO-SYS Team FOP update request V04

3.3.38SIMBIO-SYS STC Science SURF SINGLE PANL (SS-FCP-302)

3.3.38.1 Objectives

The aim of this FOP is to command STC acquisition with short IT of a X+PANL.

3.3.38.2 Summary of Constraints

STC PE ON.

3.3.38.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC in Science or Standby Mode	STC in Science Mode

3.3.38.4 Reference File(s)

3.3.38.4.1 Input Command Sequences

None

3.3.38.4.2 Output Command Sequences

ASSF302A

3.3.38.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF302A	PSS01501	integration time	XF302A01	0
	PSS01629	repetition time STC	XF302A02	38
	PSS01602	NbrAcq	XF302A03	10
	PSS00503	start strip pixel w2	XF302A04	9
	PSS00504	end strip pixel w2	XF302A05	22
	PSS00601	Compression ratio w1	XF302A06	1
	PSS00602	Compression ratio w2	XF302A07	1
	PSS08008	Priority	XF302A08	0

3.3.38.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF302A	ZSS17202	PSS01501	integration time	XF302A01
			PSS01629	repetition time STC	XF302A02
			PSS01602	NbrAcq	XF302A03
			PSS00301	number of windows	2
			PSS01101	start row pixel w1	100
			PSS00501	start strip pixel w1	3
			PSS01102	end row pixel w1	163
			PSS00502	end strip pixel w1	4
			PSS01103	start row pixel w2	1227
			PSS00503	start strip pixel w2	XF302A04
			PSS01104	end row pixel w2	1610
			PSS00504	end strip pixel w2	XF302A05
			PSS01105	start row pixel w3	0

			PSS00505	start strip pixel w3	0
			PSS01106	end row pixel w3	0
			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS01109	start row pixel w5	0
			PSS00509	start strip pixel w5	0
			PSS01110	end row pixel w5	0
			PSS00510	end strip pixel w5	1
			PSS01111	start row pixel w6	0
			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	XF302A06
			PSS00602	Compression ratio w2	XF302A07
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00605	Compression ratio w5	0
			PSS00606	Compression ratio w6	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF302A08

3.3.38.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017	1	1	Created
28/05/2018	3	2	CR-121 SIMBIO-SYS Team FOP update request V04

3.3.39SIMBIO-SYS STC Science SURF SINGLE 750 (SS-FCP-303)

3.3.39.1 Objectives

The aim of this FOP is to command STC acquisition with short IT of a X+F750.

3.3.39.2 Summary of Constraints

STC PE ON.

3.3.39.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC in Science or Standby Mode	STC in Science Mode

3.3.39.4 Reference File(s)

3.3.39.4.1 Input Command Sequences

None

3.3.39.4.2 Output Command Sequences

ASSF303A

3.3.39.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF303A	PSS01501	integration time	XF303A01	0
	PSS01629	repetition time STC	XF303A02	30
	PSS01602	NbrAcq	XF303A03	10
	PSS00503	start strip pixel w2	XF303A04	9
	PSS00504	end strip pixel w2	XF303A05	22
	PSS00601	Compression ratio w1	XF303A06	1
	PSS00602	Compression ratio w2	XF303A07	1
	PSS08008	Priority	XF303A08	0

3.3.39.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF303A	ZSS17202	PSS01501	integration time	XF303A01
			PSS01629	repetition time STC	XF303A02
			PSS01602	NbrAcq	XF303A03
			PSS00301	number of windows	2
			PSS01101	start row pixel w1	100
			PSS00501	start strip pixel w1	3
			PSS01102	end row pixel w1	163
			PSS00502	end strip pixel w1	4
			PSS01103	start row pixel w2	32
			PSS00503	start strip pixel w2	XF303A04
			PSS01104	end row pixel w2	95
			PSS00504	end strip pixel w2	XF303A05
			PSS01105	start row pixel w3	0

			PSS00505	start strip pixel w3	0
			PSS01106	end row pixel w3	0
			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS01109	start row pixel w5	0
			PSS00509	start strip pixel w5	0
			PSS01110	end row pixel w5	0
			PSS00510	end strip pixel w5	1
			PSS01111	start row pixel w6	0
			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	XF303A06
			PSS00602	Compression ratio w2	XF303A07
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00605	Compression ratio w5	0
			PSS00606	Compression ratio w6	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF303A08

3.3.39.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017	1	1	Created

3.3.40 SIMBIO-SYS STC Science SURF SINGLE 420 (SS-FCP-304)

3.3.40.1 Objectives

The aim of this FOP is to command STC acquisition with short IT of a X+F420.

3.3.40.2 Summary of Constraints

STC PE ON.

3.3.40.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC in Science or Standby Mode	STC in Science Mode

3.3.40.4 Reference File(s)

3.3.40.4.1 Input Command Sequences

None

3.3.40.4.2 Output Command Sequences

ASSF304A

3.3.40.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF304A	PSS01501	integration time	XF304A01	0
	PSS01629	repetition time STC	XF304A02	30
	PSS01602	NbrAcq	XF304A03	10
	PSS00503	start strip pixel w2	XF304A04	9
	PSS00504	end strip pixel w2	XF304A05	22
	PSS00601	Compression ratio w1	XF304A06	1
	PSS00602	Compression ratio w2	XF304A07	1
	PSS08008	Priority	XF304A08	0

3.3.40.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF304A	ZSS17202	PSS01501	integration time	XF304A01
			PSS01629	repetition time STC	XF304A02
			PSS01602	NbrAcq	XF304A03
			PSS00301	number of windows	2
			PSS01101	start row pixel w1	100
			PSS00501	start strip pixel w1	3
			PSS01102	end row pixel w1	163
			PSS00502	end strip pixel w1	4
			PSS01103	start row pixel w2	240
			PSS00503	start strip pixel w2	XF304A04
			PSS01104	end row pixel w2	303
			PSS00504	end strip pixel w2	XF304A05
			PSS01105	start row pixel w3	0

			PSS00505	start strip pixel w3	0
			PSS01106	end row pixel w3	0
			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS01109	start row pixel w5	0
			PSS00509	start strip pixel w5	0
			PSS01110	end row pixel w5	0
			PSS00510	end strip pixel w5	1
			PSS01111	start row pixel w6	0
			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	XF304A06
			PSS00602	Compression ratio w2	XF304A07
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00605	Compression ratio w5	0
			PSS00606	Compression ratio w6	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF304A08

3.3.40.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017	1	1	Created

3.3.41 SIMBIO-SYS STC Science SURF SINGLE 550 (SS-FCP-305)

3.3.41.1 Objectives

The aim of this FOP is to command STC acquisition with short IT of a X+F550.

3.3.41.2 Summary of Constraints

STC PE ON.

3.3.41.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC in Science or Standby Mode	STC in Science Mode

3.3.41.4 Reference File(s)

3.3.41.4.1 Input Command Sequences

None

3.3.41.4.2 Output Command Sequences

ASSF305A

3.3.41.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF305A	PSS01501	integration time	XF305A01	0
	PSS01629	repetition time STC	XF305A02	30
	PSS01602	NbrAcq	XF305A03	10
	PSS00503	start strip pixel w2	XF305A04	9
	PSS00504	end strip pixel w2	XF305A05	22
	PSS00601	Compression ratio w1	XF305A06	1
	PSS00602	Compression ratio w2	XF305A07	1
	PSS08008	Priority	XF305A08	0

3.3.41.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF305A	ZSS17202	PSS01501	integration time	XF305A01
			PSS01629	repetition time STC	XF305A02
			PSS01602	NbrAcq	XF305A03
			PSS00301	number of windows	2
			PSS01101	start row pixel w1	100
			PSS00501	start strip pixel w1	3
			PSS01102	end row pixel w1	163
			PSS00502	end strip pixel w1	4
			PSS01103	start row pixel w2	1745
			PSS00503	start strip pixel w2	XF305A04
			PSS01104	end row pixel w2	1808
			PSS00504	end strip pixel w2	XF305A05
			PSS01105	start row pixel w3	0

			PSS00505	start strip pixel w3	0
			PSS01106	end row pixel w3	0
			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS01109	start row pixel w5	0
			PSS00509	start strip pixel w5	0
			PSS01110	end row pixel w5	0
			PSS00510	end strip pixel w5	1
			PSS01111	start row pixel w6	0
			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	XF305A06
			PSS00602	Compression ratio w2	XF305A07
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00605	Compression ratio w5	0
			PSS00606	Compression ratio w6	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF305A08

3.3.41.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017	1	1	Created

3.3.42 SIMBIO-SYS STC Science SURF SINGLE 920 (SS-FCP-306)

3.3.42.1 Objectives

The aim of this FOP is to command STC acquisition, with short IT, of a X+F920.

3.3.42.2 Summary of Constraints

STC PE ON.

3.3.42.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC in Science or Standby Mode	STC in Science Mode

3.3.42.4 Reference File(s)

3.3.42.4.1 Input Command Sequences

None

3.3.42.4.2 Output Command Sequences

ASSF306A

3.3.42.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF306A	PSS01501	integration time	XF306A01	0
	PSS01629	repetition time STC	XF306A02	30
	PSS01602	NbrAcq	XF306A03	10
	PSS00503	start strip pixel w2	XF306A04	9
	PSS00504	end strip pixel w2	XF306A05	22
	PSS00601	Compression ratio w1	XF306A06	1
	PSS00602	Compression ratio w2	XF306A07	1
	PSS08008	Priority	XF306A08	0

3.3.42.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF306A	ZSS17202	PSS01501	integration time	XF306A01
			PSS01629	repetition time STC	XF306A02
			PSS01602	NbrAcq	XF306A03
			PSS00301	number of windows	2
			PSS01101	start row pixel w1	100
			PSS00501	start strip pixel w1	3
			PSS01102	end row pixel w1	163
			PSS00502	end strip pixel w1	4
			PSS01103	start row pixel w2	1953
			PSS00503	start strip pixel w2	XF306A04
			PSS01104	end row pixel w2	2016
			PSS00504	end strip pixel w2	XF306A05
			PSS01105	start row pixel w3	0

			PSS00505	start strip pixel w3	0
			PSS01106	end row pixel w3	0
			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS01109	start row pixel w5	0
			PSS00509	start strip pixel w5	0
			PSS01110	end row pixel w5	0
			PSS00510	end strip pixel w5	1
			PSS01111	start row pixel w6	0
			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	XF306A06
			PSS00602	Compression ratio w2	XF306A07
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00605	Compression ratio w5	0
			PSS00606	Compression ratio w6	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF306A08

3.3.42.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017	1	1	Created

3.3.43SIMBIO-SYS STC Science SURF NOMINAL GM (SS-FCP-307)

3.3.43.1 Objectives

The aim of this FOP is to command STC acquisition of Global Mapping Mode (X+PANH+PANL with short IT).

Notes

The input parameters and TC sequence reported are different respect with [RD.3] . This is due a correction of the [RD.3] report. As described in the configuration Control Information the FCP was not update after the launch and this version must be considered even for NECP phase.

3.3.43.2 Summary of Constraints

STC PE ON.

3.3.43.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC in Science or Standby Mode	STC in Science Mode

3.3.43.4 Reference File(s)

3.3.43.4.1 Input Command Sequences

None

3.3.43.4.2 Output Command Sequences

ASSF307A

3.3.43.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF307A	PSS01501	integration time	XF307A01	0
	PSS01629	repetition time STC	XF307A02	74
	PSS01602	NbrAcq	XF307A03	10
	PSS00503	start strip pixel w2	XF307A04	9
	PSS00504	end strip pixel w2	XF307A05	22
	PSS00505	start strip pixel w3	XF307A06	9
	PSS00506	end strip pixel w3	XF307A07	22
	PSS00601	Compression ratio w1	XF307A08	1
	PSS00602	Compression ratio w2	XF307A09	1
	PSS00603	Compression ratio w3	XF307A10	1
	PSS08008	Priority	XF307A11	0

3.3.43.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF307A	ZSS17202	PSS01501	integration time	XF307A01
			PSS01629	repetition time STC	XF307A02
			PSS01602	NbrAcq	XF307A03
			PSS00301	number of windows	3

			PSS01101	start row pixel w1	100
			PSS00501	start strip pixel w1	3
			PSS01102	end row pixel w1	163
			PSS00502	end strip pixel w1	4
			PSS01103	start row pixel w2	437
			PSS00503	start strip pixel w2	XF307A04
			PSS01104	end row pixel w2	820
			PSS00504	end strip pixel w2	XF307A05
			PSS01105	start row pixel w3	1227
			PSS00505	start strip pixel w3	XF307A06
			PSS01106	end row pixel w3	1610
			PSS00506	end strip pixel w3	XF307A07
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS01109	start row pixel w5	0
			PSS00509	start strip pixel w5	0
			PSS01110	end row pixel w5	0
			PSS00510	end strip pixel w5	1
			PSS01111	start row pixel w6	0
			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	XF307A08
			PSS00602	Compression ratio w2	XF307A09
			PSS00603	Compression ratio w3	XF307A10
			PSS00604	Compression ratio w4	0
			PSS00605	Compression ratio w5	0
			PSS00606	Compression ratio w6	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF307A11

3.3.43.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017	1	1	Created
28/05/2018	3	2	CR-121 SIMBIO-SYS Team FOP update request V04

3.3.44 SIMBIO-SYS STC Science SURF NOMINAL CM (SS-FCP-308)

3.3.44.1 Objectives

The aim of this FOP is to command STC acquisition of Color Mode: (X+750+420+550+920 with short IT).

3.3.44.2 Summary of Constraints

STC PE ON.

3.3.44.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC in Science or Standby Mode	STC in Science Mode

3.3.44.4 Reference File(s)

3.3.44.4.1 Input Command Sequences

None

3.3.44.4.2 Output Command Sequences

ASSF308A

3.3.44.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF308A	PSS01501	integration time	XF308A01	0
	PSS01629	repetition time STC	XF308A02	30
	PSS01602	NbrAcq	XF308A03	10
	PSS00503	start strip pixel w2	XF308A04	9
	PSS00504	end strip pixel w2	XF308A05	22
	PSS00505	start strip pixel w3	XF308A06	9
	PSS00506	end strip pixel w3	XF308A07	22
	PSS00507	start strip pixel w4	XF308A08	9
	PSS00508	end strip pixel w4	XF308A09	22
	PSS00509	start strip pixel w5	XF308A10	9
	PSS00510	end strip pixel w5	XF308A11	22
	PSS00601	Compression ratio w1	XF308A12	1
	PSS00602	Compression ratio w2	XF308A13	1
	PSS00603	Compression ratio w3	XF308A14	1
	PSS00604	Compression ratio w4	XF308A15	1
	PSS00605	Compression ratio w5	XF308A16	1
	PSS08008	Priority	XF308A17	0

3.3.44.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF308A	ZSS17202	PSS01501	integration time	XF308A01
			PSS01629	repetition time STC	XF308A02
			PSS01602	NbrAcq	XF308A03

			PSS00301	number of windows	5
			PSS01101	start row pixel w1	100
			PSS00501	start strip pixel w1	3
			PSS01102	end row pixel w1	163
			PSS00502	end strip pixel w1	4
			PSS01103	start row pixel w2	32
			PSS00503	start strip pixel w2	XF308A04
			PSS01104	end row pixel w2	95
			PSS00504	end strip pixel w2	XF308A05
			PSS01105	start row pixel w3	240
			PSS00505	start strip pixel w3	XF308A06
			PSS01106	end row pixel w3	303
			PSS00506	end strip pixel w3	XF308A07
			PSS01107	start row pixel w4	1745
			PSS00507	start strip pixel w4	XF308A08
			PSS01108	end row pixel w4	1808
			PSS00508	end strip pixel w4	XF308A09
			PSS01109	start row pixel w5	1953
			PSS00509	start strip pixel w5	XF308A10
			PSS01110	end row pixel w5	2016
			PSS00510	end strip pixel w5	XF308A11
			PSS01111	start row pixel w6	0
			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	XF308A12
			PSS00602	Compression ratio w2	XF308A13
			PSS00603	Compression ratio w3	XF308A14
			PSS00604	Compression ratio w4	XF308A15
			PSS00605	Compression ratio w5	XF308A16
			PSS00606	Compression ratio w6	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF308A17

3.3.44.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017	1	1	Created

3.3.45 SIMBIO-SYS STC Science STAR FREE (SS-FCP-310)

3.3.45.1 Objectives

The aim of this FOP is to command STC User Defined acquisition (for high IT). It commands the acquisition of a maximum of 6 windows.

3.3.45.2 Summary of Constraints

STC PE ON.

3.3.45.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC in Science or Standby Mode	STC in Science Mode

3.3.45.4 Reference File(s)

3.3.45.4.1 Input Command Sequences

None

3.3.45.4.2 Output Command Sequences

ASSF310A

3.3.45.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF310A	PSS015B1	integration time 1ms	XF310A01	33096
	PSS01629	repetition time STC	XF310A02	64
	PSS01602	NbrAcq	XF310A03	10
	PSS00301	number of windows	XF310A04	1
	PSS01101	start row pixel w1	XF310A05	100
	PSS00501	start strip pixel w1	XF310A06	3
	PSS01102	end row pixel w1	XF310A07	163
	PSS00502	end strip pixel w1	XF310A08	4
	PSS01103	start row pixel w2	XF310A09	0
	PSS00503	start strip pixel w2	XF310A10	0
	PSS01104	end row pixel w2	XF310A11	0
	PSS00504	end strip pixel w2	XF310A12	1
	PSS01105	start row pixel w3	XF310A13	0
	PSS00505	start strip pixel w3	XF310A14	0
	PSS01106	end row pixel w3	XF310A15	0
	PSS00506	end strip pixel w3	XF310A16	1
	PSS01107	start row pixel w4	XF310A17	0
	PSS00507	start strip pixel w4	XF310A18	0
	PSS01108	end row pixel w4	XF310A19	0
	PSS00508	end strip pixel w4	XF310A20	1
	PSS01109	start row pixel w5	XF310A21	0
	PSS00509	start strip pixel w5	XF310A22	0
	PSS01110	end row pixel w5	XF310A23	0
	PSS00510	end strip pixel w5	XF310A24	1

	PSS01111	start row pixel w6	XF310A25	0
	PSS00511	start strip pixel w6	XF310A26	0
	PSS01112	end row pixel w6	XF310A27	0
	PSS00512	end strip pixel w6	XF310A28	1
	PSS00205	Compression box dimension	XF310A29	1
	PSS00601	Compression ratio w1	XF310A30	1
	PSS00602	Compression ratio w2	XF310A31	1
	PSS00603	Compression ratio w3	XF310A32	1
	PSS00604	Compression ratio w4	XF310A33	1
	PSS00605	Compression ratio w5	XF310A34	1
	PSS00606	Compression ratio w6	XF310A35	1
	PSS08008	Priority	XF310A36	0

3.3.45.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF310A	ZSS172B2	PSS015B1	integration time 1ms	XF310A01
			PSS01629	repetition time STC	XF310A02
			PSS01602	NbrAcq	XF310A03
			PSS00301	number of windows	XF310A04
			PSS01101	start row pixel w1	XF310A05
			PSS00501	start strip pixel w1	XF310A06
			PSS01102	end row pixel w1	XF310A07
			PSS00502	end strip pixel w1	XF310A08
			PSS01103	start row pixel w2	XF310A09
			PSS00503	start strip pixel w2	XF310A10
			PSS01104	end row pixel w2	XF310A11
			PSS00504	end strip pixel w2	XF310A12
			PSS01105	start row pixel w3	XF310A13
			PSS00505	start strip pixel w3	XF310A14
			PSS01106	end row pixel w3	XF310A15
			PSS00506	end strip pixel w3	XF310A16
			PSS01107	start row pixel w4	XF310A17
			PSS00507	start strip pixel w4	XF310A18
			PSS01108	end row pixel w4	XF310A19
			PSS00508	end strip pixel w4	XF310A20
			PSS01109	start row pixel w5	XF310A21
			PSS00509	start strip pixel w5	XF310A22
			PSS01110	end row pixel w5	XF310A23
			PSS00510	end strip pixel w5	XF310A24
			PSS01111	start row pixel w6	XF310A25
			PSS00511	start strip pixel w6	XF310A26
			PSS01112	end row pixel w6	XF310A27
			PSS00512	end strip pixel w6	XF310A28
			PSS00205	Compression box dimension	XF310A29
			PSS00601	Compression ratio w1	XF310A30
			PSS00602	Compression ratio w2	XF310A31

			PSS00603	Compression ratio w3	XF310A32
			PSS00604	Compression ratio w4	XF310A33
			PSS00605	Compression ratio w5	XF310A34
			PSS00606	Compression ratio w6	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF308A17

3.3.45.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created
14/11/2017	1	2	Integration Time modified to 33096
28/05/2018	3	3	CR-121 SIMBIO-SYS Team FOP update request V04
18/09/2018	3.1	4	CR-245 Update request from SIMBIO V06 aug 28 2018

3.3.46 SIMBIO-SYS STC Science STAR FREE (SS-FCP-311)

3.3.46.1 Objectives

The aim of this FOP is to command STC acquisition of a X+PANH (for high IT).

3.3.46.2 Summary of Constraints

STC PE ON.

3.3.46.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC in Science or Standby Mode	STC in Science Mode

3.3.46.4 Reference File(s)

3.3.46.4.1 Input Command Sequences

None

3.3.46.4.2 Output Command Sequences

ASSF311A

3.3.46.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF311A	PSS015B1	integration time 1ms	XF311A01	33096
	PSS01629	repetition time STC	XF311A02	78
	PSS01602	NbrAcq	XF311A03	10
	PSS00601	Compression ratio w1	XF311A04	1
	PSS00602	Compression ratio w2	XF311A05	1
	PSS08008	Priority	XF311A06	0

3.3.46.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF311A	ZSS172B2	PSS015B1	integration time 1ms	XF311A01
			PSS01629	repetition time STC	XF311A02
			PSS01602	NbrAcq	XF311A03
			PSS00301	number of windows	2
			PSS01101	start row pixel w1	100
			PSS00501	start strip pixel w1	3
			PSS01102	end row pixel w1	163
			PSS00502	end strip pixel w1	4
			PSS01103	start row pixel w2	437
			PSS00503	start strip pixel w2	9
			PSS01104	end row pixel w2	820
			PSS00504	end strip pixel w2	22
			PSS01105	start row pixel w3	0
			PSS00505	start strip pixel w3	0

			PSS01106	end row pixel w3	0
			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS01109	start row pixel w5	0
			PSS00509	start strip pixel w5	0
			PSS01110	end row pixel w5	0
			PSS00510	end strip pixel w5	1
			PSS01111	start row pixel w6	0
			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	XF311A04
			PSS00602	Compression ratio w2	XF311A05
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00605	Compression ratio w5	0
			PSS00606	Compression ratio w6	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF311A06

3.3.46.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created
14/11/2017	1	2	Integration Time modified to 33096
28/05/2018	3	3	CR-121 SIMBIO-SYS Team FOP update request V04

3.3.47 SIMBIO-SYS STC Science STAR SINGLE PANL (SS-FCP-312)

3.3.47.1 Objectives

The aim of this FOP is to command STC acquisition of a X+PANL (for high IT).

3.3.47.2 Summary of Constraints

STC PE ON.

3.3.47.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC in Science or Standby Mode	STC in Science Mode

3.3.47.4 Reference File(s)

3.3.47.4.1 Input Command Sequences

None

3.3.47.4.2 Output Command Sequences

ASSF312A

3.3.47.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF312A	PSS015B1	integration time 1ms	XF312A01	33096
	PSS01629	repetition time STC	XF312A02	78
	PSS01602	NbrAcq	XF312A03	10
	PSS00601	Compression ratio w1	XF312A04	1
	PSS00602	Compression ratio w2	XF312A05	1
	PSS08008	Priority	XF312A06	0

3.3.47.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF312A	ZSS172B2	PSS015B1	integration time 1ms	XF312A01
			PSS01629	repetition time STC	XF312A02
			PSS01602	NbrAcq	XF312A03
			PSS00301	number of windows	2
			PSS01101	start row pixel w1	100
			PSS00501	start strip pixel w1	3
			PSS01102	end row pixel w1	163
			PSS00502	end strip pixel w1	4
			PSS01103	start row pixel w2	1227
			PSS00503	start strip pixel w2	9
			PSS01104	end row pixel w2	1610
			PSS00504	end strip pixel w2	22
			PSS01105	start row pixel w3	0
			PSS00505	start strip pixel w3	0

			PSS01106	end row pixel w3	0
			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS01109	start row pixel w5	0
			PSS00509	start strip pixel w5	0
			PSS01110	end row pixel w5	0
			PSS00510	end strip pixel w5	1
			PSS01111	start row pixel w6	0
			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	XF312A04
			PSS00602	Compression ratio w2	XF312A05
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00605	Compression ratio w5	0
			PSS00606	Compression ratio w6	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF312A06

3.3.47.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created
14/11/2017	1	2	Integration Time modified to 33096
28/05/2018	3	3	CR-121 SIMBIO-SYS Team FOP update request V04

3.3.48 SIMBIO-SYS STC Science STAR SINGLE 750 (SS-FCP-313)

3.3.48.1 Objectives

The aim of this FOP is to command STC acquisition of a X+F750 (for high IT).

3.3.48.2 Summary of Constraints

STC PE ON.

3.3.48.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC in Science or Standby Mode	STC in Science Mode

3.3.48.4 Reference File(s)

3.3.48.4.1 Input Command Sequences

None

3.3.48.4.2 Output Command Sequences

ASSF313A

3.3.48.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF313A	PSS015B1	integration time 1ms	XF313A01	33096
	PSS01629	repetition time STC	XF313A02	67
	PSS01602	NbrAcq	XF313A03	10
	PSS00601	Compression ratio w1	XF313A04	1
	PSS00602	Compression ratio w2	XF313A05	1
	PSS08008	Priority	XF313A06	0

3.3.48.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF313A	ZSS172B2	PSS015B1	integration time 1ms	XF313A01
			PSS01629	repetition time STC	XF313A02
			PSS01602	NbrAcq	XF313A03
			PSS00301	number of windows	2
			PSS01101	start row pixel w1	100
			PSS00501	start strip pixel w1	3
			PSS01102	end row pixel w1	163
			PSS00502	end strip pixel w1	4
			PSS01103	start row pixel w2	32
			PSS00503	start strip pixel w2	9
			PSS01104	end row pixel w2	95
			PSS00504	end strip pixel w2	22
			PSS01105	start row pixel w3	0
			PSS00505	start strip pixel w3	0

			PSS01106	end row pixel w3	0
			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS01109	start row pixel w5	0
			PSS00509	start strip pixel w5	0
			PSS01110	end row pixel w5	0
			PSS00510	end strip pixel w5	1
			PSS01111	start row pixel w6	0
			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	XF313A04
			PSS00602	Compression ratio w2	XF313A05
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00605	Compression ratio w5	0
			PSS00606	Compression ratio w6	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF313A06

3.3.48.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created
14/11/2017	1	2	Integration Time modified to 33096
28/05/2018	3	3	CR-121 SIMBIO-SYS Team FOP update request V04

3.3.49 SIMBIO-SYS STC Science STAR SINGLE 420 (SS-FCP-314)

3.3.49.1 Objectives

The aim of this FOP is to command STC acquisition of a X+F420 (for high IT).

3.3.49.2 Summary of Constraints

STC PE ON.

3.3.49.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC in Science or Standby Mode	STC in Science Mode

3.3.49.4 Reference File(s)

3.3.49.4.1 Input Command Sequences

None

3.3.49.4.2 Output Command Sequences

ASSF314A

3.3.49.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF314A	PSS015B1	integration time 1ms	XF314A01	33096
	PSS01629	repetition time STC	XF314A02	67
	PSS01602	NbrAcq	XF314A03	10
	PSS00601	Compression ratio w1	XF314A04	1
	PSS00602	Compression ratio w2	XF314A05	1
	PSS08008	Priority	XF314A06	0

3.3.49.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF314A	ZSS172B2	PSS015B1	integration time 1ms	XF314A01
			PSS01629	repetition time STC	XF314A02
			PSS01602	NbrAcq	XF314A03
			PSS00301	number of windows	2
			PSS01101	start row pixel w1	100
			PSS00501	start strip pixel w1	3
			PSS01102	end row pixel w1	163
			PSS00502	end strip pixel w1	4
			PSS01103	start row pixel w2	240
			PSS00503	start strip pixel w2	9
			PSS01104	end row pixel w2	303
			PSS00504	end strip pixel w2	22
			PSS01105	start row pixel w3	0
			PSS00505	start strip pixel w3	0

			PSS01106	end row pixel w3	0
			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS01109	start row pixel w5	0
			PSS00509	start strip pixel w5	0
			PSS01110	end row pixel w5	0
			PSS00510	end strip pixel w5	1
			PSS01111	start row pixel w6	0
			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	XF314A04
			PSS00602	Compression ratio w2	XF314A05
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00605	Compression ratio w5	0
			PSS00606	Compression ratio w6	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF314A06

3.3.49.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created
14/11/2017	1	2	Integration Time modified to 33096
28/05/2018	3	3	CR-121 SIMBIO-SYS Team FOP update request V04

3.3.50 SIMBIO-SYS STC Science STAR SINGLE 550 (SS-FCP-315)

3.3.50.1 Objectives

The aim of this FOP is to command STC acquisition of a X+F550 (for high IT).

3.3.50.2 Summary of Constraints

STC PE ON.

3.3.50.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC in Science or Standby Mode	STC in Science Mode

3.3.50.4 Reference File(s)

3.3.50.4.1 Input Command Sequences

None

3.3.50.4.2 Output Command Sequences

ASSF315A

3.3.50.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF315A	PSS015B1	integration time 1ms	XF315A01	33096
	PSS01629	repetition time STC	XF315A02	67
	PSS01602	NbrAcq	XF315A03	10
	PSS00601	Compression ratio w1	XF315A04	1
	PSS00602	Compression ratio w2	XF315A05	1
	PSS08008	Priority	XF315A06	0

3.3.50.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF315A	ZSS172B2	PSS015B1	integration time 1ms	XF315A01
			PSS01629	repetition time STC	XF315A02
			PSS01602	NbrAcq	XF315A03
			PSS00301	number of windows	2
			PSS01101	start row pixel w1	100
			PSS00501	start strip pixel w1	3
			PSS01102	end row pixel w1	163
			PSS00502	end strip pixel w1	4
			PSS01103	start row pixel w2	1745
			PSS00503	start strip pixel w2	9
			PSS01104	end row pixel w2	1808
			PSS00504	end strip pixel w2	22
			PSS01105	start row pixel w3	0
			PSS00505	start strip pixel w3	0

			PSS01106	end row pixel w3	0
			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS01109	start row pixel w5	0
			PSS00509	start strip pixel w5	0
			PSS01110	end row pixel w5	0
			PSS00510	end strip pixel w5	1
			PSS01111	start row pixel w6	0
			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	XF315A04
			PSS00602	Compression ratio w2	XF315A05
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00605	Compression ratio w5	0
			PSS00606	Compression ratio w6	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF315A06

3.3.50.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created
14/11/2017		2	Integration Time modified to 33096
14/11/2017	1	3	Fixed integration time (had not been refreshed)
28/05/2018	3	4	CR-121 SIMBIO-SYS Team FOP update request V04

3.3.51 SIMBIO-SYS STC Science STAR SINGLE 920 (SS-FCP-316)

3.3.51.1 Objectives

The aim of this FOP is to command STC acquisition of a X+F920 (for high IT).

3.3.51.2 Summary of Constraints

STC PE ON.

3.3.51.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC in Science or Standby Mode	STC in Science Mode

3.3.51.4 Reference File(s)

3.3.51.4.1 Input Command Sequences

None

3.3.51.4.2 Output Command Sequences

ASSF316A

3.3.51.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF316A	PSS015B1	integration time 1ms	XF316A01	33096
	PSS01629	repetition time STC	XF316A02	67
	PSS01602	NbrAcq	XF316A03	10
	PSS00601	Compression ratio w1	XF316A04	1
	PSS00602	Compression ratio w2	XF316A05	1
	PSS08008	Priority	XF316A06	0

3.3.51.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF316A	ZSS172B2	PSS015B1	integration time 1ms	XF316A01
			PSS01629	repetition time STC	XF316A02
			PSS01602	NbrAcq	XF316A03
			PSS00301	number of windows	2
			PSS01101	start row pixel w1	100
			PSS00501	start strip pixel w1	3
			PSS01102	end row pixel w1	163
			PSS00502	end strip pixel w1	4
			PSS01103	start row pixel w2	1953
			PSS00503	start strip pixel w2	9
			PSS01104	end row pixel w2	2016
			PSS00504	end strip pixel w2	22
			PSS01105	start row pixel w3	0
			PSS00505	start strip pixel w3	0

			PSS01106	end row pixel w3	0
			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS01109	start row pixel w5	0
			PSS00509	start strip pixel w5	0
			PSS01110	end row pixel w5	0
			PSS00510	end strip pixel w5	1
			PSS01111	start row pixel w6	0
			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	XF316A04
			PSS00602	Compression ratio w2	XF316A05
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00605	Compression ratio w5	0
			PSS00606	Compression ratio w6	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF316A06

3.3.51.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created
14/11/2017	1	2	Integration Time modified to 33096
28/05/2018	3	3	CR-121 SIMBIO-SYS Team FOP update request V04

3.3.52 SIMBIO-SYS STC Science STAR GM (SS-FCP-317)

3.3.52.1 Objectives

The aim of this FOP is to command STC acquisition of a X+PANH+PANL (for high IT).

3.3.52.2 Summary of Constraints

STC PE ON.

3.3.52.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC in Science or Standby Mode	STC in Science Mode

3.3.52.4 Reference File(s)

3.3.52.4.1 Input Command Sequences

None

3.3.52.4.2 Output Command Sequences

ASSF317A

3.3.52.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF317A	PSS015B1	integration time 1ms	XF317A01	33096
	PSS01629	repetition time STC	XF317A02	92
	PSS01602	NbrAcq	XF317A03	10
	PSS00601	Compression ratio w1	XF317A04	1
	PSS00602	Compression ratio w2	XF317A05	1
	PSS00603	Compression ratio w3	XF317A06	1
	PSS08008	Priority	XF317A07	0

3.3.52.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF317A	ZSS172B2	PSS015B1	integration time 1ms	XF317A01
			PSS01629	repetition time STC	XF317A02
			PSS01602	NbrAcq	XF317A03
			PSS00301	number of windows	3
			PSS01101	start row pixel w1	100
			PSS00501	start strip pixel w1	3
			PSS01102	end row pixel w1	163
			PSS00502	end strip pixel w1	4
			PSS01103	start row pixel w2	437
			PSS00503	start strip pixel w2	9
			PSS01104	end row pixel w2	820
			PSS00504	end strip pixel w2	22
			PSS01105	start row pixel w3	1227

			PSS00505	start strip pixel w3	9
			PSS01106	end row pixel w3	1610
			PSS00506	end strip pixel w3	22
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS01109	start row pixel w5	0
			PSS00509	start strip pixel w5	0
			PSS01110	end row pixel w5	0
			PSS00510	end strip pixel w5	1
			PSS01111	start row pixel w6	0
			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	XF317A04
			PSS00602	Compression ratio w2	XF317A05
			PSS00603	Compression ratio w3	XF317A06
			PSS00604	Compression ratio w4	0
			PSS00605	Compression ratio w5	0
			PSS00606	Compression ratio w6	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF317A07

3.3.52.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created
14/11/2017	1	2	Integration Time modified to 33096
28/05/2018	3	3	CR-121 SIMBIO-SYS Team FOP update request V04
08/04/2019	3.2	4	CR-478 As per Post-NECP FOP update v8 re. Email Michele Zusi 28 March 2019. The number of windows (i.e., PSS00301) and the window #3 compression ratio (i.e., PSS00603) were updated (for details compare with [RD.2]).

3.3.53 SIMBIO-SYS STC Science STAR CM (SS-FCP-318)

3.3.53.1 Objectives

The aim of this FOP is to command STC acquisition of Color Mode: X+750+420+550+920 (for high IT).

Notes

Note that PSS00301 (Number of acquisition) is defined as 2. This means that the FCP will acquired only 2 windows instead of the 5 expected.

3.3.53.2 Summary of Constraints

STC PE ON.

3.3.53.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC in Science or Standby Mode	STC in Science Mode

3.3.53.4 Reference File(s)

3.3.53.4.1 Input Command Sequences

None

3.3.53.4.2 Output Command Sequences

ASSF318A

3.3.53.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF318A	PSS015B1	integration time 1ms	XF318A01	33096
	PSS01629	repetition time STC	XF318A02	73
	PSS01602	NbrAcq	XF318A03	10
	PSS00601	Compression ratio w1	XF318A04	1
	PSS00602	Compression ratio w2	XF318A05	1
	PSS08008	Priority	XF318A06	0

3.3.53.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF318A	ZSS172B2	PSS015B1	integration time 1ms	XF318A01
			PSS01629	repetition time STC	XF318A02
			PSS01602	NbrAcq	XF318A03
			PSS00301	number of windows	2
			PSS01101	start row pixel w1	100
			PSS00501	start strip pixel w1	3
			PSS01102	end row pixel w1	163
			PSS00502	end strip pixel w1	4

			PSS01103	start row pixel w2	32
			PSS00503	start strip pixel w2	9
			PSS01104	end row pixel w2	95
			PSS00504	end strip pixel w2	22
			PSS01105	start row pixel w3	240
			PSS00505	start strip pixel w3	9
			PSS01106	end row pixel w3	303
			PSS00506	end strip pixel w3	22
			PSS01107	start row pixel w4	1745
			PSS00507	start strip pixel w4	9
			PSS01108	end row pixel w4	1808
			PSS00508	end strip pixel w4	22
			PSS01109	start row pixel w5	1953
			PSS00509	start strip pixel w5	9
			PSS01110	end row pixel w5	2016
			PSS00510	end strip pixel w5	22
			PSS01111	start row pixel w6	0
			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	XF318A04
			PSS00602	Compression ratio w2	XF318A05
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00605	Compression ratio w5	0
			PSS00606	Compression ratio w6	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF318A06

3.3.53.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created
14/11/2017	1	2	Integration Time modified to 33096
28/05/2018	3	3	CR-121 SIMBIO-SYS Team FOP update request V04

3.3.54 SIMBIO-SYS STC Out Filters SURF X (SS-FCP-320)

3.3.54.1 Objectives

The aim of this FOP is to command STC acquisition of WindowX (for short IT).

Notes

Note that PSS00602 (Compression ratio w2) is defined as formal parameter but has no effect on the commanding.

3.3.54.2 Summary of Constraints

STC PE ON.

3.3.54.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC in Science or Standby Mode	STC in Science Mode

3.3.54.4 Reference File(s)

3.3.54.4.1 Input Command Sequences

None

3.3.54.4.2 Output Command Sequences

ASSF320A

3.3.54.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF320A	PSS01501	integration time	XF320A01	0
	PSS01629	repetition time STC	XF320A02	30
	PSS01602	NbrAcq	XF320A03	10
	PSS00601	Compression ratio w1	XF320A04	1
	PSS00602	Compression ratio w2	XF320A05	1
	PSS08008	Priority	XF320A06	0

3.3.54.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF320A	ZSS17202	PSS01501	integration time	XF320A01
			PSS01629	repetition time STC	XF320A02
			PSS01602	NbrAcq	XF320A03
			PSS00301	number of windows	1
			PSS01101	start row pixel w1	100
			PSS00501	start strip pixel w1	3
			PSS01102	end row pixel w1	163
			PSS00502	end strip pixel w1	4
			PSS01103	start row pixel w2	0
			PSS00503	start strip pixel w2	0
			PSS01104	end row pixel w2	0

			PSS00504	end strip pixel w2	1
			PSS01105	start row pixel w3	0
			PSS00505	start strip pixel w3	0
			PSS01106	end row pixel w3	0
			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS01109	start row pixel w5	0
			PSS00509	start strip pixel w5	0
			PSS01110	end row pixel w5	0
			PSS00510	end strip pixel w5	1
			PSS01111	start row pixel w6	0
			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	XF320A04
			PSS00602	Compression ratio w2	XF320A05
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00605	Compression ratio w5	0
			PSS00606	Compression ratio w6	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF320A06

3.3.54.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created

3.3.55 SIMBIO-SYS STC Out Filters SURF BAND CENTRAL (SS-FCP-321)

3.3.55.1 Objectives

The aim of this FOP is to command STC acquisition of central vertical band of the Detector (for short IT).

3.3.55.2 Summary of Constraints

STC PE ON.

3.3.55.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC in Science or Standby Mode	STC in Science Mode

3.3.55.4 Reference File(s)

3.3.55.4.1 Input Command Sequences

None

3.3.55.4.2 Output Command Sequences

ASSF321A

3.3.55.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF321A	PSS01501	integration time	XF321A01	0
	PSS01629	repetition time STC	XF321A02	240
	PSS01602	NbrAcq	XF321A03	10
	PSS00501	start strip pixel w1	XF321A04	9
	PSS00502	end strip pixel w1	XF321A05	24
	PSS00601	Compression ratio w1	XF321A06	1
	PSS08008	Priority	XF321A07	0

3.3.55.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF321A	ZSS17202	PSS01501	integration time	XF321A01
			PSS01629	repetition time STC	XF321A02
			PSS01602	NbrAcq	XF321A03
			PSS00301	number of windows	1
			PSS01101	start row pixel w1	0
			PSS00501	start strip pixel w1	XF321A04
			PSS01102	end row pixel w1	2047
			PSS00502	end strip pixel w1	XF321A05
			PSS01103	start row pixel w2	0
			PSS00503	start strip pixel w2	0
			PSS01104	end row pixel w2	0
			PSS00504	end strip pixel w2	1

			PSS01105	start row pixel w3	0
			PSS00505	start strip pixel w3	0
			PSS01106	end row pixel w3	0
			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS01109	start row pixel w5	0
			PSS00509	start strip pixel w5	0
			PSS01110	end row pixel w5	0
			PSS00510	end strip pixel w5	1
			PSS01111	start row pixel w6	0
			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dimension	3
			PSS00601	Compression ratio w1	XF321A06
			PSS00602	Compression ratio w2	1
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00605	Compression ratio w5	0
			PSS00606	Compression ratio w6	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF321A07

3.3.55.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017	1	1	Created
28/05/2018	3	2	CR-121 SIMBIO-SYS Team FOP update request V04
08/04/2019	3.2	3	CR-478 As per Post-NECP FOP update v8 re. Email Michele Zusi 28 March 2019. The repetition time default value of the formal parameter XF321A02, the compression box size (i.e., PSS00205) and the window #1 default value of the formal parameters XF321A04 and XF321A05 were updated (for details compare with [RD.2]) to avoid conflicts reported in [RD.10].

3.3.56 SIMBIO-SYS STC Out Filters SURF BAND LEFT (SS-FCP-322)

3.3.56.1 Objectives

The aim of this FOP is to command STC acquisition of left vertical band of the Detector (for short IT).

3.3.56.2 Summary of Constraints

STC PE ON.

3.3.56.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC in Science or Standby Mode	STC in Science Mode

3.3.56.4 Reference File(s)

3.3.56.4.1 Input Command Sequences

None

3.3.56.4.2 Output Command Sequences

ASSF322A

3.3.56.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF322A	PSS01501	integration time	XF322A01	0
	PSS01629	repetition time STC	XF322A02	126
	PSS01602	NbrAcq	XF322A03	10
	PSS00502	end strip pixel w1	XF322A04	8
	PSS00601	Compression ratio w1	XF322A05	1
	PSS08008	Priority	XF322A06	0

3.3.56.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF322A	ZSS17202	PSS01501	integration time	XF322A01
			PSS01629	repetition time STC	XF322A02
			PSS01602	NbrAcq	XF322A03
			PSS00301	number of windows	1
			PSS01101	start row pixel w1	0
			PSS00501	start strip pixel w1	0
			PSS01102	end row pixel w1	2047
			PSS00502	end strip pixel w1	XF322A04
			PSS01103	start row pixel w2	0
			PSS00503	start strip pixel w2	0
			PSS01104	end row pixel w2	0
			PSS00504	end strip pixel w2	1
			PSS01105	start row pixel w3	0
			PSS00505	start strip pixel w3	0

			PSS01106	end row pixel w3	0
			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS01109	start row pixel w5	0
			PSS00509	start strip pixel w5	0
			PSS01110	end row pixel w5	0
			PSS00510	end strip pixel w5	1
			PSS01111	start row pixel w6	0
			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dimension	3
			PSS00601	Compression ratio w1	XF322A05
			PSS00602	Compression ratio w2	1
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00605	Compression ratio w5	0
			PSS00606	Compression ratio w6	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF322A06

3.3.56.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017	1	1	Created
28/05/2018	3	2	CR-121 SIMBIO-SYS Team FOP update request V04
11/04/2019	3.2	3	CR-478 As per Post-NECP FOP update v8 re. Email Michele Zusi 28 March 2019. The default value of the CBD parameter (i.e., PSS00205) was updated (for details compare with [RD.2]) to avoid conflicts reported in [RD.10].

3.3.57SIMBIO-SYS STC Out Filters SURF BAND RIGHT (SS-FCP-323)

3.3.57.1 Objectives

The aim of this FOP is to command STC acquisition of the right vertical band of the Detector (for short IT).

3.3.57.2 Summary of Constraints

STC PE ON.

3.3.57.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC in Science or Standby Mode	STC in Science Mode

3.3.57.4 Reference File(s)

3.3.57.4.1 Input Command Sequences

None

3.3.57.4.2 Output Command Sequences

ASSF323A

3.3.57.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF323A	PSS01501	integration time	XF323A01	0
	PSS01629	repetition time STC	XF323A02	126
	PSS01602	NbrAcq	XF323A03	10
	PSS00501	start strip pixel w1	XF323A04	23
	PSS00601	Compression ratio w1	XF323A05	1
	PSS08008	Priority	XF323A06	0

3.3.57.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF323A	ZSS17202	PSS01501	integration time	XF323A01
			PSS01629	repetition time STC	XF323A02
			PSS01602	NbrAcq	XF323A03
			PSS00301	number of windows	1
			PSS01101	start row pixel w1	0
			PSS00501	start strip pixel w1	XF323A04
			PSS01102	end row pixel w1	2047
			PSS00502	end strip pixel w1	31
			PSS01103	start row pixel w2	0
			PSS00503	start strip pixel w2	0
			PSS01104	end row pixel w2	0
			PSS00504	end strip pixel w2	1
			PSS01105	start row pixel w3	0

			PSS00505	start strip pixel w3	0
			PSS01106	end row pixel w3	0
			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS01109	start row pixel w5	0
			PSS00509	start strip pixel w5	0
			PSS01110	end row pixel w5	0
			PSS00510	end strip pixel w5	1
			PSS01111	start row pixel w6	0
			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dimension	3
			PSS00601	Compression ratio w1	XF323A05
			PSS00602	Compression ratio w2	1
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00605	Compression ratio w5	0
			PSS00606	Compression ratio w6	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF323A06

3.3.57.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017	1	1	Created
28/05/2018	3	2	CR-121 SIMBIO-SYS Team FOP update request V04
08/04/2019	3.2	3	CR-478 As per Post-NECP FOP update v8 re. Email Michele Zusi 28 march 2019. The default value of the CBD parameter (i.e., PSS00205) was updated (for details compare with [RD.2]) to avoid conflicts reported in [RD.10].

3.3.58 SIMBIO-SYS STC Out Filters SURF BAND RIGHT (SS-FCP-324)

3.3.58.1 Objectives

The aim of this FOP is to command STC acquisition for short IT of half high region of the Detector (Along track 0-1023).

3.3.58.2 Summary of Constraints

STC PE ON.

3.3.58.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC in Science or Standby Mode	STC in Science Mode

3.3.58.4 Reference File(s)

3.3.58.4.1 Input Command Sequences

None

3.3.58.4.2 Output Command Sequences

ASSF324A

3.3.58.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF324A	PSS01501	integration time	XF324A01	0
	PSS01629	repetition time STC	XF324A02	223
	PSS01602	NbrAcq	XF324A03	10
	PSS00601	Compression ratio w1	XF324A04	1
	PSS08008	Priority	XF324A05	0

3.3.58.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF324A	ZSS17202	PSS01501	integration time	XF324A01
			PSS01629	repetition time STC	XF324A02
			PSS01602	NbrAcq	XF324A03
			PSS00301	number of windows	1
			PSS01101	start row pixel w1	0
			PSS00501	start strip pixel w1	0
			PSS01102	end row pixel w1	1023
			PSS00502	end strip pixel w1	31
			PSS01103	start row pixel w2	0
			PSS00503	start strip pixel w2	0
			PSS01104	end row pixel w2	0
			PSS00504	end strip pixel w2	1
			PSS01105	start row pixel w3	0

			PSS00505	start strip pixel w3	0
			PSS01106	end row pixel w3	0
			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS01109	start row pixel w5	0
			PSS00509	start strip pixel w5	0
			PSS01110	end row pixel w5	0
			PSS00510	end strip pixel w5	1
			PSS01111	start row pixel w6	0
			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dimension	3
			PSS00601	Compression ratio w1	XF324A04
			PSS00602	Compression ratio w2	1
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00605	Compression ratio w5	0
			PSS00606	Compression ratio w6	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF324A05

3.3.58.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017	1	1	Created
27/05/2018	3	2	CR-121 SIMBIO-SYS Team FOP update request V04
08/04/2019	3.2	3	CR-478 As per Post-NECP FOP update v8 re. Email Michele Zusi 28 March 2019. The default value of the CBD parameter (i.e., PSS00205) was updated (for details compare with [RD.2]) to avoid conflicts reported in [RD.10].

3.3.59 SIMBIO-SYS STC Out Filters SURF HALF LOW (SS-FCP-325)

3.3.59.1 Objectives

The aim of this FOP is to command STC acquisition for short IT of the HALF low region of the Detector (1024-2047 along track).

3.3.59.2 Summary of Constraints

STC PE ON.

3.3.59.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC in Science or Standby Mode	STC in Science Mode

3.3.59.4 Reference File(s)

3.3.59.4.1 Input Command Sequences

None

3.3.59.4.2 Output Command Sequences

ASSF325A

3.3.59.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF325A	PSS01501	integration time	XF325A01	0
	PSS01629	repetition time STC	XF325A02	223
	PSS01602	NbrAcq	XF325A03	10
	PSS00601	Compression ratio w1	XF325A04	1
	PSS08008	Priority	XF325A05	0

3.3.59.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF325A	ZSS17202	PSS01501	integration time	XF325A01
			PSS01629	repetition time STC	XF325A02
			PSS01602	NbrAcq	XF325A03
			PSS00301	number of windows	1
			PSS01101	start row pixel w1	1024
			PSS00501	start strip pixel w1	0
			PSS01102	end row pixel w1	2047
			PSS00502	end strip pixel w1	31
			PSS01103	start row pixel w2	0
			PSS00503	start strip pixel w2	0
			PSS01104	end row pixel w2	0
			PSS00504	end strip pixel w2	1
			PSS01105	start row pixel w3	0
			PSS00505	start strip pixel w3	0

			PSS01106	end row pixel w3	0
			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS01109	start row pixel w5	0
			PSS00509	start strip pixel w5	0
			PSS01110	end row pixel w5	0
			PSS00510	end strip pixel w5	1
			PSS01111	start row pixel w6	0
			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dimension	3
			PSS00601	Compression ratio w1	XF325A04
			PSS00602	Compression ratio w2	1
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00605	Compression ratio w5	0
			PSS00606	Compression ratio w6	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF325A05

3.3.59.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017	1	1	Created
28/05/2018	3	2	CR-121 SIMBIO-SYS Team FOP update request V04
08/04/2019	3.2	3	CR-478 As per Post-NECP FOP update v8 re. Email Michele Zusi 28 march 2019

3.3.60 SIMBIO-SYS STC Out Filters STAR X (SS-FCP-330)

3.3.60.1 Objectives

The aim of this FOP is to command STC acquisition of WindowX (for high IT).

3.3.60.2 Summary of Constraints

STC PE ON.

3.3.60.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC in Science or Standby Mode	STC in Science Mode

3.3.60.4 Reference File(s)

3.3.60.4.1 Input Command Sequences

None

3.3.60.4.2 Output Command Sequences

ASSF330A

3.3.60.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF330A	PSS015B1	integration time 1ms	XF330A01	33096
	PSS01629	repetition time STC	XF330A02	65
	PSS01602	NbrAcq	XF330A03	10
	PSS00601	Compression ratio w1	XF330A04	1
	PSS08008	Priority	XF330A05	0

3.3.60.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF330A	ZSS172B2	PSS015B1	integration time 1ms	XF330A01
			PSS01629	repetition time STC	XF330A02
			PSS01602	NbrAcq	XF330A03
			PSS00301	number of windows	1
			PSS01101	start row pixel w1	100
			PSS00501	start strip pixel w1	3
			PSS01102	end row pixel w1	163
			PSS00502	end strip pixel w1	4
			PSS01103	start row pixel w2	0
			PSS00503	start strip pixel w2	0
			PSS01104	end row pixel w2	0
			PSS00504	end strip pixel w2	1
			PSS01105	start row pixel w3	0
			PSS00505	start strip pixel w3	0
			PSS01106	end row pixel w3	0

			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS01109	start row pixel w5	0
			PSS00509	start strip pixel w5	0
			PSS01110	end row pixel w5	0
			PSS00510	end strip pixel w5	1
			PSS01111	start row pixel w6	0
			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	XF330A04
			PSS00602	Compression ratio w2	1
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00605	Compression ratio w5	0
			PSS00606	Compression ratio w6	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF330A05

3.3.60.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created
14/11/2017	1	2	Integration Time modified to 33096
28/05/2018	3	3	CR-121 SIMBIO-SYS Team FOP update request V04

3.3.61 SIMBIO-SYS STC Out Filters STAR BAND CENTRAL (SS-FCP-331)

3.3.61.1 Objectives

The aim of this FOP is to command STC acquisition of central vertical band of the Detector (for high IT).

3.3.61.2 Summary of Constraints

STC PE ON.

3.3.61.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC in Science or Standby Mode	STC in Science Mode

3.3.61.4 Reference File(s)

3.3.61.4.1 Input Command Sequences

None

3.3.61.4.2 Output Command Sequences

ASSF331A

3.3.61.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF331A	PSS015B1	integration time 1ms	XF331A01	33096
	PSS01629	repetition time STC	XF331A02	240
	PSS01602	NbrAcq	XF331A03	10
	PSS01101	start row pixel w1	XF331A04	0
	PSS01102	end row pixel w1	XF331A05	2047
	PSS00601	Compression ratio w1	XF331A06	1
	PSS08008	Priority	XF331A07	0

3.3.61.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF331A	ZSS172B2	PSS015B1	integration time 1ms	XF331A01
			PSS01629	repetition time STC	XF331A02
			PSS01602	NbrAcq	XF331A03
			PSS00301	number of windows	1
			PSS01101	start row pixel w1	XF331A04
			PSS00501	start strip pixel w1	9
			PSS01102	end row pixel w1	XF331A05
			PSS00502	end strip pixel w1	24
			PSS01103	start row pixel w2	0
			PSS00503	start strip pixel w2	0
			PSS01104	end row pixel w2	0
			PSS00504	end strip pixel w2	1

			PSS01105	start row pixel w3	0
			PSS00505	start strip pixel w3	0
			PSS01106	end row pixel w3	0
			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS01109	start row pixel w5	0
			PSS00509	start strip pixel w5	0
			PSS01110	end row pixel w5	0
			PSS00510	end strip pixel w5	1
			PSS01111	start row pixel w6	0
			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dimension	3
			PSS00601	Compression ratio w1	XF331A06
			PSS00602	Compression ratio w2	1
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00605	Compression ratio w5	0
			PSS00606	Compression ratio w6	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF331A07

3.3.61.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created
14/11/2017	1	2	Integration Time modified to 33096
28/05/2018	3	3	CR-121 SIMBIO-SYS Team FOP update request V04
08/04/2019	3.2	4	CR-478 As per Post-NECP FOP update v8 re. Email Michele Zusi 28 March 2019. The repetition time default value of the formal parameter XF331A02, the compression box size (i.e., PSS00205) and the window #1 default value of the formal parameters XF331A04 and XF321A05 were updated (for details compare with [RD.2]) to avoid conflicts reported in [RD.10].

3.3.62 SIMBIO-SYS STC Out Filters STAR BAND LEFT (SS-FCP-332)

3.3.62.1 Objectives

The aim of this FOP is to command STC acquisition of left vertical band of the Detector (for high IT).

3.3.62.2 Summary of Constraints

STC PE ON.

3.3.62.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC in Science or Standby Mode	STC in Science Mode

3.3.62.4 Reference File(s)

3.3.62.4.1 Input Command Sequences

None

3.3.62.4.2 Output Command Sequences

ASSF332A

3.3.62.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF332A	PSS015B1	integration time 1ms	XF332A01	33096
	PSS01629	repetition time STC	XF332A02	240
	PSS01602	NbrAcq	XF332A03	10
	PSS00601	Compression ratio w1	XF332A04	1
	PSS08008	Priority	XF332A05	0

3.3.62.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF332A	ZSS172B2	PSS015B1	integration time 1ms	XF332A01
			PSS01629	repetition time STC	XF332A02
			PSS01602	NbrAcq	XF332A03
			PSS00301	number of windows	1
			PSS01101	start row pixel w1	0
			PSS00501	start strip pixel w1	0
			PSS01102	end row pixel w1	2047
			PSS00502	end strip pixel w1	9
			PSS01103	start row pixel w2	0
			PSS00503	start strip pixel w2	0
			PSS01104	end row pixel w2	0
			PSS00504	end strip pixel w2	1
			PSS01105	start row pixel w3	0
			PSS00505	start strip pixel w3	0
			PSS01106	end row pixel w3	0

			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS01109	start row pixel w5	0
			PSS00509	start strip pixel w5	0
			PSS01110	end row pixel w5	0
			PSS00510	end strip pixel w5	1
			PSS01111	start row pixel w6	0
			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dimension	3
			PSS00601	Compression ratio w1	XF332A04
			PSS00602	Compression ratio w2	1
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00605	Compression ratio w5	0
			PSS00606	Compression ratio w6	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF332A05

3.3.62.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created
14/11/2017	1	2	Integration Time modified to 33096
28/05/2018	3	3	CR-121 SIMBIO-SYS Team FOP update request V04
08/04/2019	3.2	4	CR-478 As per Post-NECP FOP update v8 re. Email Michele Zusi 28 March 2019. The repetition time default value of the formal parameter XF332A02, the compression box size (i.e., PSS00205) and the window #1 default value of the formal parameters XF321A02 and XF321A05 were updated (for details compare with [RD.2]) to avoid conflicts reported in [RD.10].

3.3.63 SIMBIO-SYS STC Out Filters STAR BAND RIGHT (SS-FCP-333)

3.3.63.1 Objectives

The aim of this FOP is to command STC acquisition of right vertical band of the Detector (for high IT).

3.3.63.2 Summary of Constraints

STC PE ON.

3.3.63.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC in Science or Standby Mode	STC in Science Mode

3.3.63.4 Reference File(s)

3.3.63.4.1 Input Command Sequences

None

3.3.63.4.2 Output Command Sequences

ASSF333A

3.3.63.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF333A	PSS015B1	integration time 1ms	XF333A01	33096
	PSS01629	repetition time STC	XF333A02	126
	PSS01602	NbrAcq	XF333A03	10
	PSS00501	start strip pixel w1	XF333A04	23
	PSS00601	Compression ratio w1	XF333A05	1
	PSS08008	Priority	XF333A06	0

3.3.63.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF333A	ZSS172B2	PSS015B1	integration time 1ms	XF333A01
			PSS01629	repetition time STC	XF333A02
			PSS01602	NbrAcq	XF333A03
			PSS00301	number of windows	1
			PSS01101	start row pixel w1	0
			PSS00501	start strip pixel w1	XF333A04
			PSS01102	end row pixel w1	2047
			PSS00502	end strip pixel w1	31
			PSS01103	start row pixel w2	0
			PSS00503	start strip pixel w2	0
			PSS01104	end row pixel w2	0
			PSS00504	end strip pixel w2	1
			PSS01105	start row pixel w3	0

			PSS00505	start strip pixel w3	0
			PSS01106	end row pixel w3	0
			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS01109	start row pixel w5	0
			PSS00509	start strip pixel w5	0
			PSS01110	end row pixel w5	0
			PSS00510	end strip pixel w5	1
			PSS01111	start row pixel w6	0
			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dimension	3
			PSS00601	Compression ratio w1	XF333A05
			PSS00602	Compression ratio w2	1
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00605	Compression ratio w5	0
			PSS00606	Compression ratio w6	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF333A06

3.3.63.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created
14/11/2017	1	2	Integration Time modified to 33096
28/05/2018	3	3	CR-121 SIMBIO-SYS Team FOP update request V04
08/04/2019	3.2	4	CR-478 As per Post-NECP FOP update v8 re. Email Michele Zusi 28 March 2019. The compression box size (i.e., PSS00205) was updated (for details compare with [RD.2]) to avoid conflicts reported in [RD.10].

3.3.64 SIMBIO-SYS STC Out Filters STAR HALF HIGH (SS-FCP-334)

3.3.64.1 Objectives

The aim of this FOP is to command STC acquisition of half high region of the Detector (Along track 0-1023).(for high IT).

3.3.64.2 Summary of Constraints

STC PE ON.

3.3.64.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC in Science or Standby Mode	STC in Science Mode

3.3.64.4 Reference File(s)

3.3.64.4.1 Input Command Sequences

None

3.3.64.4.2 Output Command Sequences

ASSF334A

3.3.64.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF334A	PSS015B1	integration time 1ms	XF334A01	33096
	PSS01629	repetition time STC	XF334A02	223
	PSS01602	NbrAcq	XF334A03	10
	PSS00601	Compression ratio w1	XF334A04	1
	PSS08008	Priority	XF334A05	0

3.3.64.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF334A	ZSS172B2	PSS015B1	integration time 1ms	XF334A01
			PSS01629	repetition time STC	XF334A02
			PSS01602	NbrAcq	XF334A03
			PSS00301	number of windows	1
			PSS01101	start row pixel w1	0
			PSS00501	start strip pixel w1	0
			PSS01102	end row pixel w1	1023
			PSS00502	end strip pixel w1	31
			PSS01103	start row pixel w2	0
			PSS00503	start strip pixel w2	0
			PSS01104	end row pixel w2	0
			PSS00504	end strip pixel w2	1
			PSS01105	start row pixel w3	0
			PSS00505	start strip pixel w3	0

			PSS01106	end row pixel w3	0
			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS01109	start row pixel w5	0
			PSS00509	start strip pixel w5	0
			PSS01110	end row pixel w5	0
			PSS00510	end strip pixel w5	1
			PSS01111	start row pixel w6	0
			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dimension	3
			PSS00601	Compression ratio w1	XF334A04
			PSS00602	Compression ratio w2	1
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00605	Compression ratio w5	0
			PSS00606	Compression ratio w6	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF334A05

3.3.64.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created
14/11/2017	1	2	Integration Time modified to 33096
28/05/2018	3	3	CR-121 SIMBIO-SYS Team FOP update request V04
08/04/2019	3.2	4	CR-478 As per Post-NECP FOP update v8 re. Email Michele Zusi 28 March 2019 The compression box size (i.e., PSS00205) was updated (for details compare with [RD.2]) to avoid conflicts reported in [RD.10].

3.3.65 SIMBIO-SYS STC Out Filters STAR HALF HIGH (SS-FCP-335)

3.3.65.1 Objectives

The aim of this FOP is to command STC acquisition of the HALF low region of the Detector (1024-2047 along track) for high IT.

3.3.65.2 Summary of Constraints

STC PE ON.

3.3.65.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC in Science or Standby Mode	STC in Science Mode

3.3.65.4 Reference File(s)

3.3.65.4.1 Input Command Sequences

None

3.3.65.4.2 Output Command Sequences

ASSF335A

3.3.65.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF335A	PSS015B1	integration time 1ms	XF335A01	33096
	PSS01629	repetition time STC	XF335A02	223
	PSS01602	NbrAcq	XF335A03	10
	PSS00601	Compression ratio w1	XF335A04	1
	PSS08008	Priority	XF335A05	0

3.3.65.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF335A	ZSS172B2	PSS015B1	integration time 1ms	XF335A01
			PSS01629	repetition time STC	XF335A02
			PSS01602	NbrAcq	XF335A03
			PSS00301	number of windows	1
			PSS01101	start row pixel w1	1024
			PSS00501	start strip pixel w1	0
			PSS01102	end row pixel w1	2047
			PSS00502	end strip pixel w1	31
			PSS01103	start row pixel w2	0
			PSS00503	start strip pixel w2	0
			PSS01104	end row pixel w2	0
			PSS00504	end strip pixel w2	1
			PSS01105	start row pixel w3	0
			PSS00505	start strip pixel w3	0

			PSS01106	end row pixel w3	0
			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS01109	start row pixel w5	0
			PSS00509	start strip pixel w5	0
			PSS01110	end row pixel w5	0
			PSS00510	end strip pixel w5	1
			PSS01111	start row pixel w6	0
			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dimension	3
			PSS00601	Compression ratio w1	XF335A04
			PSS00602	Compression ratio w2	1
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00605	Compression ratio w5	0
			PSS00606	Compression ratio w6	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF335A05

3.3.65.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created
17/10/2017		1.01	Description of objectives changed
14/11/2017	1	2	Integration Time modified to 33096
28/05/2018	3	3	CR-121 SIMBIO-SYS Team FOP update request V04
08/04/2019	3.2	4	CR-478 As per Post-NECP FOP update v8 re. Email Michele Zusi 28 March 2019. The compression box size (i.e., PSS00205) was updated (for details compare with [RD.2]) to avoid conflicts reported in [RD.10].

3.3.66SIMBIO-SYS STC COMBINATIONS STAR FULL FOV (SS-FCP-350)

3.3.66.1 Objectives

The aim of this FOP is to command STC acquisitions of all the 6 filters of STC F750+F420+PANH+PANL+F550+F920 (for high IT).

3.3.66.2 Summary of Constraints

STC PE ON.

3.3.66.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC in Science or Standby Mode	STC in Science Mode

3.3.66.4 Reference File(s)

3.3.66.4.1 Input Command Sequences

None

3.3.66.4.2 Output Command Sequences

ASSF350A

3.3.66.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF350A	PSS015B1	integration time 1ms	XF350A01	33096
	PSS01629	repetition time STC	XF350A02	101
	PSS01602	NbrAcq	XF350A03	10
	PSS00205	Compression box dimension	XF350A04	1
	PSS00601	Compression ratio w1	XF350A05	1
	PSS00602	Compression ratio w2	XF350A06	1
	PSS00603	Compression ratio w3	XF350A07	1
	PSS00604	Compression ratio w4	XF350A08	1
	PSS00605	Compression ratio w5	XF350A09	1
	PSS00606	Compression ratio w6	XF350A10	1
	PSS08008	Priority	XF350A11	0

3.3.66.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF350A	ZSS172B2	PSS015B1	integration time 1ms	XF350A01
			PSS01629	repetition time STC	XF350A02
			PSS01602	NbrAcq	XF350A03
			PSS00301	number of windows	6
			PSS01101	start row pixel w1	32
			PSS00501	start strip pixel w1	9
			PSS01102	end row pixel w1	95
			PSS00502	end strip pixel w1	22
			PSS01103	start row pixel w2	240

			PSS00503	start strip pixel w2	9
			PSS01104	end row pixel w2	303
			PSS00504	end strip pixel w2	22
			PSS01105	start row pixel w3	437
			PSS00505	start strip pixel w3	9
			PSS01106	end row pixel w3	820
			PSS00506	end strip pixel w3	22
			PSS01107	start row pixel w4	1227
			PSS00507	start strip pixel w4	9
			PSS01108	end row pixel w4	1610
			PSS00508	end strip pixel w4	22
			PSS01109	start row pixel w5	1745
			PSS00509	start strip pixel w5	9
			PSS01110	end row pixel w5	1808
			PSS00510	end strip pixel w5	22
			PSS01111	start row pixel w6	1953
			PSS00511	start strip pixel w6	9
			PSS01112	end row pixel w6	2016
			PSS00512	end strip pixel w6	22
			PSS00205	Compression box dimension	XF350A04
			PSS00601	Compression ratio w1	XF350A05
			PSS00602	Compression ratio w2	XF350A06
			PSS00603	Compression ratio w3	XF350A07
			PSS00604	Compression ratio w4	XF350A08
			PSS00605	Compression ratio w5	XF350A09
			PSS00606	Compression ratio w6	XF350A10
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	XF350A11

3.3.66.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created
14/11/2017	1	2	Integration Time modified to 33096
28/05/2018	3	3	CR-121 SIMBIO-SYS Team FOP update request V04

3.3.67 SIMBIO-SYS STC Chan Power On (SS-FCP-360)

3.3.67.1 Objectives

The aim of this FOP is to power-on the STC Channel.

3.3.67.2 Summary of Constraints

SIMBIO-SYS in ASW mode.

3.3.67.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC PE OFF	STC PE ON

3.3.67.4 Reference File(s)

3.3.67.4.1 Input Command Sequences

None

3.3.67.4.2 Output Command Sequences

ASSF360A

3.3.67.5 Input parameters

None

3.3.67.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF360A	ZSS17201	PSS08006	On/Off	1

3.3.67.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created

3.3.68 SIMBIO-SYS STC Chan Power Off (SS-FCP-361)

3.3.68.1 Objectives

The aim of this FOP is to power-off the STC Channel.

3.3.68.2 Summary of Constraints

SIMBIO-SYS in ASW mode.
STC Detector must be off.

3.3.68.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC PE ON	STC PE OFF

3.3.68.4 Reference File(s)

3.3.68.4.1 Input Command Sequences

None

3.3.68.4.2 Output Command Sequences

ASSF361A

3.3.68.5 Input parameters

None

3.3.68.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF361A	ZSS17201	PSS08006	On/Off	0

3.3.68.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created

3.3.69 SIMBIO-SYS STC Detector Power ON (SS-FCP-362)

3.3.69.1 Objectives

The aim of this FOP is to power-on the STC Detector.

3.3.69.2 Summary of Constraints

SIMBIO in ASW mode.

3.3.69.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC detector OFF	STC detector ON

3.3.69.4 Reference File(s)

3.3.69.4.1 Input Command Sequences

None

3.3.69.4.2 Output Command Sequences

ASSF362A

3.3.69.5 Input parameters

None

3.3.69.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF362A	ZSS17210	PSS08006	On/Off	1

3.3.69.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created
03/11/2017	1	2	Added initial and final states

3.3.70 SIMBIO-SYS STC Detector Power OFF (SS-FCP-363)

3.3.70.1 Objectives

The aim of this FOP is to power-off the STC Detector.

3.3.70.2 Summary of Constraints

STC PE and Detector ON.

3.3.70.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC detector ON	STC detector OFF

3.3.70.4 Reference File(s)

3.3.70.4.1 Input Command Sequences

None

3.3.70.4.2 Output Command Sequences

ASSF363A

3.3.70.5 Input parameters

None

3.3.70.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF363A	ZSS17210	PSS08006	On/Off	0

3.3.70.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created

3.3.71 SIMBIO-SYS STC TEC Power ON (SS-FCP-364)

3.3.71.1 Objectives

The aim of this FOP is to power-on the STC TEC.

3.3.71.2 Summary of Constraints

STC PE and Detector ON.

3.3.71.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC TEC OFF	STC TEC ON

3.3.71.4 Reference File(s)

3.3.71.4.1 Input Command Sequences

None

3.3.71.4.2 Output Command Sequences

ASSF364A

3.3.71.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF364A	PSS01603	STC HRIC Temp set point	XF364A01	2811

3.3.71.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF364A	ZSS17203	PSS08006	On/Off	1
			PSS01603	STC HRIC Temp set point	XF364A01

3.3.71.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created
03/11/2017	1	2	Modified T Set Point to 2799 Dec
11/04/2019	3.2	3	CR-478 As per Post-NECP FOP update v8 re. Email Michele Zusi 28 March 2019. The XF364A01 default parameter value was updated to 2811 from 2799 (as reported in [RD.2]; for details see [RD.4])

3.3.72 SIMBIO-SYS STC TEC Power OFF (SS-FCP-365)

3.3.72.1 Objectives

The aim of this FOP is to power-off the STC TEC.

3.3.72.2 Summary of Constraints

STC PE, Detector, TEC ON.

3.3.72.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC TEC ON	STC TEC OFF

3.3.72.4 Reference File(s)

3.3.72.4.1 Input Command Sequences

None

3.3.72.4.2 Output Command Sequences

ASSF365A

3.3.72.5 Input parameters

None

3.3.72.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF365A	ZSS17203	PSS08006	On/Off	0
			PSS01603	STC HRIC Temp set point	0

3.3.72.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created
03/11/2017	1	2	Removed FP, T Set Point fixed to 0

3.3.73 SIMBIO-SYS STC Read Address (SS-FCP-366)

3.3.73.1 Objectives

The aim of this FOP is to read STC Address.

3.3.73.2 Summary of Constraints

STC PE ON.

3.3.73.3 Spacecraft Configuration

Start of Procedure	End of Procedure
Any	Unchanged

3.3.73.4 Reference File(s)

3.3.73.4.1 Input Command Sequences

None

3.3.73.4.2 Output Command Sequences

ASSF366A

3.3.73.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF366A	PSS01607	PE STC Addr	XF366A01	0

3.3.73.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF366A	ZSS17206	PSS01607	PE STC Addr	XF366A01

3.3.73.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created

3.3.74 SIMBIO-SYS STC Write Address (SS-FCP-367)

3.3.74.1 Objectives

The aim of this FOP is to write STC Address.

3.3.74.2 Summary of Constraints

STC PE ON.

3.3.74.3 Spacecraft Configuration

Start of Procedure	End of Procedure
Any	Some STC address modified

3.3.74.4 Reference File(s)

3.3.74.4.1 Input Command Sequences

None

3.3.74.4.2 Output Command Sequences

ASSF367A

3.3.74.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF367A	PSS01607	PE STC Addr	XF367A01	0
	PSS01606	Value to be write	XF367A02	0

3.3.74.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF367A	ZSS17207	PSS01607	PE STC Addr	XF367A01
			PSS01606	Value to be write	XF367A02
00:00:05		ZSS17204			

3.3.74.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created

3.3.75 SIMBIO-SYS STC STOP SCIENCE (SS-FCP-368)

3.3.75.1 Objectives

The aim of this FOP is to command stopping acquisitions. If continuous mode is used, it stops the acquisitions and the RT granularity which should delay the execution of the subsequent TCs.

3.3.75.2 Summary of Constraints

STC PE ON.

3.3.75.3 Spacecraft Configuration

Start of Procedure	End of Procedure
STC Science mode	STC Standby mode

3.3.75.4 Reference File(s)

3.3.75.4.1 Input Command Sequences

None

3.3.75.4.2 Output Command Sequences

ASSF368A

3.3.75.5 Input parameters

None

3.3.75.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF368A	ZSS17209			

3.3.75.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created

3.3.76 SIMBIO-SYS VIHI Thermal Control On (SS-FCP-500)

3.3.76.1 Objectives

The aim of this FOP is to power-on the VIHI TEC.

3.3.76.2 Summary of Constraints

VIHI PE and Detector ON.

3.3.76.3 Spacecraft Configuration

Start of Procedure	End of Procedure
VIHI TEC OFF	VIHI TEC ON

3.3.76.4 Reference File(s)

3.3.76.4.1 Input Command Sequences

None

3.3.76.4.2 Output Command Sequences

ASSF500A

3.3.76.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF500A	PSS01636	VIHI Temp set point	XF500A01	3372

3.3.76.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF500A	ZSS17303	PSS08006	On/Off	1
			PSS01636	VIHI Temp set point	XF500A01

3.3.76.7 Configuration Control Information

Date	FOP Issue	Version	Description
10/17/2017		1	Created

3.3.77 SIMBIO-SYS VIHI Thermal Control Off (SS-FCP-501)

3.3.77.1 Objectives

The aim of this FOP is to power-off the VIHI TEC.

3.3.77.2 Summary of Constraints

VIHI PE and Detector, TEC ON.

3.3.77.3 Spacecraft Configuration

Start of Procedure	End of Procedure
VIHI TEC ON	VIHI TEC OFF

3.3.77.4 Reference File(s)

3.3.77.4.1 Input Command Sequences

None

3.3.77.4.2 Output Command Sequences

ASSF501A

3.3.77.5 Input parameters

None

3.3.77.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF501A	ZSS17303	PSS08006	On/Off	0
			PSS01636	VIHI Temp set point	0

3.3.77.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created

3.3.78 SIMBIO-SYS VIHI Detector On (SS-FCP-502)

3.3.78.1 Objectives

The aim of this FOP is to power-on the VIHI Detector.

3.3.78.2 Summary of Constraints

VIHI PE ON.

3.3.78.3 Spacecraft Configuration

Start of Procedure	End of Procedure
VIHI Detector OFF	VIHI Detector ON

3.3.78.4 Reference File(s)

3.3.78.4.1 Input Command Sequences

None

3.3.78.4.2 Output Command Sequences

ASSF502A

3.3.78.5 Input parameters

None

3.3.78.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF502A	ZSS17310	PSS08006	On/Off	1

3.3.78.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created

3.3.79 SIMBIO-SYS VIHI Detector Off (SS-FCP-503)

3.3.79.1 Objectives

The aim of this FOP is to power-off the VIHI Detector.

3.3.79.2 Summary of Constraints

VIHI PE and Detector ON.

3.3.79.3 Spacecraft Configuration

Start of Procedure	End of Procedure
VIHI Detector ON	VIHI Detector OFF

3.3.79.4 Reference File(s)

3.3.79.4.1 Input Command Sequences

None

3.3.79.4.2 Output Command Sequences

ASSF503A

3.3.79.5 Input parameters

None

3.3.79.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF503A	ZSS17310	PSS08006	On/Off	0

3.3.79.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created

3.3.80 SIMBIO-SYS VIHI Detector On and TEC On (SS-FCP-504)

3.3.80.1 Objectives

The aim of this FOP is to power-on the VIHI Detector and TEC.

3.3.80.2 Summary of Constraints

VIHI PE ON.

3.3.80.3 Spacecraft Configuration

Start of Procedure	End of Procedure
VIHI Detector and TEC OFF	VIHI Detector and TEC ON

3.3.80.4 Reference File(s)

3.3.80.4.1 Input Command Sequences

None

3.3.80.4.2 Output Command Sequences

ASSF504A

3.3.80.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF504A	PSS01636	VIHI Temp set point	XF504A01	3372

3.3.80.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF504A	ZSS17310	PSS08006	On/Off	1
00:00:05		ZSS17303	PSS08006	On/Off	1
			PSS01636	VIHI Temp set point	XF504A01

3.3.80.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created

3.3.81 SIMBIO-SYS VIHI Detector Off and TEC Off (SS-FCP-505)

3.3.81.1 Objectives

The aim of this FOP is to power-off the VIHI Detector and TEC.

3.3.81.2 Summary of Constraints

VIHI PE, Detector and TEC ON.

3.3.81.3 Spacecraft Configuration

Start of Procedure	End of Procedure
VIHI Detector and TEC ON	VIHI Detector and TEC OFF

3.3.81.4 Reference File(s)

3.3.81.4.1 Input Command Sequences

None

3.3.81.4.2 Output Command Sequences

ASSF505A

3.3.81.5 Input parameters

None

3.3.81.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF505A	ZSS17303	PSS08006	On/Off	0
			PSS01636	VIHI Temp set point	0
00:00:05		ZSS17310	PSS08006	On/Off	0

3.3.81.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created

3.3.82SIMBIO-SYS VIHI Read Address (SS-FCP-506)

3.3.82.1 Objectives

The aim of this FOP is to read VIHI Address.

3.3.82.2 Summary of Constraints

VIHI PE ON.

3.3.82.3 Spacecraft Configuration

Start of Procedure	End of Procedure
Any	Unchanged

3.3.82.4 Reference File(s)

3.3.82.4.1 Input Command Sequences

None

3.3.82.4.2 Output Command Sequences

ASSF506A

3.3.82.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF506A	PSS01637	PE VIHI Addr	XF506A01	0

3.3.82.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF506A	ZSS17306	PSS01637	PE VIHI Addr	XF506A01

3.3.82.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created

3.3.83 SIMBIO-SYS VIHI Write Address (SS-FCP-507)

3.3.83.1 Objectives

The aim of this FOP is to write VIHI Address.

Notes: In case of upload of VIHI Bias Detector parameters, they will remain in the PE RAM until the PE is switched off differently by TEC cameras parameters which are written in the CPCU RAM, so they remain available up to the next SIMBIO-SYS switch off (see [RD.2] Section 8.3.1.10 and 8.3.1.16).

3.3.83.2 Summary of Constraints

VIHI PE ON.

3.3.83.3 Spacecraft Configuration

Start of Procedure	End of Procedure
Any	Some VIHI address value modified

3.3.83.4 Reference File(s)

3.3.83.4.1 Input Command Sequences

None

3.3.83.4.2 Output Command Sequences

ASSF507A

3.3.83.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF507A	PSS01637	PE VIHI Addr	XF507A01	0
	PSS01606	Value to be write	XF507A02	0

3.3.83.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF507A	ZSS17307	PSS01637	PE VIHI Addr	XF507A01
			PSS01606	Value to be write	XF507A02
00:00:05		ZSS17304			

3.3.83.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017		1	Created

3.3.84 SIMBIO-SYS VIHI Manual dark acquisition (SS-FCP-508)

3.3.84.1 Objectives

The aim of this FOP is to perform dark acquisitions in case the dark macro is not available.

3.3.84.2 Summary of Constraints

ME and VIHI Channel ON.

3.3.84.3 Spacecraft Configuration

Start of Procedure	End of Procedure
VIHI Stand-by	Unchanged

3.3.84.4 Reference File(s)

3.3.84.4.1 Input Command Sequences

None

3.3.84.4.2 Output Command Sequences

ASSF508A

3.3.84.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF508A	PSS01630	VIHI integration time	XF508A01	3
	PSS01631	VIHI Repetition time	XF508A02	204
	PSS00105	Dark_Acquisition	XF508A03	0

3.3.84.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par reference
00:00:00	ASSF508A	ZSS17311	PSS08006	On/Off	1
			PSS01638	Shutter set point	1000
00:00:02		ZSS17302	PSS01630	VIHI integration time	XF508A01
			PSS01631	VIHI Repetition time	XF508A02
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	XF508A03
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0

			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:00:05		ZSS17309			
00:00:15		ZSS17311	PSS08006	On/Off	0
			PSS01638	Shutter set point	71

3.3.84.7 Configuration Control Information

Date	FOP Issue	Version	Description
28/05/2018	3	1	Created
18/09/2018	3.1	2	CR-245 Update request from SIMBIO-SYS V06 aug 28 2018

3.3.85 SIMBIO-SYS VIHI Science Mode Variable IT (SS-FCP-512)

3.3.85.1 Objectives

The aim of this FOP is to command VIHI Science acquisition with variable integration time.

3.3.85.2 Summary of Constraints

VIHI PE ON.

3.3.85.3 Spacecraft Configuration

Start of Procedure	End of Procedure
VIHI in Standby or Science mode	VIHI in Science mode

3.3.85.4 Reference File(s)

3.3.85.4.1 Input Command Sequences

None

3.3.85.4.2 Output Command Sequences

ASSF512A

3.3.85.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF512A	PSS01630	VIHI integration time	XF512A01	3
	PSS01631	VIHI Repetition time	XF512A02	8
	PSS01632	VIHI starting row pixel	XF512A03	8
	PSS01633	VIHI Starting column pixel	XF512A04	4
	PSS01634	VIHI End row pixel	XF512A05	263
	PSS01635	VIHI End column pixel	XF512A06	259
	PSS00104	Dark subtraction status	XF512A07	1
	PSS00105	Dark_Acquisition	XF512A08	0
	PSS00207	Spatial binning VIHI	XF512A09	0
	PSS00208	Binning sequence of frame	XF512A10	0
	PSS00209	Spectral editing	XF512A11	0
	PSS00205	Compression box dimension	XF512A12	3
	PSS00601	Compression ratio w1	XF512A13	1
	PSS00106	Dark Macro	XF512A14	1
	PSS00101	LS bit1 PE mode	XF512A15	0
	PSS08008	Priority	XF512A16	0

3.3.85.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par reference
00:00:00	ASSF512A	ZSS17302	PSS01630	VIHI integration time	XF512A01
			PSS01631	VIHI Repetition time	XF512A02
			PSS01632	VIHI starting row pixel	XF512A03

			PSS01633	VIHI Starting column pixel	XF512A04
			PSS01634	VIHI End row pixel	XF512A05
			PSS01635	VIHI End column pixel	XF512A06
			PSS00104	Dark subtraction status	XF512A07
			PSS00105	Dark_Acquisition	XF512A08
			PSS00207	Spatial binning VIHI	XF512A09
			PSS00208	Binning sequence of frame	XF512A10
			PSS00209	Spectral editing	XF512A11
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	XF512A12
			PSS00601	Compression ratio w1	XF512A13
			PSS00106	Dark Macro	XF512A14
			PSS00101	LS bit1 PE mode	XF512A15
			PSS08008	Priority	XF512A16

3.3.85.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017	1	1	Created
25/05/2018	3	2	CR-121 SIMBIO-SYS Team FOP update request V03

3.3.86 SIMBIO-SYS VIHI Science Fixed IT 137us (SS-FCP-513)

3.3.86.1 Objectives

The aim of this FOP is to command VIHI Science acquisition with integration time fixed at 137 us.

3.3.86.2 Summary of Constraints

VIHI PE ON.

3.3.86.3 Spacecraft Configuration

Start of Procedure	End of Procedure
VIHI in Standby or Science mode	VIHI in Science mode

3.3.86.4 Reference File(s)

3.3.86.4.1 Input Command Sequences

None

3.3.86.4.2 Output Command Sequences

ASSF513A

3.3.86.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASSF513A	PSS01631	VIHI Repetition time	XF513A01	8
	PSS01632	VIHI starting row pixel	XF513A02	8
	PSS01633	VIHI Starting column pixel	XF513A03	4
	PSS01634	VIHI End row pixel	XF513A04	263
	PSS01635	VIHI End column pixel	XF513A05	259
	PSS00104	Dark subtraction status	XF513A06	1
	PSS00105	Dark_Acquisition	XF513A07	0
	PSS00207	Spatial binning VIHI	XF513A08	0
	PSS00208	Binning sequence of frame	XF513A09	0
	PSS00209	Spectral editing	XF513A10	0
	PSS00205	Compression box dimension	XF513A11	3
	PSS00601	Compression ratio w1	XF513A12	1
	PSS00106	Dark Macro	XF513A13	1
	PSS00101	LS bit1 PE mode	XF513A14	0
	PSS08008	Priority	XF513A15	0

3.3.86.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par reference
00:00:00	ASSF513A	ZSS173B2	PSS01631	VIHI Repetition time	XF513A01
			PSS01632	VIHI starting row pixel	XF513A02
			PSS01633	VIHI Starting column pixel	XF513A03
			PSS01634	VIHI End row pixel	XF513A04
			PSS01635	VIHI End column pixel	XF513A05

			PSS00104	Dark subtraction status	XF513A06
			PSS00105	Dark_Acquisition	XF513A07
			PSS00207	Spatial binning VIHI	XF513A08
			PSS00208	Binning sequence of frame	XF513A09
			PSS00209	Spectral editing	XF513A10
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	XF513A11
			PSS00601	Compression ratio w1	XF513A12
			PSS00106	Dark Macro	XF513A13
			PSS00101	LS bit1 PE mode	XF513A14
			PSS08008	Priority	XF513A15

3.3.86.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017	1	1	Created
25/05/2018		2	CR-121 SIMBIO-SYS Team FOP update request V03
28/05/2018	3	3	CR-121 SIMBIO-SYS Team FOP update request V04

3.3.87 SIMBIO-SYS VIHI Stop Science (SS-FCP-514)

3.3.87.1 Objectives

The aim of this FOP is to stop VIHI Science acquisitions.

3.3.87.2 Summary of Constraints

VIHI in Science Mode.

3.3.87.3 Spacecraft Configuration

Start of Procedure	End of Procedure
VIHI in Science Mode	VIHI in Standby mode

3.3.87.4 Reference File(s)

3.3.87.4.1 Input Command Sequences

None

3.3.87.4.2 Output Command Sequences

ASSF514A

3.3.87.5 Input parameters

None

3.3.87.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF514A	ZSS17309			

3.3.87.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017	1	1	Created

3.3.88 SIMBIO-SYS Power-on VIHI Channel (SS-FCP-515)

3.3.88.1 Objectives

The aim of this FOP is to power-on VIHI Channel.

3.3.88.2 Summary of Constraints

SIMBIO in ASW mode.

3.3.88.3 Spacecraft Configuration

Start of Procedure	End of Procedure
VIHI in Science Mode	VIHI in Standby mode

3.3.88.4 Reference File(s)

3.3.88.4.1 Input Command Sequences

None

3.3.88.4.2 Output Command Sequences

ASSF515A

3.3.88.5 Input parameters

None

3.3.88.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF515A	ZSS17301	PSS08006	On/Off	1

3.3.88.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017	1	1	Created

3.3.89SIMBIO-SYS Power-off VIHI Channel (SS-FCP-516)

3.3.89.1 Objectives

The aim of this FOP is to power-off VIHI Channel.

3.3.89.2 Summary of Constraints

VIHI PE ON.
VIHI Detector must be off.

3.3.89.3 Spacecraft Configuration

Start of Procedure	End of Procedure
VIHI PE ON	VIHI PE OFF

3.3.89.4 Reference File(s)

3.3.89.4.1 Input Command Sequences

None

3.3.89.4.2 Output Command Sequences

ASSF516A

3.3.89.5 Input parameters

None

3.3.89.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASSF516A	ZSS17301	PSS08006	On/Off	0

3.3.89.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017	1	1	Created

3.4 TST

3.4.1 Summary

TeST procedures (TST)				
ID	**Name and description**	**Procedure status**		
		Start	**End**	**Duration [s]**
SIMBIO-SYS ME first power on (SS-TST-001)	**SIMBIO-SYS ME first power on** (SS-TST-001) First Power On of the Redundant and Main Electronic after launch.	SIMBIO-SYS OFF	SIMBIO-SYS ASW started on Main ME	TBD
SIMBIO-SYS HRIC functional tests (SS-TST-010)	**SIMBIO-SYS HRIC functional tests** (SS-TST-010) Test the Chan/Detector/TEC functionality with also an acquisition of a limited set of images	ME Main is ON, HRIC is ON	Unchanged	TBD
SIMBIO-SYS HRIC functional test on ME Redundant (SS-TST-011)	**SIMBIO-SYS HRIC functional test on ME Redundant** (SS-TST-011) Test the Chan/Detector/TEC functionality with also an acquisition of a limited set of images on the REDUNDANT ME channel	ME Redundant is ON, HRIC is OFF	Unchanged	TBD
SIMBIO-SYS STC functional tests (SS-TST-020)	**SIMBIO-SYS STC functional tests** (SS-TST-020) Test the Detector/TEC cycles and the acquisition of a limited set of images	ME Main is ON, STC is ON	Unchanged	TBD
SIMBIO-SYS STC functional test on ME Redundant (SS-TST-021)	**SIMBIO-SYS STC functional test on ME Redundant** (SS-TST-021) Test the Detector/TEC cycles and the acquisition of a limited set of images (on redundant ME).	ME Redundant is ON, STC channel OFF	Unchanged	TBD
SIMBIO-SYS VIHI calibration test (SS-TST-031)	**SIMBIO-SYS VIHI calibration test** (SS-TST-031) VIHI Full calibration procedure	VIHI STAND-BY, LED and Lamp OFF	Unchanged	TBD
SIMBIO-SYS VIHI dark and binning test (SS-TST-032)	**SIMBIO-SYS VIHI dark and binning test** (SS-TST-032) Test to check Dark, Currents and Binning, carried out after First Power On and Verification that all VIHI subsystems work properly	VIHI in STAND-BY	Unchanged	TBD
		ME Redundant is ON, all channels OFF	Unchanged	TBD

SIMBIO-SYS VIHI functional test on ME Redundant (SS-TST-033)	**SIMBIO-SYS VIHI functional test on ME** Redundant (SS-TST-033) Check VIHI Channel activation with ME in redundant.			
SIMBIO-SYS VIHI functional test on ME Main (SS-TST-037)	**SIMBIO-SYS VIHI functional test on ME** Main (SS-TST-037) Check VIHI Channel activation with ME in main	ME Main is ON, all channels ON	Unchanged	TBD

3.4.2 SIMBIO-SYS ME first power on (SS-TST-001)

3.4.2.1 Objectives

The aim of this FOP is to command the first Power On of the Redundant and Main channel of ME after launch.

3.4.2.2 Summary of Constraints

Operations to be carried out in ground contact.

3.4.2.3 Spacecraft Configuration

Start of Procedure	End of Procedure
SIMBIO-SYS OFF	SIMBIO-SYS Application software started on Main ME

3.4.2.4 Reference File(s)

3.4.2.4.1 Input Command Sequences

None

3.4.2.4.2 Output Command Sequences

ASST001A

3.4.2.5 Input parameters

None

3.4.2.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASST001A	ZSSK4000	PKK00021	Nominal Redundant	Redundant
			PKK00102	ASW Start	0
			PKK00103	EEPROM_START_ADDRESS	10040000
			PKK00104	IMG_LENGTH	120872
			PKK00105	RAM_START_ ADDRESS	40100000
			PKK00106	CRC_VALUE	55350
Auto		ZCD00C01	PCG0C011	Number of Monitoring	2
			PCG0C012	User Monitoring ID	82
			PCG0C012	User Monitoring ID	83
Auto		ZSS00605	PSS06060	Memory ID	ONCHIP_RAM
			PSS06065	Start Address	A0008318
			PSS06067	Length of Dump Block	3
Auto		ZSS00605	PSS06060	Memory ID	RAM
			PSS06065	Start Address	40114140
			PSS06067	Length of Dump Block	3
Auto		ZSS00605	PSS06060	Memory ID	RAM
			PSS06065	Start Address	40000F34
			PSS06067	Length of Dump Block	3
Auto		ZCD00C02	PCG0C011	Number of Monitoring	2
			PCG0C012	User Monitoring ID	82
			PCG0C012	User Monitoring ID	83

Auto		ZSSK4001			
Auto		ZSSK4000	PKK00021	Nominal Redundant	Nominal
			PKK00102	ASW Start	0
			PKK00103	EEPROM_START_ADDRESS	10040000
			PKK00104	IMG_LENGTH	120872
			PKK00105	RAM_START_ ADDRESS	40100000
			PKK00106	CRC_VALUE	55350
Auto		ZCD00C01	PCG0C011	Number of Monitoring	2
			PCG0C012	User Monitoring ID	82
			PCG0C012	User Monitoring ID	83
Auto		ZSS00605	PSS06060	Memory ID	ONCHIP_RAM
			PSS06065	Start Address	A0008318
			PSS06067	Length of Dump Block	3
Auto		ZSS00605	PSS06060	Memory ID	RAM
			PSS06065	Start Address	40114140
			PSS06067	Length of Dump Block	3
Auto		ZSS00605	PSS06060	Memory ID	RAM
			PSS06065	Start Address	40000F34
			PSS06067	Length of Dump Block	3

3.4.2.7 Configuration Control Information

Date	FOP Issue	Version	Description
17/10/2017	1	1	Created
08/06/2018		2	CR-133 SIMBIO-SYS upd req V05 Set 1st TC to Auto Dispatch and time 00:00:00
06/08/2018	3	3	CR205 - Management of DMS monitorings 82 and 83 on SIMBIO 3.5 V and 5 V supply that were added after OBCP developments

3.4.3 SIMBIO-SYS HRIC functional tests (SS-TST-010)

3.4.3.1 Objectives

The aim of this FOP is to test the Chan/Detector/TEC functionality with also an acquisition of a limited set of images.

3.4.3.2 Summary of Constraints

SIMBIO ME in "ASW Started" mode, HRIC channel On.

3.4.3.3 Spacecraft Configuration

Start of Procedure	End of Procedure
SIMBIO ME ON, HRIC channel On	Unchanged

3.4.3.4 Reference File(s)

3.4.3.4.1 Input Command Sequences

None

3.4.3.4.2 Output Command Sequences

ASST010A

3.4.3.5 Input parameters

None

3.4.3.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASST010A	ZSS00329	PSS08003	SID	1
			PSS08004	Collection Interval	8
00:00:05		ZSS17110	PSS08006	On/Off	1
00:00:05		ZSS17103	PSS08006	On/Off	1
			PSS01603	STC HRIC Temp set point	2799
00:15:00		ZSS17106	PSS01605	PE HRIC Addr	3
			PSS01605	PE HRIC Addr	0
00:00:15		ZSS17107	PSS01605	PE HRIC Addr	0
			PSS01606	Value to be write	1
00:00:05		ZSS17104			
00:00:05		ZSS17107	PSS01605	PE HRIC Addr	0
			PSS01606	Value to be write	0
00:00:05		ZSS17104			
00:00:05		ZSS17102	PSS01501	integration time	4
			PSS01601	repetition time HRIC	200
			PSS01602	NbrAcq	65535
			PSS00202	binning factor w2	0
			PSS00201	binning factor w1	0
			PSS00301	number of windows	1
			PSS00204	binning factor w4	0
			PSS00203	binning factor w3	0

			PSS01101	start row pixel w1	920
			PSS00501	start strip pixel w1	0
			PSS01102	end row pixel w1	1559
			PSS00502	end strip pixel w1	31
			PSS01103	start row pixel w2	0
			PSS00503	start strip pixel w2	0
			PSS01104	end row pixel w2	0
			PSS00504	end strip pixel w2	1
			PSS01105	start row pixel w3	0
			PSS00505	start strip pixel w3	0
			PSS01106	end row pixel w3	0
			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS00205	Compression box dimension	3
			PSS00601	Compression ratio w1	32
			PSS00602	Compression ratio w2	0
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:02:00		ZSS17109			
00:00:05		ZSS171B2	PSS015B1	integration time 1ms	33096
			PSS01601	repetition time HRIC	200
			PSS01602	NbrAcq	65535
			PSS00202	binning factor w2	0
			PSS00201	binning factor w1	0
			PSS00301	number of windows	1
			PSS00204	binning factor w4	0
			PSS00203	binning factor w3	0
			PSS01101	start row pixel w1	920
			PSS00501	start strip pixel w1	0
			PSS01102	end row pixel w1	1559
			PSS00502	end strip pixel w1	31
			PSS01103	start row pixel w2	0
			PSS00503	start strip pixel w2	0
			PSS01104	end row pixel w2	0
			PSS00504	end strip pixel w2	1
			PSS01105	start row pixel w3	0
			PSS00505	start strip pixel w3	0
			PSS01106	end row pixel w3	0
			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS00205	Compression box dimension	3
			PSS00601	Compression ratio w1	32
			PSS00602	Compression ratio w2	0

			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:02:00		ZSS17109			
00:00:05		ZSS17102	PSS01501	integration time	4
			PSS01601	repetition time HRIC	200
			PSS01602	NbrAcq	10
			PSS00202	binning factor w2	0
			PSS00201	binning factor w1	0
			PSS00301	number of windows	1
			PSS00204	binning factor w4	0
			PSS00203	binning factor w3	0
			PSS01101	start row pixel w1	920
			PSS00501	start strip pixel w1	0
			PSS01102	end row pixel w1	1559
			PSS00502	end strip pixel w1	31
			PSS01103	start row pixel w2	0
			PSS00503	start strip pixel w2	0
			PSS01104	end row pixel w2	0
			PSS00504	end strip pixel w2	1
			PSS01105	start row pixel w3	0
			PSS00505	start strip pixel w3	0
			PSS01106	end row pixel w3	0
			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS00205	Compression box dimension	3
			PSS00601	Compression ratio w1	32
			PSS00602	Compression ratio w2	0
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:00:20		ZSS00329	PSS08003	SID	1
			PSS08004	Collection Interval	240

3.4.3.7 Configuration Control Information

Date	FOP Issue	Version	Description
10/12/2017		1	Created
11/03/2017		2	Modified read/write memory TCs using ROIC Freq address (3) instead of 0
11/14/2017	1	3	Integration Time in TC ZSS171B2 modified to 33096s
25/05/2018		4	CR-121 SIMBIO-SYS Team FOP update request V03
06/08/2018	3	5	CR-133 SIMBIO-SYS upd req V05 Set 1st TC to Auto Dispatch and time 00:00:00
10/04/2019	3.2	6	CR-478 As per Post-NECP FOP update v8 re. Email Michele Zusi 28 March 2019. The HRIC PE, TEC and detector switch-on/off was removed

			and the HK generation frequency was fixed to 1s (for details compare with [RD.2]).

3.4.4 SIMBIO-SYS HRIC functional test on ME Redundant (SS-TST-011)

3.4.4.1 Objectives

The aim of this FOP is to test the Chan/Detector/TEC functionality with also an acquisition of a limited set of images on the REDUNDANT ME channel.

3.4.4.2 Summary of Constraints

SIMBIO-SYS ME in "ASW Started" mode.

3.4.4.3 Spacecraft Configuration

Start of Procedure	End of Procedure
SIMBIO ME Redundant ON, HRIC channel off	Unchanged

3.4.4.4 Reference File(s)

3.4.4.4.1 Input Command Sequences

None

3.4.4.4.2 Output Command Sequences

ASST011A

3.4.4.5 Input parameters

None

3.4.4.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASST011A	ZSS00329	PSS08003	SID	1
			PSS08004	Collection Interval	8
00:00:05		ZSS17101	PSS08006	On/Off	1
00:00:30		ZSS00329	PSS08003	SID	1
			PSS08004	Collection Interval	40
Auto		ZSS00329	PSS08003	SID	1
			PSS08004	Collection Interval	8
00:00:05		ZSS17110	PSS08006	On/Off	1
00:00:05		ZSS17103	PSS08006	On/Off	1
			PSS01603	STC HRIC Temp set point	2799
00:15:00		ZSS17102	PSS01501	integration time	4
			PSS01601	repetition time HRIC	200
			PSS01602	NbrAcq	65535
			PSS00202	binning factor w2	0
			PSS00201	binning factor w1	0
			PSS00301	number of windows	1
			PSS00204	binning factor w4	0
			PSS00203	binning factor w3	0
			PSS01101	start row pixel w1	920
			PSS00501	start strip pixel w1	0
			PSS01102	end row pixel w1	1559

			PSS00502	end strip pixel w1	31
			PSS01103	start row pixel w2	0
			PSS00503	start strip pixel w2	0
			PSS01104	end row pixel w2	0
			PSS00504	end strip pixel w2	1
			PSS01105	start row pixel w3	0
			PSS00505	start strip pixel w3	0
			PSS01106	end row pixel w3	0
			PSS00506	end strip pixel w3	1
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS00205	Compression box dimension	3
			PSS00601	Compression ratio w1	32
			PSS00602	Compression ratio w2	0
			PSS00603	Compression ratio w3	0
			PSS00604	Compression ratio w4	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:02:00		ZSS17109			
00:00:05		ZSS17103	PSS08006	On/Off	0
			PSS01603	STC HRIC Temp set point	0
00:00:05		ZSS17110	PSS08006	On/Off	0
00:00:05		ZSS17101	PSS08006	On/Off	0
00:00:05		ZSS00329	PSS08003	SID	1
			PSS08004	Collection Interval	40

3.4.4.7 Configuration Control Information

Date	FOP Issue	Version	Description
10/12/2017		1	Created
11/03/2017	1	2	Added final HK sampling rate to 5 s
06/08/2018	3	3	CR-133 SIMBIO-SYS upd req V05 Set 1st TC to Auto Dispatch and time 00:00:00
04/08/2019	3.2	4	CR-478 As per Post-NECP FOP update v8 re. Email Michele Zusi 28 March 2019. The STC HRIC TEC set-point default value was updated to 2799 from 2811 (as reported in [RD.2]; for details see [RD.4])

3.4.5 SIMBIO-SYS STC functional tests (SS-TST-020)

3.4.5.1 Objectives

The aim of this FOP is to test the Detector/TEC cycles and the acquisition of a limited set of images in continuous mode:

- 10 GM with RT=2 s
- 10 GM with RT=12.3 s
- 10 CM with RT=0.4 s
- 10 CM with RT=2.05 ms

The acquisitions are performed after a Collect Interval update (1 s), switch on of the Detector and the TEC.
As reported in 3.4.5.7 these science parameters has been changed respect previous FOP version before ICO1 Test (Jun 2019).

3.4.5.2 Summary of Constraints

SIMBIO ME in "ASW Started" mode, STC channel On

3.4.5.3 Spacecraft Configuration

Start of Procedure	End of Procedure
SIMBIO ME ON, STC channel On	Unchanged

3.4.5.4 Reference File(s)

3.4.5.4.1 Input Command Sequences

None

3.4.5.4.2 Output Command Sequences

ASST020A

3.4.5.5 Input parameters

None

3.4.5.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASST020A	ZSS00329	PSS08003	SID	2
			PSS08004	Collection Interval	8
00:00:05		ZSS17210	PSS08006	On/Off	1
00:00:05		ZSS17203	PSS08006	On/Off	1
			PSS01603	STC HRIC Temp set point	2811
00:00:05		ZSS17206	PSS01607	PE STC Addr	3
00:00:15		ZSS17206	PSS01607	PE STC Addr	0
00:00:05		ZSS17207	PSS01607	PE STC Addr	0
			PSS01606	Value to be write	1
00:00:05		ZSS17204			

00:00:05		ZSS17207	PSS01607	PE STC Addr	0
			PSS01606	Value to be write	0
00:00:05		ZSS17204			
00:15:00		ZSS17202	PSS01501	integration time	10
			PSS01629	repetition time STC	400
			PSS01602	NbrAcq	65535
			PSS00301	number of windows	3
			PSS01101	start row pixel w1	100
			PSS00501	start strip pixel w1	3
			PSS01102	end row pixel w1	163
			PSS00502	end strip pixel w1	4
			PSS01103	start row pixel w2	437
			PSS00503	start strip pixel w2	9
			PSS01104	end row pixel w2	820
			PSS00504	end strip pixel w2	22
			PSS01105	start row pixel w3	1227
			PSS00505	start strip pixel w3	9
			PSS01106	end row pixel w3	1610
			PSS00506	end strip pixel w3	22
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS01109	start row pixel w5	0
			PSS00509	start strip pixel w5	0
			PSS01110	end row pixel w5	0
			PSS00510	end strip pixel w5	1
			PSS01111	start row pixel w6	0
			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	32
			PSS00602	Compression ratio w2	32
			PSS00603	Compression ratio w3	32
			PSS00604	Compression ratio w4	1
			PSS00605	Compression ratio w5	1
			PSS00606	Compression ratio w6	1
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:00:20		ZSS17202	PSS01501	integration time	156
			PSS01629	repetition time STC	2460
			PSS01602	NbrAcq	65535
			PSS00301	number of windows	3
			PSS01101	start row pixel w1	100
			PSS00501	start strip pixel w1	3
			PSS01102	end row pixel w1	163
			PSS00502	end strip pixel w1	4
			PSS01103	start row pixel w2	437
			PSS00503	start strip pixel w2	9
			PSS01104	end row pixel w2	820

			PSS00504	end strip pixel w2	22
			PSS01105	start row pixel w3	1227
			PSS00505	start strip pixel w3	9
			PSS01106	end row pixel w3	1610
			PSS00506	end strip pixel w3	22
			PSS01107	start row pixel w4	0
			PSS00507	start strip pixel w4	0
			PSS01108	end row pixel w4	0
			PSS00508	end strip pixel w4	1
			PSS01109	start row pixel w5	0
			PSS00509	start strip pixel w5	0
			PSS01110	end row pixel w5	0
			PSS00510	end strip pixel w5	1
			PSS01111	start row pixel w6	0
			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	32
			PSS00602	Compression ratio w2	32
			PSS00603	Compression ratio w3	32
			PSS00604	Compression ratio w4	1
			PSS00605	Compression ratio w5	1
			PSS00606	Compression ratio w6	1
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:02:10		ZSS17202	PSS01501	integration time	552
			PSS01629	repetition time STC	80
			PSS01602	NbrAcq	65535
			PSS00301	number of windows	5
			PSS01101	start row pixel w1	100
			PSS00501	start strip pixel w1	3
			PSS01102	end row pixel w1	163
			PSS00502	end strip pixel w1	4
			PSS01103	start row pixel w2	32
			PSS00503	start strip pixel w2	9
			PSS01104	end row pixel w2	95
			PSS00504	end strip pixel w2	22
			PSS01105	start row pixel w3	240
			PSS00505	start strip pixel w3	9
			PSS01106	end row pixel w3	303
			PSS00506	end strip pixel w3	22
			PSS01107	start row pixel w4	1745
			PSS00507	start strip pixel w4	9
			PSS01108	end row pixel w4	1808
			PSS00508	end strip pixel w4	22
			PSS01109	start row pixel w5	1953
			PSS00509	start strip pixel w5	9
			PSS01110	end row pixel w5	2016
			PSS00510	end strip pixel w5	22
			PSS01111	start row pixel w6	0

			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	63
			PSS00602	Compression ratio w2	63
			PSS00603	Compression ratio w3	63
			PSS00604	Compression ratio w4	63
			PSS00605	Compression ratio w5	63
			PSS00606	Compression ratio w6	1
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:00:10		ZSS17202	PSS01501	integration time	3937
			PSS01629	repetition time STC	410
			PSS01602	NbrAcq	65535
			PSS00301	number of windows	5
			PSS01101	start row pixel w1	100
			PSS00501	start strip pixel w1	3
			PSS01102	end row pixel w1	163
			PSS00502	end strip pixel w1	4
			PSS01103	start row pixel w2	32
			PSS00503	start strip pixel w2	9
			PSS01104	end row pixel w2	95
			PSS00504	end strip pixel w2	22
			PSS01105	start row pixel w3	240
			PSS00505	start strip pixel w3	9
			PSS01106	end row pixel w3	303
			PSS00506	end strip pixel w3	22
			PSS01107	start row pixel w4	1745
			PSS00507	start strip pixel w4	9
			PSS01108	end row pixel w4	1808
			PSS00508	end strip pixel w4	22
			PSS01109	start row pixel w5	1953
			PSS00509	start strip pixel w5	9
			PSS01110	end row pixel w5	2016
			PSS00510	end strip pixel w5	22
			PSS01111	start row pixel w6	0
			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	63
			PSS00602	Compression ratio w2	63
			PSS00603	Compression ratio w3	63
			PSS00604	Compression ratio w4	63
			PSS00605	Compression ratio w5	63
			PSS00606	Compression ratio w6	1
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:00:24		ZSS17209			
00:00:05		ZSS00329	PSS08003	SID	2

			PSS08004	Collection Interval	40

3.4.5.7 Configuration Control Information

Date	FOP Issue	Version	Description
10/12/2017		1	Created
11/03/2017	1	2	Modified address used in STC memory test to 3 (ROIC FREQ)
25/05/2018		3	CR-121 SIMBIO-SYS Team FOP update request V03
06/07/2018		4	CR-121 SIMBIO-SYS Team FOP update request V04 added missing channel ON TC
06/08/2018	3	5	CR-133 SIMBIO-sys update req V05 Set 1st TC to Auto Dispatch and time 00:00:00
04/10/2019	3.2	6	CR-478 As per Post-NECP FOP update v8 re. Email Michele Zusi 28 March 2019. The STC PE, TEC and detector switch-on/off was removed and the HK generation frequency was fixed to 1s (for details compare with [RD.2]).

3.4.6 SIMBIO-SYS STC functional test on ME Redundant (SS-TST-021)

3.4.6.1 Objectives

The aim of this FOP is to test the Detector/TEC cycles and performs 50 acquisitions in CM with RT=400ms on redundant ME.

3.4.6.2 Summary of Constraints

SIMBIO ME Redundant in "ASW Started" mode.

3.4.6.3 Spacecraft Configuration

Start of Procedure	End of Procedure
SIMBIO ME Redundant ON, STC channel off	Unchanged

3.4.6.4 Reference File(s)

3.4.6.4.1 Input Command Sequences

None

3.4.6.4.2 Output Command Sequences

ASST021A

3.4.6.5 Input parameters

None

3.4.6.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASST021A	ZSS00329	PSS08003	SID	2
			PSS08004	Collection Interval	8
00:00:05		ZSS17201	PSS08006	On/Off	1
00:00:30		ZSS00329	PSS08003	SID	2
			PSS08004	Collection Interval	40
Auto		ZSS00329	PSS08003	SID	2
			PSS08004	Collection Interval	8
00:00:05		ZSS17210	PSS08006	On/Off	1
00:00:05		ZSS17203	PSS08006	On/Off	1
			PSS01603	STC HRIC Temp set point	2811
00:15:00		ZSS17202	PSS01501	integration time	4
			PSS01629	repetition time STC	80
			PSS01602	NbrAcq	65535
			PSS00301	number of windows	5
			PSS01101	start row pixel w1	100
			PSS00501	start strip pixel w1	3
			PSS01102	end row pixel w1	163
			PSS00502	end strip pixel w1	4
			PSS01103	start row pixel w2	32
			PSS00503	start strip pixel w2	9
			PSS01104	end row pixel w2	95

			PSS00504	end strip pixel w2	22
			PSS01105	start row pixel w3	240
			PSS00505	start strip pixel w3	9
			PSS01106	end row pixel w3	303
			PSS00506	end strip pixel w3	22
			PSS01107	start row pixel w4	1745
			PSS00507	start strip pixel w4	9
			PSS01108	end row pixel w4	1808
			PSS00508	end strip pixel w4	22
			PSS01109	start row pixel w5	1953
			PSS00509	start strip pixel w5	9
			PSS01110	end row pixel w5	2016
			PSS00510	end strip pixel w5	22
			PSS01111	start row pixel w6	0
			PSS00511	start strip pixel w6	0
			PSS01112	end row pixel w6	0
			PSS00512	end strip pixel w6	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	63
			PSS00602	Compression ratio w2	63
			PSS00603	Compression ratio w3	63
			PSS00604	Compression ratio w4	63
			PSS00605	Compression ratio w5	63
			PSS00606	Compression ratio w6	1
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:02:00		ZSS17209			
00:00:05		ZSS17203	PSS08006	On/Off	0
			PSS01603	STC HRIC Temp set point	0
00:00:05		ZSS17210	PSS08006	On/Off	0
00:00:05		ZSS17201	PSS08006	On/Off	0
00:00:05		ZSS00329	PSS08003	SID	2
			PSS08004	Collection Interval	40

3.4.6.7 Configuration Control Information

Date	FOP Issue	Version	Description
10/12/2017		1	Created
11/03/2017	1	2	Final setting HK sampling rate to 5 s, PSS08003 always expressed as dec 2, modified parameters of STC science TC ZSS17202
25/05/2018		3	CR-121 SIMBIO-SYS Team FOP update request V03
08/06/2018	3	4	CR-133 SIMBIO-SYS update req V05 Set 1st TC to Auto Dispatch and time 00:00:00
04/08/2019	3.2	5	CR-478 As per Post-NECP FOP update v8 re. Email Michele Zusi 28 March 2019. The STC HRIC TEC set-point default value was updated to 2811 from 2799 (as reported in [RD.2]; for details see [RD.4])

3.4.7 SIMBIO-SYS VIHI calibration test (SS-TST-031)

3.4.7.1 Objectives

The aim of this FOP is to perform VIHI Full calibration procedure.

3.4.7.2 Summary of Constraints

No need for direct contact with Earth.

3.4.7.3 Spacecraft Configuration

Start of Procedure	End of Procedure
VIHI Stand-by. LED and Lamp OFF	Unchanged

3.4.7.4 Reference File(s)

3.4.7.4.1 Input Command Sequences

None

3.4.7.4.2 Output Command Sequences

ASST031A

3.4.7.5 Input parameters

Sequence	TC par name	TC par description	TC par reference	Default par value
ASST031A	PSS08006	On/Off	XT031A01	0
	PSS01639	Lamp set point	XT031A02	71
	PSS08006	On/Off	XT031A03	0
	PSS01640	LED current setpoint	XT031A04	71

3.4.7.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASST031A	ZSS00329	PSS08003	SID	3
			PSS08004	Collection Interval	8
00:00:05		ZSS17311	PSS08006	On/Off	1
			PSS01638	Shutter set point	1000
00:00:05		ZSS17302	PSS01630	VIHI integration time	3
			PSS01631	VIHI Repetition time	204
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0

			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:00:15		ZSS17302	PSS01630	VIHI integration time	29
			PSS01631	VIHI Repetition time	204
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:00:15		ZSS17302	PSS01630	VIHI integration time	175
			PSS01631	VIHI Repetition time	203
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:00:15		ZSS17302	PSS01630	VIHI integration time	292
			PSS01631	VIHI Repetition time	204
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0

			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:00:15		ZSS17309			
00:00:15		ZSS17311	PSS08006	On/Off	0
			PSS01638	Shutter set point	71
00:00:05		ZSS17302	PSS01630	VIHI integration time	3
			PSS01631	VIHI Repetition time	402
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:02:00		ZSS17309			
00:00:15		ZSS17302	PSS01630	VIHI integration time	29
			PSS01631	VIHI Repetition time	405
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:02:00		ZSS17309			
00:00:15		ZSS17302	PSS01630	VIHI integration time	175
			PSS01631	VIHI Repetition time	402
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	0

			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:02:00		ZSS17309			
00:00:15		ZSS17302	PSS01630	VIHI integration time	292
			PSS01631	VIHI Repetition time	403
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:02:00		ZSS17309			
00:00:15		ZSS17312	PSS08006	On/Off	XT031A01
			PSS01639	Lamp set point	XT031A02
00:01:00		ZSS17302	PSS01630	VIHI integration time	29
			PSS01631	VIHI Repetition time	405
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:02:00		ZSS17309			
00:00:15		ZSS17302	PSS01630	VIHI integration time	175
			PSS01631	VIHI Repetition time	402
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	0

			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	255
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:02:00		ZSS17309			
00:00:15		ZSS17302	PSS01630	VIHI integration time	175
			PSS01631	VIHI Repetition time	402
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	8
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	263
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:02:00		ZSS17309			
		ZSS17302	PSS01630	VIHI integration time	175
			PSS01631	VIHI Repetition time	402
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:02:00		ZSS17309			
00:00:15		ZSS17302	PSS01630	VIHI integration time	175

			PSS01631	VIHI Repetition time	402
			PSS01632	VIHI starting row pixel	72
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	1
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:02:00		ZSS17309			
00:00:15		ZSS17312	PSS08006	On/Off	0
			PSS01639	Lamp set point	71
00:00:05		ZSS17313	PSS08006	On/Off	XT031A03
			PSS01640	LED current setpoint	XT031A04
00:01:00		ZSS17302	PSS01630	VIHI integration time	175
			PSS01631	VIHI Repetition time	402
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:02:00		ZSS17309			
00:00:15		ZSS17302	PSS01630	VIHI integration time	292
			PSS01631	VIHI Repetition time	403
			PSS01632	VIHI starting row pixel	0
			PSS01633	VIHI Starting column pixel	0
			PSS01634	VIHI End row pixel	255
			PSS01635	VIHI End column pixel	255
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1

			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:02:00		ZSS17309			
00:00:15		ZSS17302	PSS01630	VIHI integration time	292
			PSS01631	VIHI Repetition time	403
			PSS01632	VIHI starting row pixel	0
			PSS01633	VIHI Starting column pixel	8
			PSS01634	VIHI End row pixel	255
			PSS01635	VIHI End column pixel	263
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:02:00		ZSS17309			
00:00:15		ZSS17302	PSS01630	VIHI integration time	292
			PSS01631	VIHI Repetition time	403
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:02:00		ZSS17309			
00:00:15		ZSS17313	PSS08006	On/Off	0
			PSS01640	LED current setpoint	71
00:00:05		ZSS00329	PSS08003	SID	3
			PSS08004	Collection Interval	80

3.4.7.7 Configuration Control Information

Date	FOP Issue	Version	Description
23/11/2017		1	Created
25/05/2018	3	2	CR-121 SIMBIO-SYS Team FOP update request V03

18/09/2018	3.1	3	CR-245 Update request from SIMBIO-SYS V06 aug 28 2018
10/04/2019	3.2	6	CR-478 As per Post-NECP FOP update v8 re. Email Michele Zusi 28 March 2019. The Lamp and LED activation currents were unfixed (for details compare with [RD.2]).

3.4.8 SIMBIO-SYS VIHI dark and binning test (SS-TST-032)

3.4.8.1 Objectives

The aim of this FOP is to check Dark, Currents and Binning, carried out after First Power On and Verification that all VIHI subsystems work properly.

3.4.8.2 Summary of Constraints

Intended to be run during NECP. No need for direct contact with Earth.

3.4.8.3 Spacecraft Configuration

Start of Procedure	End of Procedure
VIHI in stand-by mode	Unchanged

3.4.8.4 Reference File(s)

3.4.8.4.1 Input Command Sequences

None

3.4.8.4.2 Output Command Sequences

ASST032A

3.4.8.5 Input parameters

None

3.4.8.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASST032A	ZSS00329	PSS08003	SID	3
			PSS08004	Collection Interval	80
00:00:05		ZSS17311	PSS08006	On/Off	1
			PSS01638	Shutter set point	1000
00:00:05		ZSS17302	PSS01630	VIHI integration time	3
			PSS01631	VIHI Repetition time	204
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0

00:00:15		ZSS17302	PSS01630	VIHI integration time	146
			PSS01631	VIHI Repetition time	207
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:00:15		ZSS17302	PSS01630	VIHI integration time	584
			PSS01631	VIHI Repetition time	208
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:00:15		ZSS17302	PSS01630	VIHI integration time	730
			PSS01631	VIHI Repetition time	203
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0

00:00:15		ZSS17302	PSS01630	VIHI integration time	1022
			PSS01631	VIHI Repetition time	210
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:00:15		ZSS17302	PSS01630	VIHI integration time	1460
			PSS01631	VIHI Repetition time	211
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:00:15		ZSS17302	PSS01630	VIHI integration time	2920
			PSS01631	VIHI Repetition time	216
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0

00:00:15		ZSS17309			
00:00:15		ZSS17311	PSS08006	On/Off	0
			PSS01638	Shutter set point	71
00:00:05		ZSS17302	PSS01630	VIHI integration time	3
			PSS01631	VIHI Repetition time	402
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:02:00		ZSS17309			
00:00:15		ZSS17302	PSS01630	VIHI integration time	146
			PSS01631	VIHI Repetition time	404
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:02:00		ZSS17309			
00:00:15		ZSS17302	PSS01630	VIHI integration time	584
			PSS01631	VIHI Repetition time	405
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1

			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:02:00		ZSS17309			
00:00:15		ZSS17302	PSS01630	VIHI integration time	1022
			PSS01631	VIHI Repetition time	404
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:02:00		ZSS17309			
00:00:15		ZSS17302	PSS01630	VIHI integration time	1460
			PSS01631	VIHI Repetition time	424
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:02:00		ZSS17309			
00:00:15		ZSS17302	PSS01630	VIHI integration time	2920
			PSS01631	VIHI Repetition time	435
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	0

			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:02:00		ZSS17309			
00:00:15		ZSS17302	PSS01630	VIHI integration time	146
			PSS01631	VIHI Repetition time	404
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark substraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	1
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:02:00		ZSS17309			
00:00:15		ZSS17302	PSS01630	VIHI integration time	730
			PSS01631	VIHI Repetition time	407
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	2
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:02:0		ZSS17309			
00:00:15		ZSS17302	PSS01630	VIHI integration time	730
			PSS01631	VIHI Repetition time	407
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259

			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	2
			PSS00208	Binning sequence of frame	2
			PSS00209	Spectral editing	2
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:02:00		ZSS17309			
00:00:15		ZSS17302	PSS01630	VIHI integration time	730
			PSS01631	VIHI Repetition time	407
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	2
			PSS00208	Binning sequence of frame	2
			PSS00209	Spectral editing	2
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	32
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:02:00		ZSS17309			
00:00:15		ZSS17302	PSS01630	VIHI integration time	730
			PSS01631	VIHI Repetition time	407
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	2
			PSS00208	Binning sequence of frame	2
			PSS00209	Spectral editing	2
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	1
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:02:00		ZSS17309			
00:00:15		ZSS17302	PSS01630	VIHI integration time	730
			PSS01631	VIHI Repetition time	407
			PSS01632	VIHI starting row pixel	8

			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	1
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:02:00		ZSS17309			
00:00:15		ZSS17302	PSS01630	VIHI integration time	730
			PSS01631	VIHI Repetition time	407
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	48
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:02:00		ZSS17309			
00:00:15		ZSS17302	PSS01630	VIHI integration time	146
			PSS01631	VIHI Repetition time	404
			PSS01632	VIHI starting row pixel	72
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	1
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	1
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:02:00		ZSS17309			

3.4.8.7 Configuration Control Information

Date	FOP Issue	Version	Description
10/17/2017	1	1	Created
25/05/2018	3	2	CR-121 SIMBIO-SYS Team FOP update request V03
18/09/2018	3.13		CR-245 Update request from SIMBIO V06 aug 28 2018

3.4.9 SIMBIO-SYS VIHI functional test on ME Redundant (SS-TST-033)

3.4.9.1 Objectives

The aim of this FOP is to check VIHI Channel activation with ME in redundant.

3.4.9.2 Summary of Constraints

SIMBIO ME Main in "ASW Started" mode. HRIC & STC will be off.

3.4.9.3 Spacecraft Configuration

Start of Procedure	End of Procedure
SIMBIO ME Redundant ON, all channels off	Unchanged

3.4.9.4 Reference File(s)

3.4.9.4.1 Input Command Sequences

None

3.4.9.4.2 Output Command Sequences

ASST033A

3.4.9.5 Input parameters

None

3.4.9.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASST033A	ZSS00329	PSS08003	SID	3
			PSS08004	Collection Interval	8
00:00:05		ZSS17301	PSS08006	On/Off	1
00:00:30		ZSS00329	PSS08003	SID	3
			PSS08004	Collection Interval	40
Auto		ZSS00329	PSS08003	SID	3
			PSS08004	Collection Interval	40
00:00:05		ZSS17310	PSS08006	On/Off	1
00:00:05		ZSS17303	PSS08006	On/Off	1
			PSS01636	VIHI Temp set point	3372
00:15:00		ZSS17302	PSS01630	VIHI integration time	3
			PSS01631	VIHI Repetition time	101
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	0
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1

			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:00:25		ZSS17309			
00:00:05		ZSS17303	PSS08006	On/Off	0
			PSS01636	VIHI Temp set point	0
00:00:05		ZSS17310	PSS08006	On/Off	0
00:00:05		ZSS17301	PSS08006	On/Off	0
00:00:05		ZSS00329	PSS08003	SID	3
			PSS08004	Collection Interval	40

3.4.9.7 Configuration Control Information

Date	FOP Issue	Version	Description
12/10/2017		1	Created
03/11/2017		2	Added last TC to set HK sampling to 5 s
03/11/2017		3	Modified flags for first TC

14/11/2017		4	Integration Time modified to 3:
			• Step 5 modified:
			  ○ TC ZSS17309 delta time set to 00:02:00, manual release to N
			• Step 6 modified:
			  ○ TC ZSS17310 delta time set to 00:00:05, manual release to N
			  ○ TC ZSS17301 delta time set to 00:00:05, manual release to N

14/11/2017	1	5	TC ZSS00329 delta time set to 00:00:05, manual release to N
25/05/2018	3	6	CR-121 SIMBIO-SYS Team FOP update request V03

3.4.10 SIMBIO-SYS VIHI functional test on ME Main (SS-TST-037)

3.4.10.1 Objectives

The aim of this FOP is to check VIHI Channel activation with ME in main.

3.4.10.2 Summary of Constraints

SIMBIO ME Main in "ASW Started" mode. HRIC & STC will be off.

3.4.10.3 Spacecraft Configuration

Start of Procedure	End of Procedure
SIMBIO ME Main ON, all channels off	Unchanged

3.4.10.4 Reference File(s)

3.4.10.4.1 Input Command Sequences

None

3.4.10.4.2 Output Command Sequences

ASST037A

3.4.10.5 Input parameters

None

3.4.10.6 TC sequence

Relative time	Sequence	TC name	TC par name	TC par description	TC par value
00:00:00	ASST037A	ZSS00329	PSS08003	SID	3
			PSS08004	Collection Interval	8
00:00:05		ZSS17301	PSS08006	On/off	1
00:00:30		ZSS00329	PSS08003	SID	3
			PSS08004	Collection Interval	40
Auto		ZSS00329	PSS08003	SID	3
			PSS08004	Collection Interval	8
00:00:05		ZSS17310	PSS08006	On/off	1
00:00:05		ZSS00329	PSS08003	SID	3
			PSS08004	Collection Interval	40
Auto		ZSS00329	PSS08003	SID	3
			PSS08004	Collection Interval	8
00:00:05		ZSS17311	PSS08006	On/off	1
			PSS01638	Shutter set point	1000
00:00:10		ZSS17311	PSS08006	On/off	0
			PSS01638	Shutter set point	71
00:00:05		ZSS00329	PSS08003	SID	3
			PSS08004	Collection Interval	40
Auto		ZSS00329	PSS08003	SID	3
			PSS08004	Collection Interval	8

00:00:05		ZSS17312	PSS08006	On/off	1
			PSS01639	Lamp set point	3500
00:00:35		ZSS17312	PSS08006	On/off	0
			PSS01639	Lamp set point	71
00:00:05		ZSS17313	PSS08006	On/off	1
			PSS01640	LED current setpoint	2000
00:00:35		ZSS17313	PSS08006	On/off	0
			PSS01640	LED current setpoint	71
00:00:05		ZSS00329	PSS08003	SID	3
			PSS08004	Collection Interval	40
Auto		ZSS00329	PSS08003	SID	3
			PSS08004	Collection Interval	8
00:00:05		ZSS17303	PSS08006	On/off	1
			PSS01636	VIHI Temp set point	3372
00:15:00		ZSS00329	PSS08003	SID	3
			PSS08004	Collection Interval	40
Auto		ZSS00329	PSS08003	SID	3
			PSS08004	Collection Interval	8
00:00:05		ZSS17306	PSS01637	PE VIHI Addr	3
00:00:15		ZSS17306	PSS01637	PE VIHI Addr	0
00:00:05		ZSS17307	PSS01637	PE VIHI Addr	0
			PSS01606	Value to be write	1
00:00:05		ZSS17304			
00:00:05		ZSS00329	PSS08003	SID	3
			PSS08004	Collection Interval	40
Auto		ZSS00329	PSS08003	SID	3
			PSS08004	Collection Interval	8
00:00:05		ZSS17307	PSS01637	PE VIHI Addr	0
			PSS01606	Value to be write	0
00:00:05		ZSS17304			
00:00:05		ZSS00329	PSS08003	SID	3
			PSS08004	Collection Interval	40
Auto		ZSS00329	PSS08003	SID	3
			PSS08004	Collection Interval	8
00:00:05		ZSS17302	PSS01630	VIHI integration time	3
			PSS01631	VIHI Repetition time	20
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	0
			PSS00105	Dark_Acquisition	0
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0

			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:00:05		ZSS173B2	PSS01631	VIHI Repetition time	101
			PSS01632	VIHI starting row pixel	8
			PSS01633	VIHI Starting column pixel	4
			PSS01634	VIHI End row pixel	263
			PSS01635	VIHI End column pixel	259
			PSS00104	Dark subtraction status	1
			PSS00105	Dark_Acquisition	0
			PSS00207	Spatial binning VIHI	0
			PSS00208	Binning sequence of frame	0
			PSS00209	Spectral editing	0
			PSS03207	VIHI Spare 32	1
			PSS00205	Compression box dimension	1
			PSS00601	Compression ratio w1	0
			PSS00106	Dark Macro	0
			PSS00101	LS bit1 PE mode	0
			PSS08008	Priority	0
00:00:25		ZSS17309			
00:00:05		ZSS00329	PSS08003	SID	3
			PSS08004	Collection Interval	40
Auto		ZSS00329	PSS08003	SID	3
			PSS08004	Collection Interval	8
00:00:05		ZSS17303	PSS08006	On/off	0
			PSS01636	VIHI Temp set point	0
Auto		ZSS17310	PSS08006	On/off	0
Auto		ZSS17301	PSS08006	On/off	0
Auto		ZSS00329	PSS08003	SID	3
			PSS08004	Collection Interval	40

3.4.10.7 Configuration Control Information

Date	FOP Issue	Version	Description
12/10/2017	0	1	Created
03/112017	1	2	Memory check test modified using ROIC 3 address. Final HK setting added.
25/05/2018	3	3	CR-121 SIMBIO-SYS Team FOP update request V03

4 Conclusions

Some FOPs are duplicated and shall be removed in future version of the present Technical Note.

5 Auxiliary information

PID_SPID	TPCF_NAME	PID_DESCR	Explanation	Status at OBCP end
85595	YSSK6500	OBCP 4000 SIMBIO-SYS LCL is already on	At start, OBCP detected that SIMBIO is already ON, so aborted execution	No change, SIMBIO left as it was
85596	YSSK6501	OBCP 4000 P/L SpW link not enabled	The TC to enable the SIMBIO Spacewire i/f (nr 3) was not verified	LCL still OFF, all subsch. Disabled
85597	YSSK6502	OBCP 4000 ME temperature not in range	Test [-20°C < ME Temp < 50°C] has failed	LCL still OFF, all subsch. Disabled
85598	YSSK6503	OBCP 4000 No boot event received	SIMB BSW Report, EID = 40409 was not received after LCL closure	LCL switched OFF, all subsch. Disabled
85599	YSSK6504	OBCP 4000 Current after power-on is OOL	Test [0,17 A < LCL Current < 0,37 A] after LCL closure has failed	LCL switched OFF, all subsch. Disabled
85600	YSSK6505	OBCP 4000 BSW on-board time synch failed	SIMBIO - DMS Time Synch TC(9,130) was not verified on BSW	LCL switched OFF, all subsch. Disabled
85601	YSSK6506	OBCP 4000 Connection test failed	TC(17,3) to request a connection test to SIMBIO was not verified	LCL switched OFF, all subsch. Disabled
85602	YSSK6507	OBCP 4000 ME SW status NOK	ME status after power on is not equal to "Boot SW Stand-By"	LCL switched OFF, S12/S19 + all subsch. Disabled
85603	YSSK6508	OBCP 4000 BSW Power on completed	ME Power ON successfully completed on BSW	SIMBIO ME ON, only BSW is started
85604	YSSK6509	OBCP 4000 No mode change event received	SIMB Mode Change EID=40400 was not received after start ASW TC	All subsch. Disabled, SIMBIO ME ON, BSW started
85605	YSSK6510	OBCP 4000 ASW not started	ME current status not "Application SW started" after start ASW TC	LCL switched OFF, S12/S19 + all subsch. Disabled
85606	YSSK6511	OBCP 4000 ASW on-board time synch failed	SIMBIO - DMS Time Synch TC(9,130) was not verified on ASW	LCL switched OFF, S12/S19 + all subsch. Disabled

***Table 1**: SIMBIO-SYS ME switch on by OBCP status table.*

		SIMBIO-SYS ME Switch Off		KSS04001MEOF
PID_SPID	**TPCF_NAME**	**PID_DESCR**	**Explanation**	**OBCP actions at exit**
85607	YSSK6520	OBCP 4001 SIMBIO-SYS is already off	At start, OBCP detected that SIMBIO is already OFF, so aborted execution	No change, SIMBIO left as it was
85608	YSSK6521	OBCP 4001 VIHI SWOF failed	Event YSSK6605 confirming completion of VIHI OFF OBCP was not received	All SIMBIO subschedules disabled
85609	YSSK6522	OBCP 4001 STC SWOF failed	Event YSSK6625 confirming completion of STC OFF OBCP was not received	All SIMBIO subschedules disabled
85610	YSSK6523	OBCP 4001 HRIC SWOF failed	Event YSSK6645 confirming completion of HRIC OFF OBCP was not received	All SIMBIO subschedules disabled
85611	YSSK6524	OBCP 4001 Switching-off LCL failed	The TM from one or both LCLs still shows that LCL is closed	All SIMBIO subschedules disabled

***Table 2**:SIMBIO-SYS ME switch off by OBCP status table.*

		SIMBIO-SYS HRIC Graceful Shutdown		KSS04005HGOF
PID_SPID	**TPCF_NAME**	**PID_DESCR**	**Explanation**	**OBCP actions at exit**
85640	YSSK6600	OBCP 4005 LCL not ON	Both SIMBIO LCLs TM read OFF	All HRIC subschedules disabled
85641	YSSK6601	OBCP 4005 HRIC already off	ME Mode TM reads Boot SW Sby or HRIC status TM reads Channel Off	All HRIC subschedules disabled
85642	YSSK6602	OBCP 4005 HRIC detector Off TC repeated	HRIC Detector status in TM does not read OFF after first Detector OFF TC	No change on this event
85643	YSSK6603	OBCP 4005 HRIC detector not Off	HRIC Detector status in TM does not read OFF after second Detector OFF TC	All HRIC subschedules disabled
85644	YSSK6604	OBCP 4005 HRIC not Off	HRIC SW status in TM does not read Chanenl OFF	All HRIC subschedules disabled

***Table 3**: SIMBIO-SYS HRIC switch off by OBCP status table.*

		SIMBIO-SYS HRIC Switch On		KSS04002HRSC
PID_SPID	**TPCF_NAME**	**PID_DESCR**	**Explanation**	**OBCP actions at exit**
85612	YSSK6540	OBCP 4002 HRIC_TEMP NOK	Test [-10°C < PE Temp < +14°C] has failed	All HRIC subschedules disabled
85613	YSSK6541	OBCP 4002 LCL not ON	Both SIMBIO LCLs TM read OFF	All HRIC subschedules disabled
85614	YSSK6542	OBCP 4002 ME mode NOK	ME Mode TM does not read ASW started	All HRIC subschedules disabled
85615	YSSK6543	OBCP 4002 HRIC PE ON TC repeated	HRIC PE status in TM does not read Standby after first PE ON TC	No change on this event
85616	YSSK6544	OBCP 4002 HRIC PE not ON	HRIC PE status in TM does not read Standby after second PE ON TC	All HRIC subschedules disabled
85617	YSSK6545	OBCP 4002 HRIC detector ON TC repeated	HRIC Detector status in TM does not read ON after first Detector ON TC	No change on this event
85618	YSSK6546	OBCP 4002 HRIC detector not ON	HRIC Detector status in TM does not read ON after second Detector ON TC	All HRIC subschedules disabled
85619	YSSK6547	OBCP 4002 HRIC TEC ON TC repeated	HRIC TEC status in TM does not read ON after first TEC ON TC	All HRIC subschedules disabled
85620	YSSK6548	OBCP 4002 HRIC TEC not ON	HRIC TEC status in TM does not read ON after second TEC ON TC	No change to HRIC subschedules, HRIC PE and Detector left ON

***Table 4**: SIMBIO-SYS HRIC PE Detector TEC on by OBCP status table.*

SIMBIO-SYS STC Graceful Shutdown KSS04006SGOF

PID_SPID	TPCF_NAME	PID_DESCR	Explanation	OBCP actions at exit
85645	YSSK6620	OBCP 4006 LCL not ON	Both SIMBIO LCLs TM read OFF	All STC subschedules disabled
85646	YSSK6621	OBCP 4006 STC already off	ME Mode TM reads Boot SW Sby or STC status TM reads Channel Off	All STC subschedules disabled
85647	YSSK6622	OBCP 4006 STC detector Off TC repeated	STC Detector status in TM does not read OFF after first Detector OFF TC	No change on this event
85648	YSSK6623	OBCP 4006 STC detector not Off	STC Detector status in TM does not read OFF after second Detector OFF TC	All STC subschedules disabled
85649	YSSK6624	OBCP 4006 STC not Off	STC SW status in TM does not read Chanenl OFF	All STC subschedules disabled

Table 5: SIMBIO-SYS STC switch off by OBCP status table.

SIMBIO-SYS STC Switch On KSS04003SRSC

PID_SPID	TPCF_NAME	PID_DESCR	Explanation	OBCP actions at exit
85621	YSSK6560	OBCP 4003 STC_TEMP NOK	Test [-10°C < PE Temp < +14°C] has failed	All STC subschedules disabled
85622	YSSK6561	OBCP 4003 LCL not ON	Both SIMBIO LCLs TM read OFF	All STC subschedules disabled
85623	YSSK6562	OBCP 4003 ME mode NOK	ME Mode TM does not read ASW started	All STC subschedules disabled
85624	YSSK6563	OBCP 4003 STC PE ON TC repeated	STC PE status in TM does not read Standby after first PE ON TC	No change on this event
85625	YSSK6564	OBCP 4003 STC PE not ON	STC PE status in TM does not read Standby after second PE ON TC	All STC subschedules disabled
85626	YSSK6565	OBCP 4003 STC detector ON TC repeated	STC Detector status in TM does not read ON after first Detector ON TC	No change on this event
85627	YSSK6566	OBCP 4003 STC detector not ON	STC Detector status in TM does not read ON after second Detector ON TC	All STC subschedules disabled
85628	YSSK6567	OBCP 4003 STC TEC ON TC repeated	STC TEC status in TM does not read ON after first TEC ON TC	All STC subschedules disabled
85629	YSSK6568	OBCP 4003 STC TEC not ON	STC TEC status in TM does not read ON after second TEC ON TC	No change to STC subschedules, STC PE and Detector left ON

Table 6: SIMBIO-SYS STC PE Detector TEC on by OBCP status table.

SIMBIO-SYS VIHI Graceful Shutdown KSS04007VGOF

PID_SPID	TPCF_NAME	PID_DESCR	Explanation	OBCP actions at exit
85650	YSSK6640	OBCP 4007 LCL not ON	Both SIMBIO LCLs TM read OFF	All VIHI subschedules disabled
85651	YSSK6641	OBCP 4007 VIHI already off	ME Mode TM reads Boot SW Sby or VIHI status TM reads Channel Off	All VIHI subschedules disabled
85652	YSSK6642	OBCP 4007 VIHI detector Off TC repeated	VIHI Detector status in TM does not read OFF after first Detector OFF TC	No change on this event
85653	YSSK6643	OBCP 4007 VIHI detector not Off	VIHI Detector status in TM does not read OFF after second Detector OFF TC	All VIHI subschedules disabled
85654	YSSK6644	OBCP 4007 VIHI not Off	VIHI SW status in TM does not read Chanenl OFF	All VIHI subschedules disabled

Table 7: SIMBIO-SYS VIHI switch off by OBCP status table.

			SIMBIO-SYS VIHI Switch On	KSS04004VRSC
PID_SPID	TPCF_NAME	PID_DESCR	Explanation	OBCP actions at exit
85630	YSSK6580	OBCP 4004 VIHI_PE_TEMP NOK	Test [-10°C < PE Temp < +14°C] has failed	All VIHI subschedules disabled
85631	YSSK6581	OBCP 4004 VIHI_DETECTOR_TEMP NOK	Test [-60°C < FPA Temp < -16.5°C] has failed	All VIHI subschedules disabled
85632	YSSK6582	OBCP 4004 LCL not ON	Both SIMBIO LCLs TM read OFF	All VIHI subschedules disabled
85633	YSSK6583	OBCP 4004 ME mode NOK	ME Mode TM does not read ASW started	All VIHI subschedules disabled
85634	YSSK6584	OBCP 4004 VIHI PE ON TC repeated	VIHI PE status in TM does not read Standby after first PE ON TC	No change on this event
85635	YSSK6585	OBCP 4004 VIHI PE not ON	VIHI PE status in TM does not read Standby after second PE ON TC	All VIHI subschedules disabled
85636	YSSK6586	OBCP 4004 VIHI detector ON TC repeated	VIHI Detector status in TM does not read ON after first Detector ON TC	No change on this event
85637	YSSK6587	OBCP 4004 VIHI detector not ON	VIHI Detector status in TM does not read ON after second Detector ON TC	All VIHI subschedules disabled
85638	YSSK6588	OBCP 4004 VIHI TEC ON TC repeated	VIHI TEC status in TM does not read ON after first TEC ON TC	All VIHI subschedules disabled
85639	YSSK6589	OBCP 4004 VIHI TEC not ON	VIHI TEC status in TM does not read ON after second TEC ON TC	No change to VIHI subschedules, VIHI PE and Detector left ON

Table 8: SIMBIO-SYS VIHI PE Detector TEC on by OBCP status table.

6 Fast FCP Summary

Following Table reports the FCPs enumerated by ID (id XXX corresponds to FCP: SS-FCP-XXX). The FCPs are divided in color following the legend: black for the ME, blue for HRIC, green for STC and orange for VIHI.

ID	Name	Description
1	**ME Switch On by OBCP**	To trigger execution of the SIMBIO ME Switch On OBCP.
2	**ME Switch Off by OBCP**	To trigger execution of the SIMBIO ME Switch Off OBCP.
3	**HK Report Collection interval**	To redefine the generation frequency of the SIMBIO HK TM.
4	**HRIC Off by OBCP**	To trigger execution of the SIMBIO HRIC Graceful Shutdown OBCP.
5	**HRIC PE Detector TEC on by OBCP**	To trigger execution of the SIMBIO HRIC Switch ON OBCP.
6	**HRIC Start-Stop Science**	To Start or Stop science generation for the HRIC sensor.
7	**STC Off by OBCP**	To trigger execution of the SIMBIO STC Graceful Shutdown OBCP.
8	**STC PE Detector TEC On by OBCP**	To trigger execution of the SIMBIO STC Switch ON OBCP.
9	**STC Start-Stop Science**	To Start or Stop science generation for the STC sensor.
10	**VIHI Off by OBCP**	To trigger execution of the SIMBIO VIHI Graceful Shutdown OBCP
11	**VIHI Detector TEC On by OBCP**	To trigger execution of the SIMBIO VIHI Switch ON OBCP.
12	**VIHI Start-Stop Science**	To Start or Stop science generation for the VIHI sensor.
13	**VIHI Shutter Calibr –LAMP and LED**	To operate the VIHI shutter, Calibration Lamp, Calibration LED.
14	**Upload of Parameters**	To modify, up to the next UploadParam TC to the same channel, or up to SIMBIO-SYS power off, the specified parameter and value for one SIMBIO channel.
15	**Set NECP-CRUISE or STD thermal control thresholds**	Prior to SIMBIO-SYS power ON in NECP or Cruise check-out, the instrument needs to be heated up to reach the PEs operational temperature range. This is done by increasing the settings of TCS heater line 22 (heater switching thresholds) at least two hours before planned ME switch ON.
100	**HRIC Science Acq Short Integr**	Command science acquisition with short integration and all free parameters.
101	**HRIC Science Acq Short Integr FPAN filter**	Command science acquisition with short integration in the FPAN filter.
102	**HRIC Science Acq Short Integr BB Filters**	Command science acquisition with short integration using all BB filters.
103	**HRIC Science Acq Short Integr all filters**	Command science acquisition with short integration using all filters.
110	**HRIC Stop Science Acq**	Command stopping acquisition. If continuous mode is used, it stops the acquisitions and the RT granularity which should delay the execution of the subsequent TCs.
120	**HRIC Channel Power ON**	Power-on the HRIC Channel.
121	**HRIC Channel Power OFF**	Power-off the HRIC Channel.
122	**HRIC Detector Power ON**	Switch-on the HRIC Detector.
123	**HRIC Detector Power OFF**	Switch-off the HRIC Detector.
124	**HRIC TEC Power On**	Switch-on the HRIC TEC.
125	**HRIC TEC Power Off**	Switch-off the HRIC TEC.
126	**HRIC Read Address**	Read HRIC address.
127	**HRIC Write Address**	Write HRIC address.
199	**HRIC Science Acq Short Integr Xwindow**	Command science acquisition with short integration using x-window (see STC)
200	**HRIC Science Acq Long Integr ALL FREE**	Command science acquisition with long integration and all free.
201	**HRIC Science Acq Long Integr FPAN filter**	Command science acquisition with long integration in the FPAN filter.
202	**HRIC Science Acq Long Integr BB filters**	Command science acquisition with long integration using all BB filters.
203	**HRIC Science Acq Long Integr all filters**	Command science acquisition with long integration using all filters.
299	**HRIC Science Acq Long Integr Xwindow**	Command science acquisition with long integration using x-window (see STC).
300	**STC Science SURF FREE**	User Defined acquisition. It commands the acquisition of a maximum of 6 Windows.
301	**STC Science SURF SINGLE PANH**	It commands the acquisition of a X+PANH
302	**STC Science SURF SINGLE PANL**	It commands the acquisition of a X+PANL
303	**STC Science SURF SINGLE 750**	It commands the acquisition of a X+F750

304	**STC Science SURF SINGLE 420**	It commands the acquisition of a X+F420
305	**STC Science SURF SINGLE 550**	It commands the acquisition of a X+F550
306	**STC Science SURF SINGLE 920**	It commands the acquisition of a X+F920
307	**STC Science SURF NOMINAL GM**	It commands the acquisition of Global Mapping Mode X+PANH+PANL
308	**STC Science SURF NOMINAL CM**	It commands the acquisition of Color Mode: X+750+420+550+920
310	**STC Science STAR FREE**	User Defined acquisition (for high IT). It commands the acquisition of a maximum of 6 windows.
311	**STC Science STAR FREE**	It commands the acquisition of a X+PANH (for high IT)
312	**STC Science STAR SINGLE PANL**	It commands the acquisition of a X+PANL (for high IT)
313	**STC Science STAR SINGLE 750**	It commands the acquisition of a X+F750 (for high IT)
314	**STC Science STAR SINGLE 420**	It commands the acquisition of a X+F420 (for high IT)
315	**STC Science STAR SINGLE 550**	It commands the acquisition of a X+F550 (for high IT)
316	**STC Science STAR SINGLE 920**	It commands the acquisition of a X+F920 (for high IT)
317	**STC Science STAR GM**	It commands the acquisition of a X+PANH+PANL (for high IT).
318	**STC Science STAR CM (*)**	It commands the acquisition of Color Mode: X+750+420+550+920 (for high IT)
320	**STC Out Filters SURF X (*)**	It commands the acquisition of WindowX.
321	**STC Out Filters SURF BAND CENTRAL**	It commands the acquisition of central vertical band of the Detector.
322	**STC Out Filters SURF BAND LEFT**	It commands the acquisition of left vertical band of the Detector.
323	**STC Out Filters SURF BAND RIGHT**	It commands the acquisition of the right vertical band of the Detector.
324	**STC Out Filters SURF BAND RIGHT**	It commands the acquisition of half high region of the Detector (Along track 0-1023).
325	**STC Out Filters SURF HALF LOW**	It commands the acquisition of the HALF low region of the Detector (1024-2047 along track).
326	**STC Out Filters STAR X**	It commands the acquisition of WindowX (for high IT).
327	**STC Out Filters STAR BAND CENTRAL**	It commands the acquisition of central vertical band of the Detector. (for high IT)
328	**STC Out Filters STAR BAND LEFT**	It commands the acquisition of left vertical band of the Detector (for high IT)
329	**STC Out Filters STAR BAND RIGHT**	It commands the acquisition of right vertical band of the Detector (for high IT)
334	**STC Out Filters STAR HALF HIGH**	It commands the acquisition of half high region of the Detector (Along track 0-1023) for high IT.
335	**STC Out Filters STAR HALF HIGH**	It commands the acquisition of the HALF low region of the FPA (1024-2047 along track) for high IT
350	**STC COMBINATIONS STAR FULL FOV**	It commands the acquisitions of all the 6 filters of STC (for high IT).
360	**STC Chan Power On**	Power-on the STC Channel
361	**STC Chan Power Off**	Power-off the STC Channel
362	**STC Detector Power ON**	Power-on the STC Detector
363	**STC Detector Power OFF**	Power-off the STC Detector
364	**STC TEC Power ON**	Power-on the STC TEC
365	**STC TEC Power OFF**	Power-off the STC TEC
366	**STC Read Address**	STC Read Address
367	**STC Write Address**	STC Write Address
368	**STC STOP SCIENCE**	Command stopping acquisition. If continuous mode is used, it stops the acquisitions and the RT granularity which should delay the execution of the subsequent TCs.
500	**VIHI Thermal Control On**	Power-on the VIHI TEC
501	**VIHI Thermal Control Off**	Power-off the VIHI TEC
502	**VIHI Detector On**	Power-on the VIHI Detector
503	**VIHI Detector Off**	Power-off the VIHI Detector
504	**VIHI Detector On and TEC On**	Power-on the VIHI Detector and TEC
505	**VIHI Detector Off and TEC Off**	Power-off the VIHI Detector and TEC
506	**VIHI Write Address**	VIHI Read Address
507	**VIHI Write Address**	VIHI Write Address
508	**VIHI Manual dark acquisition**	To perform dark acquisitions in case the dark macro is not available
512	**VIHI Science Mode Variable IT**	VIHI Science with variable integration time
513	**VIHI Science Fixed IT 137us**	VIHI Science with integration time fixed at 137 us
514	**VIHI Stop Science**	Stops VIHI Science acquisitions
515	**Power-on VIHI Channel**	Power-on VIHI Channel
516	**Power-off VIHI Channel**	Power-off VIHI Channel