This subset from a Level 1 product acquired on the 28th August 2010 shows the River Amazon (bottom) and two of its tributaries, Negro (top) and Japurá (centre) in Brazil. This RGB image is composed of the 1.6, 0.87 and 0.55 micron channels for the nadir view.
# APPROVAL

<table>
<thead>
<tr>
<th>Title (titre)</th>
<th>AATSR Cyclic Report – Cycle 92</th>
<th>issue</th>
<th>revision</th>
</tr>
</thead>
</table>

| author (auteur) | Paula Marti Rocafull/Siân O’Hara | date | 27 September 2010 |

| approved by (approuvé par) | | date | |

# CHANGE LOG

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# CHANGE RECORd

**ISSUE: 1 REVISION: 0**

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AATSR CYCLIC REPORT # 92

1 INTRODUCTION

The AATSR Cyclic Report is distributed by the AATSR IDEAS 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
EN-UNA-YYYY/# Envisat Unavailability (plus year and number)
ESOC        European Space Operation Centre
HSM         High Speed Multiplexer
IDEAS       Instrument Data quality Evaluation and Analysis Service
IECF        Instrument Engineering and Calibration Facilities
IPF         Instrument Processing Facilities
LUT         Look Up Table
MPS         Mission Planning Schedule
NRT         Near Real Time
OCM         Orbit Control Manoeuvre
OBDH        On-board Data Handling
PDS         Payload Data Segment
PMC         Payload Management Computer
RAL         Rutherford Appleton Laboratory
SPR         Software Problem Reporting
SSR         Solid State Recorder
SW          Software
VISCAL      Visible Calibration

The AATSR list of acronyms and abbreviations is available at the following site: http://envisat.esa.int/dataproducts/aatsr/CNTR5.htm#eph.aatsr.glossary
2 SUMMARY

Cyclic Report: 92

Cycle Start: 9th August 2010, 21:59:29 Orbit #: 44143
Cycle End: 13th September 2010, 21:59:29 Orbit #: 44643

The main activities during the cycle have been as follows:

- **Kiruna AATSR NRT Dissemination Delays**
  9th to 10th August due to system problems at the PDHS-K facility.
  On the 22nd August a system problem caused delays in the NRT level 1 and level 2 production,
  9th to 10th September due to system problems at the PDHS-K facility.

- **Esrin AATSR NRT Dissemination Delay**
  Network downtime at PDHS-E on 6th September for approximately 4 hours impacted the distribution of NRT data as well as access to online archives. The processing centre is now back to nominal operations.

- **UK-PAC/PAF unavailability**
  On 24th August 2010 from 10:00 to 18:00 CET, server access to Matera and UK-PAC/PAF were unavailable due to network maintenance affecting the production facility centres.

- **Error in Visible Calibration (VC1) auxiliary files**
  It was detected that all VC1 files generated from 4th April until 12th July (inclusive) did not contain the long-term drift correction. The work to regenerate and disseminate the incorrect VC1 files is ongoing. The first set of reprocessed products has been analysed and has passed the QC checks successfully.
3 SOFTWARE & AUX FILE VERSION CONFIGURATION

3.1 Software Version

AATSR IPF for Level 1 and Level 2: Version 6.03

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:

<table>
<thead>
<tr>
<th>Product name</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATS_BRW_AXVIEC20020123_072338_20020101_000000_20200101_000000</td>
</tr>
<tr>
<td>ATS_CH1_AXVIEC20070720_093530_20020301_000000_20200101_000000</td>
</tr>
<tr>
<td>ATS_CL1_AXVIEC20070223_102348_20010308_120446_20120801_235959</td>
</tr>
<tr>
<td>ATS_GC1_AXVIEC20070720_093834_20020301_000000_20200101_000000</td>
</tr>
<tr>
<td>ATS_INS_AXVIEC20070720_094014_20020301_000000_20200101_000000</td>
</tr>
<tr>
<td>ATS_LST_AXVIEC20070720_094144_20020301_000001_20200101_000000</td>
</tr>
<tr>
<td>ATS_PC1 AXVIEC20070720_094312_20020301_000000_20200101_000000</td>
</tr>
<tr>
<td>ATS_PC2 AXVIEC20020123_074151_20020101_000000_20200101_000000</td>
</tr>
<tr>
<td>ATS_SST AXVIEC20051205_102103_20020101_000000_20200101_000000</td>
</tr>
</tbody>
</table>

See below for VC1 files

<table>
<thead>
<tr>
<th>Product name</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATS_LST AXVIEC20070720_094144_20020301_000001_20200101_000000</td>
</tr>
<tr>
<td>ATS_PC1 AXVIEC20070720_094312_20020301_000000_20200101_000000</td>
</tr>
<tr>
<td>ATS_PC2 AXVIEC20020123_074151_20020101_000000_20200101_000000</td>
</tr>
<tr>
<td>ATS_SST AXVIEC20051205_102103_20020101_000000_20200101_000000</td>
</tr>
</tbody>
</table>

Table 3-1 Latest auxiliary files currently in use by the PDS
3.2.1 STATUS OF DAILY VISIBILE CALIBRATION FILES

3.2.1.1 VC1 File Availability

The following daily reflectance channel calibration files were not available during this cycle:

<table>
<thead>
<tr>
<th>Date</th>
<th>Validity range</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>24/08/2010</td>
<td>23/08/2010</td>
<td>30/08/2010</td>
</tr>
<tr>
<td>29/08/2010</td>
<td>28/08/2010</td>
<td>04/09/2010</td>
</tr>
<tr>
<td>30/08/2010</td>
<td>29/08/2010</td>
<td>05/09/2010</td>
</tr>
<tr>
<td>03/09/2010</td>
<td>02/09/2010</td>
<td>09/09/2010</td>
</tr>
<tr>
<td>07/09/2010</td>
<td>06/09/2010</td>
<td>13/09/2010</td>
</tr>
<tr>
<td>08/09/2010</td>
<td>07/09/2010</td>
<td>14/09/2010</td>
</tr>
</tbody>
</table>

Table 3-2 Unavailable VC1 files

3.2.2 STATUS OF OTHER AUXILIARY FILES

No auxiliary files changed during this cycle.
4 PDS STATUS

4.1 Instrument Unavailability

No AATSR data were unavailable due to instrument unavailability during the cycle.

4.2 L0 Data Acquisition and L1b Processing Status

<table>
<thead>
<tr>
<th>Week</th>
<th>Availability (s)</th>
<th>Availability (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dates</td>
<td>Start</td>
</tr>
<tr>
<td>1</td>
<td>Aug 9, 2010</td>
<td>44143</td>
</tr>
<tr>
<td>2</td>
<td>Aug 16, 2010</td>
<td>44243</td>
</tr>
<tr>
<td>3</td>
<td>Aug 23, 2010</td>
<td>44343</td>
</tr>
<tr>
<td>4</td>
<td>Aug 30, 2010</td>
<td>44444</td>
</tr>
<tr>
<td>5</td>
<td>Sep 6, 2010</td>
<td>44544</td>
</tr>
</tbody>
</table>

Table 4-1 Instrument and data unavailability weekly summary for cycle 92

The instrument was available for 100.00% of the time during the cycle. The L0 data were available for 99.62% of the time during the cycle. The L1b data were available for 99.62% of the time during the cycle.

The following L0 data was missing from this cycle:

<table>
<thead>
<tr>
<th>UTC Start</th>
<th>UTC Stop</th>
<th>Duration (s)</th>
<th>Orbit Start</th>
<th>Orbit End</th>
</tr>
</thead>
<tbody>
<tr>
<td>24/08/2010 14:30</td>
<td>24/08/2010 16:04</td>
<td>5659</td>
<td>44353</td>
<td>44354</td>
</tr>
<tr>
<td>30/08/2010 17:55</td>
<td>30/08/2010 19:34</td>
<td>5933</td>
<td>44441</td>
<td>44442</td>
</tr>
</tbody>
</table>

Table 4-2 ATS_NL__0P missing data during cycle 92

No L1 data was missing from this cycle that was not associated with the missing L0 data reported above.

4.2.1 ORBITS AFFECTED BY POOR DATA QUALITY

During this cycle, no orbits contained frames suffering from bad/missing telemetry.

4.3 L0 and L1b Backlog Processing Status

There is no update available on the status of backlog processing.
5 DATA QUALITY CONTROL

5.1 Monitoring of Instrument Parameters

5.1.1 JITTER

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 Jitter plot shows a fairly steady net increase over recent weeks.

5.1.2 SENSOR TEMPERATURE

The detector temperature plots for Cycle 92 can be found at:

While in measurement mode, all sensors maintained their nominal orbital and seasonal ranges in this cycle. The detector temperatures have remained nominal

5.1.3 VISCAL

NRT calibration quality for AATSR reflectance channels has been maintained throughout this cycle. In addition, the following set of “orbital” VC1 files was delivered:
http://zenith.ag.rl.ac.uk/data/zenith/EDS-X/CyclePlots/VC1-92.txt

5.1.4 NE\Delta T

Information on the NEDT for Cycle 92 was not available at the time of publishing; the information will be included in the next Cyclic Report.
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

The following SPRs are still open:

Wrong REF_DOC in MPH of AATSR products
NA-PR-10-05334
As a result of the AMALFI-2 pilot project, it has been discovered that the REF_DOC field in the MPH of AATSR products is different from the product specification name.
2) The referenced product spec is still 3/K. whilst the one applicable, and also referenced in the SRN of 6.03 is 4/A.

AATSR Consolidated Products
NA-PR-08-03952
The AATSR Flight Operations and Data Plan (FODP), PO-PL-ESA-AT-0152, Issue 2 Revision 5 dated 22 November 2001 defines the meaning of “consolidated” in Appendix B.1 as follows: “… time-ordered, no overlap nor data gap except when the instrument is not operated …”, and for Level 0 there should be sufficient overlap only so that the higher level products can be chopped “… ANX to ANX …”. The FODP is part of the high level agreement between ESA and Defra and so can be taken as the definitive requirement for AATSR products.

Update to AATSR Child product generation requirements
NA-PR-08-04015
The 'Child Product Generation Requirements' on pages 520-521 of the document 'PDS Technical Specification for Maintenance and Evolution' (PO-RF-CSF-GS-20437) currently reads:
"For time extraction, for each data set in the parent product, the time stamp of the DSRs shall be compared to that of the requested start time (t0) segment. The first DSR extracted from each data set to form the new child data set is the one with a time stamp immediately preceding or equal to t0. The last DSR extracted from each DS is the one immediately preceding t1."
To ensure that a sufficient number of Auxiliary Data Set Records are present in AATSR child products, the requirement should be changed to read as follows:
"For time extraction, for each data set in the parent product, the time stamp of the DSRs shall be compared to that of the requested start time (t0) segment. The first DSR extracted from each data set to form the new child data set is the one with a
time stamp immediately preceding or equal to \( t_0 \). The last DSR extracted from each DS is the one immediately preceding \( t_1 \).

For AATSR data, the last ADS DSR extracted from each DS is the one whose time label is equal to or greater than \( t_1 \) provided such a DSR exists, otherwise the last ADS DSR in the product."

5.3.2 NEW SPRS SINCE THE LAST CYCLIC REPORT

One new SPR has been opened since the last Cyclic Report:

Processing of L1/L2 fails with product:

\texttt{ATS\_NL\_0PNPDE20100515\_214836\_000061722089\_00272\_42911\_1524.N1}

IDEAS-PR-10-05411

The problem does not occur in prototype, but in PDGS operational chain and in Gamme validation platform. Processing the following L0 product to L1 and L2 fails

\texttt{ATS\_NL\_0PNPDE20100515\_214836\_000061722089\_00272\_42911\_1524.N1}

Please consider that same error occurs also in GAMME test environment.

5.3.3 CLOSED SPRS

No new SPRs have been closed since the last Cyclic Report
5.4 Monthly Level 3 Product

The following plots have been generated from the available Meteo products acquired in August 2010. This consists of 488 products taken from orbits 44015 to 44458. Figure 5-3, Figure 5-4, Figure 5-5 and Figure 5-6 show the SST average in dual and nadir views, the standard deviation and the number of contributory orbits for August 2010. Please note we are not able to provide individual colour scales at this time, however the scheme used is given in Figure 5-2, and the data ranges of each plot are specified in the accompanying caption.

Figure 5-2 This is the colour scheme used for the following plots, running linearly from left to right with increasing magnitude.

Figure 5-3 Monthly average Dual View SST, with a range of 270 - 305 Kelvin for August 2010
Figure 5-4 Monthly average Nadir SST, with a data range of 270 - 305 Kelvin for August 2010

Figure 5-5 Standard deviation of the monthly average SST with a data range of 0 to 5 Kelvin for August 2010
Figure 5-6 Number of contributory orbits to the calculation of the SST, with a range of 0 to 57 for August 2010
6 CALIBRATION/VALIDATION ACTIVITIES & RESULTS

6.1 Calibration

No calibration results were reported during this cycle.

6.2 Validation

The Met Office has validated the AATSR dual-view SST data using the global network of in situ drifting buoy SST data, the results for Cycle 92 being shown in Figure 6-1. The updated SST coefficients released in December 2005 were used in the AATSR SST retrievals.

![Image of Figure 6-1 Comparison of daily mean difference between 10° AATSR SST values and in situ drifting buoy SST for Cycle 92. Data provided by the Met Office](image)

During cycle 92, there were 2050 night time match-ups, with a mean (UL derived dual-view skin SST minus buoy SST) of -0.003 K, standard deviation 0.24 K, and a mean (dual-view depth SST minus buoy SST) of +0.135 K, standard deviation 0.22 K. A total of 1856 daytime match-ups were found, with a mean (UL derived dual-view skin SST minus buoy SST) of +0.089 K, standard deviation 0.29 K, and a mean (dual-view depth SST minus buoy SST) of +0.229 K, standard deviation 0.29 K. As these data are comparisons of a single point buoy measurement against a much larger spatially averaged value they are not a true indicator of AATSR’s accuracy and are used to show consistency of data quality between cycles.
Figure 6-2 Plot of daily number of match-ups between 10° AATSR SST values and in situ buoy SST for Cycle 92. Data provided by the Met Office.

Figure 6-3 Map showing global distribution of match-ups between 10° AATSR SST values and in situ buoy SST for Cycle 92. The cyan dots indicate a match-up to a drifting buoy. Data provided by the Met Office.
7 DISCLAIMERS

No new disclaimers have been issued during this cycle.