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TEST REPORT / TEST RESULT

Initial Results from the NECP In Situ Inter-Instrument Communication Test

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REFERENCE DOCUMENTS

[RD1] NECP In-Situ Inter-Instrument Communication Campaign SOL-MAG-TN-0047, iss. 1 rev. 4

[RD2] NECP IIC test flow spreadsheet iss. 2 rev. 2

[RD3] IM-IIC_MAG_RPW_EPD_SWA activity report from the EPD point of view

1 INTRODUCTION

The in situ inter-instrument communications test campaign was designed to validate in flight the functionality of the inter-instrument communications (IIC) facility provided by the Solar Orbiter spacecraft, and its use by the four in situ instruments, in a way more representative of its use in science operations than was possible on the ground.

The campaign, fully described in [RD1] and [RD2], consisted of five sub-campaigns, identified as IIC-1 through IIC-5, each of which tested different use cases of the IIC facility, as follows.

- IIC-1 was designed to test that when the RPW instrument issues an SBM1 trigger, which denote the detection of interplanetary shocks, EPD, MAG and SWA-EAS receive the notification and enter their triggered burst mode, or not, depending on whether the quality factor associated with the trigger meets their configured thresholds.
- IIC-2 was designed to test that when the RPW instrument issues an SBM2 trigger, which denote the detection of in situ type III radio bursts, EPD receives the notification and enters its triggered burst mode, or not, depending on whether the quality factor associated with the trigger meets its configured threshold.
- IIC-3 was designed to test that MAG correctly sends the measured magnetic field vector and that it is received properly by SWA, which then uses the vector to configure the EAS sensors so that their 2D burst mode product captures a complete pitch angle distribution.
- IIC-4 was designed to test the RPW SBM1 detection algorithm, such that when a simulated shock with known parameters is sent by MAG, RPW correctly reads the parameters, detects the “shock”, issues a SBM1 trigger and the other instruments respond correctly.
- IIC-5 was designed to test the RPW SBM2 detection algorithm, such that when simulated energetic electron flux data are sent by EPD, RPW activates its SBM2 detection algorithm, confirms the presence of Langmuir waves, issues an SBM2 trigger and then EPD reacts accordingly.

2 TEST RESULTS SUMMARY & CONCLUSION

Note that detailed step-by-step results, following [RD2], can be found in Sections 3 to 7. Here we summarise the initial test results, first at the top level, then sub-campaign by sub-campaign.



The test can be considered **partially successful**. Initial results suggest the service 20 packet is correctly populated, and most instruments react as expected to SBM1 and SBM2 triggers:

1. MAG and SWA correctly reacted to RPW SBM1 triggers. EPD did not.
2. EPD correctly reacted to an RPW SBM2 trigger, although analysis suggests this was by chance.
3. MAG correctly sent magnetic field vectors, which were correctly interpreted by SWA, which configured the look-direction of EAS appropriately
4. It is TBC whether or not RPW correctly issued an SBM1 trigger in response to the MAG test pattern.
5. EPD correctly sent a test pattern, which was correctly interpreted by RPW. RPW did not successfully confirm the SBM2 event and thus no trigger was issued that EPD could respond to.

These results suggest that IIC functionality provided by the spacecraft is working correctly, and that instrument IIC functionality critical for cruise phase is working correctly.

EPD's failure to correctly react to triggers has been determined to have been a result of a misconfiguration such that the instrument was extracting the wrong bits from the packet to represent the triggers and their quality flags. An updated configuration will be tested during STP-104.

Further work is needed to tune and debug RPW's SBM algorithms before triggers should be routinely used. It is expected this will happen as normal work during the cruise phase.

2.1 IIC-1 Results

IIC-1 can be considered **partially successful**.

SBM1 triggers were issued by telecommand and both MAG and SWA correctly responded to a trigger that had a high enough quality factor associated with it, and ignored a trigger with a too-low quality factor.

EPD did not respond to the two triggers to which it should have, nor the trigger to which it should not have. Given that MAG and SWA did respond to the triggers correctly, this points to an error in EPD's decoding of the S20 packet, and indeed the EPD team have identified a misconfiguration such that the SBM triggers and their quality flags were not correctly extracted. A fix will be tested during STP-104.

The initial step of this subcampaign was for RPW to enable a housekeeping packet that contains the contents of the S20 packet. Although this was enabled correctly, it was routed to the OBC, rather than the SSMM and as such isn't available on ground to aid diagnosis of test results. This does not invalidate the test.

2.2 IIC-2 Results

IIC-2 can be considered **partially successful**.

RPW successfully issued SBM2 Triggers and EPD responded correctly, entering burst mode when the quality factor was sufficiently high, and not entering burst mode when the quality factor was too low. Analysis of EPD behaviour during IIC-1 suggests EPD's correct triggering here was by chance. The new configuration being tested in response to the failure in IIC-1 and IIC-4 will also address SBM-2 triggering.

2.3 IIC-3 Results

IIC-3 can be considered **successful**.

With the exception of a sign error in one component of one commanded magnetic field vector, all the MAG vectors were sent correctly and SWA responded as expected by setting the look-direction of the EAS sensors to lie within the plane of the magnetic field.

2.4 IIC-4 Results

IIC-4 can be considered **partially successful**.

SBM1 triggers were issued by RPW and those triggers were responded to by MAG and SWA, but not by EPD, as for IIC-1. The explanation is the same.

RPW issued an SBM1 trigger almost immediately after enabling their detection algorithm, at 06:51:09 and another some 7 minutes 48 seconds later at 06:58:57. This second trigger is at a time consistent with when a response to MAG's injection of the simulated shock signal, between 06:57:20 and 06:57:25, would be expected, given the configuration of the SBM1 algorithm (DT1 = 180s). However, subsequent to this second trigger, additional SBM1 triggers were also issued at 7 minute, 48 second intervals, after which the SBM1 detection algorithm was disabled as expected.

It is therefore unclear whether or not second the SBM1 trigger was issued in response to the change in magnetic field supplied by MAG or as some sort of periodic behaviour of the algorithm. Further investigation is needed.

Note also that although the SBM1 triggers are reported in RPW low latency data, the associated quality factors are all zero. TBD whether or not this is consistent with expectations.

2.5 IIC-5 Results

IIC-5 can be considered **partially successful**.

EPD correctly sent its test pattern of simulated electron flux, which was correctly received and interpreted by RPW, which entered SBM2_AQUISITION mode. RPW should then have confirmed by presence of the radio burst by examining TDS data. This confirmation did not happen and thus no SBM2 trigger was issued. This is likely because of a TDS misconfiguration.



3 DETAILED RESULTS: IIC-1

UTC	Step description	Successful? Yes/No	Comments
RPW Issues SBM1 Trigger; EPD, MAG and SWA-EAS React			
2020-06-06T05:00:00	RPW to enable TM(3,25) HK "TM_DPU_IIT_HK" at 1 Hz to dump contents of TC(20,128) from EPD, MAG, RPW and SWA. To be kept enabled during the duration of the entire IS-IIC campaign (IIC-1, IIC-2, IIC-3, IIC-4 and IIC5). RPW Activate also SBM1 HK (1 per sec)	YES	First S1 HK produced on 00:00:03.69 (then every 1s).
2020-06-06T05:00:04	RPW to feed IIC TM(3,25) with test pattern: SMB1_FLAG and SMB2_FLAG1 are set to 0; SBM1_ENABLED to 1; SBM2_ENABLED to 0	YES	
2020-06-06T05:00:05	EPD to enable trigger mode 2, set trigger mode 2 threshold to 0xB0FF, set internal instrument particle flux threshold to 0x00, set idle time of all modes to 0 mins (to guarantee consecutive transitions during the IS-IIC).	YES	All the EPD commands for this test were successfully executed.
2020-06-06T05:01:20	MAG to enable BM trigger, threshold set to 0xB0FF, duration set to 5 minutes (AIMF406A)	Yes	6 TCs executed. First TC accepted (1,1): 2020-06-06T05:01:20.114006042 Final TC completion (1,7): 2020-06-06T05:01:29.122077584
2020-06-06T05:02:10	SWA to enable trigger mode for SWA-EAS, keep SWA-PAS reaction disabled, set threshold to 0xB0FF EAS 1&2 Compression ON	YES	
2020-06-06T05:08:11	RPW to feed IIC TM(3,25) with test pattern SMB1_FLAG to 1; SMB2_FLAG1 to 0; SBM1_ENABLED to 1; SBM2_ENABLED to 0	YES	
Autonomous Reactions	EPD Burst Mode 2 Triggered	NO	No Burst mode was triggered The specific Burst conditions for this test never were activated.
	Mag mode transition from NM to BM	Yes	RPW trigger received: 2020-06-06T05:08:12.494254112 Trigger quality factor: 45,370 Normal mode to Burst mode: 2020-06-06T05:08:12.497519493
	SWA-EAS Trigger mode Enabled	YES	T05:08:11.884. All event parameters are correct. Followed by 5 minutes of TM data.
2020-06-06T05:13:11	MAG transition back from Bust to Normal mode after 5 minutes	Yes	Burst mode to Normal mode: 2020-06-06T05:13:12.566210032
2020-06-06T05:13:12	RPW to feed IIC TM(3,25) with test pattern SMB1_FLAG and SMB2_FLAG1 are set to 0; SBM1_ENABLED to 1; SBM2_ENABLED to 0	YES	
Autonomous Reactions	EPD disables burst mode 2	No	Because Burst mode wasn't activated
RPW Issues SBM1 Trigger; No reaction because quality too low			
2020-06-06T05:13:13	EPD to enable trigger mode 2, set trigger mode 2 threshold to 0xB200, set internal instrument particle flux threshold to 0x00, set idle time of all modes to 0 mins (to guarantee consecutive transitions during the IS-IIC).	YES	All the EPD commands for this test were successfully executed.
2020-06-06T05:13:18	MAG to enable BM trigger, threshold set to 0xB200, duration set to 5 minutes (AIMF406A)	Yes	7 TCs executed. First TC accepted (1,1): 2020-06-06T05:13:18.115505099 Final TC completion (1,7): 2020-06-06T05:13:24.124197364



2020-06-06T05:44:08	SWA to enable trigger mode for SWA-EAS, keep SWA-PAS reaction disabled, set threshold to 0xB200		
2020-06-06T05:44:09	RPW to feed IIC TM(3,25) with test pattern SMB1_FLAG to 1; SMB2_FLAG1 to 0; SBM1_ENABLED to 1; SBM2_ENABLED to 0	YES	
Autonomous Reactions	EPD Does not enter burst mode	YES	No Burst mode was triggered The specific Burst conditions for this test never were activated, however we were expecting a value in the bit-set of 0x0001 (SMB1_Flag_val=true) but during the test, the value is 0x0002 or 0x0006.
	MAG Does not enter burst mode	Yes	No mode transition occurred.
	SWA does not enter trigger mode		T05:44:11.887. All event parameters are correct. No TM data were received as expected.
RPW issues SB1 Trigger; EPD enters trigger mode 3			
2020-06-06T05:49:10	RPW to feed IIC TM(3,25) with test pattern SMB1_FLAG and SMB2_FLAG1 are set to 0; SBM1_ENABLED to 1; SBM2_ENABLED to 0	YES	
2020-06-06T05:49:11	EPD to enable trigger mode 3, set trigger mode 3 threshold to 0xB1FF, set internal instrument particle flux threshold to 0x00, set idle time of all modes to 0 mins (to guarantee consecutive transitions during the IS-IIC).	YES	All the EPD commands for this test were successfully executed.
2020-06-06T05:49:56	RPW to feed IIC TM(3,25) with test pattern SMB1_FLAG to 1; SMB2_FLAG1 to 0; SBM1_ENABLED to 1; SBM2_ENABLED to 0	YES	
Autonomous Reactions	EPD burst mode 3 triggered	NO	No Burst mode was triggered We were expecting a value in the bit-set of 0x0015 but during the test, the value is 0x0002.
2020-06-06T05:54:57	RPW to feed IIC TM(3,25) with test pattern SMB1_FLAG and SMB2_FLAG1 are set to 0; SBM1_ENABLED to 1; SBM2_ENABLED to 0	YES	
Autonomous Reactions	EPD disables burst mode 3	No	Because Burst mode wasn't activated

4 DETAILED RESULTS: IIC-2

UTC	PDOR summary / Step description	Successful? Yes/No	Comments
IIC-2-A: RPW Issues SBM2 Trigger, EPD reacts			
2020-06-06T06:00:00	RPW to feed IIC TM(3,25) with test pattern SMB1_FLAG and SMB2_FLAG1 are set to 0; SBM1_ENABLED to 0; SBM2_ENABLED to 1	YES	
2020-06-06T06:00:06	EPD to enable trigger mode 5, set trigger mode 5 threshold to 0xC0FF, set idle time of all modes to 0 mins (to guarantee consecutive transitions during the IS-IIC).	YES	All the EPD commands for this test were successfully executed.
2020-06-06T06:00:46	RPW to feed IIC TM(3,25) with test pattern SMB1_FLAG to 0; SMB2_FLAG1 to 1; SBM1_ENABLED to 0; SBM2_ENABLED to 1	YES	
Autonomous Reactions	EPD burst mode 5 triggered	YES	2020-06-06T06:01:53.281 Burst mode 5 was triggered
2020-06-06T06:15:47	RPW to feed IIC TM(3,25) with test pattern SMB1_FLAG and SMB2_FLAG1 are set to 0; SBM1_ENABLED to 0; SBM2_ENABLED to 1	YES	
Autonomous Reactions	EPD burst mode 5 disabled		2020-06-06T06:04:53.280
IIC-2-B: RPW Issues SBM2 Trigger, no reaction, quality factor smaller than EPD's threshold			



2020-06-06T06:15:48	EPD to enable trigger mode 5, set trigger mode 5 threshold to 0xC200, set idle time of all modes to 0 mins (to guarantee consecutive transitions during the IS-IIC).	YES	All the EPD commands for this test were successfully executed.
2020-06-06T06:16:33	RPW to feed IIC TM(3,25) with test pattern SMB1_FLAG to 0; SMB2_FLAG1 to 1; SBM1_ENABLED to 0; SBM2_ENABLED to 1	YES	
Autonomous Reactions	No reaction expected from EPD	YES	Burst mode 5 was not triggered
2020-06-06T06:21:34	RPW to feed IIC TM(3,25) with test pattern SMB1_FLAG and SMB2_FLAG1 are set to 0; SBM1_ENABLED to 0; SBM2_ENABLED to 0	YES	
Autonomous Reactions	No reaction expected from EPD	YES	

5 DETAILED RESULTS: IIC-3

UTC	PDOR summary / Step description	Successful? Yes/No	Comments	Old UTC
IIC-3 SWA-EAS Reacts to MAG Field Changes				
2020-06-06T06:40:00	SWA-EAS transition to Burst mode for 5 minutes	Yes		2020-05-24T16:40:00
2020-06-06T06:40:01	IM-FCP-404: MAG send Matrix 1: X=-278nT, Y=1971nT, Z=482nT	Yes	3 TCs executed. First TC accepted (1,1): 2020-06-06T06:40:01.124034762 Final TC completion (1,7): 2020-06-06T06:40:06.133839250	2020-05-24T16:40:01
Autonomous Reactions	NIA00451 EAS_ID = 0; NIA00452 ELEVATION_ID = 1E	No	Incorrect Bx used. +278 not -278	
2020-06-06T06:40:41	IM-FCP-404: MAG send Matrix 2: X=-443nT, Y=-1607nT, Z=1190nT	Yes	3 TCs executed. First TC accepted (1,1): 2020-06-06T06:40:41.125123620 Final TC completion (1,7): 2020-06-06T06:40:46.133707404	2020-05-24T16:40:41
Autonomous Reactions	NIA00451 EAS_ID = 1; NIA00452 ELEVATION_ID = 3C	Yes		
2020-06-06T06:41:21	IM-FCP-404: MAG send Matrix 3: X=-349nT, Y=983nT, Z=-1762nT	Yes	3 TCs executed. First TC accepted (1,1): 2020-06-06T06:41:21.125129104 Final TC completion (1,7): 2020-06-06T06:41:26.133850098	2020-05-24T16:41:21
Autonomous Reactions	NIA00451 EAS_ID = 0; NIA00452 ELEVATION_ID = 5A	Yes		
2020-06-06T06:42:01	IM-FCP-404: MAG send Matrix 4: X=0nT, Y=0nT, Z=0nT	Yes	3 TCs executed. First TC accepted (1,1): 2020-06-06T06:42:01.123990178 Final TC completion (1,7): 2020-06-06T06:42:06.133626699	2020-05-24T16:42:01
Autonomous Reactions	NIA00451 EAS_ID = ?; NIA00452 ELEVATION_ID = ??	Yes	Mag Null vector used. Validity reported correctly	
2020-06-06T06:42:41	IM-FCP-404: MAG send Matrix 5: X=-1190nT, Y=-1559nT, Z=-590nT	Yes	3 TCs executed. First TC accepted (1,1): 2020-06-06T06:42:41.127337337 Final TC completion (1,7): 2020-06-06T06:42:46.133983135	2020-05-24T16:42:41
Autonomous Reactions	NIA00451 EAS_ID = 1; NIA00452 ELEVATION_ID = 69	Yes		
2020-06-06T06:43:21	IM-FCP-404: MAG send Matrix 6: X=-1432nT, Y=743nT, Z=-1262nT	Yes	3 TCs executed. First TC accepted (1,1): 2020-06-06T06:43:21.126839161 Final TC completion (1,7): 2020-06-06T06:43:26.133500338	2020-05-24T16:43:21
Autonomous Reactions	NIA00451 EAS_ID = 0; NIA00452 ELEVATION_ID = A5	Yes		



2020-06-06T06:44:01	IM-FCP-404: MAG send Matrix 7: X=-1914nT, Y=-706nT, Z=-182nT	Yes	3 TCs executed. First TC accepted (1,1): 2020-06-06T06:44:01.126478434 Final TC completion (1,7): 2020-06-06T06:44:06.133032799	2020-05-24T16:44:01
Autonomous Reactions	NIA00451 EAS_ID = 1; NIA00452 ELEVATION_ID = C3	Yes		
2020-06-06T06:44:41	IM-FCP-404: MAG send Matrix 8: X=-1976nT, Y=250nT, Z=-477nT	Yes	3 TCs executed. First TC accepted (1,1): 2020-06-06T06:44:41.125934601 Final TC completion (1,7): 2020-06-06T06:44:46.132550001	2020-05-24T16:44:41
Autonomous Reactions	NIA00451 EAS_ID = 0; NIA00452 ELEVATION_ID = E1	Yes		
2020-06-06T06:45:21	MAG load default calibration matrix	Yes	3 TCs executed. First TC accepted (1,1): 2020-06-06T06:45:21.125741720 Final TC completion (1,7): 2020-06-06T06:45:26.132174015	2020-05-24T16:45:21

6 DETAILED RESULTS: IIC-4

UTC	PDOR summary / Step description	Successful? Yes/No	Comments
IIC-4 RPW Issues SBM1 Trigger Based on Changes in MAG data. Other instruments react			
2020-06-06T06:50:00	EPD to enable trigger mode 3, set trigger mode 3 threshold to 0x0000, set internal instrument particle flux threshold to 0x00, set idle time of all modes to 0 mins (to guarantee consecutive transitions during the IS-IIC).	YES	All the EPD commands for this test were successfully executed.
2020-06-06T06:50:15	MAG to enable BM trigger, threshold set to 0x0000, duration set to 5 minutes (AIMF406A)	Yes	10 TCs executed. First TC accepted (1,1): 2020-06-06T06:50:15.125040412 Final TC completion (1,7): 2020-06-06T06:50:33.129602194
2020-06-06T06:51:05	RPW to enable SBM1 detection algorithm, with coefficient values of alpha=1, beta=0, gamma=0	YES	
2020-06-06T06:51:10	SWA to enable trigger mode for SWA-EAS, keep SWA-PAS reaction disabled, set threshold to 0x0000	YES	
2020-06-06T06:57:20	IM-FCP-404: MAG send Matrix 2: contents such that there is a step change in X of 100nT e.g. X=-1000nT, Y=-600nT, Z=-100nT	Yes	3 TCs executed. First TC accepted (1,1): 2020-06-06T06:57:20.126113415 Final TC completion (1,7): 2020-06-06T06:57:25.130470395



		YES	<p>RPW detects SBM1 event at :</p> <ul style="list-style-type: none"> - 06:51:09 - 06:58:57 - 07:06:45 - 07:14:33 - 07:22:22 - 07:30:10 <p>RPW enters SBM1_DUMP mode (sending SBM1 data) :</p> <ul style="list-style-type: none"> - from 06:54:09 to 06:58:59 - from 07:01:57 to 07:06:45 - from 07:09:45 to 07:14:33 - from 07:17:33 to 07:22:22 - from 07:25:22 to 07:30:10 <p>(in between those times, RPW returns in SBM_DETECTION mode)</p>
Autonomous Reactions	RPW Issues SBM1 Trigger & sends SBM1 data		
Autonomous Reactions	EPD enters Burst Mode 3	NO	<p>No Burst mode was triggered</p> <p>The specific L1 Burst conditions for this test never were activated. We were expecting a value in the bit-set of 0x0015 but during the whole test, the values are either 0x0002 or 0x0000.</p>
	MAG transitions from Normal to Burst mode	Partial	<p>Trigger received by MAG: 2020-06-06T06:51:16.504796386</p> <p>Normal mode to Burst mode: 2020-06-06T06:51:16.508077025</p> <p>Trigger quality factor: Zero</p> <p>MAG appears to have been triggered based on trigger sent at the time when RPW enabled shock detection algorithm, not when the simulated shock was delivered from MAG to RPW.</p>
	SWA-EAS Enters Trigger mode		T06:51:15.894. All event parameters are correct. Plus 5mins of TM data.
Autonomous Reactions	EPD disables Burst Mode 3	NO	N/A
	MAG transitions from Burst to Normal mode	Yes	<p>MAG reverted back to Normal mode after 5 minutes:</p> <p>2020-06-06T06:56:16.616486311</p>
	RPW returns to Normal Mode	YES	See above
2020-06-06T07:32:17	RPW to disable SBM1 detection algorithm	YES	
2020-06-06T07:32:21	MAG to load default calibration matrices	Yes	<p>3 TCs executed.</p> <p>First TC accepted (1,1): 2020-06-06T07:32:21.129408598</p> <p>Final TC completion (1,7): 2020-06-06T07:32:26.133658886</p>



7 DETAILED RESULTS: IIC-5

UTC	PDOR summary / Step description	Successful? Yes/No	Comments
IIC-4 RPW Issues SBM2 Trigger Based on Changes in EPD data. EPD reacts			
2020-06-06T07:35:05	EPD to enable trigger mode 5, set trigger mode 5 threshold to 0x0000, set idle time of all modes to 0 mins (to guarantee consecutive transitions during the IS-IIC).	YES	All the EPD commands for this test were successfully executed.
2020-06-06T07:35:15	RPW to enable SBM2 detectino algorithm, set ΔTEPD to 5mins (TBD), set NEPD-tresh to 1 (TBD), set ΔTSBM2 to 15mins (TBD), set NLW-thresh to 0, set ΔTLW to 5mins (TBD).	YES	
2020-06-06T07:35:16	EPD Command test pattern. Contents of the test pattern should contain the following values: Electrons Sun 40/60 = 0; Electrons ASun 40/60 = 8.	YES	All the EPD commands for this test were successfully executed.
Autonomous Reaction	RPW SBM2 mode automatic transition	YES	RPW enters SBM2_ACQUISITION mode at 07:35:32
Autonomous Reaction	RPW stays in SBM2 and notifies SBM2 detection	YES (from an IIC point of view, as link with EPD worked)	RPW notifies detection at 07:35:30 via TM_DPU_EVENT_PR_DPU_SBM2 with PA_DPU_SBM2_PR_CODE = 1 (SBM2_DETECTED and not CONFIRMED) --> RPW has been alerted by EPD but TDS did not confirmed the SBM2 event so no data acquired -> wrong configuration of TDS ?
Autonomous Reaction	EPD burst mode 5 triggered	NO	Burst mode 5 was not triggered The specific L1 Burst conditions for this test were not activated. We were expecting a value in the bit-set of 0x000a but during the whole test the value is at 0x0000.
Autonomous Reaction	RPW exits SBM2 and set SBM2 flag to 0	YES	RPW exits SBM2_ACQUISITION mode at 07:50:33
Autonomous Reaction	EPD burst mode 5 disabled	NO	N/A
2020-06-06T07:55:21	EPD: comand to default configuration	YES	All the EPD commands for this test were successfully executed.
2020-06-06T07:56:51	MAG: Normal Mode, BM trigger reaction disabled, default calibration matrices	Yes	4 TCs executed. First TC accepted (1,1): 2020-06-06T07:56:51.131563067 Final TC completion (1,7): 2020-06-06T07:56:55.136238933
2020-06-06T07:59:51	RPW: Command to default configuration (including disabling of TM(3,25) HK "TM_DPU_IIT_HK" generation)	YES	RPW exits SBM2_ACQUISITION mode at 07:59:52 (as required by PDOR)
2020-06-06T07:59:56	SWA: comand to default configuration (i.e. switch off)	YES	SWA received 2 more RPW triggers during power down and reacted due to threshold =0 and Trigger reaction not disabled.