Planck LFI
DPC SOVT2 Test-Results

TITLE:

DOC. TYPE: Test report

PROJECT REF.: PL-LFI-OAT-RP-018 **PAGE:** I of VI, 88

ISSUE/REV.: 1.0 **DATE:** October 30th, 2008

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CHANGE RECORD

Issue	Date	Sheet	Description of Change	Release
0.1	14.10.2008	All	First Version	
1.0	30.10.2008	All	Reviewed version	

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1 INTRODUCTION

1.1 SCOPE

1.2 TEST OBJECTIVIES

Top Objective:

Validation of the overall ground and space segment behaviour from end-to-end in a CPV Phase operational configuration.

Detailed Objectives:

1. Demonstration of E2E integration of subsystems and their system-level interfaces
   Successful integration and validation activities, which were already performed for limited system areas and confirmed in SOVT-1, shall be performed for the CPV Phase in a system wide operational context.
2. Identification of timing constraints and data product processing issues
   Estimated transfer and process times shall be confirmed that are specific to the CPV Phase. Especially the impact of transfer times on the expected start of successive processes. Identification of bottlenecks in system processes, where an underperformance in transfer or in a sub-process causes delays.
3. Validation of Ground Segment stability for 24/5
   The complete ground segment hardware, software and communication lines are used in an operational context for 24 hours on 5 days. No forced contingencies are planned, but unexpected outages shall be covered by redundancy. In this case the CPV Phase requirements are more stringent than the routine phase.
4. Validation of Space Segment stability for 24/55 while operating PV phase activities
   The S/C shall operate for 24 hours on 5 days based upon planned CPV Phase activities. The MTLs shall be executed and the S/C behaviour shall be nominal.
5. Identification of unexpected problems coming up in an E2E operational environment
   Complex systems conceal unexpected behaviour and this behaviour will differ between the Routine (SOVT-1) and CPV Phase scenario. System wide tests reduce these risks.

Ancillary Objectives:

6. Validation of CPV Phase Operations Procedures
   While most Flight Operations Procedures are validated in SVTs, Ground Operations Procedures shall be validated during SOVTs as well. SOVT-2 is the opportunity to validate CPV Phase procedures.
7. Operational Network under realistic load
   The measured data transfer times shall confirm the choice of communication lines bandwidths. These times are more stringent during the CPV Phase.

2 APPLICABLE/REFERENCE DOCUMENTS

2.1 APPLICABLE DOCUMENTS

AD-01 Planck SOVT-2 Test Plan, PT-PMOC-OPS-PL-6216-OPS-OAP, latest Version

2.2 REFERENCE DOCUMENTS

RD-01 Planck SOVT1 Test Plan, PT-PMOC-OPS-PL-6203-OPS-OAP, latest version

RD-02 Planck LFI/SCS Operation Plan, PL-LFI-PST-PL-011, latest version

RD-03 Planck LFI/SCS User Manual, PL-LFI-PST-MA-001, latest version

2.3 ACRONYMS LIST

ACA	Amplifier Chain Assembly
AD	Applicable Document
AHF	Attitude History File
APID	Applications Process Identifiers
APPL	Augmented Preprogrammed Pointing List
ASI	Agenzia Spaziale Italiana (Italian Space Agency)
CPV	Calibration Performance Verification
CSL	Centre Spatiale de Liège
DAE	Data Acquisition Electronics
DDS	Data Disposition System
DMC	Data Management Component
DPC	Data Processing Centre (for Planck)
DQR	Daily Quality Report
DTCP	Daily Tele Communication Period
ESA	European Space Agency
ESOC	ESA Space Operations Center
HK	HouseKeeping
H/W	Hardware
HFI	High Frequency Instrument
HPFTS	Heschel Planck File Transfer System
ICD	Interface Control Document
IOT	Instrument Operations Team
IW@MOC	Instrument WorkStation at MOC
LFI	Low Frequency Instrument
MIBs	Mission Information BaSe
MOC	Mission Operations Centre
MTL	Mission TimeLine
OATs	Osservatorio Astronomico di Trieste
PGSSG	Planck Ground Segment System Group
PSO	Planck Science Office
PPL	Preprogrammed Pointing List
P/S	Phase Switch

QA	Quality Assurance
QLA	Quick-Look Analysis
RCA	Radiometer Chain Assembly
RTA	Real-Time Assessment
RTSI	Real Time System Interface
SVT	System Verification Test
SOVT	System Operations Verification Test
TBC	To Be Confirmed
TBD	To Be Defined
TBW	To Be Written
TC	TeleCommands
TCH	Tele Command History
TM	TeleMetry
TMH	Telemetry Handling
TOD	Time-Ordered Data
TOI	Time-Ordered Information
TQL	Telemetry Quick-Look
TPF	Task parameters Files
TSF	Mission Timelines Summary File
UTC	Coordinated Universal Time

3 L1 SOFTWARE VALIDATION GUIDELINES

Analysis of real time data is performed offline at DPC using LIFE/Pegaso. Main objectives of this analysis are

1. To verify that the software is able to open and handle the data
2. To verify that data are displayed the same way in Pegaso and LAMA
3. To verify functionality IDL-Pegaso data interface
4. To verify and validate DQR production

Objectives 2 and 3 are fulfilled using a twin data session in LAMA format acquired using the LFI EGSE running in CSL. Then the same data sections are analysed using both software codes and the results are then compared.

3.1 OPENING AND DISPLAYING DATA

Scientific and HK data were succesfully opened using the nominal operation interface, PEGASO, that interacts with the SGS 1 database through DMC.

3.2 FUNCTIONALITY OF IDL-PEGASO DATA INTERFACE

The set of functions interfacing IDL and Pegaso are the main building blocks for data analysis via IDL routines. Here we basically verify functionality and consistency of the following functions. A more comprehensive check of data analysis routines as a whole will be done in the future but are outside the scope of this report.

- `get_sky_x, get_sky_y`
- `selection_get_sky_x, selection_get_sky_y`
- `get_hk_x, get_hk_y`
- `get_sci_avg, get_sci_sig`

Furthermore there are some derived functions based on the above:

- `select_scidata`
- `select_hkdata`

3.3 CONSISTENCY OF DATA DISPLAY

Cross checks between data opened with the nominal operation interface, PEGASO (applied on consolidated and real time data), and the interface used during previous ground tests, LAMA (applied on the same set of data acquired at CSL), were succesfully performed. A bug was found in the calibration procedure applied to the nominal operation due a wrong sign in the formula used. A change request was applied and quickly implemented in the SGS1 operation software.

4 OPERATIONAL DAY 040 (DRAIN CURRENT VERIFICATION)

4.1 TESTS PERFORMED DURING OD 040

In the following table we summarise the CPV tests performed during OD 040. In practice the LFI run a single test, the so-called Drain current verification test, that is entirely run in the mission timeline.

Time	*Actor*	*Action/Event*
MTL	LFI	**Drain Current Verification**
MTL	HFI	**Compression algorithm validation** P_FCP_HFI_NXCN P_FCP_HFI_PCMP (commands separated by 1 second) P_FCP_HFI_NCCN P_FCP_HFI_NXCN P_FCP_HFI_NCON
MTL	HFI	**End-of-Slew command load** [covering period until end of DTCP OD-3]

4.2 INSTRUMENT COMMANDING, DATA TRANSMISSION AND MANAGEMENT

4.2.1 IOT@MOC

4.2.1.1 REAL TIME IW@MOC

Two RTSI were started without Problem. One configured to display the Real Time telemetry on SCOS. The other configured to display the Real Time telemetry in our QLA system.

We analyze the telemetry received during the DTCP of OD_40. gaps were identified (we report here only the overall summary, see annex for detailed analysis):

APID 0016:

```
################################################################################
TOTAL Number of lost packets= 1295
TOTAL Number of packets RECEIVED= 7571
Percentuage of lost Packets= 14.606361
################################################################################
```

APID 0018

```
################################################################################
TOTAL Number of lost packets= 273
TOTAL Number of packets RECEIVED= 33513
Percentuage of lost Packets= 0.80802699
################################################################################
```

APID 1408

```
################################################################################
TOTAL Number of lost packets= 4
TOTAL Number of packets RECEIVED= 761
Percentuage of lost Packets= 0.52287582
################################################################################
```

APID 1410

```
################################################################################
TOTAL Number of lost packets= 73
TOTAL Number of packets RECEIVED= 8585
Percentuage of lost Packets= 0.84315084
################################################################################
```

APID 1536:

```
################################################################################
TOTAL Number of lost packets= 7
TOTAL Number of packets RECEIVED= 1380
Percentuage of lost Packets= 0.50468637
################################################################################
```

APID 1538

```
################################################################################
TOTAL Number of lost packets= 77
TOTAL Number of packets RECEIVED= 9034
Percentuage of lost Packets= 0.84513226
################################################################################
```

APID 1540

```
################################################################################
TOTAL Number of lost packets= 0
TOTAL Number of packets RECEIVED= 59116
Percentuage of lost Packets= 0.000000
################################################################################
```

APID 1664

```
################################################################################
```

```
TOTAL Number of lost packets= 9
TOTAL Number of packets RECEIVED= 1580
Percentuage of lost Packets= 0.56639396
################################################################################
```

APID 1666

```
################################################################################
TOTAL Number of lost packets= 131
TOTAL Number of packets RECEIVED= 15818
Percentuage of lost Packets= 0.82136811
################################################################################
```

4.2.1.2 RECEPTION AND TRANSFER OF FILES VIA HPFTS@IW

The following TPF were sent

- TPF__LPISDA_D_PFL_CSNP__IPF_00011.PLAN
- TPF__LPISDA_D_PFL_CSSX__IPF_00011.PLAN

4.2.1.3 GENERATION OF TPFS@MOC

The following TPFs required to set the LFI in the correct configuration were created:

- PFLCSNP_C_NAVRGE_0011.IPF
- PFLCSSX_C_SCI_AB_0011.IPF

4.2.2 DPC SITE

4.2.2.1 RETRIEVING DATA VIA DDS

The 14/10/2008 at 7:30 UTC we start our pipeline to retrieve consolidated data. At this time only consolidated data belong to OD-39 (not official part of P-SOVT2) was retrieved between the following time range: 09/04/2009 / 07:00z - 08:00z

Gaps analysis was performed and gaps were found ONLY on the APID 0016. This is due to a now SPR raised during the SOVT1b.

- The consolidator does not copy R/T TM packets into the dumped TM to close gaps
- There are some type/subtypes of APID 16 and 512/514, which are not stored on board, but only available as R/T TM

4.2.2.2 RECEPTION AND TRANSFER OF FILES VIA HPFTS@DPC

The following files were received before the starting of SOVT2:

APPL:

APPL_SDALFI_D_0039_0032_____00000.PLAN

- 0039_0032.APL
- 0039_0032.APF
- 0039_0032.APS
- 0039_0032.SED

APPL_SDALFI_D_0040_0062_____00000.PLAN

- 0040_0062.APL
- 0040_0062.APF
- 0040_0062.APS
- 0040_0062.SED

APPL_SDALFI_D_0041_0011_____00000.PLAN

- 0041_0011.APL
- 0041_0011.APF
- 0041_0011.APS
- 0041_0011.SED

APPL_SDALFI_D_0042_0008_____00000.PLAN

- 0042_0008.APL
- 0042_0008.APF
- 0042_0008.APS
- 0042_0008.SED

APPL_SDALFI_D_0043_0007_____00000.PLAN

- 0043_0007.APL
- 0043_0007.APF
- 0043_0007.APS
- 0043_0007.SED

APPL_SDALFI_D_0044_0005_____00000.PLAN

- 0044_0005.APL
- 0044_0005.APF
- 0044_0005.APS
- 0044_0005.SED

APPL_SDALFI_D_0044_0007_____00000.PLAN

- 0044_0007.APL
- 0044_0007.APF
- 0044_0007.APS

0044_0007.SED

PPL:

PPL__SDALFI_D_____00006.PLAN

- 20090405_20090409_0006_R.PPL

PPL__SDALFI_D_____00007.PLAN

- 20090405_20090413_0007_R.PPL

MIBs Tables:

SDB__SDALFI_D_081007T162918_00001.PLAN

- 200810071830-PLANCK-PSVT2MIB-CCS.zip

TCH

PTCH_SDALFI_D_081014T131209_00001.PLAN

- 20090409_0040_0001.PTCH

TSF:

TSF__SDALFI_D_081014T133242_00001.PLAN

- 20090409_0040_P_BRIEF_L001.TSF

TSF__SDALFI_D_081014T133253_00001.PLAN

- 20090409_0040_P_FULL__L001.TSF

TSF__SDALFI_D_081014T133817_00001.PLAN

- 20090409_0040_P_FULL__L002.TSF

TSF__SDALFI_D_081014T133827_00001.PLAN

- 20090409_0040_P_BRIEF_L002.TSF

TSF__SDALFI_D_081014T155629_00001.PLAN

- 20090409_0040_P_BRIEF_H001.TSF

TSF__SDALFI_D_081014T155930_00001.PLAN

- 20090409_0040_P_FULL__H001.TSF

TSF__SDALFI_D_081014T155943_00001.PLAN

- 20090409_0040_P_BRIEF_H002.TSF

TSF__SDALFI_D_081014T160004_00001.PLAN

- 20090409_0040_P_FULL__H002.TSF

TSF__SDALFI_D_081014T160016_00001.PLAN

- 20090409_0040_P_FULL__H002.TSF

TSF__SDALFI_D_081014T160027_00001.PLAN

- 20090409_0040_P_BRIEF_H003.TSF

TSF__SDALFI_D_081014T160047_00001.PLAN

- 20090409_0040_P_FULL__H003.TSF

TSF__SDALFI_D_081014T160057_00001.PLAN

- 20090409_0040_P_BRIEF_H004.TSF

TSF__SDALFI_D_081014T160108_00001.PLAN

- 20090409_0040_P_FULL__H004.TSF

The Red TSFs are identical but they were included in different HPFTS wrappers files. This was due to a manual error. No impact.

4.2.2.3 PROCESSING AHF

None

4.2.2.4 PROCESSING ORBIT AND EVENT FILE

APPL and PPL were received and correctly processed.

4.2.2.5 PROCESSING TCH ASCII PRINTOUT FILES

The TCH received is correct. Note that in the Header is written:

MISSION: HERSCHEL CONTEXT: ALL DOMAIN:

….

The MISSION should be Planck NOT Herschel.

4.2.2.6 PROCESSING TSF ASCII PRINTOUT FILES

The TSF received are correct. Note that in the Header is written:

MISSION: HERSCHEL CONTEXT: ALL DOMAIN:

4.2.2.7 DPC SHADOW DISPLAY ON IW@MOC

The remote shadow interface at the DPC of SCOS2k IW@MOC had problem due to the use of double monitor at PISA site. We decided to disenable the second monitor in the next DTCP.

4.3 EXECUTION OF INSTRUMENT PROCEDURES

The drain current verification procedure presented problems in the execution of the loop on the Vg1 bias voltage. These problems were identified and corrected. The procedure has been run again during OD 042, so its results are not reported in this section.

4.4 OD 040 TEST RESULT SUMMARY

The activities performed during this day include an undisturbed acquisition in nominal (compressed mode) and a subsequent drain current verification test performed in TYPE1 (AVR1) mode. This activity has been repeated during OD 042 because of a procedural problem.

DOY 099, 101 **OD-1, 3**
Test name: **Drain current verification**

Test objectives: This procedure exercises all the radiometers in Vg1 and Vg2 and verifies the corresponding drain current

Verification matrix

Check	Passed?			Recovered?	
	Yes	No	Notes	Yes	No
No unexpected events packets				N/A	N/A
TC procedure			The Vg1 loop was not running. Procedure was corrected and correctly implemented again on OD-3.		
No unexpected features				N/A	N/A

Anomalies:

- The initial LFI configuration was not correct. LFI was in nominal scientific processing type (Type 5) while for the tests LFI should be in Type 1, the processing type used for Commissioning and CPV tests. The 4KHz configuration also required to be changed: all the RCAs were switching on B/D while RCA23 should be switching on A/C. For both these activities, the required TPFs were sent. For what regards the change in 4KHz configuration, an error in the TPF production was found. The TPFs were changed online and as a consequence the code for the TPF production was modified. Before applying the foreseen activity, the configuration was changed without any problem.
- An error in the procedure (see verification matrix above)

4.4.1 DPC POINT OF VIEW

The Gaps reported in the IW@MOC were discussed with MOC and justified as follow:

The 2 gaps in R/T TM are expected (and will come again on each DTCP):

- The first gap right after the start of the DTCP was caused by the NDIU interface switchover from umbilical to RF
- The second gap ~08:15z was caused by the TM rate switch from medium to high rate (expected in flight as well)

The remote shadow interface at the DPC of SCOS2k IW@MOC had problem due to the use of double monitor at PISA site. We decided to disenable the second monitor in the next DTCP.

5 OPERATIONAL DAY 041 (Phase switch tuning)

5.1 TESTS PERFORMED DURING OD 041

In the following table we summarise the CPV tests performed during OD 041. During this OD the LFI run the phase switch tuning test, performed on a 10x10 matrix of current values for I1 and I2.

Time	*Actor*	*Action/Event*
MTL	LFI	**P/S Balance Verification Test** P_FCP_LFI_CRCA P_FCP_LFI_CSCC P_FCP_LFI_CSDC **Special PS Tuning Command Stacks**
MTL	HFI	**REU properties** (at 1K +/- 0.2K) QEC (see CSL_FM_7_6.xls) P_FCP_HFI_NXCN P_FCP_HFI_ERSS (once for each channel) P_FCP_HFI_C00P - P_FCP_HFI_CB5P: (Not all channels tested - see Cooldown definition; around 715 TPFs required) P_FCP_HFI_NCON
MTL	HFI	**End-of-Slew command load** [NOTE: For a specific period covering the **high data-rate activity** in DTCP OD-4 there will be a single long-duration End-of-Slew command for 24 hours] P_FCP_HFI_PEOS

5.2 INSTRUMENT COMMANDING, DATA TRANSMISSION AND MANAGEMENT

5.2.1 IOT@MOC

5.2.1.1 REAL TIME IW@MOC

At the start of the DTCP the RTSI server (MOC) disconnect, the RTSI client (IW@MOC) correctly reconnect as soon the server become available.

We analyze the telemetry received during the DTCP of OD_41. some gaps were identified (we report here only the overall summary, see annex for detailed analysis):

Here is the usual list:

APID 0016

```
################################################################################
TOTAL Number of lost packets= 38
TOTAL Number of packets RECEIVED= 7279
```

```
Percentuage of lost Packets= 0.51933853
################################################################################
```

APID 0018

```
################################################################################
TOTAL Number of lost packets= 356
TOTAL Number of packets RECEIVED= 32722
Percentuage of lost Packets= 1.0762440
################################################################################
```

APID 1408

```
################################################################################
TOTAL Number of lost packets= 14
TOTAL Number of packets RECEIVED= 832
Percentuage of lost Packets= 1.6548463
################################################################################
```

APID 1410

```
################################################################################
TOTAL Number of lost packets= 92
TOTAL Number of packets RECEIVED= 8384
Percentuage of lost Packets= 1.0854176
################################################################################
```

APID 1536

```
################################################################################
TOTAL Number of lost packets= 7
TOTAL Number of packets RECEIVED= 3989
Percentuage of lost Packets= 0.17517518
################################################################################
```

APID 1538

```
################################################################################
TOTAL Number of lost packets= 99
TOTAL Number of packets RECEIVED= 9439
Percentuage of lost Packets= 1.0379534
################################################################################
```

APID 1540 NO GAPS

APID 1664

```
################################################################################
TOTAL Number of lost packets= 9
TOTAL Number of packets RECEIVED= 1555
Percentuage of lost Packets= 0.57544757
```

```
################################################################################
```

APID 1666

```
################################################################################
TOTAL Number of lost packets= 166
TOTAL Number of packets RECEIVED= 15448
Percentuage of lost Packets= 1.0631485
################################################################################
```

5.2.1.2 RECEPTION AND TRANSFER OF FILES VIA HPFTS@IW

The following TPFs required for the PS tuning verification test foreseen for OD_41 of SOVT-2 were sent via HPFTS:

TPF__LPISDA_D_PFL_CRCA_2421_00002.PLAN
TPF__LPISDA_D_PFL_CRCA_90D1_00002.PLAN
TPF__LPISDA_D_PFL_CS1C_0821_00002.PLAN
TPF__LPISDA_D_PFL_CRCA_8861_00002.PLAN
TPF__LPISDA_D_PFL_CRCA_90E1_00002.PLAN
TPF__LPISDA_D_PFL_CS2C_0821_00002.PLAN
TPF__LPISDA_D_PFL_CRCA_8871_00002.PLAN
TPF__LPISDA_D_PFL_CRCA_9161_00002.PLAN
TPF__LPISDA_D_PFL_CSCC_0001_00002.PLAN
TPF__LPISDA_D_PFL_CRCA_8881_00002.PLAN
TPF__LPISDA_D_PFL_CRCA_9171_00002.PLAN
TPF__LPISDA_D_PFL_CSCC_0011_00002.PLAN
TPF__LPISDA_D_PFL_CRCA_88C1_00002.PLAN
TPF__LPISDA_D_PFL_CRCA_9181_00002.PLAN
TPF__LPISDA_D_PFL_CSCC_7101_00002.PLAN
TPF__LPISDA_D_PFL_CRCA_88D1_00002.PLAN
TPF__LPISDA_D_PFL_CRCA_92C1_00002.PLAN
TPF__LPISDA_D_PFL_CSDC_0001_00002.PLAN
TPF__LPISDA_D_PFL_CRCA_8961_00002.PLAN
TPF__LPISDA_D_PFL_CRCA_92D1_00002.PLAN

TPF__LPISDA_D_PFL_CSDC_0011_00002.PLAN
TPF__LPISDA_D_PFL_CRCA_8971_00002.PLAN
TPF__LPISDA_D_PFL_CRCA_92E1_00002.PLAN
TPF__LPISDA_D_PFL_CSDC_7111_00002.PLAN
TPF__LPISDA_D_PFL_CRCA_8981_00002.PLAN
TPF__LPISDA_D_PFL_CRCA_92E2_00002.PLAN
TPF__LPISDA_D_PFL_CSNC_0821_00002.PLAN
TPF__LPISDA_D_PFL_CRCA_9061_00002.PLAN
TPF__LPISDA_D_PFL_CRCA_92E3_00002.PLAN
TPF__LPISDA_D_PFL_CSXC_0821_00002.PLAN
TPF__LPISDA_D_PFL_CRCA_9071_00002.PLAN
TPF__LPISDA_D_PFL_CRCA_92E4_00002.PLAN
TPF__LPISDA_D_PFL_CSYC_0821_00002.PLAN
TPF__LPISDA_D_PFL_CRCA_9081_00002.PLAN
TPF__LPISDA_D_PFL_CRCA_93D1_00002.PLAN
TPF__LPISDA_D_PFL_CRCA_90C1_00002.PLAN
TPF__LPISDA_D_PFL_CRCA_93E1_00002.PLAN

5.2.1.3 GENERATION OF TPFS@MOC

37 TPFs were generated and sent for the PS tuning verification procedure.

5.2.2 DPC SITE

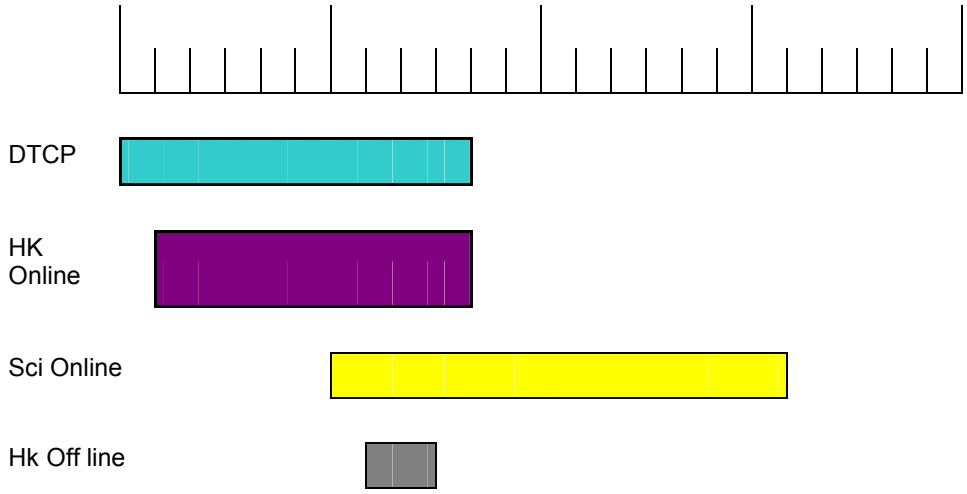
5.2.2.1 RETRIEVING DATA VIA DDS

The download of the Online HK TM (0018 – 1410 – 1538 – 1666) started at 08:45 UTC and end at 12:55.

The download of the OffLine HK TM (0016 – 1408 – 1536 – 1664) started at 11:15 UTC and end at 12:50. See Timeline below.

The download of the Online Science TM (1540) started at 11:55 UTC and end at 17:20 UTC

0 3 h 6 h 9 h



We perform a quick GAPS analysis on the consolidated telemetry. Here is the results:

APID 0016, list is not reported here (too long), The reason is known see OD_040

```
################################################################################
TOTAL Number of lost packets= 815
TOTAL Number of packets RECEIVED= 34455
################################################################################
```

APID 0018

```
################################################################################
TOTAL Number of lost packets= 70
TOTAL Number of packets RECEIVED= 166318
################################################################################
```

APID 1408

```
################################################################################
TOTAL Number of lost packets= 20
TOTAL Number of packets RECEIVED= 3821
################################################################################
```

APID 1410

```
################################################################################
TOTAL Number of lost packets= 2
TOTAL Number of packets RECEIVED= 7467
################################################################################
```

APID 1538

```
################################################################################
TOTAL Number of lost packets= 19
TOTAL Number of packets RECEIVED= 45014
################################################################################
```

APID 1540

```
################################################################################
TOTAL Number of lost packets= 38
TOTAL Number of packets RECEIVED= 472895
################################################################################
```

APID 1664

```
################################################################################
TOTAL Number of lost packets= 25
TOTAL Number of packets RECEIVED= 7853
################################################################################
```

APID 1666

```
################################################################################
TOTAL Number of lost packets= 33
TOTAL Number of packets RECEIVED= 78511
################################################################################
```

5.2.2.2 RECEPTION AND TRANSFER OF FILES VIA HPFTS@DPC

The following files were received at the Start of OD_041.

TSF:

TSF__SDALFI_D_081015T084807_00001.PLAN

- 20090410_0041_P_BRIEF_H001.TSF

TSF__SDALFI_D_081015T084909_00001.PLAN

- 20090410_0041_P_BRIEF_H001.TSF

TSF__SDALFI_D_081015T085153_00001.PLAN

- 20090410_0041_P_BRIEF_H002.TSF

TSF__SDALFI_D_081015T085228_00001.PLAN

- 20090410_0041_P_BRIEF_H003.TSF

TSF__SDALFI_D_081015T085336_00001.PLAN

- 20090410_0041_P_BRIEF_L001.TSF

TSF__SDALFI_D_081015T085350_00001.PLAN

- 20090410_0041_P_BRIEF_L002.TSF

TSF__SDALFI_D_081015T085355_00001.PLAN

- 20090410_0041_P_BRIEF_L003.TSF

TSF__SDALFI_D_081015T085408_00001.PLAN

- 20090410_0041_P_FULL__L001.TSF

TSF__SDALFI_D_081015T085415_00001.PLAN

- 20090410_0041_P_FULL__L002.TSF

TSF__SDALFI_D_081015T085421_00001.PLAN

- 20090410_0041_P_FULL__L003.TSF

TSF__SDALFI_D_081015T090135_00001.PLAN

- 20090410_0041_P_BRIEF_H001.TSF

TSF__SDALFI_D_081015T090341_00001.PLAN

- 20090410_0041_P_BRIEF_H002.TSF

TSF__SDALFI_D_081015T090349_00001.PLAN

- 20090410_0041_P_BRIEF_H003.TSF

TSF__SDALFI_D_081015T090411_00001.PLAN

- 20090410_0041_P_FULL__H001.TSF

TSF__SDALFI_D_081015T090423_00001.PLAN

- 20090410_0041_P_FULL__H002.TSF

TSF__SDALFI_D_081015T090429_00001.PLAN

- 20090410_0041_P_FULL__H003.TSF

The Red TSFs are identical but they were included in different HPFTS wrappers files. This was noted also in the OD_040. No impact. We suggest checking to avoid redundant information.

PPL

PPL__SDALFI_D_____00008.PLAN

- 20090412_20090414_0008_R.PPL

TCH

PTCH_SDALFI_D_081015T135601_00001.PLAN

- 20090410_0041_0001.PTCH

APPL

APPL_SDALFI_D_0043_0008_____00000.PLAN

- 0043_0008.APL
- 0043_0008.APF

- 0043_0008.APS
- 0043_0008.SED

APPL_SDALFI_D_0044_0008_____00000.PLAN

- 0044_0008.APL
- 0044_0008.APF
- 0044_0008.APS
- 0044_0008.SED

The following TPF regarding the SCS were sent via HPFTS
TPF__LFISDA_D_PFSCLPM_PWRTN_00003.PLAN
TPF__LFISDA_D_PFSNLDM_PIDAN_00003.PLAN

5.2.2.3 GENERATION OF TPFS@DPC

2 SCS TPFs were generated at LFI DPC and sent.
PFSCLPM_LUT_PWRT_N_0003.ipf
PFSNLDM_LUT_PIDA_N_0003.ipf

5.2.2.4 GENERATION OF ICR@DPC

One ICR regarding the SCS was sent by the LFI DPC to be approved by HFI DPC and PSO.

5.2.2.4.1 Processing AHF

At the time this report was issued NO AHF regarding OD_040 was received

5.2.2.4.2 Processing Orbit and Event File

None

5.2.2.4.3 Processing TCH ASCII printout Files

The TCH received is correct. Note that in the Header is written:
MISSION: HERSCHEL CONTEXT: ALL DOMAIN:

The MISSION should be Planck NOT Herschel.

5.2.2.4.4 Processing TSF ASCII printout Files

The TSF received are correct. Note that in the Header is written:

MISSION: HERSCHEL CONTEXT: ALL DOMAIN:

Please change.

5.2.2.5 DPC SHADOW DISPLAY ON IW@MOC

The disenable of the second monitor of SCOS2k IW@MOC permit the correctly shadow display at the DPC.

5.3 EXECUTION OF INSTRUMENT PROCEDURES

5.3.1 DETAILED PROCEDURE

In the following table we report the complete and detailed procedure followed in the phase switch tuning test. This procedure was run partly during the DTCP (RCAs LFI 24 and 25) and partly outside DTCP (the remaining 30 and 44 GHz RCAs).

It is worth noticing that during the tuning of LFI24 and LFI28 we have exercised the so-called "soft" ACA switch-on procedures that avoid oscillation and consequent saturation (see steps 7.20 through 7.22 for LFI24 and 7.56 for LFI28).

#7	**Phase Shifter Tuning**			
	Detailed Description	P/S Balance Verification Test		
	Constraints	Start OD: **TBD** Start Reference Temperature: **4K Stage=30K** **Note**: LFI activity will follow after completion of 4K cooler 'nominal stroke' configuration activity		
	Start Condition	LFI (NOM) in **Nominal Science** Mode		
	End Condition	No change in LFI configuration		
	Initial Configuration	Cryo biases, 4kHz switching on B/D (**RCA23 on 4 A/C**), Polarization A/C=1, B/D=0		
	End Configuration	Unchanged		
	Execution Type	**MTL**		
	Duration	**6 hours**		
Step	**Reference**	**Proc. Ref.**	**Proc. Title**	**Procedure Inputs**
7	**P/S Tuning** (UM section 13.1.2.6)			
	RCA 24 and 25			
7.1	**Set zero bias on ACA1**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters	
7.2	**Perform Iswitch1 vs Iswitch2 tuning for ACA2**	**PS_24_25_ACA2**	**(Special Command Sequence product)**	

7.3	**Set zero bias on ACA2**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
7.4	**Set Cryo bias on ACA1**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
7.5	**Disable B/D 4kHz**	**P_FCP_LFI_CSDC**	Enable/Disable the B-D phase switch
7.6	**Enable A/C 4kHz**	**P_FCP_LFI_CSCC**	Enable/Disable the A-C phase switch
7.7	**Perform Iswitch1 vs Iswitch2 tuning for ACA1**	**PS_24_25_ACA1**	**(Special Command Sequence product)**
7.8	**Set Cryo bias on ACA1 and ACA2**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
7.9	**Disable A/C 4kHz**	**P_FCP_LFI_CSCC**	Enable/Disable the A-C phase switch
7.10	**Enable B/D 4kHz**	**P_FCP_LFI_CSDC**	Enable/Disable the B-D phase switch
7.11	**Set zero bias on ACA3**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
7.12	**Perform Iswitch1 vs Iswitch2 tuning for ACA4**	**PS_24_25_ACA4**	**(Special Command Sequence product)**
7.13	**Set zero bias on ACA4**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
7.14	**Set Cryo bias on ACA3**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
7.15	**Disable B/D 4kHz**	**P_FCP_LFI_CSDC**	Enable/Disable the B-D phase switch
7.16	**Enable A/C 4kHz**	**P_FCP_LFI_CSCC**	Enable/Disable the A-C phase switch
7.17	**Perform Iswitch1 vs Iswitch2 tuning for ACA3**	**PS_24_25_ACA3**	**(Special Command Sequence product)**
7.18	**Set Cryo bias on ACA3**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
7.19	**Set Cryo bias on ACA4 of RCA 25**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
7.20	**Set Vg2 on ACA4 of RCA 24**	**P_FCP_LFI_CS2C**	Configure Vgate2
7.21	**Set Vdrain on ACA4 of RCA 24**	**P_FCP_LFI_CSNC**	Configure Vdrain
7.22	**Set Vg1 on ACA4 of RCA 24**	**P_FCP_LFI_CS1C**	Configure Vgate1
7.23	**Set Iswitch1 on ACA4 of RCA 24**	**P_FCP_LFI_CSXC**	Configure Iswitch1
7.24	**Set Iswitch2 on ACA4 of RCA 24**	**P_FCP_LFI_CSYC**	Configure Iswitch2
7.25	**Disable A/C 4kHz**	**P_FCP_LFI_CSCC**	Enable/Disable the A-C phase switch
7.26	**Enable B/D 4kHz**	**P_FCP_LFI_CSDC**	Enable/Disable the B-D phase switch
	RCA 26 and 27		
7.27	**Set zero bias on ACA1**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
7.28	**Perform Iswitch1 vs Iswitch2 tuning for ACA2**	**PS_26_27_ACA2**	**(Special Command Sequence product)**
7.29	**Set zero bias on ACA2**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
7.30	**Set Cryo bias on ACA1**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
7.31	**Disable B/D 4kHz**	**P_FCP_LFI_CSDC**	Enable/Disable the B-D phase switch
7.32	**Enable A/C 4kHz**	**P_FCP_LFI_CSCC**	Enable/Disable the A-C phase switch
7.33	**Perform Iswitch1 vs Iswitch2 tuning for ACA1**	**PS_26_27_ACA1**	**(Special Command Sequence product)**

7.34	**Set Cryo bias on ACA1 and ACA2**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
7.35	**Disable A/C 4kHz**	**P_FCP_LFI_CSCC**	Enable/Disable the A-C phase switch
7.36	**Enable B/D 4kHz**	**P_FCP_LFI_CSDC**	Enable/Disable the B-D phase switch
7.37	**Set zero bias on ACA3**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
7.38	**Perform Iswitch1 vs Iswitch2 tuning for ACA4**	**PS_26_27_ACA4**	**(Special Command Sequence product)**
7.39	**Set zero bias on ACA4**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
7.40	**Set Cryo bias on ACA3**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
7.41	**Disable B/D 4kHz**	**P_FCP_LFI_CSDC**	Enable/Disable the B-D phase switch
7.42	**Enable A/C 4kHz**	**P_FCP_LFI_CSCC**	Enable/Disable the A-C phase switch
7.43	**Perform Iswitch1 vs Iswitch2 tuning for ACA3**	**PS_26_27_ACA3**	**(Special Command Sequence product)**
7.44	**Set Cryo bias on ACA3 and ACA4**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
7.45	**Disable A/C 4kHz**	**P_FCP_LFI_CSCC**	Enable/Disable the A-C phase switch
7.46	**Enable B/D 4kHz**	**P_FCP_LFI_CSDC**	Enable/Disable the B-D phase switch
	RCA 28		
7.47	**Set zero bias on ACA1**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
7.48	**Perform Iswitch1 vs Iswitch2 tuning for ACA2**	**PS_28_ACA2**	**(Special Command Sequence product)**
7.49	**Set zero bias on ACA2**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
7.50	**Power on ACA1 and ACA2 with Soft Switch-On procedure**	**4x P_FCP_LFI_CRCA**	RCA28 Soft Switch-On procedure (ACA 1 + 2)
7.51	**Set zero bias on ACA2**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
7.52	**Disable B/D 4kHz**	**P_FCP_LFI_CSDC**	Enable/Disable the B-D phase switch
7.53	**Enable A/C 4kHz**	**P_FCP_LFI_CSCC**	Enable/Disable the A-C phase switch
7.54	**Perform Iswitch1 vs Iswitch2 tuning for ACA1**	**PS_28_ACA1**	**(Special Command Sequence product)**
7.55	**Set zero bias on ACA1**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
7.56	**Power on ACA1 and ACA2 with Soft Switch-On procedure**	**4x P_FCP_LFI_CRCA**	RCA28 Soft Switch-On procedure (ACA 1 + 2)
7.57	**Disable A/C 4kHz**	**P_FCP_LFI_CSCC**	Enable/Disable the A-C phase switch
7.58	**Enable B/D 4kHz**	**P_FCP_LFI_CSDC**	Enable/Disable the B-D phase switch
7.59	**Set zero bias on ACA3**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
7.60	**Perform Iswitch1 vs Iswitch2 tuning for ACA4**	**PS_28_ACA4**	**(Special Command Sequence product)**
7.61	**Set zero bias on ACA4**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
7.62	**Set Cryo bias on ACA3**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
7.63	**Disable B/D 4kHz**	**P_FCP_LFI_CSDC**	Enable/Disable the B-D phase switch
7.64	**Enable A/C 4kHz**	**P_FCP_LFI_CSCC**	Enable/Disable the A-C phase switch
7.65	**Perform Iswitch1 vs**	**PS_28_ACA3**	**(Special Command Sequence product)**

	Iswitch2 tuning for ACA3		
7.66	**Set Cryo bias on ACA3 and ACA4**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
7.67	**Disable A/C 4kHz**	**P_FCP_LFI_CSCC**	Enable/Disable the A-C phase switch
7.68	**Enable B/D 4kHz**	**P_FCP_LFI_CSDC**	Enable/Disable the B-D phase switch
Additional Comments			
All P/S tuning points will be applied for 20 seconds.			

The tuning matrix indicated in the table is a 11x11 matrix in I1, I2 ranging from 200 to 210 in a loop where for each value of I1 we have I2 spanning the whole set of values.

5.4 DETAILS OF THE TEST

The purpose of the phase shifter tuning is to find the optimal (I1,I2) bias configuration for the 44 LFI radiometric channels. While each channel is in the switching state, a number of different (I1,I2) configurations is exercised, and the radiometric output is used by the LIFE analysis modules to determine the best configuration.

5.5 ACTIVITY REPORT

5.5.1 OVERALL PROCEDURE

The overall procedure for each ACA consisted in the following points:

- All the biases (Vgate1, Vgate2, drain, I1, I2) are set to zero;
- The tuning matrix is applied to the (I1,I2) currents for the channel under test;
- The biases are set back to zero.

The sequence followed for each RCA was M1-M2-S1-S2, with the exception of #28, where the order has been M2-M1-S2-S1.

This procedure was applied correctly to all the 44 LFI ACAs.

5.5.2 PHASE SWITCH TUNING MATRIX

The tuning matrix consisted of 10 values for I1 (200...210) and 10 values for I2 (200...210), to be iterated in a double loop. For each I1 value, the ten I2 values have been exercised before increasing I1 to the next value. This is shown in the following figure. Notice that these values **do not correspond to the actual values that will be used in flight.**

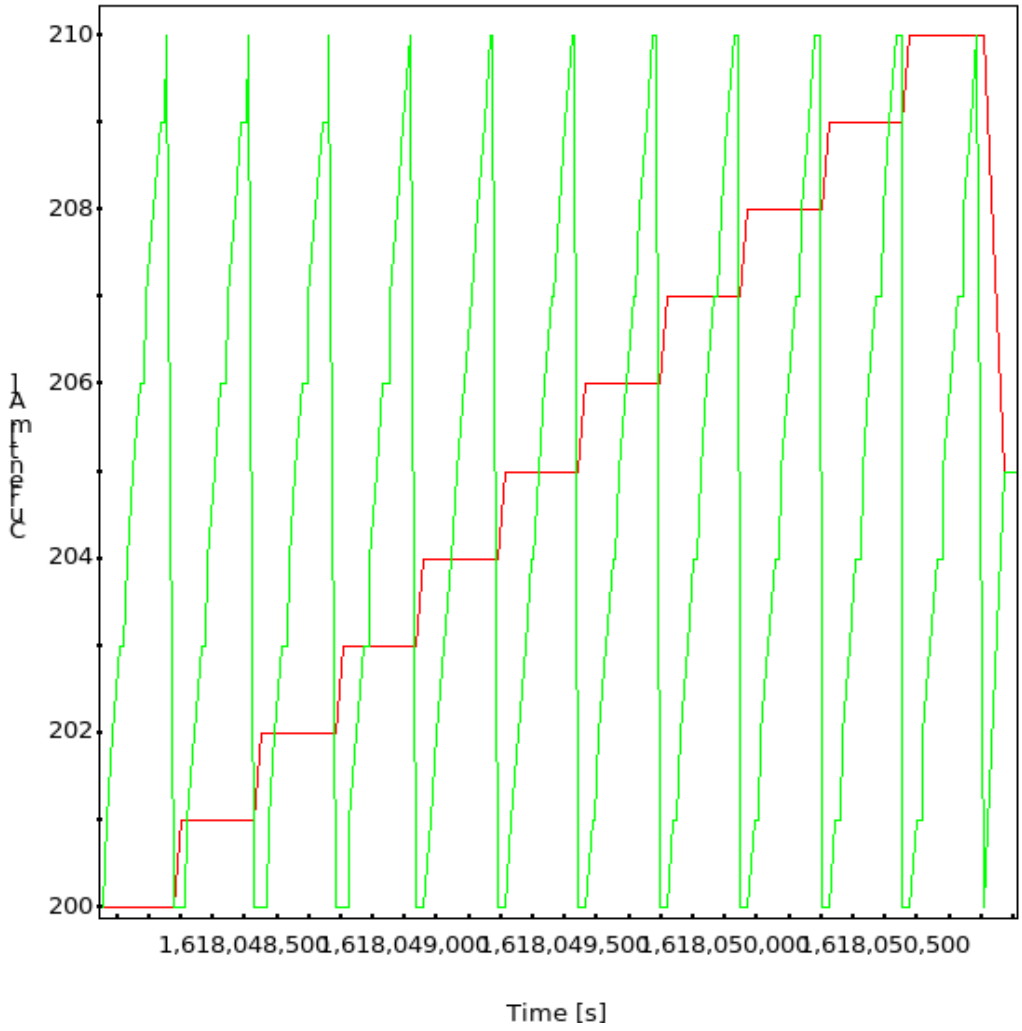


Figure 1: Steps used for the tuning of one ACA. The I1 (red) and I2 (green) values are both exercised from 200 up to 210.

5.5.3 RCA#24 "SOFT" PROCEDURE

During the Planck Integrated Tests in Liége the LFI team discovered that RCA#24 requires a dedicated procedure to be turned off: biases must be set in the order Vg2-Vd-Vg1 in order to prevent oscillations in the radiometric signal.

This procedure has been applied correctly during the PS test, as it can be seen from figure [REF].

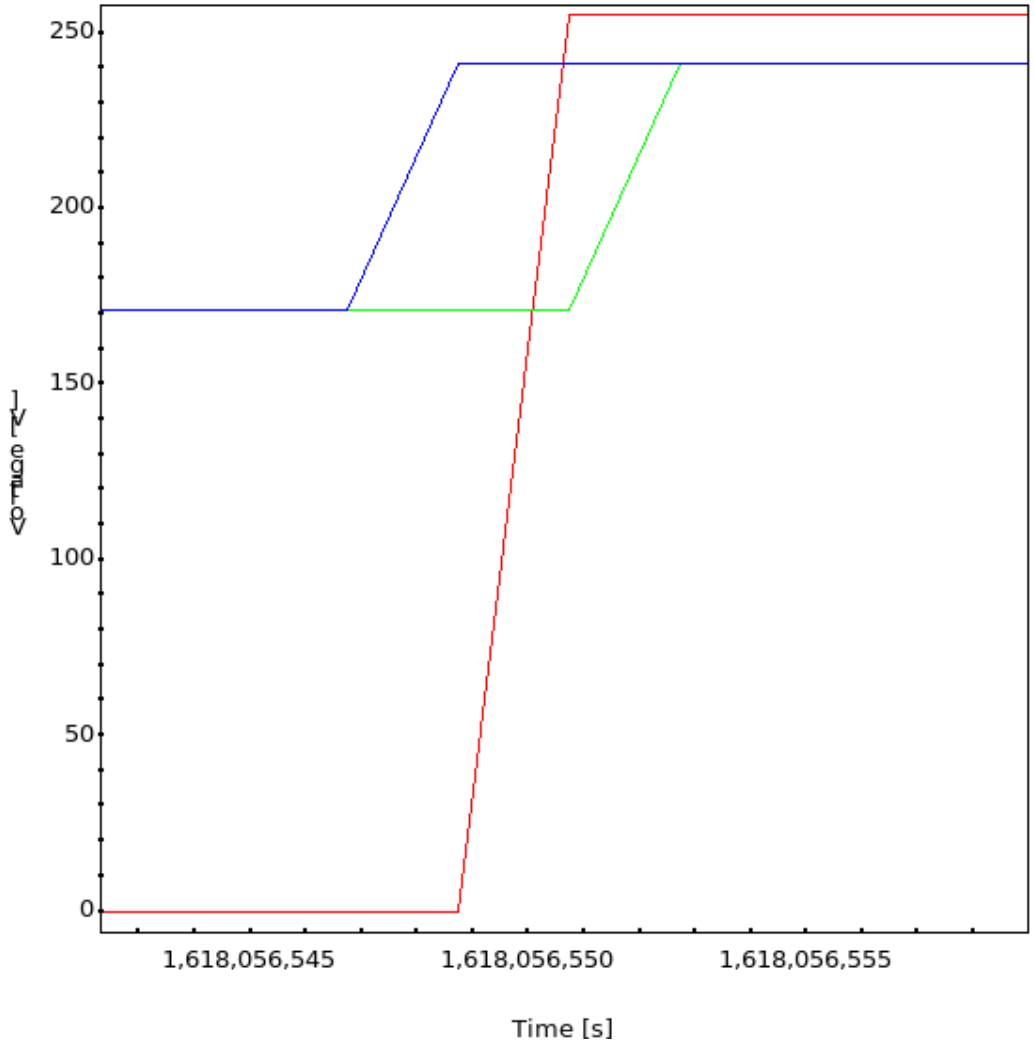


Fig 2: Soft procedure for RCA #24 ACA4. The order in which the biases are reset to zero is Vg2 (blue), Vd (red), Vg1 (green). This is different than the default sequence used for all the other ACAs (apart from LFI28): Vg1-Vg2-Vd.

5.5.4 RCA#28 "SOFT" SWITCH-ON PROCEDURE

ACAs 1 and 2 of RCA#28 require a dedicated procedure (called "soft switch-on procedure") to be turned on properly. Failing to do so would cause saturation in all the LFI channels. The procedure consists in inserting an intermediate step (194) when switching between the zero bias condition (241) and the nominal bias (171).

The procedure has been applied correctly during the Phase Shifter Tuning tests. An example is shown in the following figure.

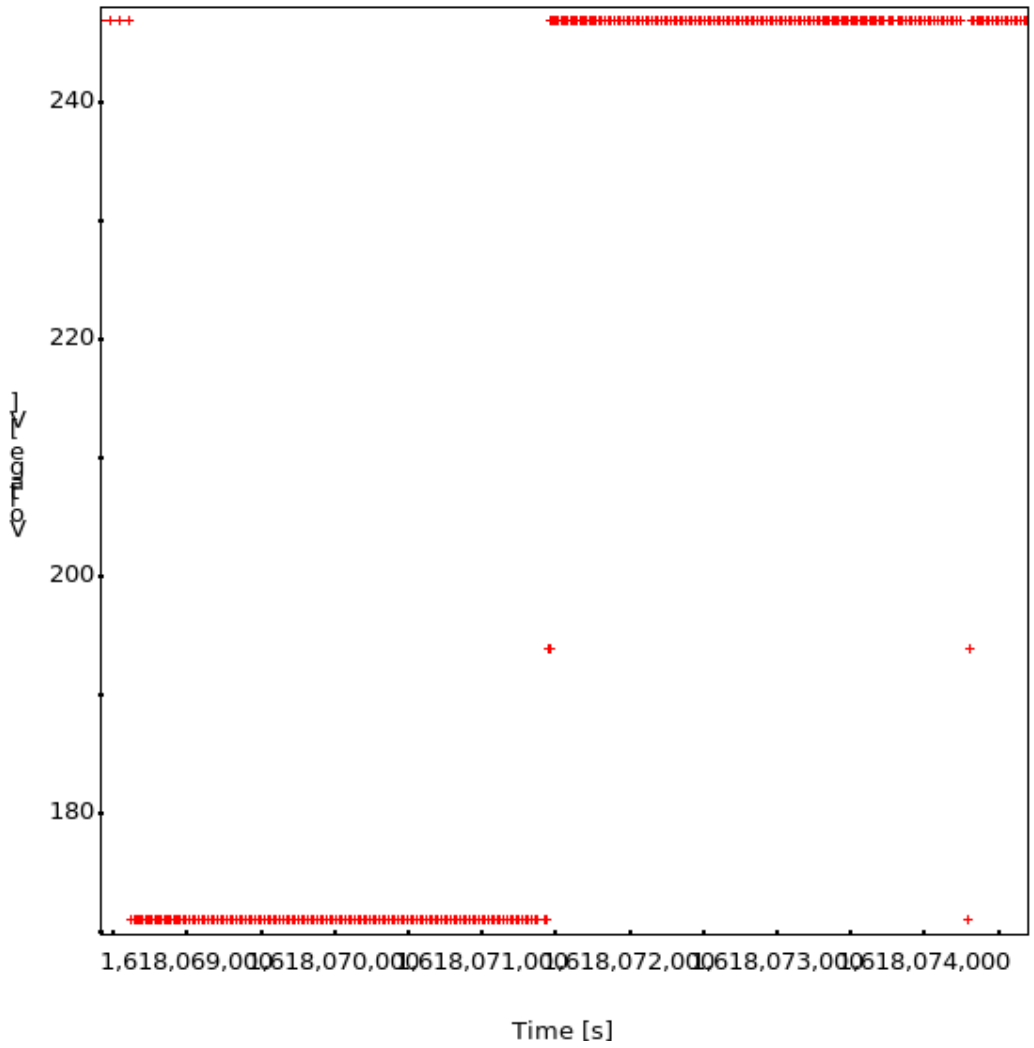


Fig 3: Soft switch-on procedure for channel M1 of RCA #28. The value of Vg1 does not switch between 171 and 247 abruptly, but takes one intermediate step at 194.

5.6 DAILY QUALITY REPORT PRODUCTION

No DQR were produced because NO AHF was received.

5.7 OD 041 TEST RESULT SUMMARY

DOY 100 **OD-2**

Test name: **P/S tuning verification**

Test objectives:

The main objective of the test is to perform a verification of the balance of the two diodes in each PS of each FEM unit. The test is performed only on the 33 and 44 GHz RCAs, as on the 70 GHz radiometers the currents are maximized in order to reduce the transition time of the output signal between the two states of the PS. In principle the nominal bias condition derived from the RAA tests shall be the optimal one. The test is performed on each ACA, biasing each channel separately. For this purpose the ACA coupled with the one under test is switched-off. The
phase switch is activated, thus producing two different output signal traces for the radiometer under test when the PS is not balanced. The balancing philosophy is described in the procedure

Verification matrix

Check	Passed?			Recovered?	
	Yes	No	Notes	Yes	No
No unexpected events packets				N/A	N/A
TC procedure				N/A	N/A
Every P/S is responding to bias stimuli as expected				N/A	N/A
Correct biases for P/S balancing Applied and Checked				N/A	N/A
No unexpected features				N/A	N/A

No anomalies.

5.7.1 DPC POINT OF VIEW

The Gaps reported in the DDS section were discussed with MOC after the SOVT2 and they match the Gaps identified at the MOC level due to lost of frames and disconnection of the NDIU with the MCS.

The Timeline necessary to download the consolidated telemetry was very good and in line with the expectation.

The remote shadow interface problem at the DPC of SCOS2k IW@MOC reported in the OD 40 was solved.

6 OPERATIONAL DAY 042 (Repeat drain current verification, ACA matrix tuning)

6.1 TESTS PERFORMED DURING OD 042

Tests performed during OD 042 have been the following:

1. Drain current verification (recovered from OD 041), that was partly run during the DTCP
2. ACA matrix tuning that was completely run outside DTCP

Here follows a summary table of the ACA matrix tuning test together with the other activities performed during OD 042

Time	*Actor*	*Action/Event*
	SCS	**Routine Phase Regular LUT Tuning** P_FCP_SOR_CLPM P_FCP_SOR_NLDM [TPF/ICR production from LFI DPC, (see note below)]
MTL	LFI	**ACA Matrix Tuning #1** [Tuning of all 44 ACA channels] P_FCP_LFI_CSDC P_FCP_LFI_CADC P_FCP_LFI_CRCA **Special ACA Matrix Tuning Command Stacks**
	HFI	**Special 'Verbose Radiometer' Real-Time contingency recovery** P_FCP_HFI_PCMP [TPF/ICR production, delivery and upload during DTCP, (see note below)]
MTL	HFI	**Optimisation of fine thermometers (4K, 1.6K, 0.1K)** [Hourly operation with different parameters] P_FCP_HFI_NXCN P_FCP_HFI_ECLS P_FCP_HFI_EOPC P_FCP_HFI_NCPN WAIT 2 minutes then P_FCP_HFI_NCON
MTL	HFI	**End-of-Slew command load** [NOTE: this set covers the period from the end of the long-duration End-of-Slew command used for the high data-rate activity] P_FCP_HFI_PEOS

Available data:

- Data from OD 041 in DDS
- Data from IW@MOC (real time session)
- Data from IW@CSL: test session AMB_0198

6.2 INSTRUMENT COMMANDING, DATA TRANSMISSION AND MANAGEMENT

6.2.1 IOT@MOC

6.2.1.1 REAL TIME IW@MOC

The two IW@MOC starts regularly. We analyze the telemetry received during the DTCP of OD_42. some gaps were identified (we report here only the overall summary, see annex for detailed analysis):

It seems that a gap of few minutes (starting at 8:20 to 8:25 UTC) affect all the telemetry.

Here is the usual list:

APID 0016

```
################################################################################
TOTAL Number of lost packets= 60
TOTAL Number of packets RECEIVED= 6966
Percentuage of lost Packets= 0.85397096
################################################################################
```

APID 0018

```
################################################################################
TOTAL Number of lost packets= 381
TOTAL Number of packets RECEIVED= 33281
Percentuage of lost Packets= 1.1318401
################################################################################
```

APID 1408

```
################################################################################
TOTAL Number of lost packets= 7
TOTAL Number of packets RECEIVED= 2211
Percentuage of lost Packets= 0.31559964
################################################################################
```

APID 1410

```
################################################################################
TOTAL Number of lost packets= 102
TOTAL Number of packets RECEIVED= 8523
Percentuage of lost Packets= 1.1826087
################################################################################
```

APID 1536:

```
################################################################################
TOTAL Number of lost packets= 10
TOTAL Number of packets RECEIVED= 4089
Percentuage of lost Packets= 0.24396194
################################################################################
```

APID 1538

```
################################################################################
TOTAL Number of lost packets= 105
TOTAL Number of packets RECEIVED= 9556
Percentuage of lost Packets= 1.0868440
################################################################################
```

APID 1540

```
TOTAL Number of lost packets= 0
TOTAL Number of packets RECEIVED= 87120
Percentuage of lost Packets= 0.00000000
################################################################################
```

APID 1664

```
################################################################################
TOTAL Number of lost packets= 15
TOTAL Number of packets RECEIVED= 1574
Percentuage of lost Packets= 0.94398993
################################################################################
```

APID 1666

```
################################################################################
TOTAL Number of lost packets= 179
TOTAL Number of packets RECEIVED= 15713
Percentuage of lost Packets= 1.1263529
################################################################################
```

6.2.1.2 RECEPTION AND TRANSFER OF FILES VIA HPFTS@IW

The following 66 TPFs were sent from IW@MOC required for the PS tuning verification test to be applied during the OD 042of SOVT-2:

Here is the list of its wrappers name.

TPF__LPISDA_D_PFL_CRCA_A005_00003.PLAN

TPF__LPISDA_D_PFL_CS2C_A030_00003.PLAN

TPF__LPISDA_D_PFL_CSCC_A044_00003.PLAN
TPF__LPISDA_D_PFL_CRCA_A008_00003.PLAN
TPF__LPISDA_D_PFL_CS2C_A038_00003.PLAN
TPF__LPISDA_D_PFL_CSCC_A049_00003.PLAN
TPF__LPISDA_D_PFL_CRCA_A013_00003.PLAN
TPF__LPISDA_D_PFL_CSAC_A003_00003.PLAN
TPF__LPISDA_D_PFL_CSCC_A052_00003.PLAN
TPF__LPISDA_D_PFL_CRCA_A016_00003.PLAN
TPF__LPISDA_D_PFL_CSAC_A011_00003.PLAN
TPF__LPISDA_D_PFL_CSCC_A061_00003.PLAN
TPF__LPISDA_D_PFL_CRCA_A021_00003.PLAN
TPF__LPISDA_D_PFL_CSAC_A019_00003.PLAN
TPF__LPISDA_D_PFL_CSDC_A001_00003.PLAN
TPF__LPISDA_D_PFL_CRCA_A024_00003.PLAN
TPF__LPISDA_D_PFL_CSAC_A027_00003.PLAN
TPF__LPISDA_D_PFL_CSDC_A006_00003.PLAN
TPF__LPISDA_D_PFL_CRCA_A029_00003.PLAN
TPF__LPISDA_D_PFL_CSAC_A045_00003.PLAN
TPF__LPISDA_D_PFL_CSDC_A009_00003.PLAN
TPF__LPISDA_D_PFL_CRCA_A037_00003.PLAN
TPF__LPISDA_D_PFL_CSAC_A053_00003.PLAN
TPF__LPISDA_D_PFL_CSDC_A014_00003.PLAN
TPF__LPISDA_D_PFL_CRCA_A047_00003.PLAN
TPF__LPISDA_D_PFL_CSBC_A004_00003.PLAN
TPF__LPISDA_D_PFL_CSDC_A017_00003.PLAN
TPF__LPISDA_D_PFL_CRCA_A050_00003.PLAN
TPF__LPISDA_D_PFL_CSBC_A012_00003.PLAN
TPF__LPISDA_D_PFL_CSDC_A022_00003.PLAN
TPF__LPISDA_D_PFL_CRCA_A055_00003.PLAN
TPF__LPISDA_D_PFL_CSBC_A020_00003.PLAN
TPF__LPISDA_D_PFL_CSDC_A025_00003.PLAN

TPF__LPISDA_D_PFL_CRCA_A056_00003.PLAN
TPF__LPISDA_D_PFL_CSBC_A028_00003.PLAN
TPF__LPISDA_D_PFL_CSDC_A035_00003.PLAN
TPF__LPISDA_D_PFL_CRCA_A057_00003.PLAN
TPF__LPISDA_D_PFL_CSBC_A046_00003.PLAN
TPF__LPISDA_D_PFL_CSDC_A043_00003.PLAN
TPF__LPISDA_D_PFL_CRCA_A058_00003.PLAN
TPF__LPISDA_D_PFL_CSBC_A054_00003.PLAN
TPF__LPISDA_D_PFL_CSDC_A048_00003.PLAN
TPF__LPISDA_D_PFL_CRCA_A059_00003.PLAN
TPF__LPISDA_D_PFL_CSCC_A002_00003.PLAN
TPF__LPISDA_D_PFL_CSDC_A051_00003.PLAN
TPF__LPISDA_D_PFL_CRCA_A062_00003.PLAN
TPF__LPISDA_D_PFL_CSCC_A007_00003.PLAN
TPF__LPISDA_D_PFL_CSDC_A060_00003.PLAN
TPF__LPISDA_D_PFL_CRCA_A063_00003.PLAN
TPF__LPISDA_D_PFL_CSCC_A010_00003.PLAN
TPF__LPISDA_D_PFL_CSNC_A031_00003.PLAN
TPF__LPISDA_D_PFL_CRCA_A064_00003.PLAN
TPF__LPISDA_D_PFL_CSCC_A015_00003.PLAN
TPF__LPISDA_D_PFL_CSNC_A039_00003.PLAN
TPF__LPISDA_D_PFL_CRCA_A065_00003.PLAN
TPF__LPISDA_D_PFL_CSCC_A018_00003.PLAN
TPF__LPISDA_D_PFL_CSXC_A033_00003.PLAN
TPF__LPISDA_D_PFL_CRCA_A066_00003.PLAN
TPF__LPISDA_D_PFL_CSCC_A023_00003.PLAN
TPF__LPISDA_D_PFL_CSXC_A041_00003.PLAN
TPF__LPISDA_D_PFL_CS1C_A032_00003.PLAN
TPF__LPISDA_D_PFL_CSCC_A026_00003.PLAN
TPF__LPISDA_D_PFL_CSYC_A034_00003.PLAN
TPF__LPISDA_D_PFL_CS1C_A040_00003.PLAN

TPF__LPISDA_D_PFL_CSCC_A036_00003.PLAN

TPF__LPISDA_D_PFL_CSYC_A042_00003.PLAN

6.2.1.3 GENERATION OF TPFS@MOC

66 TPFs were generated and sent for the PS tuning verification procedure.

6.2.2 DPC SITE

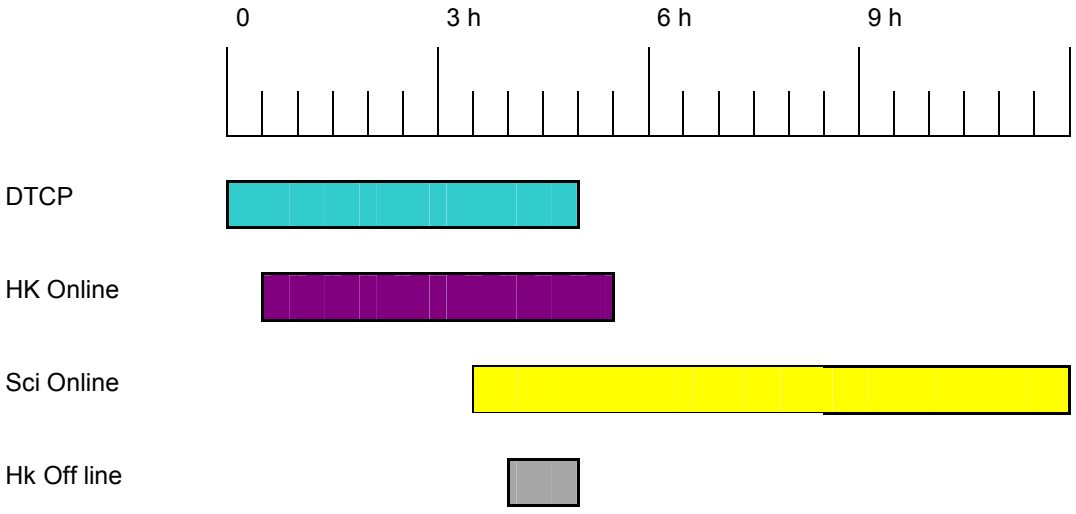
6.2.2.1 RETRIEVING DATA VIA DDS

The download of the Online HK TM (0018 – 1410 – 1538 – 1666) started at 8:46 UTC and end at 13:05.

The download of the OffLine HK TM (0016 – 1408 – 1536 – 1664) started at 12:00 UTC and end at 13:02 .

The download of the Online Science TM (1540) started at 13:35 UTC and end at 16:45 UTC. NOTE THAT one hour of Science is not yet released (Note that the first hour of 1540 was received the 17/10/2008 at 7:40 UTC).

See Timeline below.



We perform a quick GAPS analysis on the consolidated telemetry. Here is the result. Note that the first hour of 1540 was received the 17/10/2008 at 7:40 UTC.

APID 0016, list is not reported here (too long), The reason is known see OD_040

```
################################################################################
TOTAL Number of lost packets= 437
TOTAL Number of packets RECEIVED= 35527
################################################################################
```

APID 0018

```
################################################################################
TOTAL Number of lost packets= 90
TOTAL Number of packets RECEIVED= 173229
################################################################################
```

APID 1408

```
################################################################################
TOTAL Number of lost packets= 13
TOTAL Number of packets RECEIVED= 4199
################################################################################
```

APID 1410

```
################################################################################
TOTAL Number of lost packets= 27
TOTAL Number of packets RECEIVED= 42630
################################################################################
```

APID 1536

```
################################################################################
TOTAL Number of lost packets= 4
TOTAL Number of packets RECEIVED= 12746
################################################################################
```

APID 1538

```
################################################################################
TOTAL Number of lost packets= 26
TOTAL Number of packets RECEIVED= 48027
################################################################################
```

APID 1540

```
################################################################################
TOTAL Number of lost packets= 46
TOTAL Number of packets RECEIVED= 521310
################################################################################
```

APID 1664

```
################################################################################
TOTAL Number of lost packets= 50
TOTAL Number of packets RECEIVED= 8179
################################################################################
```

APID 1666

```
################################################################################
TOTAL Number of lost packets= 43
TOTAL Number of packets RECEIVED= 81774
```

##

6.2.2.2 RECEPTION AND TRANSFER OF FILES VIA HPFTS@DPC

The following files were received at the Start of OD_041.

TSF

TSF__SDALFI_D_081016T074149_00001.PLAN

- 20090411_0042_P_BRIEF_H001.TSF

TSF__SDALFI_D_081016T074243_00001.PLAN

- 20090411_0042_P_BRIEF_H001.TSF

TSF__SDALFI_D_081016T074255_00001.PLAN

- 20090411_0042_P_BRIEF_H002.TSF

TSF__SDALFI_D_081016T074304_00001.PLAN

- 20090411_0042_P_FULL__H001.TSF

TSF__SDALFI_D_081016T074312_00001.PLAN

- 20090411_0042_P_FULL__H002.TSF

TSF__SDALFI_D_081016T095523_00001.PLAN

- 20090411_0042_P_BRIEF_H003.TSF

TSF__SDALFI_D_081016T095534_00001.PLAN

- 20090411_0042_P_BRIEF_H004.TSF

TSF__SDALFI_D_081016T095544_00001.PLAN

- 20090411_0042_P_FULL__H003.TSF

TSF__SDALFI_D_081016T095554_00001.PLAN

- 20090411_0042_P_FULL__H004.TSF

The Red TSFs are identical but they were included in different HPFTS wrappers files. This was noted also in the OD_040. No impact. We suggest checking to avoid redundant information.

AHF

AHF__SDALFI_D_0040_0004_____00000.PLAN

- 0040_0004.AHF.gz

AHF__SDALFI_D_0041_0001_____00000.PLAN

- 0041_0001.AHF.gz

TCH

PTCH_SDALFI_D_081016T131324_00001.PLAN

- 20090411_0042_0001.PTCH

6.2.2.2.1 Processing AHF

AHF referring to OD 40 was process correctly

AHF referring to OD 41contains a big gap between 15:52 10/04/2009 – 7:36 11/04/2009. This gaps was already reported by FD, an update of AHF is expected.

The AHF referred to the OD 41 contains records with time < of the last record of AHF referred of the OD 40. This is obviusoly a problem.

The AHFs contains records not filtered. This was already reported by FD.

6.2.2.2.2 Processing Orbit and Event File

None

6.2.2.2.3 Processing TCH ASCII printout Files

Correctly processed

6.2.2.3 DPC SHADOW DISPLAY ON IW@MOC

No Problem

6.3 EXECUTION OF INSTRUMENT PROCEDURES

6.3.1 DRAIN CURRENT VERIFICATION

The drain current verification procedure (that was not run correctly during OD40) was repeated during OD 42. Here we first summarise the main results obtained in this test:

Procedure application

1. The Vg1-Vg2 sequence was correctly applied for each ACA
2. Sequences were applied in the correct order for the various RCAs
3. Within each sequence there were some values that were repeatedly commanded.

Matrix values

A simple rule was chosen to build the bias matrix values to be commanded in order to make the check easier. **The matrix used here does not reflect the actual matrix that will be used in flight, but was chosen to verify that the values uploaded to the instrument actually corresponded to the matrix provided by the instrument team.** This correspondence has been completely verified for all channels.

6.3.1.1 PROCEDURE

The drain current verification procedure is detailed in the table below. For each ACA we perform first a series of changes in Vg1 around the nominal point (with the Vg2 in the nominal point) and then a series of changes in Vg2 around the nominal point (with the Vg1 in the nominal point).

#5	**Drain Current Verification**			
	Detailed Description	Drain Current Verification		
	Constraints	Start OD: **TBD**		
	Start Condition	LFI (NOM) in **Nominal Science** Mode		
	End Condition	No change in LFI configuration		
	Initial Configuration	Cryo biases, 4kHz switching on A/C, Polarization A/C=0, B/D=0		
	End Configuration	Unchanged		
	Execution Type	**MTL**		
	Duration	**3 hours**		
Step	**Reference**	**Proc. Ref.**	**Proc. Title**	**Procedure Inputs**
5	**Drain Current Verification** (UM section 13.1.2.4)			
	RCA 18 and 21			
5.1	**Vg1, Vg2 tuning for each ACA of RCA18, 21**	**Id_18_21_4xACA**	**(Special Command Sequence product)**	**Id Matrix**
	RCA 19 and 22			
5.2	**Vg1, Vg2 tuning for each ACA of RCA19, 22**	**Id_19_22_4xACA**	**(Special Command Sequence product)**	**Id Matrix**
	RCA 20 and 23			
5.3	**Vg1, Vg2 tuning for each ACA of RCA20, 23**	**Id_20_23_4xACA**	**(Special Command Sequence product)**	**Id Matrix**
	RCA 24 and 25			
5.4	**Vg1, Vg2 tuning for each ACA of RCA25, 24**	**Id_25_24_4xACA**	**(Special Command Sequence product)**	**Id Matrix**

	RCA 26 and 27			
5.5	**Vg1, Vg2 tuning for each ACA of RCA26, 27**	**Id_26_27_4xACA**	**(Special Command Sequence product)**	**Id Matrix**
	RCA 28			
5.6	**Vg1, Vg2 tuning for each ACA of RCA28**	**Id_28_4xACA**	**(Special Command Sequence product)**	**Id Matrix**

Additional Comments

Performed for each RCA:

1) ACA1 Increment Vg1 against static Vg2; Apply Cryo value to Vg1;
2) ACA2 Increment Vg1 against static Vg2; Apply Cryo value to Vg1;
3) ACA3 Increment Vg1 against static Vg2; Apply Cryo value to Vg1;
4) ACA4 Increment Vg1 against static Vg2; Apply Cryo value to Vg1;
5) ACA1 Increment Vg2 against static Vg1; Apply Cryo value to Vg2;
6) ACA2 Increment Vg2 against static Vg1; Apply Cryo value to Vg2;
7) ACA3 Increment Vg2 against static Vg1; Apply Cryo value to Vg2;
8) ACA4 Increment Vg2 against static Vg1; Apply Cryo value to Vg2;

In the next figure we show such a sequence for the ACA LFI18S2 in which we can see the series of changes in Vg1 followed by the series of changes in Vg2

Notice that

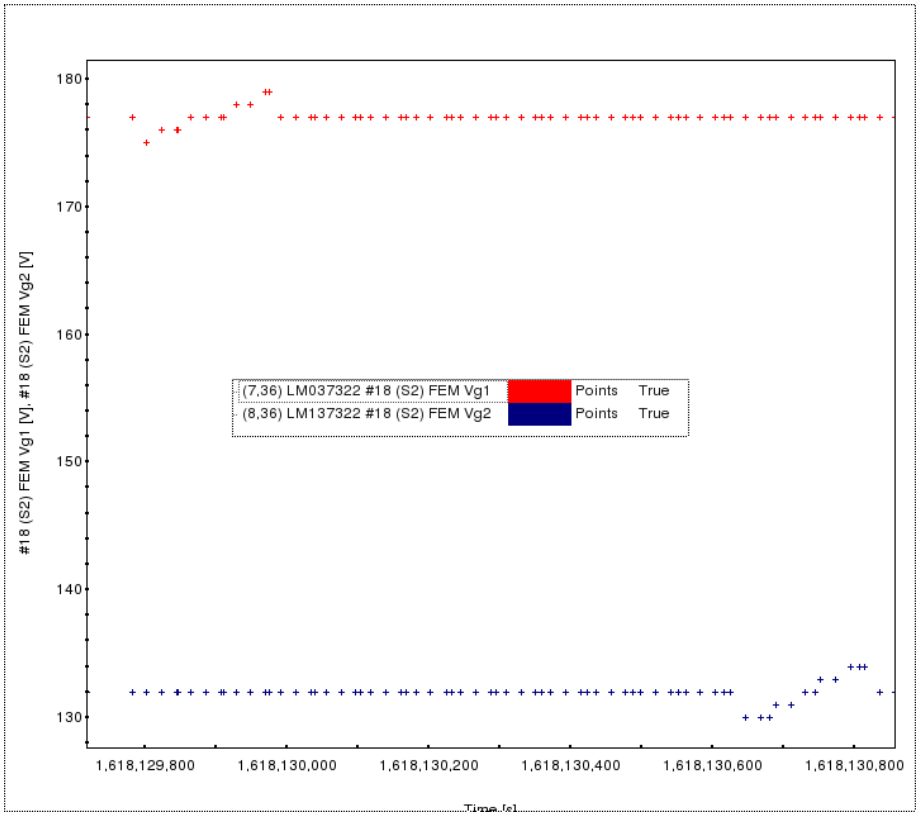
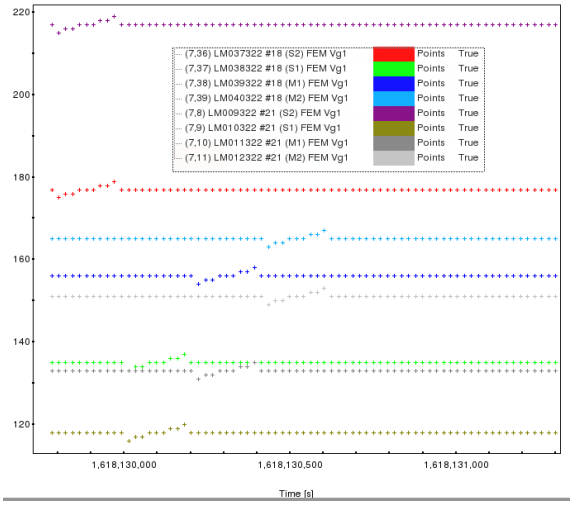
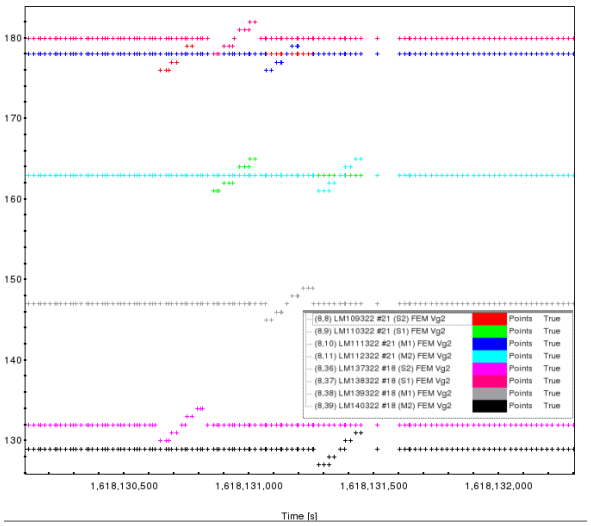


Fig 1 Changes in Vg1 followed by Vg2 for LFI18S2

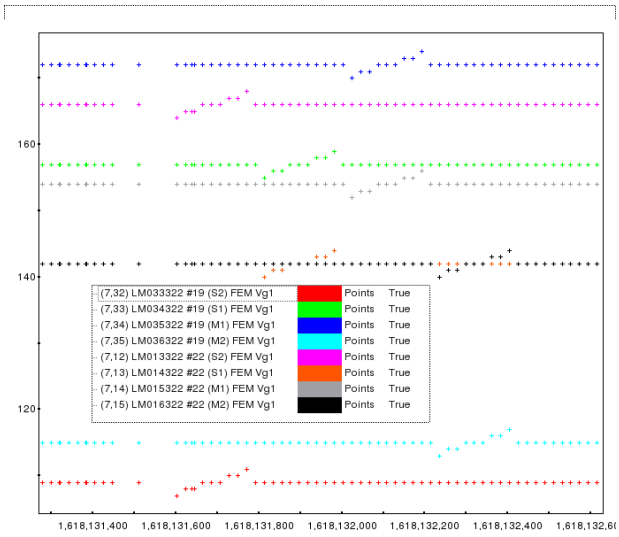
The procedure was applied correctly for all ACAs, as shown in the following figures that are organised in couples of RCAs in the same order as they were tested (see procedure above)

VG1	VG2
	

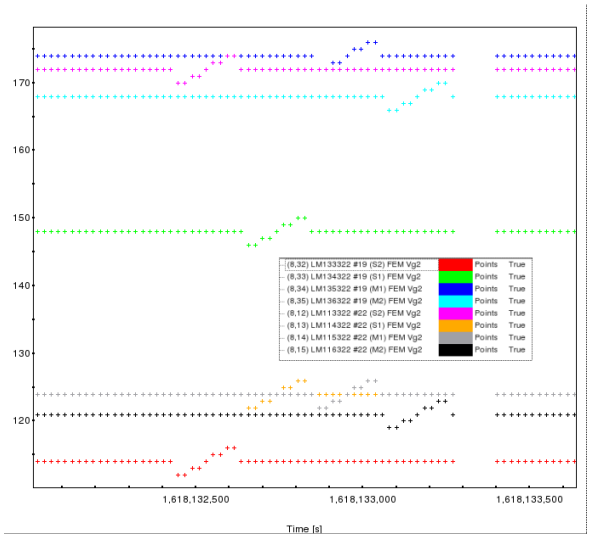


LFI19 – LFI22

VG1



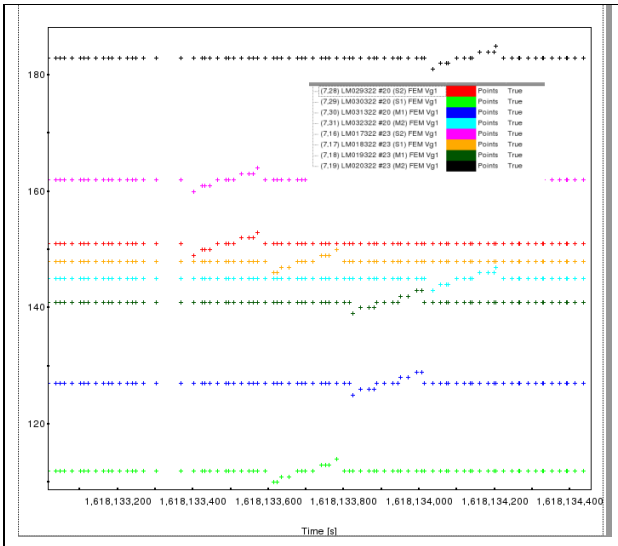
VG2

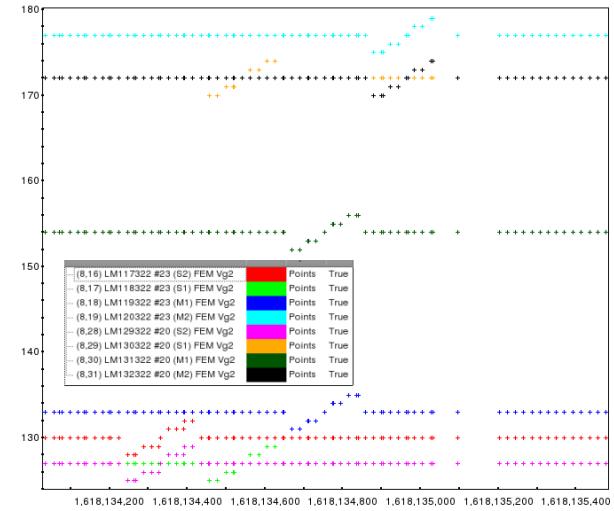


LFI20 – LFI23

VG1

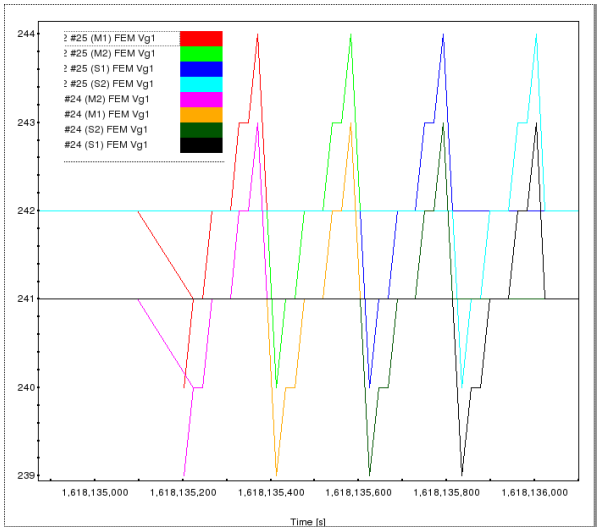
VG2



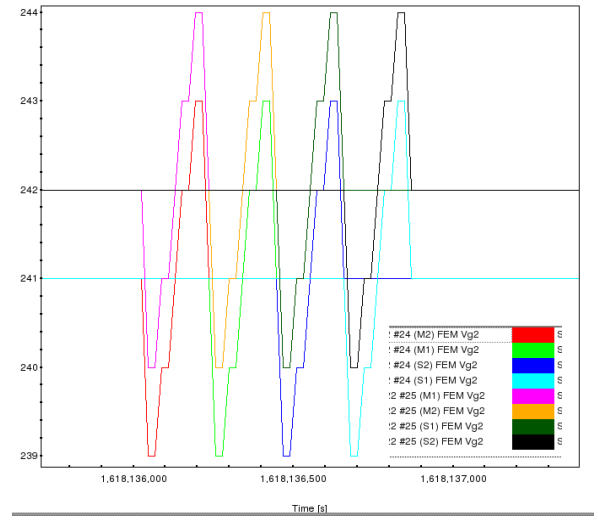


LFI24 – LFI25

VG1



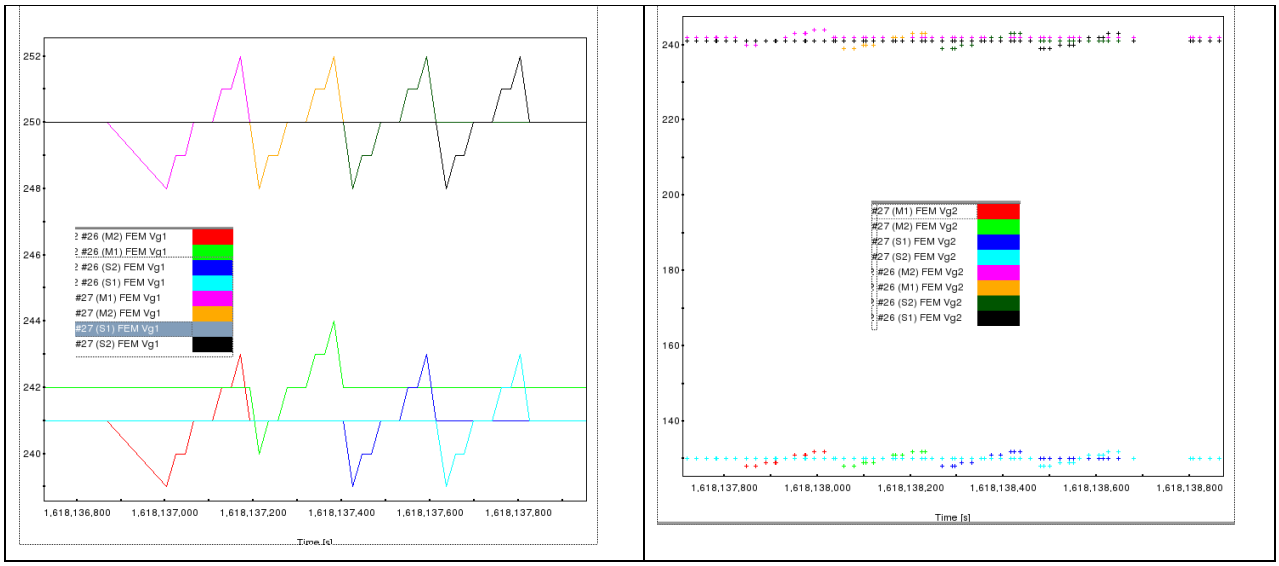
VG2



LFI26 – LFI27

VG1

VG2



6.3.1.2 MATRIX VALUES

If we call VG* the nominal bias point (could be VG1 or VG2) then the values that have been uploaded to the instrument have been [VG* - 2 DEC, VG* - 1 DEC, VG*, VG* + 1 DEC, VG* + 2 DEC] for all detectors. These values have been chosen in order not to change too much the bias points and to facilitate the check. **These do not correspond to the actual steps that will be implemented during this test in flight.**

In the next figure we show the performed steps for all detectors (with the average value removed) which shows the correct steps have been commanded.

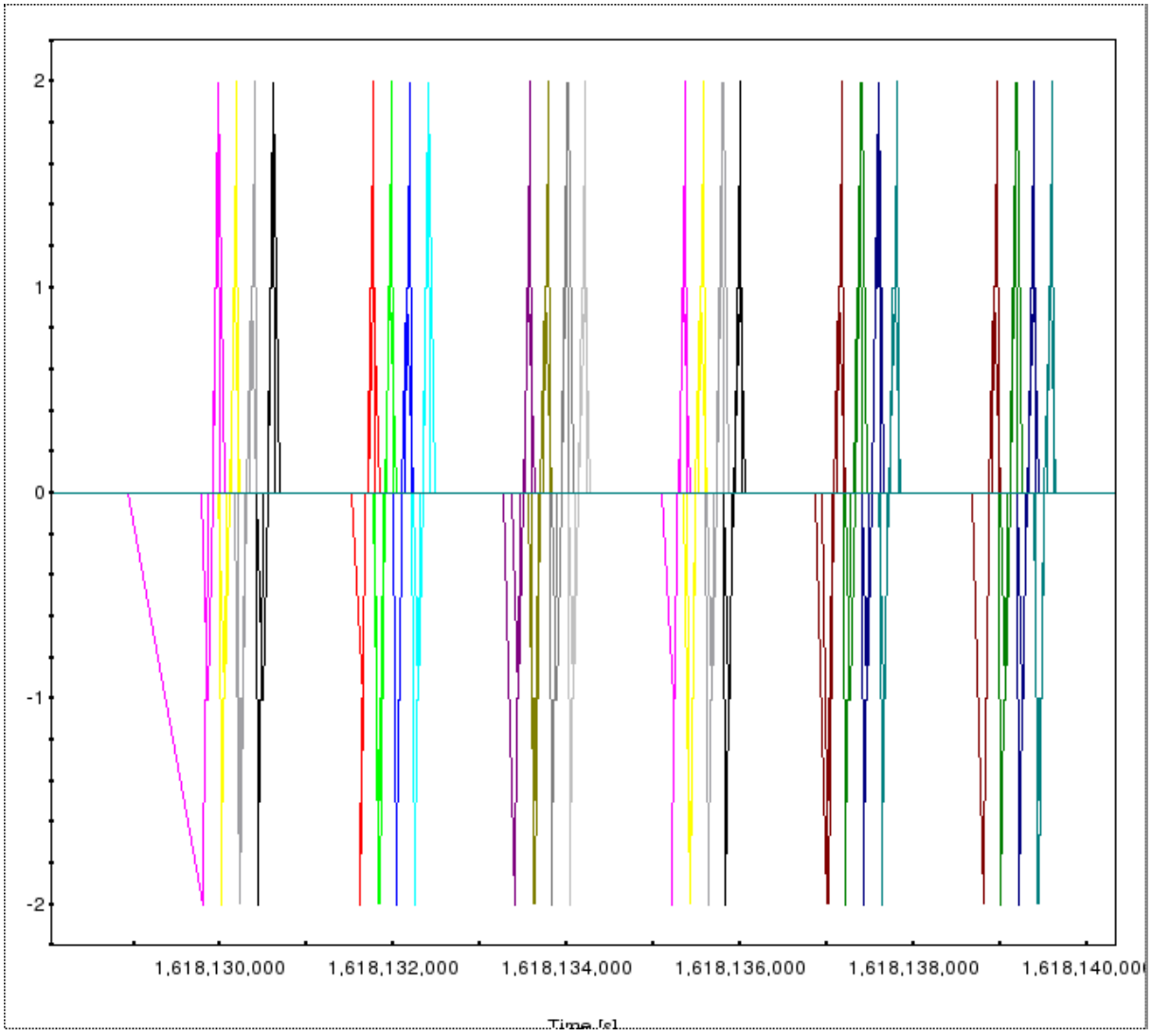


Fig. 2 – Steps in Vg1 and Vg2 for all detectors. The average Vg value has been removed to highlight the variations around the optimal point during the procedure.

6.3.2 ACA MATRIX TUNING

The ACA matrix tuning consists, for each detector, to command a series of Vg1, Vg2 couples. Each series is preceded and followed by a zero-bias commanded to the same detector to acquire the BEM baseline voltage output.

The results obtained can be summarised as follows:

1. The procedure has been correctly applied for all RCAs apart from LFI18 and LFI21, for which the zero bias was not applied before the matrix and was applied twice after

2. The bias values have been uploaded as expected.

6.3.2.1 PROCEDURE

#8	ACA Matrix Tuning (#1, #2, #3)			
	Detailed Description	Tuning of all 44 ACA channels		
	Constraints	Start Reference Temperature: **#1**: Start**@4K Stage=22K End BEFORE 4K Stage=18K** **#2**: Start**@4K Stage=15K End BEFORE 4K Stage=10K** **#3**: Start**@4K Stage cooldown complete**		
	Start Condition	LFI (NOM) in **Nominal Science** Mode		
	End Condition	No change in LFI configuration		
	Initial Configuration	Cryo biases, 4kHz switching on B/D (**RCA23 switching on A/C**), Polarization A/C=1, B/D=0 (**IF PS TUNING DOES NOT CHANGE THESE DEFAULTS**)		
	End Configuration	Unchanged		
	Execution Type	**MTL**		
	Duration	**6 hours**		
Step	**Reference**	**Proc. Ref.**	**Proc. Title**	**Procedure Inputs**
8	**ACA Matrix Tuning** (UM section 13.1.2.7)			
8.1	**RCA 18 and 21**			
8.1.1	**Disable B/D 4kHz on RCA 18 and 21**	**P_FCP_LFI_CSDC**	Enable/Disable the B-D phase switch	
8.1.2	**Disable A/C 4kHz on RCA 18 and 21**	**P_FCP_LFI_CSCC**	Enable/Disable the A-C phase switch	
8.1.3	**Set A/C P/S Status (0) on RCA 18 and 21**	**P_FCP_LFI_CSAC**	Configure the A-C phase switch	
8.1.4	**Set B/D P/S Status (0) on RCA 18 and 21**	**P_FCP_LFI_CSBC**	Configure the B-D phase switch	
8.1.5	**Set zero bias on RCA 18 and 21**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters	
8.1.6	**WAIT 1 minute**			
8.1.7	**Apply DEFAULT Configuration**	**P_FCP_LFI_CADC**	Apply DEFAULT Configuration as Current	
8.1.8	**WAIT 1 minute**			
8.1.9	**Perform Matrix Tuning for VG1 & VG2 (RCA 18 and 21)**	**ACA_Tuning_18_21**	**(Special Command Sequence product)**	
8.1.10	**Disable B/D 4kHz on RCA 18 and 21**	**P_FCP_LFI_CSDC**	Enable/Disable the B-D phase switch	
8.1.11	**Disable A/C 4kHz on**	**P_FCP_LFI_CSCC**	Enable/Disable the A-C phase switch	

	RCA 18 and 21		
8.1.12	**Set zero bias on RCA 18 and 21**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
8.1.13	**WAIT 1 minute**		
8.1.14	**Apply DEFAULT Configuration**	**P_FCP_LFI_CADC**	Apply DEFAULT Configuration as Current
8.1.15	**WAIT 1 minute**		
8.2	**RCA 19 and 22**		
8.2.1	**Disable B/D 4kHz on RCA 19 and 22**	**P_FCP_LFI_CSDC**	Enable/Disable the B-D phase switch
8.2.2	**Disable A/C 4kHz on RCA 19 and 22**	**P_FCP_LFI_CSCC**	Enable/Disable the A-C phase switch
8.2.3	**Set A/C P/S Status (0) on RCA 19 and 22**	**P_FCP_LFI_CSAC**	Configure the A-C phase switch
8.2.4	**Set B/D P/S Status (0) on RCA 19 and 22**	**P_FCP_LFI_CSBC**	Configure the B-D phase switch
8.2.5	**Set zero bias on RCA 19 and 22**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
8.2.6	**WAIT 1 minute**		
8.2.7	**Apply DEFAULT Configuration**	**P_FCP_LFI_CADC**	Apply DEFAULT Configuration as Current
8.2.8	**WAIT 1 minute**		
8.2.9	**Perform Matrix Tuning for VG1 & VG2 (RCA 19 and 22)**	**ACA_Tuning_19_22**	**(Special Command Sequence product)**
8.2.10	**Disable B/D 4kHz on RCA 19 and 22**	**P_FCP_LFI_CSDC**	Enable/Disable the B-D phase switch
8.2.11	**Disable A/C 4kHz on RCA 19 and 22**	**P_FCP_LFI_CSCC**	Enable/Disable the A-C phase switch
8.2.12	**Set zero bias on RCA 19 and 22**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
8.2.13	**WAIT 1 minute**		
8.2.14	**Apply DEFAULT Configuration**	**P_FCP_LFI_CADC**	Apply DEFAULT Configuration as Current
8.2.15	**WAIT 1 minute**		
8.3	**RCA 20 and 23**		
8.3.1	**Disable B/D 4kHz on RCA 20 and 23**	**P_FCP_LFI_CSDC**	Enable/Disable the B-D phase switch
8.3.2	**Disable A/C 4kHz on RCA 20 and 23**	**P_FCP_LFI_CSCC**	Enable/Disable the A-C phase switch
8.3.3	**Set A/C P/S Status (0) on RCA 20 and 23**	**P_FCP_LFI_CSAC**	Configure the A-C phase switch

8.3.4	**Set B/D P/S Status (0) on RCA 20 and 23**	**P_FCP_LFI_CSBC**	Configure the B-D phase switch
8.3.5	**Set zero bias on RCA 20 and 23**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
8.3.6	**WAIT 1 minute**		
8.3.7	**Apply DEFAULT Configuration**	**P_FCP_LFI_CADC**	Apply DEFAULT Configuration as Current
8.3.8	**WAIT 1 minute**		
8.3.9	**Perform Matrix Tuning for VG1 & VG2 (RCA 20 and 23)**	**ACA_Tuning_20_23**	**(Special Command Sequence product)**
8.3.10	**Disable B/D 4kHz on RCA 20 and 23**	**P_FCP_LFI_CSDC**	Enable/Disable the B-D phase switch
8.3.11	**Disable A/C 4kHz on RCA 20 and 23**	**P_FCP_LFI_CSCC**	Enable/Disable the A-C phase switch
8.3.12	**Set zero bias on RCA 20 and 23**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
8.3.13	**WAIT 1 minute**		
8.3.14	**Apply DEFAULT Configuration**	**P_FCP_LFI_CADC**	Apply DEFAULT Configuration as Current
8.3.15	**WAIT 1 minute**		
8.4	**RCA 25 and 24**		
8.4.1	**Disable B/D 4kHz on RCA 25 and 24**	**P_FCP_LFI_CSDC**	Enable/Disable the B-D phase switch
8.4.2	**Disable A/C 4kHz on RCA 25 and 24**	**P_FCP_LFI_CSCC**	Enable/Disable the A-C phase switch
8.4.3	**Set A/C P/S Status (0) on RCA 25 and 24**	**P_FCP_LFI_CSAC**	Configure the A-C phase switch
8.4.4	**Set B/D P/S Status (0) on RCA 25 and 24**	**P_FCP_LFI_CSBC**	Configure the B-D phase switch
8.4.5	**Set zero bias on RCA 25 and 24**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
8.4.6	**WAIT 1 minute**		
8.4.7	**Apply DEFAULT Configuration**	**P_FCP_LFI_CADC**	Apply DEFAULT Configuration as Current
8.4.8	**WAIT 1 minute**		
8.4.9	**Perform Matrix Tuning for VG1 & VG2 (RCA 25 and 24)**	**ACA_Tuning_25_24**	**(Special Command Sequence product)**
8.4.10	**Disable B/D 4kHz on RCA 25 and 24**	**P_FCP_LFI_CSDC**	Enable/Disable the B-D phase switch
8.4.11	**Disable A/C 4kHz on RCA 25 and 24**	**P_FCP_LFI_CSCC**	Enable/Disable the A-C phase switch

8.4.12	**Set zero bias on RCA 25 and 24**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
8.4.13	**WAIT 1 minute**		
8.4.14	**Apply DEFAULT Configuration**	**P_FCP_LFI_CADC**	Apply DEFAULT Configuration as Current
8.4.15	**WAIT 1 minute**		
8.5	**RCA 26 and 27**		
8.5.1	**Disable B/D 4kHz on RCA 26 and 27**	**P_FCP_LFI_CSDC**	Enable/Disable the B-D phase switch
8.5.2	**Disable A/C 4kHz on RCA 26 and 27**	**P_FCP_LFI_CSCC**	Enable/Disable the A-C phase switch
8.5.3	**Set A/C P/S Status (0) on RCA 26 and 27**	**P_FCP_LFI_CSAC**	Configure the A-C phase switch
8.5.4	**Set B/D P/S Status (0) on RCA 26 and 27**	**P_FCP_LFI_CSBC**	Configure the B-D phase switch
8.5.5	**Set zero bias on RCA 26 and 27**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
8.5.6	**WAIT 1 minute**		
8.5.7	**Apply DEFAULT Configuration**	**P_FCP_LFI_CADC**	Apply DEFAULT Configuration as Current
8.5.8	**WAIT 1 minute**		
8.5.9	**Perform Matrix Tuning for VG1 & VG2 (RCA 26 and 27)**	**ACA_Tuning_26_27**	**(Special Command Sequence product)**
8.5.10	**Disable B/D 4kHz on RCA 26 and 27**	**P_FCP_LFI_CSDC**	Enable/Disable the B-D phase switch
8.5.11	**Disable A/C 4kHz on RCA 26 and 27**	**P_FCP_LFI_CSCC**	Enable/Disable the A-C phase switch
8.5.12	**Set zero bias on RCA 26 and 27**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
8.5.13	**WAIT 1 minute**		
8.5.14	**Apply DEFAULT Configuration**	**P_FCP_LFI_CADC**	Apply DEFAULT Configuration as Current
8.5.15	**WAIT 1 minute**		
8.6	**RCA 28**		
8.6.1	**Disable B/D 4kHz on RCA 28**	**P_FCP_LFI_CSDC**	Enable/Disable the B-D phase switch
8.6.2	**Disable A/C 4kHz on RCA 28**	**P_FCP_LFI_CSCC**	Enable/Disable the A-C phase switch
8.6.3	**Set A/C P/S Status (0) on RCA 28**	**P_FCP_LFI_CSAC**	Configure the A-C phase switch
8.6.4	**Set B/D P/S Status (0)**	**P_FCP_LFI_CSBC**	Configure the B-D phase switch

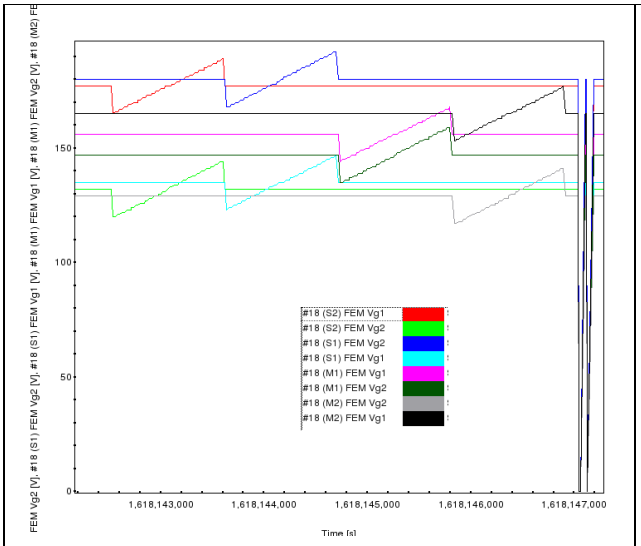
	on RCA 28		
8.6.5	**Set zero bias on RCA 28**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
8.6.6	**WAIT 1 minute**		
8.6.7	**Power on RCA 28 with Soft Switch-On procedure**	**4x P_FCP_LFI_CRCA**	RCA28 Soft Switch-On procedure (ACA 1 + 2)
8.6.8	**Apply DEFAULT Configuration**	**P_FCP_LFI_CADC**	Apply DEFAULT Configuration as Current
8.6.9	**WAIT 1 minute**		
8.6.10	**Perform Matrix Tuning for VG1 & VG2 (RCA 28)**	**ACA_Tuning_28**	**(Special Command Sequence product)**
8.6.11	**Disable B/D 4kHz on RCA 28**	**P_FCP_LFI_CSDC**	Enable/Disable the B-D phase switch
8.6.12	**Disable A/C 4kHz on RCA 28**	**P_FCP_LFI_CSCC**	Enable/Disable the A-C phase switch
8.6.13	**Set zero bias on RCA 28**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters
8.6.14	**WAIT 1 minute**		
8.6.15	**Power on RCA 28 with Soft Switch-On procedure**	**4x P_FCP_LFI_CRCA**	RCA28 Soft Switch-On procedure (ACA 1 + 2)
8.6.16	**Apply DEFAULT Configuration**	**P_FCP_LFI_CADC**	Apply DEFAULT Configuration as Current
8.6.17	**WAIT 1 minute**		

Additional Comments

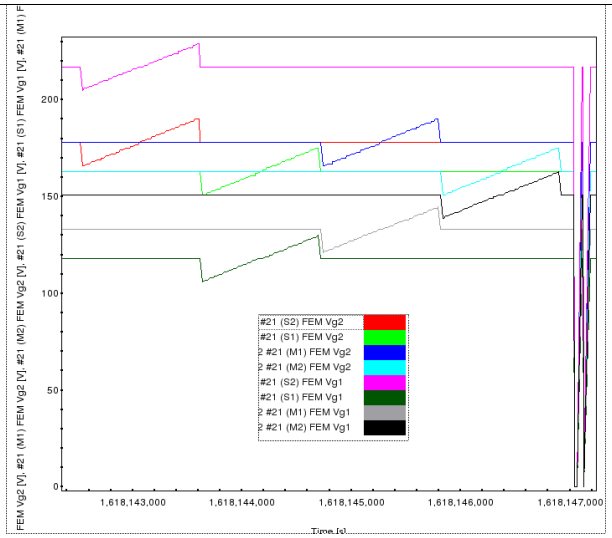
1) All points will be applied as follows:
RCA 18-23: 20 seconds
RCA 24-28: 10 seconds
2) At the end of each ACA Matrix Tuning stage the CRYO biases will be re-asserted on the ACA.

In the following series of pictures we show the bias voltages variations for all 11 RCAs. We can see that the procedure has been applied correctly for all receivers apart from LFI 18 and LFI21 in which the zero bias was not applied before the matrix and was applied twice afterwards.

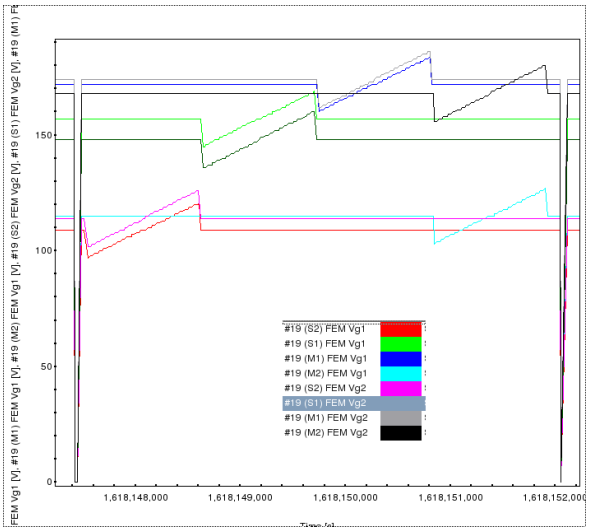
LFI18	LFI21



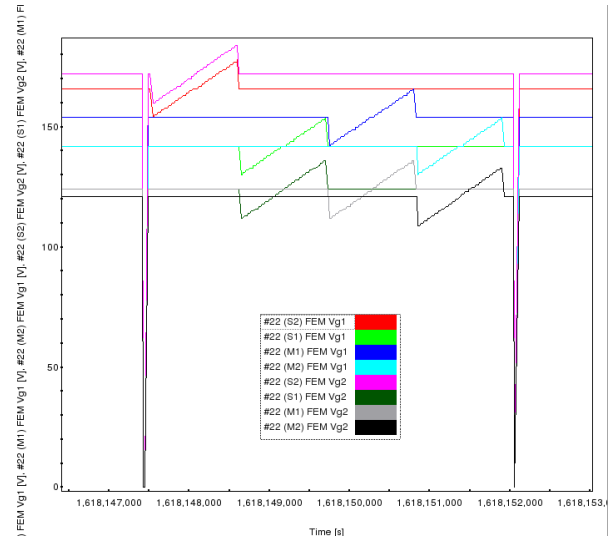
LFI19



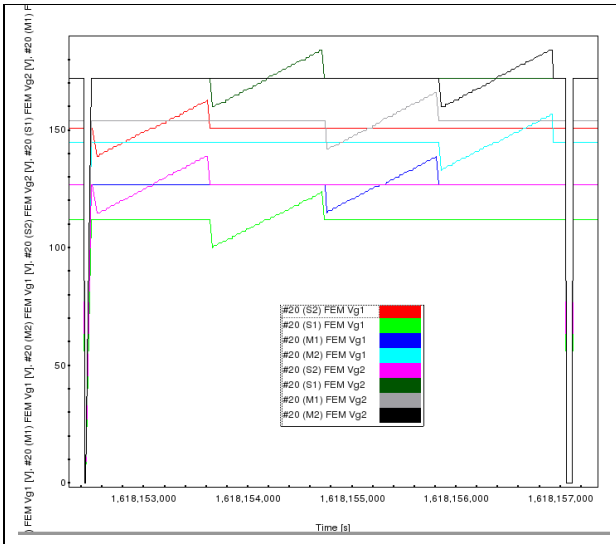
LFI22



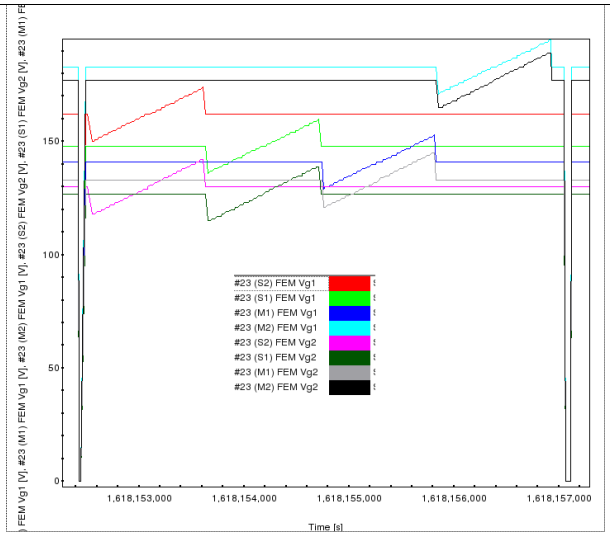
LFI20



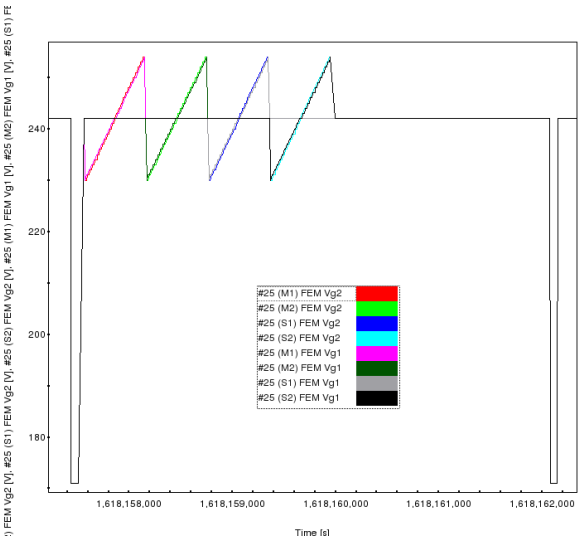
LFI23



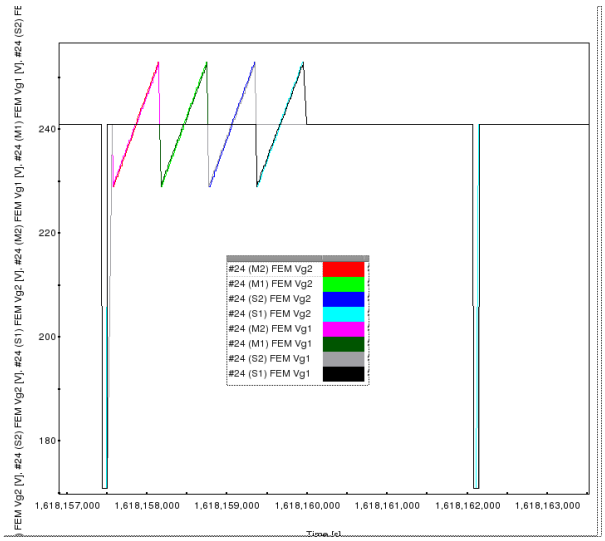
LFI25



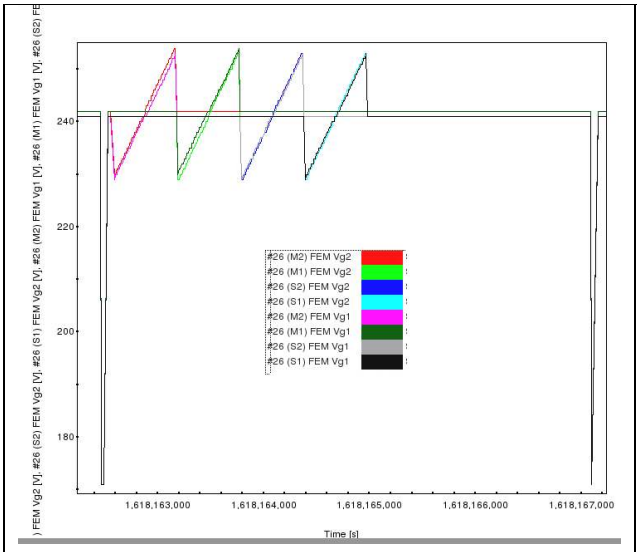
LFI24

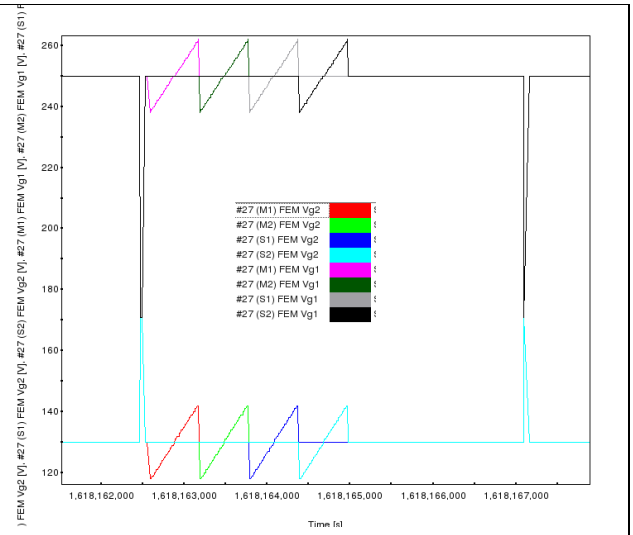


LFI26

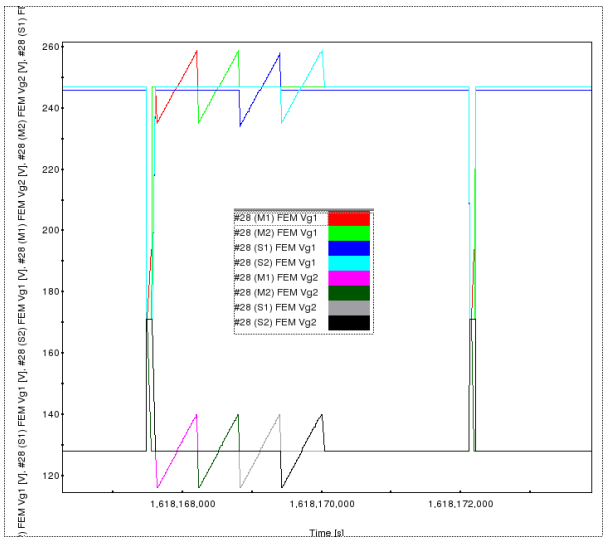


LFI27



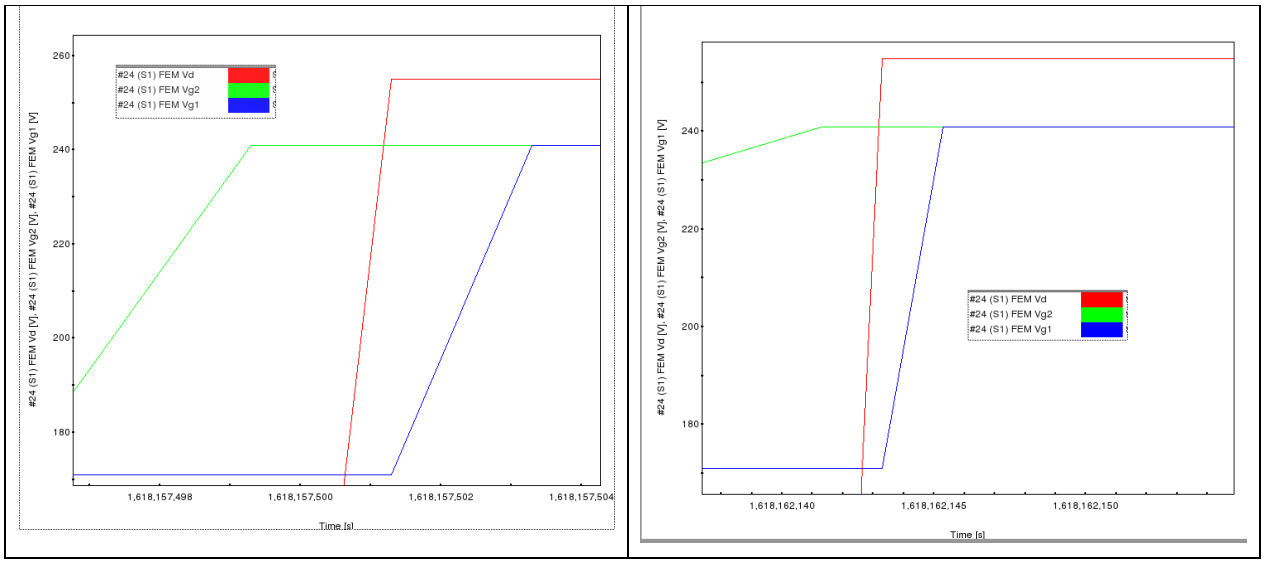


LFI28



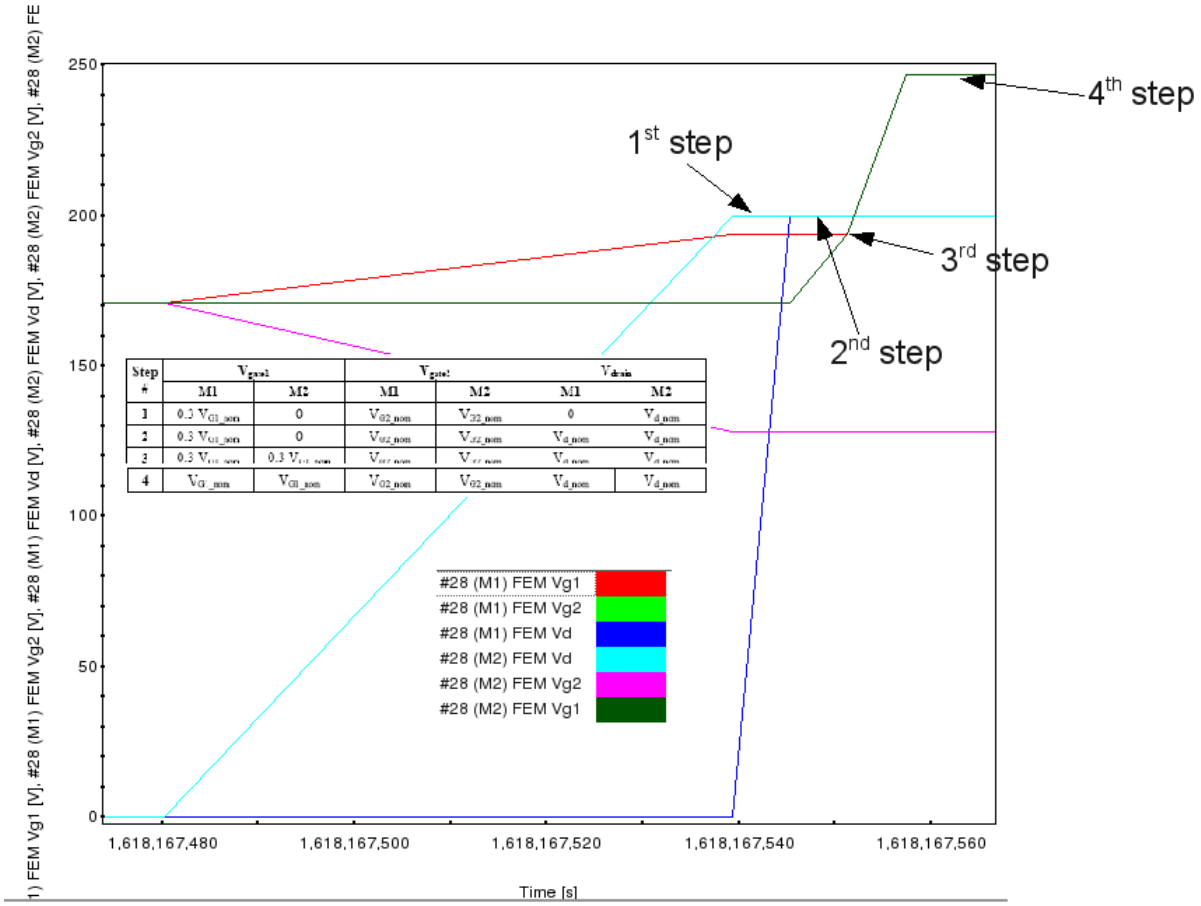
Here we concentrate on the LFI24 and LFI28 soft switch-on procedures. In the following two figures we zoom on the soft procedure for LFI24 before and after the matrix. Here the sequence Vg2, Vd, Vg1 is apparent, which confirms the correct procedure execution.

LFI 24 switch on (before matrix)	LFI24 switch on (after matrix)



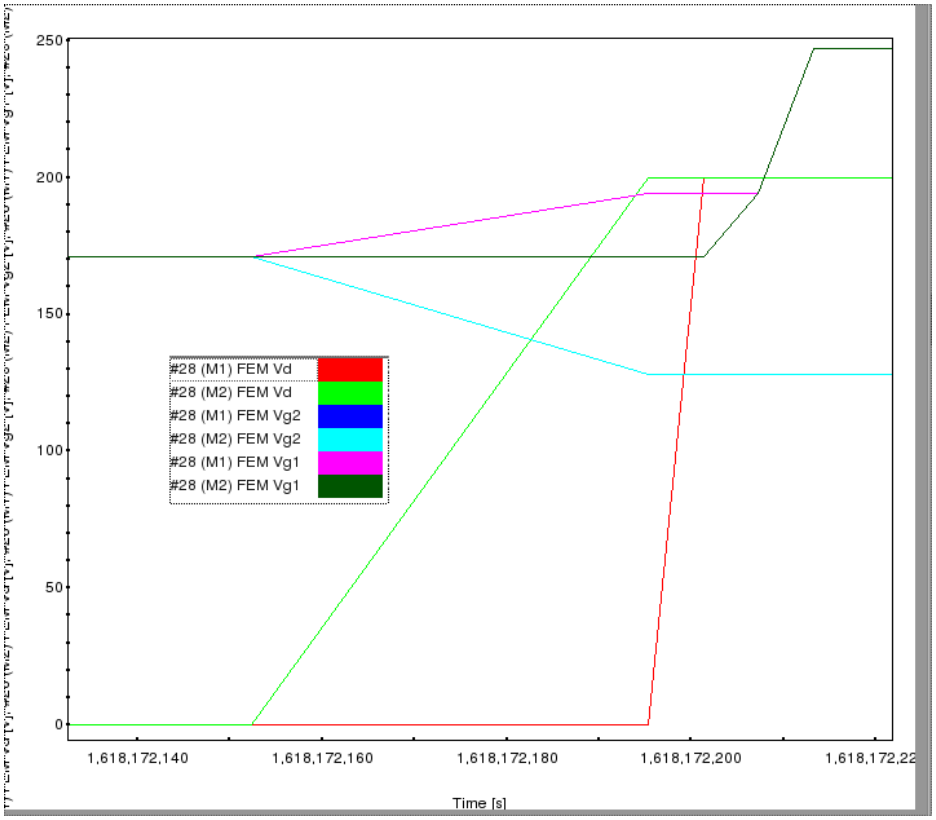
In the next two pictures we show the LFI28 soft switch on procedure before and after the matrix. In the first picture we also show where the various steps occur and the table with the details of bias values at each step.

LFI28 switch on before matrix



Step #	V_{gate1}		V_{gate2}		V_{drain}	
	M1	M2	M1	M2	M1	M2
1	0.3 V_{G1_nom}	0	V_{G2_nom}	V_{G2_nom}	0	V_{d_nom}
2	0.3 V_{G1_nom}	0	V_{G2_nom}	V_{G2_nom}	V_{d_nom}	V_{d_nom}
3	0.3 V_{G1_nom}	0.3 V_{G1_nom}	V_{G2_nom}	V_{G2_nom}	V_{d_nom}	V_{d_nom}
4	V_{G1_nom}	V_{G1_nom}	V_{G2_nom}	V_{G2_nom}	V_{d_nom}	V_{d_nom}

LFI28 switch on after matrix

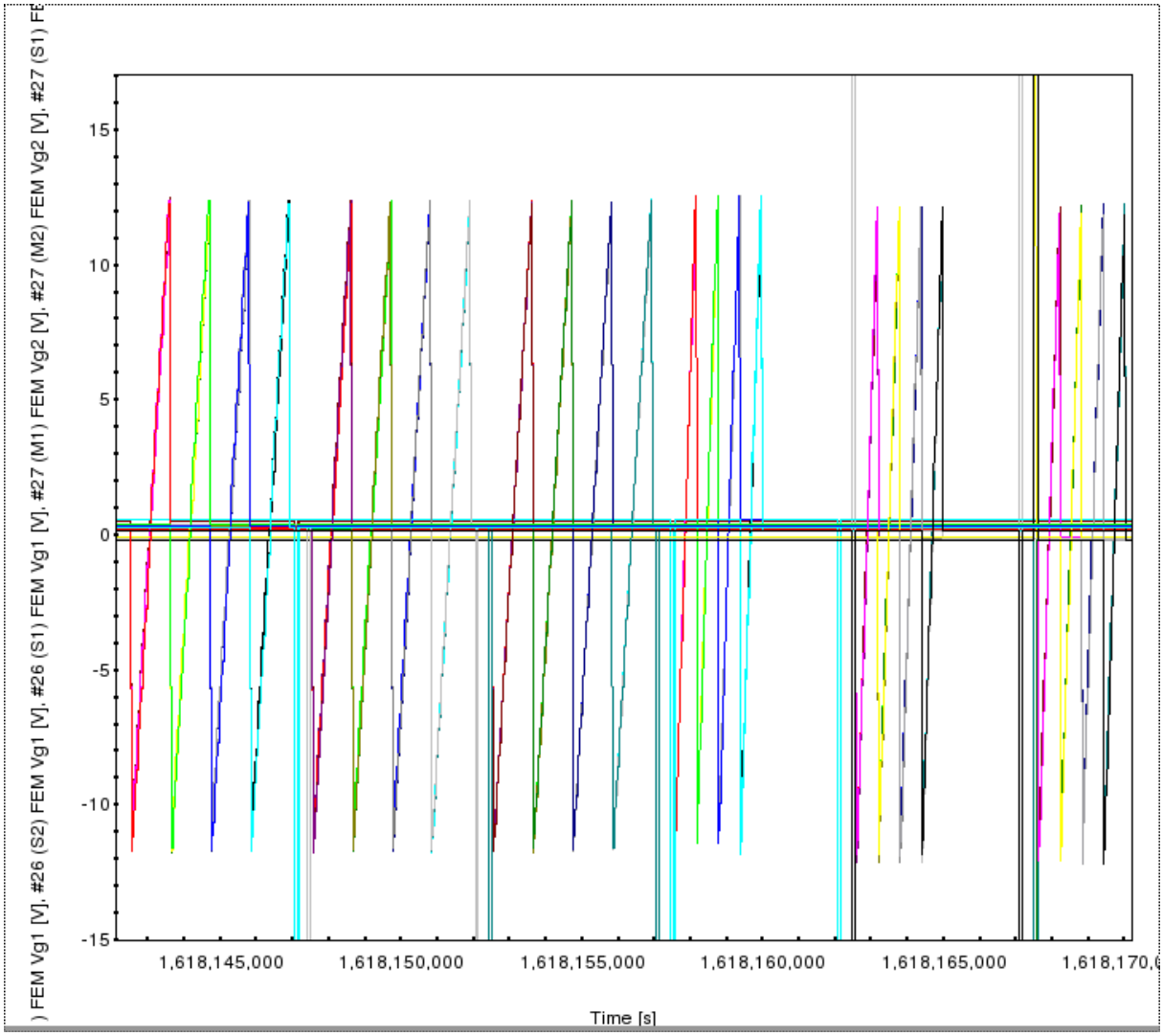


6.3.2.2 MATRIX VALUES

The bias values that have been uploaded to the instrument have been 49 Vg1, Vg2 pairs around the optimal values in 12 steps below and 12 steps above. Each step has been of 1 LSB. In practice the values have been the following:

$$[Vg1(nominal) + i, Vg2(nominal) + i],\ i = -12 \ldots 12$$

In the following figure we show the bias voltage variation for all channels around the nominal values, showing that the sequence of values has been as expected. **Notice that this is not the actual sequence of values that will be exercised in flight.**



6.4 DAILY QUALITY REPORT PRODUCTION

The DQRs referred to OD 40 and OD 41 was not generated for two reasons:

1. During nominal operation the pointing period corresponds of about 45 minutes, during the CPV the pointing period corresponds to about 24 hours. This drive a change in the DQR to avoid to store in memory all the data corresponding to a pointing period. Patch is ongoing.
2. During Nominal operation the number of configuration changes are very few, during CPV operations the number of configuration changes (stored inside the LFI internal part of the DQR) are more than 10000. e decide to remove the changing configuration history for the CPV phase (patch is ongoing).

3. LFI use different processing type, the ptype COM5 is the compressed and nominal, the ptype AVR is not compressed and will be used during some particular tuning in the CPV. The data acquired with avr type will NOT be included in the DQR.

As soon as the patch will be ready the DQR will be created and sent.

6.5 OD 042 TEST RESULT SUMMARY

DOY 101 **OD-3**

Test name: **ACA tuning verification**

Test objectives: The scope of this test is to check the optimisation of the radiometer noise temperature by tuning the Vg1 and VG2 of every LNA for each channel.
Given the two radiometer channels M1 and M2, when tuning channel M1 (Vg1,Vg2), channel M2 (which is coupled to channel M1 through the two hybrids) is still on with (Vg1,Vg2) nominal value set. Channels S1 and S2 are on, in order not to impact on the overall power dissipation on the FPU thus affecting its temperature stability. The procedure is repeated for all other instrument channels.
To speed up the execution of the procedure the sequence is build in order to perform the tuning in two different ACAs in parallel. The chosen ACAs are belonging to different power groups in order to minimize the coupling between radiometers biases.

Verification matrix

Check	Passed?			Recovered?	
	Yes	No	Notes	Yes	No
No unexpected event Packets				N/A	N/A
TC procedure			A wrong TPF was used: PFLCSBC_C_POLB_D_A004.IPF was uploaded twice instead of PFLCRCA_C_5x_RCA_A005.IPF (human error). The procedure continued and for all the other RCA couples the test was fine.		
Every ACA is responding to Biases stimulus as expected				N/A	N/A
No unexpected features				N/A	N/A

Anomalies:

- The initial LFI configuration was not correct. The 4KHz configuration also required to be changed: all the RCAs were switching on B/D while RCA23 should be switching on A/C. Before applying the activities, the configuration was changed.
- An error in the procedure implementation (see verification matrix above)

Due to the problem encountered on OD-1 while performing the Drain Current Verification test, this test was performed again in OD-3. Since this test is shorter than the DTCP (2.5 hours), it was run while in visibility and the procedure was fine. This allowed to start the ACA Matrix Tuning before the end of the DTCP itself.

6.5.1 DPC POINT OF VIEW

The Gaps reported in the DDS were discussed with MOC after the SOVT2 and they match the Gaps identified at the MOC level due to lost of frames and disconnection of the NDIU with the MCS.

The Timeline necessary to download the consolidated telemetry shows some problem. The Entire OD was ONLY completed at the start of the subsequent DTCP (one consolidation window was note released before that). This can be a problem during CPV as NOT all data will be available at the DPC. We suggest to discuss this point at PGSSG level.

DQR was not produced due to the reason above specified in the dedicated section.

AHF of the OD 41 is not compliant with respect AHF of OD 40. This prevent the DQR creation for OD 41

7 OPERATIONAL DAY 043 (Reference functional test and DAE tuning)

7.1 TESTS PERFORMED DURING OD 043

During OD 43 two tests have been performed:

1. Functionality reference test (that was run in a reduced way during visibility)
2. DAE tuning (gain and offset) that was fully conducted (255 offset values by 11 gain values) in the mission timeline (outside visibility, apart from the start of the test)

Here follows a summary table of the planned tests for OD43

Time	*Actor*	*Action/Event*
MTL	LFI	**DAE Offset Tuning** [RCA Offset/Gain Tuning] P_FCP_LFI_CSGC [multiple repeats] P_FCP_LFI_CSOC [multiple repeats]
MTL	LFI	**Functional Test** [Standard Reference Functional Test] P_FCP_LFI_CRCA P_FCP_LFI_CSAC P_FCP_LFI_CSBC P_FCP_LFI_CSCC P_FCP_LFI_CSDC
MTL	HFI	**High data-rate activity = RAW72** P_CRP_HFI_PHEE P_FCP_HFI_NXCN P_FCP_HFI_NCRN for 72 channels [1 minute interval but configurable] P_CRP_HFI_PHED P_FCP_HFI_NCON
MTL	HFI	**4K PID Tuning** P_FCP_HFI_NXCN P_FCP_HFI_CP4P P_FCP_HFI_NCON

Time	*Actor*	*Action/Event*
MTL	HFI	**Fast VI curves and optimisation** P_FCP_HFI_EOPC P_FCP_HFI_ECLS P_FCP_HFI_NCPN P_FCP_HFI_EOPC P_FCP_HFI_NCPN P_FCP_HFI_NCVN

7.2 INSTRUMENT COMMANDING, DATA TRANSMISSION AND MANAGEMENT

7.2.1 IOT@MOC

7.2.1.1 REAL TIME IW@MOC

The two IW@MOC starts regularly. We analyze the telemetry received during the DTCP of OD_43. gaps were identified (we report here only the overall summary, see annex for detailed analysis).

It seems that a large gap happen between 8:18 and 8:23 UTC. Here is the usual list:

APID 0016

```
################################################################################
TOTAL Number of lost packets= 100
TOTAL Number of packets RECEIVED= 6624
Percentuage of lost Packets= 1.4872100
################################################################################
```

APID 0018

```
################################################################################
TOTAL Number of lost packets= 406
TOTAL Number of packets RECEIVED= 32154
Percentuage of lost Packets= 1.2469287
################################################################################
```

APID 1408

```
################################################################################
TOTAL Number of lost packets= 8
```

```
TOTAL Number of packets RECEIVED= 680
Percentuage of lost Packets= 1.1627907
################################################################################
```

APID 1410

```
################################################################################
TOTAL Number of lost packets= 100
TOTAL Number of packets RECEIVED= 8242
Percentuage of lost Packets= 1.1987533
################################################################################
```

APID 1536

```
################################################################################
TOTAL Number of lost packets= 11
TOTAL Number of packets RECEIVED= 2005
Percentuage of lost Packets= 0.54563492
################################################################################
```

APID 1538

```
################################################################################
TOTAL Number of lost packets= 110
TOTAL Number of packets RECEIVED= 8804
Percentuage of lost Packets= 1.2340139
################################################################################
```

APID 1540

```
################################################################################
TOTAL Number of lost packets= 31
TOTAL Number of packets RECEIVED= 80533
Percentuage of lost Packets= 0.038478725
################################################################################
```

APID 1664

```
################################################################################
TOTAL Number of lost packets= 17
TOTAL Number of packets RECEIVED= 1532
Percentuage of lost Packets= 1.0974822
################################################################################
```

APID 1666

```
################################################################################
TOTAL Number of lost packets= 193
TOTAL Number of packets RECEIVED= 15178
Percentuage of lost Packets= 1.2556112
################################################################################
```

7.2.1.2 RECEPTION AND TRANSFER OF FILES VIA HPFTS@IW

None

7.2.1.3 GENERATION OF TPFS@MOC

None

7.2.2 DPC SITE

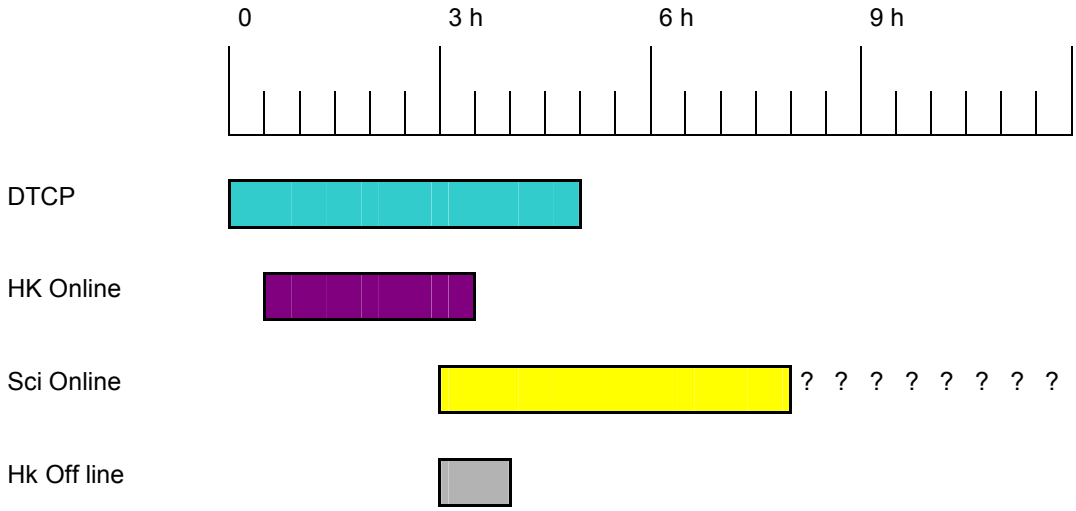
7.2.2.1 RETRIEVING DATA VIA DDS

The download of the Online HK TM (0018 – 1410 – 1538 – 1666) started at 8:40 UTC and end at 11:30.

The download of the OffLine HK TM (0016 – 1408 – 1536 – 1664) started at 11:50 UTC and end at 12:50 .

The download of the Online Science TM (1540) started at 11:35 UTC and end at 16:00 UTC (note that the last hour was not released, we should expect it tomorrow).

See Timeline below.



We perform a quick GAPS analysis on the consolidated telemetry. We report here only the overall summary, see annex for detailed analysis.

Here is the result:

APID 0016, list is not reported here (too long), The reason is known see OD_040

```
################################################################################
TOTAL Number of lost packets= 310
TOTAL Number of packets RECEIVED= 36203
################################################################################
```

APID 0018 NO LOST PACKETS

APID 1408

```
################################################################################
TOTAL Number of lost packets= 1
TOTAL Number of packets RECEIVED= 5157
################################################################################
```

APID 1410 NO LOST PACKETS

APID 1536

```
################################################################################
TOTAL Number of lost packets= 2
TOTAL Number of packets RECEIVED= 15352
################################################################################
```

APID 1538 NO LOST PACKETS

APID1540 NO LOST PACKETS

APID 1664

```
################################################################################
TOTAL Number of lost packets= 31
TOTAL Number of packets RECEIVED= 8167
################################################################################
```

APID 1666 NO LOST PACKETS

7.2.2.2 RECEPTION AND TRANSFER OF FILES VIA HPFTS@DPC

The following Files were received:

PTCH

PTCH_SDALFI_D_081017T131203_00001.PLAN

- 20090412_0043_0001.PTCH

The following files were sent:

DQR

DQRL_LFISDA_D_17102008_0040_00001.PLAN

- 0040_0001.DQRL

7.2.2.2.1 Processing AHF

AHF regarding OD 42 was not received nor the updated AHF of OD 41.

7.2.2.2.2 Processing Orbit and Event File

None

7.2.2.2.3 Processing TCH ASCII printout Files

Correctly processed.

7.2.2.3 DPC SHADOW DISPLAY ON IW@MOC

No problem

7.3 EXECUTION OF INSTRUMENT PROCEDURES

7.3.1 FUNCTIONALITY REFERENCE TEST

The functionality reference test is a test that it is intended to be run after the instrument has been tuned to establish a reference for possible functional tests that might be run during operations. In its complete form is composed by a CRYO02 run with the same biases used in the pre-tuning CRYO02 and a CRYO01 run with the optimised tuned values.

During the SOVT2 only the CRYO01 part has been tested and the CRYO02 is procedurally much simpler and, furthermore, it has been tested during SVT2. Moreover only a limited set of RCAs has been exercised (namely LFI24 and LFI25) because of time constraints. Due to the complexity of the procedure the test has been run interactively during visibility for maximum control.

The main results of this tests can be summarised as follow:

1. The CRYO01 part of the functionality reference test has been run for LFI24 and LFI25 with few errors in some points of the procedure.
2. The errors have been identified in real time so that the procedure was eventually rerun without any more mistakes.

7.3.1.1 PROCEDURE DETAILS AND EXECUTION

In the following table the full set of procedure steps exercised during the test is summarised. For each step we also report whether it was executed correctly or not the first time. Mistakes were found at steps 10.4.6, 10.4.25, 10.4.27, 10.4.62, 10.4.64.

Mistakes were identified in real time, corrected and then the procedure was run again a second time without any problems during the same OD.

#10	**Reference Test**			
	Detailed Description	Reference Functional Test		
	Constraints	Start OD: **TBD**		
	Start Condition	LFI (NOM) in **Nominal Science** Mode		
	End Condition	No change in LFI configuration		
	Initial Configuration	Cryo biases, 4kHz switching on B/D (**RCA23 switching on A/C**), Polarization A/C=1, B/D=0 (**IF PS TUNING DOES NOT CHANGE THESE DEFAULTS**)		
	End Configuration	Unchanged		
	Execution Type			
	Duration	**4 hours**		
Step	**Reference**	**Proc. Ref.**	**Proc. Title**	**Procedure Inputs**
10	**Reference Test** (UM section 13.1.2.9)			
10.4	**RCA 25 and 24**			
10.4.1	**Set zero bias on ACA1 and ACA2 of RCA 25 and 24**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters	**OK**
10.4.2	**Disable B/D 4kHz on RCA 25 and 24**	**P_FCP_LFI_CSDC**	Enable/Disable the B-D phase switch	**OK**
10.4.3	**Disable A/C 4kHz on RCA 25 and 24**	**P_FCP_LFI_CSCC**	Enable/Disable the A-C phase switch	**OK**
10.4.4	**Set A/C P/S Status (0) on RCA 25 and 24**	**P_FCP_LFI_CSAC**	Configure the A-C phase switch	**OK**
10.4.5	**WAIT 1 minute**			
10.4.6	**Set Cryo bias on ACA1 of RCA 25, 24**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters	**NO** (zero biaes were applied)
10.4.7	**WAIT 1 minute**			
10.4.8	**Set A/C P/S Status (1) on RCA 25 and 24**	**P_FCP_LFI_CSAC**	Configure the A-C phase switch	**OK**
10.4.9	**WAIT 1 minute**			
10.4.10	**Enable 4kHz (A/C) RCA 25 and 24**	**P_FCP_LFI_CSCC**	Enable/Disable the A-C phase switch	**OK**
10.4.11	**WAIT 1 minute**			
10.4.12	**Set Iswitch1 low value on ACA1 RCA 25, 24**	**P_FCP_LFI_CSXC**	Configure Iswitch1	**OK**
10.4.13	**WAIT 1 minute**			
10.4.14	**Set Iswitch1 nominal value on ACA1 RCA 25, 24**	**P_FCP_LFI_CSXC**	Configure Iswitch1	**OK**
10.4.15	**Set Iswitch2 low value on**	**P_FCP_LFI_CSYC**	Configure Iswitch2	**OK**

	ACA1 RCA 25, 24			
10.4.16	**WAIT 1 minute**			
10.4.17	**Set Iswitch2 nominal value on ACA1 RCA 25, 24**	**P_FCP_LFI_CSYC**	Configure Iswitch2	**OK**
10.4.18	**Set DAE Gain values ACA1 RCA 25, 24**	**P_FCP_LFI_CSGC**	Configure Gain	**OK**
10.4.19	**Set DAE offset values ACA1 RCA 25, 24**	**P_FCP_LFI_CSOC**	Configure Offset	**OK**
10.4.20	**Disable 4kHz (A/C)** **RCA 25, 24**	**P_FCP_LFI_CSCC**	Enable/Disable the A-C phase switch	**OK**
10.4.21	**Set A/C P/S Status (0) on RCA 25 and 24**	**P_FCP_LFI_CSAC**	Configure the A-C phase switch	**OK**
10.4.22	**Set zero bias on ACA1 of RCA 25, 24**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters	**OK**
10.4.23	**Set Cryo bias on ACA2 of RCA 25, 24**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters	**OK**
10.4.24	**WAIT 1 minute**			
10.4.25	**Set B/D P/S Status (1) on RCA 25 and 24**	**P_FCP_LFI_CSAC**	Configure the A-C phase switch	**NO (A/C was set to 1 and not B/D)**
10.4.26	**WAIT 1 minute**			
10.4.27	**Enable 4kHz (B/D)** **RCA 25 and 24**	**P_FCP_LFI_CSCC**	Enable/Disable the A-C phase switch	**NO (A/C 4 KHz was switched on and not B/D)**
10.4.28	**WAIT 1 minute**			
10.4.29	**Set Iswitch1 low value on ACA2 RCA 25, 24**	**P_FCP_LFI_CSXC**	Configure Iswitch1	**OK**
10.4.30	**WAIT 1 minute**			
10.4.31	**Set Iswitch1 nominal value on ACA2 RCA 25, 24**	**P_FCP_LFI_CSXC**	Configure Iswitch1	**OK**
10.4.32	**Set Iswitch2 low value on ACA2 RCA 25, 24**	**P_FCP_LFI_CSYC**	Configure Iswitch2	**OK**
10.4.33	**WAIT 1 minute**			
10.4.34	**Set Iswitch2 nominal value on ACA2 RCA 25, 24**	**P_FCP_LFI_CSYC**	Configure Iswitch2	**OK**
10.4.35	**Set DAE Gain values ACA2 RCA 25, 24**	**P_FCP_LFI_CSGC**	Configure Gain	**OK**
10.4.36	**Set DAE offset values ACA2 RCA 25, 24**	**P_FCP_LFI_CSOC**	Configure Offset	**OK**
10.4.37	**Set Cryo bias on ACA1 of RCA 25, 24**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters	**OK**
	Note: ACA1 and 2 of RCA 25 and 24 now set with Cryo values			
10.4.38	**Set zero bias on ACA3 and ACA4 of RCA 25 and 24**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters	**OK**

10.4.39	**Disable B/D 4kHz on RCA 25 and 24**	**P_FCP_LFI_CSDC**	Enable/Disable the B-D phase switch	**OK**
10.4.40	**Disable A/C 4kHz on RCA 25 and 24**	**P_FCP_LFI_CSCC**	Enable/Disable the A-C phase switch	**OK**
10.4.41	**Set A/C P/S Status (0) on RCA 25 and 24**	**P_FCP_LFI_CSAC**	Configure the A-C phase switch	**OK**
10.4.42	**WAIT 1 minute**			
10.4.43	**Set Cryo bias on ACA3 of RCA 25, 24**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters	**OK**
10.4.44	**WAIT 1 minute**			
10.4.45	**Set A/C P/S Status (1) on RCA 25 and 24**	**P_FCP_LFI_CSAC**	Configure the A-C phase switch	**OK**
10.4.46	**WAIT 1 minute**			
10.4.47	**Enable 4kHz (A/C) RCA 25 and 24**	**P_FCP_LFI_CSCC**	Enable/Disable the A-C phase switch	**OK**
10.4.48	**WAIT 1 minute**			
10.4.49	**Set Iswitch1 low value on ACA3 RCA 25, 24**	**P_FCP_LFI_CSXC**	Configure Iswitch1	**OK**
10.4.50	**WAIT 1 minute**			
10.4.51	**Set Iswitch1 nominal value on ACA3 RCA 25, 24**	**P_FCP_LFI_CSXC**	Configure Iswitch1	**OK**
10.4.52	**Set Iswitch2 low value on ACA3 RCA 25, 24**	**P_FCP_LFI_CSYC**	Configure Iswitch2	**OK**
10.4.53	**WAIT 1 minute**			
10.4.54	**Set Iswitch2 nominal value on ACA3 RCA 25, 24**	**P_FCP_LFI_CSYC**	Configure Iswitch2	**OK**
10.4.55	**Set DAE Gain values ACA3 RCA 25, 24**	**P_FCP_LFI_CSGC**	Configure Gain	**OK**
10.4.56	**Set DAE offset values ACA3 RCA 25, 24**	**P_FCP_LFI_CSOC**	Configure Offset	**OK**
10.4.57	**Disable 4kHz (A/C) RCA 25, 24**	**P_FCP_LFI_CSCC**	Enable/Disable the A-C phase switch	**OK**
10.4.58	**Set A/C P/S Status (0) on RCA 25 and 24**	**P_FCP_LFI_CSAC**	Configure the A-C phase switch	**OK**
10.4.59	**Set zero bias on ACA3 of RCA 25, 24**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters	**OK**
xxx	**Set Vg2 on ACA 4 of RCA 24**	**P_FCP_LFI_CS2C**	Configure Vgate2	**OK**
xxx	**Set Vdrain on ACA 4 of RCA 24**	**P_FCP_LFI_CSNC**	Configure Vdrain	**OK**
xxx	**Set Vg1 on ACA 4 of RCA 24**	**P_FCP_LFI_CS1C**	Configure Vgate1	**OK**
xxx	**Set I1 on ACA 4 of RCA 24**	**P_FCP_LFI_CSXC**	Configure Iswitch1	**OK**

xxx	**Set I2 on ACA 4 of RCA 24**	**P_FCP_LFI_CSYC**	Configure Iswitch2	**OK**
10.4.60	**Set Cryo bias on ACA4 of RCA 25, 24**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters	**OK**
10.4.61	**WAIT 1 minute**			
10.4.62	**Set B/D P/S Status (1) on RCA 25 and 24**	**P_FCP_LFI_CSAC**	Configure the A-C phase switch	**NO (A/C was set to 1 and not B/D)**
10.4.63	**WAIT 1 minute**			
10.4.64	**Enable 4kHz (B/D)** **RCA 25 and 24**	**P_FCP_LFI_CSCC**	Enable/Disable the A-C phase switch	**NO (A/C 4 KHz was switched on and not B/D)**
10.4.65	**WAIT 1 minute**			
10.4.66	**Set Iswitch1 low value on ACA4 RCA 25, 24**	**P_FCP_LFI_CSXC**	Configure Iswitch1	**OK**
10.4.67	**WAIT 1 minute**			
10.4.68	**Set Iswitch1 nominal value on ACA4 RCA 25, 24**	**P_FCP_LFI_CSXC**	Configure Iswitch1	**OK**
10.4.69	**Set Iswitch2 low value on ACA4 RCA 25, 24**	**P_FCP_LFI_CSYC**	Configure Iswitch2	**OK**
10.4.70	**WAIT 1 minute**			
10.4.71	**Set Iswitch2 nominal value on ACA4 RCA 25, 24**	**P_FCP_LFI_CSYC**	Configure Iswitch2	**OK**
10.4.72	**Set DAE Gain values ACA4 RCA 25, 24**	**P_FCP_LFI_CSGC**	Configure Gain	**OK**
10.4.73	**Set DAE offset values ACA4 RCA 25, 24**	**P_FCP_LFI_CSOC**	Configure Offset	**OK**
10.4.74	**Set Cryo bias on ACA3 of RCA 25, 24**	**P_FCP_LFI_CRCA**	Configure Vgate1, Vgate2, Drain, Iswitch1 and Iswitch2 parameters	**OK**
	Note: All ACAs of RCA 25 and 24 now set with Cryo values			
Additional Comments				
none				

7.3.2 DAE TUNING

This test consists in acquiring data from the instrument in its nominal bias point (during CPV this will happen after bias tuning) while DAE gain and offset values are changed from 255 DEC to 0 DEC and from 1 to 48 (in 11 steps) respectively.

Changes are implemented in a double loop and are implemented in parallel for all 44 detectors for a total of 256 x 11 = 2816 steps.

During this test the procedure was run in the mission timeline partly during the last part of the DTCP and the major part outside visibility. The last part of the procedure (that lasts about 24 hours) was completed in the first part of the DTCP pf OD 044

7.3.2.1 PROCEDURE DETAILS AND EXECUTION

In the following table we report the detailed procedure for DAE gain and offset tuning

#9	DAE Offset/Gain Tuning			
	Detailed Description	DAE Offset/Gain Tuning		
	Constraints	Start OD: **TBD**		
	Start Condition	LFI (NOM) in **Nominal Science** Mode		
	End Condition	No change in LFI configuration		
	Initial Configuration	Cryo biases, 4kHz switching on B/D (**RCA23 switching on A/C**), Polarization A/C=1, B/D=0 (**IF PS TUNING DOES NOT CHANGE THESE DEFAULTS**)		
	End Configuration	Unchanged		
	Execution Type	**MTL**		
	Duration	**6 hours**		
Step	**Reference**	**Proc. Ref.**	**Proc. Title**	**Procedure Inputs**
9	**DAE Offset & Gain Tuning** (UM section 13.1.2.8)			
	ACA1 (All RCAs)			
9.1	**Perform Gain/Offset Tuning on all ACAs**	**DAE_Tuning_ACA1**	**(Special Command Sequence product)**	**Gain (see comment)** **Offset 255 - 0 (dec)**
9.2	**WAIT for IOT Go-ahead**			
Additional Comments				

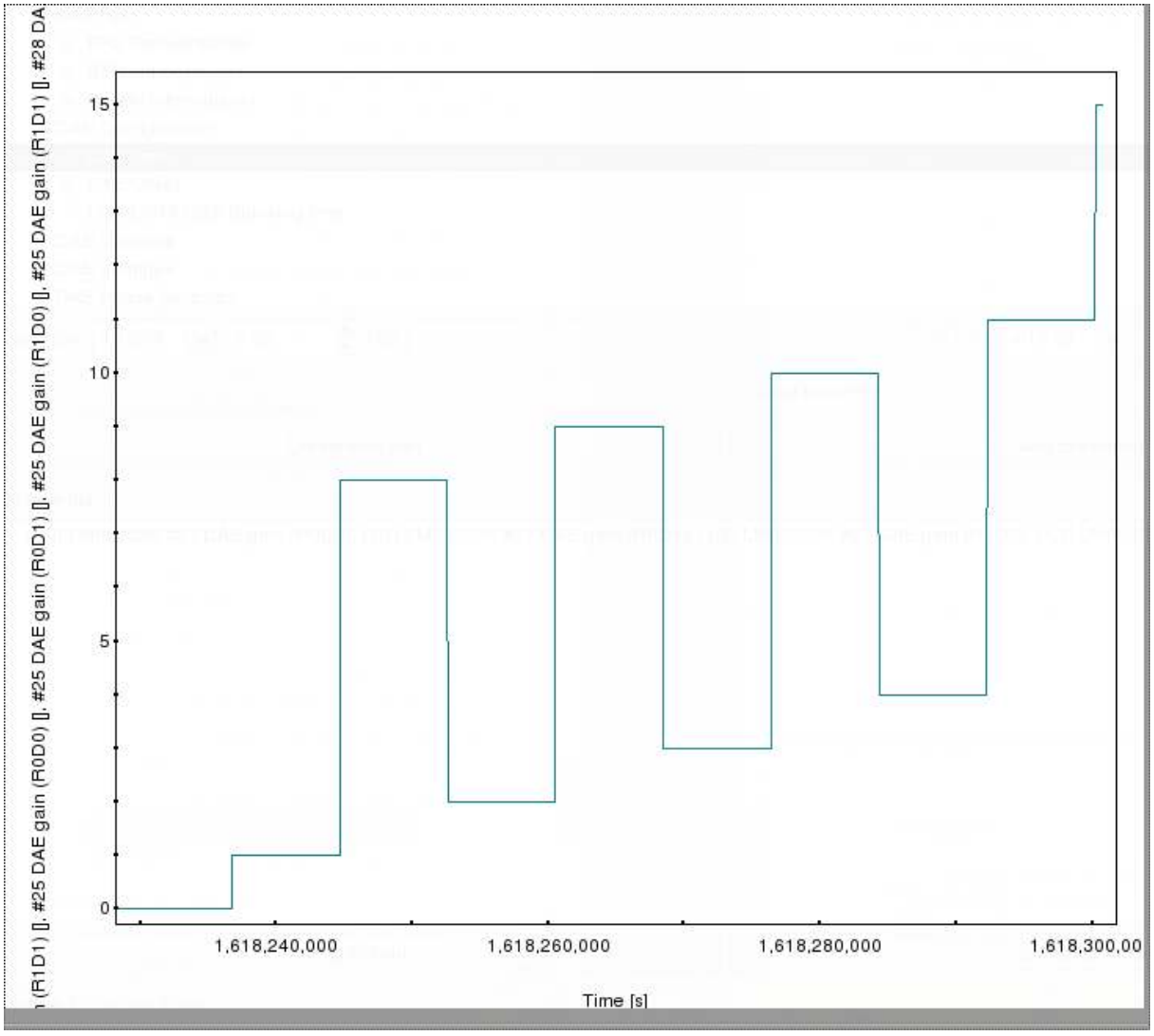
Gain will be applied in incrementing order:

GAIN	Raw (dec)
1	0
2	1
3	8
4	2
6	9
8	3
12	10
16	4
24	11
48	15

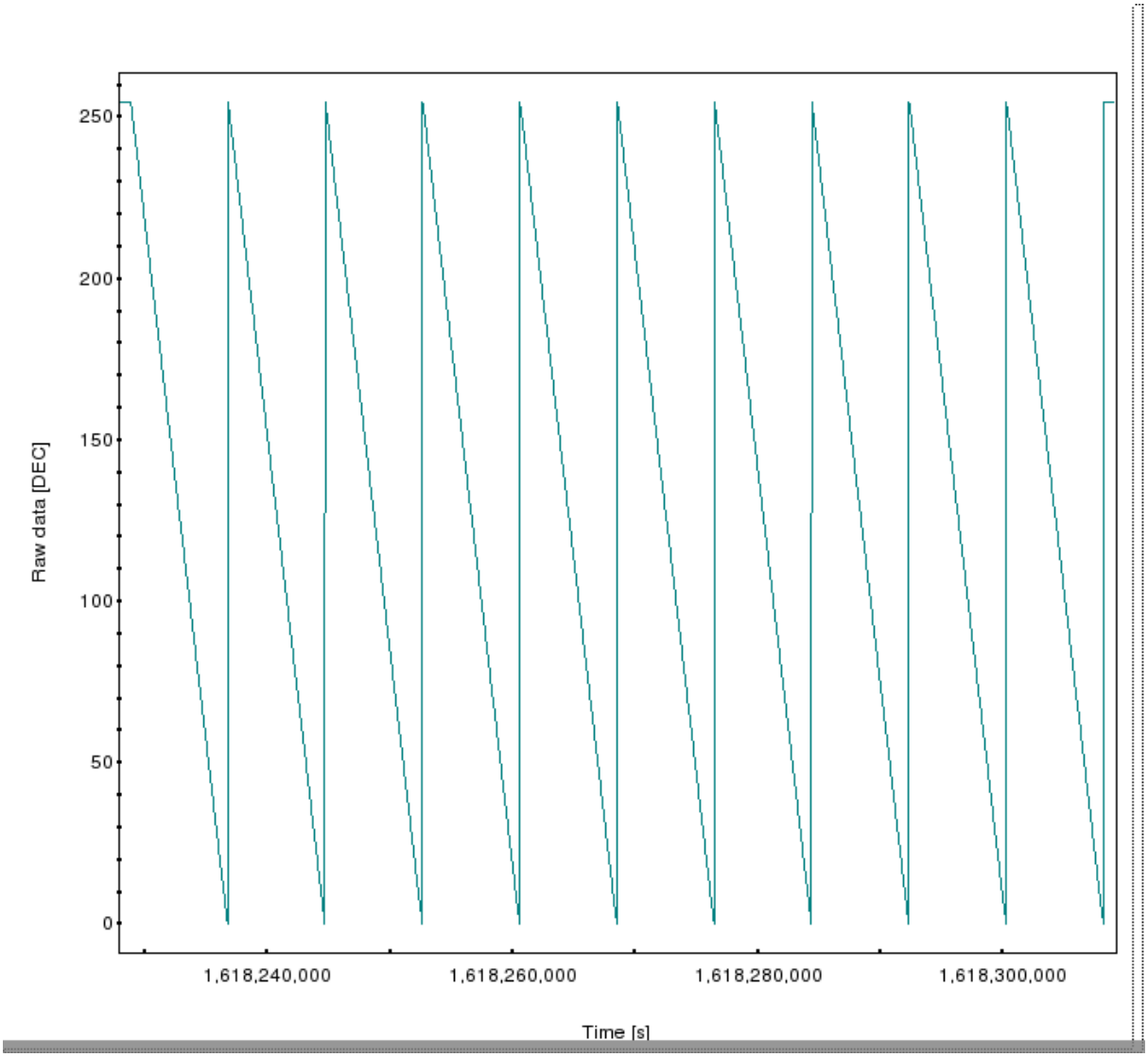
The final step of tuning for each ACA will assert a Gain of 1 (raw 0) and an Offset of 255 (dec).

In the next figure we show the behaviour of the DAE gain during the DAE gain and offset tuning during OD 043. Notice that:

1. The gain values represented in the plot are the raw, not the physical gains (see the table at the end of the above procedure). That is why we see an alternating pattern of gain states and not a continuous rise
2. The larger part of the last gain step was run during the first part of OD 044.
3. The picture shows a single line that is actually a superposition of all the 44 gain states one over the other.



The same plot for the DAE offset is shown in the next figure



7.4 DAILY QUALITY REPORT PRODUCTION

DQR of OD 040 was sent. LFI internal part was minimized (due to many changes on configuration).

7.5 OD 043 TEST RESULT SUMMARY

DOY 102 **OD-4**
Test name: **Reference functional test "flight like sequence"**

Test objectives:

The objective of the test is to perform a complete functional test of the radiometric part in stable temperature condition. The aim of this test is also to perform a functional test that mimics the one that will be done during flight and will be the reference point for any other functional test during mission. For instance if there is the need to perform a functional test on a single radiometer, there is in principle no need to switch off all the other radiometers to perform the test: all radiometers are kept on and science can be stored as usual. This is more a reference point than a functional one because at this point LFI is surely functioning as expected.

Verification matrix

Check	Passed?			Recovered?	
	Yes	No	Notes	Yes	No
No unexpected event Packets				N/A	N/A
TC procedure			The procedure was formally correct but some TPFs were wrongly referred. The procedure was corrected but the test continued but at the end the new TPFs were sent and the test was restarted. After the data analysis, it turned out that two additional steps need to be added to set to 0 the B/D polarization status.		
Every ACA is responding to Bias stimuli as expected				N/A	N/A
No unexpected features				N/A	N/A

DOY 102 **OD-4**
Test name: **DAE offset/gain tuning**

Test objectives:

The objective of this test is to exercise the offset circuitry in order to verify the DAE offset and gain values at the end of the amplifier chain. During the FM test was discovered that the offset value applied by circuitry has some dependence from the input signal, so a sort of calibration/adjustment activity is foreseen to obtain data that could be checked for performances of the instrument. (Refer to FM Test Report or to NC 4122)

Verification matrix

Check	Passed?			Recovered?	
	Yes	No	Notes	Yes	No
No unexpected event Packets				N/A	N/A
TC procedure				N/A	N/A
No unexpected features				N/A	N/A

Anomalies:

- Reference Functional test: two errors in the procedure implementation (see verification matrix above)

7.5.1 DPC POINT OF VIEW

The Gaps reported in the DDS were discussed with MOC after the SOVT2 and they match the Gaps identified at the MOC level due to lost of frames and disconnection of the NDIU with the MCS.

The Timeline necessary to download the consolidated telemetry shows some problem. The Entire OD was ONLY completed at the start of the subsequent DTCP (one consolidation window was note released before that). This can be a problem during CPV as NOT all data will be available at the DPC. We suggest to discuss this point at PGSSG level.

DQR of OD 40 was produced removing all the LFI internal part to avoid too many entries due to many changes in the configuration.

8 OPERATIONAL DAY 044

8.1 TESTS PERFORMED DURING OD 044

No additional foreseen tests during OD 044, DAE offset/gain tuning was still running (see paragraph 7.5).

8.2 INSTRUMENT COMMANDING, DATA TRANSMISSION AND MANAGEMENT

8.2.1 IOT@MOC

8.2.1.1 REAL TIME IW@MOC

The two IW@MOC starts regularly. We analyze the telemetry received during the DTCP of OD_42. gaps were identified (we report here only the overall summary, see annex for detailed analysis):

It seems that a gap of few minutes (starting at 8:20 to 8:25 UTC) affect all the telemetry.

Here is the usual list:

APID 0016

```
################################################################################
TOTAL Number of lost packets= 1027
TOTAL Number of packets RECEIVED= 5655
Percentuage of lost Packets= 15.369650
################################################################################
```

APID 0018

```
################################################################################
TOTAL Number of lost packets= 5394
TOTAL Number of packets RECEIVED= 26880
Percentuage of lost Packets= 16.713144
################################################################################
```

APID 1408

```
################################################################################
TOTAL Number of lost packets= 117
TOTAL Number of packets RECEIVED= 572
Percentuage of lost Packets= 16.981132
################################################################################
```

APID 1410

```
################################################################################
TOTAL Number of lost packets= 1380
TOTAL Number of packets RECEIVED= 6889
Percentuage of lost Packets= 16.688838
################################################################################
```

APID 1536

```
################################################################################
TOTAL Number of lost packets= 196
TOTAL Number of packets RECEIVED= 1739
Percentuage of lost Packets= 10.129199
################################################################################
```

APID 1538

```
################################################################################
TOTAL Number of lost packets= 1454
TOTAL Number of packets RECEIVED= 7409
Percentuage of lost Packets= 16.405280
################################################################################
```

APID 1540

```
################################################################################
TOTAL Number of lost packets= 2508
TOTAL Number of packets RECEIVED= 64884
Percentuage of lost Packets= 3.7215100
################################################################################
```

APID 1664

```
################################################################################
TOTAL Number of lost packets= 251
TOTAL Number of packets RECEIVED= 1273
Percentuage of lost Packets= 16.469816
################################################################################
```

APID 1666

```
################################################################################
TOTAL Number of lost packets= 2541
TOTAL Number of packets RECEIVED= 12696
Percentuage of lost Packets= 16.676511
################################################################################
```

8.2.1.2 RECEPTION AND TRANSFER OF FILES VIA HPFTS@IW

None

8.2.1.3 GENERATION OF TPFS@MOC

None

8.2.2 DPC SITE

8.2.2.1 RETRIEVING DATA VIA DDS

The download of the Online HK TM (0018 – 1410 – 1538 – 1666) started at 8:30 UTC of 18/10 and end the 19/10 at 13:50. (note three hours were only downloaded on the 19/10)

The download of the OffLine HK TM (0016 – 1408 – 1536 – 1664) started at 16:50 UTC of 18/10 and end the 22/10(Note that some hours were downloaded the 18, others between the 19 and the 22/10).

The download of the Online Science TM (1540) started at 11:35 UTC of the 18/10 and end at 11:50 UTC of the 19/10(three hours were downloaded on the 19/10).

Timeline in this case is NOT rappresentative as many hours were consolidated/relesed only the day after.

We perform a quick GAPS analysis on the consolidated telemetry. Here is the result:

APID 0016, list is not reported here (too long), The reason is known see OD_040

```
################################################################################
TOTAL Number of lost packets= 1685
TOTAL Number of packets RECEIVED= 34003
Percentuage of lost Packets= 4.7214750
################################################################################
```

APID 0018 → NO GAPS

APID 1408

```
################################################################################
TOTAL Number of lost packets= 1
TOTAL Number of packets RECEIVED= 3652
Percentuage of lost Packets= 0.027374760
################################################################################
```

APID 1410 → NO GAPS

APID 1536

```
################################################################################
TOTAL Number of lost packets= 1
TOTAL Number of packets RECEIVED= 15565
Percentuage of lost Packets= 0.0064242580
################################################################################
```

APID 1538

```
################################################################################
TOTAL Number of lost packets= 1
TOTAL Number of packets RECEIVED= 48844
Percentuage of lost Packets= 0.0020472925
################################################################################
```

APID 1540

```
################################################################################
TOTAL Number of lost packets= 1014
TOTAL Number of packets RECEIVED= 520339
Percentuage of lost Packets= 0.194493941
################################################################################
```

APID 1664

```
################################################################################
TOTAL Number of lost packets= 33
TOTAL Number of packets RECEIVED= 8191
Percentuage of lost Packets= 0.40126459
################################################################################
```

APID 1666 → NO GAPs

8.2.2.2 RECEPTION AND TRANSFER OF FILES VIA HPFTS@DPC

The following Files were received:

TSF

TSF__SDALFI_D_081018T081248_00001.PLAN

TSF__SDALFI_D_081018T081258_00001.PLAN

TSF__SDALFI_D_081018T081310_00001.PLAN

TSF__SDALFI_D_081018T081317_00001.PLAN

TSF__SDALFI_D_081018T081323_00001.PLAN
TSF__SDALFI_D_081018T081331_00001.PLAN
TSF__SDALFI_D_081018T081337_00001.PLAN
TSF__SDALFI_D_081018T081344_00001.PLAN
TSF__SDALFI_D_081018T081351_00001.PLAN
TSF__SDALFI_D_081018T081357_00001.PLAN
TSF__SDALFI_D_081018T081403_00001.PLAN
TSF__SDALFI_D_081018T081409_00001.PLAN
TSF__SDALFI_D_081018T081415_00001.PLAN
TSF__SDALFI_D_081018T081422_00001.PLAN
TSF__SDALFI_D_081018T081431_00001.PLAN
TSF__SDALFI_D_081018T081437_00001.PLAN
TSF__SDALFI_D_081018T081443_00001.PLAN
TSF__SDALFI_D_081018T081449_00001.PLAN
TSF__SDALFI_D_081018T081454_00001.PLAN
TSF__SDALFI_D_081018T081503_00001.PLAN
TSF__SDALFI_D_081018T081509_00001.PLAN
TSF__SDALFI_D_081018T081516_00001.PLAN
TSF__SDALFI_D_081018T081521_00001.PLAN
TSF__SDALFI_D_081018T081535_00001.PLAN
TSF__SDALFI_D_081018T081608_00001.PLAN
TSF__SDALFI_D_081018T081650_00001.PLAN
TSF__SDALFI_D_081018T081659_00001.PLAN
TSF__SDALFI_D_081018T081706_00001.PLAN
TSF__SDALFI_D_081018T081713_00001.PLAN
TSF__SDALFI_D_081018T081719_00001.PLAN
TSF__SDALFI_D_081018T081726_00001.PLAN
TSF__SDALFI_D_081018T081732_00001.PLAN
TSF__SDALFI_D_081018T081740_00001.PLAN
TSF__SDALFI_D_081018T081746_00001.PLAN
TSF__SDALFI_D_081018T081753_00001.PLAN

TSF__SDALFI_D_081018T081759_00001.PLAN

TSF__SDALFI_D_081018T081806_00001.PLAN

TSF__SDALFI_D_081018T081811_00001.PLAN

TSF__SDALFI_D_081018T081818_00001.PLAN

DQRH

DQRH_SDALFI_D_0040_0001_____00001.PLAN

AHF

AHF__SDALFI_D_0041_0002_____00000.PLAN

AHF__SDALFI_D_0042_0002_____00000.PLAN

AHF__SDALFI_D_0043_0001_____00000.PLAN

PTCH

PTCH_SDALFI_D_081018T131133_00001.PLAN

PTCH_SDALFI_D_081018T131205_00001.PLAN

8.2.2.2.1 Processing AHF

AHF of OD 0041 was re-received to correct the large gap present in the previous version.

AHF of the OD 41 is still not compliant with respect AHF of OD 40 and the AHF of OD 42 is also not compliant with respect the AHF of OD 42.

AHFs still contains records not filtered.

8.2.2.2.2 Processing Orbit and Event File

None

8.2.2.2.3 Processing TCH ASCII printout Files

None

8.2.2.3 DPC SHADOW DISPLAY ON IW@MOC

No problem

8.3 EXECUTION OF INSTRUMENT PROCEDURES

No LFI activity has been performed during this OD apart from (automatic) completion of the DAE gain and offset tuning. No problems to report.

8.4 DAILY QUALITY REPORT PRODUCTION

No DQR were generated due to the use of AVR type instead of Nominal science packets. Discussion on the DQR creation/delivery during the CPV will be done during the next PGSSG/ICWG meeting.

8.5 OD 044 TEST RESULT SUMMARY

No Foreseen LFI activity.

No anomalies.

8.5.1 DPC POINT OF VIEW

The Gaps reported in the DDS were discussed with MOC after the SOVT2 and they match the Gaps identified at the MOC level due to lost of frames and disconnection of the NDIU with the MCS.

The Timeline necessary to download the consolidated telemetry shows some problem. The Entire OD was ONLY completed after two days from the last DTCP. Could be that this was due to the "end of SOVT2 test"

AHF of OD 41 and OD 42 still contains records with time < of the previous AHF. This is obviusoly a problem that must be solved.

9 ACKNOWLEDGEMENT

This document was created under ASI contract *Planck LFI Activity of Phase E2*

Annex GAPs identified during SOVT2

IW@MOC and DDS

TABLE OF CONTENTS

1 OPERATIONAL DAY 040

1.1 REAL TIME IW@MOC

Gaps founds during the DTCP of OD_40:

APID 0016:

```
APID=0016 OBT=1.0603434657181200E+014 SSC=3291 UTC= 2009/4/9 8:8:47.719340
APID=0016 OBT=1.0603434660388100E+014 SSC=3293 UTC= 2009/4/9 8:8:48.208655
Number of lost packets= 1
################################################################################
APID=0016 OBT=1.0603436415054600E+014 SSC=3523 UTC= 2009/4/9 8:13:15.949548
APID=0016 OBT=1.0603437122905600E+014 SSC=3562 UTC= 2009/4/9 8:15:3.9590210
Number of lost packets= 38
################################################################################
APID=0016 OBT=1.0603549238560300E+014 SSC=10896 UTC= 2009/4/9 13:0:11.450297
APID=0016 OBT=1.0603569505703800E+014 SSC=12153 UTC= 2009/4/9 13:51:43.970960
Number of lost packets= 1256
################################################################################
TOTAL Number of lost packets= 1295
TOTAL Number of packets RECEIVED= 7571
Percentuage of lost Packets= 14.606361
################################################################################
```

APID 0018

```
APID=0018 OBT=1.0603436474037000E+014 SSC=5318 UTC= 2009/4/9 8:13:24.949540
APID=0018 OBT=1.0603437096629000E+014 SSC=5499 UTC= 2009/4/9 8:14:59.949548
Number of lost packets= 180
################################################################################
APID=0018 OBT=1.0603549254939400E+014 SSC=5692 UTC= 2009/4/9 13:0:13.949539
APID=0018 OBT=1.0603549576065800E+014 SSC=5786 UTC= 2009/4/9 13:1:2.9495144
Number of lost packets= 93
################################################################################
TOTAL Number of lost packets= 273
TOTAL Number of packets RECEIVED= 33513
Percentuage of lost Packets= 0.80802699
################################################################################
```

APID 1408

```
APID=1408 OBT=1.0603436426934100E+014 SSC=688 UTC= 2009/4/9 8:13:17.762212
APID=1408 OBT=1.0603437248602600E+014 SSC=693 UTC= 2009/4/9 8:15:23.138881
Number of lost packets= 4
################################################################################
TOTAL Number of lost packets= 4
TOTAL Number of packets RECEIVED= 761
Percentuage of lost Packets= 0.52287582
################################################################################
```

APID 1410

```
APID=1410 OBT=1.0603436011711800E+014 SSC=6831 UTC= 2009/4/9 8:12:14.404318
APID=1410 OBT=1.0603436041398200E+014 SSC=6833 UTC= 2009/4/9 8:12:18.934086
Number of lost packets= 1
################################################################################
APID=1410 OBT=1.0603436466461400E+014 SSC=6866 UTC= 2009/4/9 8:13:23.793602
APID=1410 OBT=1.0603437105334000E+014 SSC=6912 UTC= 2009/4/9 8:15:1.2778044
Number of lost packets= 45
################################################################################
APID=1410 OBT=1.0603549250537300E+014 SSC=15354 UTC= 2009/4/9 13:0:13.277847
APID=1410 OBT=1.0603549593069500E+014 SSC=15382 UTC= 2009/4/9 13:1:5.5441090
Number of lost packets= 27
################################################################################
TOTAL Number of lost packets= 73
TOTAL Number of packets RECEIVED= 8585
Percentuage of lost Packets= 0.84315084
################################################################################
```

APID 1536:

```
APID=1536 OBT=1.0603436354816000E+014 SSC=1319 UTC= 2009/4/9 8:13:6.7578462
APID=1536 OBT=1.0603437193697500E+014 SSC=1327 UTC= 2009/4/9 8:15:14.761014
Number of lost packets= 7
################################################################################
TOTAL Number of lost packets= 7
TOTAL Number of packets RECEIVED= 1380
Percentuage of lost Packets= 0.50468637
################################################################################
```

APID 1538

```
APID=1538 OBT=1.0603436462965800E+014 SSC=9337 UTC= 2009/4/9 8:13:23.260191
APID=1538 OBT=1.0603437115047100E+014 SSC=9388 UTC= 2009/4/9 8:15:2.7599126
Number of lost packets= 50
################################################################################
APID=1538 OBT=1.0603549266310700E+014 SSC=1889 UTC= 2009/4/9 13:0:15.684673
APID=1538 OBT=1.0603549603809600E+014 SSC=1917 UTC= 2009/4/9 13:1:7.1828851
Number of lost packets= 27
################################################################################
TOTAL Number of lost packets= 77
TOTAL Number of packets RECEIVED= 9034
Percentuage of lost Packets= 0.84513226
################################################################################
```

APID 1540

```
################################################################################
TOTAL Number of lost packets= 0
TOTAL Number of packets RECEIVED= 59116
Percentuage of lost Packets= 0.000000
################################################################################
```

APID 1664

```
APID=1664 OBT=1.0603436439533700E+014 SSC=1760 UTC= 2009/4/9 8:13:19.684753
APID=1664 OBT=1.0603437160440800E+014 SSC=1770 UTC= 2009/4/9 8:15:9.6864492
Number of lost packets= 9
################################################################################
TOTAL Number of lost packets= 9
TOTAL Number of packets RECEIVED= 1580
Percentuage of lost Packets= 0.56639396
################################################################################
```

APID 1666

```
APID=1666 OBT=1.0603436014179800E+014 SSC=1087 UTC= 2009/4/9 8:12:14.780900
APID=1666 OBT=1.0603436028597400E+014 SSC=1089 UTC= 2009/4/9 8:12:16.980848
Number of lost packets= 1
################################################################################
APID=1666 OBT=1.0603436468351400E+014 SSC=1150 UTC= 2009/4/9 8:13:24.081993
APID=1666 OBT=1.0603437102748800E+014 SSC=1238 UTC= 2009/4/9 8:15:0.88335872
Number of lost packets= 87
################################################################################
APID=1666 OBT=1.0603549261464800E+014 SSC=412 UTC= 2009/4/9 13:0:14.945228
APID=1666 OBT=1.0603549578664000E+014 SSC=456 UTC= 2009/4/9 13:1:3.3459717
Number of lost packets= 43
################################################################################
TOTAL Number of lost packets= 131
TOTAL Number of packets RECEIVED= 15818
Percentuage of lost Packets= 0.82136811
################################################################################
```

2 OPERATIONAL DAY 041

2.1 REAL TIME IW@MOC

Gaps found during the DTCP of OD_41:

APID 0016

```
APID=0016 OBT=1.0604005791822600E+014 SSC=6045 UTC= 2009/4/10 8:21:15.949520
APID=0016 OBT=1.0604006499611400E+014 SSC=6084 UTC= 2009/4/10 8:23:3.9495376
Number of lost packets= 38
################################################################################
TOTAL Number of lost packets= 38
TOTAL Number of packets RECEIVED= 7279
Percentuage of lost Packets= 0.51933853
################################################################################
```

APID 0018

```
APID=0018 OBT=1.0604003478401800E+014 SSC=8092 UTC= 2009/4/10 8:15:22.949544
APID=0018 OBT=1.0604003484955400E+014 SSC=8094 UTC= 2009/4/10 8:15:23.949538
Number of lost packets= 1
################################################################################
APID=0018 OBT=1.0604005641089800E+014 SSC=8728 UTC= 2009/4/10 8:20:52.949524
APID=0018 OBT=1.0604005654197000E+014 SSC=8732 UTC= 2009/4/10 8:20:54.949553
Number of lost packets= 3
################################################################################
APID=0018 OBT=1.0604005863912200E+014 SSC=8794 UTC= 2009/4/10 8:21:26.949541
APID=0018 OBT=1.0604006506165000E+014 SSC=8981 UTC= 2009/4/10 8:23:4.9495322
Number of lost packets= 186
################################################################################
APID=0018 OBT=1.0604047944577800E+014 SSC=4775 UTC= 2009/4/10 10:8:27.949515
APID=0018 OBT=1.0604047970792200E+014 SSC=4783 UTC= 2009/4/10 10:8:31.949533
Number of lost packets= 7
################################################################################
APID=0018 OBT=1.0604048101864200E+014 SSC=4821 UTC= 2009/4/10 10:8:51.949545
APID=0018 OBT=1.0604048586830600E+014 SSC=4964 UTC= 2009/4/10 10:10:5.9495464
Number of lost packets= 142
################################################################################
APID=0018 OBT=1.0604048744117000E+014 SSC=5012 UTC= 2009/4/10 10:10:29.949537
APID=0018 OBT=1.0604048809653000E+014 SSC=5030 UTC= 2009/4/10 10:10:39.949523
Number of lost packets= 17
################################################################################
TOTAL Number of lost packets= 356
TOTAL Number of packets RECEIVED= 32722
Percentuage of lost Packets= 1.0762440
################################################################################
```

APID 1408

```
APID=1408 OBT=1.0604005826742100E+014 SSC=4551 UTC= 2009/4/10 8:21:21.277835
APID=1408 OBT=1.0604006647478200E+014 SSC=4556 UTC= 2009/4/10 8:23:26.512199
Number of lost packets= 4
################################################################################
APID=1408 OBT=1.0604021204457900E+014 SSC=4693 UTC= 2009/4/10 9:0:27.731051
APID=1408 OBT=1.0604021212035000E+014 SSC=4695 UTC= 2009/4/10 9:0:28.887230
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0604021239785300E+014 SSC=4703 UTC= 2009/4/10 9:0:33.121566
APID=1408 OBT=1.0604021244919900E+014 SSC=4705 UTC= 2009/4/10 9:0:33.905067
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0604021269993800E+014 SSC=4712 UTC= 2009/4/10 9:0:37.731037
APID=1408 OBT=1.0604021277570900E+014 SSC=4714 UTC= 2009/4/10 9:0:38.887216
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0604021310465700E+014 SSC=4722 UTC= 2009/4/10 9:0:43.906541
APID=1408 OBT=1.0604021315868400E+014 SSC=4724 UTC= 2009/4/10 9:0:44.730918
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0604021335529900E+014 SSC=4730 UTC= 2009/4/10 9:0:47.731063
APID=1408 OBT=1.0604021343106900E+014 SSC=4732 UTC= 2009/4/10 9:0:48.887202
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0604021368399700E+014 SSC=4739 UTC= 2009/4/10 9:0:52.746566
APID=1408 OBT=1.0604021377728000E+014 SSC=4741 UTC= 2009/4/10 9:0:54.169974
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0604021401167800E+014 SSC=4749 UTC= 2009/4/10 9:0:57.746579
APID=1408 OBT=1.0604021408642900E+014 SSC=4751 UTC= 2009/4/10 9:0:58.887188
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0604021433935700E+014 SSC=4758 UTC= 2009/4/10 9:1:2.7465919
APID=1408 OBT=1.0604021442639700E+014 SSC=4760 UTC= 2009/4/10 9:1:4.0746877
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0604021469478400E+014 SSC=4767 UTC= 2009/4/10 9:1:8.1699783
APID=1408 OBT=1.0604021474178900E+014 SSC=4769 UTC= 2009/4/10 9:1:8.8872144
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0604021499369800E+014 SSC=4776 UTC= 2009/4/10 9:1:12.731048
APID=1408 OBT=1.0604021506949800E+014 SSC=4778 UTC= 2009/4/10 9:1:13.887630
Number of lost packets= 1
################################################################################
TOTAL Number of lost packets= 14
TOTAL Number of packets RECEIVED= 832
Percentuage of lost Packets= 1.6548463
################################################################################
```

APID 1410

```
APID=1410 OBT=1.0604005863094200E+014 SSC=581 UTC= 2009/4/10 8:21:26.824697
APID=1410 OBT=1.0604006526748600E+014 SSC=634 UTC= 2009/4/10 8:23:8.0903319
Number of lost packets= 52
```

```
################################################################################
APID=1410 OBT=1.0604047949801300E+014 SSC=3751 UTC= 2009/4/10 10:8:28.746573
APID=1410 OBT=1.0604047983798200E+014 SSC=3753 UTC= 2009/4/10 10:8:33.934073
Number of lost packets= 1
################################################################################
APID=1410 OBT=1.0604048105449200E+014 SSC=3761 UTC= 2009/4/10 10:8:52.496555
APID=1410 OBT=1.0604048602089400E+014 SSC=3798 UTC= 2009/4/10 10:10:8.2778379
Number of lost packets= 36
################################################################################
APID=1410 OBT=1.0604048752535200E+014 SSC=3814 UTC= 2009/4/10 10:10:31.234060
APID=1410 OBT=1.0604048822659000E+014 SSC=3818 UTC= 2009/4/10 10:10:41.934103
Number of lost packets= 3
################################################################################
TOTAL Number of lost packets= 92
TOTAL Number of packets RECEIVED= 8384
Percentuage of lost Packets= 1.0854176
################################################################################
```

APID 1536

```
APID=1536 OBT=1.0604005745867200E+014 SSC=8818 UTC= 2009/4/10 8:21:8.9372867
APID=1536 OBT=1.0604006585482700E+014 SSC=8826 UTC= 2009/4/10 8:23:17.052464
Number of lost packets= 7
################################################################################
TOTAL Number of lost packets= 7
TOTAL Number of packets RECEIVED= 3989
Percentuage of lost Packets= 0.17517518
################################################################################
```

APID 1538

```
APID=1538 OBT=1.0604005854022000E+014 SSC=5466 UTC= 2009/4/10 8:21:25.440396
APID=1538 OBT=1.0604006509392900E+014 SSC=5517 UTC= 2009/4/10 8:23:5.4420662
Number of lost packets= 50
################################################################################
APID=1538 OBT=1.0604047952120000E+014 SSC=8976 UTC= 2009/4/10 10:8:29.100384
APID=1538 OBT=1.0604047978335100E+014 SSC=8979 UTC= 2009/4/10 10:8:33.100483
Number of lost packets= 2
################################################################################
APID=1538 OBT=1.0604048109410400E+014 SSC=8990 UTC= 2009/4/10 10:8:53.100978
APID=1538 OBT=1.0604048607496700E+014 SSC=9033 UTC= 2009/4/10 10:10:9.1029391
Number of lost packets= 42
################################################################################
APID=1538 OBT=1.0604048741868500E+014 SSC=9045 UTC= 2009/4/10 10:10:29.606429
APID=1538 OBT=1.0604048817217200E+014 SSC=9051 UTC= 2009/4/10 10:10:41.103731
Number of lost packets= 5
################################################################################
TOTAL Number of lost packets= 99
TOTAL Number of packets RECEIVED= 9439
Percentuage of lost Packets= 1.0379534
################################################################################
```

APID 1540 NO GAPS

```
TOTAL Number of lost packets= 0
TOTAL Number of packets RECEIVED= 87029
Percentuage of lost Packets= 0.00000000
################################################################################
```

APID 1664

```
APID=1664 OBT=1.0604005812118100E+014 SSC=9690 UTC= 2009/4/10 8:21:19.046385
APID=1664 OBT=1.0604006533024600E+014 SSC=9700 UTC= 2009/4/10 8:23:9.0480012
Number of lost packets= 9
################################################################################
TOTAL Number of lost packets= 9
TOTAL Number of packets RECEIVED= 1555
Percentuage of lost Packets= 0.57544757
################################################################################
```

APID 1666

```
APID=1666 OBT=1.0604005646288900E+014 SSC=14567 UTC= 2009/4/10 8:20:53.742841
APID=1666 OBT=1.0604005660707000E+014 SSC=14569 UTC= 2009/4/10 8:20:55.942869
Number of lost packets= 1
################################################################################
APID=1666 OBT=1.0604005869770400E+014 SSC=14598 UTC= 2009/4/10 8:21:27.843440
APID=1666 OBT=1.0604006511378300E+014 SSC=14687 UTC= 2009/4/10 8:23:5.7450217
Number of lost packets= 88
################################################################################
APID=1666 OBT=1.0604047949138900E+014 SSC=4051 UTC= 2009/4/10 10:8:28.645508
APID=1666 OBT=1.0604047977975500E+014 SSC=4055 UTC= 2009/4/10 10:8:33.045605
Number of lost packets= 3
################################################################################
APID=1666 OBT=1.0604048107738600E+014 SSC=4073 UTC= 2009/4/10 10:8:52.845899
APID=1666 OBT=1.0604048590746400E+014 SSC=4140 UTC= 2009/4/10 10:10:6.5470487
Number of lost packets= 66
################################################################################
APID=1666 OBT=1.0604048749347600E+014 SSC=4162 UTC= 2009/4/10 10:10:30.747642
APID=1666 OBT=1.0604048814227800E+014 SSC=4171 UTC= 2009/4/10 10:10:40.647608
Number of lost packets= 8
################################################################################
TOTAL Number of lost packets= 166
TOTAL Number of packets RECEIVED= 15448
Percentuage of lost Packets= 1.0631485
################################################################################
```

2.2 RETRIEVING DATA VIA DDS

We perform a quick GAPS analysis on the consolidated telemetry. Here is the results:

APID 0016, list is not reported here (too long) this was explained by MOC with a problem of copying VC-0 in to DDS system.

```
################################################################################
```

```
TOTAL Number of lost packets= 815
TOTAL Number of packets RECEIVED= 34455
################################################################################
```

APID 0018

```
APID=0018 OBT=1.0603432607413000E+014 SSC=4183 UTC= 2009/4/9 8:3:34.949521
APID=0018 OBT=1.0603432725377800E+014 SSC=4215 UTC= 2009/4/9 8:3:52.949544
Number of lost packets= 31
################################################################################
APID=0018 OBT=1.0603484046619400E+014 SSC=2913 UTC= 2009/4/9 10:14:23.949515
APID=0018 OBT=1.0603484184245000E+014 SSC=2953 UTC= 2009/4/9 10:14:44.949522
Number of lost packets= 39
################################################################################
TOTAL Number of lost packets= 70
TOTAL Number of packets RECEIVED= 166318
################################################################################
```

APID 1408

```
APID=1408 OBT=1.0603432497237200E+014 SSC=661 UTC= 2009/4/9 8:3:18.138025
APID=1408 OBT=1.0603432821737400E+014 SSC=663 UTC= 2009/4/9 8:4:7.6528242
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0603434129897300E+014 SSC=671 UTC= 2009/4/9 8:7:27.262202
APID=1408 OBT=1.0603434132160000E+014 SSC=673 UTC= 2009/4/9 8:7:27.607443
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0603620150352200E+014 SSC=1938 UTC= 2009/4/9 16:0:31.731015
APID=1408 OBT=1.0603620157941500E+014 SSC=1940 UTC= 2009/4/9 16:0:32.889046
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0603620183539200E+014 SSC=1947 UTC= 2009/4/9 16:0:36.794959
APID=1408 OBT=1.0603620192550300E+014 SSC=1949 UTC= 2009/4/9 16:0:38.169967
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0603620219471700E+014 SSC=1957 UTC= 2009/4/9 16:0:42.277810
APID=1408 OBT=1.0603620223465300E+014 SSC=1959 UTC= 2009/4/9 16:0:42.887221
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0603620256345500E+014 SSC=1967 UTC= 2009/4/9 16:0:47.904333
APID=1408 OBT=1.0603620261762800E+014 SSC=1969 UTC= 2009/4/9 16:0:48.730923
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0603620281847500E+014 SSC=1975 UTC= 2009/4/9 16:0:51.795602
APID=1408 OBT=1.0603620289001300E+014 SSC=1977 UTC= 2009/4/9 16:0:52.887207
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0603620314193200E+014 SSC=1984 UTC= 2009/4/9 16:0:56.731161
APID=1408 OBT=1.0603620321974100E+014 SSC=1986 UTC= 2009/4/9 16:0:57.918441
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0603620347393800E+014 SSC=1993 UTC= 2009/4/9 16:1:1.7971972
APID=1408 OBT=1.0603620354662600E+014 SSC=1995 UTC= 2009/4/9 16:1:2.9063040
Number of lost packets= 1
################################################################################
```

```
APID=1408 OBT=1.0603620385257300E+014 SSC=2003 UTC= 2009/4/9 16:1:7.5747156
APID=1408 OBT=1.0603620387305400E+014 SSC=2005 UTC= 2009/4/9 16:1:7.8872064
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0603620412598100E+014 SSC=2012 UTC= 2009/4/9 16:1:11.746570
APID=1408 OBT=1.0603620421516600E+014 SSC=2014 UTC= 2009/4/9 16:1:13.107415
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0603632419525500E+014 SSC=2149 UTC= 2009/4/9 16:31:43.858298
APID=1408 OBT=1.0603632425346800E+014 SSC=2151 UTC= 2009/4/9 16:31:44.746565
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0603632445022300E+014 SSC=2157 UTC= 2009/4/9 16:31:47.748802
APID=1408 OBT=1.0603632451868900E+014 SSC=2159 UTC= 2009/4/9 16:31:48.793496
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0603632485070500E+014 SSC=2167 UTC= 2009/4/9 16:31:53.859692
APID=1408 OBT=1.0603632491292500E+014 SSC=2169 UTC= 2009/4/9 16:31:54.809074
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0603632510868800E+014 SSC=2176 UTC= 2009/4/9 16:31:57.796183
APID=1408 OBT=1.0603632517404900E+014 SSC=2178 UTC= 2009/4/9 16:31:58.793522
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0603632550274900E+014 SSC=2186 UTC= 2009/4/9 16:32:3.8090649
APID=1408 OBT=1.0603632556828500E+014 SSC=2188 UTC= 2009/4/9 16:32:4.8090595
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0603632576079900E+014 SSC=2194 UTC= 2009/4/9 16:32:7.7466014
APID=1408 OBT=1.0603632583681700E+014 SSC=2196 UTC= 2009/4/9 16:32:8.9065629
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0603632608745200E+014 SSC=2203 UTC= 2009/4/9 16:32:12.730924
APID=1408 OBT=1.0603632615606500E+014 SSC=2205 UTC= 2009/4/9 16:32:13.777870
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0603632648501000E+014 SSC=2213 UTC= 2009/4/9 16:32:18.797195
APID=1408 OBT=1.0603632654620400E+014 SSC=2215 UTC= 2009/4/9 16:32:19.730926
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0603632674288500E+014 SSC=2222 UTC= 2009/4/9 16:32:22.732036
APID=1408 OBT=1.0603632681142400E+014 SSC=2224 UTC= 2009/4/9 16:32:23.777856
Number of lost packets= 1
################################################################################
TOTAL Number of lost packets= 20
TOTAL Number of packets RECEIVED= 3821
################################################################################
```

APID 1410

```
APID=1410 OBT=1.0603432600553200E+014 SSC=6574 UTC= 2009/4/9 8:3:33.902816
APID=1410 OBT=1.0603432736847700E+014 SSC=6582 UTC= 2009/4/9 8:3:54.699686
Number of lost packets= 7
################################################################################
APID=1410 OBT=1.0603484048258900E+014 SSC=10449 UTC= 2009/4/9 10:14:24.199685
APID=1410 OBT=1.0603484204828600E+014 SSC=10459 UTC= 2009/4/9 10:14:48.090362
```

```
Number of lost packets= 9
################################################################################
TOTAL Number of lost packets= 16
TOTAL Number of packets RECEIVED= 42614
################################################################################
```

APID 1536

```
APID=1536 OBT=1.0603432579849400E+014 SSC=1280 UTC= 2009/4/9 8:3:30.743670
APID=1536 OBT=1.0603432789569700E+014 SSC=1282 UTC= 2009/4/9 8:4:2.7444220
Number of lost packets= 1
################################################################################
APID=1536 OBT=1.0603434175467500E+014 SSC=1296 UTC= 2009/4/9 8:7:34.215655
APID=1536 OBT=1.0603434175470700E+014 SSC=1298 UTC= 2009/4/9 8:7:34.216138
Number of lost packets= 1
################################################################################
TOTAL Number of lost packets= 2
TOTAL Number of packets RECEIVED= 7467
################################################################################
```

APID 1538

```
APID=1538 OBT=1.0603432606059200E+014 SSC=9033 UTC= 2009/4/9 8:3:34.742965
APID=1538 OBT=1.0603432737134400E+014 SSC=9043 UTC= 2009/4/9 8:3:54.743460
Number of lost packets= 9
################################################################################
APID=1538 OBT=1.0603484043273600E+014 SSC=13081 UTC= 2009/4/9 10:14:23.438997
APID=1538 OBT=1.0603484197269000E+014 SSC=13092 UTC= 2009/4/9 10:14:46.936837
Number of lost packets= 10
################################################################################
TOTAL Number of lost packets= 19
TOTAL Number of packets RECEIVED= 45014
################################################################################
```

APID 1540

```
################################################################################
APID=1540 OBT=1.0603432409406400E+014 SSC=3628 UTC= 2009/4/9 8:3:4.7361267
APID=1540 OBT=1.0603432442267200E+014 SSC=3632 UTC= 2009/4/9 8:3:9.7503018
Number of lost packets= 3
################################################################################
APID=1540 OBT=1.0603432442267200E+014 SSC=3632 UTC= 2009/4/9 8:3:9.7503018
APID=1540 OBT=1.0603432589502400E+014 SSC=3636 UTC= 2009/4/9 8:3:32.216605
Number of lost packets= 3
################################################################################
APID=1540 OBT=1.0603432589502400E+014 SSC=3659 UTC= 2009/4/9 8:3:32.216605
APID=1540 OBT=1.0603432493675200E+014 SSC=3662 UTC= 2009/4/9 8:3:17.594516
Number of lost packets= 2
################################################################################
APID=1540 OBT=1.0603432493675200E+014 SSC=3662 UTC= 2009/4/9 8:3:17.594516
APID=1540 OBT=1.0603432520689600E+014 SSC=3666 UTC= 2009/4/9 8:3:21.716602
Number of lost packets= 3
################################################################################
APID=1540 OBT=1.0603432744920000E+014 SSC=3683 UTC= 2009/4/9 8:3:55.931423
APID=1540 OBT=1.0603432755070400E+014 SSC=3708 UTC= 2009/4/9 8:3:57.480278
Number of lost packets= 24
################################################################################
```

```
APID=1540 OBT=1.0603432805822400E+014 SSC=3715 UTC= 2009/4/9 8:4:5.2243924
APID=1540 OBT=1.0603432815972800E+014 SSC=3717 UTC= 2009/4/9 8:4:6.7732474
Number of lost packets= 1
################################################################################
APID=1540 OBT=1.0603432826123200E+014 SSC=3718 UTC= 2009/4/9 8:4:8.3220622
APID=1540 OBT=1.0603432759896000E+014 SSC=3720 UTC= 2009/4/9 8:3:58.216585
Number of lost packets= 1
################################################################################
APID=1540 OBT=1.0603432888190400E+014 SSC=3762 UTC= 2009/4/9 8:4:17.792781
APID=1540 OBT=1.0603432898340800E+014 SSC=3764 UTC= 2009/4/9 8:4:19.341596
Number of lost packets= 1
################################################################################
TOTAL Number of lost packets= 38
TOTAL Number of packets RECEIVED= 472895
################################################################################
```

APID 1664

```
APID=1664 OBT=1.0603432546635400E+014 SSC=1704 UTC= 2009/4/9 8:3:25.675623
APID=1664 OBT=1.0603432762907800E+014 SSC=1707 UTC= 2009/4/9 8:3:58.676168
Number of lost packets= 2
################################################################################
APID=1664 OBT=1.0603434254113200E+014 SSC=1728 UTC= 2009/4/9 8:7:46.216032
APID=1664 OBT=1.0603434276812800E+014 SSC=1730 UTC= 2009/4/9 8:7:49.679743
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0603587253292100E+014 SSC=3852 UTC= 2009/4/9 14:36:52.038025
APID=1664 OBT=1.0603587325383800E+014 SSC=3854 UTC= 2009/4/9 14:37:3.0383277
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0603587830018300E+014 SSC=3861 UTC= 2009/4/9 14:38:20.039439
APID=1664 OBT=1.0603587902108700E+014 SSC=3863 UTC= 2009/4/9 14:38:31.039580
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0603588767197300E+014 SSC=3875 UTC= 2009/4/9 14:40:43.041641
APID=1664 OBT=1.0603588839288300E+014 SSC=3877 UTC= 2009/4/9 14:40:54.041822
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0603589271832700E+014 SSC=3883 UTC= 2009/4/9 14:42:0.042872429
APID=1664 OBT=1.0603589343923400E+014 SSC=3885 UTC= 2009/4/9 14:42:11.043054
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0603590209011900E+014 SSC=3897 UTC= 2009/4/9 14:44:23.045074
APID=1664 OBT=1.0603590281103100E+014 SSC=3899 UTC= 2009/4/9 14:44:34.045296
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0603591218281900E+014 SSC=3912 UTC= 2009/4/9 14:46:57.047457
APID=1664 OBT=1.0603591290372700E+014 SSC=3914 UTC= 2009/4/9 14:47:8.0476391
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0603591650826500E+014 SSC=3919 UTC= 2009/4/9 14:48:3.0485076
APID=1664 OBT=1.0603591722917000E+014 SSC=3921 UTC= 2009/4/9 14:48:14.048649
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0603592227552000E+014 SSC=3928 UTC= 2009/4/9 14:49:31.049841
APID=1664 OBT=1.0603592299642600E+014 SSC=3930 UTC= 2009/4/9 14:49:42.049982
```

```
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0603592732187000E+014 SSC=3936 UTC= 2009/4/9 14:50:48.051032
APID=1664 OBT=1.0603592804277900E+014 SSC=3938 UTC= 2009/4/9 14:50:59.051214
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0603593236822100E+014 SSC=3944 UTC= 2009/4/9 14:52:5.0522241
APID=1664 OBT=1.0603593308912800E+014 SSC=3946 UTC= 2009/4/9 14:52:16.052406
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0603593885638700E+014 SSC=3954 UTC= 2009/4/9 14:53:44.053779
APID=1664 OBT=1.0603593957729600E+014 SSC=3956 UTC= 2009/4/9 14:53:55.054001
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0603594390274600E+014 SSC=3962 UTC= 2009/4/9 14:55:1.0551319
APID=1664 OBT=1.0603594462364600E+014 SSC=3964 UTC= 2009/4/9 14:55:12.055193
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0603594822818000E+014 SSC=3969 UTC= 2009/4/9 14:56:7.0560211
APID=1664 OBT=1.0603594894908900E+014 SSC=3971 UTC= 2009/4/9 14:56:18.056203
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0603595255362600E+014 SSC=3976 UTC= 2009/4/9 14:57:13.057071
APID=1664 OBT=1.0603595327453200E+014 SSC=3978 UTC= 2009/4/9 14:57:24.057213
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0603595687907000E+014 SSC=3983 UTC= 2009/4/9 14:58:19.058121
APID=1664 OBT=1.0603595759997500E+014 SSC=3985 UTC= 2009/4/9 14:58:30.058263
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0603993196238400E+014 SSC=9498 UTC= 2009/4/10 7:49:14.015909
APID=1664 OBT=1.0603993268330000E+014 SSC=9500 UTC= 2009/4/10 7:49:25.016212
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0603993772964100E+014 SSC=9507 UTC= 2009/4/10 7:50:42.017283
APID=1664 OBT=1.0603993845054600E+014 SSC=9509 UTC= 2009/4/10 7:50:53.017424
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0603994205508600E+014 SSC=9514 UTC= 2009/4/10 7:51:48.018333
APID=1664 OBT=1.0603994277599200E+014 SSC=9516 UTC= 2009/4/10 7:51:59.018474
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0603994782234200E+014 SSC=9523 UTC= 2009/4/10 7:53:16.019666
APID=1664 OBT=1.0603994854325800E+014 SSC=9525 UTC= 2009/4/10 7:53:27.019968
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0603995935686300E+014 SSC=9540 UTC= 2009/4/10 7:56:12.022493
APID=1664 OBT=1.0603996007776700E+014 SSC=9542 UTC= 2009/4/10 7:56:23.022594
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0603996656593700E+014 SSC=9551 UTC= 2009/4/10 7:58:2.0242301
APID=1664 OBT=1.0603996728684100E+014 SSC=9553 UTC= 2009/4/10 7:58:13.024331
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0603997161228800E+014 SSC=9559 UTC= 2009/4/10 7:59:19.025422
```

```
APID=1664 OBT=1.0603997233319300E+014 SSC=9561 UTC= 2009/4/10 7:59:30.025563
Number of lost packets= 1
################################################################################
TOTAL Number of lost packets= 25
TOTAL Number of packets RECEIVED= 7853
################################################################################
```

APID 1666

```
APID=1666 OBT=1.0603432604288900E+014 SSC=614 UTC= 2009/4/9 8:3:34.472839
APID=1666 OBT=1.0603432719633900E+014 SSC=630 UTC= 2009/4/9 8:3:52.073066
Number of lost packets= 15
################################################################################
APID=1666 OBT=1.0603484048212200E+014 SSC=7750 UTC= 2009/4/9 10:14:24.192563
APID=1666 OBT=1.0603484185184500E+014 SSC=7769 UTC= 2009/4/9 10:14:45.092872
Number of lost packets= 18
################################################################################
TOTAL Number of lost packets= 33
TOTAL Number of packets RECEIVED= 78511
################################################################################
```

3 OPERATIONAL DAY 042

3.1 REAL TIME IW@MOC

Gaps were identified during the DTCP of OD_42:

It seems that a gap of few minutes (starting at 8:20 to 8:25 UTC) affect all the telemetry.

APID 0016

```
APID=0016 OBT=1.0604567166799400E+014 SSC=7437 UTC= 2009/4/11 8:8:54.973092
APID=0016 OBT=1.0604567173198600E+014 SSC=7439 UTC= 2009/4/11 8:8:55.949551
Number of lost packets= 1
################################################################################
APID=0016 OBT=1.0604571891790600E+014 SSC=7745 UTC= 2009/4/11 8:20:55.949548
APID=0016 OBT=1.0604572966581000E+014 SSC=7805 UTC= 2009/4/11 8:23:39.949543
Number of lost packets= 59
################################################################################
TOTAL Number of lost packets= 60
TOTAL Number of packets RECEIVED= 6966
Percentuage of lost Packets= 0.85397096
################################################################################
```

APID 0018

```
APID=0018 OBT=1.0604571937665800E+014 SSC=11294 UTC= 2009/4/11 8:21:2.9495502
APID=0018 OBT=1.0604572986241800E+014 SSC=11603 UTC= 2009/4/11 8:23:42.949527
Number of lost packets= 308
################################################################################
APID=0018 OBT=1.0604600957006600E+014 SSC=3437 UTC= 2009/4/11 9:34:50.949552
APID=0018 OBT=1.0604601009435400E+014 SSC=3452 UTC= 2009/4/11 9:34:58.949549
Number of lost packets= 14
################################################################################
APID=0018 OBT=1.0604603696411400E+014 SSC=4243 UTC= 2009/4/11 9:41:48.949538
APID=0018 OBT=1.0604603722625800E+014 SSC=4250 UTC= 2009/4/11 9:41:52.949516
Number of lost packets= 6
################################################################################
APID=0018 OBT=1.0604607628571400E+014 SSC=5399 UTC= 2009/4/11 9:51:48.949542
APID=0018 OBT=1.0604607687553800E+014 SSC=5415 UTC= 2009/4/11 9:51:57.949533
Number of lost packets= 15
################################################################################
APID=0018 OBT=1.0604613343310600E+014 SSC=7078 UTC= 2009/4/11 10:6:20.949520
APID=0018 OBT=1.0604613382632200E+014 SSC=7088 UTC= 2009/4/11 10:6:26.949527
Number of lost packets= 9
################################################################################
APID=0018 OBT=1.0604618389582600E+014 SSC=8562 UTC= 2009/4/11 10:19:10.949527
APID=0018 OBT=1.0604618422350600E+014 SSC=8568 UTC= 2009/4/11 10:19:15.949540
Number of lost packets= 5
################################################################################
APID=0018 OBT=1.0604624458216200E+014 SSC=10344 UTC= 2009/4/11 10:34:36.949534
APID=0018 OBT=1.0604624484430600E+014 SSC=10351 UTC= 2009/4/11 10:34:40.949552
```

```
Number of lost packets= 6
################################################################################
APID=0018 OBT=1.0604631450907400E+014 SSC=12399 UTC= 2009/4/11 10:52:23.949540
APID=0018 OBT=1.0604631509889800E+014 SSC=12416 UTC= 2009/4/11 10:52:32.949531
Number of lost packets= 16
################################################################################
APID=0018 OBT=1.0604675045454600E+014 SSC=8825 UTC= 2009/4/11 12:43:15.949548
APID=0018 OBT=1.0604675058561800E+014 SSC=8828 UTC= 2009/4/11 12:43:17.949538
Number of lost packets= 2
################################################################################
TOTAL Number of lost packets= 381
TOTAL Number of packets RECEIVED= 33281
Percentuage of lost Packets= 1.1318401
################################################################################
```

APID 1408

```
APID=1408 OBT=1.0604571786934100E+014 SSC=8613 UTC= 2009/4/11 8:20:39.949715
APID=1408 OBT=1.0604573097452000E+014 SSC=8621 UTC= 2009/4/11 8:23:59.918858
Number of lost packets= 7
################################################################################
TOTAL Number of lost packets= 7
TOTAL Number of packets RECEIVED= 2211
Percentuage of lost Packets= 0.31559964
################################################################################
```

APID 1410

```
APID=1410 OBT=1.0604571942582000E+014 SSC=8680 UTC= 2009/4/11 8:21:3.6996970
APID=1410 OBT=1.0604572991575200E+014 SSC=8761 UTC= 2009/4/11 8:23:43.763363
Number of lost packets= 80
################################################################################
APID=1410 OBT=1.0604600965199800E+014 SSC=10865 UTC= 2009/4/11 9:34:52.199716
APID=1410 OBT=1.0604601018975600E+014 SSC=10872 UTC= 2009/4/11 9:35:0.40526390
Number of lost packets= 6
################################################################################
APID=1410 OBT=1.0604603688847100E+014 SSC=11073 UTC= 2009/4/11 9:41:47.795329
APID=1410 OBT=1.0604603742185400E+014 SSC=11076 UTC= 2009/4/11 9:41:55.934090
Number of lost packets= 2
################################################################################
APID=1410 OBT=1.0604607637686200E+014 SSC=11370 UTC= 2009/4/11 9:51:50.340361
APID=1410 OBT=1.0604607702300600E+014 SSC=11374 UTC= 2009/4/11 9:52:0.19973248
Number of lost packets= 3
################################################################################
APID=1410 OBT=1.0604613349357000E+014 SSC=11802 UTC= 2009/4/11 10:6:21.872146
APID=1410 OBT=1.0604613387141300E+014 SSC=11805 UTC= 2009/4/11 10:6:27.637554
Number of lost packets= 2
################################################################################
APID=1410 OBT=1.0604618399116600E+014 SSC=12181 UTC= 2009/4/11 10:19:12.404317
APID=1410 OBT=1.0604618433835100E+014 SSC=12183 UTC= 2009/4/11 10:19:17.701935
Number of lost packets= 1
################################################################################
APID=1410 OBT=1.0604624460379900E+014 SSC=12635 UTC= 2009/4/11 10:34:37.279687
APID=1410 OBT=1.0604624492623600E+014 SSC=12637 UTC= 2009/4/11 10:34:42.199676
```

```
Number of lost packets= 1
################################################################################
APID=1410 OBT=1.0604631456642900E+014 SSC=13162 UTC= 2009/4/11 10:52:24.824691
APID=1410 OBT=1.0604631512450900E+014 SSC=13169 UTC= 2009/4/11 10:52:33.340316
Number of lost packets= 6
################################################################################
APID=1410 OBT=1.0604675044239400E+014 SSC=60 UTC= 2009/4/11 12:43:15.764114
APID=1410 OBT=1.0604675080374100E+014 SSC=62 UTC= 2009/4/11 12:43:21.277824
Number of lost packets= 1
################################################################################
TOTAL Number of lost packets= 102
TOTAL Number of packets RECEIVED= 8523
Percentuage of lost Packets= 1.1826087
################################################################################
```

APID 1536:

```
APID=1536 OBT=1.0604571889600400E+014 SSC=4968 UTC= 2009/4/11 8:20:55.615331
APID=1536 OBT=1.0604573039769200E+014 SSC=4979 UTC= 2009/4/11 8:23:51.117176
Number of lost packets= 10
################################################################################
TOTAL Number of lost packets= 10
TOTAL Number of packets RECEIVED= 4089
Percentuage of lost Packets= 0.24396194
################################################################################
```

APID 1538

```
APID=1538 OBT=1.0604571942026600E+014 SSC=2501 UTC= 2009/4/11 8:21:3.6149257
APID=1538 OBT=1.0604572987333900E+014 SSC=2583 UTC= 2009/4/11 8:23:43.116173
Number of lost packets= 81
################################################################################
APID=1538 OBT=1.0604600962093400E+014 SSC=4959 UTC= 2009/4/11 9:34:51.725729
APID=1538 OBT=1.0604601014523500E+014 SSC=4964 UTC= 2009/4/11 9:34:59.725927
Number of lost packets= 4
################################################################################
APID=1538 OBT=1.0604603688460300E+014 SSC=5193 UTC= 2009/4/11 9:41:47.736307
APID=1538 OBT=1.0604603737595500E+014 SSC=5196 UTC= 2009/4/11 9:41:55.233712
Number of lost packets= 2
################################################################################
APID=1538 OBT=1.0604607620718900E+014 SSC=5530 UTC= 2009/4/11 9:51:47.751319
APID=1538 OBT=1.0604607696068400E+014 SSC=5537 UTC= 2009/4/11 9:51:59.248742
Number of lost packets= 6
################################################################################
APID=1538 OBT=1.0604613335600800E+014 SSC=6016 UTC= 2009/4/11 10:6:19.773103
APID=1538 OBT=1.0604613388031000E+014 SSC=6021 UTC= 2009/4/11 10:6:27.773341
Number of lost packets= 4
################################################################################
APID=1538 OBT=1.0604618395107100E+014 SSC=6451 UTC= 2009/4/11 10:19:11.792492
APID=1538 OBT=1.0604618444242400E+014 SSC=6454 UTC= 2009/4/11 10:19:19.289977
Number of lost packets= 2
################################################################################
APID=1538 OBT=1.0604624463321500E+014 SSC=6967 UTC= 2009/4/11 10:34:37.728528
```

```
APID=1538 OBT=1.0604624499920900E+014 SSC=6970 UTC= 2009/4/11 10:34:43.313169
Number of lost packets= 2
################################################################################
APID=1538 OBT=1.0604631450207700E+014 SSC=7567 UTC= 2009/4/11 10:52:23.842761
APID=1538 OBT=1.0604631514996800E+014 SSC=7572 UTC= 2009/4/11 10:52:33.728807
Number of lost packets= 4
################################################################################
TOTAL Number of lost packets= 105
TOTAL Number of packets RECEIVED= 9556
Percentuage of lost Packets= 1.0868440
################################################################################
```

APID 1540

```
TOTAL Number of lost packets= 0
TOTAL Number of packets RECEIVED= 87120
Percentuage of lost Packets= 0.00000000
################################################################################
```

APID 1664

```
APID=1664 OBT=1.0604571868539800E+014 SSC=1190 UTC= 2009/4/11 8:20:52.401750
APID=1664 OBT=1.0604573021991300E+014 SSC=1206 UTC= 2009/4/11 8:23:48.404456
Number of lost packets= 15
################################################################################
TOTAL Number of lost packets= 15
TOTAL Number of packets RECEIVED= 1574
Percentuage of lost Packets= 0.94398993
################################################################################
```

APID 1666

```
APID=1666 OBT=1.0604571933401800E+014 SSC=11199 UTC= 2009/4/11 8:21:2.2988999
APID=1666 OBT=1.0604572985926200E+014 SSC=11345 UTC= 2009/4/11 8:23:42.901368
Number of lost packets= 145
################################################################################
APID=1666 OBT=1.0604600957122900E+014 SSC=15225 UTC= 2009/4/11 9:34:50.967295
APID=1666 OBT=1.0604601014796600E+014 SSC=15233 UTC= 2009/4/11 9:34:59.767569
Number of lost packets= 7
################################################################################
APID=1666 OBT=1.0604603696570200E+014 SSC=15605 UTC= 2009/4/11 9:41:48.973758
APID=1666 OBT=1.0604603725406400E+014 SSC=15609 UTC= 2009/4/11 9:41:53.373815
Number of lost packets= 3
################################################################################
APID=1666 OBT=1.0604607632723500E+014 SSC=16151 UTC= 2009/4/11 9:51:49.583093
APID=1666 OBT=1.0604607690395900E+014 SSC=16159 UTC= 2009/4/11 9:51:58.383206
Number of lost packets= 7
################################################################################
APID=1666 OBT=1.0604613349517700E+014 SSC=560 UTC= 2009/4/11 10:6:21.896648
APID=1666 OBT=1.0604613385563000E+014 SSC=565 UTC= 2009/4/11 10:6:27.396719
Number of lost packets= 4
################################################################################
APID=1666 OBT=1.0604618395868000E+014 SSC=1260 UTC= 2009/4/11 10:19:11.908605
```

```
APID=1666 OBT=1.0604618417495100E+014 SSC=1263 UTC= 2009/4/11 10:19:15.208647
Number of lost packets= 2
################################################################################
APID=1666 OBT=1.0604624458698000E+014 SSC=2101 UTC= 2009/4/11 10:34:37.023040
APID=1666 OBT=1.0604624487533400E+014 SSC=2105 UTC= 2009/4/11 10:34:41.422976
Number of lost packets= 3
################################################################################
APID=1666 OBT=1.0604631451497300E+014 SSC=3071 UTC= 2009/4/11 10:52:24.039541
APID=1666 OBT=1.0604631509170000E+014 SSC=3079 UTC= 2009/4/11 10:52:32.839695
Number of lost packets= 7
################################################################################
APID=1666 OBT=1.0604675051961000E+014 SSC=9119 UTC= 2009/4/11 12:43:16.942341
APID=1666 OBT=1.0604675066379400E+014 SSC=9121 UTC= 2009/4/11 12:43:19.142410
Number of lost packets= 1
################################################################################
TOTAL Number of lost packets= 179
TOTAL Number of packets RECEIVED= 15713
Percentuage of lost Packets= 1.1263529
################################################################################
```

3.2 RETRIEVING DATA VIA DDS

We perform a quick GAPS analysis on the consolidated telemetry. Here is the result..

APID 0016, list is not reported here (too long), APID 0016, list is not reported here (too long) this was explained by MOC with a problem of copying VC-0 in to DDS system.

```
################################################################################
TOTAL Number of lost packets= 437
TOTAL Number of packets RECEIVED= 35527
################################################################################
```

APID 0018

```
APID=0018 OBT=1.0604183191221000E+014 SSC=11749 UTC= 2009/4/10 15:52:24.949548
APID=0018 OBT=1.0604183302632200E+014 SSC=11780 UTC= 2009/4/10 15:52:41.949536
Number of lost packets= 30
################################################################################
APID=0018 OBT=1.0604311045403400E+014 SSC=168 UTC= 2009/4/10 21:17:33.949544
APID=0018 OBT=1.0604311255118600E+014 SSC=229 UTC= 2009/4/10 21:18:5.9495312
Number of lost packets= 60
################################################################################
TOTAL Number of lost packets= 90
TOTAL Number of packets RECEIVED= 173229
################################################################################
```

APID 1408

```
APID=1408 OBT=1.0604003848486800E+014 SSC=4537 UTC= 2009/4/10 8:16:19.420008
APID=1408 OBT=1.0604003861071700E+014 SSC=4539 UTC= 2009/4/10 8:16:21.340335
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0604021204457900E+014 SSC=4693 UTC= 2009/4/10 9:0:27.731051
```

```
APID=1408 OBT=1.0604021212035000E+014 SSC=4695 UTC= 2009/4/10 9:0:28.887230
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0604021239785300E+014 SSC=4703 UTC= 2009/4/10 9:0:33.121566
APID=1408 OBT=1.0604021244919900E+014 SSC=4705 UTC= 2009/4/10 9:0:33.905067
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0604021269993800E+014 SSC=4712 UTC= 2009/4/10 9:0:37.731037
APID=1408 OBT=1.0604021277570900E+014 SSC=4714 UTC= 2009/4/10 9:0:38.887216
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0604021310465700E+014 SSC=4722 UTC= 2009/4/10 9:0:43.906541
APID=1408 OBT=1.0604021315868400E+014 SSC=4724 UTC= 2009/4/10 9:0:44.730918
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0604021335529900E+014 SSC=4730 UTC= 2009/4/10 9:0:47.731063
APID=1408 OBT=1.0604021343106900E+014 SSC=4732 UTC= 2009/4/10 9:0:48.887202
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0604021368399700E+014 SSC=4739 UTC= 2009/4/10 9:0:52.746566
APID=1408 OBT=1.0604021377728000E+014 SSC=4741 UTC= 2009/4/10 9:0:54.169974
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0604021401167800E+014 SSC=4749 UTC= 2009/4/10 9:0:57.746579
APID=1408 OBT=1.0604021408642900E+014 SSC=4751 UTC= 2009/4/10 9:0:58.887188
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0604021433935700E+014 SSC=4758 UTC= 2009/4/10 9:1:2.7465919
APID=1408 OBT=1.0604021442639700E+014 SSC=4760 UTC= 2009/4/10 9:1:4.0746877
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0604021469478400E+014 SSC=4767 UTC= 2009/4/10 9:1:8.1699783
APID=1408 OBT=1.0604021474178900E+014 SSC=4769 UTC= 2009/4/10 9:1:8.8872144
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0604021499369800E+014 SSC=4776 UTC= 2009/4/10 9:1:12.731048
APID=1408 OBT=1.0604021506949800E+014 SSC=4778 UTC= 2009/4/10 9:1:13.887630
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0604183067932400E+014 SSC=5793 UTC= 2009/4/10 15:52:6.1371776
APID=1408 OBT=1.0604183396022200E+014 SSC=5795 UTC= 2009/4/10 15:52:56.199710
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0604311004444500E+014 SSC=7018 UTC= 2009/4/10 21:17:27.699688
APID=1408 OBT=1.0604311330486000E+014 SSC=7020 UTC= 2009/4/10 21:18:17.449690
Number of lost packets= 1
################################################################################
TOTAL Number of lost packets= 13
TOTAL Number of packets RECEIVED= 4199
################################################################################
```

APID 1410

```
APID=1410 OBT=1.0604183192860500E+014 SSC=13932 UTC= 2009/4/10 15:52:25.199718
APID=1410 OBT=1.0604183305612500E+014 SSC=13943 UTC= 2009/4/10 15:52:42.404291
```

```
Number of lost packets= 10
################################################################################
APID=1410 OBT=1.0604311052880000E+014 SSC=5423 UTC= 2009/4/10 21:17:35.090354
APID=1410 OBT=1.0604311273142100E+014 SSC=5441 UTC= 2009/4/10 21:18:8.6997074
Number of lost packets= 17
################################################################################
TOTAL Number of lost packets= 27
TOTAL Number of packets RECEIVED= 42630
################################################################################
```

APID 1536

```
APID=1536 OBT=1.0604003919237100E+014 SSC=8798 UTC= 2009/4/10 8:16:30.215644
APID=1536 OBT=1.0604003919240300E+014 SSC=8800 UTC= 2009/4/10 8:16:30.216167
Number of lost packets= 1
################################################################################
APID=1536 OBT=1.0604183274904300E+014 SSC=15490 UTC= 2009/4/10 15:52:37.718579
APID=1536 OBT=1.0604183281438900E+014 SSC=15492 UTC= 2009/4/10 15:52:38.715677
Number of lost packets= 1
################################################################################
APID=1536 OBT=1.0604310997389200E+014 SSC=2467 UTC= 2009/4/10 21:17:26.623130
APID=1536 OBT=1.0604311308687600E+014 SSC=2470 UTC= 2009/4/10 21:18:14.123496
Number of lost packets= 2
################################################################################
TOTAL Number of lost packets= 4
TOTAL Number of packets RECEIVED= 12746
################################################################################
```

APID 1538

```
APID=1538 OBT=1.0604183198945900E+014 SSC=4196 UTC= 2009/4/10 15:52:26.128258
APID=1538 OBT=1.0604183326726300E+014 SSC=4206 UTC= 2009/4/10 15:52:45.626000
Number of lost packets= 9
################################################################################
APID=1538 OBT=1.0604311049815900E+014 SSC=14741 UTC= 2009/4/10 21:17:34.622845
APID=1538 OBT=1.0604311282454300E+014 SSC=14759 UTC= 2009/4/10 21:18:10.120621
Number of lost packets= 17
################################################################################
TOTAL Number of lost packets= 26
TOTAL Number of packets RECEIVED= 48027
################################################################################
```

APID 1540

```
APID=1540 OBT=1.0604015444593400E+014 SSC=4785 UTC= 2009/4/10 8:45:48.845454
APID=1540 OBT=1.0604015494369400E+014 SSC=4832 UTC= 2009/4/10 8:45:56.440665
Number of lost packets= 46
################################################################################
TOTAL Number of lost packets= 46
TOTAL Number of packets RECEIVED= 521310
################################################################################
```

APID 1664

```
APID=1664 OBT=1.0603993196238400E+014 SSC=9498 UTC= 2009/4/10 7:49:14.015909
APID=1664 OBT=1.0603993268330000E+014 SSC=9500 UTC= 2009/4/10 7:49:25.016212
Number of lost packets= 1
```

```
################################################################################
APID=1664 OBT=1.0603993772964100E+014 SSC=9507 UTC= 2009/4/10 7:50:42.017283
APID=1664 OBT=1.0603993845054600E+014 SSC=9509 UTC= 2009/4/10 7:50:53.017424
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0603994205508600E+014 SSC=9514 UTC= 2009/4/10 7:51:48.018333
APID=1664 OBT=1.0603994277599200E+014 SSC=9516 UTC= 2009/4/10 7:51:59.018474
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0603994782234200E+014 SSC=9523 UTC= 2009/4/10 7:53:16.019666
APID=1664 OBT=1.0603994854325800E+014 SSC=9525 UTC= 2009/4/10 7:53:27.019968
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0603995935686300E+014 SSC=9540 UTC= 2009/4/10 7:56:12.022493
APID=1664 OBT=1.0603996007776700E+014 SSC=9542 UTC= 2009/4/10 7:56:23.022594
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0603996656593700E+014 SSC=9551 UTC= 2009/4/10 7:58:2.0242301
APID=1664 OBT=1.0603996728684100E+014 SSC=9553 UTC= 2009/4/10 7:58:13.024331
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0603997161228800E+014 SSC=9559 UTC= 2009/4/10 7:59:19.025422
APID=1664 OBT=1.0603997233319300E+014 SSC=9561 UTC= 2009/4/10 7:59:30.025563
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0603997665863700E+014 SSC=9567 UTC= 2009/4/10 8:0:36.026613
APID=1664 OBT=1.0603997737954400E+014 SSC=9569 UTC= 2009/4/10 8:0:47.026755
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0603998098408300E+014 SSC=9574 UTC= 2009/4/10 8:1:42.027664
APID=1664 OBT=1.0603998170499300E+014 SSC=9576 UTC= 2009/4/10 8:1:53.027886
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0603998603043800E+014 SSC=9582 UTC= 2009/4/10 8:2:59.028936
APID=1664 OBT=1.0603998675134200E+014 SSC=9584 UTC= 2009/4/10 8:3:10.029077
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0603999107678500E+014 SSC=9590 UTC= 2009/4/10 8:4:16.030087
APID=1664 OBT=1.0603999179769300E+014 SSC=9592 UTC= 2009/4/10 8:4:27.030269
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0603999540223200E+014 SSC=9597 UTC= 2009/4/10 8:5:22.031178
APID=1664 OBT=1.0603999612314900E+014 SSC=9599 UTC= 2009/4/10 8:5:33.031480
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604000044858000E+014 SSC=9605 UTC= 2009/4/10 8:6:39.032329
APID=1664 OBT=1.0604000116948500E+014 SSC=9607 UTC= 2009/4/10 8:6:50.032471
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604000477402600E+014 SSC=9612 UTC= 2009/4/10 8:7:45.033379
APID=1664 OBT=1.0604000549493200E+014 SSC=9614 UTC= 2009/4/10 8:7:56.033561
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604000982037300E+014 SSC=9620 UTC= 2009/4/10 8:9:2.0345306
APID=1664 OBT=1.0604001054128200E+014 SSC=9622 UTC= 2009/4/10 8:9:13.034753
```

```
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604004017544100E+014 SSC=9664 UTC= 2009/4/10 8:16:45.216126
APID=1664 OBT=1.0604004081939300E+014 SSC=9666 UTC= 2009/4/10 8:16:55.042064
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604118417868900E+014 SSC=11252 UTC= 2009/4/10 13:7:41.320357
APID=1664 OBT=1.0604118489959100E+014 SSC=11254 UTC= 2009/4/10 13:7:52.320458
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604118922503600E+014 SSC=11260 UTC= 2009/4/10 13:8:58.321508
APID=1664 OBT=1.0604118994594200E+014 SSC=11262 UTC= 2009/4/10 13:9:9.3216500
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604119355047900E+014 SSC=11267 UTC= 2009/4/10 13:10:4.3225184
APID=1664 OBT=1.0604119427139700E+014 SSC=11269 UTC= 2009/4/10 13:10:15.322861
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604119787593600E+014 SSC=11274 UTC= 2009/4/10 13:11:10.323770
APID=1664 OBT=1.0604119859684000E+014 SSC=11276 UTC= 2009/4/10 13:11:21.323911
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604120220137400E+014 SSC=11281 UTC= 2009/4/10 13:12:16.324699
APID=1664 OBT=1.0604120292228300E+014 SSC=11283 UTC= 2009/4/10 13:12:27.324921
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604120724772800E+014 SSC=11289 UTC= 2009/4/10 13:13:33.325971
APID=1664 OBT=1.0604120796863400E+014 SSC=11291 UTC= 2009/4/10 13:13:44.326113
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604121157317100E+014 SSC=11296 UTC= 2009/4/10 13:14:39.326981
APID=1664 OBT=1.0604121229408000E+014 SSC=11298 UTC= 2009/4/10 13:14:50.327203
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604121589861700E+014 SSC=11303 UTC= 2009/4/10 13:15:45.328072
APID=1664 OBT=1.0604121661952600E+014 SSC=11305 UTC= 2009/4/10 13:15:56.328253
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604122022405800E+014 SSC=11310 UTC= 2009/4/10 13:16:51.329041
APID=1664 OBT=1.0604122094496700E+014 SSC=11312 UTC= 2009/4/10 13:17:2.3292634
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604122454950300E+014 SSC=11317 UTC= 2009/4/10 13:17:57.330092
APID=1664 OBT=1.0604122527041300E+014 SSC=11319 UTC= 2009/4/10 13:18:8.3303136
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604122887495200E+014 SSC=11324 UTC= 2009/4/10 13:19:3.3312222
APID=1664 OBT=1.0604122959585500E+014 SSC=11326 UTC= 2009/4/10 13:19:14.331324
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604123320039400E+014 SSC=11331 UTC= 2009/4/10 13:20:9.3322322
APID=1664 OBT=1.0604123392130900E+014 SSC=11333 UTC= 2009/4/10 13:20:20.332494
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604123752584200E+014 SSC=11338 UTC= 2009/4/10 13:21:15.333323
```

```
APID=1664 OBT=1.0604123824674700E+014 SSC=11340 UTC= 2009/4/10 13:21:26.333464
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604124185128500E+014 SSC=11345 UTC= 2009/4/10 13:22:21.334333
APID=1664 OBT=1.0604124257219400E+014 SSC=11347 UTC= 2009/4/10 13:22:32.334554
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604124617672900E+014 SSC=11352 UTC= 2009/4/10 13:23:27.335383
APID=1664 OBT=1.0604124689764600E+014 SSC=11354 UTC= 2009/4/10 13:23:38.335685
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604183155362900E+014 SSC=12165 UTC= 2009/4/10 15:52:19.478002
APID=1664 OBT=1.0604183371636000E+014 SSC=12168 UTC= 2009/4/10 15:52:52.478668
Number of lost packets= 2
################################################################################
APID=1664 OBT=1.0604311044339400E+014 SSC=13939 UTC= 2009/4/10 21:17:33.787163
APID=1664 OBT=1.0604311260611600E+014 SSC=13942 UTC= 2009/4/10 21:18:6.7877081
Number of lost packets= 2
################################################################################
APID=1664 OBT=1.0604552187774900E+014 SSC=900 UTC= 2009/4/11 7:30:49.355355
APID=1664 OBT=1.0604552259865400E+014 SSC=902 UTC= 2009/4/11 7:31:0.35549641
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604552620319400E+014 SSC=907 UTC= 2009/4/11 7:31:55.356405
APID=1664 OBT=1.0604552692409800E+014 SSC=909 UTC= 2009/4/11 7:32:6.3565063
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604553052863500E+014 SSC=914 UTC= 2009/4/11 7:33:1.3573748
APID=1664 OBT=1.0604553124954200E+014 SSC=916 UTC= 2009/4/11 7:33:12.357557
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604553485407600E+014 SSC=921 UTC= 2009/4/11 7:34:7.3583847
APID=1664 OBT=1.0604553557498600E+014 SSC=923 UTC= 2009/4/11 7:34:18.358607
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604553917951800E+014 SSC=928 UTC= 2009/4/11 7:35:13.359395
APID=1664 OBT=1.0604553990042400E+014 SSC=930 UTC= 2009/4/11 7:35:24.359536
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604554350496000E+014 SSC=935 UTC= 2009/4/11 7:36:19.360405
APID=1664 OBT=1.0604554422586600E+014 SSC=937 UTC= 2009/4/11 7:36:30.360546
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604554783040200E+014 SSC=942 UTC= 2009/4/11 7:37:25.361415
APID=1664 OBT=1.0604554855131100E+014 SSC=944 UTC= 2009/4/11 7:37:36.361596
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604555143494000E+014 SSC=948 UTC= 2009/4/11 7:38:20.362283
APID=1664 OBT=1.0604555215584300E+014 SSC=950 UTC= 2009/4/11 7:38:31.362384
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604555576038200E+014 SSC=955 UTC= 2009/4/11 7:39:26.363293
APID=1664 OBT=1.0604555648128600E+014 SSC=957 UTC= 2009/4/11 7:39:37.363394
Number of lost packets= 1
################################################################################
```

```
APID=1664 OBT=1.0604556008582100E+014 SSC=962 UTC= 2009/4/11 7:40:32.364263
APID=1664 OBT=1.0604556080672900E+014 SSC=964 UTC= 2009/4/11 7:40:43.364444
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604556441126500E+014 SSC=969 UTC= 2009/4/11 7:41:38.365273
APID=1664 OBT=1.0604556513218000E+014 SSC=971 UTC= 2009/4/11 7:41:49.365575
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604556873670600E+014 SSC=976 UTC= 2009/4/11 7:42:44.366283
APID=1664 OBT=1.0604556945761500E+014 SSC=978 UTC= 2009/4/11 7:42:55.366464
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604557306215100E+014 SSC=983 UTC= 2009/4/11 7:43:50.367333
APID=1664 OBT=1.0604557378305500E+014 SSC=985 UTC= 2009/4/11 7:44:1.3674742
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604557738759300E+014 SSC=990 UTC= 2009/4/11 7:44:56.368343
APID=1664 OBT=1.0604557810850100E+014 SSC=992 UTC= 2009/4/11 7:45:7.3685244
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604558099212700E+014 SSC=996 UTC= 2009/4/11 7:45:51.369171
APID=1664 OBT=1.0604558171303400E+014 SSC=998 UTC= 2009/4/11 7:46:2.3693526
Number of lost packets= 1
################################################################################
TOTAL Number of lost packets= 50
TOTAL Number of packets RECEIVED= 8179
################################################################################
```

APID 1666

```
APID=1666 OBT=1.0604183191389100E+014 SSC=6427 UTC= 2009/4/10 15:52:24.975176
APID=1666 OBT=1.0604183306736500E+014 SSC=6443 UTC= 2009/4/10 15:52:42.575805
Number of lost packets= 15
################################################################################
APID=1666 OBT=1.0604311051529100E+014 SSC=7779 UTC= 2009/4/10 21:17:34.884240
APID=1666 OBT=1.0604311260592300E+014 SSC=7808 UTC= 2009/4/10 21:18:6.7847711
Number of lost packets= 28
################################################################################
TOTAL Number of lost packets= 43
TOTAL Number of packets RECEIVED= 81774
################################################################################
```

4 OPERATIONAL DAY 043

4.1 REAL TIME IW@MOC

Gaps were identified during the DTCP of OD_43.

It seems that a large gap happen between 8:18 and 8:23 UTC

Here is the usual list:

APID 0016

```
APID=0016 OBT=1.0605137388827400E+014 SSC=9939 UTC= 2009/4/12 8:19:3.9495519
APID=0016 OBT=1.0605138594689800E+014 SSC=10040 UTC= 2009/4/12 8:22:7.9495195
Number of lost packets= 100
################################################################################
TOTAL Number of lost packets= 100
TOTAL Number of packets RECEIVED= 6624
Percentuage of lost Packets= 1.4872100
################################################################################
```

APID 0018

```
APID=0018 OBT=1.0605131628213000E+014 SSC=11919 UTC= 2009/4/12 8:4:24.949532
APID=0018 OBT=1.0605131641320200E+014 SSC=11922 UTC= 2009/4/12 8:4:26.949521
Number of lost packets= 2
################################################################################
APID=0018 OBT=1.0605136740021000E+014 SSC=13423 UTC= 2009/4/12 8:17:24.949526
APID=0018 OBT=1.0605136753128200E+014 SSC=13427 UTC= 2009/4/12 8:17:26.949515
Number of lost packets= 3
################################################################################
APID=0018 OBT=1.0605137421595400E+014 SSC=13622 UTC= 2009/4/12 8:19:8.9495248
APID=0018 OBT=1.0605138607797000E+014 SSC=13970 UTC= 2009/4/12 8:22:9.9495488
Number of lost packets= 347
################################################################################
APID=0018 OBT=1.0605160863822600E+014 SSC=4128 UTC= 2009/4/12 9:18:45.949515
APID=0018 OBT=1.0605160890037000E+014 SSC=4133 UTC= 2009/4/12 9:18:49.949534
Number of lost packets= 4
################################################################################
APID=0018 OBT=1.0605180976821000E+014 SSC=10036 UTC= 2009/4/12 10:9:54.949526
APID=0018 OBT=1.0605181062017800E+014 SSC=10062 UTC= 2009/4/12 10:10:7.9495355
Number of lost packets= 25
################################################################################
APID=0018 OBT=1.0605181107893000E+014 SSC=10076 UTC= 2009/4/12 10:10:14.949538
APID=0018 OBT=1.0605181127553800E+014 SSC=10080 UTC= 2009/4/12 10:10:17.949522
Number of lost packets= 3
################################################################################
APID=0018 OBT=1.0605192792961800E+014 SSC=13510 UTC= 2009/4/12 10:39:57.949523
APID=0018 OBT=1.0605192819176200E+014 SSC=13516 UTC= 2009/4/12 10:40:1.9495413
Number of lost packets= 5
################################################################################
```

```
APID=0018 OBT=1.0605200336155400E+014 SSC=15725 UTC= 2009/4/12 10:59:8.9495158
APID=0018 OBT=1.0605200355816200E+014 SSC=15732 UTC= 2009/4/12 10:59:11.949540
Number of lost packets= 6
################################################################################
APID=0018 OBT=1.0605203776795400E+014 SSC=352 UTC= 2009/4/12 11:7:53.949525
APID=0018 OBT=1.0605203796456200E+014 SSC=357 UTC= 2009/4/12 11:7:56.949549
Number of lost packets= 4
################################################################################
APID=0018 OBT=1.0605204772942600E+014 SSC=646 UTC= 2009/4/12 11:10:25.949545
APID=0018 OBT=1.0605204799157000E+014 SSC=653 UTC= 2009/4/12 11:10:29.949524
Number of lost packets= 6
################################################################################
APID=0018 OBT=1.0605232402920200E+014 SSC=8765 UTC= 2009/4/12 12:20:41.949530
APID=0018 OBT=1.0605232416027400E+014 SSC=8767 UTC= 2009/4/12 12:20:43.949519
Number of lost packets= 1
################################################################################
TOTAL Number of lost packets= 406
TOTAL Number of packets RECEIVED= 32154
Percentuage of lost Packets= 1.2469287
################################################################################
```

APID 1408

```
APID=1408 OBT=1.0605137259394900E+014 SSC=13624 UTC= 2009/4/12 8:18:44.199709
APID=1408 OBT=1.0605138734466900E+014 SSC=13633 UTC= 2009/4/12 8:22:29.277829
Number of lost packets= 8
################################################################################
TOTAL Number of lost packets= 8
TOTAL Number of packets RECEIVED= 680
Percentuage of lost Packets= 1.1627907
################################################################################
```

APID 1410

```
APID=1410 OBT=1.0605137416273200E+014 SSC=2105 UTC= 2009/4/12 8:19:8.1374189
APID=1410 OBT=1.0605138616911700E+014 SSC=2195 UTC= 2009/4/12 8:22:11.340328
Number of lost packets= 89
################################################################################
APID=1410 OBT=1.0605160869558000E+014 SSC=3873 UTC= 2009/4/12 9:18:46.824667
APID=1410 OBT=1.0605160903043000E+014 SSC=3875 UTC= 2009/4/12 9:18:51.934074
Number of lost packets= 1
################################################################################
APID=1410 OBT=1.0605180985526100E+014 SSC=5388 UTC= 2009/4/12 10:9:56.277823
APID=1410 OBT=1.0605181068171300E+014 SSC=5393 UTC= 2009/4/12 10:10:8.8884965
Number of lost packets= 4
################################################################################
APID=1410 OBT=1.0605192796658700E+014 SSC=6277 UTC= 2009/4/12 10:39:58.513632
APID=1410 OBT=1.0605192828802800E+014 SSC=6279 UTC= 2009/4/12 10:40:3.4184530
Number of lost packets= 1
################################################################################
APID=1410 OBT=1.0605200331241200E+014 SSC=6842 UTC= 2009/4/12 10:59:8.1996909
APID=1410 OBT=1.0605200364009300E+014 SSC=6844 UTC= 2009/4/12 10:59:13.199704
Number of lost packets= 1
################################################################################
```

```
APID=1410 OBT=1.0605203772393400E+014 SSC=7101 UTC= 2009/4/12 11:7:53.277833
APID=1410 OBT=1.0605203807926100E+014 SSC=7103 UTC= 2009/4/12 11:7:58.699690
Number of lost packets= 1
################################################################################
APID=1410 OBT=1.0605204770486000E+014 SSC=7176 UTC= 2009/4/12 11:10:25.574693
APID=1410 OBT=1.0605204821798400E+014 SSC=7179 UTC= 2009/4/12 11:10:33.404343
Number of lost packets= 2
################################################################################
APID=1410 OBT=1.0605235093071700E+014 SSC=9461 UTC= 2009/4/12 12:27:32.434087
APID=1410 OBT=1.0605235124303600E+014 SSC=9463 UTC= 2009/4/12 12:27:37.199702
Number of lost packets= 1
################################################################################
TOTAL Number of lost packets= 100
TOTAL Number of packets RECEIVED= 8242
Percentuage of lost Packets= 1.1987533
################################################################################
```

APID 1536

```
APID=1536 OBT=1.0605137397702000E+014 SSC=3696 UTC= 2009/4/12 8:19:5.3036785
APID=1536 OBT=1.0605138656025500E+014 SSC=3708 UTC= 2009/4/12 8:22:17.308632
Number of lost packets= 11
################################################################################
TOTAL Number of lost packets= 11
TOTAL Number of packets RECEIVED= 2005
Percentuage of lost Packets= 0.54563492
################################################################################
```

APID 1538

```
APID=1538 OBT=1.0605137427206800E+014 SSC=15988 UTC= 2009/4/12 8:19:9.8057663
APID=1538 OBT=1.0605138629805200E+014 SSC=16081 UTC= 2009/4/12 8:22:13.307728
Number of lost packets= 92
################################################################################
APID=1538 OBT=1.0605160863476500E+014 SSC=1483 UTC= 2009/4/12 9:18:45.896730
APID=1538 OBT=1.0605160896328900E+014 SSC=1486 UTC= 2009/4/12 9:18:50.909617
Number of lost packets= 2
################################################################################
APID=1538 OBT=1.0605180970432300E+014 SSC=3087 UTC= 2009/4/12 10:9:53.974677
APID=1538 OBT=1.0605181071997600E+014 SSC=3095 UTC= 2009/4/12 10:10:9.4723195
Number of lost packets= 7
################################################################################
APID=1538 OBT=1.0605181101507600E+014 SSC=3098 UTC= 2009/4/12 10:10:13.975212
APID=1538 OBT=1.0605181150642800E+014 SSC=3101 UTC= 2009/4/12 10:10:21.472616
Number of lost packets= 2
################################################################################
APID=1538 OBT=1.0605192793426900E+014 SSC=4018 UTC= 2009/4/12 10:39:58.020494
APID=1538 OBT=1.0605192842562200E+014 SSC=4021 UTC= 2009/4/12 10:40:5.5179387
Number of lost packets= 2
################################################################################
APID=1538 OBT=1.0605200340071300E+014 SSC=4611 UTC= 2009/4/12 10:59:9.5470583
APID=1538 OBT=1.0605200366286400E+014 SSC=4613 UTC= 2009/4/12 10:59:13.547157
Number of lost packets= 1
################################################################################
```

```
APID=1538 OBT=1.0605201162670700E+014 SSC=4680 UTC= 2009/4/12 11:1:15.065750
APID=1538 OBT=1.0605201182248500E+014 SSC=4682 UTC= 2009/4/12 11:1:18.053100
Number of lost packets= 1
################################################################################
APID=1538 OBT=1.0605203777541400E+014 SSC=4900 UTC= 2009/4/12 11:7:54.063344
APID=1538 OBT=1.0605203803756500E+014 SSC=4902 UTC= 2009/4/12 11:7:58.063484
Number of lost packets= 1
################################################################################
APID=1538 OBT=1.0605204773713100E+014 SSC=4980 UTC= 2009/4/12 11:10:26.067106
APID=1538 OBT=1.0605204822848300E+014 SSC=4983 UTC= 2009/4/12 11:10:33.564551
Number of lost packets= 2
################################################################################
TOTAL Number of lost packets= 110
TOTAL Number of packets RECEIVED= 8804
Percentuage of lost Packets= 1.2340139
################################################################################
```

APID 1540

```
APID=1540 OBT=1.0605201108913400E+014 SSC=4294 UTC= 2009/4/12 11:1:6.8630585
APID=1540 OBT=1.0605201108913400E+014 SSC=4302 UTC= 2009/4/12 11:1:6.8630585
Number of lost packets= 7
################################################################################
APID=1540 OBT=1.0605232318465400E+014 SSC=15512 UTC= 2009/4/12 12:20:29.062736
APID=1540 OBT=1.0605232368241400E+014 SSC=15523 UTC= 2009/4/12 12:20:36.657988
Number of lost packets= 10
################################################################################
APID=1540 OBT=1.0605235056145400E+014 SSC=1511 UTC= 2009/4/12 12:27:26.799557
APID=1540 OBT=1.0605235056145400E+014 SSC=1526 UTC= 2009/4/12 12:27:26.799557
Number of lost packets= 14
################################################################################
TOTAL Number of lost packets= 31
TOTAL Number of packets RECEIVED= 80533
Percentuage of lost Packets= 0.038478725
################################################################################
```

APID 1664

```
APID=1664 OBT=1.0605137348269100E+014 SSC=9066 UTC= 2009/4/12 8:18:57.760811
APID=1664 OBT=1.0605138645902700E+014 SSC=9084 UTC= 2009/4/12 8:22:15.764001
Number of lost packets= 17
################################################################################
TOTAL Number of lost packets= 17
TOTAL Number of packets RECEIVED= 1532
Percentuage of lost Packets= 1.0974822
################################################################################
```

APID 1666

```
APID=1666 OBT=1.0605131631455200E+014 SSC=6917 UTC= 2009/4/12 8:4:25.444238
APID=1666 OBT=1.0605131645873500E+014 SSC=6919 UTC= 2009/4/12 8:4:27.644307
Number of lost packets= 1
################################################################################
```

```
APID=1666 OBT=1.0605136742687800E+014 SSC=7626 UTC= 2009/4/12 8:17:25.356444
APID=1666 OBT=1.0605136757106000E+014 SSC=7628 UTC= 2009/4/12 8:17:27.556512
Number of lost packets= 1
################################################################################
APID=1666 OBT=1.0605137420340300E+014 SSC=7720 UTC= 2009/4/12 8:19:8.7580150
APID=1666 OBT=1.0605138609837800E+014 SSC=7885 UTC= 2009/4/12 8:22:10.260953
Number of lost packets= 164
################################################################################
APID=1666 OBT=1.0605160864249500E+014 SSC=10972 UTC= 2009/4/12 9:18:46.014693
APID=1666 OBT=1.0605160893086200E+014 SSC=10976 UTC= 2009/4/12 9:18:50.414790
Number of lost packets= 3
################################################################################
APID=1666 OBT=1.0605180977564900E+014 SSC=13762 UTC= 2009/4/12 10:9:55.063064
APID=1666 OBT=1.0605181056865100E+014 SSC=13773 UTC= 2009/4/12 10:10:7.1632996
Number of lost packets= 10
################################################################################
APID=1666 OBT=1.0605181114537400E+014 SSC=13781 UTC= 2009/4/12 10:10:15.963373
APID=1666 OBT=1.0605181128955700E+014 SSC=13783 UTC= 2009/4/12 10:10:18.163441
Number of lost packets= 1
################################################################################
APID=1666 OBT=1.0605192793236700E+014 SSC=15401 UTC= 2009/4/12 10:39:57.991486
APID=1666 OBT=1.0605192822073100E+014 SSC=15405 UTC= 2009/4/12 10:40:2.3915827
Number of lost packets= 3
################################################################################
APID=1666 OBT=1.0605200333928700E+014 SSC=63 UTC= 2009/4/12 10:59:8.6097470
APID=1666 OBT=1.0605200362764700E+014 SSC=67 UTC= 2009/4/12 10:59:13.009804
Number of lost packets= 3
################################################################################
APID=1666 OBT=1.0605201162972000E+014 SSC=178 UTC= 2009/4/12 11:1:15.111736
APID=1666 OBT=1.0605201177390000E+014 SSC=180 UTC= 2009/4/12 11:1:17.311765
Number of lost packets= 1
################################################################################
APID=1666 OBT=1.0605203779866100E+014 SSC=541 UTC= 2009/4/12 11:7:54.418080
APID=1666 OBT=1.0605203801493200E+014 SSC=544 UTC= 2009/4/12 11:7:57.718122
Number of lost packets= 2
################################################################################
APID=1666 OBT=1.0605204774718400E+014 SSC=679 UTC= 2009/4/12 11:10:26.220515
APID=1666 OBT=1.0605204803555100E+014 SSC=683 UTC= 2009/4/12 11:10:30.620612
Number of lost packets= 3
################################################################################
APID=1666 OBT=1.0605232407101600E+014 SSC=4512 UTC= 2009/4/12 12:20:42.587547
APID=1666 OBT=1.0605232421519600E+014 SSC=4514 UTC= 2009/4/12 12:20:44.787575
Number of lost packets= 1
################################################################################
TOTAL Number of lost packets= 193
TOTAL Number of packets RECEIVED= 15178
Percentuage of lost Packets= 1.2556112
################################################################################
```

4.2 RETRIEVING DATA VIA DDS

We perform a quick GAPS analysis on the consolidated telemetry. Here is the result:

APID 0016, list is not reported here (too long), APID 0016, list is not reported here (too long) this was explained by MOC with a problem of copying VC-0 in to DDS system.

```
################################################################################
TOTAL Number of lost packets= 310
TOTAL Number of packets RECEIVED= 36203
################################################################################
```

APID 0018 NO LOST PACKETS

APID 1408

```
APID=1408 OBT=1.0604564594988000E+014 SSC=8568 UTC= 2009/4/11 8:2:22.545810
APID=1408 OBT=1.0604564743147500E+014 SSC=8570 UTC= 2009/4/11 8:2:45.153171
Number of lost packets= 1
################################################################################
TOTAL Number of lost packets= 1
TOTAL Number of packets RECEIVED= 5157
################################################################################
```

APID 1410 NO LOST PACKETS

APID 1536

```
APID=1536 OBT=1.0604564671467500E+014 SSC=4887 UTC= 2009/4/11 8:2:34.215673
APID=1536 OBT=1.0604564671470800E+014 SSC=4889 UTC= 2009/4/11 8:2:34.216155
Number of lost packets= 1
################################################################################
APID=1536 OBT=1.0604717432697300E+014 SSC=10759 UTC= 2009/4/11 14:31:3.7294739
APID=1536 OBT=1.0604717537176600E+014 SSC=10761 UTC= 2009/4/11 14:31:19.671773
Number of lost packets= 1
################################################################################
TOTAL Number of lost packets= 2
TOTAL Number of packets RECEIVED= 15352
################################################################################
```

APID 1538 NO LOST PACKETS

APID1540 NO LOST PACKETS

APID 1664

```
APID=1664 OBT=1.0604564874631600E+014 SSC=1091 UTC= 2009/4/11 8:3:5.2160275
APID=1664 OBT=1.0604564875740200E+014 SSC=1093 UTC= 2009/4/11 8:3:5.3852078
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604684618419500E+014 SSC=2754 UTC= 2009/4/11 13:7:36.668039
APID=1664 OBT=1.0604684690510600E+014 SSC=2756 UTC= 2009/4/11 13:7:47.668301
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604685050963900E+014 SSC=2761 UTC= 2009/4/11 13:8:42.669089
APID=1664 OBT=1.0604685123054800E+014 SSC=2763 UTC= 2009/4/11 13:8:53.669311
```

```
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604685483508500E+014 SSC=2768 UTC= 2009/4/11 13:9:48.670179
APID=1664 OBT=1.0604685555599200E+014 SSC=2770 UTC= 2009/4/11 13:9:59.670321
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604685916052900E+014 SSC=2775 UTC= 2009/4/11 13:10:54.671189
APID=1664 OBT=1.0604685988143300E+014 SSC=2777 UTC= 2009/4/11 13:11:5.6713307
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604686348598900E+014 SSC=2782 UTC= 2009/4/11 13:12:0.67248076
APID=1664 OBT=1.0604686420688600E+014 SSC=2784 UTC= 2009/4/11 13:12:11.672502
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604686781141100E+014 SSC=2789 UTC= 2009/4/11 13:13:6.6731688
APID=1664 OBT=1.0604686853231800E+014 SSC=2791 UTC= 2009/4/11 13:13:17.673351
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604687213685700E+014 SSC=2796 UTC= 2009/4/11 13:14:12.674259
APID=1664 OBT=1.0604687285776600E+014 SSC=2798 UTC= 2009/4/11 13:14:23.674441
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604687646230200E+014 SSC=2803 UTC= 2009/4/11 13:15:18.675309
APID=1664 OBT=1.0604687718320900E+014 SSC=2805 UTC= 2009/4/11 13:15:29.675451
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604688078774400E+014 SSC=2810 UTC= 2009/4/11 13:16:24.676319
APID=1664 OBT=1.0604688150865300E+014 SSC=2812 UTC= 2009/4/11 13:16:35.676501
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604688439227900E+014 SSC=2816 UTC= 2009/4/11 13:17:19.677148
APID=1664 OBT=1.0604688511318900E+014 SSC=2818 UTC= 2009/4/11 13:17:30.677370
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604688871772500E+014 SSC=2823 UTC= 2009/4/11 13:18:25.678198
APID=1664 OBT=1.0604688943863100E+014 SSC=2825 UTC= 2009/4/11 13:18:36.678379
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604689304316800E+014 SSC=2830 UTC= 2009/4/11 13:19:31.679248
APID=1664 OBT=1.0604689376407500E+014 SSC=2832 UTC= 2009/4/11 13:19:42.679389
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604689736861100E+014 SSC=2837 UTC= 2009/4/11 13:20:37.680258
APID=1664 OBT=1.0604689808952000E+014 SSC=2839 UTC= 2009/4/11 13:20:48.680480
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604690169405600E+014 SSC=2844 UTC= 2009/4/11 13:21:43.681308
APID=1664 OBT=1.0604690241496300E+014 SSC=2846 UTC= 2009/4/11 13:21:54.681490
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0604690601950100E+014 SSC=2851 UTC= 2009/4/11 13:22:49.682358
APID=1664 OBT=1.0604690674040400E+014 SSC=2853 UTC= 2009/4/11 13:23:0.68245947
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605110025880500E+014 SSC=8670 UTC= 2009/4/12 7:9:28.695192
```

```
APID=1664 OBT=1.0605110097971300E+014 SSC=8672 UTC= 2009/4/12 7:9:39.695374
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605110746787700E+014 SSC=8681 UTC= 2009/4/12 7:11:18.696889
APID=1664 OBT=1.0605110818878600E+014 SSC=8683 UTC= 2009/4/12 7:11:29.697111
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605111251423200E+014 SSC=8689 UTC= 2009/4/12 7:12:35.698161
APID=1664 OBT=1.0605111323513900E+014 SSC=8691 UTC= 2009/4/12 7:12:46.698343
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605111900240100E+014 SSC=8699 UTC= 2009/4/12 7:14:14.699756
APID=1664 OBT=1.0605111972330900E+014 SSC=8701 UTC= 2009/4/12 7:14:25.699938
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605112549056600E+014 SSC=8709 UTC= 2009/4/12 7:15:53.701311
APID=1664 OBT=1.0605112621147500E+014 SSC=8711 UTC= 2009/4/12 7:16:4.7014931
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605113918780300E+014 SSC=8729 UTC= 2009/4/12 7:19:22.704563
APID=1664 OBT=1.0605113990871400E+014 SSC=8731 UTC= 2009/4/12 7:19:33.704785
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605115648958300E+014 SSC=8754 UTC= 2009/4/12 7:23:46.708764
APID=1664 OBT=1.0605115721049000E+014 SSC=8756 UTC= 2009/4/12 7:23:57.708946
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605116658228400E+014 SSC=8769 UTC= 2009/4/12 7:26:20.711147
APID=1664 OBT=1.0605116730319100E+014 SSC=8771 UTC= 2009/4/12 7:26:31.711329
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605117523317600E+014 SSC=8782 UTC= 2009/4/12 7:28:32.713288
APID=1664 OBT=1.0605117595408900E+014 SSC=8784 UTC= 2009/4/12 7:28:43.713550
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605118027953500E+014 SSC=8790 UTC= 2009/4/12 7:29:49.714640
APID=1664 OBT=1.0605118100043400E+014 SSC=8792 UTC= 2009/4/12 7:30:0.71466118
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605118532588100E+014 SSC=8798 UTC= 2009/4/12 7:31:6.7157516
APID=1664 OBT=1.0605118604678700E+014 SSC=8800 UTC= 2009/4/12 7:31:17.715893
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605119541858300E+014 SSC=8813 UTC= 2009/4/12 7:33:40.718175
APID=1664 OBT=1.0605119613949100E+014 SSC=8815 UTC= 2009/4/12 7:33:51.718357
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605120406947000E+014 SSC=8826 UTC= 2009/4/12 7:35:52.720235
APID=1664 OBT=1.0605120479037600E+014 SSC=8828 UTC= 2009/4/12 7:36:3.7203768
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605120911582200E+014 SSC=8834 UTC= 2009/4/12 7:37:9.7214270
APID=1664 OBT=1.0605120983672900E+014 SSC=8836 UTC= 2009/4/12 7:37:20.721609
Number of lost packets= 1
################################################################################
```

```
APID=1664 OBT=1.0605121560398800E+014 SSC=8844 UTC= 2009/4/12 7:38:48.722982
APID=1664 OBT=1.0605121632489400E+014 SSC=8846 UTC= 2009/4/12 7:38:59.723164
Number of lost packets= 1
################################################################################
TOTAL Number of lost packets= 31
TOTAL Number of packets RECEIVED= 8167
################################################################################
```

APID 1666 NO LOST PACKETS

5 OPERATIONAL DAY 044

5.1 REAL TIME IW@MOC

Gaps identified during the DTCP of OD_42:

It seems that a gap of few minutes (starting at 8:20 to 8:25 UTC) affect all the telemetry.

Here is the usual list:

APID 0016

```
APID=0016 OBT=1.0605701090240100E+014 SSC=11217 UTC= 2009/4/13 8:12:37.959048
APID=0016 OBT=1.0605702309147400E+014 SSC=11283 UTC= 2009/4/13 8:15:43.949550
Number of lost packets= 65
################################################################################
APID=0016 OBT=1.0605725823464200E+014 SSC=12748 UTC= 2009/4/13 9:15:31.949522
APID=0016 OBT=1.0605725889227700E+014 SSC=12750 UTC= 2009/4/13 9:15:41.984229
Number of lost packets= 1
################################################################################
APID=0016 OBT=1.0605754135016200E+014 SSC=14449 UTC= 2009/4/13 10:27:31.949546
APID=0016 OBT=1.0605754187445000E+014 SSC=14451 UTC= 2009/4/13 10:27:39.949543
Number of lost packets= 1
################################################################################
APID=0016 OBT=1.0605758670107400E+014 SSC=14763 UTC= 2009/4/13 10:39:3.9495340
APID=0016 OBT=1.0605758984871100E+014 SSC=14779 UTC= 2009/4/13 10:39:51.978644
Number of lost packets= 15
################################################################################
APID=0016 OBT=1.0605759037109000E+014 SSC=14789 UTC= 2009/4/13 10:39:59.949552
APID=0016 OBT=1.0605759482753800E+014 SSC=14840 UTC= 2009/4/13 10:41:7.9495454
Number of lost packets= 50
################################################################################
APID=0016 OBT=1.0605759508968200E+014 SSC=14841 UTC= 2009/4/13 10:41:11.949524
APID=0016 OBT=1.0605760059470600E+014 SSC=14865 UTC= 2009/4/13 10:42:35.949551
Number of lost packets= 23
################################################################################
APID=0016 OBT=1.0605760111899400E+014 SSC=14869 UTC= 2009/4/13 10:42:43.949548
APID=0016 OBT=1.0605760662401800E+014 SSC=14899 UTC= 2009/4/13 10:44:7.9495347
Number of lost packets= 29
################################################################################
APID=0016 OBT=1.0605760832857900E+014 SSC=14905 UTC= 2009/4/13 10:44:33.959090
APID=0016 OBT=1.0605761527538800E+014 SSC=14937 UTC= 2009/4/13 10:46:19.958957
Number of lost packets= 31
################################################################################
APID=0016 OBT=1.0605761540805000E+014 SSC=14939 UTC= 2009/4/13 10:46:21.983207
APID=0016 OBT=1.0605762025550600E+014 SSC=14964 UTC= 2009/4/13 10:47:35.949533
Number of lost packets= 24
################################################################################
APID=0016 OBT=1.0605762104193800E+014 SSC=14968 UTC= 2009/4/13 10:47:47.949548
APID=0016 OBT=1.0605762680910600E+014 SSC=14997 UTC= 2009/4/13 10:49:15.949554
Number of lost packets= 28
################################################################################
APID=0016 OBT=1.0605762759553800E+014 SSC=15001 UTC= 2009/4/13 10:49:27.949529
```

```
APID=0016 OBT=1.0605762916902200E+014 SSC=15007 UTC= 2009/4/13 10:49:51.958974
Number of lost packets= 5
################################################################################
APID=0016 OBT=1.0605762992179600E+014 SSC=15018 UTC= 2009/4/13 10:50:3.4454137
APID=0016 OBT=1.0605764673205000E+014 SSC=15132 UTC= 2009/4/13 10:54:19.949514
Number of lost packets= 113
################################################################################
APID=0016 OBT=1.0605764784616200E+014 SSC=15137 UTC= 2009/4/13 10:54:36.949543
APID=0016 OBT=1.0605766350926600E+014 SSC=15213 UTC= 2009/4/13 10:58:35.949534
Number of lost packets= 75
################################################################################
APID=0016 OBT=1.0605767963306000E+014 SSC=15329 UTC= 2009/4/13 11:2:41.979099
APID=0016 OBT=1.0605777963905800E+014 SSC=15896 UTC= 2009/4/13 11:28:7.9495382
Number of lost packets= 566
################################################################################
APID=0016 OBT=1.0605785880654600E+014 SSC=16364 UTC= 2009/4/13 11:48:15.949544
APID=0016 OBT=1.0605785933083400E+014 SSC=16366 UTC= 2009/4/13 11:48:23.949541
Number of lost packets= 1
################################################################################
TOTAL Number of lost packets= 1027
TOTAL Number of packets RECEIVED= 5655
Percentuage of lost Packets= 15.369650
################################################################################
```

APID 0018

```
APID=0018 OBT=1.0605700395496200E+014 SSC=15212 UTC= 2009/4/13 8:10:51.949525
APID=0018 OBT=1.0605700402049800E+014 SSC=15214 UTC= 2009/4/13 8:10:52.949519
Number of lost packets= 1
################################################################################
APID=0018 OBT=1.0605701096731400E+014 SSC=15420 UTC= 2009/4/13 8:12:38.949548
APID=0018 OBT=1.0605702302593800E+014 SSC=15775 UTC= 2009/4/13 8:15:42.949516
Number of lost packets= 354
################################################################################
APID=0018 OBT=1.0605724774888200E+014 SSC=5994 UTC= 2009/4/13 9:12:51.949545
APID=0018 OBT=1.0605724787995400E+014 SSC=5999 UTC= 2009/4/13 9:12:53.949534
Number of lost packets= 4
################################################################################
APID=0018 OBT=1.0605725377819400E+014 SSC=6171 UTC= 2009/4/13 9:14:23.949528
APID=0018 OBT=1.0605725390926600E+014 SSC=6173 UTC= 2009/4/13 9:14:25.949517
Number of lost packets= 1
################################################################################
APID=0018 OBT=1.0605725856232200E+014 SSC=6310 UTC= 2009/4/13 9:15:36.949535
APID=0018 OBT=1.0605725869339400E+014 SSC=6313 UTC= 2009/4/13 9:15:38.949524
Number of lost packets= 2
################################################################################
APID=0018 OBT=1.0605750006248200E+014 SSC=13409 UTC= 2009/4/13 10:17:1.9495431
APID=0018 OBT=1.0605750045569800E+014 SSC=13417 UTC= 2009/4/13 10:17:7.9495507
Number of lost packets= 7
################################################################################
APID=0018 OBT=1.0605750130766600E+014 SSC=13444 UTC= 2009/4/13 10:17:20.949520
APID=0018 OBT=1.0605750156981000E+014 SSC=13451 UTC= 2009/4/13 10:17:24.949539
Number of lost packets= 6
################################################################################
```

```
APID=0018 OBT=1.0605750517429000E+014 SSC=13557 UTC= 2009/4/13 10:18:19.949522
APID=0018 OBT=1.0605750556750600E+014 SSC=13568 UTC= 2009/4/13 10:18:25.949530
Number of lost packets= 10
################################################################################
APID=0018 OBT=1.0605754167784200E+014 SSC=14630 UTC= 2009/4/13 10:27:36.949519
APID=0018 OBT=1.0605754187445000E+014 SSC=14634 UTC= 2009/4/13 10:27:39.949543
Number of lost packets= 3
################################################################################
APID=0018 OBT=1.0605758519374600E+014 SSC=15909 UTC= 2009/4/13 10:38:40.949538
APID=0018 OBT=1.0605758598017800E+014 SSC=15931 UTC= 2009/4/13 10:38:52.949553
Number of lost packets= 21
################################################################################
APID=0018 OBT=1.0605758604571400E+014 SSC=15935 UTC= 2009/4/13 10:38:53.949548
APID=0018 OBT=1.0605758663553800E+014 SSC=15951 UTC= 2009/4/13 10:39:2.9495394
Number of lost packets= 15
################################################################################
APID=0018 OBT=1.0605758663553800E+014 SSC=15952 UTC= 2009/4/13 10:39:2.9495394
APID=0018 OBT=1.0605758715982600E+014 SSC=15967 UTC= 2009/4/13 10:39:10.949536
Number of lost packets= 14
################################################################################
APID=0018 OBT=1.0605758715982600E+014 SSC=15969 UTC= 2009/4/13 10:39:10.949536
APID=0018 OBT=1.0605758774965000E+014 SSC=15985 UTC= 2009/4/13 10:39:19.949528
Number of lost packets= 15
################################################################################
APID=0018 OBT=1.0605758781518600E+014 SSC=15986 UTC= 2009/4/13 10:39:20.949522
APID=0018 OBT=1.0605758827393800E+014 SSC=16000 UTC= 2009/4/13 10:39:27.949525
Number of lost packets= 13
################################################################################
APID=0018 OBT=1.0605758840501000E+014 SSC=16003 UTC= 2009/4/13 10:39:29.949514
APID=0018 OBT=1.0605758912590600E+014 SSC=16023 UTC= 2009/4/13 10:39:40.949534
Number of lost packets= 19
################################################################################
APID=0018 OBT=1.0605758912590600E+014 SSC=16024 UTC= 2009/4/13 10:39:40.949534
APID=0018 OBT=1.0605758971573000E+014 SSC=16041 UTC= 2009/4/13 10:39:49.949526
Number of lost packets= 16
################################################################################
APID=0018 OBT=1.0605758978126600E+014 SSC=16045 UTC= 2009/4/13 10:39:50.949520
APID=0018 OBT=1.0605759037109000E+014 SSC=16061 UTC= 2009/4/13 10:39:59.949552
Number of lost packets= 15
################################################################################
APID=0018 OBT=1.0605759043662600E+014 SSC=16062 UTC= 2009/4/13 10:40:0.94954669
APID=0018 OBT=1.0605759128859400E+014 SSC=16087 UTC= 2009/4/13 10:40:13.949516
Number of lost packets= 24
################################################################################
APID=0018 OBT=1.0605759148520200E+014 SSC=16094 UTC= 2009/4/13 10:40:16.949540
APID=0018 OBT=1.0605759246824200E+014 SSC=16123 UTC= 2009/4/13 10:40:31.949539
Number of lost packets= 28
################################################################################
APID=0018 OBT=1.0605759259931400E+014 SSC=16126 UTC= 2009/4/13 10:40:33.949529
APID=0018 OBT=1.0605759351681800E+014 SSC=16154 UTC= 2009/4/13 10:40:47.949533
Number of lost packets= 27
################################################################################
APID=0018 OBT=1.0605759358235400E+014 SSC=16155 UTC= 2009/4/13 10:40:48.949528
APID=0018 OBT=1.0605759449985800E+014 SSC=16182 UTC= 2009/4/13 10:41:2.9495323
Number of lost packets= 26
```

```
################################################################################
APID=0018 OBT=1.0605759456539400E+014 SSC=16184 UTC= 2009/4/13 10:41:3.9495268
APID=0018 OBT=1.0605759515521800E+014 SSC=16200 UTC= 2009/4/13 10:41:12.949518
Number of lost packets= 15
################################################################################
APID=0018 OBT=1.0605759522075400E+014 SSC=16202 UTC= 2009/4/13 10:41:13.949553
APID=0018 OBT=1.0605759581057800E+014 SSC=16220 UTC= 2009/4/13 10:41:22.949544
Number of lost packets= 17
################################################################################
APID=0018 OBT=1.0605759581057800E+014 SSC=16220 UTC= 2009/4/13 10:41:22.949544
APID=0018 OBT=1.0605759653147400E+014 SSC=16243 UTC= 2009/4/13 10:41:33.949525
Number of lost packets= 22
################################################################################
APID=0018 OBT=1.0605759672808200E+014 SSC=16247 UTC= 2009/4/13 10:41:36.949549
APID=0018 OBT=1.0605759744897800E+014 SSC=16266 UTC= 2009/4/13 10:41:47.949530
Number of lost packets= 18
################################################################################
APID=0018 OBT=1.0605759751451400E+014 SSC=16270 UTC= 2009/4/13 10:41:48.949524
APID=0018 OBT=1.0605759849755400E+014 SSC=16297 UTC= 2009/4/13 10:42:3.9495233
Number of lost packets= 26
################################################################################
APID=0018 OBT=1.0605761193243400E+014 SSC=309 UTC= 2009/4/13 10:45:28.949538
APID=0018 OBT=1.0605762923393800E+014 SSC=819 UTC= 2009/4/13 10:49:52.949514
Number of lost packets= 509
################################################################################
APID=0018 OBT=1.0605762975822600E+014 SSC=834 UTC= 2009/4/13 10:50:0.94955117
APID=0018 OBT=1.0605764660097800E+014 SSC=1328 UTC= 2009/4/13 10:54:17.949525
Number of lost packets= 493
################################################################################
APID=0018 OBT=1.0605764686312200E+014 SSC=1338 UTC= 2009/4/13 10:54:21.949544
APID=0018 OBT=1.0605764699419400E+014 SSC=1341 UTC= 2009/4/13 10:54:23.949533
Number of lost packets= 2
################################################################################
APID=0018 OBT=1.0605764797723400E+014 SSC=1371 UTC= 2009/4/13 10:54:38.949532
APID=0018 OBT=1.0605766291944200E+014 SSC=1808 UTC= 2009/4/13 10:58:26.949542
Number of lost packets= 436
################################################################################
APID=0018 OBT=1.0605766337819400E+014 SSC=1822 UTC= 2009/4/13 10:58:33.949545
APID=0018 OBT=1.0605766364033800E+014 SSC=1830 UTC= 2009/4/13 10:58:37.949523
Number of lost packets= 7
################################################################################
APID=0018 OBT=1.0605766567195400E+014 SSC=1889 UTC= 2009/4/13 10:59:8.9495158
APID=0018 OBT=1.0605766586856200E+014 SSC=1895 UTC= 2009/4/13 10:59:11.949540
Number of lost packets= 5
################################################################################
APID=0018 OBT=1.0605766973518600E+014 SSC=2008 UTC= 2009/4/13 11:0:10.949542
APID=0018 OBT=1.0605767098037000E+014 SSC=2046 UTC= 2009/4/13 11:0:29.949519
Number of lost packets= 37
################################################################################
APID=0018 OBT=1.0605767484699400E+014 SSC=2158 UTC= 2009/4/13 11:1:28.949521
APID=0018 OBT=1.0605778324353800E+014 SSC=5344 UTC= 2009/4/13 11:29:2.9495215
Number of lost packets= 3185
################################################################################
APID=0018 OBT=1.0605785926529800E+014 SSC=7579 UTC= 2009/4/13 11:48:22.949546
APID=0018 OBT=1.0605785939637000E+014 SSC=7581 UTC= 2009/4/13 11:48:24.949535
```

```
Number of lost packets= 1
################################################################################
TOTAL Number of lost packets= 5394
TOTAL Number of packets RECEIVED= 26880
Percentuage of lost Packets= 16.713144
################################################################################
```

APID 1408

```
APID=1408 OBT=1.0605701091111400E+014 SSC=733 UTC= 2009/4/13 8:12:38.091979
APID=1408 OBT=1.0605702402543400E+014 SSC=741 UTC= 2009/4/13 8:15:58.200650
Number of lost packets= 7
################################################################################
APID=1408 OBT=1.0605753999544400E+014 SSC=1066 UTC= 2009/4/13 10:27:11.278163
APID=1408 OBT=1.0605754325788400E+014 SSC=1068 UTC= 2009/4/13 10:28:1.0590640
Number of lost packets= 1
################################################################################
APID=1408 OBT=1.0605758586550100E+014 SSC=1094 UTC= 2009/4/13 10:38:51.199694
APID=1408 OBT=1.0605760717823700E+014 SSC=1107 UTC= 2009/4/13 10:44:16.406258
Number of lost packets= 12
################################################################################
APID=1408 OBT=1.0605760717823700E+014 SSC=1107 UTC= 2009/4/13 10:44:16.406258
APID=1408 OBT=1.0605761533314900E+014 SSC=1112 UTC= 2009/4/13 10:46:20.840345
Number of lost packets= 4
################################################################################
APID=1408 OBT=1.0605761533314900E+014 SSC=1112 UTC= 2009/4/13 10:46:20.840345
APID=1408 OBT=1.0605766449129500E+014 SSC=1142 UTC= 2009/4/13 10:58:50.934124
Number of lost packets= 29
################################################################################
APID=1408 OBT=1.0605767925942100E+014 SSC=1153 UTC= 2009/4/13 11:2:36.277822
APID=1408 OBT=1.0605778079004500E+014 SSC=1217 UTC= 2009/4/13 11:28:25.512187
Number of lost packets= 63
################################################################################
APID=1408 OBT=1.0605785777129400E+014 SSC=1264 UTC= 2009/4/13 11:48:0.15284836
APID=1408 OBT=1.0605786107574100E+014 SSC=1266 UTC= 2009/4/13 11:48:50.574703
Number of lost packets= 1
################################################################################
TOTAL Number of lost packets= 117
TOTAL Number of packets RECEIVED= 572
Percentuage of lost Packets= 16.981132
################################################################################
```

APID 1410

```
APID=1410 OBT=1.0605701101238100E+014 SSC=11777 UTC= 2009/4/13 8:12:39.637213
APID=1410 OBT=1.0605702309046200E+014 SSC=11869 UTC= 2009/4/13 8:15:43.934101
Number of lost packets= 91
################################################################################
APID=1410 OBT=1.0605725380995000E+014 SSC=13605 UTC= 2009/4/13 9:14:24.434096
APID=1410 OBT=1.0605725399631700E+014 SSC=13607 UTC= 2009/4/13 9:14:27.277814
Number of lost packets= 1
################################################################################
APID=1410 OBT=1.0605725863913200E+014 SSC=13641 UTC= 2009/4/13 9:15:38.121566
APID=1410 OBT=1.0605725880399800E+014 SSC=13643 UTC= 2009/4/13 9:15:40.637223
```

```
Number of lost packets= 1
################################################################################
APID=1410 OBT=1.0605750012393400E+014 SSC=15462 UTC= 2009/4/13 10:17:2.8872165
APID=1410 OBT=1.0605750058576800E+014 SSC=15466 UTC= 2009/4/13 10:17:9.9342513
Number of lost packets= 3
################################################################################
APID=1410 OBT=1.0605750141836700E+014 SSC=15471 UTC= 2009/4/13 10:17:22.638709
APID=1410 OBT=1.0605750173161200E+014 SSC=15473 UTC= 2009/4/13 10:17:27.418445
Number of lost packets= 1
################################################################################
APID=1410 OBT=1.0605750519999200E+014 SSC=15501 UTC= 2009/4/13 10:18:20.341715
APID=1410 OBT=1.0605750567401300E+014 SSC=15504 UTC= 2009/4/13 10:18:27.574707
Number of lost packets= 2
################################################################################
APID=1410 OBT=1.0605754170140400E+014 SSC=15773 UTC= 2009/4/13 10:27:37.309042
APID=1410 OBT=1.0605754203740700E+014 SSC=15775 UTC= 2009/4/13 10:27:42.436071
Number of lost packets= 1
################################################################################
APID=1410 OBT=1.0605758512002900E+014 SSC=16101 UTC= 2009/4/13 10:38:39.824700
APID=1410 OBT=1.0605758609385200E+014 SSC=16107 UTC= 2009/4/13 10:38:54.684044
Number of lost packets= 5
################################################################################
APID=1410 OBT=1.0605758609385200E+014 SSC=16107 UTC= 2009/4/13 10:38:54.684044
APID=1410 OBT=1.0605758781417400E+014 SSC=16119 UTC= 2009/4/13 10:39:20.934073
Number of lost packets= 11
################################################################################
APID=1410 OBT=1.0605758781417400E+014 SSC=16119 UTC= 2009/4/13 10:39:20.934073
APID=1410 OBT=1.0605758838658800E+014 SSC=16126 UTC= 2009/4/13 10:39:29.668445
Number of lost packets= 6
################################################################################
APID=1410 OBT=1.0605758846850800E+014 SSC=16127 UTC= 2009/4/13 10:39:30.918448
APID=1410 OBT=1.0605758920783700E+014 SSC=16133 UTC= 2009/4/13 10:39:42.199699
Number of lost packets= 5
################################################################################
APID=1410 OBT=1.0605758920783700E+014 SSC=16133 UTC= 2009/4/13 10:39:42.199699
APID=1410 OBT=1.0605758973724500E+014 SSC=16136 UTC= 2009/4/13 10:39:50.277828
Number of lost packets= 2
################################################################################
APID=1410 OBT=1.0605758973724500E+014 SSC=16136 UTC= 2009/4/13 10:39:50.277828
APID=1410 OBT=1.0605759151495100E+014 SSC=16147 UTC= 2009/4/13 10:40:17.403451
Number of lost packets= 10
################################################################################
APID=1410 OBT=1.0605759151495100E+014 SSC=16147 UTC= 2009/4/13 10:40:17.403451
APID=1410 OBT=1.0605759250511700E+014 SSC=16153 UTC= 2009/4/13 10:40:32.512200
Number of lost packets= 5
################################################################################
APID=1410 OBT=1.0605759264642900E+014 SSC=16155 UTC= 2009/4/13 10:40:34.668455
APID=1410 OBT=1.0605759363151700E+014 SSC=16167 UTC= 2009/4/13 10:40:49.699715
Number of lost packets= 11
################################################################################
APID=1410 OBT=1.0605759363151700E+014 SSC=16167 UTC= 2009/4/13 10:40:49.699715
APID=1410 OBT=1.0605759527401400E+014 SSC=16177 UTC= 2009/4/13 10:41:14.762222
Number of lost packets= 9
################################################################################
APID=1410 OBT=1.0605759527401400E+014 SSC=16177 UTC= 2009/4/13 10:41:14.762222
```

```
APID=1410 OBT=1.0605759675983700E+014 SSC=16186 UTC= 2009/4/13 10:41:37.434077
Number of lost packets= 8
################################################################################
APID=1410 OBT=1.0605759675983700E+014 SSC=16186 UTC= 2009/4/13 10:41:37.434077
APID=1410 OBT=1.0605759749008800E+014 SSC=16191 UTC= 2009/4/13 10:41:48.576804
Number of lost packets= 4
################################################################################
APID=1410 OBT=1.0605759760156500E+014 SSC=16192 UTC= 2009/4/13 10:41:50.277821
APID=1410 OBT=1.0605759870654300E+014 SSC=16205 UTC= 2009/4/13 10:42:7.1384418
Number of lost packets= 12
################################################################################
APID=1410 OBT=1.0605761198159700E+014 SSC=16300 UTC= 2009/4/13 10:45:29.699685
APID=1410 OBT=1.0605762934467900E+014 SSC=50 UTC= 2009/4/13 10:49:54.639306
Number of lost packets= 132
################################################################################
APID=1410 OBT=1.0605762983094000E+014 SSC=53 UTC= 2009/4/13 10:50:2.0590603
APID=1410 OBT=1.0605764670353000E+014 SSC=178 UTC= 2009/4/13 10:54:19.514353
Number of lost packets= 124
################################################################################
APID=1410 OBT=1.0605764695860900E+014 SSC=181 UTC= 2009/4/13 10:54:23.406546
APID=1410 OBT=1.0605764714680100E+014 SSC=183 UTC= 2009/4/13 10:54:26.278146
Number of lost packets= 1
################################################################################
APID=1410 OBT=1.0605764801308400E+014 SSC=192 UTC= 2009/4/13 10:54:39.496542
APID=1410 OBT=1.0605766292876700E+014 SSC=304 UTC= 2009/4/13 10:58:27.091807
Number of lost packets= 111
################################################################################
APID=1410 OBT=1.0605766341200900E+014 SSC=307 UTC= 2009/4/13 10:58:34.465494
APID=1410 OBT=1.0605766375503700E+014 SSC=309 UTC= 2009/4/13 10:58:39.699705
Number of lost packets= 1
################################################################################
APID=1410 OBT=1.0605766570882900E+014 SSC=321 UTC= 2009/4/13 10:59:9.5122164
APID=1410 OBT=1.0605766606108700E+014 SSC=323 UTC= 2009/4/13 10:59:14.887243
Number of lost packets= 1
################################################################################
APID=1410 OBT=1.0605766979970900E+014 SSC=353 UTC= 2009/4/13 11:0:11.934087
APID=1410 OBT=1.0605767114319700E+014 SSC=361 UTC= 2009/4/13 11:0:32.434076
Number of lost packets= 7
################################################################################
APID=1410 OBT=1.0605767492482900E+014 SSC=391 UTC= 2009/4/13 11:1:30.137203
APID=1410 OBT=1.0605778336233300E+014 SSC=1207 UTC= 2009/4/13 11:29:4.7621852
Number of lost packets= 815
################################################################################
TOTAL Number of lost packets= 1380
TOTAL Number of packets RECEIVED= 6889
Percentuage of lost Packets= 16.688838
################################################################################
```

APID 1536

```
APID=1536 OBT=1.0605701024849000E+014 SSC=2724 UTC= 2009/4/13 8:12:27.981150
APID=1536 OBT=1.0605702379707200E+014 SSC=2761 UTC= 2009/4/13 8:15:54.716098
Number of lost packets= 36
################################################################################
```

```
APID=1536 OBT=1.0605725771864700E+014 SSC=3448 UTC= 2009/4/13 9:15:24.076058
APID=1536 OBT=1.0605725946452900E+014 SSC=3450 UTC= 2009/4/13 9:15:50.716107
Number of lost packets= 1
################################################################################
APID=1536 OBT=1.0605754084134000E+014 SSC=4088 UTC= 2009/4/13 10:27:24.185516
APID=1536 OBT=1.0605754293855700E+014 SSC=4090 UTC= 2009/4/13 10:27:56.186509
Number of lost packets= 1
################################################################################
APID=1536 OBT=1.0605758697984900E+014 SSC=4132 UTC= 2009/4/13 10:39:8.2033029
APID=1536 OBT=1.0605759009292600E+014 SSC=4135 UTC= 2009/4/13 10:39:55.705077
Number of lost packets= 2
################################################################################
APID=1536 OBT=1.0605759009292600E+014 SSC=4135 UTC= 2009/4/13 10:39:55.705077
APID=1536 OBT=1.0605760687035400E+014 SSC=4151 UTC= 2009/4/13 10:44:11.708315
Number of lost packets= 15
################################################################################
APID=1536 OBT=1.0605760795188900E+014 SSC=4152 UTC= 2009/4/13 10:44:28.211223
APID=1536 OBT=1.0605761525917500E+014 SSC=4159 UTC= 2009/4/13 10:46:19.711564
Number of lost packets= 6
################################################################################
APID=1536 OBT=1.0605761525917500E+014 SSC=4159 UTC= 2009/4/13 10:46:19.711564
APID=1536 OBT=1.0605762053513600E+014 SSC=4164 UTC= 2009/4/13 10:47:40.216337
Number of lost packets= 4
################################################################################
APID=1536 OBT=1.0605762155079100E+014 SSC=4165 UTC= 2009/4/13 10:47:55.714020
APID=1536 OBT=1.0605762784242000E+014 SSC=4171 UTC= 2009/4/13 10:49:31.716638
Number of lost packets= 5
################################################################################
APID=1536 OBT=1.0605762993961200E+014 SSC=4173 UTC= 2009/4/13 10:50:3.7172690
APID=1536 OBT=1.0605764779879300E+014 SSC=4190 UTC= 2009/4/13 10:54:36.226754
Number of lost packets= 16
################################################################################
APID=1536 OBT=1.0605764779879300E+014 SSC=4190 UTC= 2009/4/13 10:54:36.226754
APID=1536 OBT=1.0605766457646600E+014 SSC=4206 UTC= 2009/4/13 10:58:52.233694
Number of lost packets= 15
################################################################################
APID=1536 OBT=1.0605767925687900E+014 SSC=4220 UTC= 2009/4/13 11:2:36.239037
APID=1536 OBT=1.0605777992276600E+014 SSC=4316 UTC= 2009/4/13 11:28:12.278583
Number of lost packets= 95
################################################################################
TOTAL Number of lost packets= 196
TOTAL Number of packets RECEIVED= 1739
Percentuage of lost Packets= 10.129199
################################################################################
```

APID 1538

```
APID=1538 OBT=1.0605701100194300E+014 SSC=13645 UTC= 2009/4/13 8:12:39.477930
APID=1538 OBT=1.0605702309382500E+014 SSC=13747 UTC= 2009/4/13 8:15:43.985398
Number of lost packets= 101
################################################################################
APID=1538 OBT=1.0605725850531600E+014 SSC=15715 UTC= 2009/4/13 9:15:36.079694
APID=1538 OBT=1.0605725876721500E+014 SSC=15717 UTC= 2009/4/13 9:15:40.075971
Number of lost packets= 1
```

```
################################################################################
APID=1538 OBT=1.0605749994579700E+014 SSC=1323 UTC= 2009/4/13 10:17:0.16906589
APID=1538 OBT=1.0605750069928500E+014 SSC=1328 UTC= 2009/4/13 10:17:11.666368
Number of lost packets= 4
################################################################################
APID=1538 OBT=1.0605750125655200E+014 SSC=1333 UTC= 2009/4/13 10:17:20.169601
APID=1538 OBT=1.0605750174788800E+014 SSC=1336 UTC= 2009/4/13 10:17:27.666804
Number of lost packets= 2
################################################################################
APID=1538 OBT=1.0605750518880900E+014 SSC=1364 UTC= 2009/4/13 10:18:20.171086
APID=1538 OBT=1.0605750568014800E+014 SSC=1367 UTC= 2009/4/13 10:18:27.668330
Number of lost packets= 2
################################################################################
APID=1538 OBT=1.0605754162775700E+014 SSC=1651 UTC= 2009/4/13 10:27:36.185290
APID=1538 OBT=1.0605754188990700E+014 SSC=1653 UTC= 2009/4/13 10:27:40.185389
Number of lost packets= 1
################################################################################
APID=1538 OBT=1.0605758514502000E+014 SSC=1993 UTC= 2009/4/13 10:38:40.206030
APID=1538 OBT=1.0605758616039900E+014 SSC=2001 UTC= 2009/4/13 10:38:55.699488
Number of lost packets= 7
################################################################################
APID=1538 OBT=1.0605758616039900E+014 SSC=2001 UTC= 2009/4/13 10:38:55.699488
APID=1538 OBT=1.0605758668497400E+014 SSC=2005 UTC= 2009/4/13 10:39:3.7038705
Number of lost packets= 3
################################################################################
APID=1538 OBT=1.0605758671766100E+014 SSC=2006 UTC= 2009/4/13 10:39:4.2026407
APID=1538 OBT=1.0605758724196200E+014 SSC=2010 UTC= 2009/4/13 10:39:12.202839
Number of lost packets= 3
################################################################################
APID=1538 OBT=1.0605758724196200E+014 SSC=2010 UTC= 2009/4/13 10:39:12.202839
APID=1538 OBT=1.0605758983050900E+014 SSC=2029 UTC= 2009/4/13 10:39:51.700915
Number of lost packets= 18
################################################################################
APID=1538 OBT=1.0605758983050900E+014 SSC=2029 UTC= 2009/4/13 10:39:51.700915
APID=1538 OBT=1.0605759140341300E+014 SSC=2042 UTC= 2009/4/13 10:40:15.701549
Number of lost packets= 12
################################################################################
APID=1538 OBT=1.0605759143637000E+014 SSC=2043 UTC= 2009/4/13 10:40:16.204423
APID=1538 OBT=1.0605759248505000E+014 SSC=2051 UTC= 2009/4/13 10:40:32.205985
Number of lost packets= 7
################################################################################
APID=1538 OBT=1.0605759271416600E+014 SSC=2052 UTC= 2009/4/13 10:40:35.702044
APID=1538 OBT=1.0605759458220400E+014 SSC=2068 UTC= 2009/4/13 10:41:4.2060533
Number of lost packets= 15
################################################################################
APID=1538 OBT=1.0605759458220400E+014 SSC=2068 UTC= 2009/4/13 10:41:4.2060533
APID=1538 OBT=1.0605759585997400E+014 SSC=2077 UTC= 2009/4/13 10:41:23.703272
Number of lost packets= 8
################################################################################
APID=1538 OBT=1.0605759585997400E+014 SSC=2077 UTC= 2009/4/13 10:41:23.703272
APID=1538 OBT=1.0605759664643500E+014 SSC=2083 UTC= 2009/4/13 10:41:35.703690
Number of lost packets= 5
################################################################################
APID=1538 OBT=1.0605759667937500E+014 SSC=2084 UTC= 2009/4/13 10:41:36.206322
APID=1538 OBT=1.0605759858080000E+014 SSC=2099 UTC= 2009/4/13 10:42:5.2197638
```

```
Number of lost packets= 14
################################################################################
APID=1538 OBT=1.0605761188411300E+014 SSC=2204 UTC= 2009/4/13 10:45:28.212225
APID=1538 OBT=1.0605762941525800E+014 SSC=2341 UTC= 2009/4/13 10:49:55.716266
Number of lost packets= 136
################################################################################
APID=1538 OBT=1.0605762971036800E+014 SSC=2344 UTC= 2009/4/13 10:50:0.21927953
APID=1538 OBT=1.0605764671720500E+014 SSC=2477 UTC= 2009/4/13 10:54:19.723002
Number of lost packets= 132
################################################################################
APID=1538 OBT=1.0605764675015600E+014 SSC=2478 UTC= 2009/4/13 10:54:20.225795
APID=1538 OBT=1.0605764724150600E+014 SSC=2481 UTC= 2009/4/13 10:54:27.723200
Number of lost packets= 2
################################################################################
APID=1538 OBT=1.0605764806090800E+014 SSC=2488 UTC= 2009/4/13 10:54:40.226290
APID=1538 OBT=1.0605766297054900E+014 SSC=2605 UTC= 2009/4/13 10:58:27.729381
Number of lost packets= 116
################################################################################
APID=1538 OBT=1.0605766326566300E+014 SSC=2608 UTC= 2009/4/13 10:58:32.232435
APID=1538 OBT=1.0605766375700100E+014 SSC=2611 UTC= 2009/4/13 10:58:39.729678
Number of lost packets= 2
################################################################################
APID=1538 OBT=1.0605766569137600E+014 SSC=2627 UTC= 2009/4/13 10:59:9.2458731
APID=1538 OBT=1.0605766611635800E+014 SSC=2630 UTC= 2009/4/13 10:59:15.730610
Number of lost packets= 2
################################################################################
APID=1538 OBT=1.0605766981942700E+014 SSC=2659 UTC= 2009/4/13 11:0:12.234950
APID=1538 OBT=1.0605767109722100E+014 SSC=2669 UTC= 2009/4/13 11:0:31.732531
Number of lost packets= 9
################################################################################
APID=1538 OBT=1.0605767480028000E+014 SSC=2699 UTC= 2009/4/13 11:1:28.236751
APID=1538 OBT=1.0605778329772500E+014 SSC=3552 UTC= 2009/4/13 11:29:3.7763527
Number of lost packets= 852
################################################################################
TOTAL Number of lost packets= 1454
TOTAL Number of packets RECEIVED= 7409
Percentuage of lost Packets= 16.405280
################################################################################
```

APID 1540

```
APID=1540 OBT=1.0605754120273400E+014 SSC=1607 UTC= 2009/4/13 10:27:29.699950
APID=1540 OBT=1.0605754120273400E+014 SSC=1622 UTC= 2009/4/13 10:27:29.699950
Number of lost packets= 14
################################################################################
APID=1540 OBT=1.0605758052577400E+014 SSC=5104 UTC= 2009/4/13 10:37:29.721922
APID=1540 OBT=1.0605758102353400E+014 SSC=5107 UTC= 2009/4/13 10:37:37.317133
Number of lost packets= 2
################################################################################
APID=1540 OBT=1.0605758102353400E+014 SSC=5109 UTC= 2009/4/13 10:37:37.317133
APID=1540 OBT=1.0605758102353400E+014 SSC=5123 UTC= 2009/4/13 10:37:37.317133
Number of lost packets= 13
################################################################################
APID=1540 OBT=1.0605758102353400E+014 SSC=5124 UTC= 2009/4/13 10:37:37.317133
```

```
APID=1540 OBT=1.0605758102353400E+014 SSC=5136 UTC= 2009/4/13 10:37:37.317133
Number of lost packets= 11
################################################################################
APID=1540 OBT=1.0605758102353400E+014 SSC=5137 UTC= 2009/4/13 10:37:37.317133
APID=1540 OBT=1.0605758152129400E+014 SSC=5164 UTC= 2009/4/13 10:37:44.912345
Number of lost packets= 26
################################################################################
APID=1540 OBT=1.0605758152129400E+014 SSC=5164 UTC= 2009/4/13 10:37:44.912345
APID=1540 OBT=1.0605758152129400E+014 SSC=5181 UTC= 2009/4/13 10:37:44.912345
Number of lost packets= 16
################################################################################
APID=1540 OBT=1.0605758152129400E+014 SSC=5182 UTC= 2009/4/13 10:37:44.912345
APID=1540 OBT=1.0605758600113400E+014 SSC=5545 UTC= 2009/4/13 10:38:53.269286
Number of lost packets= 362
################################################################################
APID=1540 OBT=1.0605758649889400E+014 SSC=5604 UTC= 2009/4/13 10:39:0.86449742
APID=1540 OBT=1.0605759695185400E+014 SSC=6538 UTC= 2009/4/13 10:41:40.364015
Number of lost packets= 933
################################################################################
APID=1540 OBT=1.0605759944065400E+014 SSC=6749 UTC= 2009/4/13 10:42:18.340111
APID=1540 OBT=1.0605760640929400E+014 SSC=7363 UTC= 2009/4/13 10:44:4.6731091
Number of lost packets= 613
################################################################################
APID=1540 OBT=1.0605760740481400E+014 SSC=7463 UTC= 2009/4/13 10:44:19.863532
APID=1540 OBT=1.0605761238241400E+014 SSC=7877 UTC= 2009/4/13 10:45:35.815684
Number of lost packets= 413
################################################################################
APID=1540 OBT=1.0605761437345400E+014 SSC=8055 UTC= 2009/4/13 10:46:6.1965296
APID=1540 OBT=1.0605761437345400E+014 SSC=8087 UTC= 2009/4/13 10:46:6.1965296
Number of lost packets= 31
################################################################################
APID=1540 OBT=1.0605761586673400E+014 SSC=8204 UTC= 2009/4/13 10:46:28.982204
APID=1540 OBT=1.0605780202897400E+014 SSC=8257 UTC= 2009/4/13 11:33:49.592545
Number of lost packets= 52
################################################################################
APID=1540 OBT=1.0605784284529400E+014 SSC=11870 UTC= 2009/4/13 11:44:12.400151
APID=1540 OBT=1.0605784284529400E+014 SSC=11878 UTC= 2009/4/13 11:44:12.400151
Number of lost packets= 7
################################################################################
APID=1540 OBT=1.0605785877361400E+014 SSC=13298 UTC= 2009/4/13 11:48:15.447032
APID=1540 OBT=1.0605785877361400E+014 SSC=13314 UTC= 2009/4/13 11:48:15.447032
Number of lost packets= 15
################################################################################
TOTAL Number of lost packets= 2508
TOTAL Number of packets RECEIVED= 64884
Percentuage of lost Packets= 3.7215100
################################################################################
```

APID 1664

```
APID=1664 OBT=1.0605701025686400E+014 SSC=543 UTC= 2009/4/13 8:12:28.108931
APID=1664 OBT=1.0605702323319100E+014 SSC=561 UTC= 2009/4/13 8:15:46.111961
Number of lost packets= 17
################################################################################
```

```
APID=1664 OBT=1.0605758698267600E+014 SSC=1343 UTC= 2009/4/13 10:39:8.2464328
APID=1664 OBT=1.0605758986630800E+014 SSC=1347 UTC= 2009/4/13 10:39:52.247160
Number of lost packets= 3
################################################################################
APID=1664 OBT=1.0605758986630800E+014 SSC=1347 UTC= 2009/4/13 10:39:52.247160
APID=1664 OBT=1.0605760067991700E+014 SSC=1362 UTC= 2009/4/13 10:42:37.249765
Number of lost packets= 14
################################################################################
APID=1664 OBT=1.0605760140082200E+014 SSC=1363 UTC= 2009/4/13 10:42:48.249907
APID=1664 OBT=1.0605760716808100E+014 SSC=1371 UTC= 2009/4/13 10:44:16.251280
Number of lost packets= 7
################################################################################
APID=1664 OBT=1.0605760788898800E+014 SSC=1372 UTC= 2009/4/13 10:44:27.251462
APID=1664 OBT=1.0605761509806000E+014 SSC=1382 UTC= 2009/4/13 10:46:17.253158
Number of lost packets= 9
################################################################################
APID=1664 OBT=1.0605761509806000E+014 SSC=1382 UTC= 2009/4/13 10:46:17.253158
APID=1664 OBT=1.0605762086532200E+014 SSC=1390 UTC= 2009/4/13 10:47:45.254572
Number of lost packets= 7
################################################################################
APID=1664 OBT=1.0605762086532200E+014 SSC=1390 UTC= 2009/4/13 10:47:45.254572
APID=1664 OBT=1.0605762735348600E+014 SSC=1399 UTC= 2009/4/13 10:49:24.256127
Number of lost packets= 8
################################################################################
APID=1664 OBT=1.0605762735348600E+014 SSC=1399 UTC= 2009/4/13 10:49:24.256127
APID=1664 OBT=1.0605762951620700E+014 SSC=1402 UTC= 2009/4/13 10:49:57.256632
Number of lost packets= 2
################################################################################
APID=1664 OBT=1.0605762951620700E+014 SSC=1402 UTC= 2009/4/13 10:49:57.256632
APID=1664 OBT=1.0605764681799000E+014 SSC=1426 UTC= 2009/4/13 10:54:21.260873
Number of lost packets= 23
################################################################################
APID=1664 OBT=1.0605764753889500E+014 SSC=1427 UTC= 2009/4/13 10:54:32.261015
APID=1664 OBT=1.0605766411977200E+014 SSC=1450 UTC= 2009/4/13 10:58:45.265114
Number of lost packets= 22
################################################################################
APID=1664 OBT=1.0605767925882500E+014 SSC=1471 UTC= 2009/4/13 11:2:36.268729
APID=1664 OBT=1.0605778018588200E+014 SSC=1611 UTC= 2009/4/13 11:28:16.293408
Number of lost packets= 139
################################################################################
TOTAL Number of lost packets= 251
TOTAL Number of packets RECEIVED= 1273
Percentuage of lost Packets= 16.469816
################################################################################
```

APID 1666

```
APID=1666 OBT=1.0605701090548700E+014 SSC=3989 UTC= 2009/4/13 8:12:38.006121
APID=1666 OBT=1.0605702308881500E+014 SSC=4158 UTC= 2009/4/13 8:15:43.908955
Number of lost packets= 168
################################################################################
APID=1666 OBT=1.0605724779558500E+014 SSC=7275 UTC= 2009/4/13 9:12:52.662154
APID=1666 OBT=1.0605724793976700E+014 SSC=7277 UTC= 2009/4/13 9:12:54.862222
Number of lost packets= 1
```

```
################################################################################
APID=1666 OBT=1.0605725377911300E+014 SSC=7358 UTC= 2009/4/13 9:14:23.963570
APID=1666 OBT=1.0605725392329500E+014 SSC=7360 UTC= 2009/4/13 9:14:26.163598
Number of lost packets= 1
################################################################################
APID=1666 OBT=1.0605725860919500E+014 SSC=7425 UTC= 2009/4/13 9:15:37.664759
APID=1666 OBT=1.0605725875337700E+014 SSC=7427 UTC= 2009/4/13 9:15:39.864787
Number of lost packets= 1
################################################################################
APID=1666 OBT=1.0605750011314300E+014 SSC=10775 UTC= 2009/4/13 10:17:2.7225423
APID=1666 OBT=1.0605750047359900E+014 SSC=10780 UTC= 2009/4/13 10:17:8.2226935
Number of lost packets= 4
################################################################################
APID=1666 OBT=1.0605750133868800E+014 SSC=10792 UTC= 2009/4/13 10:17:21.422904
APID=1666 OBT=1.0605750162705000E+014 SSC=10796 UTC= 2009/4/13 10:17:25.822960
Number of lost packets= 3
################################################################################
APID=1666 OBT=1.0605750523158800E+014 SSC=10846 UTC= 2009/4/13 10:18:20.823829
APID=1666 OBT=1.0605750559204200E+014 SSC=10851 UTC= 2009/4/13 10:18:26.323940
Number of lost packets= 4
################################################################################
APID=1666 OBT=1.0605754170950600E+014 SSC=11352 UTC= 2009/4/13 10:27:37.432678
APID=1666 OBT=1.0605754185367900E+014 SSC=11354 UTC= 2009/4/13 10:27:39.632586
Number of lost packets= 1
################################################################################
APID=1666 OBT=1.0605758525230500E+014 SSC=11956 UTC= 2009/4/13 10:38:41.843076
APID=1666 OBT=1.0605758604530100E+014 SSC=11967 UTC= 2009/4/13 10:38:53.943231
Number of lost packets= 10
################################################################################
APID=1666 OBT=1.0605758611739800E+014 SSC=11968 UTC= 2009/4/13 10:38:55.043326
APID=1666 OBT=1.0605758669411700E+014 SSC=11976 UTC= 2009/4/13 10:39:3.8433588
Number of lost packets= 7
################################################################################
APID=1666 OBT=1.0605758669411700E+014 SSC=11976 UTC= 2009/4/13 10:39:3.8433588
APID=1666 OBT=1.0605758719875800E+014 SSC=11983 UTC= 2009/4/13 10:39:11.543579
Number of lost packets= 6
################################################################################
APID=1666 OBT=1.0605758719875800E+014 SSC=11983 UTC= 2009/4/13 10:39:11.543579
APID=1666 OBT=1.0605758777548100E+014 SSC=11991 UTC= 2009/4/13 10:39:20.343692
Number of lost packets= 7
################################################################################
APID=1666 OBT=1.0605758777548100E+014 SSC=11991 UTC= 2009/4/13 10:39:20.343692
APID=1666 OBT=1.0605758835220700E+014 SSC=11999 UTC= 2009/4/13 10:39:29.143805
Number of lost packets= 7
################################################################################
APID=1666 OBT=1.0605758842429700E+014 SSC=12000 UTC= 2009/4/13 10:39:30.243819
APID=1666 OBT=1.0605758914520200E+014 SSC=12010 UTC= 2009/4/13 10:39:41.243961
Number of lost packets= 9
################################################################################
APID=1666 OBT=1.0605758914520200E+014 SSC=12010 UTC= 2009/4/13 10:39:41.243961
APID=1666 OBT=1.0605758979401900E+014 SSC=12019 UTC= 2009/4/13 10:39:51.144128
Number of lost packets= 8
################################################################################
APID=1666 OBT=1.0605758979401900E+014 SSC=12019 UTC= 2009/4/13 10:39:51.144128
APID=1666 OBT=1.0605759044284900E+014 SSC=12028 UTC= 2009/4/13 10:40:1.0444969
```

```
Number of lost packets= 8
################################################################################
APID=1666 OBT=1.0605759044284900E+014 SSC=12028 UTC= 2009/4/13 10:40:1.0444969
APID=1666 OBT=1.0605759130792400E+014 SSC=12040 UTC= 2009/4/13 10:40:14.244506
Number of lost packets= 11
################################################################################
APID=1666 OBT=1.0605759152419600E+014 SSC=12043 UTC= 2009/4/13 10:40:17.544548
APID=1666 OBT=1.0605759246137600E+014 SSC=12056 UTC= 2009/4/13 10:40:31.844772
Number of lost packets= 12
################################################################################
APID=1666 OBT=1.0605759260556600E+014 SSC=12058 UTC= 2009/4/13 10:40:34.044921
APID=1666 OBT=1.0605759354273800E+014 SSC=12071 UTC= 2009/4/13 10:40:48.345025
Number of lost packets= 12
################################################################################
APID=1666 OBT=1.0605759354273800E+014 SSC=12071 UTC= 2009/4/13 10:40:48.345025
APID=1666 OBT=1.0605759455200900E+014 SSC=12085 UTC= 2009/4/13 10:41:3.7453035
Number of lost packets= 13
################################################################################
APID=1666 OBT=1.0605759462410100E+014 SSC=12086 UTC= 2009/4/13 10:41:4.8453176
APID=1666 OBT=1.0605759520082700E+014 SSC=12094 UTC= 2009/4/13 10:41:13.645471
Number of lost packets= 7
################################################################################
APID=1666 OBT=1.0605759527291800E+014 SSC=12095 UTC= 2009/4/13 10:41:14.745485
APID=1666 OBT=1.0605759584964300E+014 SSC=12103 UTC= 2009/4/13 10:41:23.545598
Number of lost packets= 7
################################################################################
APID=1666 OBT=1.0605759584964300E+014 SSC=12103 UTC= 2009/4/13 10:41:23.545598
APID=1666 OBT=1.0605759657055000E+014 SSC=12113 UTC= 2009/4/13 10:41:34.545780
Number of lost packets= 9
################################################################################
APID=1666 OBT=1.0605759678682000E+014 SSC=12116 UTC= 2009/4/13 10:41:37.845823
APID=1666 OBT=1.0605759750773000E+014 SSC=12126 UTC= 2009/4/13 10:41:48.846004
Number of lost packets= 9
################################################################################
APID=1666 OBT=1.0605759757981800E+014 SSC=12127 UTC= 2009/4/13 10:41:49.945978
APID=1666 OBT=1.0605759851700100E+014 SSC=12140 UTC= 2009/4/13 10:42:4.2462829
Number of lost packets= 12
################################################################################
APID=1666 OBT=1.0605761199797100E+014 SSC=12327 UTC= 2009/4/13 10:45:29.949532
APID=1666 OBT=1.0605762929974600E+014 SSC=12567 UTC= 2009/4/13 10:49:53.953693
Number of lost packets= 239
################################################################################
APID=1666 OBT=1.0605762980438700E+014 SSC=12574 UTC= 2009/4/13 10:50:1.6539127
APID=1666 OBT=1.0605764667361300E+014 SSC=12808 UTC= 2009/4/13 10:54:19.057868
Number of lost packets= 233
################################################################################
APID=1666 OBT=1.0605764688988700E+014 SSC=12811 UTC= 2009/4/13 10:54:22.357950
APID=1666 OBT=1.0605764703406900E+014 SSC=12813 UTC= 2009/4/13 10:54:24.557979
Number of lost packets= 1
################################################################################
APID=1666 OBT=1.0605764804333900E+014 SSC=12827 UTC= 2009/4/13 10:54:39.958217
APID=1666 OBT=1.0605766289403600E+014 SSC=13033 UTC= 2009/4/13 10:58:26.561856
Number of lost packets= 205
################################################################################
APID=1666 OBT=1.0605766339867300E+014 SSC=13040 UTC= 2009/4/13 10:58:34.262035
```

```
APID=1666 OBT=1.0605766368703100E+014 SSC=13044 UTC= 2009/4/13 10:58:38.662012
Number of lost packets= 3
################################################################################
APID=1666 OBT=1.0605766570557100E+014 SSC=13072 UTC= 2009/4/13 10:59:9.4624883
APID=1666 OBT=1.0605766592185000E+014 SSC=13075 UTC= 2009/4/13 10:59:12.762651
Number of lost packets= 2
################################################################################
APID=1666 OBT=1.0605766974265400E+014 SSC=13128 UTC= 2009/4/13 11:0:11.063482
APID=1666 OBT=1.0605767104028900E+014 SSC=13146 UTC= 2009/4/13 11:0:30.863817
Number of lost packets= 17
################################################################################
APID=1666 OBT=1.0605767486109900E+014 SSC=13199 UTC= 2009/4/13 11:1:29.164768
APID=1666 OBT=1.0605778328560100E+014 SSC=14703 UTC= 2009/4/13 11:29:3.5913607
Number of lost packets= 1503
################################################################################
APID=1666 OBT=1.0605785926923700E+014 SSC=15757 UTC= 2009/4/13 11:48:23.009655
APID=1666 OBT=1.0605785941341700E+014 SSC=15759 UTC= 2009/4/13 11:48:25.209643
Number of lost packets= 1
################################################################################
TOTAL Number of lost packets= 2541
TOTAL Number of packets RECEIVED= 12696
Percentuage of lost Packets= 16.676511
################################################################################
```

5.2 RETRIEVING DATA VIA DDS

We perform a quick GAPS analysis on the consolidated telemetry. Here is the result:

APID 0016, list is not reported here (too long), APID 0016, list is not reported here (too long) this was explained by MOC with a problem of copying VC-0 in to DDS system.

```
################################################################################
TOTAL Number of lost packets= 1685
TOTAL Number of packets RECEIVED= 34003
Percentuage of lost Packets= 4.7214750
################################################################################
```

APID 0018 → NO GAPS

APID 1408

```
APID=1408 OBT=1.0605131944837400E+014 SSC=13589 UTC= 2009/4/12 8:5:13.262567
APID=1408 OBT=1.0605131945654200E+014 SSC=13591 UTC= 2009/4/12 8:5:13.387209
Number of lost packets= 1
################################################################################
TOTAL Number of lost packets= 1
TOTAL Number of packets RECEIVED= 3652
Percentuage of lost Packets= 0.027374760
```

```
################################################################################
```

APID 1410 → NO GAPS

APID 1536

```
APID=1536 OBT=1.0605132010066000E+014 SSC=3642 UTC= 2009/4/12 8:5:23.215681
APID=1536 OBT=1.0605132010069200E+014 SSC=3644 UTC= 2009/4/12 8:5:23.216164
Number of lost packets= 1
################################################################################
TOTAL Number of lost packets= 1
TOTAL Number of packets RECEIVED= 15565
Percentuage of lost Packets= 0.0064242580
################################################################################
```

APID 1538

```
APID=1538 OBT=1.0605602715077500E+014 SSC=5421 UTC= 2009/4/13 4:2:27.100496
APID=1538 OBT=1.0605602741292600E+014 SSC=5423 UTC= 2009/4/13 4:2:31.100595
Number of lost packets= 1
################################################################################
TOTAL Number of lost packets= 1
TOTAL Number of packets RECEIVED= 48844
Percentuage of lost Packets= 0.0020472925
################################################################################
```

APID 1540

```
APID=1540 OBT=1.0605157455361400E+014 SSC=14863 UTC= 2009/4/12 9:10:5.8596388
APID=1540 OBT=1.0605158401105400E+014 SSC=15693 UTC= 2009/4/12 9:12:30.168693
Number of lost packets= 829
################################################################################
APID=1540 OBT=1.0605424105393400E+014 SSC=4804 UTC= 2009/4/12 20:28:13.425550
APID=1540 OBT=1.0605424204945400E+014 SSC=4892 UTC= 2009/4/12 20:28:28.615972
Number of lost packets= 87
################################################################################
APID=1540 OBT=1.0605441228337400E+014 SSC=3562 UTC= 2009/4/12 21:11:46.179473
APID=1540 OBT=1.0605441327889400E+014 SSC=3629 UTC= 2009/4/12 21:12:1.3698953
Number of lost packets= 66
################################################################################
APID=1540 OBT=1.0605454866961400E+014 SSC=15608 UTC= 2009/4/12 21:46:27.268326
APID=1540 OBT=1.0605454916737400E+014 SSC=15641 UTC= 2009/4/12 21:46:34.863537
Number of lost packets= 32
################################################################################
TOTAL Number of lost packets= 1014
TOTAL Number of packets RECEIVED= 520339
Percentuage of lost Packets= 0.194493941
################################################################################
```

APID 1664

```
APID=1664 OBT=1.0605132088711500E+014 SSC=8992 UTC= 2009/4/12 8:5:35.216019
APID=1664 OBT=1.0605132157737300E+014 SSC=8994 UTC= 2009/4/12 8:5:45.748530
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605140496981500E+014 SSC=9112 UTC= 2009/4/12 8:26:58.216221
APID=1664 OBT=1.0605140497017600E+014 SSC=9114 UTC= 2009/4/12 8:26:58.221733
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605140765679100E+014 SSC=9121 UTC= 2009/4/12 8:27:39.216200
APID=1664 OBT=1.0605140765693900E+014 SSC=9123 UTC= 2009/4/12 8:27:39.218453
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605256153812900E+014 SSC=10724 UTC= 2009/4/12 13:21:6.0481587
APID=1664 OBT=1.0605256225903900E+014 SSC=10726 UTC= 2009/4/12 13:21:17.048381
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605256658447700E+014 SSC=10732 UTC= 2009/4/12 13:22:23.049310
APID=1664 OBT=1.0605256730538500E+014 SSC=10734 UTC= 2009/4/12 13:22:34.049492
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605257090992200E+014 SSC=10739 UTC= 2009/4/12 13:23:29.050360
APID=1664 OBT=1.0605257163082900E+014 SSC=10741 UTC= 2009/4/12 13:23:40.050542
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605257523536800E+014 SSC=10746 UTC= 2009/4/12 13:24:35.051451
APID=1664 OBT=1.0605257595627500E+014 SSC=10748 UTC= 2009/4/12 13:24:46.051592
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605257956081400E+014 SSC=10753 UTC= 2009/4/12 13:25:41.052501
APID=1664 OBT=1.0605258028171800E+014 SSC=10755 UTC= 2009/4/12 13:25:52.052602
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605258388625700E+014 SSC=10760 UTC= 2009/4/12 13:26:47.053511
APID=1664 OBT=1.0605258460716400E+014 SSC=10762 UTC= 2009/4/12 13:26:58.053693
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605258821170000E+014 SSC=10767 UTC= 2009/4/12 13:27:53.054561
APID=1664 OBT=1.0605258893261000E+014 SSC=10769 UTC= 2009/4/12 13:28:4.0547428
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605259253714400E+014 SSC=10774 UTC= 2009/4/12 13:28:59.055571
APID=1664 OBT=1.0605259325804900E+014 SSC=10776 UTC= 2009/4/12 13:29:10.055712
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605259686259400E+014 SSC=10781 UTC= 2009/4/12 13:30:5.0567016
APID=1664 OBT=1.0605259758349500E+014 SSC=10783 UTC= 2009/4/12 13:30:16.056803
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605260118803100E+014 SSC=10788 UTC= 2009/4/12 13:31:11.057631
APID=1664 OBT=1.0605260190894000E+014 SSC=10790 UTC= 2009/4/12 13:31:22.057853
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605260551347500E+014 SSC=10795 UTC= 2009/4/12 13:32:17.058681
APID=1664 OBT=1.0605260623438900E+014 SSC=10797 UTC= 2009/4/12 13:32:28.058943
Number of lost packets= 1
```

```
################################################################################
APID=1664 OBT=1.0605260983892700E+014 SSC=10802 UTC= 2009/4/12 13:33:23.059852
APID=1664 OBT=1.0605261055983000E+014 SSC=10804 UTC= 2009/4/12 13:33:34.059953
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605261416436900E+014 SSC=10809 UTC= 2009/4/12 13:34:29.060862
APID=1664 OBT=1.0605261488528300E+014 SSC=10811 UTC= 2009/4/12 13:34:40.061124
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605261848981000E+014 SSC=10816 UTC= 2009/4/12 13:35:35.061832
APID=1664 OBT=1.0605261921071800E+014 SSC=10818 UTC= 2009/4/12 13:35:46.062014
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605262281527600E+014 SSC=10823 UTC= 2009/4/12 13:36:41.063204
APID=1664 OBT=1.0605262353616200E+014 SSC=10825 UTC= 2009/4/12 13:36:52.063064
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605675577662100E+014 SSC=173 UTC= 2009/4/13 7:7:45.048561
APID=1664 OBT=1.0605675649752600E+014 SSC=175 UTC= 2009/4/13 7:7:56.048702
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605676010206100E+014 SSC=180 UTC= 2009/4/13 7:8:51.049570
APID=1664 OBT=1.0605676082297000E+014 SSC=182 UTC= 2009/4/13 7:9:2.0497522
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605676442750700E+014 SSC=187 UTC= 2009/4/13 7:9:57.050621
APID=1664 OBT=1.0605676514841500E+014 SSC=189 UTC= 2009/4/13 7:10:8.0508024
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605676803204200E+014 SSC=193 UTC= 2009/4/13 7:10:52.051449
APID=1664 OBT=1.0605676875294900E+014 SSC=195 UTC= 2009/4/13 7:11:3.0516306
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605677235748500E+014 SSC=200 UTC= 2009/4/13 7:11:58.052499
APID=1664 OBT=1.0605677307839000E+014 SSC=202 UTC= 2009/4/13 7:12:9.0526405
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605677668292700E+014 SSC=207 UTC= 2009/4/13 7:13:4.0535089
APID=1664 OBT=1.0605677740383400E+014 SSC=209 UTC= 2009/4/13 7:13:15.053650
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605678100836900E+014 SSC=214 UTC= 2009/4/13 7:14:10.054479
APID=1664 OBT=1.0605678172928100E+014 SSC=216 UTC= 2009/4/13 7:14:21.054741
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605678533381400E+014 SSC=221 UTC= 2009/4/13 7:15:16.055569
APID=1664 OBT=1.0605678605472200E+014 SSC=223 UTC= 2009/4/13 7:15:27.055751
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605678965926100E+014 SSC=228 UTC= 2009/4/13 7:16:22.056619
APID=1664 OBT=1.0605679038016700E+014 SSC=230 UTC= 2009/4/13 7:16:33.056801
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605679398470200E+014 SSC=235 UTC= 2009/4/13 7:17:28.057629
APID=1664 OBT=1.0605679470560800E+014 SSC=237 UTC= 2009/4/13 7:17:39.057771
```

```
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605679831014300E+014 SSC=242 UTC= 2009/4/13 7:18:34.058599
APID=1664 OBT=1.0605679903105400E+014 SSC=244 UTC= 2009/4/13 7:18:45.058861
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605680263559000E+014 SSC=249 UTC= 2009/4/13 7:19:40.059689
APID=1664 OBT=1.0605680335649800E+014 SSC=251 UTC= 2009/4/13 7:19:51.059871
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605680696103200E+014 SSC=256 UTC= 2009/4/13 7:20:46.060699
APID=1664 OBT=1.0605680768194800E+014 SSC=258 UTC= 2009/4/13 7:20:57.061002
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605681128647500E+014 SSC=263 UTC= 2009/4/13 7:21:52.061749
APID=1664 OBT=1.0605681200738800E+014 SSC=265 UTC= 2009/4/13 7:22:3.0619714
Number of lost packets= 1
################################################################################
APID=1664 OBT=1.0605681561194700E+014 SSC=270 UTC= 2009/4/13 7:22:58.063202
APID=1664 OBT=1.0605681633283400E+014 SSC=272 UTC= 2009/4/13 7:23:9.0630618
Number of lost packets= 1
################################################################################
TOTAL Number of lost packets= 33
TOTAL Number of packets RECEIVED= 8191
Percentuage of lost Packets= 0.40126459
################################################################################
```

APID 1666 → NO GAPs