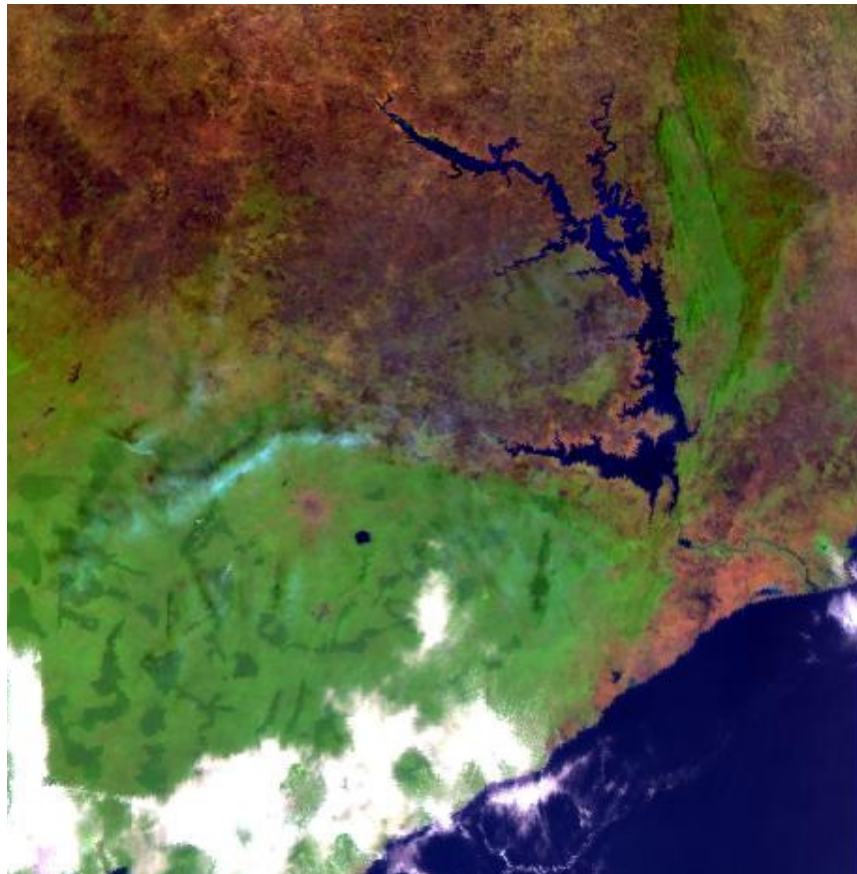


# **ENVISAT - AATSR**

## **CYCLIC REPORT #54**

	START	END
<i>DATE</i>	<i>18 DECEMBER 2006</i>	<i>22 JANUARY 2007</i>
<i>TIME</i>	<i>21:59:29</i>	<i>21:59:29</i>
<i>ORBIT #</i>	<i>25105</i>	<i>25605</i>



Lake Volta, Ghana 11 Jan 2007 – Formed in 1965 by construction of the Akosombo Dam, this is the largest reservoir in the world. Its creation required the relocation of over 78,000 people and 200,000 livestock.

---

prepared by/*préparé par* AATSR DPQC and QWG team  
 reference/*référence*  
 issue/*édition* 1  
 revision/*révision* 0  
 date of issue/*date d'édition* 05 February 2007  
 status/*état*  
 Document type/*type de document* Technical Note  
 Distribution/*distribution*

**A P P R O V A L**

Title <i>titre</i>	AATSR Cyclic Report – Cycle 54	issue 1 <i>issue</i>	revision 0 <i>revision</i>
-----------------------	--------------------------------	-------------------------	-------------------------------

author <i>auteur</i>	Sian Procter/Kevin Halsall	date <i>date</i>	05 February 2007
-------------------------	----------------------------	---------------------	---------------------

approved by <i>approuvé par</i>		date <i>date</i>	
------------------------------------	--	---------------------	--

**C H A N G E L O G**

reason for change / <i>raison du changement</i>	issue/ <i>issue</i>	revision/ <i>revision</i>	date/ <i>date</i>

**C H A N G E R E C O R D**

Issue: 1 Revision: 0

reason for change/ <i>raison du changement</i>	page(s)/ <i>page(s)</i>	paragraph(s)/ <i>paragraph(s)</i>

## T A B L E O F C O N T E N T S

<b>AATSR CYCLIC REPORT # 54</b> .....	<b>1</b>
<b>1 INTRODUCTION</b> .....	<b>1</b>
1.1 Acronyms and Abbreviations .....	1
<b>2 SUMMARY</b> .....	<b>2</b>
<b>3 SOFTWARE &amp; AUX FILE VERSION CONFIGURATION</b> .....	<b>3</b>
3.1 Software Version .....	3
3.2 Auxiliary Files .....	3
3.2.1 Status of Daily Visible Calibration Files .....	4
3.2.1.1 VC1 File Availability .....	4
3.2.2 Status of other auxiliary Files.....	4
<b>4 PDS STATUS</b> .....	<b>5</b>
4.1 Instrument Unavailability.....	5
4.2 L0 Data Acquisition and L1b Processing Status.....	5
4.2.1 Orbits Affected by Poor Data Quality .....	6
4.3 L0 and L1b Backlog Processing Status.....	7
<b>5 DATA QUALITY CONTROL</b> .....	<b>8</b>
5.1 Monitoring of Instrument Parameters .....	8
5.1.1 Jitter.....	8
5.1.2 Sensor Temperature.....	8
5.1.3 Viscal.....	8
5.1.4 NE $\Delta$ T .....	9
5.2 User Rejections.....	9
5.3 Software Problem Reporting .....	9
5.3.1 Existing SPRs that are still open .....	9
5.3.2 New SPRs since the last cyclic report .....	9
5.3.3 Closed SPRs .....	9
<b>6 CALIBRATION/VALIDATION ACTIVITIES &amp; RESULTS</b> .....	<b>10</b>
6.1 Calibration .....	10
6.2 Validation.....	10
<b>7 DISCLAIMERS</b> .....	<b>11</b>

## AATSR CYCLIC REPORT # 54

### 1 INTRODUCTION

The AATSR Cyclic Report is distributed by the AATSR DPQC team to keep the AATSR community informed of any modification regarding instrument performances, the data production chain and the results of calibration and validation campaigns at the end of each Envisat cycle, which consists of 501 complete orbits over the course of 35 days.

This document is available online at: <http://earth.esa.int/pcs/envisat/aatsr/reports/cyclic/>

#### 1.1 *Acronyms and Abbreviations*

AATSR	Advanced Along Track Scanning Radiometer
APC	Antenna Pointing Controller
CR	Cyclic Report
DDS	Data Dissemination System
DMOP	Detailed Mission Operation Plan
DMS	Data Management System
DPQC	Data Product Quality Control
EN-UNA-YYYY/#	Envisat Unavailability (plus year and number)
ESOC	European Space Operation Centre
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
OBDAH	On-board Data Handling
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.htm#eph.aatsr.glossary>

## 2 SUMMARY

**Cyclic Report:** 54  
**Cycle Start:** 18 December 2006, 21:59:29, Orbit #: 25105  
**Cycle End:** 22 January 2007, 21:59:29 Orbit #: 25605

The main activities during the cycle have been as follows:

- **L0 Processor and IPF Version:**  
L0 Processor – no change (5.22)  
Level 1b & Level 2 processor – patch installed 18 Jan 2007 at Kiruna, ESRIN and UK-PAC (5.60)
- **Visible channel calibration:**  
The visible calibration data supplied as an aux file (ATS\_VC1\_AX) continued to be regularly updated throughout the cycle.
- **PEB Anomaly**  
An anomaly and unplanned instrument unavailability from 24 Dec 2006 08:30.00 to 24 Dec 2006 12:07.45
- **Envisat OCM**  
Began 22 Jan 2007 23:51:59 and ended after the cycle had finished on 23 Jan 2007 06:54:00.
- **Visible Channel Drift Correction**  
A new visible channel drift correction has been calculated, based upon a thin film model. This has been applied to all VC1 files delivered since 20 December. The new correction will have been applied for all consolidated data from 18 December onwards.

### 3 SOFTWARE & AUX FILE VERSION CONFIGURATION

#### 3.1 Software Version

AATSR IPF for Level 1 and Level 2: Version 5.60

#### 3.2 Auxiliary Files

AATSR processing uses the following auxiliary files:

- Browse Product Lookup Data (ATS\_BRW\_AX)
- L1b Characterisation Data (ATS\_CH1\_AX)
- Cloud Lookup Table Data (ATS\_CL1\_AX)
- General Calibration Data (ATS\_GC1\_AX)
- AATSR Instrument Data (ATS\_INS\_AX)
- Visible Calibration Coefficients Data (ATS\_VC1\_AX)
- L1b Processing Configuration Data (ATS\_PC1\_AX)
- L2 Processing Configuration Data (ATS\_PC2\_AX)
- SST Retrieval Coefficients Data (ATS\_SST\_AX)
- LST Land Surface Temperature Coefficients Data (ATS\_LST\_AX)

The latest filename for each auxiliary file in use in the PDS is as follows:

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
See below for VC1 files
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_AXVIEC20051205_102103_20020101_000000_20200101_000000

Table 3-1 Latest auxiliary files currently in use by the PDS

### 3.2.1 STATUS OF DAILY VISIBLE CALIBRATION FILES

#### 3.2.1.1 VC1 File Availability

Reflectance channel calibration files were available for all dates, except for the following dates:

- 20<sup>th</sup> December 2006
- 29<sup>th</sup> December 2006
- 31<sup>st</sup> December 2006
- 13<sup>th</sup> January 2007

### 3.2.2 STATUS OF OTHER AUXILIARY FILES

The following list highlights any of the other auxiliary files changed during this cycle.

<b>Product name</b>	<b>Date Introduced</b>	<b>Validity Range</b>	<b>Reason for Change</b>
No changes during this cycle			

## 4 PDS STATUS

### 4.1 Instrument Unavailability

AATSR data were unavailable due to instrument unavailability at the following times during the cycle:

UTC Start	UTC Stop	Reason	Reference	Planned
24 Dec 2006 08:30.00	24 Dec 2006 12:07.45	PEB FAILURE	EN-UNA-2006/0379	NO
22 Jan 2007 23:51:59.00	(23 Jan 2007 06:54:00)	OCM	EN-UNA-2007/0015	YES

Table 4-1 Instrument unavailability during cycle 54

### 4.2 L0 Data Acquisition and L1b Processing Status

The L0 data were available for 96.49% of the time during the cycle.

The L1b data were available for 95.46% of the time during the cycle.

The following L0 data were missing from this cycle:

NB Missing L0 data are automatically also missing at L1b. Therefore the missing L1b data specifically reported in Table 4-3 represent additional data gaps where the start time does not coincide with L0 data already known to be missing.

UTC Start	UTC Stop	Duration (s)	Orbit Start	Orbit End
19/12/2006 18:40	19/12/2006 20:01	4901	25117	25118
23/12/2006 03:34	23/12/2006 05:16	6152	25165	25166
23/12/2006 09:47	23/12/2006 11:24	5819	25169	25170
23/12/2006 13:05	23/12/2006 16:19	11625	25171	25173
24/12/2006 08:56	24/12/2006 12:02	11150	25183	25184
24/12/2006 17:06	24/12/2006 17:26	1205	25187	25188
24/12/2006 18:15	24/12/2006 19:02	2793	25188	25189
24/12/2006 19:41	24/12/2006 20:43	3746	25189	25190
25/12/2006 06:31	25/12/2006 07:00	1774	25195	25196
25/12/2006 11:48	25/12/2006 12:00	754	25199	25199
25/12/2006 13:08	25/12/2006 13:41	1950	25199	25200
25/12/2006 14:30	25/12/2006 15:20	2980	25200	25201
25/12/2006 18:36	25/12/2006 20:12	5764	25203	25204
26/12/2006 08:34	26/12/2006 09:50	4523	25211	25212
26/12/2006 10:21	26/12/2006 11:30	4097	25212	25213
26/12/2006 16:02	26/12/2006 16:27	1518	25215	25216
26/12/2006 16:45	26/12/2006 18:03	4689	25216	25217
26/12/2006 18:05	26/12/2006 19:42	5828	25217	25218
27/12/2006 07:34	27/12/2006 07:38	266	25225	25225
27/12/2006 09:48	27/12/2006 10:59	4220	25226	25227



UTC Start	UTC Stop	Duration (s)	Orbit Start	Orbit End
27/12/2006 11:01	27/12/2006 12:38	5828	25227	25228
31/12/2006 02:42	31/12/2006 04:25	6177	25279	25280
31/12/2006 06:04	31/12/2006 06:04	27	25281	25281
02/01/2007 06:43	02/01/2007 07:49	3990	25310	25311
13/01/2007 01:23	13/01/2007 02:34	4238	25464	25465

**Table 4-2 ATS\_NL\_0P missing data during cycle 54**

UTC Start	UTC Stop	Duration (s)	Orbit Start	Orbit End
19/12/2006 18:42	19/12/2006 20:01	4731	25117	25118
23/12/2006 03:37	23/12/2006 05:16	5983	25165	25166
23/12/2006 09:50	23/12/2006 11:24	5630	25169	25170
24/12/2006 08:58	24/12/2006 12:02	10989	25183	25184
24/12/2006 17:08	24/12/2006 17:26	1042	25187	25188
24/12/2006 18:18	24/12/2006 19:02	2611	25188	25189
24/12/2006 19:44	24/12/2006 20:43	3581	25189	25190
25/12/2006 06:34	25/12/2006 07:00	1581	25196	25196
25/12/2006 11:51	25/12/2006 12:00	552	25199	25199
25/12/2006 13:11	25/12/2006 13:41	1800	25199	25200
25/12/2006 14:33	25/12/2006 15:20	2794	25200	25201
25/12/2006 18:40	25/12/2006 20:12	5546	25203	25204
25/12/2006 21:05	25/12/2006 21:26	1250	25204	25204
25/12/2006 21:37	25/12/2006 23:06	5363	25204	25205
25/12/2006 23:40	26/12/2006 00:48	4079	25206	25206
26/12/2006 04:18	26/12/2006 05:22	3826	25208	25209
26/12/2006 06:40	26/12/2006 07:03	1372	25210	25210
26/12/2006 08:37	26/12/2006 09:50	4368	25211	25212
26/12/2006 10:24	26/12/2006 11:30	3915	25212	25213
26/12/2006 16:05	26/12/2006 16:27	1301	25215	25216
26/12/2006 16:48	26/12/2006 18:03	4519	25216	25217
26/12/2006 18:08	26/12/2006 19:42	5650	25217	25218
27/12/2006 07:37	27/12/2006 07:38	58	25225	25225
27/12/2006 09:51	27/12/2006 10:59	4028	25226	25227
27/12/2006 11:04	27/12/2006 12:38	5647	25227	25228
29/12/2006 08:18	29/12/2006 09:57	5914	25254	25255
30/12/2006 23:52	31/12/2006 02:42	10157	25277	25279
31/12/2006 02:42	31/12/2006 04:25	6177	25279	25280
31/12/2006 04:25	31/12/2006 06:04	5952	25280	25281
31/12/2006 06:04	31/12/2006 06:04	27	25281	25281
03/01/2007 18:55	03/01/2007 20:32	5812	25332	25333
06/01/2007 20:39	06/01/2007 20:58	1121	25376	25376
13/01/2007 01:26	13/01/2007 02:34	4058	25464	25465
17/01/2007 08:22	17/01/2007 10:00	5873	25526	25527

**Table 4-3 ATS\_TOA\_1P missing data during cycle 54**

#### 4.2.1 ORBITS AFFECTED BY POOR DATA QUALITY

The information reported in Table 4-2 does not consider the quality of data, only whether or not it is available.

In the following orbit, a few frames suffered from bad/missing telemetry:

- 25233 (27<sup>th</sup> December 2006)
- 25242/3 (28<sup>th</sup> December 2006)
- 25266 (30<sup>th</sup> December 2006)
- 25442/3 (11<sup>th</sup> January 2007)

### **4.3 *L0 and L1b Backlog Processing Status***

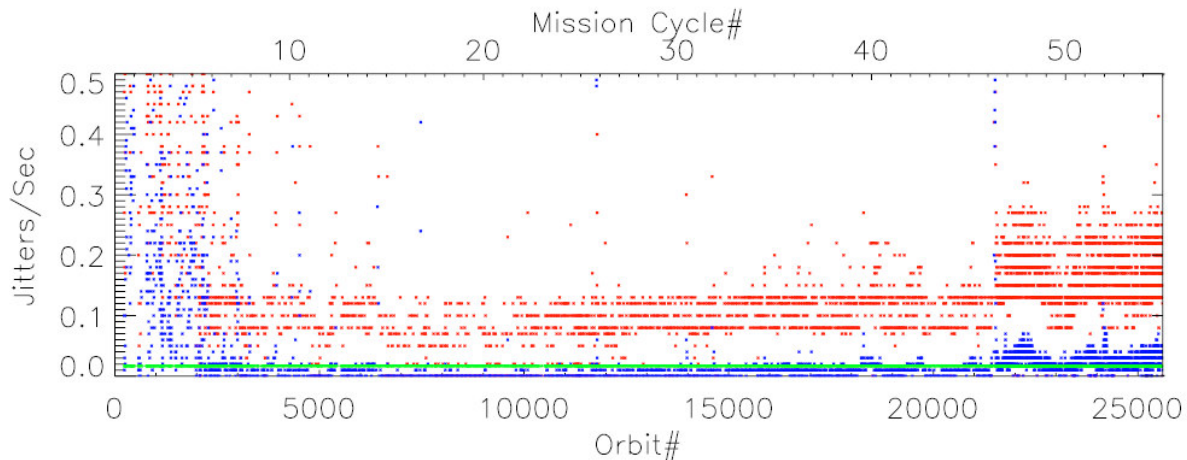
The list of data missing during the previous cycle has not changed.

## 5 DATA QUALITY CONTROL

### 5.1 *Monitoring of Instrument Parameters*

#### 5.1.1 JITTER

(Includes info for the last two cycles).



The plot shows the jitter-trend since the start of the mission, against both orbit-number and cycle-number. The mean jitter-rate (per-orbit) is shown in blue and the maximum rate per orbit in red. The green horizontal line shows the nominal mean jitter-level achieved for much of the mission. The mean jitter-rate over the last two cycles continues to be well above the nominal level. There is no significant deterioration in image quality associated, but this is continually monitored.

#### 5.1.2 SENSOR TEMPERATURE

While in measurement mode, all sensors maintained their nominal orbital and seasonal ranges in these cycles.

#### 5.1.3 VISCAL

Reflectance channel calibration files are available for most days in these cycles, except:

Cycle #53:

November: 14 and 29-30 (ENVISAT Memory maintenance anomaly)

December: 05 and 13-16 (ENVISAT Level 3 Protocol Error)

Cycle #54:

December: 20, 29 and 31  
January : 13

#### 5.1.4 NEΔT

The NEΔT information for this cycle shall be included in the report for Cycle #55

### 5.2 *User Rejections*

There were no user rejections during this cycle.

### 5.3 *Software Problem Reporting*

This section describes the open SPRs, their potential impact on the data quality, and SPRs that have been closed.

#### 5.3.1 EXISTING SPRS THAT ARE STILL 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. No further instances of the problem have been reported. Original OAR (OAR-193) closed. Investigation will continue as a background task and a new OAR opened if necessary.

#### 5.3.2 NEW SPRS SINCE THE LAST CYCLIC REPORT

No new SPRs have been opened since the last Cyclic Report.

#### 5.3.3 CLOSED SPRS

##### **Inconsistent values in AST confidence word, 17 km cell:**

Open - Investigation completed (an error has been found in the setting of the flag indicating the use of ir37 channel). The problem was corrected in the patch supplied to the IPF.

##### **Cloud Flagging Errors leading to Missing Zones in Consolidated AATSR Data:**

Open – Systematic bands of missing data were observed in monthly mean SST maps for December products from all years. The problem has been traced to a problem with the loading of the "12 micron gross cloud test" LUT from the relevant auxiliary file. The problem has been corrected with the patch supplied to the IPF. Consolidated data from December 2006 will be reprocessed with the new IPF (5.6) before being disseminated.

## **6 CALIBRATION/VALIDATION ACTIVITIES & RESULTS**

### **6.1 Calibration**

The calibration activities and results information for this cycle shall be included in the report for cycle #55.

### **6.2 Validation**

The validation activities and results information for this cycle shall be included in the report for cycle #55.

## **7      DISCLAIMERS**

No new disclaimers have been issued during this cycle.