ADEN ALOS AVNIR-2 CYCLIC REPORT

CYCLIC REPORT #33

27 JANUARY 2010 TO 14 MARCH 2010

This RGB composite AVNIR-2 image has been taken on the 24th of August 2008 from orbit 13760.

prepared by/préparé par: IDEAS Optical Team
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### APPROVAL

<table>
<thead>
<tr>
<th>Title</th>
<th>ADEN ALOS AVNIR-2 Cyclic Report – Cycle 33</th>
</tr>
</thead>
<tbody>
<tr>
<td>Issue</td>
<td>1</td>
</tr>
<tr>
<td>Revision</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Author</th>
<th>IDEAS Optical Team</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>25 March 2010</td>
</tr>
</tbody>
</table>

### CHANGE LOG

<table>
<thead>
<tr>
<th>Reason for change /raison du changement</th>
<th>Issue/issue</th>
<th>Revision/revision</th>
<th>Date/Date</th>
</tr>
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<tbody>
<tr>
<td>Initial Issue</td>
<td>1</td>
<td>0</td>
<td>25 March 2010</td>
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AVNIR-2 CYCLIC REPORT # 33

1 INTRODUCTION

The AVNIR-2 Cyclic Report is distributed by the IDEAS AVNIR-2 QC team to keep the AVNIR-2 community informed of any modifications regarding quality control, instrument performance, the data production chain and the results of calibration and validation campaigns at the end of each ALOS cycle, which represents 671 orbits, or 46 days.

The AVNIR-2 instrument is part of the Japanese JAXA ALOS mission and its products are received and processed via ESA’s ADEN ground segment across Europe. This is done through an agreement between JAXA and ESA, where ALOS is classed as an ESA Third Party Mission, for which it is responsible for data reception and product dissemination across the European and African regions. A series of quality checks are undertaken in order to assess the ground segment, the instrument performance and the product quality.

Checks are currently made on a weekly (header parameters, PDS status) or bi-monthly (visual report) basis to have a constant view on the mission status. The cyclic report presents the results of the analysis for the different part of the chain, from satellite to end-product.

This document is available online at:
http://earth.esa.int/pcs/alos/avnir/reports/cyclic/

1.1 Acronyms and Abbreviations

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADEN</td>
<td>ALOS Data European Node</td>
</tr>
<tr>
<td>ALOS</td>
<td>Advanced Land Observing Satellite</td>
</tr>
<tr>
<td>AVNIR-2</td>
<td>Advanced Visible and Near Infra-red Radiometer Type-2</td>
</tr>
<tr>
<td>CEOS</td>
<td>Committee on Earth Observation Satellites</td>
</tr>
<tr>
<td>EO Help</td>
<td>Earth Observation Help Desk</td>
</tr>
<tr>
<td>GCP</td>
<td>Ground Control Points</td>
</tr>
<tr>
<td>IDEAS</td>
<td>Instrument Data quality Evaluation and Analysis Service</td>
</tr>
<tr>
<td>JAXA</td>
<td>Japan Aerospace Exploration Agency</td>
</tr>
<tr>
<td>OCM</td>
<td>Orbit Control Manoeuvre</td>
</tr>
<tr>
<td>PCS</td>
<td>Product Control Service</td>
</tr>
<tr>
<td>PDS</td>
<td>Payload Data Segment</td>
</tr>
<tr>
<td>PI</td>
<td>Principal Investigator</td>
</tr>
<tr>
<td>PRISM</td>
<td>Panchromatic Remote-sensing Instrument Stereo Mapping</td>
</tr>
<tr>
<td>QC</td>
<td>Quality Control</td>
</tr>
<tr>
<td>SPPA</td>
<td>Sensor Performance Products Algorithms</td>
</tr>
<tr>
<td>TOA</td>
<td>Top of Atmosphere</td>
</tr>
</tbody>
</table>
1.2 Reference Documents

RD.1 ALOS/AVNIR-2 Level 1 product format description Rev J - October, 2006 JAXA (NEB 00016)


1.3 Background information

The AVNIR-2 instrument is an optical instrument on board the ALOS mission built by the Japanese Space Agency (JAXA).

The ALOS mission has its data produced and disseminated through geographical nodes. The European node (ADEN) was set up and is operated by ESA through the Tromso, Matera, Mas Palomas and Frascati ground stations. As a third party mission (TPM), only the ground segment and data processing are dealt with by ESA, the platform being the responsibility of the owner: JAXA. Each node operates their ground segment independently and shares results with JAXA when required.

The ADEN team is responsible for the operation and maintenance of the node that receives data acquired over Europe and North Africa. The ADEN team took part in the Cal/Val activities during the ALOS commissioning phase (January to October 2006). The methodologies used and results obtained are documented (RD.3 and RD.4) and made available to the user through the site: http://earth.esa.int/object/index.cfm?fobjectid=3738

As part of the ADEN operations, a series of quality checks are undertaken in order to assess the ground segment and instrument performance and the product quality for products requested by European users. Checks are currently made on a weekly basis (header parameters, PDS status) to have a constant view on the mission status.
2 SUMMARY

Cyclic Report: 33

Cycle Start: 27 January 2010

Cycle End: 14 March 2010

The main issues during the cycle have been as follows:
During cycle 33, we can observe several notifications of emergency observation plan due to severe natural events.

Figure 1.3-1 Image source https://auig.eoc.jaxa.jp/auigs/
Observation Date: January 30, 2010
Observation Start Time: UT15:30
Observation Area: Machu Picchu, Peru
Disaster Type: Landslide/Flood
Sensor: AVNIR-2

Figure 1.3-2 Image source https://auig.eoc.jaxa.jp/auigs/
Observation Date: February 12, 2010
Observation Start Time: UT01:07
Observation Area: Fukutoku okanoba, Japan
Disaster Type: Volcanic eruption
Sensor: AVNIR-2
Figure 1.3-3 Image source https://auig.eoc.jaxa.jp/auigs/
Observation Date:February 28, 2010 Observation Start Time:UT16:01 Observation Area:Chile Disaster Type:Earthquake Sensor:AVNIR-2

Figure 1.3-4 Image source https://auig.eoc.jaxa.jp/auigs/
Observation Date:March 14, 2010 Observation Start Time:UT08:17 Observation Area:Eastern part of Turkey Disaster Type:Earthquake Sensor:AVNIR-2

Figure 1.3-5 Image source https://auig.eoc.jaxa.jp/auigs/
Observation Date:March 11, 2010 Observation Start Time:UT08:10 Observation Area:Safala,Mozambique Disaster Type:Flood Sensor:AVNIR-2

Figure 1.3-6 Image source https://auig.eoc.jaxa.jp/auigs/
Observation Date:March 11, 2010 Observation Start Time:UT04:40 Observation Area:Eastern part of Bhutan Disaster Type:Wildfire Sensor:AVNIR-2
Observation Date: March 9, 2010  Observation Start Time: UT11:24  Observation Area: France  Disaster Type: Wind Storm  Sensor: AVNIR-2

Figure 1.3-7  Image source https://auig.eoc.jaxa.jp/auigs/
3 SOFTWARE & AUX FILE VERSION CONFIGURATION

<table>
<thead>
<tr>
<th>Current Optical Processor Version</th>
<th>ESRIN</th>
<th>Matera</th>
<th>Tromso</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.08</td>
<td>09/12/2009</td>
<td>09/12/2009</td>
<td>09/12/2009</td>
</tr>
</tbody>
</table>

Table 1.3-1 : AVNIR-2 Processing Versions

A history of the ADEN optical processor release notes will be made available on the ALOS ADEN PCS website, location: http://earth.esa.int/pcs/alos/avnir/userinfo/ReleaseNote_AVN_V05L08.pdf

4 PDS STATUS

Please note; the major source of information for this document is the ALOS monthly report provided by JAXA. The monthly reporting timescale means that data concerning events conducted within this cycle may not be available at the time of writing. In this event, information will be included in the next cyclic report.

Instrument information provided by JAXA during the period 27 January 2010 to 14 March 2010 is reported in this document.

4.1 Planned Instrument Unavailability

For the periods described in Table 4.1-1, JAXA has announced planned instrument unavailability. Exact times of the periods are not available.

<table>
<thead>
<tr>
<th>From (UT)</th>
<th>To (UT)</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Time</td>
<td>Date</td>
</tr>
<tr>
<td>March 12, 2010</td>
<td>20:09:00.000000</td>
<td>March 12, 2010</td>
</tr>
<tr>
<td>Feb. 27, 2010</td>
<td>08:40:00.000000</td>
<td>Feb. 27, 2010</td>
</tr>
<tr>
<td>Feb. 20, 2009</td>
<td>07:11:00.000000</td>
<td>Feb. 20, 2009</td>
</tr>
<tr>
<td>Feb. 12, 2010</td>
<td>07:11:00.000000</td>
<td>Feb. 12, 2010</td>
</tr>
<tr>
<td>Jan. 29, 2010</td>
<td>18:44:00.000000</td>
<td>Jan. 29, 2010</td>
</tr>
</tbody>
</table>

Table 4.1-1 : Planned instrument unavailability

4.2 Unplanned Instrument Unavailability
For the periods described in Table 4.2-1, JAXA announced unplanned instrument unavailability.

<table>
<thead>
<tr>
<th>From (UT)</th>
<th>To (UT)</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Time</td>
<td>Date</td>
</tr>
<tr>
<td>None</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.2-1 : Unplanned instrument unavailability

4.3 **Current Platform Status**

Information on the platform provided by JAXA:

Current platform status: **Normal**

4.4 **Upcoming Instrument Unavailability**

For the periods described in Table 4.4-1, JAXA has announced planned instrument unavailability.

<table>
<thead>
<tr>
<th>From (UT)</th>
<th>To (UT)</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Time</td>
<td>Date</td>
</tr>
<tr>
<td>None</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.4-1 : Upcoming instrument unavailability

4.5 **ADEN PDS Unavailability**

None reported during this cycle.

4.6 **Periods of missing precision orbit data**

For the periods described in Table 4.6-1, JAXA has announced that precision orbit data is missing.

<table>
<thead>
<tr>
<th>From (UT)</th>
<th>To (UT)</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Time</td>
<td>Date</td>
</tr>
<tr>
<td>March 12, 2010 20:09:00.000000</td>
<td>March 12, 2010 21:13:00.000000</td>
<td>Due to orbit manoeuvring</td>
</tr>
<tr>
<td>Feb. 27, 2010 08:40:00.000000</td>
<td>Feb 27, 2010 09:43:00.000000</td>
<td>Due to orbit manoeuvring</td>
</tr>
<tr>
<td>Feb 20, 2009 07:11:00.000000</td>
<td>Feb 20, 2009 08:15:00.000000</td>
<td>Due to orbit manoeuvring</td>
</tr>
<tr>
<td>Feb 12, 2010 07:11:00.000000</td>
<td>Feb 12, 2010 17:39:00.000000</td>
<td>Due to orbit manoeuvring</td>
</tr>
<tr>
<td>Jan. 29, 2010 18:44:00.000000</td>
<td>Jan. 29, 2010 19:48:00.000000</td>
<td>Due to orbit manoeuvring</td>
</tr>
</tbody>
</table>

Table 4.6-1: Missing Precision Orbit Data
4.7 **Periods of missing precision attitude data**

For the periods described in Table 4.7-1, JAXA has announced that precision attitude data is missing.

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb. 10, 2010</td>
<td>16:35:00-17:10:00</td>
<td>Due to data deficits (LSSR data acquisition 98.36%)</td>
</tr>
<tr>
<td>Jan. 27, 2010</td>
<td>01:40:30-08:19:48</td>
<td>Due to calibration of STT / PrecisePositioningDeterminationSystem</td>
</tr>
</tbody>
</table>

Table 4.7-1 : Missing Precision Attitude Data

4.8 **Periods lacking Yaw steering**

No Yaw steering announced by JAXA, during the period for cycle 32 (Table 4.8-1).

<table>
<thead>
<tr>
<th>From (UT)</th>
<th>To (UT)</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Time</td>
<td>Date</td>
</tr>
<tr>
<td>None</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.8-1 : No Yaw steering

4.9 **JAXA Observation Strategy**

The JAXA observation strategy can be found at: http://www.eorc.jaxa.jp/ALOS/en/obs/overview.htm

4.10 **Artefact repositories**

A number of image artefacts are not due to instrument or processing chain malfunctions. These are fully documented in the following JAXA web pages.

5 DATA QUALITY CONTROL

The following sections in this Cyclic Report do not contain inputs from the ALOS SPPA scientific experts.

5.1 Instrument Related Anomalies

No reported anomalies this cycle.

5.2 Processor Related Anomalies

No reported anomalies this cycle.

5.3 Daily Report Issues

During the past cycle, daily checks have been undertaken on all AVNIR-2 products generated by ADEN which were electronically disseminated. Checks are currently conducted on a weekly basis due to data volumes.

Browse products for all optical images are visually inspected and reported on in each weekly report.

90 products have been examined during the course of this cycle and 3 anomalies were highlighted by the browse inspections.

Specific anomalies were observed for the products downloaded during this period (Table 5.3-1).

<table>
<thead>
<tr>
<th>Scene ID</th>
<th>Inspection Date</th>
<th>Cloud %</th>
<th>Gain</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALAV2A191142540</td>
<td>24/02/2010</td>
<td>0-2</td>
<td>0.588, 0.573, 0.502, 0.557</td>
<td>Slight Saturation of Ground Features. Radiance 3 band is missing on image on a south band. (Figure 5.3-1)</td>
</tr>
<tr>
<td>ALAV2A194642570</td>
<td>24/02/2010</td>
<td>0-2</td>
<td>0.588, 0.573, 0.502, 0.557</td>
<td>Slight Saturation of Ground Features. Radiance 3 band is missing on image on a south band. (Figure 5.3-2)</td>
</tr>
<tr>
<td>ALAV2A200332670</td>
<td>24/02/2010</td>
<td>11-20</td>
<td>0.588, 0.573, 0.502, 0.557</td>
<td>Moderate Saturation of Ground Features. Radiance 2 band is missing on image on a south band. (Figure 5.3-3)</td>
</tr>
</tbody>
</table>

Table 5.3-1 Anomalous products identified during the browse inspections.
5.4  Visual Inspection Report Issues

There were no visual anomalies which have not already been documented in the JAXA document that details expected image features:

5.5 **User Information**

An AVNIR-2 FAQ containing common user requests can be found on the ESA PCS website. The most recent version of this document can be found at: http://earth.esa.int/download/alos/IDEAS-VEG-OQC-REP012420ALOS 20OPTICAL 20FAQ.pdf. It has been issued 18 January 2010.

6 **CALIBRATION/VALIDATION ACTIVITIES & RESULTS**

Update values have been added in FAQ (updated 15 January 2010). AVNIR-2 calibration values can be found in annexe E of the FAQ. FAQ link:

http://earth.esa.int/download/alos/IDEAS-VEG-OQC-REP-0124 20ALOS 20OPTICAL 20FAQ.pdf
7 DISCLAIMERS

A list of known product errors caused by image processing algorithm errors is listed on the JAXA site at:
http://www.eorc.jaxa.jp/hatoyama/satellite/data_tekyo_setsumei/alos_renraku_e.html
8 EVENTS

The following section details events that may be of interest to ALOS data users.

<table>
<thead>
<tr>
<th>Acquisition plan at MATE</th>
<th>Ref</th>
<th>Date</th>
<th>Due to</th>
<th>Information from:</th>
</tr>
</thead>
<tbody>
<tr>
<td>cancelled</td>
<td>MATE00000139073D X1503287001-01 (AVNIR-2)</td>
<td>March 6, 2010</td>
<td>due to an emergency observation for floods in Hungary</td>
<td>RESTEC Centre</td>
</tr>
<tr>
<td>cancelled</td>
<td>(MSPS00000139466D) X1506252001-01, Path 252, AVNIR-2</td>
<td>March 9, 2010</td>
<td>due to an emergency observation for the wind storm in France</td>
<td>RESTEC Centre</td>
</tr>
</tbody>
</table>

- **ALOS Simulation #18 for Cycle 36 – 39** (information from RESTEC Centre) will be conducted from the end of March 2010. Following sensors and areas have been added in the BOS for Simulation#18.
  <AVNIR-2 & PRISM(OB1)>
  Cycle 36: E4, 5, 6 & 7
  Updated BOS Map will be provided.

- Operational restriction: (information source: Masanobu Morioka, Earth Observation Dept. Remote Sensing Technology Center of Japan (RESTEC))
  - Maintenance of data receiving facility at EOC (From 00:00 on Dec. 22nd to 23:59 on Dec. 23rd (UT))

- Events announced for January 2010 but not reported yet on ALOS Web pages for the cycle 32 time period.
  - Suspension of Data Relay Satellite Communication Subsystem (Only DT is conducted.) From 9:15 to 12:00 on Jan. 13th (UT)
  - Suspension of observations due to HK operation #1 of S/C From 11:45 to 13:34 on Jan. 6th (UT)
  - Observation suspended because power supply will be lowered due to an eclipse caused by the moon. From 6:42 to 7:02 on Jan. 15th (UT)
  - HK operation #2 of S/C.
  - Suspension of observations From 23:58 on Jan. 26th to 01:06 on Jan. 27th, From 02:18 to 03:15, from 05:33 to 06:37 and from 22:20 to 23:08 on Jan 27th (UT), From 01:21 to 02:15 and from 23:08 to 23:58 on Jan. 28th
  - Suspension of Precision Attitude Determination
    - Approximately, from 0:35 to 7:10 on Jan. 27th (UT)
- **ALOS simulation#17 (Cycle 34 –37)**
- Request files are due on January, 8th. Result files will be available in late January.

**8.1 Past Events:**

- 2010.03.17] System maintenance of AUIG : 21 March, 2010 5:30 ~ 21 March, 2010 12:00(UT)
• [2010.03.08] System maintenance of AUIG : 11 March, 2010 4:30 ~ 11 March, 2010 5:30(UT)
• [2010.02.23] System maintenance of AUIG : 25 February, 2010 7:00 ~ 26 February, 2010 2:30(UT)
• [2010.02.15] System maintenance of AUIG : 19 February, 2010 7:00 ~ 21 February, 2010 2:30(UT)
• [2010.02.12] System maintenance of AUIG : 18 February, 2010 7:00 ~ 18 February, 2010 8:00(UT)
• [2010.02.09] Upgraded Processing Software Release Information
• [2010.02.05] System maintenance of AUIG : 10 February, 2010 7:00 ~ 10 February, 2010 8:00(UT)
• [2010.02.02] System maintenance of AUIG : 10 February, 2010 13:00 ~ 11 February, 2010 11:00(UT)
• Result files and statistics of second stage of ALOS simulation #16 (Cycle 32 □ 35) have been released on November 9th.
• Adoption/Rejection Information of Sim#16. Last Updated: November 17, 2009.
• EO-Modernisation project is going to have a significant impact on EO systems :
  o By 14th January 2010, e-mail was sent to inform that ESA IP addresses servers changed even firewall IP address. “For applications, installed locally on IDEAS premises, which access ESA servers it is needed to verify that they rely on servers names and not on IP addresses” (information provided by e-mail from Massimo Cardaci). It mainly concerns:
    ▪ ESA Servers identification [Action for all IDEAS] [by 14.01.2009]), servers hosting only EOP-GQ applications -> marked as "EOP-GQ servers", servers accessed by us as clients, but managed at application level by other EOP groups -> marked as "we are clients", servers with applications, managed by other EOP groups, which talk (input or output) with our applications located in other servers -> marked as "we have application dependency".
      "List of firewall entries pointing to ESA servers [Action for all IDEAS] [by 14.01.2009]"
      "Local applications exchanging data with ESA servers [Action for all IDEAS] [by 14.01.2009]"
  ▪ RESTEC note: Downlink Segment Numbers (DLS#) for January 10th in acquisition/Observation Plan files were changed due to emergency observations, and related MOIFs have been redistributed. Please issue your acquisition/processing result MOIFs, such as REAC, L0RN, and so forth, carrying the DLS numbers updated.
• ALOS Core Processing Software v5.08 for AVNIR-2/PRISM (PRISM Pointing Alignment Parameter) was released on December 09th. V5.08 includes an update to the PRISM Pointing Alignment Parameter in comparison to v5.04, the previous ALOS Core processing.
  • ALOS Symposium:
Nov. 9 - 13, 2009: 3rd Joint PI symposium of ALOS Data Nodes for ALOS Science Program in Kona, Hawaii, US. Details are available on site: http://www.asf.alaska.edu/pi_symp/ Presentations in session dedicated to Calibration/Validation (November 9th 2009) context:

- Image Quality Evaluation on PRISM and AVNIR-2, Latest Evaluation Results, Akira Mukaida, Naritoshi Imoto, Sachi Kawamoto, Takeo Tadono.
- PRISM Geometric Calibration Updates and DSM, Generation Status, Junichi Takaku, Takeo Tadono.
- RPC Generations on PRISM/AVNIR-2 Level 1B2 Images, Junichi Takaku, Takeo Tadono.

The ALOS PRISM AVNIR-2 Quality Control at ADEN, a Status After 3 years of Operation, Sebastien Saunier, A. Mambi mba, V. Motti Assessment of DEM Extraction Joanna Tan, M.Z Mat Jafri, H.S. Lim, K. Abdullah.

- Time Trend Evaluations of Absolute Accuracies for PRISM and AVNIR-2, Takeo Tadono, Masanobu Shimada, Hiroshi Murakami, Junichi Takaku, Sachi Kawamoto.

- ALOS Simulation #17 for Cycle 34 – 37 has been uploaded to the ALOS Mission Operation Date: 06-Jan-2009.

- Simulation #16 has been uploaded to the ALOS Mission Operation Site as Sim16_Cycle 32-35_2.zip because part of the result files were missing in the previous package. Date: 04-Dec-2009.

- Submission of the request files for the first stage simulation #15 (Cycle 31 – 40) was due to the end of August.

- Submission of request files for the first stage of simulation #15 (Cycle 30 – 33) was due towards the end of June.

- The simulation #15 is given because #14 is assigned to ALOS Long-term full Simulation Cycle31–70.

- ALOS Core Processing Software v5.09 for AVNIR-2/PRISM (Core processing) was released on October, 15th, 2009.

- Result files and statistics of second stage simulation #13 were released on May 22nd. Analysis report was released on May 28th

- The results of first stage simulation #13 were available from April 6th

- Submission of request files for the first stage simulation #13 (Cycle28 - 31) was due on March 12th

- ALOS Core Processing Software PRISM/AVNIR-2 Version 5.05 (PRISM Pointing Alignment Parameter) was released on Feb. 6th
• ADN-15 meeting was held on Feb. 24th and 25th in Tokyo

• The result files and statistics for the second stage simulation#12 were released on Feb. 13th.

• Analysis Report and Adoption/Rejection Information for simulation#12 was released on Feb. 20th.

• The submission of request files for the second stage simulation#12 is due on Jan. 19th.

• 11th Science Team meeting for ALOS Kyoto and Carbon Initiative, January 13 - 16, 2009 (Tue. - Fri.), JAXA.

• The result files of first stage simulation#12 will be available on Jan. 3rd

• ALOS Core Processing Software (Version 5.03 for PALSAR and Version 5.04 for PRISM/AVNIR-2) was provided Dec. 19th.

• Result files and statistics for simulation#11 were released on Nov. 21st

• Analysis Report and Adoption/Rejection Information for simulation#11 were released on Nov. 29th.

• The submission of request files for the first stage of simulation#12 was due Dec. 16th.

• The second ALOS PI Symposium took place from the 3rd to the 7th of November in Rhodes, Greece.

• Results of first stage simulation#11 made available on Oct. 15th.

• The submission of request files for the second stage simulation#11 was due on Oct. 28th.

• Analysis report and Adoption/Rejection information of simulation#10 were released by JAXA on 21/08/2008.

• The due date of Observation/Acquisition request files for ALOS simulation 11 was 25/09/2008. This simulation covers the period 10/12/2008 to 11/06/2008.

• ADN-14 meeting was held at ASF from Sep. 9th to 11th

• Analysis report and Adoption/Rejection information of simulation#10 were released by JAXA on 21/08/2008.
• The submission of request files for ALOS simulation number 10 was due by 20\textsuperscript{th} of June.

• The submission of request files for ALOS simulation number 9 was due by March 21, 2008

• The ALOS PCS Site is now available at: http://earth.esa.int/pcs/alos/

• ALOS simulation #8 for Cycle 18-21
  o The results of the second stage simulation were made available by JAXA on Feb.4\textsuperscript{th}.
  o The Analysis Report on ALOS simulation #8 was delivered by JAXA on Feb.12\textsuperscript{th}.

• 29 January 2008: Users are now able to submit orders for ALOS future acquisitions via EOLI-SA (email eohelp@esa.int for more information)
APPENDIX A  DATASET FOR L1B2 PERFORMANCE MONITORING

There was no L1B2 performance monitoring in this report.

APPENDIX B  PRODUCT SPECIFICATION

<table>
<thead>
<tr>
<th>AVNIR-2</th>
<th>Radiometric accuracy</th>
<th>Geometric accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>RMS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pixel (CT)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Line (AT)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Norm</td>
</tr>
<tr>
<td>Level 1B2</td>
<td>Band 1 +5.05% (1σ)</td>
<td>35.732 m</td>
</tr>
<tr>
<td></td>
<td>Band 2 -0.1% (1σ)</td>
<td>17.401 m</td>
</tr>
<tr>
<td></td>
<td>Band 3 -1.3% (1σ)</td>
<td>39.744 m</td>
</tr>
<tr>
<td></td>
<td>Band 4 +5.16% (1σ)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sensor Intercomparison with various EO Sensor (Meris, Landsat ...) as reference (ESA/ESTEC, USGS, LISE)</td>
<td>Polynomial coefficients embedded within product are used to predict geo location (GAEL). *Acquisition with a 0 pointing degree.</td>
</tr>
</tbody>
</table>

AVNIR-2 Product specifications, radiometric and geometric accuracy

<table>
<thead>
<tr>
<th>AVNIR-2</th>
<th>Image Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MTF@Nyquist</td>
</tr>
<tr>
<td>Level 1B1</td>
<td>Band 1</td>
</tr>
<tr>
<td></td>
<td>Band 2</td>
</tr>
<tr>
<td></td>
<td>Band 3</td>
</tr>
<tr>
<td></td>
<td>Band 4*</td>
</tr>
<tr>
<td></td>
<td>HR/LR Method (ONERA)</td>
</tr>
<tr>
<td></td>
<td>*Not evaluated due to image saturation</td>
</tr>
</tbody>
</table>

AVNIR-2 Product specifications, image quality
APPENDIX C INSTRUMENT ANOMALIES

Below is a list of ALOS anomalies that may have an impact on image quality, radiometric calibration or localisation accuracy (from 24th October 2006).

- Orbit manoeuvres conducted on 5 and 12 December 2009
- Orbit manoeuvres conducted on 6, 13, 20, 28 November 2009
- Orbit manoeuvres conducted on 31 October 2009
- Orbit manoeuvres conducted on 2nd, 9 and 17 October 2009
- Orbit manoeuvres conducted on 25th September 2009
- Orbit manoeuvres conducted on 14th and 28th August 2009
- Orbit manoeuvres conducted on 20th June, 3rd, 4th, 5th, 7th, 10th and 13th July 2009
- Orbit manoeuvre conducted on 16th May 2009
- Orbit manoeuvres conducted on 13th and 26th March 2009
- Orbit manoeuvres conducted on 14th February 2009
- Orbit manoeuvres conducted on 3rd, 10th, 16th and 30th of January 2009
- Orbit manoeuvres conducted on 15th, 29th November 2008
- Orbit manoeuvres conducted on 11th, 18th, 24th October 2008
- Orbit manoeuvres conducted on 12th, 26th September 2008
- Orbit manoeuvres conducted on 5th, 8th August 2008
- Orbit manoeuvres conducted from 2nd August 2008 14:27 – 3rd August 2008 06:05
- Inclination and related in plane orbit manoeuvres conducted from 29th July 22:26 – 31st July 05:42
- Orbit manoeuvres conducted on 19th July 2008,
- LSSR acquisition failure 11th June 2008,
- Orbit manoeuvres conducted on 19th July 2008,
- Orbit manoeuvres conducted on 11th, 14th, 17th, 20th, 23rd June 2008,
- Calibration operations for Star Tracker conducted on 11th and 13th of May 2008,
- Orbit manoeuvres conducted on 16th May 2008,
- Orbit manoeuvres conducted on 26th April 2008,
- Orbit manoeuvres conducted on 4th April 2008.
- Orbit manoeuvres conducted on 26th January and 2nd, 15th, 29th February 2008.
- YAW steering was suspended on 28th January 2008
- Observation, yaw steering, and precision attitude system suspended on 31st October 2006 between 03:50 and 15:50 UT due to change AOCS on-board orbit model to that of 15th order.
- Yaw steering suspended during 23rd February 00:12 UT to 24th February 2007 23:01 UT (yaw steering suspended due to calibrating operations for Star Tracker (STT) and Precision Attitude Determination).
- Yaw steering suspended during 22nd March 00:24 UT to 23rd March 2007 23:17 UT (yaw steering suspended due to calibrating operations for Star Tracker (STT) and Precision Attitude Determination).
- Yaw steering on/off switching on 10th April 2007:
  Yaw steering on to off: 12:57 – 13:22 UT (data unavailable)
  No yaw steering operation: 13:22 – 14:42 UT (data available)
  Yaw steering off to on: 14:42 – 15:45 UT (data unavailable)
- Orbit manoeuvres on 8th and 22nd June 2007.
- Orbit manoeuvres conducted on 7th and 20th July 2007.
- Yaw steering on/off switching on 31st July 2007:
  Switching in progress: 00:00 – 00:30, 21:57 – 22:46 UT (Observation suspended)
  No yaw steering observation: 00:30 – 21:57UT (Data available)
- Orbit manoeuvres conducted on 3rd and 25th August 2007.
- Orbit manoeuvres conducted on 6th, 12th and 26th October 2007.
- Orbit manoeuvres conducted on 10th and 23rd November 2007.
- Orbit manoeuvres conducted on 7th and 15th December 2007.
- Orbit manoeuvres conducted on 4th, 11th, 18th and 26th January 2008.
- Orbit manoeuvres conducted on 2nd, 15th and 29th February 2008.
- Orbit manoeuvres conducted on 8th March 2008.
APPENDIX D  PROCESSOR UPDATE SUMMARY

Upgrade Version:  5.08
Previous Version:  5.04
Modifications:

(1) Update of Processing Software
   • None

(2) Update of Correction Parameter
   • Table of Geometric correction information (Update version of October20, 2008) (for AVNIR-2) [Ver_AV2_PR_GeometricModel (6.21)]
   • PRISM Pointing Alignment parameter file (Update version of November26, 2008) ( for PRISM) [Ver_PSM_PR_AlignmentParameter(6.22)]

(3) Update of DEM data directory
   • None

Comments:
None