AATSR Cycle Report
Cycle # 32

17 January 2004, 21:59:29 orbit 14585
21 February 2005, 21:59:29 orbit 15585

This scene, acquired on 17 February 2005 - absolute orbit 15516 (relative orbit 432) - shows from Northeast to Southwest, the Mekong River through Laos, Thailand, Cambodia and Vietnam. The lake on the left of the image is the Tonlé Sap Lake, the largest of Southeast Asian lakes. During February this lake begins its return to normal size. In June and November the Tonle Sap River changes direction. In June, with monsoon rains swelling the Mekong, excess water is pushed into the Tonle Sap that then drains back upstream into the lake, flooding the surrounding low plains. By monsoon's end, in November, the pressure is relieved and the Tonle Sap reverses course and returns to the direction of flow expected of it.

prepared by/*préparé par*	AATSR PCF team and QWG team
reference/*réference*	
issue/*édition*	1
Revision/*révision*	0
date of issue/*date d'édition*	
status/*état*	Draft
Document type/*type de document*	Technical Note
Distribution/*distribution*	

APPROVAL

Title *Titre*	AATSR Cyclic Report – Cycle 34th	issue 1 *issue*	revision 0 *revision*

author *auteur*	Luigi Accica	date *date*	10 May 2005

approved by *approuvé by*	date *date*

CHANGE LOG

reason for change */raison du changement*	issue/*issue*	revision/*revision*	date/*date*

CHANGE RECORD

Issue: 1 Revision: 0

reason for change/*raison du changement*	page(s)/*page(s)*	Paragraph(s)/*paragraph(s)*

TABLE OF CONTENTS

1 THE CYCLIC REPORT #34

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
HSM	High Speed Multiplexer
IECF	Instrument Engineering and Calibration Facilities
IPF	Instrument Processing Facilities
MPS	Mission Planning Schedule
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:
http://envisat.esa.int/dataproducts/aatsr/CNTR5-1.htm#eph.aatsr.glossary.acronabbr:nrt

1.2 Summary

Cyclic number: 34
Cycle Start Time: 17-JANUARY-2004, 21:59:29 orbit stop: 14585
Cycle Stop Time: 21-FEBRUARY-2005, 21:59:29 orbit stop: 15585

The main activities during the cycle have been the following:

- **Processor L0 and IPF Version**: No changing in the version of AATSR processor for Level0 (5.22). No changing in the IPF version for Level1 and Level2 (5.59).
- **Visible calibration data**: 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.

- **Data Acquisition**: The data acquisition for the Level0 has been of 91.74% of the whole period, for the Level1 of the 98.88% of the whole period.
- **Calibration activities**: tbd.
- **Validation activities**: tbd.

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/05.59 – delivered on 19th July 2004.

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

1.3.1.1 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)***
- ***LST Land Surface Temperature Coefficients Data (ATS_LST_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)**.

Product name	Start validity	Reason of changing
ATS_VC1_AXVIEC2005	January, 18, 19, 20, 21, 24, 25, 26, 27, 28, 31 February, 1, 2, 3, 4, 7, 8, 9, 10, 14, 15, 16, 18, 19, 20	(1)

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_AXVIEC20041214_154941_20020301_000000_20070801_235959
ATS_INS_AXVIEC20030731_092706_20020301_000000_20070801_235959
ATS_VC1_AXVRAL20050220_131949_20050218_182436_20050225_182436
ATS_LST_AXVIEC20040311_095537_20020301_000001_20070801_235959
ATS_PC1_AXVIEC20040812_063722_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

No instrument unavailability during the period.

1.4.2 Level0 data acquisition and Level1b processing status

In this chapter will be reported the Level0 missing and the data unavailability not planned in the period.
Only the Level1b data not processed starting from the corresponding Level0 will be reported.
The figure below shows the Level0 data missing measurements (yellow line) and the Level1 data not processed starting from the corresponding Level0 (red line) and the unavailability not planned (green line).

Figure 1.4.2.1: Missing measurements during cycle 34.

Yellow line: Level0 missing (PDS failure)
Red lines: Level1 missing

The Level0 data was available the 91.74% of the time during the cycle.
The Level1b data was available the 98.88% 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.

UTC Start	UTC Stop	Duration (sec)	Orbit Start	Orbit Stop
26-JAN-2005 04:55:35	26-JAN-2005 06:30:29	5694	15203	15204
27-JAN-2005 21:31:22	28-JAN-2005 07:08:32	34630	15227	15233
28-JAN-2005 20:05:28	28-JAN-2005 20:56:18	3050	15241	15241
29-JAN-2005 00:07:39	29-JAN-2005 00:21:54	855	15243	15243
29-JAN-2005 11:06:55	29-JAN-2005 12:46:00	5945	15250	15251
29-JAN-2005 21:08:08	29-JAN-2005 22:09:29	3681	15256	15256
29-JAN-2005 22:16:55	29-JAN-2005 23:49:47	5572	15256	15257
29-JAN-2005 23:53:31	30-JAN-2005 04:25:19	16308	15257	15260
30-JAN-2005 04:25:36	30-JAN-2005 06:05:54	6018	15260	15261
01-FEB-2005 01:04:21	01-FEB-2005 02:05:10	3649	15287	15287
01-FEB-2005 02:13:09	01-FEB-2005 03:19:28	3979	15287	15288
01-FEB-2005 05:02:19	01-FEB-2005 05:17:01	882	15289	15289
01-FEB-2005 21:03:18	01-FEB-2005 22:14:41	4283	15299	15299
01-FEB-2005 23:58:03	01-FEB-2005 23:59:01	58	15300	15300
02-FEB-2005 02:44:47	02-FEB-2005 02:47:34	167	15302	15302
02-FEB-2005 04:31:15	02-FEB-2005 06:11:22	6007	15303	15304
02-FEB-2005 21:44:10	02-FEB-2005 23:39:45	6935	15313	15315
04-FEB-2005 21:09:49	04-FEB-2005 21:39:25	1776	15342	15342
04-FEB-2005 22:21:38	05-FEB-2005 06:15:58	28460	15342	15347
05-FEB-2005 20:34:52	06-FEB-2005 07:28:07	39195	15356	15362
06-FEB-2005 20:07:48	07-FEB-2005 06:54:11	38783	15370	15376
08-FEB-2005 01:46:23	08-FEB-2005 06:19:37	16394	15387	15390
08-FEB-2005 20:42:33	08-FEB-2005 20:59:50	1037	15399	15399
09-FEB-2005 11:58:05	09-FEB-2005 13:34:08	5763	15408	15409
11-FEB-2005 01:52:24	11-FEB-2005 03:05:16	4372	15430	15431
11-FEB-2005 04:47:56	11-FEB-2005 06:28:39	6043	15432	15433
12-FEB-2005 04:16:34	12-FEB-2005 04:19:22	168	15446	15446

Tab 1.4.2.1: ATS_NL__0P missing data during cycle 34

UTC Start	UTC Stop	Duration (sec)	Orbit Start	Orbit Stop
28-JAN-2005 22:49:11	28-JAN-2005 22:50:20	69	15242	15242
29-JAN-2005 00:25:03	29-JAN-2005 01:56:51	5508	15243	15244
30-JAN-2005 04:25:19	30-JAN-2005 04:25:36	17	15260	15260
01-FEB-2005 22:14:41	01-FEB-2005 23:58:03	6202	15299	15300
01-FEB-2005 23:59:01	02-FEB-2005 02:44:47	9946	15300	15302
02-FEB-2005 02:47:34	02-FEB-2005 04:31:15	6221	15302	15303
11-FEB-2005 00:18:56	11-FEB-2005 01:52:24	5608	15429	15429

Tab 1.4.2.2: ATS_TOA_1P missing data during cycle 34

1.4.2.1 Compromised orbits owning to major bad data quality

The information reported in the tables 1.4.2.1 and 1.4.2.2 does not consider the quality of the data, only whether or not it is available. The orbits listed

below have been processed but the quality is bad on the whole orbit or only on some few frames (bad/missing telemetry):

Orbit number	Date	Reason
15185	24 January	Esrin demodulator problems
15198, 15199	25 January	Esrin demodulator problems
15200, 15201, 15202, 15203, 15213, 15214	26 January	Esrin demodulator problems
15215, 15216, 15217	27 January	Esrin demodulator problems
15256, 15257	29 January	Esrin demodulator problems
15270, 15271	30 January	Esrin demodulator problems
15284, 15285	31 January	Esrin demodulator problems
15286, 15287, 15288, 15289	01 February	Esrin demodulator problems
15313, 15314	02 February	Esrin demodulator problems
15315	03 February	Esrin demodulator problems
15342	04 February	Esrin demodulator problems
15384, 15385	07 February	Esrin demodulator problems

Tab 1.4.2.1: Compromised orbits owning to major bad data quality during cycle 34

The anomaly occurred during January/February is recognized to be caused by a hardware problem of the demodulator in the ESRIN acquisition chain.
Because the anomaly was random and some attempts to change the demodulator chain used was done during the acquisition, the first anomaly detected for AATSR was on 24 January (orbit #15185).
A first on-site intervention was performed on 02-Feb-2005 to 03-Feb-2005.
Since then until the evening of 4th of February the data acquired was generally without anomaly.
After that date the demodulator failed again, thus there has been no acquisition until the 7th of February.
The first orbit received without anomaly #15386 on 8 February.

1.4.3 Level0 and Level1b backlog processing status

In this chapter a check with respect to the previous cycle is done to verify if the status of the missing data has changed after a backlog processing. In the following tables (showed only if a change whit respect the previous cycle has been detected) will be point out three kinds of missing products modified:

- Data gap cancelled: it refers to data gap that was identified in the previous report but hasn't now been detected as a result of backlog processing (red line).
- Duration change of data gap: it refers to data gap/s still exists but that it has got longer or shorter since the last report (green line).
- New data gap: it refers to data gap now filled as a result of a backlog processing (blue line).

The list of data missing during the previous cycle has not changed (see the list in the Cyclic Report #33).

1.5 Quality Control

1.5.1 Monitoring of parameters

JITTER:

SENSOR TEMPERATURE:

VISCAL:

TOTAL NOISE:

NE∆T:

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

- Unphysical sea surface temperature values in Level 2 AATSR products from PDHS-E at intervals of 480 rows:

Open – The investigation shows that the problem does not happen using the IPF 5.59 with respect to the IPF 5.52 on which the problem was detected. Request to investigate on which IPF version the problem has been resolved.

- 50 / 17 km Cell Size Anomaly in AST product:

Open – IPF maintainer say that there is an extra configuration parameter which could be used to override AST_cell_dimension in the PC2 file, but that when using the default configuration file delivered with the IPF this override function should not be activated.
More investigation required.

1.5.3.1.1 New SPRs since the last Cyclic Report

None

1.5.3.2 SPR closed

- Inconsistent values in AST confidence word, 17 km cell:
  Investigation completed - to be corrected with a patch at next appropriate opportunity.

1.6 Calibration / Validation activities and results

1.6.1 Calibration

No further information on instrument calibration is reported. The current status of the instrument calibration can be found in Section 1.7.1 of Cyclic Report 20.

1.6.2 Validation

1.7 General information

None