EADS Astrium   **Herschel IEGSE Test report**   **Herschel**

Title: **Herschel Instrument EGSE Validation Test Report**

CI-No: *142 200*

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Distribution: See Distribution List (last page)

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Issue	Date	Sheet	Description of Change	Release
1/-	3.12.04	All	First issue	

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1   Scope

This test report describes the results of the integration and validation performed for the Herschel Instrument EGSE (HIEGSE) according to following Test Procedures:

- H-P-2-ASP-PL-0556, issue 1/1 from 09.11.2004 (PIPE Protocol Validation Plan for Herschel I.EGSE)

- PICC-ME-PL-002, Draft3 from 08.11.2004 (Validation Plan for CCS-IEGSE Testsequence Commanding Interface

1.1   Summary

Detailed results are given in the as-run-procedures attached. Following sub-chapters only give an overview of the different steps performed and list some anomalies detected resp. necessary modifications made.

1.1.1   Unpacking and Installation

One OS Data Server,

Two S2K Work Stations and

Two QLA Work Stations

were unpacked and installed according to H-P-2-ASP-PL-0556 in the instrumenters check-out room (ED49c) at EADS Astrium in Ottobrunn, building 5.0.

The S2K Laser Printer (B&W) was not delivered.

1.1.2   LAN Configuration

All machines connected to IS LAN were configured.

Clock was manually synchronised → NTP service to be installed on IEGSE

Note: The ntpd on server is called chronyd, runs on the server port 123 and is RFC1305 compatible. Configuration file chrony.conf on CCS server has to be modified to contain the subnet for IEGSE LAN (192.168.202).

1.1.3   Databases configuration

At this stage IEGSE MIB files and CCS MIB files were merged and imported in CCS system.

1.1.4　*Physical connection between CCS and I.EGSEvia IS LAN*

The correct TCP/IP communication between CCS and HIEGSE on IS LAN was checked.

Note: Default gateway on HIEGSE has to be set to hos4-d (192.168.202.101).

1.1.5　*Initial PIPE status verification*

It was verified that the HIEGSE server accepts and keeps the connection from the CCS.

The rate for sending Alive-Packets (0x11) from HIEGSE had to be changed to < 60 sec (50 sec were chosen) as the RMs arrived closely too late at the CCS which then dropped connection.

1.1.6　*RC / RM management verification*

The correct reception of RC packets and return of RM and ACKRC messages was verified.

IEGSE SW (CCS handler) had to be modified to answer with ACKRC messages (1,1) to CCS RCs.

Note:　The case of non-acceptable RCs where the IEGSE has to answer with (1,2) RMs is currently not considered in the IEGSE SW.

MPE provided TOPE procedures as described in PICC-ME-PL-002 were run.

A problem with fetching parameters in the CCS TOPE handler was detected, i.e. when starting the procedures from the Test-conductor console → Problem has to be investigated (AI #01 of HP-2-ASED-MN-0813), SPR raised (see Attachment 5: SPR raised against the CCS)

1.1.7　*TM Acquisition verification*

The correct TM distribution (generated from the CDMU DFE) from CCS to HIEGSE was verified.

1.1.8　*Performance*

The correct TM distribution to HIEGSE at the maximum rate specified for CCS (150 kbps) was verified.

Attachment 0: Results of PIPE Protocol Validation (H-P-2-ASP-PL-0556)

See following attached as-run procedure:

3.2 LAN configuration

This stage configures all the machines connected to IS LAN.

Step	Input	Expected Output	Check
1.	Check the correct IP Address assignment of all machine to be connected to LAN according to Table 2 below.	All IP addresses correctly set.	☑
2.	Using NTP service, update and synchronise all connected machine with CCS system clock.	Clock synchronised _manually synchronised on with IEGSE_	☒

All work station shall be declared in CCS server hosts file (/etc/hosts) via DHCP (refer to [RD1] § 6.4.1)

Equipment (see Figure 3)	Hostname of the machine[1] Set #4 (HPLM EQM)[2]	IS LAN IP address
CCS Data Server	hp4-d	192.168.202.201 ✓
OS - Data Server	hos4-d	192.168.202.101 ✓
OS - S2K Work Station 1	hoss2k4-1	192.168.202.102 ✓
OS - S2K Work Station n	hoss2k4-n _n=2_	192.168.202.10n ✓
OS - QLA Work Station 1	hosqla4-1	192.168.202.110 ✓
OS - QLA Work Station n	hosqla4-n _n=2_	192.168.202.11n ✓
OS - Visitor Work Station 1	hosvis4-1	192.168.202.120 ✓
OS - Visitor Work Station n	hosvis4-n	192.168.202.12n
OS - S2K Laser Printer (B&W)	hosbw4	192.168.202.130 ✓

see attachment 1 (/etc/hosts file)

Table 2 - Herschel IEGSE LAN configuration

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[1] Convention : H = Herschel - OS = Operational System- AS = Analysis System - QLA = Quick Look Analysis
[2] Set #4 is a 'lite' CCS used for HPLM EQM set

3.3 Databases Configuration

This stage merges IEGSE MIB files and CCS MIB files, and then import these files in CCS system.

Step	Input	Expected Output	Check
1.	Check that MIB files contain data for : CCS; PLM SCOE; CDMU DFE; HIFI; PACS; SPIRE; IEGSE		☒
2.	Check that files SCO.dat, TCD.dat and TMD.dat contain at least data in Table 4 hereafter	SCO.dat, TCD.dat and TMD.dat files correctly filled.	☒
3.	Load all the MIB files in the CCS	MIB loaded in repertory : *MIB_IEGSE 15-11-2004*	☒
4.	Open a Console and type 'startmmi &'	HPCCS Control window appears	☒
5.	Click 'Preparation' → 'Prepare'	The Preparation Window appears	☒
6.	Click : 'Preparation' → Discard all 'Preparation' → Update, then Check Out environment		☒
7.	Click 'Database' → 'Import'	The 'Import Database to Environment' window appears	☒
8.	Select Directory containing the database files. Click 'Import'	'Confirm Database Import' windows appears	☒
9.	Confirm the selection, by clicking 'Import'	The database files are being imported, with the updated files being displayed	☒
10.	When 'DONE' in green appears, Click 'Close'	The window disappears	☒
11.	Click : 'Preparation' → Check In 'Preparation' → Update 'Preparation' → Consistency Check	*Preparation for IEGSE Val.?*	☒
12.	In the Preparation window Click 'Database' → 'Generate'	'Confirm Database Generation windows appears	☒
13.	Click the 'Generate' button	Generation status window appears	☒
14.	When 'DONE' in green appears, Click 'Close'	The status window disappears	☒
15.	Select dst.dat file Right click on dst.dat file and click Check In Click 'Preparation' → Consistency Check	dst selected	☒
16.	Open a new Console and view the Generation Logfile: view/home/hpcond/TESTENV/LOG/Import MIB.log	No Errors should be reported in the logfile Several Warnings will be present, these should be investigated for severity, before proceeding.	☒

Equipment	Name of Equipment	APID	Hostname of the machine	IP address	Port number
	SCO_NAME TCD_DNAME TMD_DNAME	TCD_APID	SCO_hosT	/etc/hosts	SCO_PORT
I.EGSE Data Server	HIEGSE	2043	hos4-d	192.168.202.101	~~To be filled~~ *12345*

Table 3 - Database files configuration

160002429   HIEGSE (NO_PRIME_HK)
160003429   HIEGSE (ESSENTIAL_HK)
160026380   HIEGSE (EXCEPTION_REPORT_8)

Following files shall contain at least		
SCO.dat	TMD.dat	TCD.dat
HIEGSE hos4-d ~~TBD~~ *12345*	160002429 HIEGSE 160003429 HIEGSE 160026380 HIEGSE	204~~2~~*3* HIEGSE ~~2044 HIEGSE~~
PLMSCOE hpplmscoe 3342		2025 PLMSCOE
CDMUDFE hpcdmudfe 7001		2028 CDMUDFE

Table 4 - MIB files minimum content

3.4 Physical connection between CCS and I.EGSE via IS LAN

This stage checks the correct TCP/IP communication between CCS and I.EGSE on IS LAN.

Step	Input	Expected Output	Check
1.	Check IS LAN is connected to HP-SWITCH2 of CCS rack.	IS LAN connected to CCS	☑
2.	Connect all *I.EGSE Operational System* Machines on IS LAN (Refer to Figure 3 page 8)	All LAN cable connected to CCS via IS LAN	☑
3.	If needed, connect all *I.EGSE Analysis System* Machine on ICC LAN (Refer to Figure 3).	ICC LAN connected to IS LAN via switch *Not needed*	*N/A* ☐
4.	Execute PING command to check TCP/IP communication from CCS to I.EGSE data server and from I.EGSE data server to CCS: • On CCS execute '***ping hos4-d**' • On IEGSE execute '***ping hp4-d**	Positive response ✓ Positive response	☑

On IEGSE execute 'ping 192.168.200.151' (= hp4-s)

OK ✓ (after default gateway was set to 192.168.202.101 on IEGSE)

3.5 Initial PIPE status verification

This stage checks if I.EGSE server accept and keep the connection from CCS.
PIPE message ID checked : Alive-Packets (0x11)

Step	Input	Expected Output	Check
1.	Open a new session on CCS		☑
2.	On CCS, open System AND window _SYS PARS_		☑
3.	Start I.EGSE SW application		☑
4.	On CCS, check on System AND window the status of I.EGSE connection _(PACS EGSE status)_	I.EGSE status : **Disconnected**.	✓
5.	In the Test Conductor Console, execute : **'Connect HIEGSE**		
6.	On CCS, check on System AND window the status of I.EGSE connection	I.EGSE status : **Connected**. _15:27:08_	☑
7.	Wait at least 60 seconds and check I.EGSE is still connected.	I.EGSE status : **Connected**. This means CCS receives Alive-packets.	☑ ✳
8.	Remove the LAN cable from the IEGSE server	Cable disconnected This means CCS does not receive Alive-packets. _16:06:35_	☑
9.	Wait at least 60 seconds and check I.EGSE is disconnected.	I.EGSE status : **Disconnected**. _16:06:55 ... 20 sec later_	☑
10.	Plug in the LAN cable again	Cable connected	☑
11.	In the Test Conductor Console, execute : **'Connect HIEGSE**	I.EGSE status : **Connected**.	☑

✳ 1st time connection dropped after 106 sec.
2nd time — " — 60 sec

⟹ IEGSE configured to send keep-alive RMs every 50 sec
then it was ok.

3.6 RC/RM management verification

This stage checks the correct reception of RC packet and returns of RM and ACKRC messages.
PIPE message ID checked :   RC Packets (0x44)
ACKRC Packets (0x50-51)
RM Housekeeping Packets (0x10)

Step	Input	Expected Output	Check
1.	Open a Test Conductor Console		☑
2.	If I.EGSE status is 'Disconnected' then type : **'connect HIEGSE** in the Keyboard Command Window,	I.EGSE status : **Connected**.	☑
3.	In the Keyboard Command Window, type : **'attach HIEGSE**		☑
4.	In the Keyboard Command Window, type : **'tcsend TBD'** YC 00X 964	Check reception and effect on I.EGSE	☑
5.	On CCS check the reception of the Acknowledge RC packet	ACKRC received Type/SubType = (1,1)	☑ *
6.	On CCS check the reception of RM HK Packet	Packet received without error.	☑
7.	…	…	☐
8.	If a TOPE Test Sequence shall be running to test the PIPE Interface, verify that before sending commands with **tcsend**, there is the command '.attach **HIEGSE'** The Test Sequence shall end with **detach HIEGSE**	→ see MPE's Validation Plan as-run procedure in attachment 2	
9.	# # All the following commands are sent to I.EGSE attach HIEGSE # tcsend YCxxx964 etc … detach HIEGSE #	done in step 8.	☐

* AckRC (1,1) or (1,2) are not received
⟹ connection dropped from CCS (after 5 sec timeout)
Erich modifies Scd : Always send a (1,1) after RC reception (needs to be optimised). Then it worked

3.7 TM Acquisition verification

This stage checks the Telemetry distribution from CCS to I.EGSE.
A Telemetry Simulation List is created on CDMU DFE.
This list contains TM packets recorded with PACS DPU.

PIPE message ID checked :   TM Packets Distribution (0x20)

Step	Input	Expected Output	Check
1.	Check **CDMU DFE** is in : *LOCAL* mode *On-Line* mode	Local mode On-Line mode	☑
2.	Open the TM Simulation Control window *Control-TM Simulation Control*	TM Simulation Control window opened	☑
3.	Click Load List button and select **PACS_3_Pkt.PKG** file.		☑
4.	Select options: *(gen)* Custom *(Generation Interval)* Continuous Run *(Run Specification)*	Custom and Continuous Run selected	☑
5.	<u>CDMU DFE</u> : Click on *Run* button		☑
6.	Check on CCS the reception of TM Packets		☑
	APID | **Type** | **S/Type** | **PI1** | **SPID** 1152 | 3 | 25 | 4 | 160003429 1152 | 5 | 2 | 8 | 160026380 1154 | 3 | 25 | 3 | 160002429		
7.	Check on I.EGSE the reception of these three TM Packets		☑
8.	<u>CDMU DFE</u> : Click on *Stop* button		☑

3.8 Performance

This stage checks TM distribution to I.EGSE at the maximum rate specified for CCS (150 kbps shared between up to 3 I.EGSE)

The time delay between each packet sent is set to 15 ms in order to reach the rate of 150kb/sec

PIPE message ID checked : TM Packets Distribution (0x20)

Step	Input	Expected Output	Check
1.	CDMU DFE : in the 'Generation Interval' window, select *Fixed* option and enter : 15 ms		☒
2.	CDMU DFE : Click on *Run* button		☒
3.	I.EGSEs is now receiving 150 kBits/Second of distributed packets *≈ 137 kBits/sec received on I.EGSE*		
4.	Check on CCS the reception of TM Packets :		☒
	APID	Type	S/Type	PI1	SPID	Sequence of 3 Packets received on CCS	
	1152	3	25	4	160003429		
	1152	5	2	8	160026380		
	1154	3	25	3	160002429		
5.	Check on I.EGSE the reception of these three TM Packets	Sequence of 3 Packets received on I.EGSE	☒
6.	Wait a few minutes	Verify that no Warnings nor Errors are reported from the I.EGSE system	☒
7.	CDMU DFE : Click on *Stop* button		☒

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Herschel IEGSE Test report

Herschel

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Attachment 1: Hosts as configured in CCS

Doc. No: HP-2-ASED-TR-0037

Issue: 1/-

Date: 03.12.04

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/etc/hosts

```
################################################################
# Do not remove the following line, or various programs
# that require network functionality will fail.
127.0.0.1          localhost.localdomain localhost
################################################################
#
# Start of Terma defined hosts
#
# hpccs set 4
#
# hpccs servers
#
192.168.200.151 hp4-s.egse.hpccs          hp4-s
192.168.201.151 hp4-s-scoe.external.ait    hp4-s-scoe
192.168.202.151 hp4-s-is.external.is      hp4-s-is
#
# hpccs ws
#
192.168.200.161 hpws41.egse.hpccs         hpws41
192.168.200.162 hpws42.egse.hpccs         hpws42
192.168.200.163 hpws43.egse.hpccs         hpws43
192.168.200.164 hpws44.egse.hpccs         hpws44
192.168.200.165 hpws45.egse.hpccs         hpws45
#
# hpccs network pc
#
192.168.200.171 hpnwpc4.egse.hpccs        hpnwpc4
53.141.161.29   hpnwpc4-ext.egse.hpccs  hpnwpc4-ext
#
# hpccs printers
#
192.168.200.181 hpbw41.egse.hpccs         hpbw41
192.168.200.182 hpbw42.egse.hpccs         hpbw42
192.168.200.183 hpcl41.egse.hpccs         hpcl41
#
# End of Terma defined hosts
#
# scoes
192.168.201.10  scoe1.external.ait        scoe1
192.168.201.11  plmscoe.external.ait      hpplmscoe
192.168.201.12  cdmudfe.external.ait      hpcdmudfe
192.168.201.13  eqmcryo.external.ait      hpeqmcryo
#
192.168.200.151   hpwww.egse.hpccs        hpwww
#
# I.EGSE addresses
#
192.168.202.101 hos4-d-is.external.is     hos4-d
192.168.202.102 hoss2k4-1-is.external.is    hoss2k4-1
192.168.202.103 hoss2k4-2-is.external.is    hoss2k4-2
192.168.202.110 hosqla4-1-is.external.is    hosqla4-1
192.168.202.111 hosqla4-2-is.external.is    hosqla4-2
192.168.202.120 hosvis4-1-is.external.is    hosvis4-1
192.168.202.130 hosbw4-is.external.is     hosbw4
```

Attachment 2: Results of CCS-IEGSE Testsequence Commanding I/F Validation (PICC-ME-PL-002)

See following attached as-run procedure

2.1.2 IEGSE

The IEGSE consists of a single PC running HCSS (user release 0.2.3).

Before running the validation procedures the HCSS property file must be updated to reflect the network setup used for the validation.

As there will be no real instruments available during the validation the CcsProcedureHandler application will be used also to verify the transmission of the resulting "instrument" commands. Specific "dummy" telecommands will be send to the CcsProcedureHandler which will be ignored by it but displayed by a special PusPacketDumper tool..

2.1.3 Network

Both machines CSS and IEGSE must be configured for communication via the LAN using the PIPE protocol.

2.2 Description of Procedure Steps

A typical validation procedure starts with the execution of a TOPE test procedure running at the CCS. The test procedure will send three telecommands to the CcsProcedureHandler interface via CCS-SCOS 2000 and PIPE interface:

- a TC indicating the start of the procedure (with the name of the procedure as parameter)

- a TC requesting an observation (with the observing mode plus its arguments as parameters)

- a TC indicating the end of the procedure (with the name of the procedure as parameter)

In case of the observation request the CcsProcedureHandler will schedule the observation within HCSS. The resulting telecommand parameters to be used for the observation will be packed in TM packets which are send back to the CCS. The CCS-SCOS 2000 system will receive the TM packets and pass them to the CCS TOPE environment. Via TOPE the original test procedure can read the telecommand parameters and construct the final TC sequence.

Note: The TM packets send from the IEGSE to the CCS are not sent periodically but on request from the CCS (triggered by the test procedure execution).

In the final environment this TC sequence will be sent to the HERSCHEL instruments. As they are not available for this validation the TC sequence will consist of "dummy" TCs for the CcsProcedureHandler. Those dummy TCs will be ignored by the CcsProcedureHandler.

In addition there is a tool running on the IEGSE displaying all TC packets sent to the CcsProcedureHandler and all TM packets generated by the CcsProcedureHandler.

3 Validation Procedures

3.1 Checking Network Connection

This procedure shall validate the LAN setup.

Step nr.	Procedure	Expected Result	Check
1	Using an CCS terminal window execute the "ping" command to check TCP/IP connection from CCS to IEGSE	Positive response	
2	Using an IEGSE terminal window execute the "ping" command to check TCP/IP connection from IEGSE to CCS	Positive response	

3.2 Establishing PIPE connection

This procedure shall validate the PIPE setup.

Step nr.	Procedure	Expected Result	Check
1	On IEGSE, start the PIPE server		
2	On CCS, start the PIPE client		
3	On IEGSE, check connection status	PIPE-GW: CCS pane shall turn green	
4	On CCS, check connection status	IEGSE status: connected	
5	Wait at least 60 seconds, then check connection status again	IEGSE status: connected	

3.3 Receiving IEGSE TM Packets

This procedure shall validate the IEGSE to CCS SCOS2000 connection.

Step nr.	Procedure	Expected Result	Check
1	On IEGSE, start the Router process	PIPE-GW: Router pane shall turn green	
2	On CCS, start a SCOS 2000 TM desktop application and select the IEGSE alphanumeric display		
3	On IEGSE, start the CcsProcedureHandler (A number of IEGSE TM packets will be generated and transmitted during startup)		
4	On CCS, verify update of alphanumeric display	Updated display	

Note: Don't stop the Router and the CcsProcedureHandler on IEGSE as they are needed for the following procedures.

3.4 Executing Short Standard Test Procedure

This procedure already validates the complete interface. The instrument test procedure contains only five TCs to the instrument so the whole procedure will finish in a short time scale.

Note: On IEGSE, both the Router and the CcsProcedureHandler shall still be running. They are started as part of the validation procedure 3.3 "Receiving IEGSE TM packets"

Step nr.	Procedure	Expected Result	Check
1	On IEGSE, verify the Router application is still running		☑
2	On IEGSE, verify the CcsProcedureHandler application is still running		☑
3	On CCS, using TOPE start the TCL procedure "CCS_IEGSE_5_cmds_5_params.tcl"	"attach HIEGSE" & detach HIEGSE" added in proc.	☑
4	On IEGSE, check output of the CcsProcedureHandler console window	Verify the reception of the TC and the transmission of the TM packets	☑
5	On IEGSE, check output of the PusPacketDumper console window.	Verify the reception of the "instrument" commands.	☑
6	On CCS, verify the TOPE TCL procedure ends with success	The TCL procedure ends with a non error message	☑

3.5 Executing Standard Test Procedure (100 Telecommands)

This procedure validates the complete interface. The instrument test procedure contains 10 instrument TCs with 50 TC parameters each.

Note: On IEGSE, both the Router and the CcsProcedureHandler shall still be running. They are started as part of the validation procedure 3.3 "Receiving IEGSE TM packets"

Step nr.	Procedure	Expected Result	Check
1	On IEGSE, verify the Router application is still running		☑
2	On IEGSE, verify the CcsProcedureHandler application is still running		☑
3	On CCS, using TOPE start the TCL procedure "CCS_IEGSE_100_cmds_50_params.tcl"	"attach HIEGSE" & detach HIEGSE" added in proc.	☑
4	On IEGSE, check output of the CcsProcedureHandler console window	Verify the reception of the TC and the transmission of the TM packets	☑ ✱
5	On IEGSE, check output of the PusPacketDumper console window.	Verify the reception of the "instrument" commands.	☑
6	On CCS, verify the TOPE TCL procedure ends with success	The TCL procedure ends with a non error message	☑

✱ RDLs to be sent twice (3 times) to CCS ⟹ problem to be investigated

Herschel PACS	Validation Plan for IEGSE– CCS Testsequence command interface	Reference: PICC-ME-PL-002 Issue: Draft 3 Date: Novemver 8, 2004 Page: 9 of 16

3.6 Executing Standard Test Procedure (200 Telecommands)

This procedure validates the complete interface. The instrument test procedure contains 200 instrument TCs with 50 parameters each to increase the load on the system.

Note: On IEGSE, both the Router and the CcsProcedureHandler shall still be running. They are started as part of the validation procedure 3.3 "Receiving IEGSE TM packets"

Step nr.	Procedure	Expected Result	Check
1	On IEGSE, verify the Router application is still running		☑
2	On IEGSE, verify the CcsProcedureHandler application is still running		☑
3	On CCS, using TOPE start the TCL procedure "CCS_IEGSE_200_cmds_50_params.tcl"	„attach HIEGSE" & „detach HIEGSE" added in proc.	☑
4	On IEGSE, check output of the CcsProcedureHandler console window	Verify the reception of the TC and the transmission of the TM packets	☑
5	On IEGSE, check output of the PusPacketDumper console window.	Verify the reception of the "instrument" commands.	☑
6	On CCS, verify the TOPE TCL procedure ends with success	The TCL procedure ends with a non error message	☑

3.7 Executing Standard Test Procedure (400 Telecommands)

This procedure validates the complete interface. The instrument test procedure contains 400 instrument TCs with 80 TC parameters each to increase the load on the system.

Note: On IEGSE, both the Router and the CcsProcedureHandler shall still be running. They are started as part of the validation procedure 3.3 "Receiving IEGSE TM packets"

Step nr.	Procedure	Expected Result	Check
1	On IEGSE, verify the Router application is still running		☑
2	On IEGSE, verify the CcsProcedureHandler application is still running		☑
3	On CCS, using TOPE start the TCL procedure "CCS_IEGSE_400_cmds_80_params.tcl"	„attach HIEGSE" & „detach HIEGSE" added in proc.	☑
4	On IEGSE, check output of the CcsProcedureHandler console window	Verify the reception of the TC and the transmission of the TM packets	☑
5	On IEGSE, check output of the PusPacketDumper console window.	Verify the reception of the "instrument" commands.	☑

Step nr.	Procedure	Expected Result	Check
6	On CCS, verify the TOPE TCL procedure ends with success	The TCL procedure ends with a non error message	☑

Attachment 3: Log files for CCS_IEGSE_5_cmds_5_params.tcl

Log file for CCS_IEGSE_5_cmds_5_params.tcl

/HPCCS/VARIABLE/RESULTS/2004_11_16_15_18_koellem_hp4-s_REALTIME/TSEQ/20041117_084140_0009_CCS_IEGSE_5_cmds_5_params.log

```
2004.322.08.41.40.286455 CCS_IEGSE_5_cmds_5_params: attach HIEGSE
2004.322.08.41.40.292394 CCS_IEGSE_5_cmds_5_params: ** Get time Stamp: 2004.322.08.41.40
2004.322.08.41.40.292664 CCS_IEGSE_5_cmds_5_params: tcsend YC001964 nowait {YP000964 {CCS_IEGSE_5_cmds_5_params.tcl;0} BS}
2004.322.08.41.40.293545 CCS_IEGSE_5_cmds_5_params: tcsend YC000964 nowait {YP000964 "CCS_IF_TEST;" BS} {YP001964 2} {YP002964
"numberOfCommands=5;" BS} {YP002964 "numberOfCommandParameters=5;" BS}
2004.322.08.41.40.304806 CCS_IEGSE_5_cmds_5_params: ** Waiting for IEGSE TM packets
2004.322.08.41.40.305121 CCS_IEGSE_5_cmds_5_params: Entering state: WAITING
2004.322.08.41.45.307573 CCS_IEGSE_5_cmds_5_params: Entering state: RUNNING
2004.322.08.41.45.491687 CCS_IEGSE_5_cmds_5_params: ** Check number of returned TC infos
2004.322.08.41.45.493952 CCS_IEGSE_5_cmds_5_params: ** Retrieve TCinfo data
2004.322.08.41.46.194802 CCS_IEGSE_5_cmds_5_params: ** Got all TC info data
2004.322.08.41.46.195090 CCS_IEGSE_5_cmds_5_params: ** Got all TM packets for ObservationMode
2004.322.08.41.46.195380 CCS_IEGSE_5_cmds_5_params: ** Start of TC sequence
2004.322.08.41.46.195560 CCS_IEGSE_5_cmds_5_params: ** Time to wait for TC since start of sequence: 0 milliseconds, actual
time to wait: 0 milliseconds
2004.322.08.41.46.195817 CCS_IEGSE_5_cmds_5_params: tcsend YC00X964 nowait userrequestid 1 {YP001964 "5" RAW} {YP00X964 "0"
RAW} {YP00X964 "1" RAW} {YP00X964 "2" RAW} {YP00X964 "3" RAW} {YP00X964 "4" RAW}
2004.322.08.41.46.196718 CCS_IEGSE_5_cmds_5_params: ** Time to wait for TC since start of sequence: 0 milliseconds, actual
time to wait: -1 milliseconds
2004.322.08.41.46.197019 CCS_IEGSE_5_cmds_5_params: tcsend YC00X964 nowait userrequestid 2 {YP001964 "5" RAW} {YP00X964 "0"
RAW} {YP00X964 "1" RAW} {YP00X964 "2" RAW} {YP00X964 "3" RAW} {YP00X964 "4" RAW}
2004.322.08.41.46.202949 CCS_IEGSE_5_cmds_5_params: ** Time to wait for TC since start of sequence: 1000 milliseconds, actual
time to wait: 993 milliseconds
2004.322.08.41.46.203451 CCS_IEGSE_5_cmds_5_params: Entering state: WAITING
2004.322.08.41.47.198082 CCS_IEGSE_5_cmds_5_params: Entering state: RUNNING
2004.322.08.41.47.198491 CCS_IEGSE_5_cmds_5_params: tcsend YC00X964 nowait userrequestid 3 {YP001964 "5" RAW} {YP00X964 "0"
RAW} {YP00X964 "1" RAW} {YP00X964 "2" RAW} {YP00X964 "3" RAW} {YP00X964 "4" RAW}
2004.322.08.41.47.199274 CCS_IEGSE_5_cmds_5_params: ** Time to wait for TC since start of sequence: 1000 milliseconds, actual
time to wait: -4 milliseconds
2004.322.08.41.47.199546 CCS_IEGSE_5_cmds_5_params: tcsend YC00X964 nowait userrequestid 4 {YP001964 "5" RAW} {YP00X964 "0"
RAW} {YP00X964 "1" RAW} {YP00X964 "2" RAW} {YP00X964 "3" RAW} {YP00X964 "4" RAW}
2004.322.08.41.47.204585 CCS_IEGSE_5_cmds_5_params: ** Time to wait for TC since start of sequence: 2000 milliseconds, actual
time to wait: 991 milliseconds
2004.322.08.41.47.211775 CCS_IEGSE_5_cmds_5_params: Entering state: WAITING
2004.322.08.41.48.203885 CCS_IEGSE_5_cmds_5_params: Entering state: RUNNING
2004.322.08.41.48.204276 CCS_IEGSE_5_cmds_5_params: tcsend YC00X964 nowait userrequestid 5 {YP001964 "5" RAW} {YP00X964 "0"
RAW} {YP00X964 "1" RAW} {YP00X964 "2" RAW} {YP00X964 "3" RAW} {YP00X964 "4" RAW}
2004.322.08.41.48.205138 CCS_IEGSE_5_cmds_5_params: tcsend YC002964 nowait {YP000964 {CCS_IEGSE_5_cmds_5_params.tcl;} BS}
2004.322.08.41.48.210224 CCS_IEGSE_5_cmds_5_params: detach HIEGSE
2004.322.08.41.48.212125 CCS_IEGSE_5_cmds_5_params: TERMINATED
```

Command history display printout from time: 2004.321.16.10.09.428 to time: 2004.322.08.41.48.413
Current printout time: 2004.322.08.44.40.594 Display view mode: BRIEF Sort order: RELEASE Filter status: INACTIVE
Number of commands printed: 12

Name	Description	Sequence Release Time	Execution Time	S D C G B IL ST	Source	Update Time	R GTO A S 012345 C
YC002964	Report_Test_End	2004.322.08.41.48	2004.322.08.41.48.421	E E E EX	hp4-s	2004.322.08.41.48.421	S SS
YC00X964	Test_Command	2004.322.08.41.48	2004.322.08.41.48.321	E E E EX	hp4-s	2004.322.08.41.48.321	S SS
YC00X964	Test_Command	2004.322.08.41.47	2004.322.08.41.47.383	E E E EX	hp4-s	2004.322.08.41.47.384	S SS
YC00X964	Test_Command	2004.322.08.41.47	2004.322.08.41.47.278	E E E EX	hp4-s	2004.322.08.41.47.278	S SS
YC00X964	Test_Command	2004.322.08.41.46	2004.322.08.41.46.347	E E E EX	hp4-s	2004.322.08.41.46.347	S SS
YC00X964	Test_Command	2004.322.08.41.46	2004.322.08.41.46.242	E E E EX	hp4-s	2004.322.08.41.46.242	S SS
YC000964	Requesting_Obs_TC_Param	2004.322.08.41.40	2004.322.08.41.40.472	E E E EX	hp4-s	2004.322.08.41.40.472	S SS
YC001964	Report_Test_Start	2004.322.08.41.40	2004.322.08.41.40.346	E E E EX	hp4-s	2004.322.08.41.40.346	S SS
YC00X964	Test_Command	2004.321.16.54.23	2004.321.16.54.23.723	E E E MS	hpws42	2004.321.16.54.23.723	S SS
YC00X964	Test_Command	2004.321.16.52.39	2004.321.16.52.39.478	E E E MS	hpws42	2004.321.16.52.44.917	S SF
YC00X964	Test_Command	2004.321.16.50.31	2004.321.16.50.31.334	E E E MS	hpws42	2004.321.16.50.36.674	S SF
YC00X964	Test_Command	2004.321.16.10.09	2004.321.16.10.09.428	E E E MS	hpws42	2004.321.16.10.14.108	S SF

Commands during CCS_iEGSE_5_cmds_5-params.tcl

TMPH_PRNT_2004.322.08.45.23.433

TM Packet History display printout from time: 2004.322.08.37.29.553 to time: 2004.322.08.42.00.893
Current printout time: 2004.322.08.45.23.434   FILTER MODE: ACTIVE   DISPLAY MODE: BRIEF   STATISTIC: OFF
FILTER SETTINGS:
APID: 2043
Number of printed lines: 23

Mnemonic	Generation Time	Reception Time	VC	APID	SSC	Type	STyp	PI1	PI2	DS	SPID	GSID	TmT	TmQ	F	D
AckRC Pkt	2004.322.08.42.00.893	2004.322.08.41.48.421	0	2043	24	1	1	0	0	65535	137		PG	G	E	E
AckRC Pkt	2004.322.08.42.00.789	2004.322.08.41.48.321	0	2043	23	1	1	0	0	65535	137		PG	G	E	E
AckRC Pkt	2004.322.08.41.59.856	2004.322.08.41.47.383	0	2043	22	1	1	0	0	65535	137		PG	G	E	E
AckRC Pkt	2004.322.08.41.59.751	2004.322.08.41.47.278	0	2043	21	1	1	0	0	65535	137		PG	G	E	E
AckRC Pkt	2004.322.08.41.58.820	2004.322.08.41.46.347	0	2043	20	1	1	0	0	65535	137		PG	G	E	E
AckRC Pkt	2004.322.08.41.58.715	2004.322.08.41.46.242	0	2043	19	1	1	0	0	65535	137		PG	G	E	E
CCS_IF_0004	2004.322.08.41.53.760	2004.322.08.41.41.303	0	2043	18	3	25	4	0	65535	250004964		PG	G	E	E
CCS_IF_0003	2004.322.08.41.53.634	2004.322.08.41.41.178	0	2043	17	3	25	3	0	65535	250003964		PG	G	E	E
CCS_IF_0002	2004.322.08.41.53.507	2004.322.08.41.41.051	0	2043	16	3	25	2	0	65535	250002964		PG	G	E	E
CCS_IF_0001	2004.322.08.41.53.379	2004.322.08.41.40.926	0	2043	15	3	25	1	0	65535	250001964		PG	G	E	E
CCS_IF_0000	2004.322.08.41.53.252	2004.322.08.41.40.799	0	2043	14	3	25	0	0	65535	250000964		PG	G	E	E
CCS_IF_1023	2004.322.08.41.53.237	2004.322.08.41.40.764	0	2043	13	3	25	1023	0	65535	251023964		PG	G	E	E
AckRC Pkt	2004.322.08.41.52.946	2004.322.08.41.40.472	0	2043	12	1	1	0	0	65535	137		PG	G	E	E
AckRC Pkt	2004.322.08.41.52.819	2004.322.08.41.40.346	0	2043	11	1	1	0	0	65535	137		PG	G	E	E
CCS_IF_0008	2004.322.08.37.30.548	2004.322.08.37.18.014	0	2043	10	3	25	8	0	65535	250008964		PG	G	E	E
CCS_IF_0007	2004.322.08.37.30.424	2004.322.08.37.17.891	0	2043	9	3	25	7	0	65535	250007964		PG	G	E	E
CCS_IF_0006	2004.322.08.37.30.300	2004.322.08.37.17.768	0	2043	8	3	25	6	0	65535	250006964		PG	G	E	E
CCS_IF_0005	2004.322.08.37.30.176	2004.322.08.37.17.644	0	2043	7	3	25	5	0	65535	250005964		PG	G	E	E
CCS_IF_0004	2004.322.08.37.30.053	2004.322.08.37.17.519	0	2043	6	3	25	4	0	65535	250004964		PG	G	E	E
CCS_IF_0003	2004.322.08.37.29.929	2004.322.08.37.17.395	0	2043	5	3	25	3	0	65535	250003964		PG	G	E	E
CCS_IF_0002	2004.322.08.37.29.806	2004.322.08.37.17.272	0	2043	4	3	25	2	0	65535	250002964		PG	G	E	E
CCS_IF_0001	2004.322.08.37.29.679	2004.322.08.37.17.146	0	2043	3	3	25	1	0	65535	250001964		PG	G	E	E
CCS_IF_0000	2004.322.08.37.29.553	2004.322.08.37.17.017	0	2043	2	3	25	0	0	65535	250000964		PG	G	E	E

*Pkts during CCS-1 EGSE Stimuli S_params.tcl

Attachment 4: SPRs raised against the HCSS

Report 1248

SPR-1248	Amount of logging shall be configurable	edit

Submitted by:	*Erich Wiezorrek*
Affiliation:	*PACS*
Email:	*erw@mpe.mpg.de*

Module:	*EGSERouter*	Version:	*515*
Priority:	*Low*	Status:	*Issued*
Submitted:	*18-Nov-2004 11:57*	Modified:	*18-Nov-2004 11:57*
Estimated Time for Fix:	*-- md*	Actual Time for Fix:	*-- md*

Description

```
The amount of logging of
  router
  PipeGW
  EGSEgateway
shall be configurable via different log levels.
```

Analysis

Implementation

Report 1249

SPR-1249	nice scripts to serve as command alias to start router, PipeGW and EGSEgateway edit

Submitted by:	*Erich Wiezorrek*		
Affiliation:	*PACS*		
Email:	*erw@mpe.mpg.de*		
Module:	*EGSERouter*	Version:	*515*
Priority:	*Normal*	Status:	*Issued*
Submitted:	*18-Nov-2004 11:57*	Modified:	*18-Nov-2004 11:57*
Estimated Time for Fix:	*-- md*	Actual Time for Fix:	*-- md*

Description

```
Users require simple startup scripts to start the
  router
  PipeGW
  EGSEgateway
applications.
```

Analysis

Implementation

Report 1250

SPR-1250	CcsHandler: CCS needs TC acknowledgment	edit

Submitted by:	*Erich Wiezorrek*		
Affiliation:	*PACS*		
Email:	*erw@mpe.mpg.de*		
Module:	*TestControl*	Version:	*515*
Priority:	*High*	Status:	*Issued*
Submitted:	*18-Nov-2004 11:57*	Modified:	*18-Nov-2004 11:57*
Estimated Time for Fix:	*-- md*	Actual Time for Fix:	*-- md*

Description

```
The CCS needs a acknowledgment for every IEGSE TC either via a (1,1) TM
packet
(successful reception) or a (1,2) TM packet (failed acceptance).
```

Analysis

Implementation

Report 1251

SPR-1251	PipeGW: rate of I-am-alive packet transmission must be increased	edit

Submitted by:	*Erich Wiezorrek*		
Affiliation:	*PACS*		
Email:	*erw@mpe.mpg.de*		
Module:	*EGSERouter*	Version:	*515*
Priority:	*High*	Status:	*Issued*
Submitted:	*18-Nov-2004 11:57*	Modified:	*18-Nov-2004 11:57*
Estimated Time for Fix:	*-- md*	Actual Time for Fix:	*-- md*

Description

```
The PIPE validation test showed that the rate of  I-am-alive packet
transmission

and the corresponding time-out criterea at CCS site are too close.

To be on the save side every 50 seconds a I-am-alive packet shall be
send.
```

Analysis

Implementation

Attachment 5: SPR raised against the CCS

TERMA Ⓣ

Bugzilla version 2.14.1

Full Text Bug Listing

TOPE fetches old values

Bug#: 1703 **Product:** HPCCS **Version:** HPCCS_2_0 **Platform:** PC

OS/Version: Windows 2000 **Status:** NEW **Severity:** major **Priority:** P2

Resolution: **Assigned To:** gerfried.krames@siemens.com **Reported By:** markus.koelle@astrium.eads.net **QA Contact:** projects.bugs.nl@ter...

Component: COMP TSEQ

URL:

Summary: TOPE fetches old values

Description:

```
This Bug seems similar to Bug-192 and Bug-699.

Sometimes TOPE gets into a situation where the latest sample
of a parameter is not fetched, but the last but one.

It has not been possible to produce a small test sequence
demonstrating the problem, but the Test Sequence where it
allways occurs, is attached.
What has also been seen is that a fetch on the first sample
of a parameter in a new Session returns 1970.001.00.00.00.000


First the sequence saves the CCS time, then it sends a request
to the IEGSE, which in turn returns 100 TM packets with a few
parameters in each.

The sequence then enters one of the loops fetching a parameter
until the timestamp is larger that the saved CCS time. In one
of these loops TOPE gets behind and keeps fetching the sample
prior to the last, whereby the sequence hangs.

When this occurs the TQD shows identical timestamp as the
Packet History Display for the last received packet, but if a
fetch is made from the Test Conductors Console the timestamp
equals the last but one packet.
```

------- *Additional Comments From Markus Koelle 2004-12-01 10:53* -------

Created an attachment (id=217)
Testsequence used

------- *Additional Comments From Gerfried Krames 2004-12-01 11:43* -------

```
>When this occurs the TQD shows identical timestamp as the
>Packet History Display for the last received packet, but if a
>fetch is made from the Test Conductors Console the timestamp
>equals the last but one packet.
Is the interpretation correct that (in the situation in question)
- TQD shows expected latest value
- "fetch" both in Test Conductor Console and inside the sequence consistently
  return the n-1'th sample?

If yes, this points to a kernel or EXIF problem (indeed a similarity with 192
and 699).

In any case it would be helpful to know more details about the environment:
- Nature of TM parameter (raw/synthetic/saved synthetic)?
- Is there a calibration / what type?
- Was there any online patching of parameter location, calibration,..?
- Are there any warnings issued by SCOS (in the SCOS event log), expecially
  warnings issued by TMD or ATMSET_SERVER?
- Do the N and N-th sample of the parameter differ in value?
```

------- *Additional Comments From [Markus Koelle](#) 2004-12-01 12:06* -------

```
1) Your interpretation is correct (it looks like #192).

2) - TM parameter is Raw (extracted from packet)
   - NO calibration
   - NO Online-patching
   - NO SCOS warnings
   - Parameter has same value for all samples
```

------- *Additional Comments From [Andy Amitage](#) 2004-12-01 16:14* -------

```
!! are you SURE that it is not simply a problem that you have not handed
control of the main loop back to TOPE.

If  there is no occurence of tcsend, vwait, waittime, etc, then you will not
get the latest values
```

------- *Additional Comments From [Gerfried Krames](#) 2004-12-01 17:25* -------

```
The originator has confirmed that also a "fetch XY" typed into the Conductor
Console gives the wrong result (value N-1).
```

E N D   O F   D O C U M E N T

	Name	Dep./Comp.		Name	Dep./Comp.
	Alberti von Mathias Dr.	AOE22		Wöhler Hans	AOE22
	Barlage Bernhard	AED11			
X	Bayer Thomas	AET52			
	Fehringer Alexander	AOE13			
	Frey Albrecht	AED422			
X	Gerner Willi	AED11			
	Grasl Andreas	OTN/AET52			
	Grasshoff Brigitte	AET12			
	Hauser Armin	AOE23			
	Hendry David	Terma Resid.	X	Alcatel	ASP
	Hinger Jürgen	AOE22	X	ESA/ESTEC	ESA
X	Hohn Rüdiger	AET52			
	Huber Johann	AOA4		**Instruments:**	
	Hund Walter	ASE4A	X	MPE (PACS)	MPE
X	Idler Siegmund	AED432	X	RAL (SPIRE)	RAL
	Ivády von András	FAE22	X	SRON (HIFI)	SRON
	Jahn Gerd Dr.	AOE23			
	Kalde Clemens	APE3		**Subcontractors:**	
	Kameter Rudolf	OTN/AET52		Air Liquide, Space Department	AIR
	Kettner Bernhard	AET42		Air Liquide, Space Department	AIRS
X	Knoblauch August	AET32		Air Liquide, Orbital System	AIRT
X	Koelle Markus	AET22		Alcatel Bell Space	ABSP
X	Kroeker Jürgen	AED65		Astrium Sub-Subsyst. & Equipment	ASSE
	Kunz Oliver Dr.	AOE23		Austrian Aerospace	AAE
	Lamprecht Ernst	OTN/ASI21		Austrian Aerospace	AAEM
	Lang Jürgen	ASE4A		APCO Technologies S. A.	APCO
	Langfermann Michael	AET52		Bieri Engineering B. V.	BIER
	Mack Paul	OTN/AET52		BOC Edwards	BOCE
X	Pastorino Michel	ASPI Resid.		Dutch Space Solar Arrays	DSSA
	Peltz Heinz-Willi	AOE13		EADS CASA Espacio	CASA
	Pietroboni Karin	AED65		EADS CASA Espacio	ECAS
	Platzer Wilhelm	AED22		EADS Space Transportation	ASIP
	Rebholz Reinhold	AET52		Eurocopter	ECD
	Reuß Friedhelm	AED62		HTS AG Zürich	HTSZ
	Rühe Wolfgang	AED65		Linde	LIND
	Runge Axel	OTN/AET52		Patria New Technologies Oy	PANT
	Sachsse Bernt	AED21		Phoenix, Volkmarsen	PHOE
X	Schink Dietmar	AED422		Prototech AS	PROT
X	Schlosser Christian	OTN/AET52		QMC Instruments Ltd.	QMC
	Schmidt Rudolf	FAE22		Rembe, Brilon	REMB
	Schweickert Gunn	AOE22		Rosemount Aerospace GmbH	ROSE
	Steininger Eric	AED422		RYMSA, Radiación y Microondas S.A.	RYM
X	Stritter Rene	AED11		SENER Ingenieria SA	SEN
	Tenhaeff Dieter	AOE22		Stöhr, Königsbrunn	STOE
	Thörmer Klaus-Horst Dr.	OTN/AED65		Terma A/S, Herlev	TER
	Wagner Klaus	AOE23			
X	Wietbrock Walter	AET12			