GIADA FS MODEL

REPORT ON
THE ROSETTA EXTENSION 1 PHASE
13/01/2016 - 05/04/2016

PREPARED	APPROVED	AUTHORIZED
GIADA TEAM A. ROTUNDI, V. DELLA CORTE, R. SORDINI INAF – Istituto di Astrofisica e Planetologia Spaziali, Roma (I) Università Parthenope, Napoli (I)	GIADA PI A. ROTUNDI	GIADA PI A. ROTUNDI

TABLE OF CONTENTS

REVISIONS LOG

REV	DOCUMENT CHANGE ORDER	DATE	CHANGES DESCRIPTION	PREPARED
0	-	25-11-2016	First issue	GIADA Team

1. SCOPE AND APPLICABILITY

The Rosetta Extension 1 Phase covers the period of time from 13 January 2016 until 5 April 2016. It started after Rosetta successfully completed the Comet Escort 4 Phase. The GIADA data collected in the present DataSet are complete and follow, without time interruption, the data of Comet Escort 4 DataSet (RO-C-GIA-3-ESC4-COMET-ESCORT-4-V1.0). This document reports the configurations used by GIADA FS during Rosetta Extension 1 Phase. The data were retrieved from DDS by means of the PI Workstation located at Instituto di Astrofisica e Planetologia Spaziali in Rome. We used the MaGx Converter v. 3.0 software on GIADA IWS to covert the DDS data. GIADA-in-flight software configuration is 2.3 plus three additional patches (one more patch is used to update the context file).

2. REFERENCES

2.1 APPLICABLE DOCUMENT

AD1	RO-EST-RS-3001/EID A	ROSETTA Experiment Interface Document – Part A
AD2	RO-EST-RS-3009/EIDB	ROSETTA GIADA Experiment Interface Document – Part B
AD3	RO-ESC-PL-5000 – last issue	Flight Control Procedure
AD4	GIA-GAL-MA-007 Issue 4	GIADA Flight Spare Experiment User Manual last version

2.2 REFERENCE DOCUMENT

	None.	

3. DEFINITIONS AND ABBREVIATIONS

3.1 ABBREVIATIONS

CAL	Calibration
CF	Context File
CREP	Cover REPort
CT	Configuration Table
DDS	Data Disposition System
EGSE	Electrical Ground Support Equipment
EQM	Electrical Qualification Model
ESA	European Space Agency
FCP	Flight Control Procedure
FS	Flight Spare
GDS	Grain Detection System
GES	GIADA EGSE SW
GIADA	Grain Impact Analyser and Dust Accumulator
HK	House Keeping
I/F	InterFace
INAF-OAC	INAF - Osservatorio Astronomico di Capodimonte – Napoli (I)
INAF-IAPS	INAF-Istituto di Astrofisica e Planetologia Spaziali – Roma (I)
IRQ	Interrupt ReQuest
IS	Impact Sensor
IWS	Instrument Work-Station
MBS	Micro Balance System
ME	Main Electronics
MTL	Mission TimeLine
MON	Monitor
OBCP	On-Board Control Procedure
PC	Payload Checkout
PDOP	Payload Direct Operations Proposal
PI	Principal Investigator
PS	GIADA Power Supply
PZT	(IS) Piezoelectric Sensor
RED	Redundant
REV	Revision
RMOC	Rosetta Mission Operation Centre
RSOC	Rosetta Science Operation Centre
S/C	(Rosetta) Spacecraft
S/S	(GIADA) Sub-system (e.g. IS or GDS or MBS)
SAA	Solar Aspect Angle[1]
SCI	Scientific
SSC	Source Sequence Count
SSMM	Solid State Mass Memory on-board of Rosetta Spacecraft

[1] The angle formed between the spacecraft Z-axis and the Sun direction in the XZ plane (Della Corte et. Al. 2014, present in "Document" folder).

STP	Short Term Plan (1 week of operations)
SW	Software
TC	TeleCommand
THS	Threshold
TM	Telemetry
UM	User Manual
UTC	Coordinated Universal Time
VC0	Virtual Channel 0 (Real Time TM packets)
VC1	Virtual Channel 1 (TM packets coming from Mass Memory)

4. DESCRIPTION OF ACTIVITIES

The Rosetta Extension 1 Phase (EXT1) identifies the period of time from 13 January 2016 until 5 April 2016. It started after Rosetta successfully completed the Comet Escort 4 Phase.

In the following table there is some information about the Rosetta Extension 1 Phase:

Scenario period	Start 13-01-2016	End 05-04-2016
Scenario duration	84 days	
Sun distance	~ 2.10 AU	~ 2.72 AU
Earth distance	~1.58 AU	~1.80 AU
Propagation delay	~13 min 08s.	~14 min 56s.

The configurations of GIADA during the EXT1 Phase are described at STP level in Table 1. Here are reported a short description of the GIADA configurations and the eventual anomalies, which occurred.

STP	Date [UTC]	Conf.	Description	Notes/Anomalies
091	Start 12-01-2016 23:25:00 End 19-01-2016 23:24:59	Normal Main I/F	GIADA in Normal Mode, GDS switched off taking into account SAA. IS amplification chain always set to the higher amplification value.	
092	Start 19-01-2016 23:25:00 End 26-01-2016 23:24:59	Normal Main I/F	GIADA in Normal Mode, GDS switched off taking into account SAA. IS amplification chain always set to the higher amplification value.	
093	Start 26-01-2016 23:25:00 End 02-02-2016 23:24:59	Normal Main I/F	GIADA in Normal Mode. IS amplification chain always set to the higher amplification value.	
094	Start 02-02-2016 23:25:00 End 09-02-2016 23:24:59	Normal Main I/F	GIADA in Normal Mode, GDS switched off taking into account SAA. IS amplification chain always set to the higher amplification value.	
095	Start 09-02-2016 23:25:00 End 16-02-2016 23:24:59	Normal Main I/F	GIADA in Normal Mode. IS amplification chain always set to the higher amplification value.	
096	Start 16-02-2016 23:25:00 End 23-02-2016 23:24:59	Normal Main I/F	GIADA in Normal Mode, GDS switched off taking into account SAA. IS amplification chain always set to the higher amplification value.	

097	Start 23-02-2016 23:25:00 End 01-03-2016 23:24:59	Normal Main I/F	GIADA in Normal Mode, GDS switched off taking into account SAA. IS amplification chain always set to the higher amplification value.	
098	Start 01-03-2016 23:25:00 End 08-03-2016 23:24:59	Normal Main I/F	GIADA in Normal Mode, GDS Left THS changed at the beginning of STP (Left: 6.0V, Right: 1.3V). GDS switched off taking into account SAA. IS amplification chain always set to the higher amplification value.	
099	Start 08-03-2016 23:25:00 End 15-03-2016 23:24:59	Normal Main I/F	GIADA in Normal Mode. IS amplification chain always set to the higher amplification value.	
100	Start 15-03-2016 23:25:00 End 22-03-2016 23:24:59	Normal Main I/F	GIADA in Normal Mode, GDS switched off taking into account SAA. IS amplification chain always set to the higher amplification value.	
101	Start 22-03-2016 23:25:00 End 30-03-2016 11:24:59	Normal Main I/F	GIADA in Normal Mode, GDS switched off taking into account SAA. IS amplification chain always set to the higher amplification value.	
102	Start 30-03-2016 11:25:00 End 05-04-2016 23:24:59	Normal Main I/F	GIADA in Normal Mode, GDS switched off taking into account SAA. IS amplification chain always set to the higher amplification value.	

Table 1: GIADA Operations during the Rosetta Extension 1 Phase

The data were elaborated off-line on the PI IWS at INAF-IAPS in Rome.
During the Rosetta Extension 1 Phase the GIADA Cover has never been activated.