

HERSCHEL

**SPIRE On-Board Software
Acceptance Test Report**

Document Ref.: SPIRE-IFS-REP-001393

Issue: 1.3

Prepared by: Sergio Molinari

.....	INTRODUCTION	
.....		3
1		3
1.1	PURPOSE OF THE DOCUMENT	3
1.2	ACRONYMS AND GLOSSARY	3
1.3	DOCUMENT LIST	3
1.3.1	<i>Applicable Documents</i>	3
1.3.2	<i>Reference Documents</i>	4
2	TEST CONFIGURATION	5
3	EXECUTION OF THE TEST PROCEDURES	6
3.1	TP1.....	6
3.2	TP2.....	6
3.3	TP3.....	6
3.4	TP4.....	11
3.5	TP5.....	15
3.6	TP6.....	19

1 Introduction

1.1 Purpose of the document

This document is the test report for the acceptance of SPIRE OBS Version 1 on the SPIRE AVM1 DPU, produced against the procedures contained in AD6. Only the procedure steps with a grey background in AD6 (acceptance test) will be executed.

1.2 Acronyms and Glossary

BC	Bus Controller
BP	BreakPoint
CDMS	Command and Data Management System
DM	Data Memory (DSP)
DPU	Digital Processing Unit
DSP	Digital Signal Processor
EGSE	Electrical Ground Support Equipment
HK	Housekeeping
HW	Hardware
ICE	DSP In-Circuit Emulator
I/F	Interface
NA	Not Applicable
OBS	On-Board Software
PM	Program Memory (DSP)
RAM	Random Access Memory
S/C	Spacecraft
S/S	Subsystem
TBC	To Be Confirmed
TBD	To Be Defined
TBW	To Be Written
TC	Telecommand
TM	Telemetry
VME	Virtual Machine Executable Code

1.3 Document List

1.3.1 Applicable Documents

Reference	Name	Number/version/date
AD1	SPIRE OBS User Requirements Document	SPIRE-IFS-PRJ-000444 v1.3
AD2	SPIRE OBS Software Specifications Document	SPIRE-IFS-PRJ-001036 v1.1
AD3	Packet Structure Interface Control Document	SCI-PT-ICD-7527 v4.0
AD4	Herschel/Planck Instrument Data Rates	H-P-1-ASPI-TN-0204
AD5	DPU Switch-on procedure	

AD6	SPIRE OBS SVVP	SPIRE-IFS-DOC-0001392 v1.3
-----	----------------	----------------------------

1.3.2 Reference Documents

Reference	Name	Number/version
RD1	SPIRE Data ICD	SPIRE-RAL-PRJ-001078 v1.1
RD2	DRCU/DPU ICD	Sap-SPIRE-CCa-076-02 v1.1
RD3	Virtual Machine Compiler and Simulator	CNR.IFSI.2003.TR01 v2.0.2
RD4	SPIRE OBS User Manual	SPIRE-IFS-PRJ-001391 v1.0

2 Test Configuration

The DPU used to accept the SPIRE OBS Version 1 at IFSI is the AVM1 model. It consists of a motherboard, a CPU board and a Payload Interface Board; the boards used are those originally provided by CGS as AVM model and refurbished according to....Renato per favore completa. No board redundancy is provided. An external power supply is used to generate the needed voltages according to the following scheme: Renato per favore completa.

The DPU is connected via 3 distinct cables to the DRCU Simulator; this is a PC containing a custom electronic board that simulates the hardware interface to the S/S as specified in RD2.

The DPU is also connected to a MIL-STD-1553B bus that in turn is connected to a CDMS Simulator; this is a PC containing a DDC 1553 board that implements the required hardware interface on the spacecraft side.

The CDMS Simulator is connected via Internet to SCOS2000, that implements the ground segment component that uplinks command to the spacecraft and receives telemetry.

All test equipment is setup according to AD6.

3 Execution of the Test Procedures

3.1 TP1

This procedure has been executed on October 8 2004, starting at 11:00 CET

Step #	Expected Reaction	Observed Reaction	Comments	Result
1	None			
2	None			
3	An event TM (5,2) should be received by SCOS2000. The last word before the CRC of the received packet should be 0 (no errors).	Same as expected		Pass
4	Both essential and nominal HK TM packets TM (3,25) should be received by SCOS2000	Same as expected		Pass
5	None			
6	An event TM (5,2) should be received by SCOS2000. The last word before the CRC of the received packet should be 0 (no errors).	Same as expected		Pass
7	Verify that no TM (5,2) or TM(5,4) are received.	Same as expected		Pass
8	Both essential and nominal HK TM packets TM (3,25) should be received by SCOS2000	Same as expected		Pass

Telemetry packets received during this test procedure are logged in file TP1_Telemetry.txt

3.2 TP2

No steps of this procedure are foreseen for the OBS acceptance.

3.3 TP3

Only the subset of grey background steps of this procedure is foreseen for execution in the acceptance tests. The procedure step numbering is maintained consistent with AD6 for ease of reference.

This procedure has been executed on October 8 2004, starting at about 16:00 CET

Step #	Expected Reaction	Observed Reaction	Comments	Result
1	N/A			
2	N/A			
3	N/A			

4	N/A			
5	None			
6	None			
7	None			
8	N/A			
9	N/A			
10	N/A			
11	Verify reception of: TM (1,1), (1,3), (17,2) and (1,7)	Same as expected		Pass
12	Verify reception of: TM (1,1) , (1,3), (14,4) and (1,7)	Same as expected		Pass
	Use PacketDisplay to verify that the list of SIDs in TM (14,4) matches the list of enabled TM packets (all of them are enabled by defaults at start-up; the list is in RD4).	Same as expected	See TP3_Telemetry log file	
13	Verify reception of: TM (1,1), (9,9), (1,3) and (1,7)	Same as expected	See TP3_Telemetry log file	Pass
14	N/A			
15	N/A			
16	N/A			
17	N/A			
18	N/A			
19	Verify reception of TM (1,2) with failure code 1	Same as expected	See TP3_Telemetry log file	Pass
20	Verify reception of TM (1,2) with failure code 2	Same as expected	See TP3_Telemetry log file	Pass
21	Verify reception of TM (1,2) with failure code 3	Same as expected	See TP3_Telemetry log file	Pass
22	Verify reception of TM (1,2) with failure code 4	Same as expected	See TP3_Telemetry log file	Pass
23	Verify that only TM (17,2) is received	Same as expected	See TP3_Telemetry log file	Pass
24	Verify that only TM (1,1) and TM (17,2) are received	Same as expected	See TP3_Telemetry log file	Pass
25	Verify that only TM (1,3) and TM (17,2) are received	Same as expected	See TP3_Telemetry log file	Pass
26	Verify that only TM (1,7) and TM (17,2) are received	Same as expected	See TP3_Telemetry log file	Pass
27	Verify reception of TM (1,1), (1,3), (6,6) and (1,7).	Same as expected		Pass
	Check with PacketDisplay that the received words are different from the pattern contained in Errore. L'origine riferimento non è stata trovata.	Same as expected	See TP3_Telemetry log file	

28	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
29	Verify reception of TM (1,1), (1,3), (6,6) and (1,7).	Same as expected		Pass
	Use PacketDisplay to compare received data words to the pattern uplinked in Errore. L'origine riferimento non è stata trovata.. Store received memory words into a text file on the CDMS computer. Run program "CRC" on this file and record the computed CRC.	Same as expected	See TP3_Telemetry log file. The computed CRC word is 0xB421	
30	Verify reception of TM (1,1), (1,3), (6,10) and (1,7).	Same as expected		Pass
	Verify with PacketDisplay that the received Checksum is identical to CRC computed in the previous step.	Same as expected	The CRC is 0xB421	
31	Verify reception of TM (1,1) and TM (1,8) with error code 0x601 (Illegal Memory ID)	Same as expected	See TP3_Telemetry log file	Pass
32	Verify reception of TM (1,1) and TM (1,8) with error code 0x602 (Illegal Start Address)	Same as expected	See TP3_Telemetry log file	Pass
33	Verify reception of TM (1,1) and TM (1,8) with error code 0x603 (Illegal NSAU)	Same as expected	See TP3_Telemetry log file	Pass
34	Verify reception of TM (1,1) and TM (1,8) with error code 0x604 (Bad NSAU)	Same as expected	See TP3_Telemetry log file	Pass
35	Verify reception of TM (1,1) and TM (1,8) with error code 0x605 (Bad CRC)	Same as expected	See TP3_Telemetry log file	Pass
36	N/A			
37	N/A			
38	N/A			
39	Verify reception of TM (1,1) and TM (1,8) with error code 0x0811 (Undefined Table)	Same as expected	See TP3_Telemetry log file	Pass
40	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
41	Verify reception of TM (1,1), (1,3), (21,4) and (1,7).	Same as expected		Pass
	Check with PacketDisplay that the received pattern is all 0s.	Same as expected	See TP3_Telemetry log file	
42	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass

43	Verify reception of TM (1,1), (1,3), (21,1) and (1,7). Check with PacketDisplay that the received pattern is identical to that uplinked in Errore. L'origine riferimento non è stata trovata..	Same as expected		Pass
		Same as expected	See TP3_Telemetry log file	
44	Verify reception of TM (1,1) and (1,8) with error code 0x0801 (Illegal Function ID)	Same as expected	See TP3_Telemetry log file	Pass
45	Verify reception of TM (1,1) and (1,8) with error code 0x0802 (Illegal Activity ID)	Same as expected	See TP3_Telemetry log file	Pass
46	Verify reception of TM (1,1) and (1,8) with error code 0x0805 (Illegal Table ID)	Same as expected	See TP3_Telemetry log file	Pass
47	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
48	Verify reception of TM (1,1) and (1,8) with error code 0x0809 (Table Space Full)	Same as expected	See TP3_Telemetry log file	Pass
49	Verify reception of TM (1,1) and (1,8) with error code 0x0811 (Undefined Table)	Same as expected	See TP3_Telemetry log file	Pass
50	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
51	Verify reception of TM (1,1) (1,8) with error code 0x0806 (Illegal Table Index)	Same as expected	See TP3_Telemetry log file	Pass
52	Verify reception of TM (1,1) and (1,8) with error code 0x0808 (Bad Data)	Same as expected	See TP3_Telemetry log file	Pass
53	Verify reception of TM (1,1) and (1,8) with error code 0x080D (Bad NData)	Same as expected	See TP3_Telemetry log file	Pass
54	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
55	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
56	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
57	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
58	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
59	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass

60	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify reception of TM (21,4). Inspect the dumped table and note the start address for the three last created tables	Same as expected	See TP3_Telemetry log file. Using PacketDisplay I've look into the second TM (21,4) packet at line label 340 and noted table start addresses are 0x71B8, 0x71E8 and 0x7218 for tables 0x71, 0x72 and 0x73	
61	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
62	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify reception of TM (21,4). Inspect the dumped table and check that there is no table definition entry with ID 0x72.	Same as expected	See TP3_Telemetry log file. Using PacketDisplay I've look into the second TM (21,4) packet at line label 340 and noted that for table 0x72 there is now 0x0000 where previously there was 0x71E8	
63	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
64	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify reception of TM (21,4). Inspect the dumped table; check that the start address for table 0x73 is different from previous MOAT dump and that table 0x73 is now immediately following table 0x71	Same as expected	See TP3_Telemetry log file. Using PacketDisplay I've look into the second TM (21,4) packet at line label 340 and noted table start addresses are 0x71B8 and 0x71E8 for tables 0x71 and 0x73.	
65	Verify reception of TM (1,1), (1,3) and, after about 10 seconds, (1,7)	Same as expected		Pass
66	None			

67	Verify reception of TM (5,2)	Same as expected		Pass
68	None			
69	Verify reception of TM (1,1), (1,3), (17,2) and (1,7)	Same as expected		Pass

Telemetry packets received during this test procedure are logged in file TP3_Telemetry.txt

3.4 TP4

Only the subset of grey background steps of this procedure is foreseen for execution in the acceptance tests. The procedure step numbering is maintained consistent with AD6 for ease of reference.

This procedure has been executed on October 15 2004, starting at about 15:00 CET

Step #	Expected Reaction	Observed Reaction	Comments	Result
1	N/A			
2	N/A			
3	N/A			
4	N/A			
5	N/A			
6	N/A			
7	N/A			
8	N/A			
9	N/A			
10	N/A			
11	N/A			
12	N/A			
13	N/A			
14	None	Same as expected		Pass
15	Verify periodic (0.5/sec) reception of TM (3,25) Essential HK packets with SID 0x300. Verify periodic (1/sec) reception of TM (3,25) Nominal HK packets with SID 0x301	Same as expected		Pass
	Check that the MSB of the time field in the HK packets is 1	Same as expected		
	Verify reception of three TM (5,1) events with error codes 0x0520, 0x0521 and 0x0522 that notify a no_response condition from the DRCU (it is switched off). Also check that the MON-STAT parameter in SCOS2000 is 0 (all subsystems off).	Same as expected		

16	Verify reception of three TM (5,1) events with error codes 0x8520, 0x8521 and 8x522 notifying exit from the previous no_response condition from the DRCU (it is switched on). Also check that the MONSTAT parameter in SCOS2000 is 7 (all subsystems on).	Same as expected	During DRCU switch on transition there may be problems with command response integrity so that 50A, 50B or 50C events are seen (cleared soon after).	Pass
17	Verify reception of TM (1,1), (1,3) and (1,7).	Same as expected		Pass
	Verify that no TM (3,25) packets are lost by checking that the received packet counter in the CDMS log window shows no jumps	Same as expected		
18	Verify that the TSYNC time does not change	Same as expected		Pass
19	Verify that the TSYNC time increases of 1 second every second	Same as expected		Pass
20	None	Same as expected	2016.289.14.13.59	Pass
21	None	Same as expected	1 hour more	Pass
22	Verify that the TDIFF value in the SCOS2000 Telemetry Desktop window has changed of an amount equal to the time change carried out on the CDMS computer	Same as expected	2016.289.15.36.56 It differs of 3 seconds; that may be due to various overheads in the manual execution of the procedure	Pass
	Using PacketDisplay verify also the change in the time stamp of the HK packets received after the new time was loaded by the CDMS.	Same as expected		
23	None	Same as expected	1970.001.00.00.00	Pass
24	Verify that TRESET time is updated	Same as expected	2016.289.15.43.56	Pass
25	Verify reception of TM (1,1) and (1,8) with error code 0x0825 (Undefined HK Table)	Same as expected		Pass
26	Verify reception of TM (1,1), (1,3) and (1,7).	Same as expected		Pass
27	Verify reception of TM (1,1), (1,3) and (1,7).	Same as expected		Pass
28	Verify reception of TM (1,1), (1,3) and (1,7).	Same as expected		Pass
29	Verify reception of TM (1,1), (1,3) and (1,7).	Same as expected		Pass

30	Verify reception of TM (1,1), (1,3) and (1,7).	Same as expected		Pass
	Verify periodic (1/sec) reception of additional TM (3,25) diagnostic packets with SID 0x302	Same as expected		
31	Verify reception of TM (1,1), (1,3) and (1,7).	Same as expected		Pass
	Verify periodic (1/sec) reception of additional TM (3,25) diagnostic packets with SID 0x303	Same as expected		
32	Verify reception of TM (1,1) and (1,8) with error code = 0x0821 (Illegal HK Packet ID)	Same as expected		Pass
33	Verify reception of TM (1,1) and (1,8) with error code = 0x0834 (Illegal HK Sampling Interval)	Same as expected		Pass
34	Verify reception of TM (1,1) and (1,8) with error code = 0x0822 (Illegal HK SID)	Same as expected		Pass
35	Verify reception of TM (1,1) and (1,8) with error code = 0x0827 (err HK Sampling Running)	Same as expected		Pass
36	Verify reception of TM (1,1) and (1,8) with error code = 0x0827 (err HK Sampling Running)	Same as expected		Pass
37	Verify reception of TM (1,1), (1,3), (1,7) and (21,4) with APID = 0x508 and SID = 0x209.	Same as expected		Pass
38	Verify reception of TM (1,1), (1,3), (1,7) and (21,4) with APID = 0x508 and SID = 0x209.	Same as expected		Pass
39	Verify reception of TM (1,1), (1,3), (1,7) and (21,4) with APID = 0x508 and SID = 0x209.	Same as expected		Pass
40	Verify reception of TM (1,1), (1,3), (1,7) and (21,4) with APID = 0x508 and SID = 0x209.	Same as expected		Pass
41	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that reception of TM (3,25) with SID 0x300 has stopped	Same as expected		
42	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
43	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass

	Verify that the contents of the three HK packets immediately following the issue of the command (1 per SID, excluding 0x300 that is stopped) is not perturbed (i.e. the parameters should always be at the same location).	Same as expected		
44	Verify reception of TM (1,1) and (1,8) with error code = 0x0813 (Busy Table)	Same as expected		Pass
45	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that reception of TM (3,25) with SID 0x302 has stopped	Same as expected		
46	Verify reception of TM (1,1) and (1,8) with error code = 0x0822 (Illegal HK SID)	Same as expected		Pass
47	Verify reception of TM (1,1) and (1,8) with error code = 0x0829 (Undefined HK ID)	Same as expected		Pass
48	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that reception of TM (3,25) with SID 0x303 has stopped	Same as expected		
49	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that reception of TM (3,25) with SID 0x301 has stopped	Same as expected		
50	N/A			
51	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
52	Verify reception of TM (1,1) and (1,8) with error code = 0x0829 (Undefined HK ID)	Same as expected		Pass
53	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify reception of TM (5,1) with error code = 0x0509 (S/S Command Unknown)	Same as expected		
54	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify reception of TM (5,1) with error code = 0x8509 (exit from previous error condition)	Same as expected		

Telemetry packets received during this test procedure are logged in file TP4_Telemetry.txt

3.5 TP5

This procedure has been executed on October 15 2004, starting at about 17:00 CET

Step #	Expected Reaction	Observed Reaction	Comments	Result
1	None	Same as expected		Pass
2	None	Same as expected		Pass
3	Verify periodic (0.5/sec) reception of TM (3,25) Essential HK packets with SID 0x300. Verify periodic (1/sec) reception of TM (3,25) Nominal HK packets with SID 0x301	Same as expected		Pass
4	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
5	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
6	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
7	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
8	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected	Used TCL script	Pass
9	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected	Used TCL script	Pass
10	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected	Used TCL script	Pass
11	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected	Used TCL script	Pass
12	Verify reception of TM (1,1), (1,3), (8,6) confirming VM is inactive, and (1,7)	Same as expected		Pass
13	Verify reception of TM (1,1), (1,3), (8,6) confirming VM1 is inactive, and (1,7)	Same as expected		Pass
14	Verify reception of TM (1,1), (1,3), (8,6) confirming VM2 is inactive, and (1,7)	Same as expected		Pass
15	Verify reception of TM (1,1), (1,3), (8,6) confirming VM3 is inactive, and (1,7)	Same as expected		Pass
16	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass

	Verify that no TM (5,1) events with error code = 0x050C are received	Same as expected		
	Verify that LS_Workload parameter on SCOS TM monitor is increasing.	Same as expected	LSLOAD going from 0x90880 → 0xBB260 (by-eye peak values)	
17	Verify reception of TM (1,1) and (1,8) with error code = 0x080C (VM Running)	Same as expected		Pass
18	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that no TM (5,1) events with error code = 0x050C are received	Same as expected		
	Verify that LS_Workload parameter on SCOS TM monitor is increasing.	Same as expected	LSLOAD going from 0xBB260→0xD3B8A (by-eye peak values)	
19	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that no TM (5,1) events with error code = 0x050C are received	Same as expected		
	Verify that LS_Workload parameter on SCOS TM monitor is increasing.	Same as expected	LSLOAD going from 0xD3B8A→0xEA97A (by-eye peak values)	
20	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that no TM (5,1) events with error code = 0x050C are received	Same as expected		
	Verify reception of TM (5,1) events with error code = 0x050F, notifying the overflow condition on the LS port.	Same as expected		
	Verify that LS_Workload parameter on SCOS TM monitor is increasing.	Same as expected	LSLOAD going from 0xEA97A→F6630 (by-eye peak values)	
21	Verify reception of TM (1,1), (1,3), (8,6) confirming VM is active and associated table ID is correct, and (1,7)	Same as expected		Pass
22	Verify reception of TM (1,1), (1,3), (8,6) confirming VM1 is active and associated table ID is correct, and (1,7)	Same as expected		Pass

23	Verify reception of TM (1,1), (1,3), (8,6) confirming VM2 is active and associated table ID is correct, and (1,7)	Same as expected		Pass
24	Verify reception of TM (1,1), (1,3), (8,6) confirming VM3 is active and associated table ID is correct, and (1,7)	Same as expected		Pass
25	Verify reception of TM (1,1) and (1,8) with error code = 0x0813 (Busy Table)	Same as expected		Pass
26	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that TM (5,1) with error code = 0x50F are no longer received.	Same as expected		
27	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
28	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
29	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify on the DRCU and with the LS_Workload parameter on SCOS2000 that flow of S/S commands is unperturbed, and that no TM (5,1) are received	Same as expected		
30	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
31	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
32	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that the traffic is back to normal by checking that the LS_Workload parameter on SCOS2000 is back to nominal (HK) values.	Same as expected		
33	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
34	None	Same as expected		Pass
35	Verify that these values are only found in correspondence of the correct HK parameter and nowhere else. This verifies that there was no cross-talk between the various VMs and HK collection task.	Same as expected		Pass

36	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
37	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
38	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
39	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
40	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
41	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
42	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
43	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
44	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that 18 TM (5,1) events are received with the correct values in the parameter field as specified in § Errore. L'origine riferimento non è stata trovata.	Same as expected		
45	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that no TM (5,1) events with error code = 0x050C are received	Same as expected		
	Verify that LS_Workload parameter on SCOS TM monitor is increasing.	Same as expected		
46	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify reception of TM (1,1), (1,3), (8,6) confirming VM is active and associated with table 0x87 (that is always used to store VM codes uplinked with the EXEC command), and (1,7)	Same as expected		
47	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that the traffic is back to normal by checking that the LS_Workload parameter on SCOS2000 is back to nominal (HK) values.	Same as expected		
48	Verify reception of TM (1,1),	Same as expected		Pass

	(1,3), (8,6) confirming VM is inactive, and (1,7)			
--	---	--	--	--

Telemetry packets received during this test procedure are logged in file TP5_Telemetry.txt

3.6 TP6

Only the subset of grey background steps of this procedure is foreseen for execution in the acceptance tests. The procedure step numbering is maintained consistent with AD6 for ease of reference.

This procedure has been executed on October 14 2004, starting at about 15:00 CET

Step #	Expected Reaction	Observed Reaction	Comments	Result
1	N/A			
2	Verify periodic (0.5/sec) reception of TM (3,25) Essential HK packets with SID 0x300. Verify periodic (1/sec) reception of TM (3,25) Nominal HK packets with SID 0x301	Same as expected		Pass
3	N/A			
4	N/A			
5	N/A			
6	N/A			
7	N/A			
8	N/A			
9	N/A			
10	N/A			
11	N/A			
12	N/A			
13	N/A			
14	Verify the reception of TM (1,1), (1,3) and (1,7) for all commands sent	Same as expected		Pass
15	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify start of reception for TM (21,1) science packets	Same as expected		
16	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass

	Verify that a total of 255 TM (21,1) science packets (each containing 1 Frame), has been received. TM packets will have APID=0x504 and SID=0x200. Use PacketDisplay to inspect and verify received packets against pattern sent by DRCU.	Same as expected		
17	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
18	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
19	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
20	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that TM (21,1) packets containing 255 frames were received, with APID = 0x506 and SID = 0x201. Use PacketDisplay to inspect and verify received packets against pattern sent by DRCU.	Got 43 TM packets.	Frames are 78 w/fr. A TM packets holds max. 498 words → $\text{int}(498/78)=6$ fr/pkt → excess round $(255/6) = 43$ pkts	
21	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
22	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify continuous reception of TM (21,1) packets with APID = 0x508 and SID = 0x410.	Same as expected		
23	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that TM (21,1) packets stops.	Same as expected		
24	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that the last TM (21,1) are received. Use PacketDisplay to inspect and verify received packets against pattern sent by DRCU.	Same as expected		
25	Verify reception of TM (1,1), (1,3), and (1,7)	Same as expected		Pass
26	Verify reception of TM (1,1), (1,3), and (1,7)	Same as expected		Pass

	Verify continuous reception of TM (21,1) packets with APID = 0x508 and SID = 0x612.	Same as expected		
27	Verify reception of TM (1,1), (1,3), and (1,7)	Same as expected		Pass
	Verify that TM (21,1) packets stops.	Same as expected		
28	Verify reception of TM (1,1), (1,3), and (1,7)	Same as expected		Pass
	Verify that the last TM (21,1) are received. Use PacketDisplay to inspect and verify received packets against pattern sent by DRCU.	Same as expected		
29	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
30	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected	31 inserted manually in combo box	Pass
31	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
32	Verify reception, each time, of TM (1,1); (1,3) and (1,7)	Same as expected		Pass
	Verify reception of TM (21,1) with APID = 0x508 and SID = 0xa20.	Same as expected		
33	Verify reception of TM (1,1); (1,3) and (1,7)	Same as expected		Pass
	Verify that the last TM (21,1) are received. Use PacketDisplay to inspect and verify received packets against pattern sent by DRCU.	Got 10 TM pkts	Frames are 30 w/fr. A TM packets holds max. 498 words → $\text{int}(498/30)=16$ fr/pkt → excess round $(155/16) = 10$ pkts	
34	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
35	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
36	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify reception of TM (21,2) packets with APID = 0x504 and SID = 0x102	Same as expected		
37	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass

	Verify that the last TM (21,2) are received. Use PacketDisplay to inspect and verify received packets against pattern sent by DRCU.	Got 85 TM pkts	Frames are 150 w/fr. A TM packets holds max. 498 words → $\text{int}(498/150)=3$ fr/pkt → excess round $(255/3) = 85$ pkts	
38	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
39	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
40	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify reception of TM (21,2) packets with APID = 0x504 and SID = 0x103	Same as expected		
41	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that the last TM (21,2) are received. Use PacketDisplay to inspect and verify received packets against pattern sent by DRCU.	Got 64 pkts	Frames are 102 w/fr. A TM packets holds max. 498 words → $\text{int}(498/102)=4$ fr/pkt → excess round $(255/4) = 64$ pkts	
42	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
43	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
44	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify reception of TM (21,2) packets with APID = 0x504 and SID = 0x104	Same as expected		
45	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that the last TM (21,2) are received. Use PacketDisplay to inspect and verify received packets against pattern sent by DRCU.	Got 29 pkts	Frames are 54 w/fr. A TM packets holds max. 498 words → $\text{int}(498/54)=9$ fr/pkt → excess round $(255/9) = 29$ pkts	
46	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
47	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
48	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass

	Verify reception of TM (21,2) packets with APID = 0x506 and SID = 0x106	Same as expected		
49	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that the last TM (21,2) are received. Use PacketDisplay to inspect and verify received packets against pattern sent by DRCU.	Got 16 pkts	Frames are 30 w/fr. A TM packets holds max. 498 words → $\text{int}(498/30)=16$ fr/pkt → excess round $(255/16) = 16$ pkts	
50	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
51	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
52	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify reception of TM (21,2) packets with APID = 0x506 and SID = 0x105	Same as expected		
53	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that the last TM (21,2) are received. Use PacketDisplay to inspect and verify received packets against pattern sent by DRCU.	Got 29 pkts	Frames are 54 w/fr. A TM packets holds max. 498 words → $\text{int}(498/54)=9$ fr/pkt → excess round $(255/9) = 29$ pkts	
54	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
55	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
56	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
57	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
58	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify reception of TM (21,3) packets with APID = 0x504 and SID = 0x309	Same as expected		
59	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that the last TM (21,3) are received. Use PacketDisplay to inspect and verify received packets against pattern sent by DRCU.	Got 255 pkts in total	Each packet holds 1 frame	

60	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
61	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
62	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
63	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
64	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify reception of TM (21,3) packets with APID = 0x504 and SID = 0x30a	Same as expected		
65	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that the last TM (21,3) are received. Use PacketDisplay to inspect and verify received packets against pattern sent by DRCU.	Got 85 pkts	Frames are 150 w/fr. A TM packets holds max. 498 words → $\text{int}(498/150)=3$ fr/pkt → excess round $(255/3) = 85$ pkts	
66	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
67	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
68	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
69	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
70	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify reception of TM (21,3) packets with APID = 0x504 and SID = 0x30b	Same as expected		
71	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that the last TM (21,3) are received. Use PacketDisplay to inspect and verify received packets against pattern sent by DRCU.	Got 64 pkts	Frames are 102 w/fr. A TM packets holds max. 498 words → $\text{int}(498/102)=4$ fr/pkt → excess round $(255/4) = 64$ pkts	
72	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
73	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
74	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass

75	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
76	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify reception of TM (21,3) packets with APID = 0x504 and SID = 0x30c	Same as expected		
77	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that the last TM (21,3) are received. Use PacketDisplay to inspect and verify received packets against pattern sent by DRCU.	Got 29 pkts	Frames are 54 w/fr. A TM packets holds max. 498 words → $\text{int}(498/54)=9$ fr/pkt → excess round $(255/9) = 29$ pkts	
78	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
79	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
80	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify reception of TM (21,3) packets with APID = 0x506 and SID = 0x30d	Same as expected		
81	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that the last TM (21,3) are received. Use PacketDisplay to inspect and verify received packets against pattern sent by DRCU.	Got 43 TM packets.	Frames are 78 w/fr. A TM packets holds max. 498 words → $\text{int}(498/78)=6$ fr/pkt → excess round $(255/6) = 43$ pkts	
82	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
83	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
84	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify reception of TM (21,3) packets with APID = 0x506 and SID = 0x30f	Same as expected		
85	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass

	Verify that the last TM (21,3) are received. Use PacketDisplay to inspect and verify received packets against pattern sent by DRCU.	Got 16 pkts	Frames are 30 w/fr. A TM packets holds max. 498 words → $\text{int}(498/30)=16$ fr/pkt → excess round $(255/16) = 16$ pkts	
86	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
87	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
88	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify reception of TM (21,3) packets with APID = 0x506 and SID = 0x30e	Same as expected		
89	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that the last TM (21,3) are received. Use PacketDisplay to inspect and verify received packets against pattern sent by DRCU.	Got 29 pkts	Frames are 54 w/fr. A TM packets holds max. 498 words → $\text{int}(498/54)=9$ fr/pkt → excess round $(255/9) = 29$ pkts	
90	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
91	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify continuous reception of TM (21,3) packets with APID = 0x508 and SID = 0x814.	Same as expected		
92	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that TM (21,3) packets stops.	Same as expected		
93	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that the last TM (21,3) are received. Use PacketDisplay to inspect and verify received packets against pattern sent by DRCU.	Same as expected		
94	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
95	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass

	Verify continuous reception of TM (21,3) packets with APID = 0x508 and SID = 0x915.	Same as expected		
96	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that TM (21,3) packets stops.	Same as expected		
97	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that the last TM (21,3) are received. Use PacketDisplay to inspect and verify received packets against pattern sent by DRCU.	Same as expected		
98	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
99	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected	Had to manually put 31 in the combo box	Pass
100	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
101	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify reception of four TM (1,1), plus reception of TM (21,3) with APID = 0x508 and SID = 0x1121.	Same as expected		
102	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that the last TM (21,3) are received. Use PacketDisplay to inspect and verify received packets against pattern sent by DRCU.	Got 10 TM pkts	Frames are 30 w/fr. A TM packets holds max. 498 words → $\text{int}(498/30)=16$ fr/pkt → excess round $(155/16) = 10$ pkts	
103	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
104	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
105	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
106	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
107	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass

	Verify reception of TM (21,4) packets with APID = 0x504 and SID = 0x207	Same as expected		
108	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that the last TM (21,4) are received. Use PacketDisplay to inspect and verify received packets against pattern sent by DRCU.	Got 255 pkts	1 pkt holds 1 frame	
109	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
110	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
111	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
112	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
113	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify reception of TM (21,4) packets with APID = 0x506 and SID = 0x208	Same as expected		
114	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that the last TM (21,4) are received. Use PacketDisplay to inspect and verify received packets against pattern sent by DRCU.	Got 43 TM packets.	Frames are 78 w/fr. A TM packets holds max. 498 words → $\text{int}(498/78)=6$ fr/pkt → excess round $(255/6) = 43$ pkts	
115	Verify reception of TM (1,1) and TM (1,8) with error code = 0x815 (Illegal Frame ID)	Same as expected		Pass
116	Verify reception of TM (1,1) and TM (1,8) with error code = 0x817 (Undefined Selection Table)	Same as expected		Pass
117	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
118	Verify reception of TM (1,1) and TM (1,8) with error code = 0x818 (Invalid length of Selection Table)	Same as expected		Pass
119	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass

120	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
121	Verify reception of TM (1,1) and TM (1,8) with error code = 0x819 (Invalid content of Selection Table)	Same as expected		Pass
122	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
123	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected	Used TCL script	Pass
124	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
125	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
126	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify continuous reception of TM (21,3) packets with APID = 0x504 and SID = 0x104	Same as expected		
127	Verify reception of TM (5,1) with error code =0x0506 (Illegal Frame ID)	DRCU Simulator does not allow this		N/A
	Verify that TM (21,3) packets with APID = 0x504 and SID = 0x104 are no longer received			
128	Verify reception of TM (5,1) with error code =0x8506 to signal exit from previous error condition	DRCU Simulator does not allow this		N/A
	Verify that TM (21,3) packets with APID = 0x504 and SID = 0x104 are again received			
129	Verify reception of TM (5,1) with error code =0x0507 (Illegal Frame length)	Same as expected	Length put to 53	Pass
	Verify that TM (21,3) packets with APID = 0x504 and SID = 0x104 are no longer received	Same as expected		
130	Verify reception of TM (5,1) with error code =0x8507 to signal exit from previous error condition	Same as expected		Pass
	Verify that TM (21,3) packets with APID = 0x504 and SID = 0x104 are again received	Same as expected		

131	Verify reception of TM (5,1) with error code =0x0508 (Illegal checksum)	Same as expected	Clicked on the CRC checkbox	Pass
	Verify that TM (21,3) packets with APID = 0x504 and SID = 0x104 are no longer received	Same as expected		
132	Verify reception of TM (5,1) with error code =0x8508 to signal exit from previous error condition	Same as expected		Pass
	Verify that TM (21,3) packets with APID = 0x504 and SID = 0x104 are again received	Same as expected		
133	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Use PacketDisplay to verify that the TM (21,3) now contain the SID = 0xC1A0	Same as expected		
	Use PacketDisplay to verify that the TM (21,3) packets now contain frames 10 words shorter.	Same as expected		
134	Verify reception of TM (1,1) and TM (1,8) with error code = 0x815 (Illegal Frame ID)	Same as expected		Pass
135	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Use PacketDisplay to verify reception of TM (8,6) containing a series of SID – FRAMEID-TABLEID combinations for all science frames for which selection can be active. There should be a group with SID = 0xC1A0, Frame Id = 4 and Table Id = 0x30. All others should contain their nominal SID with Table ID = 0xFFFF (meaning that there is no selection active from that Frame ID).	Same as expected		
136	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Use PacketDisplay to verify that TM (21,3) packets now contain again the nominal SID = 0x104	Same as expected		
	Use PacketDisplay to verify that the TM (21,3) packets now contain nominal Photometer PLW frames.	Same as expected		

137	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify reception of TM (8,6). Use PacketDisplay to verify that they contain nominal SIDs for all Frame IDs and all Table IDs should be 0xFFFF	Same as expected		
138	Verify reception of TM (1,1), (1,3) and (1,7)	Had to remove check manually		Pass
	Verify that TM (21,1,0x104) are no longer received	Same as expected		
139	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that the last TM packets are received	Same as expected		
140	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
141	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
142	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
143	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
144	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
145	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
146	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
147	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify continuous reception of TM (21,1) packets with APID = 0x504 and SID = 0x200	Same as expected		
148	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify continuous reception of TM (21,1) packets with APID = 0x508 and SID = 0x410	Same as expected		
149	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify continuous reception of TM (21,1) packets with APID = 0x508 and SID = 0xA20	Same as expected		

150	No TM (5,1) with error code = 0x50D, unless immediately followed by another (5,1) with code =0x850D (exit from anomaly condition).	No TM (5,1) 50d anomalies received	Removed essential HK packet so it is possible to check on PacketDisplay if TM (5,1) are effectively received	Pass
	Either using PacketDisplay , or by direct inspection of the TelemetryA.txt file on the CDMS, verify that no packets have been lost by checking that there are no jumps in packet counter for packets with the same APID.	Same as expected	Used Excel spreadsheet	
151	Verify reception of TM (5,1) with error code = 0x1503 (Science Memory pool is more than 80% occupied)	Same as expected		Pass
	Verify reception of TM (5,1) with error code = 0x1514 (VIRTUOSO FIFO queue for Science TM packets is more than 80% occupied)	Same as expected		
	Verify in the nominal HK packets that the counter for unsuccessfully allocated memory blocks for science packets increases	Same as expected		
152	Verify that reception of TM (5,1) with error code = 0x9503 (exit from 0x1503 error condition)	Same as expected		Pass
	Verify that reception of TM (5,1) with error code = 0x9514 (exit from 0x1514 error condition)	Same as expected		
	Verify in the nominal HK packets that the counter for unsuccessfully allocated memory blocks for science packets stops increasing	Same as expected		
153	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify reception of TM(14,4) packets. Use PacketDisplay to check that transmission of all packets is enabled.	Same as expected		
154	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass

	Verify that TM (21,1) with APID = 0x200 and 0xA20 are no longer received.	Same as expected		
155	Verify reception of TM (1,1), (1,3) and (1,7)	Not executed since these packets had been already switched-off to allow detecting TM (5,1) with PacketDisplay		N/A
	Verify that TM (3,25) essential HK Packets (SID = 0x300) are no longer received			
156	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify reception of TM (14,4) packet. Use PacketDisplay to verify that TM (21,1,0x200 and 0xA20) and TM (3,25,0x300) are not present in the report.	Same as expected	N/A for TM (3,25,0x300) see above	
157	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify that TM (21,1,0x200 and 0xA20) and TM (3,25,0x300) are again received	Same as expected	TM(3,25,0x300) have been reactivated before sending this command	
158	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify reception of a TM (14,4) packet. Use PacketDisplay to verify that transmission of all packets is enabled.	Same as expected		
159	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected	Hand to manually uncheck on DRCU	Pass
	Verify that TM (21,1,0x200) are no longer received	Same as expected		
160	Verify reception of TM (1,1), (1,3) and (1,7)	N/A	Hand to manually uncheck on DRCU as router crashed	Pass
	Verify that TM (21,1,0x410 and 0x612) are no longer received	Same as expected		
161	Verify reception of TM (1,1), (1,3) and (1,7)	N/A	Hand to manually uncheck on DRCU as router crashed	Pass
	Verify that TM (21,1,0xa20) are no longer received	Same as expected		
162	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass

	Verify that the last TM packets are received	Same as expected		
163	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify on SCOS2000 that OB-SID value has been updated in nominal HK packet	Same as expected		
164	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify on SCOS2000 that BBID value has been updated in nominal HK packet	Same as expected		
165	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify reception of TM (5,1) with error code =0x0501 that notifies the current values of MODE and STEP. Verify on SCOS2000 that MODE value has been updated in nominal HK packet.	Same as expected		
166	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify reception of TM (5,1) with error code =0x0501 that notifies the current values of MODE and STEP. Verify on SCOS2000 that STEP value has been updated in nominal HK packet	Same as expected		
167	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify on SCOS2000 that time of last DRCU sync has be reset in the nominal HK packet	Same as expected		
168	Verify reception of TM (1,1) and TM (1,8) with error code = 0x831 (Function Stopped) and TM (5,2) with error code = 0x832 (EXCP FX UNARMED ID)	Same as expected		Pass
169	Verify reception of TM (1,1) and TM (1,8) with error code = 0x831 (Function Stopped) and TM (5,2) with error code = 0x832 (EXCP FX UNARMED ID)	Same as expected		Pass
170	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass

171	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify on SCOS2000 that the SMEC latch state has changed in the nominal HK packet.	Same as expected	SMECLATCHSTAT parameter in "SMEC" section changed to 2	
172	Verify reception of TM (1,1) and TM (1,8) with error code = 0x831 (Function Stopped) and TM (5,2) with error code = 0x832 (EXCP FX UNARMED ID)	Same as expected		Pass
173	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
174	Verify reception of TM (1,1), (1,3) and (1,7)	Same as expected		Pass
	Verify on SCOS2000 that the SMEC latch state has changed in the nominal HK packet.	Same as expected	SMECLATCHSTAT parameter in "SMEC" section changed to 1	
175	Verify reception of TM (1,1) and (1,3)	Same as expected		Pass
	Verify that the numbering of the HK packets restarts from 0.	<u>Same as expected</u>		

Telemetry packets received during this test procedure are logged in file TP6_Telemetry.txt