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## VIRTIS PC3 Report

February 29<sup>th</sup> 2012

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## DOCUMENT CHANGE RECORD

ISSUE	DATE	AFFECTED PAGES	CHANGE DESCRIPTION
Issue 1	29/02/2012		

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### 1 Scope

This document describes the functional performances of VIRTIS during the PC3 observations executed on the 29<sup>th</sup> of August 2006.

### 2 Reference Documents

RD01 RO-EST-PL-3319\_3\_b\_MSP\_Rosetta\_Payload\_  
Passive\_Checkout\_2006Jul28

Rosetta\_Master\_Science\_Plan\_  
Passive\_PC3\_2006Jul28

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### 3 Activity Summary

The VIRTIS activity during PC3 were:

- VR01            6 Months Status Check

The VIRTIS activity during PC3 consisted in a single observation starting to a not specific target plus the usual calibration after the switch on.

VR01 observation started at 11:30 of 29<sup>th</sup> August 2006.

Duration: 1 hour and 4 minutes.

### 4 Activity Description and Cubes Generated

- VR01            6 Months Status Check

The goal of the observation is to verify the upload of a new pixel map for VIRTIS-H to be used during the forthcoming PC4 (pixel map allows to drastically reduce the data volume); analysis is being carried out by french VIRTIS-H team.

No specific target was required for this purpose considering that the most meaningful data for evaluate VIRTIS health would be acquired during the calibration performed after VIRTIS switch-on.

The following cubes were acquired :

Cube	EGSE	PDS
M Calibration	PV68TB29_QUB	V1_00115471868_QUB
M Calibration	PI68TB29_QUB	I1_00115471868_QUB




Table 1 M Cubes for VR01 6 Months Status Check

Cube	EGSE	PDS
H Calibration	PH68TC00_QUB	H1_00115473629_QUB
H Calibration	PS68TC00_QUB	S1_00115473870_QUB
H1	PS68TC28_QUB	S1_00115475347_QUB
H2	PT68TC28_QUB	T1_00115475444_QUB

Table 2 H Cubes for VR01 6 Months Status Check

## 5 PC3 Command History

PC3 Command history printout from time: 2006.241.09.00.00 to time: 2006.241.12.45.00					
OIOR	TC	Mnemonic	Sequense	Execution Time	
<b>VR ON</b>	ZDMX0047	Define Nom/Red branch for VIRTIS	AVRF001A	2006.241.09.00.00.000	
	ZSKA8121	START VIRTIS Power On OBCP	AVRF001A	2006.241.09.00.10.000	
	ZVR00113	Coolers ON in Closed Loop	AVRS003A	2006.241.09.15.00.000	
	ZVR00110	Switch PEMs ON	AVRS003A	2006.241.09.15.10.000	
<b>6 Months Status Check</b>					
	ZVR00061	MTC_DefaultConf	AVRF005A	2006.241.11.30.00.000	<b>M Calibration</b>
	ZVR00143	M Set Calibration DP in RAM	AVRF005A	2006.241.11.30.01.000	
	ZVR00016	MTC_ChangeOpe_R	AVRF005A	2006.241.11.30.02.000	
	ZVR00018	MTC_ChangeCal_R	AVRF005A	2006.241.11.30.03.000	
	ZVR00104	Enable M Science on SSMM	AVRF005A	2006.241.11.30.04.000	
	ZVR00106	Disable M Science on SSMM	AVRF005A	2006.241.11.50.04.000	
	ZVR00135	H Cover Close	AVRS004A	2006.241.12.00.00.000	
	ZVR00042	HTC_DefaultConf	AVRS004A	2006.241.12.00.30.000	<b>H Calibration</b>
	ZVR00149	H Set Calibration DP in RAM	AVRS004A	2006.241.12.00.31.000	
	ZVR00047	HTC_ChangeOpe_R	AVRS004A	2006.241.12.00.32.000	

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	ZVR00045	HTC_ChangeFun_R	AVRS004A	2006.241.12.00.33.000	
	ZVR00053	HTC_ChangePix_R	AVRS004A	2006.241.12.00.34.000	
	ZVR00105	Enable H Science on SSMM	AVRS004A	2006.241.12.00.35.000	
	ZVR00107	Disable H Science on SSMM	AVRS004A	2006.241.12.10.35.000	
	ZVR00061	MTC_DefaultConf	AVRF010A	2006.241.12.15.00.000	<b>M Cube M1</b>
	ZVR00142	M Set Science DP in RAM	AVRF010A	2006.241.12.15.01.000	
	ZVR00016	MTC_ChangeOpe_R	AVRF010A	2006.241.12.15.02.000	
	ZVR00014	MTC_ChangeFun_R	AVRF010A	2006.241.12.15.03.000	
	ZVR00020	MTC_ChangeAlt_R	AVRF010A	2006.241.12.15.04.000	
	ZVR00104	Enable M Science on SSMM	AVRF010A	2006.241.12.15.05.000	
	ZVR00106	Disable M Science on SSMM	AVRF009A	2006.241.12.27.00.000	
	ZVR00042	HTC_DefaultConf	AVRS005A	2006.241.12.28.00.000	<b>H Cube H1</b>
	ZVR00134	H Cover Open	AVRS005A	2006.241.12.28.01.000	
	ZVR00148	H Set Nom Observation DP in RAM	AVRS005A	2006.241.12.28.31.000	
	ZVR00045	HTC_ChangeFun_R	AVRS005A	2006.241.12.28.32.000	
	ZVR00047	HTC_ChangeOpe_R	AVRS005A	2006.241.12.28.33.000	
	ZVR00053	HTC_ChangePix_R	AVRS005A	2006.241.12.28.34.000	
	ZVR00105	Enable H Science on SSMM	AVRS005A	2006.241.12.28.35.000	
	ZVR00107	Disable H Science on SSMM	AVRF009B	2006.241.12.34.00.000	
<b>VR OFF</b>					
	ZDM10144	SSMM?Stop Write Operation from User	AVRF016A	2006.241.12.35.00.000	
	ZVR00124	M Cover Close	AVRF004C	2006.241.12.37.00.000	
	ZVR00135	H Cover Close	AVRF004C	2006.241.12.39.00.000	
	ZVR00111	Switch PEMs OFF	AVRF004C	2006.241.12.41.00.000	
	ZVR00115	Coolers OFF	AVRF004C	2006.241.12.42.30.000	
	ZDMX0224	Stop Time Update to VIRTIS 51	AVRF004D	2006.241.12.42.30.000	
	ZVR00037	VTC_EnterSafe	AVRF004D	2006.241.12.42.40.000	
	ZDMX0213	Send Time to VIRTIS 51	AVRF004D	2006.241.12.43.10.000	
	ZSKA8122	START VIRTIS Power Off OBCP	AVRF006A	2006.241.12.45.00.000	

Table 3 VIRTIS Passive Payload 3 Observation Sequence

## 6 VR01 Parameter List

VR01 6 Months Status Check			
Parameter List		H1	
H_DPT	Data Production Mode	0	Nominal
H_int_Science	Integration Time	929	1 sec
H_Sum	Frame Summing	0	NO
H_NR_Frame	Number of Frames	1	
H_DARK_RATE	Dark Rate	-----	
H_Comp	Compression	3	Wavelet F2
Expected duration (sec)			360
Expected Number of Image Slices			0
Expected Number of Spectral Slices			4
Expected Number of Dark			24
Expected Data Volume (kbit)			5000

Table 4 H Cube Parameters for VR01 6 Months Status Check

## 7 VIRTIS OIOR VR01

```
#
#-----#
# Filename:      OIOR_PIIORSO_D_0000_VR_PC__E0004.ROS
# Type:   Input Timeline file
#
# Description:   Passive Checkout Ops for VR
#
#
# Author: V.Dhiri
#
#              RSOC
#
# Date:         6 November 2004
#
# (c) ESA/Estec
#
#-----#
#-----#
```

Version: 00002

Ref\_date: 27-Mar-2005  
Start\_time: 000\_00:00:00  
End\_time: 006\_00:00:00

```
#-----#
# Description: "1.VIRTIS Passive Checkout"
#-----#
```

PC\_START(COUNT=001008)      00:00:00 VIRTIS      OFF      AVRF001A      # VIRTIS POWER-ON OBCP



```

PC_START(COUNT=001008)      00:15:00 VIRTIS      IDLE   AVRS003A      # VIRTIS-M and VIRTIS-H
Initialisation
PC_START(COUNT=001008)      02:30:00 VIRTIS      IDLE   AVRF005A      # VIRTIS-M Calibration
PC_START(COUNT=001008)      03:00:00 VIRTIS      IDLE   AVRS004A(\    # VIRTIS-H Calibration
                                VVRG0093 = 929 \    # Telescope Cal Int. time=1s
                                VVRG0094 = 1 \      #
                                VVRG0097 = 929 \    # Radiometric Cal Int. time=1s
                                VVRG0098 = 1 )    #
#
# Data Volume of the above 145 Mbits = 18.125 MBytes
#
PC_START(COUNT=001008)      03:15:00 VIRTIS      IDLE   AVRF010A(\    # VIRTIS Start-M Nominal Science
                                VVRG0051 = 0 \    # M_ERT (repetition time 5s)
                                VVRG0053 = 0 \    # M_ACQ_MODE (Nom/Nom )
                                VVRG0054 = 4 \    # Wavelet compression F3
                                VVRG0029 = 10 \   # M_IR_EXPO (1s integration time)
                                VVRG0035 = 10 \   # M_CCD_EXPO (1s integration time)
                                VVRG0037 = 2687 \  # M_ALPHA_FIRST (full field at half resolution)
                                VVRG0038 = 62847 \  # M_ALPHA_LAST
                                VVRG0039 = 470) # M_DELTA_ALPHA (double step)
PC_START(COUNT=001008)      03:27:00 VIRTIS      SCIENCE AVRF009A      # VIRTIS-M Stop acquisition SSMM
#
# Data Volume of the above 20 Mbits = 2.5 MBytes
#
PC_START(COUNT=001008)      03:28:00 VIRTIS      IDLE   AVRS005A(\    # VIRTIS Start-H Nominal acquisition Science
                                VVRG0117 = 929 \    # Integration time = 1s
                                VVRG0118 = 1 \    #
                                VVRG0121 = 1 \    # H_NR_Frame = 1
                                VVRG0124 = 3) # wavelet compression F2
#
PC_START(COUNT=001008)      03:34:00 VIRTIS      SCIENCE AVRF009B      # VIRTIS-H Stop acquisition SSMM
#
# Data Volume of the above 6 Mbits = 0.75 MByte
#
PC_START(COUNT=001008)      03:35:00 VIRTIS      IDLE   AVRF016A      # VIRTIS Stop Link to SSMM
PC_START(COUNT=001008)      03:37:00 VIRTIS      IDLE   AVRF004C      # VIRTIS PEM-M and PEM-H OFF
PC_START(COUNT=001008)      03:42:30 VIRTIS      IDLE   AVRF004D      # VIRTIS trans Idle to Safe
# RSOC Correction: Original 03:42:00 due to overlap.
PC_START(COUNT=001008)      03:45:00 VIRTIS      SAFE   AVRF006A      # VIRTIS power OFF OBCP
#=====END=====#

```