AATSR Cycle Report Cycle # 16

28 April 2003, 21:59:29 orbit 6067 02 June 2003, 21:59:29 orbit 6567



Scene acquired over Greece on 2003, May 8 RGB combination of 1.6u, 0.87u, 0.67u bands

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reference/ <i>réference</i>	
issue/ <i>édition</i>	1
revision/ <i>révision</i>	0
date of issue/ date d'édition	
status/ <i>état</i>	Draft
Document type/ <i>type de document</i>	Technical Note
Distribution / distribution	

APPROVAL

Title <i>Titre</i>			issue 1 re <i>issue r</i> e	evision O <i>revision</i>
author Luigi Accica auteur			date 22 Ju <i>date</i>	ine 2003
approved by approuvé by			date <i>date</i>	
CHANGE LOG				
reason for change / raison du changement	issue <i>l issue</i>	revision/ <i>revision</i>	date/ <i>date</i>	
CHANGE RECORD				
Issue: 1 Revision: 0				
reason for change/ raison du changement	page(s) <i>/ page(s)</i>		paragraph(s)/	l paragraph(s)

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1 THE CYCLIC REPORT #16

1.1 Acronyms and abbreviations

AATSR	Advanced Along Track Scanning Radiometer
CR	Cyclic Report
DMOP	Detailed Mission Operation Plan
DMS	Data Management System
EN-UNA-YYYY/#	Envisat Unavailability (plus year and number)
ESOC	European Space Operation Center
IECF	Instrument Engineering and Calibration Facilities
IPF	Instrument Processing Facilities
NRT	Near Real Time
OCM	Orbit Control Manoeuvre
PDS	Payload Data Segment
PMC	Payload Management Computer
SPR	Software Problem Reporting
SW	Software
VISCAL	Visible Calibration

The AATSR list of acronyms and abbreviation is in the following site: <u>http://envisat.esa.int/dataproducts/aatsr/CNTR5-</u> <u>1.htm#eph.aatsr.glossary.acronabbr:nrt</u>

1.2 Summary

Cyclic number: 16

Cycle Stop Time: 28-APR-2003, 21:59:29 orbit stop: 6067 Cycle Start Time: 02-JUN-2003, 21:59:29 orbit stop: 6567

The main activities during the cycle have been the following

- No changing in the version of AATSR processor for Level0 and in the IPF version for the Level1 and Level2
- The Level1 processing configuration data (ATS_PC1_AX) has been changed to make some adjustments to the length and position of the search windows for the VISCAL monitor TM and the VISCAL peak signal itself. These modifications should have no impact on the operation of the IPF.
- The visible calibration coefficients data (ATS_VC1_AX) are changed regularly during the cycle. These VC1 files are being used within the time criteria set for NRT processing. Off-line data processing is expected to take place within 2 weeks of acquisition. When this is the

case the VC1 file used should be +/- 1 day from the date of acquisition (i.e. within specification). If off-line data are generated before 2 weeks from acquisition, this may not be achieved.

- The main instrument unavailability has been planned by ESOC to the PMC SW upgrade and OCM since May, 18 to May, 20.
- The data acquisition for the LevelO has been of 99.41% of the whole period, for the Level1 of the 98.81% of the whole period.
- Calibration activities: No calibration information during that cycle.
- Validation activities: No validation updates during that cycle.

1.3 Software version and Auxiliary files version

1.3.1 Software version

AATSR processor for Level0; version: PFHS/5.22 *AATSR IPF* for Level1 and Level2; version: AATSR/05.55

DOCUMENTATION Applicable: PO-RS-MDA-GS-2009 Is. 3 Rev. F

1.3.2 Auxiliary file version

This is the list of AATSR auxiliary files.

- Browse Product Look-up Data (ATS_BRW_AX)
- L1b Characterization Data (ATS_CH1_AX)
- Cloud Look-up Table Data (ATS_CL1_AX)
- General Calibration Data (ATS_GC1_AX)
- AATSR Instrument Data (ATS_INS_AX)
- Visible Calibration Coefficients Data (ATS_VC1_AX)
- Level1B Processing Configuration Data (ATS_PC1_AX)
- Level2 Processing Configuration Data (ATS_PC2_AX)
- SST Retrieval Coefficients Data (ATS_SST_AX)

In this section will be reported the list of the auxiliary files changed in the cycle and for each file will be specified the date and the reason of the changing.

Will be also reported the list of the latest filename for every auxiliary file currently in use by the PDS.

Only the ATS_VC1_AX file is expected to change regularly. These VC1 files are being used within the time criteria set for NRT processing. Off-line data processing is expected to take place within 2 weeks of acquisition. When this is the case the VC1 file used should be +/-1 day from the date of acquisition (i.e. within specification). If off-line data are generated before 2 weeks from acquisition, this may not be achieved. **(1)**

The ATS_PC1_AXV makes some minor adjustments to the length and position of the search windows for the VISCAL monitor TM and the VISCAL peak signal itself.

These modifications should have no impact on the operation of the IPF. (2)

Product name	Start	Reason
	validity	of
		changing
ATS_PC1_AXVIEC20030430_211727_20020301_000000_20070801_235959	30	(2)
	Apr2003	
ATS_VC1_AXVIEC2003	April, 29	
	May, 1, 2,	(1)
	6, 7, 9,	
	12, 14,	
	16, 19,	
	21, 23,	
	27, 28,	
	29, 30	
	June, 2	

Tab 1.3.2.1: Auxiliary files list changed during the period

Product name
ATS_BRW_AXVIEC20020123_072338_20020101_000000_20200101_000000
ATS_CH1_AXVIEC20021114_113144_20020301_000000_20070801_235959
ATS_CL1_AXVIEC20020123_073044_20020101_000000_20200101_000000
ATS_GC1_AXVIEC20020123_073430_20020101_000000_20200101_000000
ATS_INS_AXVIEC20021029_124019_20020301_000000_20030731_235959
ATS_VC1_AXVIEC20030602_153651_20030601_070817_20030608_070817
ATS_PC1_AXVIEC20030430_211727_20020301_000000_20070801_235959
ATS_PC2_AXVIEC20020123_074151_20020101_000000_20200101_000000
ATS_SST_AXVIEC20020123_074408_20020101_000000_20200101_000000

Tab 1.3.2.2: Latest auxiliary files currently in use by the PDS

1.4 PDS status

1.4.1 Instrument Unavailability

This is a summary of unavailability reports as communicated by ESOC during the period.

The AATSR has been switch-down since 18 May 2003 06:25:28.000 (day of year 138, orbit 6344, anx offset=0.159) to 20 May 2003 12:35:51.000 (day of year 140, orbit 6376, anx orbit =1873.463).

The main reason was the switch-down of the Payload Management Computer (PMC) to allow a software upgrade and an Orbit Control Manoeuvre (OCM)

Start	Stop	Reason	Reference	Planned
18 May 2003 06:25:43	20 May 2003 12:35:51	Switch-down for PMC SW upgrade and OCM	EN-UNA 2003/0134	YES
			EN-UNA 2003/0138	YES

Tab 1.4.1: AATSR Unavailability during Cycle 16

1.4.2 LevelO data acquisition and Level1b processing status

In this chapter will be reported the LevelO missing and the data unavailability not planned in the period (in-fact the unavailability planned by ESOC is not reported neither in the figure nor in the tables).

Only the Level1b data not processed starting from the corresponding Level0 will be reported.

The table below shows the LevelO data missing measurements (yellow and blue lines) and the Level1 data not processed starting from the corresponding LevelO (red line).

The blue line shows the unavailability due to the DMS, with respect the planned unavailability shown in the Tab 1.4.1.



Figure 1.5.1: Missing measurements during cycle 16. Yellow line: Level0 missing (unknown missing) Blue line: Level0 missing due to a DMS unavailability

Red lines: Level1 missing

The total number of missing data is equivalent to 3 orbits on 501 (0.6%). The Level0 data was available the 99.41% of the time during the cycle. The Leval1b data was available the 98.81% of the time during the cycle. The following tables show the list of Level0 and Level1 lack of data.

UTC Start: start time of the missing acquisition. UTC Stop: stop time of the missing acquisition. Duration: duration of the missing acquisition. Orbit Start: absolute orbit start of the missing acquisition. Orbit Stop: absolute orbit stop of the missing acquisition. Comment: reason of the missing acquisition.

UTC Start	UTC Stop	Duration	Orbit	Orbit
		(sec)	Start	Stop
18-MAY-03 06:21:43	18-MAY-03 06:25:28	225	6343	6343
25-MAY-03 14:50:34	25-MAY-03 16:25:44	5710	6449	6450
28-MAY-03 23:17:28	29-MAY-03 00:58:16	6048	6497	6498
02-JUN-03 15:37:29	02-JUN-03 17:10:37	5588	6564	6565

Tab 1.5.1: ATS_NL__OP missing data during cycle 16

UTC Start	UTC Stop	Duration (sec)	Orbit Start	Orbit Stop
03-MAY-03 21:25:26	04-MAY-03 05:48:52	30206	6138	6143
30-MAY-03 03:58:42	30-MAY-03 05:31:50	5588	6588	6589
Tab 1 E 2: ATC TOA 10 missing data during avala 1/				

Tab 1.5.2: ATS_TOA__1P missing data during cycle 16

1.5 Quality Control

1.5.1 Monitoring of parameters

JITTER:

The average scan-mirror jitter rate during this cycle was 0.01 jitters/sec or better, except for a surge in jitter that occurred between May 22 and May 25. On May 22 the average rate reached 0.8 jitters/sec, decaying over the next few days. On May 26 it returned to a mean rate of very close to 0.0 jitters/sec.

SENSOR TEMPERATURE:

All sensors maintained their nominal orbital and seasonal values.

VISCAL:

Reflectance channel calibration files (ATS_VC1_AX) are available for everyday of the cycle except during the platform unavailability period between May 16 and May 19. Nominal viscal characteristics were observed throughout the cycle.

TOTAL NOISE:

Total noise in the thermal infrared channels, as represented by the standard deviation of the black-body signal in each channel, was seen to increase slowly during this cycle and peaked on the 23-24 May at approximately twice its nominal level. The noise-level then dropped rapidly back to nominal in little over a day. It remained nominal to the end of the cycle. N.B. There is no discernible deterioration in the L1B product images during the period of higher noise.

Total noise in the reflectance channels was nominal throughout the cycle.

NEAT: none

1.5.2 Users Rejection

No user complaints during this cycle.

1.5.3 Software Problem Reporting. Potential impact

In this section will be described the SPR open with the potential impact on the data quality, and the SPR closed.

1.5.3.1 SPR open

In this section will be reported the list of SPRs.

• Empty SST % Cloud Coverage 50KM

In Level2 AR product (averaged product) Sea Surface Temperature (SST) the cloud coverage percentage is set to 0 for the 50KM cells. The cloud top temperature fields in the 50 km AST cell records are also in error. It does not happen for the 30arc minute cells.

• Empty child product

Some child products extracted from Level1b (TOA) product has unexpected exceptional values in the data set.

- RAL SPR 15
 - The Operational Processor sets the Record Quality Indicator incorrectly.

• It is unclear whether or not the processors should omit MDS records in granules for which the attachment flag is set.

Those SPRs are under investigation.

1.5.3.2 SPR closed

No old SPRs closed during the cycle.

1.6 Calibration/Validation activities and results

1.6.1 Calibration

No calibration information during that cycle.

1.6.2 Validation

No validation updates during that cycle.

1.7 General information

A calibration meeting will be held at London on July 11. The status of the vicarious calibration and comparison with MERIS will be presented.

A MERIS/AATSR Validation Team meeting will be held at ESRIN on October 20-24. The results from the validation team will be presented.