

ENVISAT ASAR MONTHLY REPORT

SEPTEMBER 2010



PUBLIC SUMMARY

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1 EXECUTIVE SUMMARY

This document summarizes the instrument and product quality status as derived from data acquired during September 2010. There were two ASAR unavailabilities during the reporting period.

The list of unavailability periods is provided in Chapter 2 together with details of any data disclaimers issued during the reporting period. Chapter 3 provides information on the background regional mission (BRM) planning. Details on the Doppler Centroid evolution are provided in chapter 4. Radiometric stability is measured by means of ASAR transponders. Detailed results are provided in chapter 5. An updated list of auxiliary data files is provided in chapters 6 and 7.

2 INSTRUMENT STATUS

There were no transmit receive module failures during September 2010.

The following Antenna Transmit/Receive Modules (TRMs) have failed since launch:

- TRM-01 to 04 in tile C1: H & V polarisation transmit failed since May 2002
- TRM-01 to 04 in tile D2: H & V polarisation transmit and receive failed since 18th February 2003
- TRM-14 in tile B2: H polarisation transmit failed since 12th April 2004
- TRM-15 in tile A1: failed to transmit in V polarisation since 17th May 2004
- TRM-06 in tile A1: failed to transmit in V polarisation since 17th November 2004
- TRM-12 in tile C4: failed to transmit in H polarisation since 16th January 2005
- TRM-02 in tile D3: failed to transmit in V polarisation since 20th November 2005
- TRM-03 in tile A3: failed to transmit in H polarisation since 28th January 2007
- TRM-01-02-03-04 in tile B3: failed to transmit and receive in H & V polarisation since 2nd February 2007
- TRM-02 in tile B1: failed to transmit in H polarisation since 6th May 2007.
- TRM-08 in tile E4: failed to transmit in H polarisation since 20th July 2008
- TRM-05 in tile E4: failed to transmit in V polarisation since 22nd October 2008.
- TRM-10 in tile E4: failed to transmit in H polarisation since 1st January 2009.
- TRM-04 in tile D4: failed to transmit in V polarisation since 5th January 2009.
- TRM-07 in tile D2: failed to transmit in H polarisation since 7th July 2009.
- TRM-01 in tile A2: failed to transmit in H polarisation since 15th September 2009.
- TRM-05 in tile D2: failed to transmit in H polarisation since 6th October 2009.
- TRM-16 in tile E4: failed to transmit in V polarisation since 8th December 2009.
- TRM-8 in tile B4: failed to transmit in H polarisation since 26th June 2010.

Please note that single TRM transmit failures have a minimal impact on the instrument performance and on the antenna pattern shape. The impact of multiple TRM failures is mitigated by the generation of new antenna patterns.

2.1 Instrument Unavailability

The new events with respect to the previous report are given in the table below. Please note that the full unavailability list is available in Appendix A.

| Unavailability report reference | Start | Stop |
|---------------------------------|---|---|
| EN-UNA-2010/0148 | 29 Sep 2010 10:58:47.919 Orbit = 44866 | 29 Sep 2010 14:38:53.000 Orbit = 44866 |
| EN-UNA-2010/0149 | 30 Sep 2010 08:45:38.000 Orbit = 44879 | 30 Sep 2010 08:59:56.000 Orbit = 44879 |

2.2 *Data Disclaimer*

A data quality disclaimer is issued each time that ASAR data of degraded quality is acquired between specific time intervals. Details on the available disclaimers are provided online at <http://earth.eo.esa.int/pcs/envisat/asar/disclaimer>. Please note that the full disclaimer list is also available in Appendix B.

No disclaimers were issued during this reporting period.

3 LOW RATE BACKGROUND REGIONAL MISSION

The current Low Rate BRM definition is provided below:

| Mode | Where | Swath | Polarisation |
|------|--|-------|--------------|
| Wave | Over the sea (~15 sec from the coast line), including the Mediterranean Sea. | IS2 | VV |

| Mode | Where | Polarization |
|-------------------|---|---|
| Global Monitoring | Up to -65 deg from January to March Up to -55 deg from July to October | HH: over land, ice and sea-ice including the following areas: - Europe - Antarctica extended - Arctic - Greenland and Greenland Sea - Labrador Sea and North of Canada - Kara Sea - Baffin Bay - <i>Gulf of Mexico & Caribbean Sea</i> VV: None. All GM acquisitions in HH |

Further details of the background mission can be found in reference 'ASAR Low Bit Rate Background Mission Planning Strategy', ESA, ENVI-CLVL-EOPG-TN-06-0008, Issue 1, May 2006 and from the ASAR Background Region Mission web site at <http://earth.esa.int/object/index.cfm?fobjectid=4045>.

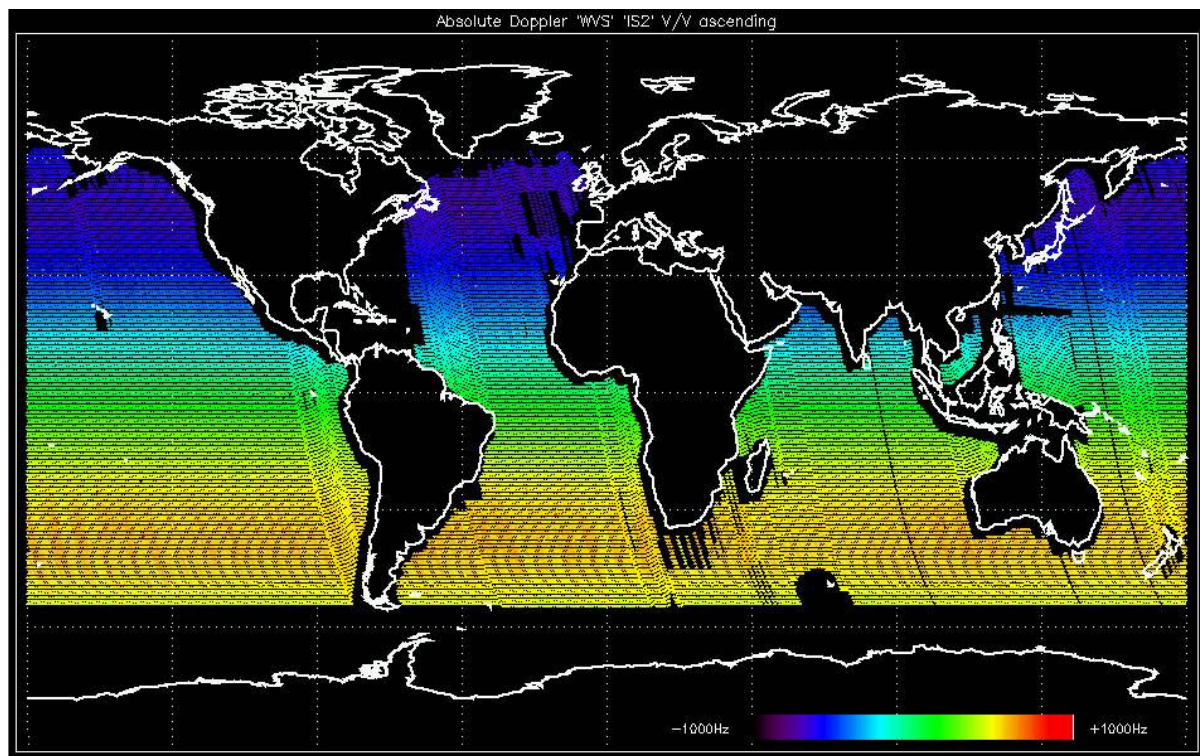
The Gulf of Mexico and Caribbean Sea acquisitions have been planned from 15th July 2010, in addition, GM data has been acquired over Madagascar and Indonesia since 11 February 2010.

4 DOPPLER MONITORING

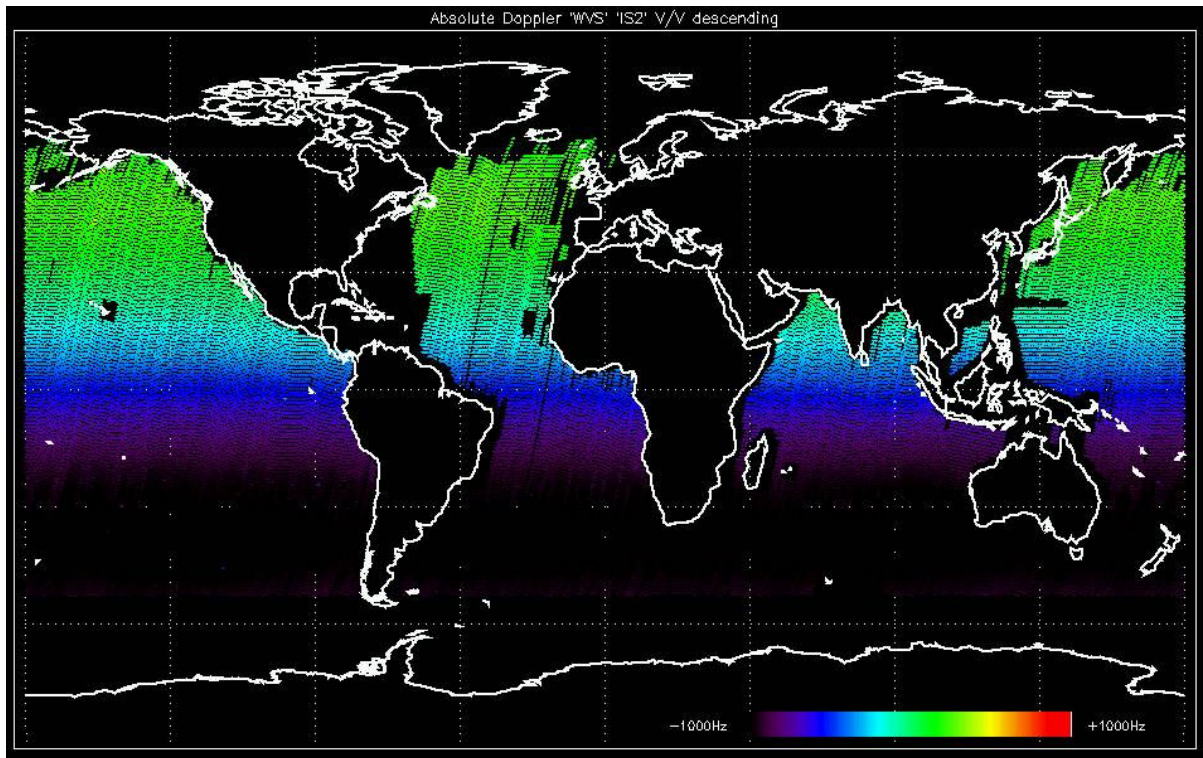
The Envisat Orbit Control Manoeuvres (OCM) can affect the platform attitude stability even hours after the burst with a direct impact on the Doppler centroid frequency evolution. An updated list of the OCM can be found at <http://nng.esoc.esa.de/envisat/ENVmano.html>.

The plots of the Figure 4.1 and Figure 4.2 show the evolution of the Doppler centroid over the world for the 35 days prior to the end of the reporting period. No anomaly on the Doppler centroid distribution is noticed.

4.1 *Absolute WV-IS2 Doppler Centroid Evolution*



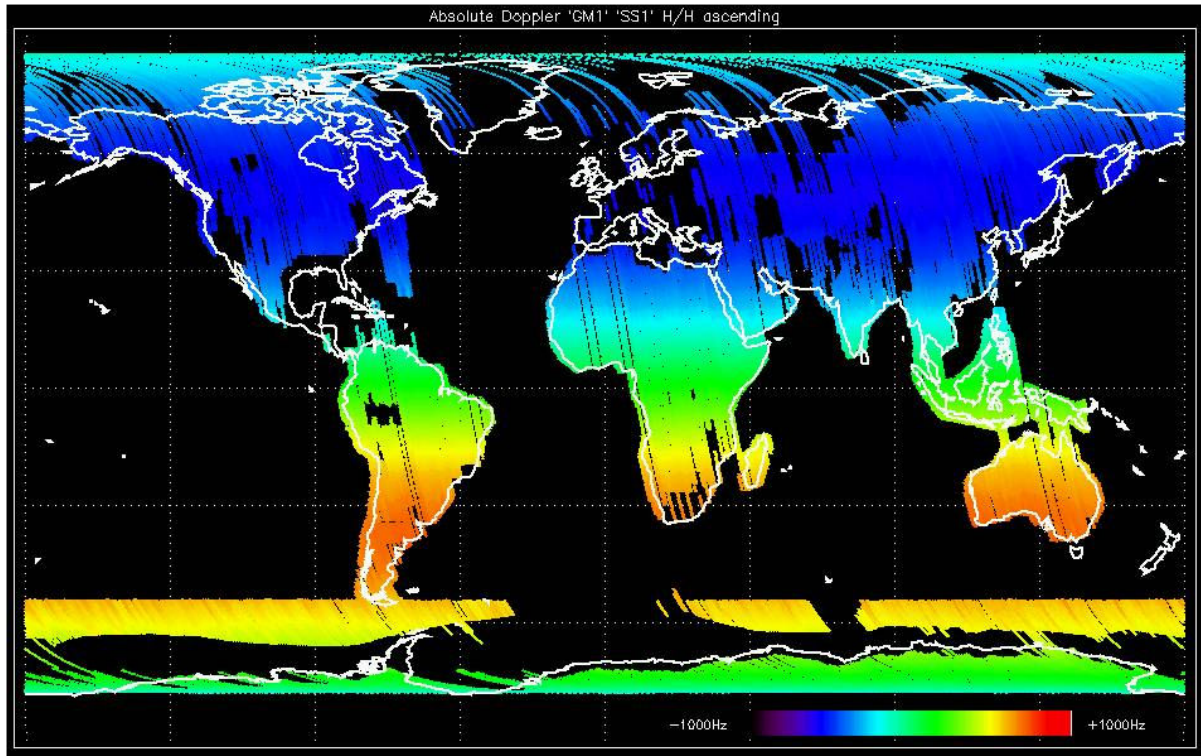
(a) absolute Doppler in ascending passes



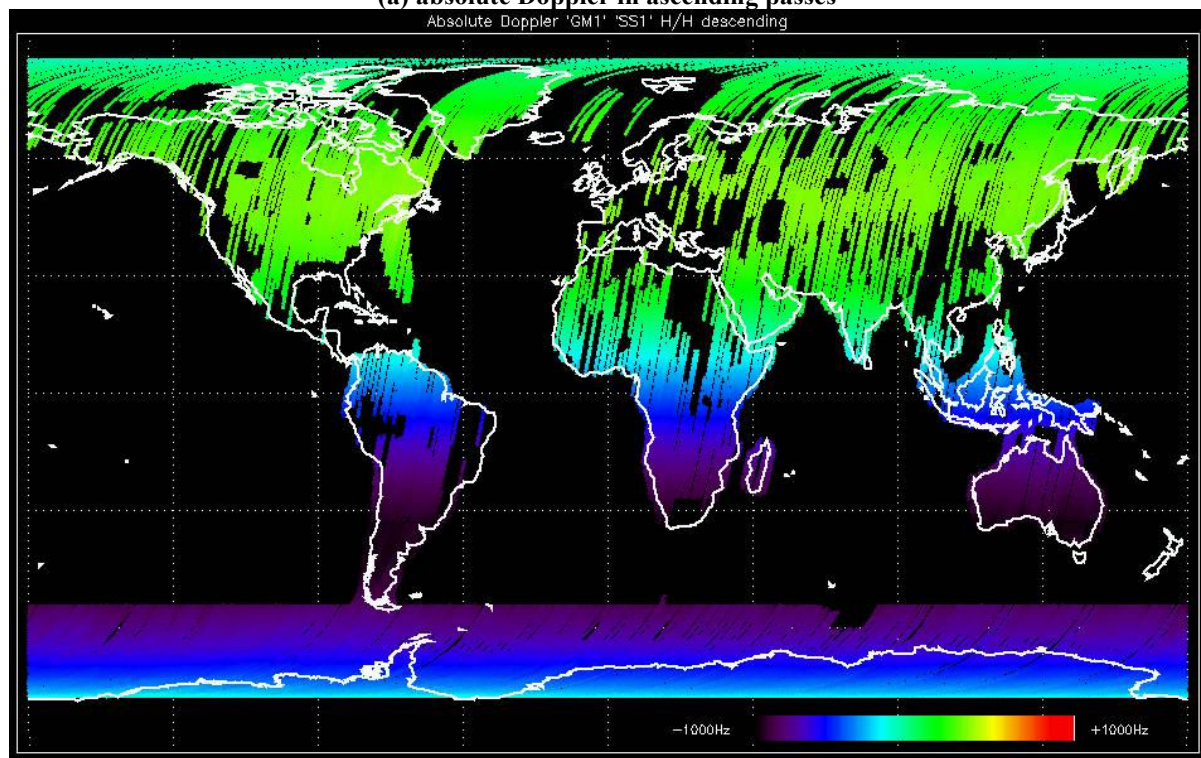
(b) absolute Doppler in descending passes

Figure 4.1: Absolute Wave mode Doppler evolution over the world

4.2 Absolute GM SS1 Doppler Centroid Evolution



(a) absolute Doppler in ascending passes

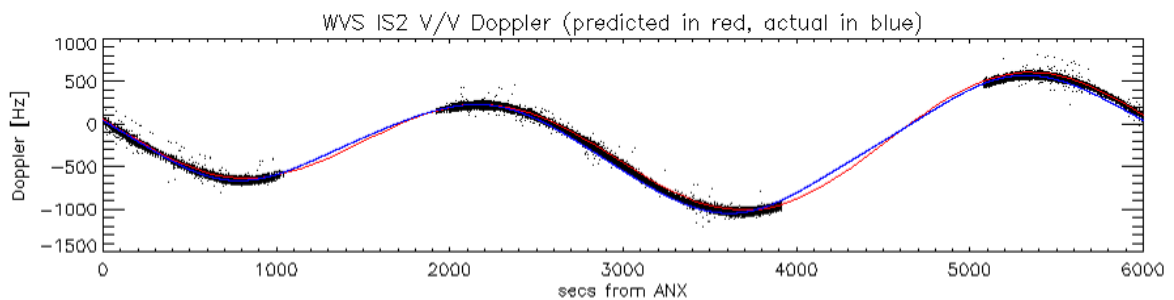


(b) absolute Doppler in descending passes

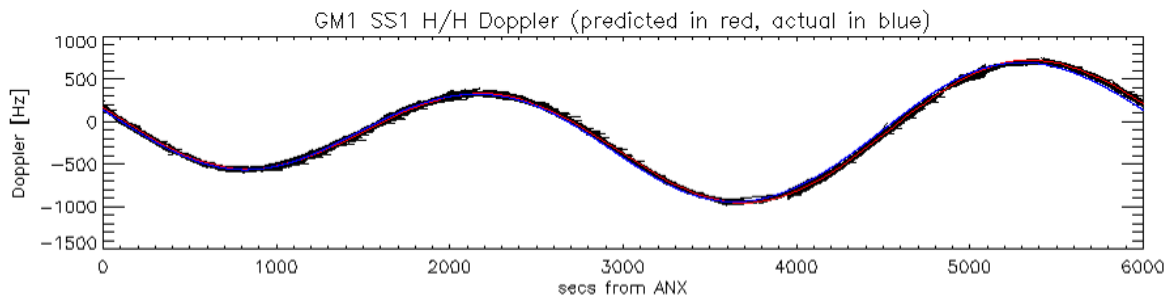
Figure 4.2: Absolute GM mode Doppler evolution over the world

4.3 Absolute Doppler Centroid Evolution vs ANX

Figure 4.3(a) shows the wave mode Doppler evolution (IS2, VV) against the elapsed seconds from the ascending node (ANX) for data acquired during the current month. Theoretical Doppler is in red while the blue curve stands for Doppler evolution model obtained by Fourier series decomposition. Figure 4.3(b) shows a similar plot derived from global monitoring data.



(a) Wave mode Doppler

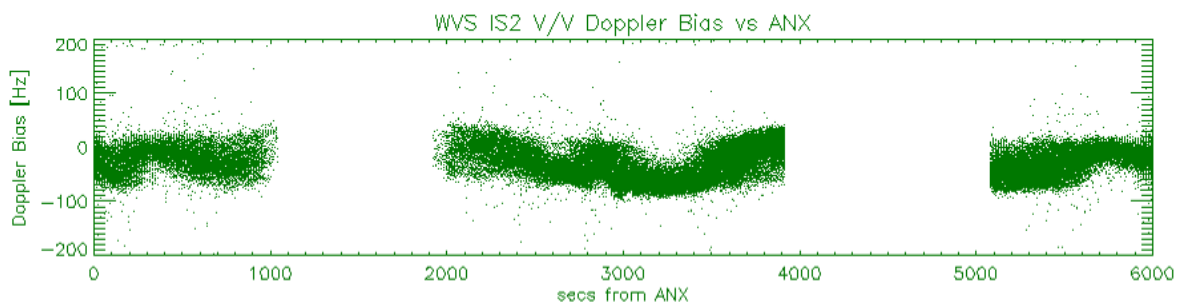


(b) GM1 Doppler

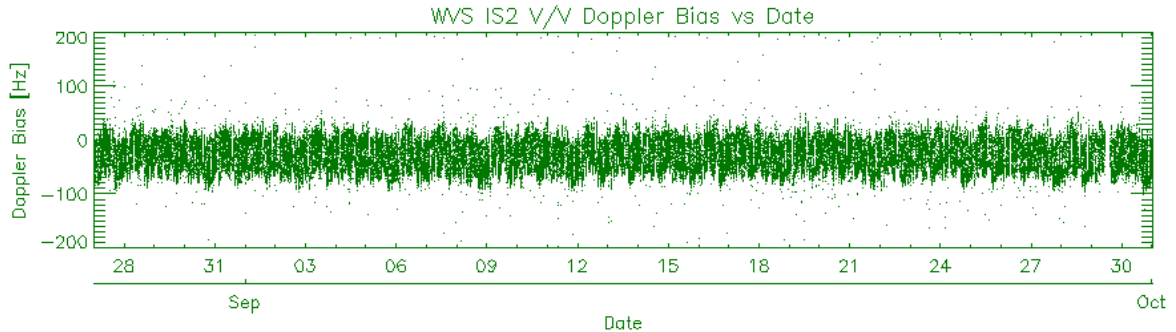
Figure 4.3: Absolute Doppler Centroid evolution wrt elapsed seconds since ANX

4.4 *Residual Doppler Centroid Evolution vs. ANX and Time of Day*

Figure 4.4 shows the wave mode residual Doppler evolution (IS2, VV) against the elapsed seconds from the ascending node (ANX) (a) and versus the time of the day (UTC time) (b) for data acquired during the current month. Figure 4.5 shows the same information but for data acquired in GM1 mode.

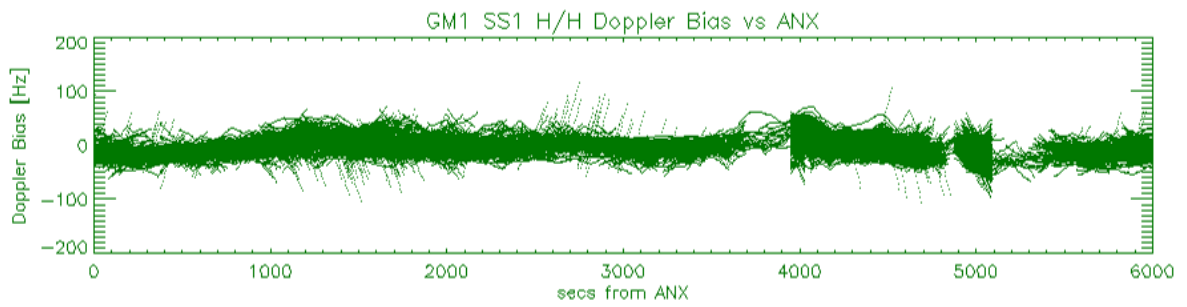


(a) residual Doppler evolution vs elapsed seconds since ANX

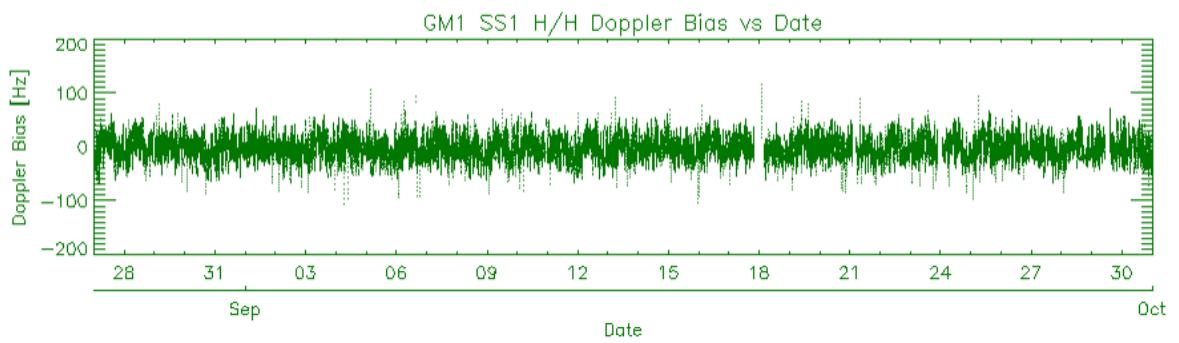


(b) residual Doppler evolution versus time of day

Figure 4.4: Residual Doppler centroid evolution for WVS data



(a) Doppler evolution versus elapsed seconds since ANX



(b) residual Doppler evolution versus time of day

Figure 4.5: Residual Doppler centroid evolution for GM1 data

5 IMAGE QUALITY AND RADIOMETRIC ANALYSIS

The analysis of the ASAR transponders is used to characterise ASAR products in terms of:

- ✓ spatial resolution,
- ✓ Impulse Response Function (IRF) parameters (ISLR, PSLR, SSLR) and
- ✓ Absolute calibration factor.

The analysis is performed for all the modes, beams and polarisations.

Table 6.1 shows the relative Radar Cross Section (RCS)¹ per mode, beam and set of transponders. The values provided per sub-swath correspond to the mean absolute calibration error. Values provided per all swaths correspond to the mean error value and the corresponding standard deviation. All values are in dB.

| Product type | Relative RCS [dB] | | | | | | | |
|--------------|-------------------|-------|-------|-------|-------|-------|-------|-------|
| | All Swaths | IS1 | IS2 | IS3 | IS4 | IS5 | IS6 | IS7 |
| IMP | -0.24±0.60 | -0.18 | -0.21 | -0.58 | -0.44 | -0.04 | -0.04 | -0.28 |
| IMG | -0.19±0.63 | -0.36 | -0.23 | -0.48 | -0.45 | 0.17 | 0.09 | -0.09 |
| IMS | -0.20±0.60 | -0.34 | -0.09 | -0.58 | -0.43 | -0.04 | 0.08 | -0.15 |
| IMM | -0.35±1.09 | | | | | | | |
| APP | -0.14±0.45 | -0.51 | -0.22 | -0.07 | -0.19 | -0.03 | 0.06 | -0.08 |
| APG | -0.13±0.51 | -0.46 | -0.21 | 0.00 | -0.26 | -0.14 | 0.20 | -0.10 |
| APS | -0.16±0.54 | -0.37 | -0.26 | 0.02 | -0.43 | -0.15 | 0.10 | 0.01 |
| APM | -0.41±0.78 | | | | | | | |
| WSM | 0.35±1.05 | | | | | | | |

Table 6.1: ASAR Image Relative Radar Cross-Sections per mode and beam.

Table 6.2 gives the relative RCS for the full resolutions products as a function of the polarization. All values are in dB.

¹The relative RCS is defined as the difference between the nominal RCS and the measured RCS.

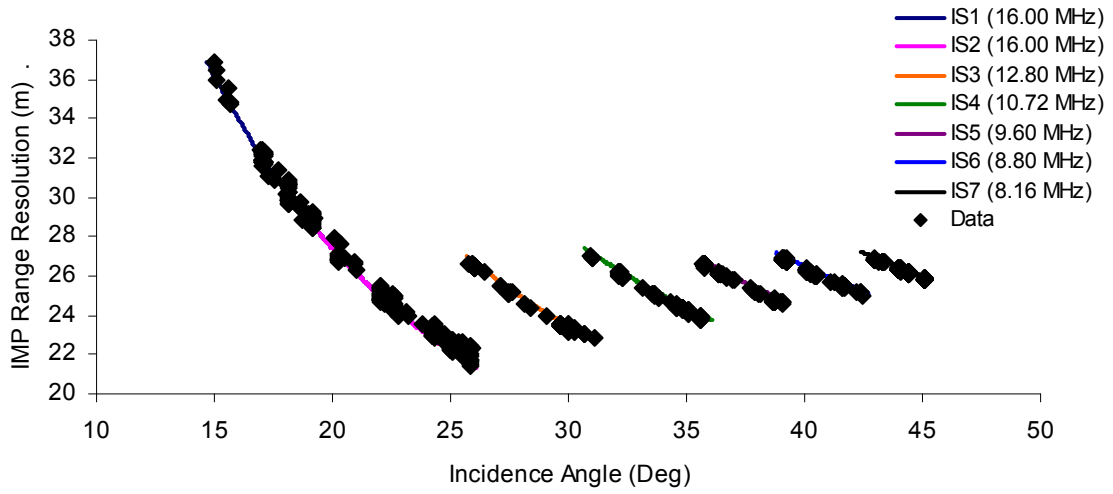
| Product type | Relative RCS [dB] | | | |
|--------------|-------------------|------------|------------|------------|
| | VV | HH | VH | HV |
| IMP | -0.13±0.52 | -0.41±0.66 | | |
| APP | 0.00±0.34 | -0.16±0.51 | -0.14±0.38 | -0.07±0.53 |

Table 6.2: ASAR Image Relative Radar Cross-Sections per mode and polarisation

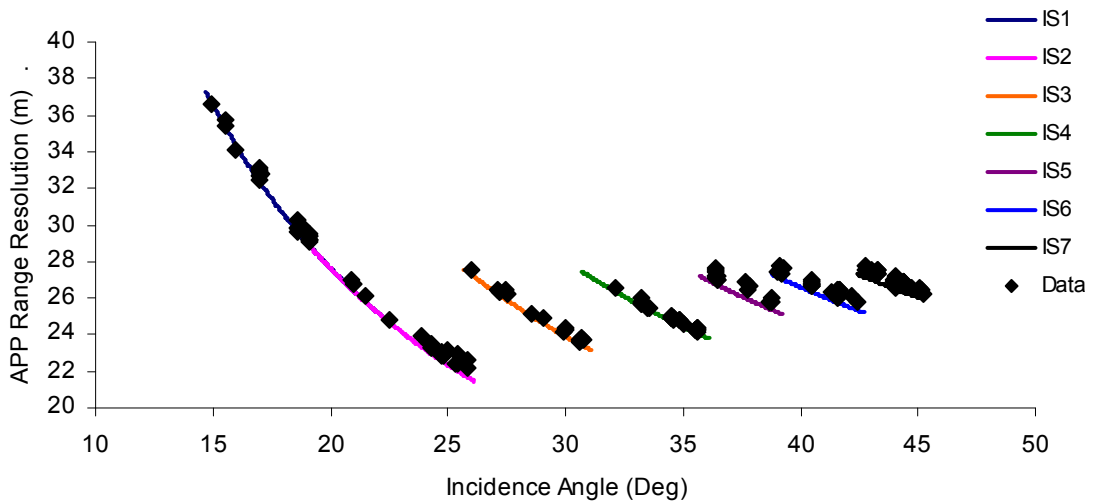
The Table 6.3 shows the IRF parameters measured per different product types.

| Product Type | Azimuth Res (m) | Range Res (m) | ISLR (dB) | PSLR (dB) | SSLR (dB) | No of Results |
|--------------|------------------------|---------------|--------------|--------------|-------------|---------------|
| IMP | 22.14±0.49 | (figure 5.1a) | -13.48±0.54 | -16.72±0.97 | -22.74±1.75 | 557 |
| IMG | 22.38±0.47 | 21.6 – 35.8 | -13.56±0.52 | -16.89±0.99 | -23.52±1.69 | 555 |
| IMS | 4.77±0.03 5.57±0.06 | 9.43±0.05 | -14.44±0.29 | -19.02±0.44 | -28.39±0.62 | 553 |
| IMM | 146.88±3.74 | 132.94±6.06 | -9.39±9.04 | -16.28±1.76 | -17.53±4.19 | 376 |
| APP | 27.65±0.79 | (figure 5.1b) | -12.90±0.47 | -19.17±0.98 | -27.11±1.55 | 152 |
| APG | 27.71±0.72 | 22.6 – 36.4 | -12.96±0.48 | -19.25±0.93 | -27.68±1.26 | 149 |
| APS | 4.33±1.84 | 8.40±0.07 | 4.08±2.43 | -1.91±1.35 | -16.49±4.40 | 148 |
| APM | 144.92±2.35 | 131.72±5.87 | -9.18±3.81 | --15.99±1.75 | -17.92±4.61 | 45 |
| WSM | 114.86±5.79 | 123.78±9.05 | -11.88±13.85 | -12.87±2.41 | -15.23±3.27 | 168 |

Table 6.3: ASAR IRF parameters per product type

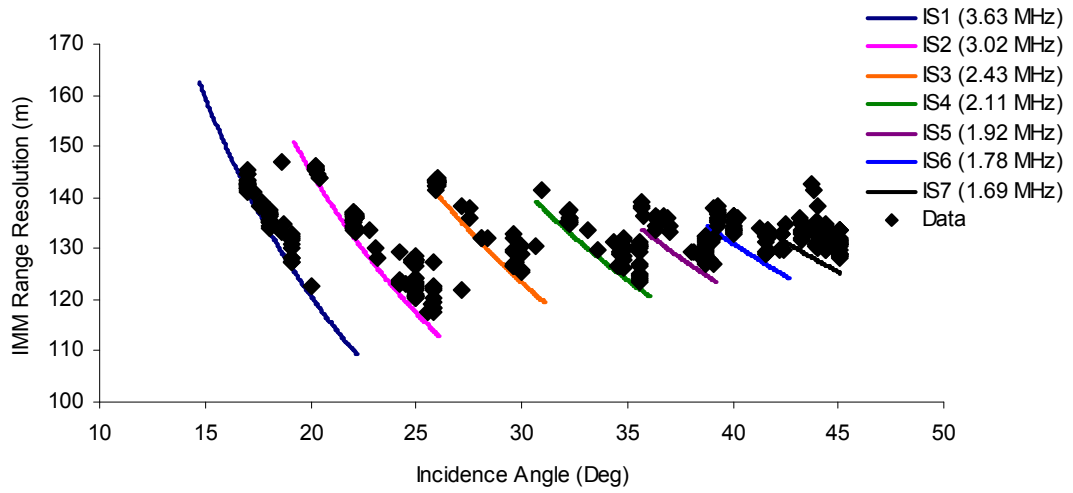


(a) IMP products

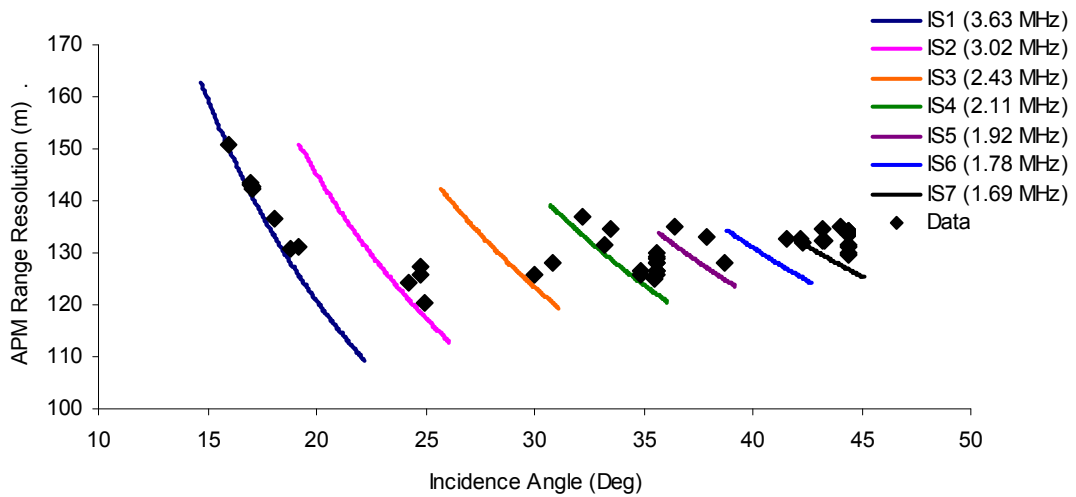


(b) APP products

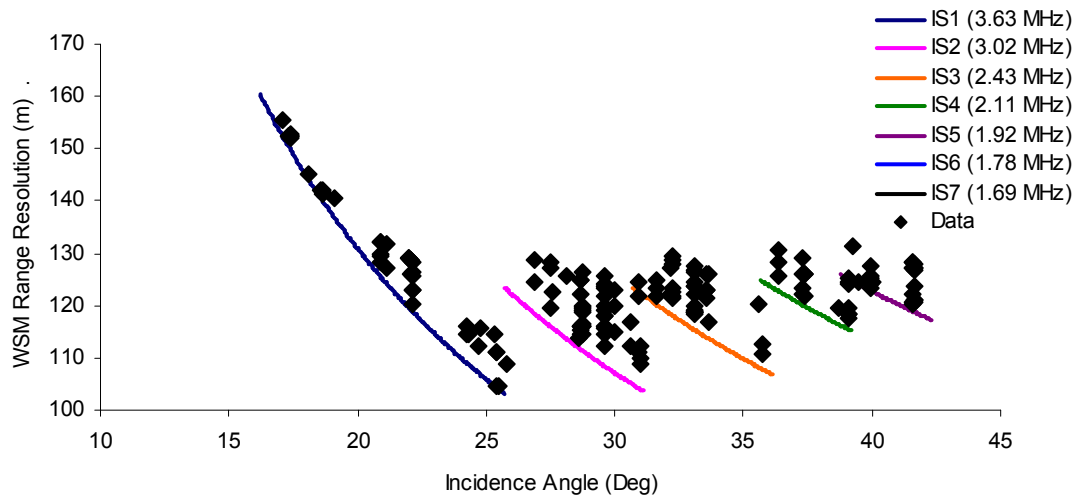
Figure 6.1: Range resolution as a function of the incidence angle for the IMP and APP products



(a) IMM products



(b) APM products



(c) WSM products.

Figure 6.2: Range resolution as a function of the incidence angle for the medium resolution products.

Table 6.4 gives measured equivalent number of looks and radiometric resolutions for IMP/IMG, IMS, APP/APG, APS and WSM products.

| Product Type | Equ. Num Looks | Rad Res (dB) |
|--------------|----------------|--------------|
| IMP/IMG | 3.95 | 1.77 |
| IMS | 0.96 | 3.05 |
| APS | 0.93 | 3.09 |

Table 6.4(a): ASAR measured equivalent number of looks and radiometric resolution

| APP/APG | IS1 | IS2 | IS3 | IS4 | IS5 | IS6 | IS7 |
|----------------|------|------|------|------|------|------|------|
| Equ. Num Looks | 1.76 | 1.73 | 2.25 | 2.66 | 3.30 | 3.78 | 3.73 |
| Rad Res (dB) | 2.44 | 2.45 | 2.22 | 2.08 | 1.91 | 1.80 | 1.81 |

Table 6.4(b): ASAR measured equivalent number of looks and radiometric resolution

| WSM | SS1 | SS2 | SS3 | SS4 | SS5 |
|----------------|-------|-------|-------|-------|-------|
| Equ. Num Looks | 13.19 | 13.21 | 13.84 | 13.77 | 13.38 |
| Rad Res (dB) | 1.05 | 1.05 | 1.03 | 1.03 | 1.04 |

Table 6.4(c): ASAR measured equivalent number of looks and radiometric resolution

| APM | IS1 | IS2 | IS3 | IS4 | IS5 | IS6 | IS7 |
|----------------|-------|-------|-------|-------|-------|-------|-------|
| Equ. Num Looks | 43.99 | 52.46 | 65.68 | 75.66 | 83.21 | 90.16 | 95.93 |
| Rad Res (dB) | 0.60 | 0.56 | 0.50 | 0.47 | 0.45 | 0.43 | 0.42 |

Table 6.4(d): ASAR measured equivalent number of looks and radiometric resolution

| IMM | IS1 | IS2 | IS3 | IS4 | IS5 | IS6 | IS7 |
|-----------------------|-------|-------|-------|-------|-------|-------|-------|
| Equ. Num Looks | 35.68 | 42.20 | 52.56 | 60.78 | 65.76 | 72.67 | 75.77 |
| Rad Res (dB) | 0.67 | 0.62 | 0.56 | 0.52 | 0.50 | 0.48 | 0.47 |

Table 6.4(e): ASAR measured equivalent number of looks and radiometric resolution

The noise equivalent radar cross-section (NESigma0) has been estimated using AP and IM products of low radar cross-section ocean region, as shown in Figure 6.3. All measurements are at or lower than predicted NESigma0 values.

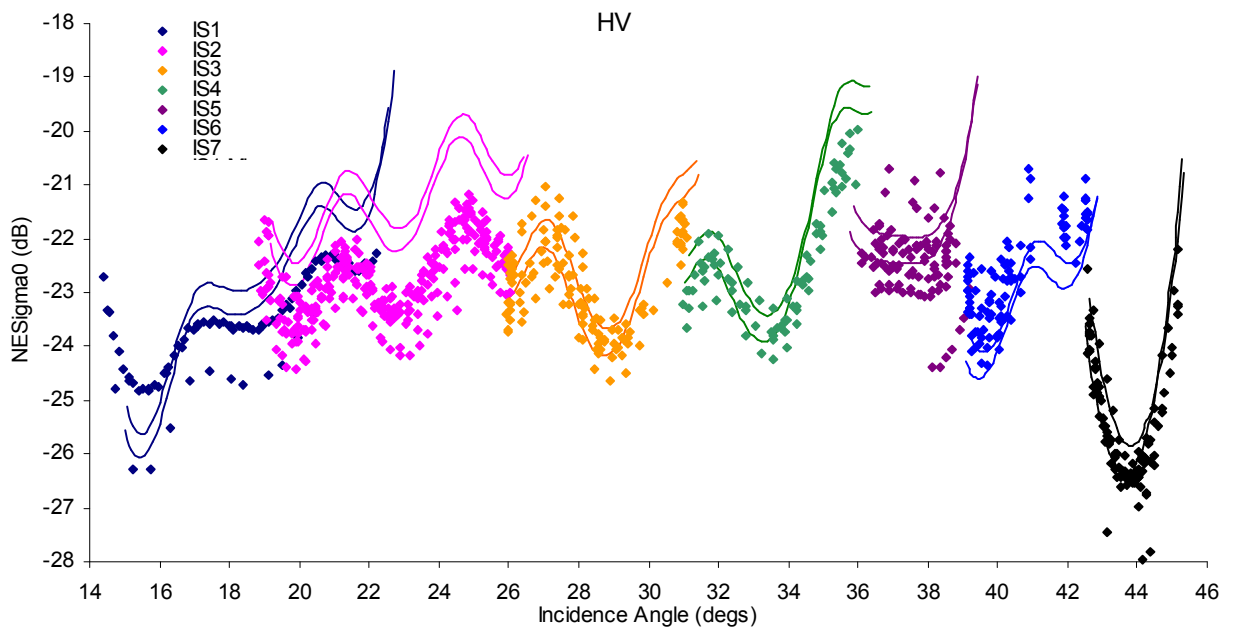


Figure 6.3(a). NESigma0 measurements for AP HV polarisation.

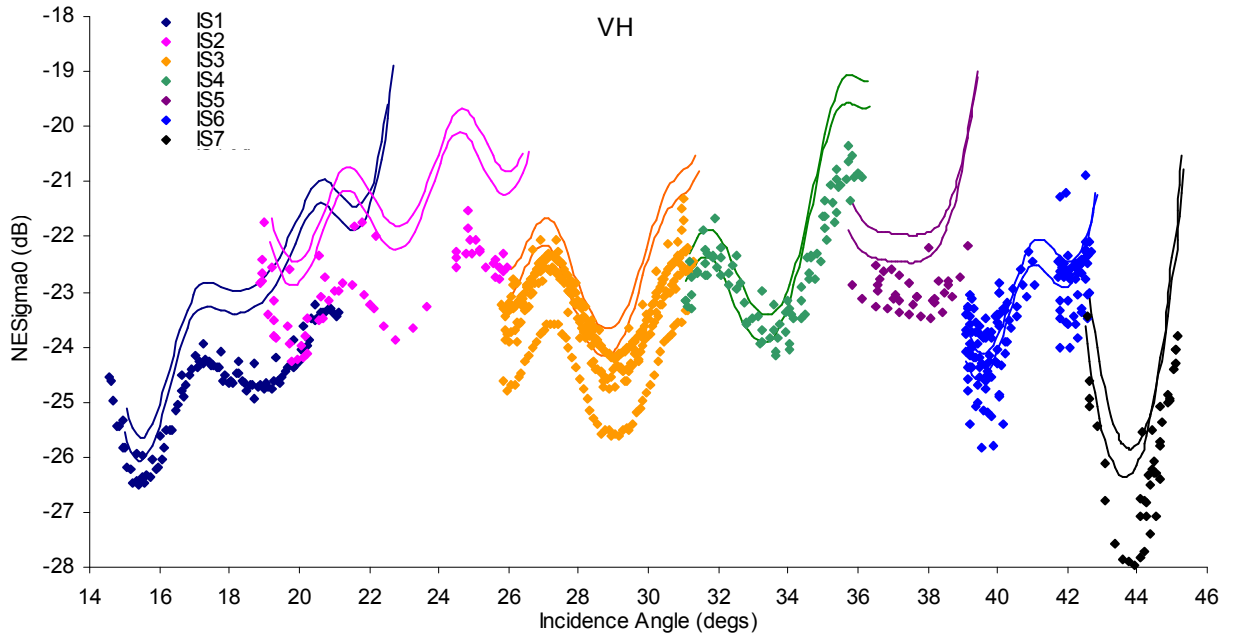


Figure 6.3(b). NESigma0 measurements for AP VH polarisation.

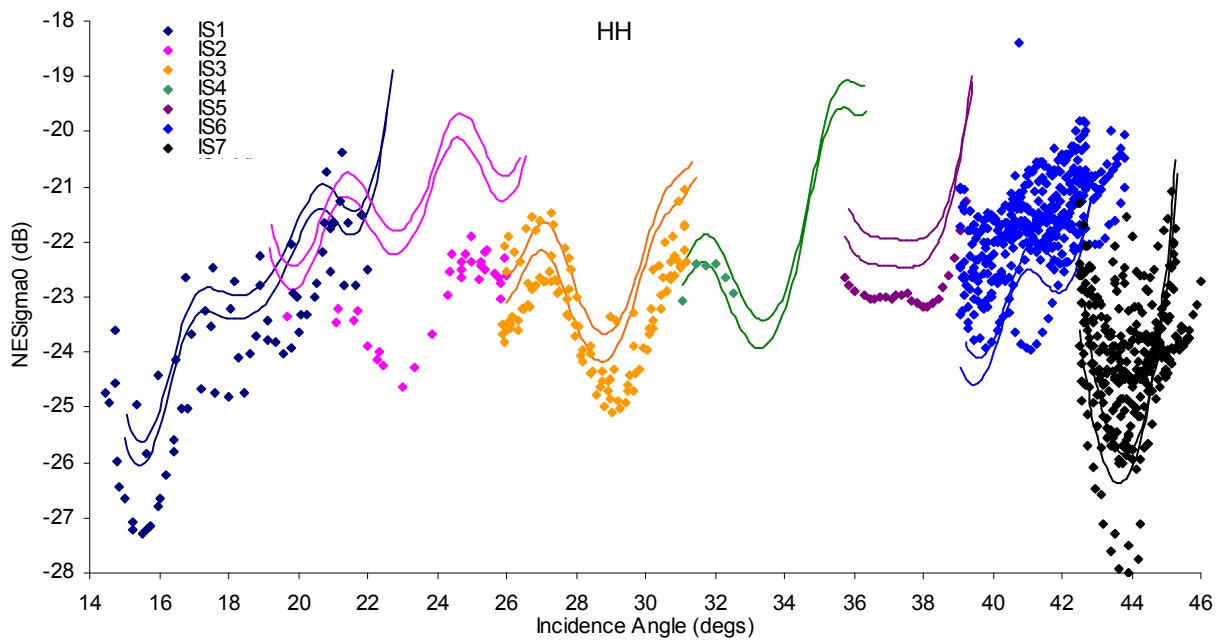


Figure 6.3(c). NESigma0 measurements for IM/AP HH polarisation.

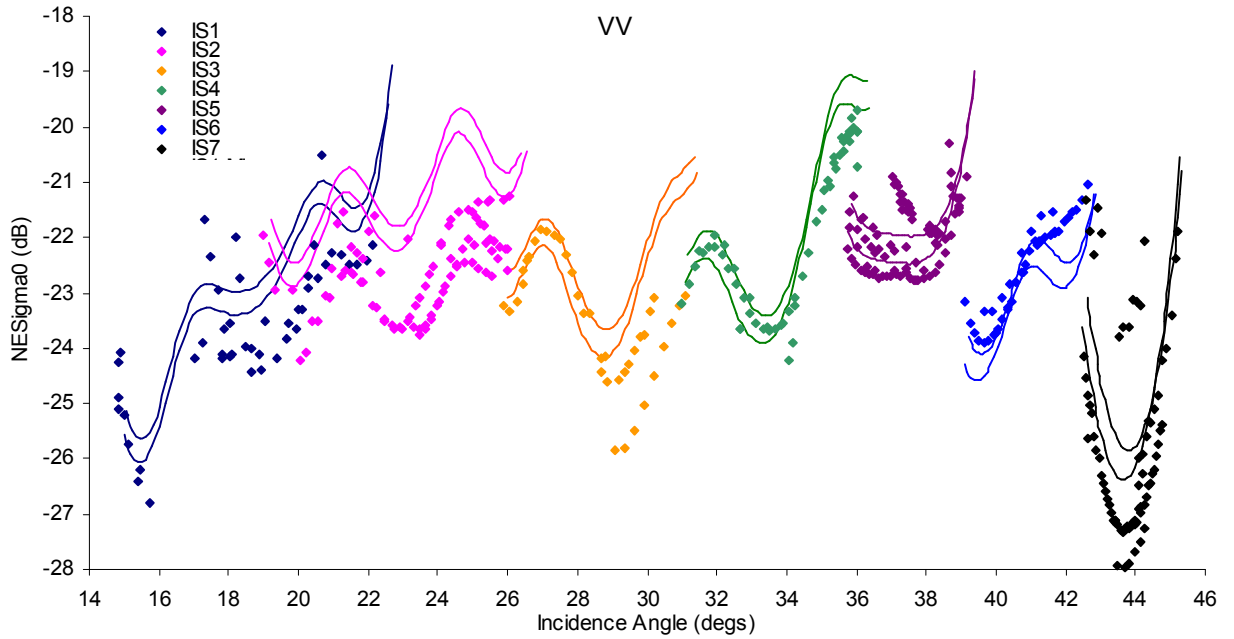


Figure 6.3(d). NESigma0 measurements for IM/AP VV polarisation.

The WSM noise equivalent radar cross-section (NESigma0) has also been estimated using low radar cross-section ocean regions, as shown in Figure 6.4.

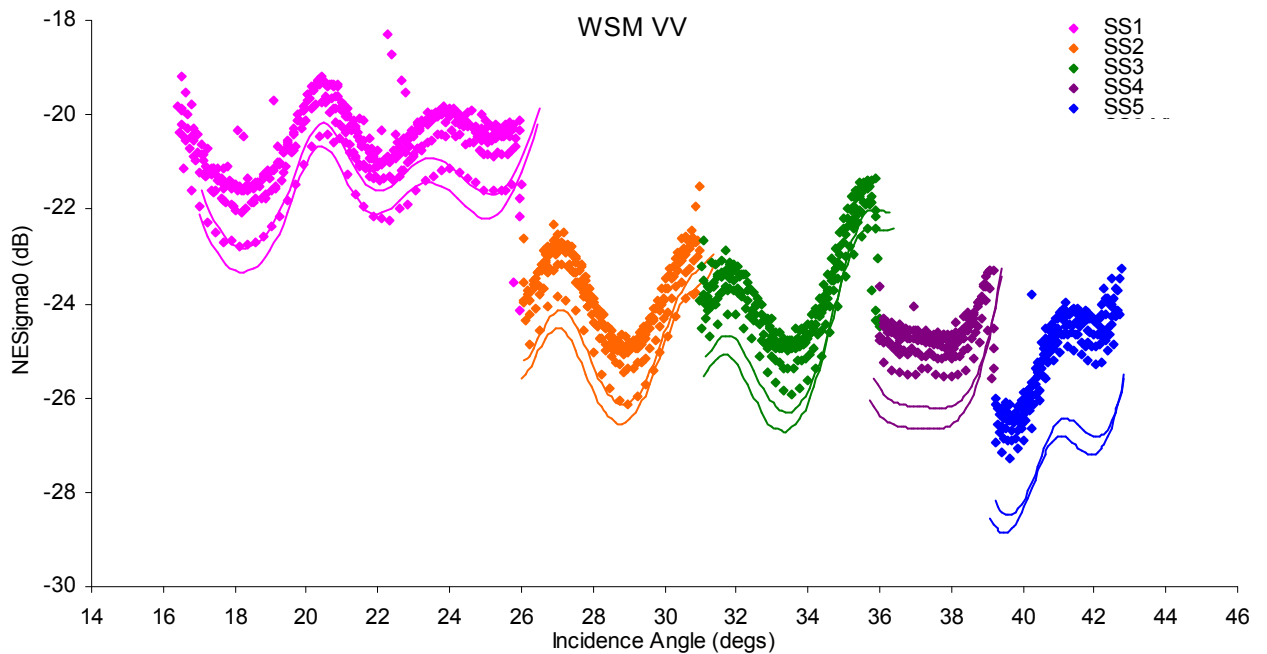


Figure 6.4(a). NESigma0 measurements for WSM VV polarisation.

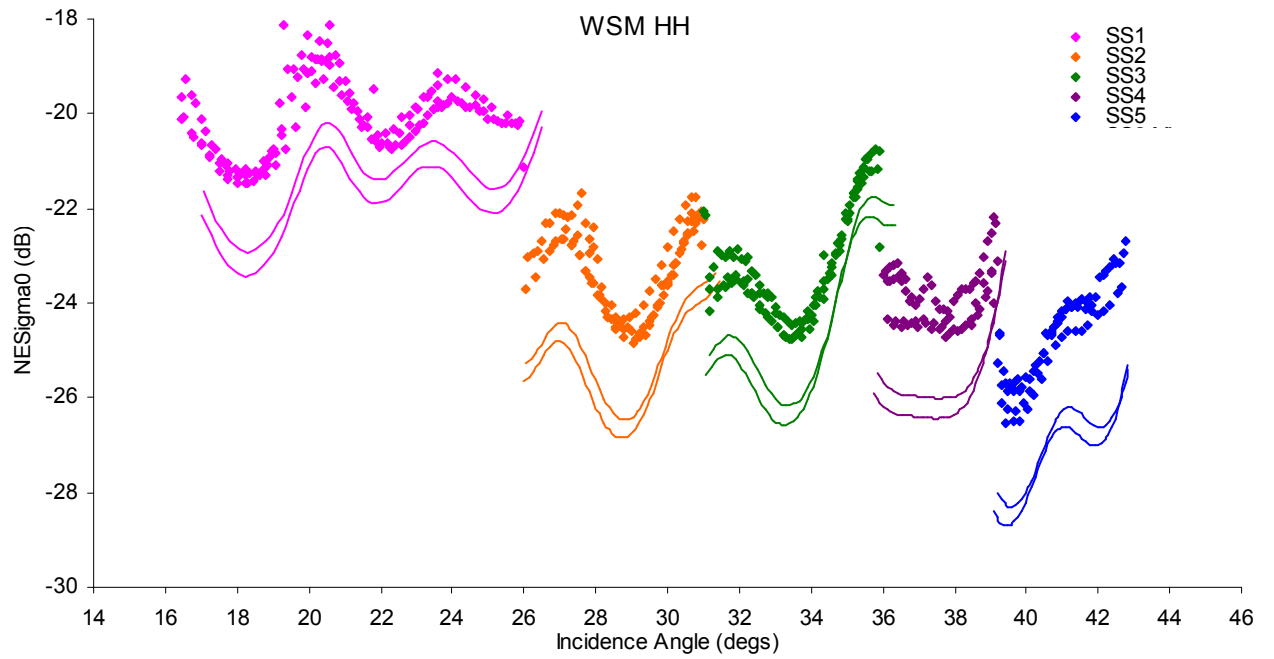


Figure 6.4(b). NESigma0 measurements for WSM HH polarisation.

6 ELEVATION ANTENNA PATTERN MONITORING

6.1 Recent Elevation Antenna Pattern Updates

During the reporting period there were no updates to the ASAR elevation antenna patterns. The table below show the most recent updates (since August 2003) for each beam and polarisation.

| BEAM | POL | RECENT ELEVATION ANTENNA PATTERN UPDATES | | | | | | | | | | | | | | |
|---------|-----|--|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| SS1 | HH | 27/08/2003 | | 06/04/2004 | 12/08/2004 | | 13/10/2005 | 19/12/2005 | 15/02/2007 | | 07/10/2008 | 11/03/2009 | 02/03/2010 | | 08/06/2010 | |
| SS1 | VV | 27/08/2003 | | 06/04/2004 | | | 13/10/2005 | 19/12/2005 | 22/02/2007 | | | | | | 08/06/2010 | 08/06/2010 |
| IS1 | HH | | 09/12/2003 | | | | | | | | 18/12/2007 | 07/10/2008 | 11/03/2009 | 02/03/2010 | | 08/06/2010 |
| IS1 | VV | | 09/12/2003 | 06/04/2004 | | | | | | | 17/05/2007 | 07/10/2008 | 11/03/2009 | 02/03/2010 | 15/03/2010 | |
| IS1 | HV | | | | | | | 23/02/2006 | 17/07/2006 | | | | | | | |
| IS1 | VH | | 09/12/2003 | 06/04/2004 | | | | 23/02/2006 | 17/07/2006 | 17/05/2007 | | | | | | |
| IS2 | HH | | | 06/04/2004 | | | 03/11/2005 | | | 17/05/2007 | | | 11/03/2009 | 02/03/2010 | | 08/06/2010 |
| IS2 | VV | | 09/12/2003 | 06/04/2004 | | | 03/11/2005 | | | 17/05/2007 | | | 11/03/2009 | 02/03/2010 | | |
| IS2 | HV | | | 06/04/2004 | | | | 23/02/2006 | 17/07/2006 | 17/05/2007 | | | | | | |
| IS2 | VH | | | 06/04/2004 | | | | 23/02/2006 | 17/07/2006 | 17/05/2007 | | | | | | |
| IS3_SS2 | HH | 27/08/2003 | 09/12/2003 | | 12/08/2004 | 27/10/2004 | 13/10/2005 | | 15/02/2007 | 17/05/2007 | 07/10/2008 | 11/03/2009 | 02/03/2010 | | 08/06/2010 | |
| IS3_SS2 | VV | 27/08/2003 | | | 12/08/2004 | | 13/10/2005 | | 22/02/2007 | 17/05/2007 | 07/10/2008 | 11/03/2009 | 02/03/2010 | | 08/06/2010 | 08/06/2010 |
| IS3_SS2 | HV | | | | | | | 23/02/2006 | 17/07/2006 | 17/05/2007 | | | | | | |
| IS3_SS2 | VH | | | | | | | 23/02/2006 | 17/07/2006 | 17/05/2007 | | | | | | |
| IS4_SS3 | HH | | | | 12/08/2004 | | 13/10/2005 | | 15/02/2007 | 17/05/2007 | 07/10/2008 | 11/03/2009 | 02/03/2010 | | | 08/06/2010 |
| IS4_SS3 | VV | | | | | 27/10/2004 | 13/10/2005 | | 22/02/2007 | 17/05/2007 | | 11/03/2009 | 02/03/2010 | | 08/06/2010 | 08/06/2010 |
| IS4_SS3 | HV | | | 06/04/2004 | | | | 23/02/2006 | 17/07/2006 | 17/05/2007 | | | | | | |
| IS4_SS3 | VH | | | 06/04/2004 | | | | 23/02/2006 | 17/07/2006 | 17/05/2007 | | | | | | |
| IS5_SS4 | HH | 27/08/2003 | | 06/04/2004 | | 27/10/2004 | 13/10/2005 | | 15/02/2007 | 18/12/2007 | 07/10/2008 | | | 02/03/2010 | | 08/06/2010 |
| IS5_SS4 | VV | 27/08/2003 | | | | | 13/10/2005 | | 22/02/2007 | 17/05/2007 | 07/10/2008 | | | 02/03/2010 | | 08/06/2010 |
| IS5_SS4 | HV | | | 06/04/2004 | | | | 23/02/2006 | 17/07/2006 | | | | | | | |
| IS5_SS4 | VH | | | 06/04/2004 | | | | 23/02/2006 | 17/07/2006 | | | | | | | |
| IS6_SS5 | HH | | | | | 27/10/2004 | 13/10/2005 | | 15/02/2007 | 17/05/2007 | 07/10/2008 | 11/03/2009 | 02/03/2010 | | 08/06/2010 | 08/06/2010 |
| IS6_SS5 | VV | | | | | | 13/10/2005 | | 22/02/2007 | 17/05/2007 | 07/10/2008 | | 02/03/2010 | | 08/06/2010 | 08/06/2010 |
| IS6_SS5 | HV | | | 06/04/2004 | | | | 23/02/2006 | 17/07/2006 | 17/05/2007 | | | | | | |
| IS6_SS5 | VH | | | 06/04/2004 | | | | 23/02/2006 | 17/07/2006 | 17/05/2007 | | | | | | |
| IS7 | HH | | | | | | | | | 17/05/2007 | | 11/03/2009 | 02/03/2010 | | | 08/06/2010 |
| IS7 | VV | | | | | | | | | 17/05/2007 | | | 02/03/2010 | | | 08/06/2010 |
| IS7 | HV | | | | | | | 23/02/2006 | 17/07/2006 | 17/05/2007 | | | | | | |
| IS7 | VH | | | | | | | 23/02/2006 | 17/07/2006 | 17/05/2007 | | | | | | |

6.2 History of Elevation Antenna Pattern Updates

The table below summarizes the evolution of the elevation antenna pattern used for processing since August 2002. The files are available on line at http://earth.eo.esa.int/services/auxiliary_data/asar/.

The source information indicates whether the pattern has been derived from data acquired over the Rain Forest (“RF”) or whether it has been derived from antenna synthesis using results from Module Stepping acquisitions (“SYN”).

Please note that pre-launch antenna pattern where used before the first ASA_XCA_AX update.

Please note that the table indicates for each beam, in which file the update took place. Any file created after this date will include that update unless a new file is specified for the beam. For instance, the pattern for IS3_SS2 VV was updated on 27 August 2003. The file created on 9 December 2003 (when the IS1 VV pattern was updated) will include the same pattern for IS3_SS2 VV as in the file of 27 August 2003, since the table does no indicate any further update for the IS3_SS2 VV pattern.

| ASAR ELEVATION ANTENNA PATTERNS UPDATES IN THE ASAR EXTERNAL CALIBRATION FILE | | | | | |
|---|-----------------|--|---|--------------------------------------|----------|
| Swath & polarization | Source | Update time (file used in operations since 1 day after this date) | File Name | Applicable to data acquired between: | |
| | | | | Start | Stop |
| IS1 VV | RF | 20020813 | ASA_XCA_AXVIEC20020813_080042_20020413_000000_20021231_000000 | 20020413 | 20021231 |
| | NA ¹ | 20021107 | ASA_XCA_AXVIEC20021107_144746_20020413_000000_20021231_000000 | 20020413 | 20021231 |
| | RF | 20021122 | ASA_XCA_AXVIEC20021122_130838_20020413_000000_20021231_00000 ² | 20020413 | 20021231 |
| | RF | 20031209 | ASA_XCA_AXVIEC20031209_113559_20030211_000000_20041231_000000 | 20030211 | 20041231 |
| | RF | 20040406 | ASA_XCA_AXVIEC20040406_160451_20030211_000000_20041231_000000 | 20030211 | 20041231 |
| | RF | 20070517 | ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| | RF | 20080710 | ASA_XCA_AXVIEC20080710_133546_20070204_165113_20081231_000000 | 20070204 | 20081231 |
| | RF | 20090311 | ASA_XCA_AXVIEC20090311_104037_20070204_165113_20080731_235959 | 20070204 | 20080731 |
| | RF | 20090311 | ASA_XCA_AXVIEC20090311_104501_20080801_000000_20091231_235959 | 20080801 | 20091231 |
| | RF ³ | 20100302 | ASA_XCA_AXVIEC20100302_155508_20090501_000000_20101231_235959 | 20090501 | 20101231 |

¹ A corrupted IS1 VV pattern was included into the ASA_XCA_1P file updated of 11 Nov. 2002

² The corrupted IS1 VV pattern in the operational ASA_XCA_1P file was corrected on 22 Nov. 2002. Please note that the IS1 VV pattern in ASA_XCA_AXVIEC20021122_130838_20020413_000000_20021231_000000 is the same as in ASA_XCA_AXVIEC20020813_080042_20020413_000000_20021231_000000

³ A corrupted IS1 VV pattern was included in the update of 3rd March 2010

| | | | | | |
|--------|-----------------|----------|---|----------|----------|
| | RF ⁴ | 20100315 | ASA_XCA_AXVIEC20100315_123052_20090501_000000_20110101_000000 | 20090501 | 20101231 |
| IS1 HH | RF | 20021107 | ASA_XCA_AXVIEC20021107_144746_20020413_000000_20021231_000000 | 20020413 | 20021231 |
| | RF | 20031209 | ASA_XCA_AXVIEC20031209_113559_20030211_000000_20041231_000000 | 20030211 | 20041231 |
| | RF | 20071218 | ASA_XCA_AXVIEC20071218_082742_20070204_165113_20081231_000000 | 20070204 | 20081231 |
| | RF | 20080710 | ASA_XCA_AXVIEC20080710_133546_20070204_165113_20081231_000000 | 20070204 | 20081231 |
| | RF | 20090311 | ASA_XCA_AXVIEC20090311_104037_20070204_165113_20080731_235959 | 20070204 | 20080731 |
| | RF | 20090311 | ASA_XCA_AXVIEC20090311_104501_20080801_000000_20091231_235959 | 20080801 | 20091231 |
| | RF | 20100302 | ASA_XCA_AXVIEC20100302_155508_20090501_000000_20101231_235959 | 20090501 | 20101231 |
| | RF | 20100315 | ASA_XCA_AXVIEC20100315_123052_20090501_000000_20110101_000000 | 20090501 | 20101231 |
| | RF | 20100608 | ASA_XCA_AXVIEC20100608_123419_20100317_120410_20110101_000000 | 20100317 | 20110101 |
| IS1 HV | RF | 20021217 | ASA_XCA_AXVIEC20021217_150852_20020413_000000_20031231_000000 | 20020413 | 20031231 |
| | RF | 20060223 | ASA_XCA_AXVIEC20060223_133247_20050101_000000_20050914_000000 | 20050101 | 20050914 |
| | RF | 20060717 | ASA_XCA_AXVIEC20060717_154125_20050916_195733_20061231_000000 | 20050916 | 20061231 |
| IS1 VH | RF | 20021217 | ASA_XCA_AXVIEC20021217_150852_20020413_000000_20031231_000000 | 20020413 | 20031231 |
| | RF | 20031209 | ASA_XCA_AXVIEC20031209_113559_20030211_000000_20041231_000000 | 20030211 | 20041231 |
| | RF | 20040406 | ASA_XCA_AXVIEC20040406_160451_20030211_000000_20041231_000000 | 20030211 | 20041231 |
| | RF | 20060223 | ASA_XCA_AXVIEC20060223_133247_20050101_000000_20050914_000000 | 20050101 | 20050914 |

⁴ The correction to IS1 VV was issued in the XCA file issued on 15th March 2010, all other patterns remain the same.

| | | | | | |
|--------|----|----------|---|----------|----------|
| | RF | 20060717 | ASA_XCA_AXVIEC20060717_154125_20050916_195733_20061231_000000 | 20050916 | 20061231 |
| | RF | 20070517 | ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| IS2 VV | RF | 20020813 | ASA_XCA_AXVIEC20020813_080042_20020413_000000_20021231_000000 | 20020413 | 20021231 |
| | RF | 20031209 | ASA_XCA_AXVIEC20031209_113559_20030211_000000_20041231_000000 | 20030211 | 20041231 |
| | RF | 20040406 | ASA_XCA_AXVIEC20040406_160451_20030211_000000_20041231_000000 | 20030211 | 20041231 |
| | RF | 20051103 | ASA_XCA_AXVIEC20051103_160021_20050101_000000_20050914_080040 | 20050101 | 20050914 |
| | RF | 20070517 | ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| | RF | 20090311 | ASA_XCA_AXVIEC20090311_104037_20070204_165113_20080731_235959 | 20070204 | 20080731 |
| | RF | 20090311 | ASA_XCA_AXVIEC20090311_104501_20080801_000000_20091231_235959 | 20080801 | 20091231 |
| | RF | 20100302 | ASA_XCA_AXVIEC20100302_155508_20090501_000000_20101231_235959 | 20090501 | 20101231 |
| | RF | 20100315 | ASA_XCA_AXVIEC20100315_123052_20090501_000000_20110101_000000 | 20090501 | 20101231 |
| IS2 HH | RF | 20021107 | ASA_XCA_AXVIEC20021107_144746_20020413_000000_20021231_000000 | 20020413 | 20021231 |
| | RF | 20040406 | ASA_XCA_AXVIEC20040406_160451_20030211_000000_20041231_000000 | 20030211 | 20041231 |
| | RF | 20051103 | ASA_XCA_AXVIEC20051103_160021_20050101_000000_20050914_080040 | 20050101 | 20050914 |
| | RF | 20070517 | ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| | RF | 20090311 | ASA_XCA_AXVIEC20090311_104037_20070204_165113_20080731_235959 | 20070204 | 20080731 |
| | RF | 20090311 | ASA_XCA_AXVIEC20090311_104501_20080801_000000_20091231_235959 | 20080801 | 20091231 |
| | RF | 20100302 | ASA_XCA_AXVIEC20100302_155508_20090501_000000_20101231_235959 | 20090501 | 20101231 |
| | RF | 20100315 | ASA_XCA_AXVIEC20100315_123052_20090501_000000_20110101_000000 | 20090501 | 20101231 |

| | | | | | |
|------------|----|----------|---|----------|----------|
| | RF | 20100608 | ASA_XCA_AXVIEC20100608_123419_20100317_120410_20110101_000000 | 20100317 | 20110101 |
| IS2 HV | RF | 20021217 | ASA_XCA_AXVIEC20021217_150852_20020413_000000_20031231_000000 | 20020413 | 20031231 |
| | RF | 20040406 | ASA_XCA_AXVIEC20040406_160451_20030211_000000_20041231_000000 | 20030211 | 20041231 |
| | RF | 20060223 | ASA_XCA_AXVIEC20060223_133247_20050101_000000_20050914_000000 | 20050101 | 20050914 |
| | RF | 20060717 | ASA_XCA_AXVIEC20060717_154125_20050916_195733_20061231_000000 | 20050916 | 20061231 |
| | RF | 20070517 | ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| IS2 VH | RF | 20021217 | ASA_XCA_AXVIEC20021217_150852_20020413_000000_20031231_000000 | 20020413 | 20031231 |
| | RF | 20040406 | ASA_XCA_AXVIEC20040406_160451_20030211_000000_20041231_000000 | 20030211 | 20041231 |
| | RF | 20060223 | ASA_XCA_AXVIEC20060223_133247_20050101_000000_20050914_000000 | 20050101 | 20050914 |
| | RF | 20060717 | ASA_XCA_AXVIEC20060717_154125_20050916_195733_20061231_000000 | 20050916 | 20061231 |
| | RF | 20070517 | ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| IS3_SS2 VV | RF | 20020813 | ASA_XCA_AXVIEC20020813_080042_20020413_000000_20021231_000000 | 20020413 | 20021231 |
| | RF | 20021018 | ASA_XCA_AXVIEC20021018_121708_20020413_000000_20021231_000000 | 20020413 | 20021231 |
| | RF | 20030801 | ASA_XCA_AXVIEC20030801_133024_20030428_000000_20031231_000000 | 20030428 | 20031231 |
| | RF | 20030801 | ASA_XCA_AXVIEC20030801_134802_20020413_000000_20030211_000000 | 20020413 | 20030211 |
| | RF | 20030827 | ASA_XCA_AXVIEC20030827_140210_20030211_000000_20031231_000000 | 20030211 | 20031231 |
| | RF | 20040812 | ASA_XCA_AXVIEC20040812_170224_20040412_000000_20041231_000000 | 20040412 | 20041231 |
| | RF | 20051013 | ASA_XCA_AXVIEC20051013_152245_20050101_000000_20050914_080040 | 20050101 | 20050914 |
| | RF | 20051013 | ASA_XCA_AXVIEC20051013_152531_20050916_195733_20061231_000000 | 20050916 | 20061231 |

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|------------|----|----------|---|----------|----------|
| | RF | 20070222 | ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| | RF | 20070517 | ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| | RF | 20080710 | ASA_XCA_AXVIEC20080710_133546_20070204_165113_20081231_000000 | 20070204 | 20081231 |
| | RF | 20090311 | ASA_XCA_AXVIEC20090311_104037_20070204_165113_20080731_235959 | 20070204 | 20080731 |
| | RF | 20090311 | ASA_XCA_AXVIEC20090311_104501_20080801_000000_20091231_235959 | 20080801 | 20091231 |
| | RF | 20100302 | ASA_XCA_AXVIEC20100302_155508_20090501_000000_20101231_235959 | 20090501 | 20101231 |
| | RF | 20100315 | ASA_XCA_AXVIEC20100315_123052_20090501_000000_20110101_000000 | 20090501 | 20101231 |
| | RF | 20100608 | ASA_XCA_AXVIEC20100608_122638_20100311_094400_20100317_120409 | 20100311 | 20100317 |
| | RF | 20100608 | ASA_XCA_AXVIEC20100608_123419_20100317_120410_20110101_000000 | 20100317 | 20110101 |
| IS3_SS2 HH | RF | 20021107 | ASA_XCA_AXVIEC20021107_144746_20020413_000000_20021231_000000 | 20020413 | 20021231 |
| | RF | 20030801 | ASA_XCA_AXVIEC20030801_133024_20030428_000000_20031231_000000 | 20030428 | 20031231 |
| | RF | 20030801 | ASA_XCA_AXVIEC20030801_134802_20020413_000000_20030211_000000 | 20020413 | 20030211 |
| | RF | 20030827 | ASA_XCA_AXVIEC20030827_140210_20030211_000000_20031231_000000 | 20030211 | 20031231 |
| | RF | 20031209 | ASA_XCA_AXVIEC20031209_113559_20030211_000000_20041231_000000 | 20030211 | 20041231 |
| | RF | 20040812 | ASA_XCA_AXVIEC20040812_170224_20040412_000000_20041231_000000 | 20040412 | 20041231 |
| | RF | 20041027 | ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000 | 20040412 | 20051231 |
| | RF | 20051013 | ASA_XCA_AXVIEC20051013_152531_20050916_195733_20061231_000000 | 20050916 | 20061231 |
| | RF | 20070215 | ASA_XCA_AXVIEC20070215_184638_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| | RF | 20070517 | ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000 | 20070204 | 20071231 |

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|------------|------|----------|---|----------|----------|
| | RF | 20080710 | ASA_XCA_AXVIEC20080710_133546_20070204_165113_20081231_000000 | 20070204 | 20081231 |
| | RF | 20090311 | ASA_XCA_AXVIEC20090311_104037_20070204_165113_20080731_235959 | 20070204 | 20080731 |
| | RF | 20090311 | ASA_XCA_AXVIEC20090311_104501_20080801_000000_20091231_235959 | 20080801 | 20091231 |
| | RF | 20100302 | ASA_XCA_AXVIEC20100302_155508_20090501_000000_20101231_235959 | 20090501 | 20101231 |
| | RF | 20100315 | ASA_XCA_AXVIEC20100315_123052_20090501_000000_20110101_000000 | 20090501 | 20101231 |
| | RF | 20100608 | ASA_XCA_AXVIEC20100608_122638_20100311_094400_20100317_120409 | 20100311 | 20100317 |
| IS3 HV | SYN. | 20021217 | ASA_XCA_AXVIEC20021217_150852_20020413_000000_20031231_000000 | 20020413 | 20031231 |
| | RF | 20060223 | ASA_XCA_AXVIEC20060223_133247_20050101_000000_20050914_000000 | 20050101 | 20050914 |
| | RF | 20060717 | ASA_XCA_AXVIEC20060717_154125_20050916_195733_20061231_000000 | 20050916 | 20061231 |
| | RF | 20070517 | ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| IS3 VH | RF | 20021217 | ASA_XCA_AXVIEC20021217_150852_20020413_000000_20031231_000000 | 20020413 | 20031231 |
| | RF | 20060223 | ASA_XCA_AXVIEC20060223_133247_20050101_000000_20050914_000000 | 20050101 | 20050914 |
| | RF | 20060717 | ASA_XCA_AXVIEC20060717_154125_20050916_195733_20061231_000000 | 20050916 | 20061231 |
| | RF | 20070517 | ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| IS4_SS3 VV | RF | 20020813 | ASA_XCA_AXVIEC20020813_080042_20020413_000000_20021231_000000 | 20020413 | 20021231 |
| | RF | 20021018 | ASA_XCA_AXVIEC20021018_121708_20020413_000000_20021231_000000 | 20020413 | 20021231 |
| | RF | 20041027 | ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000 | 20040412 | 20051231 |
| | RF | 20051013 | ASA_XCA_AXVIEC20051013_152245_20050101_000000_20050914_080040 | 20050101 | 20050914 |
| | RF | 20051013 | ASA_XCA_AXVIEC20051013_152531_20050916_195733_20061231_000000 | 20050916 | 20061231 |

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|------------|----|----------|---|----------|----------|
| | RF | 20070222 | ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| | RF | 20070517 | ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| | RF | 20090311 | ASA_XCA_AXVIEC20090311_104037_20070204_165113_20080731_235959 | 20070204 | 20080731 |
| | RF | 20090311 | ASA_XCA_AXVIEC20090311_104501_20080801_000000_20091231_235959 | 20080801 | 20091231 |
| | RF | 20100302 | ASA_XCA_AXVIEC20100302_155508_20090501_000000_20101231_235959 | 20090501 | 20101231 |
| | RF | 20100315 | ASA_XCA_AXVIEC20100315_123052_20090501_000000_20110101_000000 | 20090501 | 20101231 |
| | RF | 20100608 | ASA_XCA_AXVIEC20100608_122638_20100311_094400_20100317_120409 | 20100311 | 20100317 |
| | RF | 20100608 | ASA_XCA_AXVIEC20100608_123419_20100317_120410_20110101_000000 | 20100317 | 20110101 |
| IS4_SS3 HH | RF | 20021107 | ASA_XCA_AXVIEC20021107_144746_20020413_000000_20021231_000000 | 20020413 | 20021231 |
| | RF | 20040812 | ASA_XCA_AXVIEC20040812_170224_20040412_000000_20041231_000000 | 20040412 | 20041231 |
| | RF | 20051013 | ASA_XCA_AXVIEC20051013_152245_20050101_000000_20050914_080040 | 20050101 | 20050914 |
| | RF | 20051013 | ASA_XCA_AXVIEC20051013_152531_20050916_195733_20061231_000000 | 20050916 | 20061231 |
| | RF | 20070215 | ASA_XCA_AXVIEC20070215_184638_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| | RF | 20070517 | ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| | RF | 20090311 | ASA_XCA_AXVIEC20090311_104037_20070204_165113_20080731_235959 | 20070204 | 20080731 |
| | RF | 20090311 | ASA_XCA_AXVIEC20090311_104501_20080801_000000_20091231_235959 | 20080801 | 20091231 |
| | RF | 20100302 | ASA_XCA_AXVIEC20100302_155508_20090501_000000_20101231_235959 | 20090501 | 20101231 |
| | RF | 20100315 | ASA_XCA_AXVIEC20100315_123052_20090501_000000_20110101_000000 | 20090501 | 20101231 |
| | RF | 20100608 | ASA_XCA_AXVIEC20100608_123419_20100317_120410_20110101_000000 | 20100317 | 20110101 |

| | | | | | |
|------------|----|----------|---|----------|----------|
| IS4 HV | RF | 20021217 | ASA_XCA_AXVIEC20021217_150852_20020413_000000_20031231_000000 | 20020413 | 20031231 |
| | RF | 20040406 | ASA_XCA_AXVIEC20040406_160451_20030211_000000_20041231_000000 | 20030211 | 20041231 |
| | RF | 20060223 | ASA_XCA_AXVIEC20060223_133247_20050101_000000_20050914_000000 | 20050101 | 20050914 |
| | RF | 20060717 | ASA_XCA_AXVIEC20060717_154125_20050916_195733_20061231_000000 | 20050916 | 20061231 |
| | RF | 20070517 | ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| IS4 VH | RF | 20021217 | ASA_XCA_AXVIEC20021217_150852_20020413_000000_20031231_000000 | 20020413 | 20031231 |
| | RF | 20040406 | ASA_XCA_AXVIEC20040406_160451_20030211_000000_20041231_000000 | 20030211 | 20041231 |
| | RF | 20060223 | ASA_XCA_AXVIEC20060223_133247_20050101_000000_20050914_000000 | 20050101 | 20050914 |
| | RF | 20060717 | ASA_XCA_AXVIEC20060717_154125_20050916_195733_20061231_000000 | 20050916 | 20061231 |
| | RF | 20070517 | ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| IS5_SS4 VV | RF | 20020813 | ASA_XCA_AXVIEC20020813_080042_20020413_000000_20021231_000000 | 20020413 | 20021231 |
| | RF | 20021018 | ASA_XCA_AXVIEC20021018_121708_20020413_000000_20021231_000000 | 20020413 | 20021231 |
| | RF | 20051013 | ASA_XCA_AXVIEC20051013_152245_20050101_000000_20050914_080040 | 20050101 | 20050914 |
| | RF | 20070222 | ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| | RF | 20070517 | ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| | RF | 20080710 | ASA_XCA_AXVIEC20080710_133546_20070204_165113_20081231_000000 | 20070204 | 20081231 |
| | RF | 20100302 | ASA_XCA_AXVIEC20100302_155508_20090501_000000_20101231_235959 | 20090501 | 20101231 |
| | RF | 20100315 | ASA_XCA_AXVIEC20100315_123052_20090501_000000_20110101_000000 | 20090501 | 20101231 |
| | RF | 20100608 | ASA_XCA_AXVIEC20100608_123419_20100317_120410_20110101_000000 | 20100317 | 20110101 |

| | | | | | |
|------------|----|----------|---|----------|----------|
| IS5_SS4 HH | RF | 20021107 | ASA_XCA_AXVIEC20021107_144746_20020413_000000_20021231_000000 | 20020413 | 20021231 |
| | RF | 20040406 | ASA_XCA_AXVIEC20040406_160451_20030211_000000_20041231_000000 | 20030211 | 20041231 |
| | RF | 20041027 | ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000 | 20040412 | 20051231 |
| | RF | 20051013 | ASA_XCA_AXVIEC20051013_152531_20050916_195733_20061231_000000 | 20050916 | 20061231 |
| | RF | 20070215 | ASA_XCA_AXVIEC20070215_184638_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| | RF | 20071218 | ASA_XCA_AXVIEC20071218_082742_20070204_165113_20081231_000000 | 20070204 | 20081231 |
| | RF | 20080710 | ASA_XCA_AXVIEC20080710_133546_20070204_165113_20081231_000000 | 20070204 | 20081231 |
| | RF | 20100302 | ASA_XCA_AXVIEC20100302_155508_20090501_000000_20101231_235959 | 20090501 | 20101231 |
| | RF | 20100315 | ASA_XCA_AXVIEC20100315_123052_20090501_000000_20110101_000000 | 20090501 | 20101231 |
| | RF | 20100608 | ASA_XCA_AXVIEC20100608_122638_20100311_094400_20100317_120409 | 20100311 | 20100317 |
| | RF | 20100608 | ASA_XCA_AXVIEC20100608_123419_20100317_120410_20110101_000000 | 20100317 | 20110101 |
| IS5 HV | RF | 20021217 | ASA_XCA_AXVIEC20021217_150852_20020413_000000_20031231_000000 | 20020413 | 20031231 |
| | RF | 20040406 | ASA_XCA_AXVIEC20040406_160451_20030211_000000_20041231_000000 | 20030211 | 20041231 |
| | RF | 20060223 | ASA_XCA_AXVIEC20060223_133247_20050101_000000_20050914_000000 | 20050101 | 20050914 |
| | RF | 20060717 | ASA_XCA_AXVIEC20060717_154125_20050916_195733_20061231_000000 | 20050916 | 20061231 |
| IS5 VH | RF | 20021217 | ASA_XCA_AXVIEC20021217_150852_20020413_000000_20031231_000000 | 20020413 | 20031231 |
| | RF | 20040406 | ASA_XCA_AXVIEC20040406_160451_20030211_000000_20041231_000000 | 20030211 | 20041231 |
| | RF | 20060223 | ASA_XCA_AXVIEC20060223_133247_20050101_000000_20050914_000000 | 20050101 | 20050914 |
| IS6_SS5 VV | RF | 20020813 | ASA_XCA_AXVIEC20020813_080042_20020413_000000_20021231_000000 | 20020413 | 20021231 |

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|------------|----|----------|---|----------|----------|
| | RF | 20021018 | ASA_XCA_AXVIEC20021018_121708_20020413_000000_20021231_000000 | 20020413 | 20021231 |
| | RF | 20030801 | ASA_XCA_AXVIEC20030801_133024_20030428_000000_20031231_000000 | 20030428 | 20031231 |
| | RF | 20030801 | ASA_XCA_AXVIEC20030801_134802_20020413_000000_20030211_000000 | 20020413 | 20030211 |
| | RF | 20030827 | ASA_XCA_AXVIEC20030827_140210_20030211_000000_20031231_000000 | 20030211 | 20031231 |
| | RF | 20051013 | ASA_XCA_AXVIEC20051013_152245_20050101_000000_20050914_080040 | 20050101 | 20050914 |
| | RF | 20070222 | ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| | RF | 20070517 | ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| | RF | 20080710 | ASA_XCA_AXVIEC20080710_133546_20070204_165113_20081231_000000 | 20070204 | 20081231 |
| | RF | 20100302 | ASA_XCA_AXVIEC20100302_155508_20090501_000000_20101231_235959 | 20090501 | 20101231 |
| | RF | 20100315 | ASA_XCA_AXVIEC20100315_123052_20090501_000000_20110101_000000 | 20090501 | 20101231 |
| | RF | 20100608 | ASA_XCA_AXVIEC20100608_122638_20100311_094400_20100317_120409 | 20100311 | 20100317 |
| | RF | 20100608 | ASA_XCA_AXVIEC20100608_123419_20100317_120410_20110101_000000 | 20100317 | 20110101 |
| IS6_SS5 HH | RF | 20021107 | ASA_XCA_AXVIEC20021107_144746_20020413_000000_20021231_000000 | 20020413 | 20021231 |
| | RF | 20030801 | ASA_XCA_AXVIEC20030801_133024_20030428_000000_20031231_000000 | 20030428 | 20031231 |
| | RF | 20030801 | ASA_XCA_AXVIEC20030801_134802_20020413_000000_20030211_000000 | 20020413 | 20030211 |
| | RF | 20030827 | ASA_XCA_AXVIEC20030827_140210_20030211_000000_20031231_000000 | 20030211 | 20031231 |
| | RF | 20041027 | ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000 | 20040412 | 20051231 |
| | RF | 20051013 | ASA_XCA_AXVIEC20051013_152245_20050101_000000_20050914_080040 | 20050101 | 20050914 |
| | RF | 20051013 | ASA_XCA_AXVIEC20051013_152531_20050916_195733_20061231_000000 | 20050916 | 20061231 |

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|--------|------|----------|---|----------|----------|
| | RF | 20070215 | ASA_XCA_AXVIEC20070215_184638_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| | RF | 20070517 | ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| | RF | 20080710 | ASA_XCA_AXVIEC20080710_133546_20070204_165113_20081231_000000 | 20070204 | 20081231 |
| | RF | 20090311 | ASA_XCA_AXVIEC20090311_104037_20070204_165113_20080731_235959 | 20070204 | 20080731 |
| | RF | 20090311 | ASA_XCA_AXVIEC20090311_104501_20080801_000000_20091231_235959 | 20080801 | 20091231 |
| | RF | 20100608 | ASA_XCA_AXVIEC20100608_122638_20100311_094400_20100317_120409 | 20100311 | 20100317 |
| | RF | 20100608 | ASA_XCA_AXVIEC20100608_123419_20100317_120410_20110101_000000 | 20100317 | 20110101 |
| IS6 HV | SYN. | 20021217 | ASA_XCA_AXVIEC20021217_150852_20020413_000000_20031231_000000 | 20020413 | 20031231 |
| | RF | 20040406 | ASA_XCA_AXVIEC20040406_160451_20030211_000000_20041231_000000 | 20030211 | 20041231 |
| | RF | 20060223 | ASA_XCA_AXVIEC20060223_133247_20050101_000000_20050914_000000 | 20050101 | 20050914 |
| | RF | 20060717 | ASA_XCA_AXVIEC20060717_154125_20050916_195733_20061231_000000 | 20050916 | 20061231 |
| | RF | 20070517 | ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| IS6 VH | RF | 20021217 | ASA_XCA_AXVIEC20021217_150852_20020413_000000_20031231_000000 | 20020413 | 20031231 |
| | RF | 20040406 | ASA_XCA_AXVIEC20040406_160451_20030211_000000_20041231_000000 | 20030211 | 20041231 |
| | RF | 20060223 | ASA_XCA_AXVIEC20060223_133247_20050101_000000_20050914_000000 | 20050101 | 20050914 |
| | RF | 20060717 | ASA_XCA_AXVIEC20060717_154125_20050916_195733_20061231_000000 | 20050916 | 20061231 |
| | RF | 20070517 | ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| IS7 VV | RF | 20020813 | ASA_XCA_AXVIEC20020813_080042_20020413_000000_20021231_000000 | 20020413 | 20021231 |
| | RF | 20070517 | ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000 | 20070204 | 20071231 |

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|--------|----|----------|---|----------|----------|
| | RF | 20100302 | ASA_XCA_AXVIEC20100302_155508_20090501_000000_20101231_235959 | 20090501 | 20101231 |
| | RF | 20100315 | ASA_XCA_AXVIEC20100315_123052_20090501_000000_20110101_000000 | 20090501 | 20101231 |
| | RF | 20100608 | ASA_XCA_AXVIEC20100608_123419_20100317_120410_20110101_000000 | 20100317 | 20110101 |
| IS7 HH | RF | 20021107 | ASA_XCA_AXVIEC20021107_144746_20020413_000000_20021231_000000 | 20020413 | 20021231 |
| | RF | 20070517 | ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| | RF | 20090311 | ASA_XCA_AXVIEC20090311_104037_20070204_165113_20080731_235959 | 20070204 | 20080731 |
| | RF | 20090311 | ASA_XCA_AXVIEC20090311_104501_20080801_000000_20091231_235959 | 20080801 | 20091231 |
| | RF | 20100302 | ASA_XCA_AXVIEC20100302_155508_20090501_000000_20101231_235959 | 20090501 | 20101231 |
| | RF | 20100315 | ASA_XCA_AXVIEC20100315_123052_20090501_000000_20110101_000000 | 20090501 | 20101231 |
| | RF | 20100608 | ASA_XCA_AXVIEC20100608_123419_20100317_120410_20110101_000000 | 20100317 | 20110101 |
| IS7 HV | RF | 20021217 | ASA_XCA_AXVIEC20021217_150852_20020413_000000_20031231_000000 | 20020413 | 20031231 |
| | RF | 20060223 | ASA_XCA_AXVIEC20060223_133247_20050101_000000_20050914_000000 | 20050101 | 20050914 |
| | RF | 20060717 | ASA_XCA_AXVIEC20060717_154125_20050916_195733_20061231_000000 | 20050916 | 20061231 |
| | RF | 20070517 | ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| IS7 VH | RF | 20021217 | ASA_XCA_AXVIEC20021217_150852_20020413_000000_20031231_000000 | 20020413 | 20031231 |
| | RF | 20060223 | ASA_XCA_AXVIEC20060223_133247_20050101_000000_20050914_000000 | 20050101 | 20050914 |
| | RF | 20060717 | ASA_XCA_AXVIEC20060717_154125_20050916_195733_20061231_000000 | 20050916 | 20061231 |
| | RF | 20070517 | ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| SS1 VV | RF | 20020813 | ASA_XCA_AXVIEC20020813_080042_20020413_000000_20021231_000000 | 20020413 | 20021231 |

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|--------|----|----------|---|----------|----------|
| | RF | 20021018 | ASA_XCA_AXVIEC20021018_121708_20020413_000000_20021231_000000 | 20020413 | 20021231 |
| | RF | 20030801 | ASA_XCA_AXVIEC20030801_133024_20030428_000000_20031231_000000 | 20030428 | 20031231 |
| | RF | 20030801 | ASA_XCA_AXVIEC20030801_134802_20020413_000000_20030211_000000 | 20020413 | 20030211 |
| | RF | 20030827 | ASA_XCA_AXVIEC20030827_140210_20030211_000000_20031231_000000 | 20030211 | 20031231 |
| | RF | 20040406 | ASA_XCA_AXVIEC20040406_160451_20030211_000000_20041231_000000 | 20030211 | 20041231 |
| | RF | 20051013 | ASA_XCA_AXVIEC20051013_152245_20050101_000000_20050914_080040 | 20050101 | 20050914 |
| | RF | 20051013 | ASA_XCA_AXVIEC20051013_152531_20050916_195733_20061231_000000 | 20050916 | 20061231 |
| | RF | 20051219 | ASA_XCA_AXVIEC20051219_162245_20050916_195733_20061231_000000 | 20050916 | 20061231 |
| | RF | 20070222 | ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| | RF | 20090311 | ASA_XCA_AXVIEC20090311_104037_20070204_165113_20080731_235959 | 20070204 | 20080731 |
| | RF | 20090311 | ASA_XCA_AXVIEC20090311_104501_20080801_000000_20091231_235959 | 20080801 | 20091231 |
| | RF | 20100302 | ASA_XCA_AXVIEC20100302_155508_20090501_000000_20101231_235959 | 20090501 | 20101231 |
| | RF | 20100315 | ASA_XCA_AXVIEC20100315_123052_20090501_000000_20110101_000000 | 20090501 | 20101231 |
| | RF | 20100608 | ASA_XCA_AXVIEC20100608_122638_20100311_094400_20100317_120409 | 20100311 | 20100317 |
| | RF | 20100608 | ASA_XCA_AXVIEC20100608_123419_20100317_120410_20110101_000000 | 20100317 | 20110101 |
| SS1 HH | RF | 20021107 | ASA_XCA_AXVIEC20021107_144746_20020413_000000_20021231_000000 | 20020413 | 20021231 |
| | RF | 20030801 | ASA_XCA_AXVIEC20030801_133024_20030428_000000_20031231_000000 | 20030428 | 20031231 |
| | RF | 20030801 | ASA_XCA_AXVIEC20030801_134802_20020413_000000_20030211_000000 | 20020413 | 20030211 |
| | RF | 20030827 | ASA_XCA_AXVIEC20030827_140210_20030211_000000_20031231_000000 | 20030211 | 20031231 |

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|--|----|----------|---|----------|----------|
| | RF | 20040406 | ASA_XCA_AXVIEC20040406_160451_20030211_000000_20041231_000000 | 20030211 | 20041231 |
| | RF | 20040812 | ASA_XCA_AXVIEC20040812_170224_20040412_000000_20041231_000000 | 20040412 | 20041231 |
| | RF | 20051013 | ASA_XCA_AXVIEC20051013_152245_20050101_000000_20050914_080040 | 20050101 | 20050914 |
| | RF | 20051013 | ASA_XCA_AXVIEC20051013_152531_20050916_195733_20061231_000000 | 20050916 | 20061231 |
| | RF | 20051219 | ASA_XCA_AXVIEC20051219_162245_20050916_195733_20061231_000000 | 20050916 | 20061231 |
| | RF | 20070215 | ASA_XCA_AXVIEC20070215_184638_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| | RF | 20080710 | ASA_XCA_AXVIEC20080710_133546_20070204_165113_20081231_000000 | 20070204 | 20081231 |
| | RF | 20090311 | ASA_XCA_AXVIEC20090311_104037_20070204_165113_20080731_235959 | 20070204 | 20080731 |
| | RF | 20090311 | ASA_XCA_AXVIEC20090311_104501_20080801_000000_20091231_235959 | 20080801 | 20091231 |
| | RF | 20100302 | ASA_XCA_AXVIEC20100302_155508_20090501_000000_20101231_235959 | 20090501 | 20101231 |
| | RF | 20100315 | ASA_XCA_AXVIEC20100315_123052_20090501_000000_20110101_000000 | 20090501 | 20101231 |
| | RF | 20100608 | ASA_XCA_AXVIEC20100608_122638_20100311_094400_20100317_120409 | 20100311 | 20100317 |

7 AUXILIARY FILES UPDATE

7.1 *Operational Auxiliary Data Files*

The ASAR auxiliary data files contain information on calibration and instrument parameters. The auxiliary files used at the end of the reporting period for the operational processing of ASAR data in the ENVISAT Ground Segment, are listed below. The three dates in the auxiliary file name are the creation date, start acquisition date and end acquisition date respectively. During the reported period no new auxiliary files were disseminated.

New files are shown in bold italics, retired files are shown in italics.

Processor configuration file (CON)

Current versions

ASA_CON_AXVIEC20100608_125449_20100317_120410_20101231_000000
ASA_CON_AXVIEC20100608_124939_20100311_094400_20100317_120409
ASA_CON_AXVIEC20091217_101713_20070204_165113_20101231_000000
ASA_CON_AXVIEC20080604_143203_20050916_195733_20070204_165113
ASA_CON_AXVIEC20080610_122458_20030601_000000_20050916_195733
ASA_CON_AXVIEC20080604_143539_20021017_130000_20030601_000000

Previous versions

ASA_CON_AXVIEC20081215_141339_20070204_165113_20091231_000000
ASA_CON_AXVIEC20080710_132557_20070204_165113_20081231_000000
ASA_CON_AXVIEC20071218_084201_20070204_165113_20081231_000000
ASA_CON_AXVIEC20080610_122458_20030601_000000_20050916_195733
ASA_CON_AXVIEC20070215_183645_20050916_195733_20070204_165113
ASA_CON_AXVIEC20070202_163902_20030601_000000_20050916_195733
ASA_CON_AXVIEC20060614_160050_20021017_130000_20030601_000000
ASA_CON_AXVIEC20070410_140202_20070204_165113_20071231_000000
ASA_CON_AXVIEC20070313_165336_20070314_043800_20070314_045200
ASA_CON_AXVIEC20070320_170948_20070321_003000_20070321_050000
ASA_CON_AXVIEC20070326_152930_20070327_000000_20070328_000000
ASA_CON_AXVIEC20070328_163753_20070329_000000_20070330_120000
ASA_CON_AXVIEC20070212_170541_20070213_214400_20070213_214900
ASA_CON_AXVIEC20070215_184018_20070204_165113_20071231_000000
ASA_CON_AXVIEC20070222_190441_20070204_165113_20071231_000000
ASA_CON_AXVIEC20061107_090002_20050916_195733_20071231_000000
ASA_CON_AXVIEC20051013_151540_20050916_195733_20061231_000000
ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000

External calibration file (XCA)

There is a two day gap in file coverage between 14th and 16th September 2005; data is unavailable during this period due to antenna maintenance.

Current versions

ASA_XCA_AXVIEC20100608_123419_20100317_120410_20110101_000000

ASA_XCA_AXVIEC20100608_122638_20100311_094400_20100317_120409
ASA_XCA_AXVIEC20100315_123052_20090501_000000_20110101_000000
ASA_XCA_AXVIEC20091217_114112_20080801_000000_20101231_235959
ASA_XCA_AXVIEC20090311_104037_20070204_165113_20080731_235959
ASA_XCA_AXVIEC20070215_184408_20050916_195733_20070204_165113
ASA_XCA_AXVIEC20070130_111710_20050101_000000_20050914_000000
ASA_XCA_AXVIEC20070130_111449_20040412_000000_20050101_000000
ASA_XCA_AXVIEC20070130_111245_20030804_000000_20040412_000000
ASA_XCA_AXVIEC20070130_111029_20030601_000000_20030804_000000
ASA_XCA_AXVIEC20070130_110635_20030211_000000_20030601_000000
ASA_XCA_AXVIEC20070130_105508_20020413_000000_20030211_000000

Previous versions

ASA_XCA_AXVIEC20100302_155508_20090501_000000_20101231_235959
ASA_XCA_AXVIEC20090311_104501_20080801_000000_20091231_235959
ASA_XCA_AXVIEC20081215_141741_20070204_165113_20091231_000000
ASA_XCA_AXVIEC20080710_133546_20070204_165113_20081231_000000
ASA_XCA_AXVIEC20071218_082742_20070204_165113_20081231_000000
ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000
ASA_XCA_XXIEC20070222_185842_20070204_165113_20071231_000000
ASA_XCA_AXVIEC20070215_184408_20050916_195733_20070204_165113
ASA_XCA_AXVIEC20070215_184638_20070204_165113_20071231_000000
ASA_XCA_AXVIEC20061221_143253_20050916_195733_20071231_000000
ASA_XCA_AXVIEC20060717_154125_20050916_195733_20061231_000000
ASA_XCA_AXVIEC20060620_132802_20030211_000000_20030601_000000
ASA_XCA_AXVIEC20060620_133409_20030601_000000_20030804_000000
ASA_XCA_AXVIEC20060620_133829_20030804_000000_20040412_000000
ASA_XCA_AXVIEC20060620_145317_20020413_000000_20030211_000000
ASA_XCA_AXVIEC20060223_133247_20050101_000000_20050914_000000
ASA_XCA_AXVIEC20051013_151933_20040412_000000_20050101_000000

Instrument auxiliary file (INS)

Current versions

ASA_INS_AXVIEC20091217_114637_20090428_100000_20101231_235959
ASA_INS_AXVIEC20090525_115408_20070307_060000_20090428_095959
ASA_INS_AXVIEC20071218_083603_20070307_060000_20081231_000000
ASA_INS_AXVIEC20070227_105626_20070228_060000_20071231_000000
ASA_INS_AXVIEC20061220_105425_20030211_000000_20071231_000000
ASA_INS_AXVIEC20031209_113259_20021030_110000_20030211_000000

Previous versions

ASA_INS_AXVIEC20090525_114808_20090428_100000_20091231_235959
ASA_INS_AXVIEC20081215_140905_20070307_060000_20091231_000000
ASA_INS_AXVIEC20070306_164819_20070307_060000_20071231_000000
ASA_INS_XXIEC20070223_140724_20070226_000000_20071231_000000
ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000
ASA_INS_AXVIEC20031209_113259_20021030_110000_20030211_000000
ASA_INS_AXVIEC20031212_105841_20021017_162400_20021030_110000

ASA_INS_AXVIEC20031212_122530_20020815_131000_20021017_162400

External characterization file (XCH)

Current version

[ASA_XCH_AXVIEC20091217_113006_20020301_000000_20101231_000000](#)

Previous versions

ASA_XCH_AXVIEC20081215_143642_20020301_000000_20091231_000000

ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000

ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000

ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000

ASA_XCH_AXVIEC20031209_112947_20020301_000000_20041231_000000

ASA_XCH_AXVIEC20021217_151302_20020301_000000_20031231_000000

ASA_XCH_AXVIEC20021030_125700_20020301_000000_20021231_000000

ASA_XCH_AXVIEC20021018_121101_20020301_000000_20021231_000000

ASA_XCH_AXVIEC20020308_113032_20020301_000000_20021231_000000

These files as well as the previous versions of them can be downloaded from:

http://earth.eo.esa.int/services/auxiliary_data/asar/.

7.2 Recent Auxiliary File Updates and Description of Changes

Details of auxiliary file updates are listed below (most recent changes at the end) and those from the current period are boxed:

[ASA_XCA_AXVIEC20041129_173057_20020413_000000_20030211_000000](#)

✓ Absolute calibration constant values updated for data acquired during this period. Major changes affect AP IS5 and IS7 products.

✓ Other parameters are the same as previous XCA file covering this time period (file created on 20030801).

[ASA_XCA_AXVIEC20041028_154000_20030804_000000_20040412_000000](#)

✓ The SS2-VV elevation antenna pattern used for data acquired after 12 April 2004 is also applied now to data acquired after 4 August 2004.

✓ New calibration constant (K) for WV IS2 VV after the DSS change in May 2003. Due to the drift observed in the WV K after May2003, the new value is valid since 1 June 2003 till 12 April 2004. The K value for WV IS2 VV for this period is 51571.6

✓ Updated elevation antenna pattern for SS3 VV. Valid since 4 Aug 2003.

[ASA_CON_AXVIEC20041027_165251_20021017_130000_20051231_000000](#)

✓ File consistent with updated format in PF-ASAR v4.0 (additional parameters in spare fields included and parameters for the new WSS product included).

✓ Normalization for WSM products changed to Reference Energy.

✓ Updated reference energy values for WSM products (values in dB):

✓ HH (from SS1 to SS5): 1.08, 6.96, 7.5, 7.95, 9.13

✓ VV (from SS1 to SS5): 1.11, 6.9, 7.5, 7.95, 9.1

ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000

- ✓ Updated calibration constant (K) for WV IS2 VV to follow an observed drift. The new K is valid since 12 April 2004. with a value of 50222.9
- ✓ Updated elevation antenna patterns for: SS2 HH, SS4 HH, SS5 HH. They are valid since 12 April 2004.
- ✓ Updated elevation antenna pattern for SS3 VV. Valid since 4 Aug 2003 (this is the same pattern as in file valid from 4-Aug-04 to 12-Apr-04).

ASA_XCA_AXVIEC20041027_163611_20030601_000000_20030804_000000

- ✓ New calibration constant (K) for WV IS2 after the DSS change in May 2003. Due to the drift observed in the WV K after May 2003. The new K is valid since 1 June 2003 till 12 April 2004 with a value of 51571.6

ASA_XCA_AXVIEC20041027_162907_20030211_000000_20030601_000000

- ✓ Created to use a different K for WV (IS2 VV) before and after May 2003.
- ✓ No changes with respect to the previous XCA file covering this time period.

ASA_XCA_AXVIEC20040812_170224_20040412_000000_20041231_000000

- ✓ Update of elevation antenna pattern for: SS1_HH, SS2_IS3_HH, SS3_IS4_HH and SS2_IS3_VV.

ASA_INS_AXVIEC20040521_160843_20030211_000000_20041231_000000

- ✓ GM ISG increased by 1 for all sub-swaths

ASA_CON_AXVIEC20040407_173947_20021017_130000_20041231_000000

- ✓ Increased GM SS3 HH gain (by decreasing 0.5 dB the Eq. Energy for GM SS3 HH)

ASA_XCA_AXVIEC20040406_160451_20030211_000000_20041231_000000

- ✓ Updated elevation patterns for: SS1 HH-VV, IS1 VV-VH, IS2 HH-VV-HV-VH, IS4 HV-VH, IS5 HH-HV-VH, IS6 HV-VH

ASA_XCA_AXVIEC20040326_190217_20030211_000000_20041231_000000

- ✓ Inserted calibration constant for GMM products: 73.4 dB for HH and 74.0 dB for VV.

ASA_CON_AXVIEC20040322_164757_20021017_130000_20041231_000000

- ✓ Same as last update (20040308): Updated AP Eq. Energy values (different per each polarization).
- ✓ Changed AP normalization method from reference energy to equivalent energy.
- ✓ Enable DAR for GM.

ASA_CON_AXVIEC20040308_103426_20021017_130000_20041231_000000

- ✓ Updated AP Eq. Energy values (different per each polarization).
- ✓ Changed AP normalization method from reference energy to equivalent energy.
- ✓ Enable DAR for GM.

ASA_INS_AXVIEC20031212_122530_20020815_131000_20021017_162400

✓ SWST bias updated.

ASA_CON_AXVIEC20031212_122409_20021017_130000_20041231_000000

✓ End validity date extended till 31-12-2004

ASA_INS_AXVIEC20031212_105841_20021017_162400_20021030_110000

✓ SWST bias updated

ASA_CON_AXVIEC20031212_105603_20021017_130000_20031231_000000

✓ Dates adjusted to previous ASA_CON_AX version from 09-09-03.

ASA_XCA_AXVIEC20031209_113559_20030211_000000_20041231_000000

✓ End validity time extended until 31 December 2004.

✓ Elevation antenna patterns updated for: IS1 VV, IS1 HH, IS1 VH, IS2 VV and SS2_IS3 HH.

ASA_INS_AXVIEC20031209_113421_20030211_000000_20041231_000000

✓ SWST Bias updated.

✓ End validity time extended until 31 December 2004.

ASA_INS_AXVIEC20031209_113259_20021030_110000_20030211_000000

✓ SWST Bias updated

ASA_XCH_AXVIEC20031209_112947_20020301_000000_20041231_000000

✓ End validity time extended until 31 December 2004

ASA_CON_AXVIEC20031209_112721_20020301_000000_20041231_000000

✓ End validity time extended until 12 December 2004

ASA_CON_AXVIEC20041215_175442_20030601_000000_20051231_000000

✓ Image mode (IM) Reference Energy updated for data acquired after the DSS redundancy change in May 2003. IM Reference Energy before the DSS redundancy change can be found in the ASA_CON_AXVIEC20041215_180008_20021017_130000_20030601_000000 file. End validity time extended to 31-DEC-2005.

ASA_CON_AXVIEC20041215_180008_20021017_130000_20030601_000000

✓ File created to have different reference energy values before/after the DSS change after May 2003.

ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000

✓ End validity time extended to 31-DEC-2005.

ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000

✓ End validity time extended to 31-DEC-2005.

ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000

✓ WSS processing gain values set.

ASA_XCA_AXXIEC20050803_151858_20020413_000000_20030211_000000

✓ Inserted calibration constant values for ASA_WSS_1P product HH & VV (=80.28 dB)

ASA_XCA_AXXIEC20050803_150715_20030211_000000_20030601_000000

✓ Inserted calibration constant values for ASA_WSS_1P product HH & VV (=80.28 dB)

ASA_XCA_AXXIEC20050803_151318_20030601_000000_20030804_000000

✓ Inserted calibration constant values for ASA_WSS_1P product HH & VV (=80.28 dB)

ASA_XCA_AXXIEC20050803_151945_20030804_000000_20040412_000000

✓ Inserted calibration constant values for ASA_WSS_1P product HH & VV (=80.28 dB)

ASA_XCA_AXXIEC20050803_152145_20040412_000000_20051231_000000

✓ Inserted calibration constant values for ASA_WSS_1P product HH & VV (=80.28 dB)

ASA_CON_AXVIEC20051013_151540_20050916_195733_20061231_000000

✓ Update after the antenna maintenance, refinement operation performed on 16 Sep.2005. Eq.Energy updated for WS HH SS1,SS5 and GM HH SS1 Change in Eq. Energy for: WS HH SS1: from 1.08 dB to 1.15 dB, WS HH SS3: from 9.13 dB to 9.20 dB, GM HH SS1: from 16.43 dB to 16.73 dB

ASA_XCA_AXVIEC20051013_151933_20040412_000000_20050101_000000

✓ Same content as:ASA_XCA_AXVIEC20050803_152145_20040412_000000_20051231_000000 but split due to changes in the antenna patterns from Jan05

ASA_XCA_AXVIEC20051013_152245_20050101_000000_20050914_080040

✓ Changes in the ScanSAR elevation antenna patterns. New patterns valid from Jan 2005 till 14 Sep.2005. Updated elevation patters: IS3_SS2 VV, IS4_SS3 HH & VV, IS5_SS4 VV, IS6_SS5 HH & VV, SS1 HH & VV

ASA_XCA_AXVIEC20051013_152531_20050916_195733_20061231_000000

✓ Updated ScanSAR elevation antenna patterns since antenna maintenance refinement on 16 Sep.05. K for WS HH & VV updated as well. Updated elevation patters: IS3_SS2 HH & VV, IS4_SS3 HH & VV, IS5_SS4 HH, IS6_SS5 HH, SS1 HH & VV. Updated K: WSM HH K: 6309573.44, WSM VV K: 7413102.41

ASA_XCA_AXVIEC20051103_160021_20050101_000000_20050914_080040

✓ Updated of elevation antenna patterns for: IS2 HH and IS2 VV before the antenna maintenance. New patterns valid from Jan 2005 till 14 Sep.2005. Updated elevation patters: IS2 HH & VV

ASA_XCA_AXVIEC20051219_162245_20050916_195733_20061231_000000

✓ User description: Elevation antenna patterns for SS1 HH & VV updated

ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000

✓ User description: End validity date extended till December 2006

ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000

✓ User description: End validity date extended till December 2008

ASA_XCA_AXVIEC20060223_133247_20050101_000000_20050914_000000

✓ User description: elevation antenna pattern update for beams IS1 to IS7 and polarisation HV and VH

ASA_CON_AXVIEC20060614_160050_20021017_130000_20030601_000000

✓ User description: Processing gain for WSS products updated. Set to same value as for products acquired after 2003-06-01.

ASA_XCA_AXVIEC20060620_132802_20030211_000000_20030601_000000

✓ User description: Update of the reference document in the MPH

ASA_XCA_AXVIEC20060620_133409_20030601_000000_20030804_000000

✓ User description: Update of the reference document in the MPH

ASA_XCA_AXVIEC20060620_133829_20030804_000000_20040412_000000

✓ User description: Update of the reference document in the MPH

ASA_XCA_AXVIEC20060620_145317_20020413_000000_20030211_000000

✓ User description: Update of the reference document in the MPH

ASA_XCA_AXVIEC20060717_154125_20050916_195733_20061231_000000

✓ User description: The following ASAR antenna patterns have been updated: IS1 HV & VH, IS2 HV & VH, IS3 HV & VH, IS4 HV & VH, IS5 HV, IS6 HV & VH, IS7 HV & VH

ASA_CON_AXVIEC20061107_090002_20050916_195733_20071231_000000

✓ User description: Update of the reference chirp energy value for Image Mode, beam IS2, polarisation VV

ASA_XCA_AXVIEC20061221_143253_20050916_195733_20071231_000000

✓ User description: Update of the calibration constant for the following ASAR products: IMM, APM, APP, APS, APG, IMP, IMG, IMS

ASA_INS_AXVIEC20061220_105425_20030211_000000_20071231_000000

✓ User description: End validity date extended to 31 December 2007

ASA_XCA_AXVIEC20070130_105508_20020413_000000_20030211_000000

✓ User description: Update of the calibration constant for the following ASAR products: IMM, APM, APP, APS, APG, IMP, IMG, IMS

ASA_XCA_AXVIEC20070130_110635_20030211_000000_20030601_000000

✓ User description: Update of the calibration constant for the following ASAR products: IMM, APM, APP, APS, APG, IMP, IMG, IMS

ASA_XCA_AXVIEC20070130_111245_20030804_000000_20040412_000000

- ✓ User description: Update of the calibration constant for the following ASAR products: IMM, APM, APP, APS, APG, IMP, IMG, IMS

ASA_XCA_AXVIEC20070130_111029_20030601_000000_20030804_000000

- ✓ User description: Update of the calibration constant for the following ASAR products: IMM, APM, APP, APS, APG, IMP, IMG, IMS

ASA_XCA_AXVIEC20070130_111449_20040412_000000_20050101_000000

- ✓ User description: Update of the calibration constant for the following ASAR products: IMM, APM, APP, APS, APG, IMP, IMG, IMS

ASA_XCA_AXVIEC20070130_111710_20050101_000000_20050914_000000

- ✓ User description: Update of the calibration constant for the following ASAR products: IMM, APM, APP, APS, APG, IMP, IMG, IMS

ASA_CON_AXVIEC20070202_163902_20030601_000000_20050916_195733

- ✓ User description: Update of the end validity date

ASA_CON_AXVIEC20070212_170541_20070213_214400_20070213_214900

- ✓ User description: Update of the end validity date. User description: Enable Doppler Grid ADS creation for ASA_WSM_1P products(validity covers a single segment over Antarctica)

ASA_CON_AXVIEC20070215_183645_20050916_195733_20070204_165113

- ✓ User description: Update of the end validity date

ASA_CON_AXVIEC20070215_184018_20070204_165113_20071231_000000

- ✓ User description: Update of the reference chirp energy values for IM and WSM products

ASA_XCA_AXVIEC20070215_184408_20050916_195733_20070204_165113

- ✓ User description: Update of the end validity date

ASA_XCA_AXVIEC20070215_184638_20070204_165113_20071231_000000

- ✓ User description: Update of the Antenna elevation pattern gain for HH polarisation for the swaths SS1, IS3/SS2, IS4/SS3, IS5/SS4, IS6/SS5

ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000

- ✓ User description: For VV polarisation the following antenna elevation pattern have been updated: SS1,IS3_SS2,IS4_SS3,IS5_SS4,IS6_SS5

ASA_CON_AXVIEC20070222_190441_20070204_165113_20071231_000000

- ✓ User description: Update of the reference chirp energy values for WS products, polarisation VV, swaths SS4,SS5

ASA_INS_AXVIEC20070223_140724_20070226_000000_20071231_000000

- ✓ User description: Update of the M value from 277 to 194 for AP mode, swath IS5 for the AP IS5 test over critical ANX range, planned from 26th Feb 2007 to 17th Mar 2007

ASA_INS_AXVIEC20070227_105626_20070228_060000_20071231_000000

- ✓ User description: Number of pulses per burst for all AP swaths (but IS1) reduced to 194 (same as IS1). Expected to solve/improve the on-board anomalies related to AP usage. CTI-s (CTI_AIx) will be updated from same start validity date

ASA_INS_AXVIEC20070306_164819_20070307_060000_20071231_000000

- ✓ User description: Update of the number of pulses per burst for all AP swaths IS1=194, IS2=196, IS3=257, IS4=218, IS5=194, IS6=238, IS7=297.

ASA_CON_AXVIEC20070313_165336_20070314_043800_20070314_045200

- ✓ User description: Enable Doppler Grid ADS creation for ASA_WSM_1P products (validity covers 2 segments over Antarctica).

ASA_CON_AXVIEC20070320_170948_20070321_003000_20070321_050000

- ✓ User description: Enable WSM Doppler grid for few orbits at PDHS-E.

ASA_CON_AXVIEC20070326_152930_20070327_000000_20070328_000000

- ✓ User description: WSM Doppler grid enabled both at PDHS-K and PDHS-E on 27 march 2007 (24 hours in total).

ASA_CON_AXVIEC20070328_163753_20070329_000000_20070330_120000

- ✓ User description: WSM Doppler grid added at PDHS-E and PDHS-K for 1.5 days.

ASA_CON_AXVIEC20070410_140202_20070204_165113_20071231_000000

- ✓ User description: WSM Doppler grid enabled for the period covered by the latest operational CON file (Feb07-Dec07). Equivalent Energy values updated for IM and WS.

ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000

- ✓ User description: The following antenna elevation patterns have been updated using data acquired over Amazon RF: IS1[VV, VH], IS2[HH, VV, HV, VH], IS3[HH, VV, HV, VH], IS4[HH, VV, HV, VH], IS5[VV], IS6[HH, VV, HV, VH], IS7[HH, VV, HV, VH].

ASA_CON_AXVIEC20071218_084201_20070204_165113_20081231_000000

- ✓ User description: Extension of the end validity date to 31 December 2008. Update of the reference document to PO-RS-MDA-GS-2009_08_4B

ASA_INS_AXVIEC20071218_083603_20070307_060000_20081231_000000

- ✓ User description: Extension of the end validity date to 31 December 2008. Update of the reference document to PO-RS-MDA-GS-2009_08_4B.

ASA_XCA_AXVIEC20071218_082742_20070204_165113_20081231_000000

- ✓ User description: The following antenna elevation patterns have been updated using data acquired over Amazon RF: IS1 [HH], IS5 [HH]. Extension of the end validity date to 31 December 2008. Update of the reference document to PO-RS-MDA-GS-2009_08_4B.

ASA_CON_AXVIEC20080604_143203_20050916_195733_20070204_165113

✓ User description: Enabled “Doppler Centroid Grid ADS” for ASAR WSM products.

ASA_CON_AXVIEC20080604_143539_20021017_130000_20030601_000000

✓ User description: Enabled “Doppler Centroid Grid ADS” for ASAR WSM products.

ASA_CON_AXVIEC20080610_122458_20030601_000000_20050916_195733

✓ User description: Enabled “Doppler Centroid Grid ADS” for ASAR WSM products.

ASA_XCA_AXVIEC20080710_133546_20070204_165113_20081231_000000

✓ User description: The following elevation antenna patterns have been updated: SS1[HH], IS1[HH], IS1[VV], IS3_SS2[HH], IS3_SS2[VV], IS4_SS3[HH], IS5_SS4[HH], IS5_SS4[VV], IS6_SS5[HH], IS6_SS5[VV].

ASA_CON_AXVIEC20080710_132557_20070204_165113_20081231_000000

✓ User description: Updated reference chirp energy values for WSM products, HH and VV polarisations.

ASA_INS_AXVIEC20081215_140905_20070307_060000_20091231_000000

✓ User description: Extension of the end validity date up to 31-DEC-2009

ASA_CON_AXVIEC20081215_141339_20070204_165113_20091231_000000

✓ User description: Extension of the end validity date up to 31-DEC-2009

ASA_XCA_AXVIEC20081215_141741_20070204_165113_20091231_000000

✓ User description: Extension of the end validity date up to 31-DEC-2009

ASA_XCH_AXVIEC20081215_143642_20020301_000000_20091231_000000

✓ User description: Extension of the end validity date up to 31-DEC-2009

ASA_XCA_AXVIEC20090311_104037_20070204_165113_20080731_235959

✓ User description: Modified end validity time. Replaced 31-DEC-2009 with 31-JUL-2008.

ASA_XCA_AXVIEC20090311_104501_20080801_000000_20091231_235959

✓ User description: The following elevation antenna patterns have been updated: SS1[HH&VV], IS1[HH&VV], IS2[HH&VV], IS3[HH&VV], IS4[HH&VV], IS6[HH], IS7[HH]

ASA_INS_AXVIEC20090525_115408_20070307_060000_20090428_095959

✓ User description: Update of the end validity date due to ASAR Patch #9.

ASA_INS_AXVIEC20090525_114808_20090428_100000_20091231_235959

✓ User description: Update of the M value from 194 to 277 for AP mode, swath IS5. Updated start validity date.

ASA_XCH_AXVIEC20091217_113006_20020301_000000_20101231_000000

✓ User description: Extension of the end validity date up to 31-DEC-2010

ASA_XCA_AXVIEC20091217_114112_20080801_000000_20101231_235959

✓ User description: Extension of the end validity date up to 31-DEC-2010

ASA_INS_AXVIEC20091217_114637_20090428_100000_20101231_235959

✓ User description: Extension of the end validity date up to 31-DEC-2010

ASA_CON_AXVIEC20091217_101713_20070204_165113_20101231_000000

✓ User description: Extension of the end validity date up to 31-DEC-2010

ASA_XCA_AXVIEC20100302_155508_20090501_000000_20101231_235959

✓ User description: ASAR antenna maintenance

ASA_XCA_AXVIEC20100315_123052_20090501_000000_20110101_000000

✓ User description: ASAR antenna maintenance (with corrected IS1 VV antenna pattern)

ASA_CON_AXVIEC20100608_124939_20100311_094400_20100317_120409

✓ User description: Updated reference chirp energy values for SS1[VV],SS5[VV]

ASA_CON_AXVIEC20100608_125449_20100317_120410_20101231_000000

✓ User description: Updated reference chirp energy values for SS1[VV]

ASA_XCA_AXVIEC20100608_122638_20100311_094400_20100317_120409

✓ User description: The following elevation antenna patterns have been updated:
IS3[VV&HH],IS4[VV],IS5[HH],IS6[HH&VV],SS1[VV&HH]

ASA_XCA_AXVIEC20100608_123419_20100317_120410_20110101_000000

✓ User description: The following elevation antenna patterns have been updated:
IS1[HH],IS2[HH],IS3[VV],IS4[HH&VV],IS5[HH&VV],IS6[HH&VV],IS7[HH&VV],
SS1[VV]

APPENDIX A : INSTRUMENT UNAVAILABILITIES LIST

| Unavailability report reference | Start | Stop |
|---------------------------------|--------------------------------------|--------------------------------------|
| EN-UNA-2004/0111 | 14/04/2004 02:45:00 | 14/04/2004 13:40:00 |
| EN-UNA-2004/0114 | 20/04/2004 08:15:46 | 20/04/2004 08:23:31 |
| EN-UNA-2004/0118 | 20/04/2004 10:00:54 | 20/04/2004 11:56:40 |
| EN-UNA-2004/0124 | 26/04/2004 21:32:03 | 27/04/2004 09:41:43 |
| EN-UNA-2004/0125 | 29/04/2004 08:32:08 | 29/04/2004 10:18:18 |
| EN-UNA-2004/0129 | 02/05/2004 21:32:47 | 03/05/2004 09:41:44 |
| EN-UNA-2004/0176 | 12/07/2004 11:21:46 | 12/07/2004 18:01:40 |
| EN-UNA-2004/0191 | 04/08/2004 09:19:00 | 04/08/2004 09:26:00 |
| EN-UNA-2004/0193 | 05/08/2004 23:07:33 | 05/08/2004 23:43:27 |
| EN-UNA-2004/0229 | 12/09/2004 10:54:47 | 12/09/2004 11:12:40 |
| EN-UNA-2004/0246 | 23/09/2004 06:13:17 | 23/09/2004 09:55:38 |
| EN-UNA-2004/0252 | 26/09/2004 21:24:58 | 27/09/2004 11:02:04 |
| EN-UNA-2004/0261 | 17/10/2004 02:28:31 | 17/10/2004 07:45:11 |
| EN-UNA-2004/0265 | 01/11/2004 05:00:40 | 01/11/2004 05:01:40 |
| EN-UNA-2004/0268 | 03/11/2004 09:59:30 Orbit = 14004 | 03/11/2004 10:04:58 Orbit = 14004 |
| EN-UNA-2004/0270 | 07/11/2004 03:41:28 Orbit=14054 | 07/11/2004 08:00:03 Orbit=14060 |
| EN-UNA-2004/0276 | 12/11/2004 21:46:59 Orbit = 14140 | 12/11/2004 23:43:46 Orbit = 14141 |
| EN-UNA-2004/0281 | 16/11/2004 02:34:15 Orbit = 14185 | 16/11/2004 03:16:49 Orbit = 14186 |
| EN-UNA-2004/0290 | 21/11/2004 19:36:58 Orbit = 14267 | 21/11/2004 22:19:32 Orbit = 14269 |
| EN-UNA-2004/0299 | 29/11/2004 00:42:03 Orbit = 14370 | 29/11/2004 03:09:35 Orbit = 14372 |
| EN-UNA-2004/0307 | 05/12/2004 15:06:14 Orbit = 14465 | 05/12/2004 15:35:42 Orbit = 14465 |
| EN-UNA-2004/0309 | 09/12/2004 00:32:56 Orbit=14513 | 09/12/2004 00:56:03 Orbit=14514 |
| EN-UNA-2004/0314 | 27/12/2004 01:50:26 Orbit=14772 | 27/12/2004 07:10:58 Orbit=14775 |
| EN-UNA-2005/0002 | 01/01/2005 20:17:59 Orbit=14854 | 01/01/2005 22:37:38 Orbit=14856 |
| EN-UNA-2005/0005 | 07/01/2005 03:00:00 Orbit=14936 | 07/01/2005 13:00:00 Orbit=14936 |

| | | |
|------------------|--|--|
| EN-UNA-2005/0010 | 07/01/2005 13:00:00 Orbit=14936 | 07/01/2005 18:20:00 Orbit=14939 |
| EN-UNA-2005/0011 | 09/01/2005 06:39:29 Orbit=14961 | 09/01/2005 06:45:03 Orbit=14961 |
| EN-UNA-2005/0020 | 20/01/2005 16:49:16 Orbit = 15124 | 20/01/2005 17:05:23 Orbit = 15125 |
| EN-UNA-2005/0032 | 27/01/2005 19:59:57 Orbit = 15226 | 27/01/2005 22:52:29 Orbit = 15228 |
| EN-UNA-2005/0039 | 05/02/2005 06:12:44 Orbit = 15347 | 05/02/2005 09:46:32 Orbit = 15349 |
| EN-UNA-2005/0009 | 09/02/2005 08:38:15 Orbit = 15406 | 10/02/2005 00:17:26 Orbit = 15415 |
| EN-UNA-2005/0054 | 21/02/2005 14:07:52 Orbit=15581 | 21/02/2005 15:53:57 Orbit=15582 |
| EN-UNA-2005/0071 | 10/03/2005 10:38:15 Orbit = 15822 | 10/03/2005 10:49:45 Orbit = 15822 |
| EN-UNA-2005/0072 | 10/03/2005 20:02:46 Orbit = 15828 | 10/03/2005 22:00:18 Orbit = 15829 |
| EN-UNA-2005/0073 | 12/03/2005 15:51:15 Orbit = 15854 | 12/03/2005 15:56:28 Orbit = 15854 |
| EN-UNA-2005/0078 | 17 Mar 2005 01:00:00 Orbit = 15917 | 17 Mar 2005 13:00:00 Orbit = 15924 |
| EN-UNA-2005/0093 | 22/03/2005 09:03:10 Orbit = 15993 | 22/03/2005 09:09:10 Orbit = 15993 |
| EN-UNA-2005/0103 | 02/04/2005 02:48:28 Orbit = 16147 | 02/04/2005 06:35:25 Orbit = 16149 |
| EN-UNA-2005/0109 | 06/04/2005 02:53:21 Orbit = 16204 | 06/04/2005 06:10:08 Orbit = 16206 |
| EN-UNA-2005/0113 | 13 /04/ 2005 20:21:40 Orbit = 16315 | 13 /04/ 2005 20:21:40 Orbit = 16315 |
| EN-UNA-2005/0125 | 21/04/2005 04:17:47 Orbit = 16419 | 21/04/2005 04:17:47 Orbit = 16419 |
| EN-UNA-2005/0149 | 12 /05/ 2005 10:50:00 Orbit = 16724 | 12 /05/ 2005 10:50:00 Orbit = 16724 |
| EN-UNA-2005/0159 | 18/05/2005 01:49:01 Orbit = 16804 | 18/05/2005 01:49:01 Orbit = 16804 |
| EN-UNA-2005/0161 | 18 /05/ 2005 13:57:30 Orbit = 16812 | 18 /05/ 2005 13:57:30 Orbit = 16812 |
| EN-UNA-2005/0164 | 20/05/2005 12:09:50 Orbit = 16839 | 20/05 2005 12:09:50 Orbit = 16839 |
| EN-UNA-2005/0182 | 01/06/2005 16:44:17 Orbit = 17014 | 01/06/2005 16:51:19 Orbit = 17014 |

| | | |
|------------------|--|---------------------------------------|
| EN-UNA-2005/0188 | 06/06/2005 08:11:25 Orbit = 17080 | 06/06/2005 09:42:14 Orbit = 17081 |
| EN-UNA-2005/0190 | 11/06/2005 03:19:14 Orbit = 17149 | 11/06/2005 06:35:30 Orbit = 17151 |
| EN-UNA-2005/0212 | 01/07/2005 13:54:40 Orbit = 17442 | 01/07/2005 16:14:21 Orbit = 17443 |
| EN-UNA-2005/0216 | 04/07/2005 02:55:43 Orbit = 17478 | 04/07/2005 06:13:02 Orbit = 17480 |
| EN-UNA-2005/0223 | 5/07/2005 17:16:39 Orbit = 17501 | 5/07/2005 17:27:11 Orbit = 17501 |
| EN-UNA-2005/0231 | 10/07/2005 11:15:25 Orbit = 17569 | 10/07/2005 11:22:12 Orbit = 17569 |
| EN-UNA-2005/0239 | 16/07/2005 21:03:12 Orbit = 17661 | 16/07/2005 21:09:19 Orbit = 17661 |
| EN-UNA-2005/0258 | 24/07/2005 07:22:41 Orbit = 17767 | 24/07/2005 07:31:40 Orbit = 17767 |
| EN-UNA-2005/0269 | 03/08/2005 22:01:30 Orbit = 17919 | 03/10/2005 22:08:56 Orbit = 17919 |
| EN-UNA-2005/0285 | 15/08/2005 03:41:02 Orbit = 18080 | 15/08/2005 07:33:52 Orbit = 18082 |
| EN-UNA-2005/0305 | 22/08/2005 01:25:33 Orbit = 18178 | 22/08/2005 08:50:14 Orbit = 18183 |
| EN-UNA-2005/0325 | 24/08/2005 07:50:16 Orbit = 18211 | 24/08/2005 07:55:55 Orbit = 18211 |
| EN-UNA-2005/0350 | 31/08/2005 04:11:27 Orbit = 18309 | 31/08/2005 07:37:21 Orbit = 18309 |
| EN-UNA-2005/0357 | 06/09/2005 21:02:54 Orbit = 18405 | 06/09/2005 21:33:29 Orbit = 18405 |
| EN-UNA-2005/0355 | 07/09/2005 04:20:00 Orbit = 18409 | 07/09/2005 13:40:00 Orbit = 18415 |
| EN-UNA-2005/0365 | 14/09/2005 07:51:31 Orbit = 18511 | 14/09/2005 12:53:26 Orbit = 18514 |
| EN-UNA-2005/0440 | 21/10/2005 09:22:00 Orbit = 19042 | 21/10/2005 09:34.58 Orbit = 19042 |
| EN-UNA-2005/0441 | 23/10/2005 14:46:45 Orbit = 19074 | 23/10/2005 14:46:55 Orbit = 19074 |
| EN-UNA-2005/0465 | 20/11/2005 23:20:25 Orbit = 19480 | 20/11/2005 23:28:50 Orbit = 19480 |
| EN-UNA-2005/0473 | 11/12/2005 14:04:37.000 Orbit = 19775 | 11/12/2005 14:14:52.000 Orbit = 19775 |
| EN-UNA-2005/0477 | 18/12/2005 03:45:26.000 Orbit = 19869 | 18/12/2005 07:11:19.000 Orbit = 19871 |
| EN-UNA-2006/0009 | 9 Jan 2006 07:22:23.000 Orbit = 20186 | 9 Jan 2006 09:05:12.000 Orbit = 20187 |
| EN-UNA-2006/0022 | 25 Jan 2006 20:24:55.000 Orbit = 20423 | 25 Jan 2006 20:31:34.000 Orbit 20423 |

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| EN-UNA-2006/0038 | 07/02/2006 01:34:22.000 Orbit = 20598 | 07/02/2006 05:19:30.000 Orbit = 20600 |
| EN-UNA-2006/0052 | 17/02/2006 02:45:18.000 Orbit = 20741 | 17/02/2006 06:41:47.000 Orbit = 20744 |
| EN-UNA-2006/0060 | 19/02/2006 15:08:07.273 Orbit = 20777 | 19/02/2006 15:10:44.706 Orbit = 20778 |
| EN-UNA-2006/0069 | 22/02/2006 11:00:16.000 Orbit = 20818 | 22/02/2006 11:21:32.000 Orbit = 20818 |
| EN-UNA-2006/0073 | 24/02/2006 02:19:08.441 Orbit = 20841 | 24/02/2006 02:23:14.554 Orbit = 20841 |
| EN-UNA-2006/0084 | 28/02/2006 07:39:56.000 Orbit = 20902 | 28/02/2006 07:49:38.000 Orbit = 20902 |
| EN-UNA-2006/0102 | 20/03/2006 07:03:30.000 Orbit = 21188 | 20/03/2006 07:20:49.559 Orbit = 21188 |
| EN-UNA-2006/0108 | 28/03/2006 00:39:22.000 Orbit = 21298 | 28/03/2006 13:13:20.000 Orbit = 21306 |
| EN-UNA-2006/0120 | 06/04/2006 02:09:26.446 Orbit = 21428 | 10/04/2006 17:23:03.000 Orbit = 21495 |
| EN-UNA-2006/0122 | 12/04/2006 20:14:00.000 Orbit = 21525 | 12/04/2006 20:19:54.776 Orbit = 21525 |
| EN-UNA-2006/0130 | 19/04/2006 08:18:12.000 Orbit = 21618 | 19/04/2006 12:00:36.000 Orbit = 21620 |
| EN-UNA-2006/0136 | 24/04/2006 07:09:20.000 Orbit = 21525 | 24/04/2006 07:16:59.000 Orbit = 21689 |
| EN-UNA-2006/0140 | 25/04/2006 14:55:00.000 Orbit = 21708 | 25/04/2006 15:02:48.000 Orbit = 21708 |
| EN-UNA-2006/0143 | 30/04/2006 13:55:00.000 Orbit = 21779 | 30/04/2006 14:04:03.000 Orbit = 21779 |
| EN-UNA-2006/0151 | 10/05/2006 19:59:10.000 Orbit = 21926 | 10/05/2006 20:01:38.000 Orbit = 21926 |
| EN-UNA-2006/0155 | 11/05/2006 06:33:32.000 Orbit = 21932 | 11/05/2006 06:41:29.000 Orbit = 21932 |
| EN-UNA-2006/0167 | 22/05/2006 11:04:00.000 Orbit = 22092 | 22/05/2006 11:23:16.000 Orbit = 22092 |
| EN-UNA-2006/0171 | 25/05/2006 07:39:00.000 Orbit = 22133 | 25/05/2006 07:45:47.000 Orbit = 22133 |
| EN-UNA-2006/0185 | 03/06/2006 22:31:12.000 Orbit = 22271 | 04/06/2006 00:37:03.000 Orbit = 22272 |
| EN-UNA-2006/0186 | 04/06/2006 20:07:16.000 Orbit = 22283 | 04/06/2006 22:58:54.000 Orbit = 22285 |
| EN-UNA-2006/0188 | 10/06/2006 20:17:47.000 Orbit = 22369 | 10/06/2006 22:35:24.000 Orbit = 22371 |
| EN-UNA-2006/0190 | 13/06/2006 07:14:05.000 Orbit = 22405 | 13/06/2006 07:18:46.000 Orbit = 22405 |
| EN-UNA-2006/0200 | 22/06/2006 17:42:40.000 Orbit = 22540 | 22/06/2006 17:49:40.000 Orbit = 22540 |

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| EN-UNA-2006/0204 | 24/06/2006 07:17:00.000 Orbit = 22562 | 24/06/2006 07:23:52.000 Orbit = 22562 |
| EN-UNA-2006/0212 | 01/07/2006 08:09:30.000 Orbit = 22663 | 01/07/2006 08:16:10.000 Orbit = 22663 |
| EN-UNA-2006/0230 | 26/07/2006 13:28:00.000 Orbit = 23024 | 26/07/2006 13:41:43.000 Orbit = 23024 |
| EN-UNA-2006/0235 | 2/8/2006 13:30:01.335 Orbit = 23124 | 2/08/2006 13:33:09.238 Orbit = 23124 |
| EN-UNA-2006/0237 | 4/8/2006 10:21:22.000 Orbit = 23151 | 4/8/2006 10:30:10.000 Orbit = 23151 |
| EN-UNA-2006/0240 | 8/8/2006 08:19:23.000 Orbit = 23207 | 8/8/2006 08:28:56.000 Orbit = 23207 |
| EN-UNA-2006/0248 | 14/8/2006 15:20:59.000 Orbit = 23297 | 14/8/2006 15:24:38.000 Orbit = 23297 |
| EN-UNA-2006/0254 | 21/8/2006 14:47:52.107 Orbit = 23397 | 21/8/2006 14:55:47.108 Orbit = 23397 |
| EN-UNA-2006/0257 | 24/8/2006 16:40:50.000 Orbit = 23441 | 24/8/2006 16:47:19.000 Orbit = 23441 |
| EN-UNA-2006/0261 | 29/8/2006 09:12:28.052 Orbit = 23508 | 29/8/2006 12:35:07.052 Orbit = 23508 |
| EN-UNA-2006/0263 | 03/09/2006 06:20:00.000 Orbit = 23578 | 03/09/2006 06:28:16.000 Orbit = 23578 |
| EN-UNA-2006/0266 | 03/09/2006 17:59:17.000 Orbit = 23585 | 03/09/2006 18:07:40.000 Orbit = 23585 |
| EN-UNA-2006/0280 | 16/09/2006 14:12:15.000 Orbit = 23769 | 16/09/2006 16:21:03.000 Orbit = 23770 |
| EN-UNA-2006/0290 | 23/09/2006 13:53:10.877 Orbit = 23869 | 23/09/2006 16:00:55.216 Orbit = 23870 |
| EN-UNA-2006/0298 | 1/10/2006 14:43:21.000 Orbit = 23984 | 1/10/2006 16:41:12.000 Orbit = 23985 |
| EN-UNA-2006/0299 | 2/10/2006 14:10:16.000 Orbit = 23998 | 2/10/2006 14:33:51.000 Orbit = 23998 |
| EN-UNA-2006/0300 | 3/10/2006 13:38:04.000 Orbit = 24012 | 3/10/2006 13:57:04.000 Orbit = 24012 |
| EN-UNA-2006/0303 | 6/10/2006 10:57:34.000 Orbit = 24053 | 6/10/2006 11:15:30.000 Orbit = 24053 |
| EN-UNA-2006/0307 | 14/10/2006 13:38:33.000 Orbit = 24169 | 14/10/2006 13:38:52.000 Orbit = 24169 |
| EN-UNA-2006/0314 | 17/10/2006 19:53:41.000 Orbit = 24216 | 17/10/2006 20:00:54.000 Orbit = 24216 |
| EN-UNA-2006/0316 | 18/10/2006 14:07:37.000 Orbit = 24227 | 18/10/2006 16:15:23.000 Orbit = 24228 |
| EN-UNA-2006/0322 | 24/10/2006 09:35:01.000 Orbit = 24310 | 24/10/2006 09:42:25.000 Orbit = 24310 |
| EN-UNA-2006/0333 | 02/11/2006 14:30:52.000 Orbit = 24442 | 02/11/2006 16:48:39.000 Orbit = 24443 |
| EN-UNA-2006/0338 | 08/11/2006 14:50:09.000 | 08/11/2006 16:51:03.000 |

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| | Orbit = 24528 | Orbit = 24529 |
| EN-UNA-2006/0342 | 15/11/2006 16:10:05.724 Orbit = 24629 | 15/11/2006 18:05:13.248 Orbit = 24630 |
| EN-UNA-2006/0343 | 20/11/2006 13:30:36.000 Orbit = 24699 | 20/11/2006 14:04:27.000 Orbit = 24699 |
| EN-UNA-2006/0345 | 22/11/2006 06:56:58.000 Orbit = 24723 | 22/11/2006 07:27:33.000 Orbit = 24724 |
| EN-UNA-2006/0350 | 24/11/2006 14:49:34.000 Orbit = 24757 | 24/11/2006 15:09:01.000 Orbit = 24757 |
| EN-UNA-2006/0357 | 28/11/2006 07:58:29.000 Orbit = 24810 | 30/11/2006 13:29:00.000 Orbit = 24842 |
| EN-UNA-2006/0360 | 01/12/2006 12:44:47.000 Orbit = 24856 | 01/12/2006 13:16:28.000 Orbit = 24856 |
| EN-UNA-2006/0362 | 02/12/2006 01:46:48.000 Orbit = 24863 | 02/12/2006 07:38:30.000 Orbit = 24867 |
| EN-UNA-2006/0364 | 04/12/2006 12:50:04.000 Orbit = 24899 | 04/12/2006 13:24:50.000 Orbit = 24899 |
| EN-UNA-2006/0369 | 12/12/2006 14:24:33.000 Orbit = 25014 | 12/12/2006 14:32:26.000 Orbit = 25014 |
| EN-UNA-2006/0372 | 12/12/2006 18:02:17.000 Orbit = 25016 | 16/12/2006 02:58:44.000 Orbit = 25065 |
| EN-UNA-2006/0378 | 24/12/2006 11:07:30.000 Orbit = 25184 | 24/12/2006 11:14:05.000 Orbit = 25184 |
| EN-UNA-2006/0383 | 27/12/2006 14:15:30.000 Orbit = 25229 | 27/12/2006 17:39:31.000 Orbit = 25231 |
| EN-UNA-2007/0003 | 03/01/2007 09:08:30.000 Orbit = 25326 | 03/01/2007 09:14:26.000 Orbit = 25326 |
| EN-UNA-2007/0007 | 06/01/2007 02:40:22.000 Orbit = 25365 | 06/01/2007 04:15:17.000 Orbit = 25366 |
| EN-UNA-2007/0015 | 22/01/2007 23:29:00.000 Orbit = 25606 | 23/01/2007 12:14:00.000 Orbit = 25614 |
| EN-UNA-2007/0029 | 02/02/2007 03:29:56.000 Orbit = 25752 | 02/02/2007 20:06:32.000 Orbit = 25762 |
| EN-UNA-2007/0029 | 02/02/2007 20:41:46.000 Orbit = 25762 | 04/02/2007 16:51:13.000 Orbit = 25789 |
| EN-UNA-2007/0038 | 09/02/2007 16:07:58.000 Orbit = 25860 | 09/02/2007 16:36:05.000 Orbit = 25860 |
| EN-UNA-2007/0039 | 10/02/2007 20:17:43.000 Orbit = 25876 | 10/02/2007 21:31:10.000 Orbit = 25877 |
| EN-UNA-2007/0041 | 12/02/2007 00:47:33.000 Orbit = 25893 | 12/02/2007 04:52:37.000 Orbit = 25896 |
| EN-UNA-2007/0053 | 03/03/2007 11:31:22.000 Orbit = 26172 | 03/03/2007 12:05:49.000 Orbit = 26172 |
| EN-UNA-2007/0054 | 03/03/2007 14:28:29.000 Orbit = 26174 | 03/03/2007 14:59:00.000 Orbit = 26174 |
| EN-UNA-2007/0055 | 04/03/2007 13:07:07.000 Orbit = 26187 | 04/03/2007 14:25:55.000 Orbit = 26188 |

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| EN-UNA-2007/0059 | 05/03/2007 16:51:22.000 Orbit = 26204 | 05/03/2007 17:16:25.000 Orbit = 26204 |
| EN-UNA-2007/0064 | 15/03/2007 06:58:21.000 Orbit = 26341 | 15/03/2007 07:05:53.000 Orbit = 26341 |
| EN-UNA-2007/0070 | 17/03/2007 10:51:59.000 Orbit = 26372 | 17/03/2007 11:00:38.000 Orbit = 26372 |
| EN-UNA-2007/0078 | 23/03/2007 02:48:45.000 Orbit = 26453 | 23/03/2007 07:43:17.000 Orbit = 26456 |
| EN-UNA-2007/0090 | 31/03/2007 21:39:01.000 Orbit = 26579 | 01/04/2007 01:39:09.000 Orbit = 26581 |
| EN-UNA-2007/0088 | 02/04/2007 23:50:12.000 Orbit = 26609 | 03/04/2007 07:08:35.000 Orbit = 26613 |
| EN-UNA-2007/0102 | 15/04/2007 09:16:02.000 Orbit = 26786 | 15/04/2007 09:33:26.000 Orbit = 26786 |
| EN-UNA-2007/0112 | 23/04/2007 01:05:10.000 Orbit = 26896 | 23/04/2007 04:54:28.000 Orbit = 26898 |
| EN-UNA-2007/0122 | 11/05/2007 06:19:33.000 Orbit = 27156 | 11/05/2007 06:41:03.000 Orbit = 27157 |
| EN-UNA-2007/0127 | 21/05/2007 02:06:58.000 Orbit = 27297 | 21/05/2007 04:48:56.000 Orbit = 27299 |
| EN-UNA-2007/0134 | 27/05/2007 00:57:47.000 Orbit = 27382 | 27/05/2007 01:01:20.000 Orbit = 27382 |
| EN-UNA-2007/0136 | 27/05/2007 07:13:18.000 Orbit = 27386 | 27/05/2007 13:55:30.000 Orbit = 27390 |
| EN-UNA-2007/0165 | 27 Jun 2007 12:30:00.000 Orbit = 27833 | 27 Jun 2007 12:43:09.000 Orbit = 27833 |
| EN-UNA-2007/0176 | 10 Jul 2007 16:55:13.000 Orbit = 28022 | 10 Jul 2007 17:29:05.000 Orbit = 28022 |
| EN-UNA-2007/0178 | 16 Jul 2007 22:04:59.000 Orbit = 28111 | 17 Jul 2007 07:10:43.000 Orbit = 28116 |
| EN-UNA-2007/0187 | 22 Jul 2007 21:05:00.000 Orbit = 28196 | 22 Jul 2007 21:36:04.000 Orbit = 28196 |
| EN-UNA-2007/0219 | 24 Sep 2007 21:44:16.000 Orbit = 29112 | 25 Sep 2007 18:23:08.000 Orbit = 29125 |
| EN-UNA-2007/0223 | 24 Sep 2007 12:27:00.000 Orbit = 29107 | 27 Sep 2007 18:43:58.000 Orbit = 29153 |
| EN-UNA-2007/0225 | 29 Sep 2007 13:30:25.000 Orbit = 29179 | 29 Sep 2007 16:45:43.000 Orbit = 29181 |
| EN-UNA-2007/0243 | 31 Oct 2007 05:47:44.000 Orbit = 29632 | 31 Oct 2007 06:00:00.000 Orbit = 29633 |
| EN-UNA-2007/0254 | 30 Nov 2007 5:13:30.890 Orbit = 30068 | 30 Nov 2007 17:32:51.718 Orbit = 30069 |
| EN-UNA-2007/0257 | 1 Dec 2007 19:08:03.275 Orbit = 30084 | 1 Dec 2007 22:20:26.017 Orbit = 30086 |
| EN-UNA-2007/0261 | 3 Dec 2007 21:42:20.000 Orbit = 30114 | 4 Dec 2007 18:12:14.000 Orbit = 30127 |
| EN-UNA-2007/0270 | 9 Dec 2007 07:52:41.000 | 9 Dec 2007 11:32:07.149 |

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| | Orbit = 30192 | Orbit = 30194 |
| EN-UNA-2007/0266 | 11 Dec 2007 8:06:00.000 Orbit = 30221 | 11 Dec 2007 11:36:13.000 Orbit = 30223 |
| EN-UNA-2007/0278 | 13 Dec 2007 6:22:00.000 Orbit = 30248 | 13 Dec 2007 15:04:39.000 Orbit = 30254 |
| EN-UNA-2008/0010 | 16 Jan 2008 16:11:00.000 Orbit = 30741 | 17 Jan 2008 10:35:21.000 Orbit = 30752 |
| EN-UNA-2008/0011 | 17 Jan 2008 09:42:13.000 Orbit = 30751 | 17 Jan 2008 13:03:25.000 Orbit = 30753 |
| EN-UNA-2008/0017 | 22 Jan 2008 14:11:03.000 Orbit = 30826 | 22 Jan 2008 14:41:07.000 Orbit = 30826 |
| EN-UNA-2008/0023 | 28 Jan 2008 16:11:51.540 Orbit = 30913 | 28 Jan 2008 18:04:35.000 Orbit = 30914 |
| EN-UNA-2008/0024 | 31 Jan 2008 00:54:40.528 Orbit = 30946 | 31 Jan 2008 00:55:17.000 Orbit = 30946 |
| EN-UNA-2008/0027 | 5 Feb 2008 17:00:26.000 Orbit = 31028 | 5 Feb 2008 19:00:13.000 Orbit = 31029 |
| EN-UNA-2008/0033 | 11 Feb 2008 23:45:12.000 Orbit = 31118 | 12 Feb 2008 09:10:21.000 Orbit = 31123 |
| EN-UNA-2008/0045 | 1 Mar 2008 05:23:34.000 Orbit = 31379 | 1 Mar 2008 07:33:46.000 Orbit = 31380 |
| EN-UNA-2008/0054 | 13 Mar 2008 9:33:46.000 Orbit = 31553 | 13 Mar 2008 19:28:40.000 Orbit = 31559 |
| EN-UNA-2008/0063 | 15 Apr 2008 01:32:02.556 Orbit = 32020 | 15 Apr 2008 01:33:36.325 Orbit = 32020 |
| EN-UNA-2008/0070 | 21 Apr 2008 21:59:00.000 Orbit = 32118 | 22 Apr 2008 07:22:00.000 Orbit = 32124 |
| EN-UNA-2008/0082 | 6 May 2008 08:09:32.000 Orbit = 32325 | 6 May 2008 08:18:11.000 Orbit = 32325 |
| EN-UNA-2008/0090 | 1 Jun 2008 00:34:17.000 Orbit = 32693 | 1 Jun 2008 00:39:03.000 Orbit = 32693 |
| EN-UNA-2008/0097 | 18 Jun 2008 18:26:01.000 Orbit = 32947 | 18 Jun 2008 18:27:31.000 Orbit = 32947 |
| EN-UNA-2008/0100 | 23 Jun 2008 08:02:19.000 Orbit = 33012 | 23 Jun 2008 11:08:49.000 Orbit = 33014 |
| EN-UNA-2008/0104 | 30 Jun 2008 22:04:59.000 Orbit = 33121 | 1 Jul 2008 12:03:18.000 Orbit = 33129 |
| EN-UNA-2008/0104 | 30 Jun 2008 22:04:59.000 Orbit = 33121 | 1 Jul 2008 12:03:18.000 Orbit = 33129 |
| EN-UNA-2008/0121 | 19 Jul 2008 18:34:43.214 Orbit = 33390 | 19 Jul 2008 18:45:48.214 Orbit = 33391 |
| EN-UNA-2008/0124 | 25 Jul 2008 11:08:00.000 Orbit = 33472 | 25 Jul 2008 11:35:31.000 Orbit = 33472 |
| EN-UNA-2008/0140 | 25 Aug 2008 9:31:12.000 Orbit = 33921 | 25 Aug 2008 19:52:15.000 Orbit = 33921 |
| EN-UNA-2008/0144 | 8 Sep 2008 21:59:58.000 Orbit = 34123 | 9 Sep 2008 07:59:53.000 |

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| EN-UNA-2008/0153 | 23 Sep 2008 23:00:25.000 Orbit = 34338 | 24 Sep 2008 00:53:13.000 Orbit = 34339 |
| EN-UNA-2008/0165 | 13 Oct 2008 06:11:51.000 Orbit = 34614 | 13 Oct 2008 09:23:21.000 Orbit = 34616 |
| EN-UNA-2008/0169 | 18 Oct 2008 15:00:32.000 Orbit = 34691 | 18 Oct 2008 15:07:53.000 |
| EN-UNA-2008/0177 | 1 Nov 2008 20:16:08.000 Orbit = 34894 | 1 Nov 2008 22:31:40.000 Orbit = 34896 |
| EN-UNA-2008/0183 | 9 Nov 2008 00:57:00.000 Orbit = 34997 | 9 Nov 2008 00:58:00.000 Orbit = 34997 |
| EN-UNA-2008/0185 | 11 Nov 2008 01:41:48.000 Orbit = 35027 | 11 Nov 2008 03:58:47.000 Orbit = 35028 |
| EN-UNA-2008/0186 | 17 Nov 2008 21:59:55.000 Orbit = 35125 | 18 Nov 2008 07:08:39.000 Orbit = 35130 |
| EN-UNA-2008/0190 | 15 Nov 200 02:51:23.000 Orbit = 35084 | 15 Nov 2008 07:10:44.000 Orbit = 35087 |
| EN-UNA-2008/0205 | 03 Dec 2008 06:06:42.000 Orbit = 35344 | 03 Dec 2008 09:39:06.000 Orbit = 35346 |
| EN-UNA-2008/0213 | 19 Dec 2008 06:03:21.234 Orbit = 35573 | 19 Dec 2008 09:18:29.000 Orbit = 35575 |
| EN-UNA-2009/0001 | 04 Jan 2009 03:09:26.000 Orbit = 35800 | 04 Jan 2009 03:11:08.000 Orbit = 35800 |
| EN-UNA-2009/0015 | 26 Jan 2009 23:42:43.000 Orbit = 36128 | 27 Jan 2009 06:51:17.000 Orbit = 36132 |
| EN-UNA-2009/0037 | 21 Feb 2009 02:18:37.228 Orbit = 36487 | 21 Feb 2009 07:11:03.000 Orbit = 36490 |
| EN-UNA-2009/0054 | 22 Mar 2009 14:02:54.144 Orbit = 36909 | 22 Mar 2009 14:03:54.324 Orbit = 36909 |
| EN-UNA-2009/0060 | 6 Apr 2009 23:45:12.000 Orbit = 37130 | 7 Apr 2009 06:50:00.000 Orbit = 37134 |
| EN-UNA-2009/0062 | 6 Apr 2009 07:24:41.000 Orbit = 37120 | 6 Apr 2009 09:10:38.000 Orbit = 37121 |
| EN-UNA-2009/0064 | 9 Apr 2009 20:18:19.000 Orbit = 37170 | 9 Apr 2009 20:50:58.000 Orbit = 37171 |
| EN-UNA-2009/0065 | 11 Apr 2009 19:53:15.535 Orbit = 37199 | 11 Apr 2009 19:55:01.801 Orbit = 37199 |
| EN-UNA-2009/0066 | 12 Apr 2009 19:09:50.000 Orbit = 37213 | 12 Apr 2009 19:20:37.146 Orbit = 37213 |
| EN-UNA-2009/0073 | 28 Apr 2009 07:20:10.000 Orbit = 37435 | 28 Apr 2009 12:54:55.000 Orbit = 37438 |
| EN-UNA-2009/0075 | 28 Apr 2009 15:46:32.000 Orbit = 37440 | 28 Apr 2009 19:14:19.000 Orbit = 37442 |
| EN-UNA-2009/0076 | 28 Apr 2009 19:14:19.000 Orbit = 37442 | 29 Apr 2009 07:06:02.000 Orbit = 37449 |
| EN-UNA-2009/0078 | 29 Apr 2009 08:51:04.000 Orbit = 37450 | 29 Apr 2009 10:59:34.000 Orbit = 37451 |
| EN-UNA-2009/0098 | 14 Jun 2009 13:21:40.000 | 16 Jun 2009 16:08:53.000 |

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| | Orbit = 38111 | Orbit = 38141 |
| EN-UNA-2009/0114 | 20 Jul 2009 22:07:00.000 Orbit = 38632 | 21 Jul 2009 07:01:40.000 Orbit = 38637 |
| EN-UNA-2009/0124 | 6 Aug 2009 01:08:05.000 Orbit = 38862 | 6 Aug 2009 14:45:27.000 Orbit = 38871 |
| EN-UNA-2009/0149 | 28 Sep 2009 20:18:47.000 Orbit = 39632 | 29 Sep 2009 07:01:43.000 Orbit = 39639 |
| EN-UNA-2009/0163 | 10 Oct 2009 02:53:26.000 Orbit = 39794 | 12 Oct 2009 13:23:22.871 Orbit = 39829 |
| EN-UNA-2009/0188 | 20 Nov 2009 15:27:18.546 Orbit = 40388 | 20 Nov 2009 21:21:45.000 Orbit = 40392 |
| EN-UNA-2009/0192 | 05 Dec 2009 02:37:47.900 Orbit = 40595 | 5 Dec 2009 08:42:25.000 Orbit = 40599 |
| EN-UNA-2009/0194 | 7 Dec 2009 22:01:11.000 Orbit = 40636 | 8 Dec 2009 07:08:26.000 Orbit = 40641 |
| EN-UNA-2009/0196 | 9 Dec 2009 03:16:25.000 Orbit = 40653 | 9 Dec 2009 03:18:58.000 Orbit = 40653 |
| EN-UNA-2009/0197 | 12 Dec 2009 13:36:40.000 Orbit = 40702 | 12 Dec 2009 13:38:33.000 Orbit = 40702 |
| EN-UNA-2009/0201 | 26 Dec 2009 08:04:40.000 Orbit = 40899 | 26 Dec 2009 08:14:53.000 Orbit = 40899 |
| EN-UNA-2010/0003 | 6 Jan 2010 19:33:48.000 Orbit = 41063 | 6 Jan 2010 21:41:06.000 Orbit = 41065 |
| EN-UNA-2010/0008 | 11 Jan 2010 11:34:56.000 Orbit = 41130 | 11 Jan 2010 19:05:37.000 Orbit = 41135 |
| EN-UNA-2010/0026 | 24 Jan 2010 00:56:04.000 Orbit = 41310 | 24 Jan 2010 01:03:11.000 Orbit = 41310 |
| EN-UNA-2010/0055 | 19 Feb 2010 12:26:44.000 Orbit = 41689 | 19 Feb 2010 12:27:22.000 Orbit = 41689 |
| EN-UNA-2010/0047 | 15 Feb 2010 22:00:15.000 Orbit = 41638 | 16 Feb 2010 07:00:11.000 Orbit = 41643 |
| EN-UNA-2010/0031 | 4 Feb 2010 00:42:20.000 Orbit = 41467 | 4 Feb 2010 00:53:11.000 Orbit = 41467 |
| EN-UNA-2010/0068 | 11 Mar 2010 09:43:40.000 Orbit = 41974 | 11 Mar 2010 11:52:24.000 Orbit = 41975 |
| EN-UNA-2010/0069 | 15 Mar 2010 22:04:07.000 Orbit = 42038 | 15 Mar 2010 22:20:34.000 Orbit = 42039 |
| EN-UNA-2010/0079 | 17 Apr 2010 14:11:42.776 Orbit = 42506 | 17 Apr 2010 14:12:32.498 Orbit = 42506 |
| EN-UNA-2010/0084 | 26 Apr 2010 22:05:00.000 Orbit = 42640 | 27 Apr 2010 07:02:49.000 Orbit = 42645 |
| EN-UNA-2010/0088 | 05 May 2010 03:55:39.000 Orbit = 42758 | 05 May 2010 08:16:04.000 Orbit = 42760 |
| EN-UNA-2010/0093 | 15 May 2010 23:26:02.000 Orbit = 42912 | 16 May 2010 02:02:24.000 Orbit = 42914 |
| EN-UNA-2010/0095 | 22 May 2010 17:15:38.000 Orbit = 43009 | 22 May 2010 17:19:47.764 Orbit = 43009 |

| | | |
|------------------|---|---|
| EN-UNA-2010/0101 | 26 May 2010 12:12:12.000 Orbit = 43063 | 26 May 2010 16:45:02.000 Orbit = 43066 |
| EN-UNA-2010/0108 | 5 Jul 2010 23:52:47.000 Orbit = 43643 | 6 Jul 2010 07:00:39.000 Orbit = 43647 |
| EN-UNA-2010/0112 | 12 Jul 2010 01:26:33.000 Orbit = 43729 | 12 Jul 2010 01:33:18.000 Orbit = 43730 |
| EN-UNA-2010/0126 | 16 Aug 2010 23:17:47.000 Orbit = 44243 | 16 Aug 2010 23:36:25.000 Orbit = 44244 |
| EN-UNA-2010/0148 | 29 Sep 2010 10:58:47.919 Orbit = 44866 | 29 Sep 2010 14:38:53.000 Orbit = 44866 |
| EN-UNA-2010/0149 | 30 Sep 2010 08:45:38.000 Orbit = 44879 | 30 Sep 2010 08:59:56.000 Orbit = 44879 |

APPENDIX B : DATA DISCLAIMER LIST

Below are given, in date order, ASAR data disclaimer details. Disclaimers from the current reporting period are boxed. The disclaimer list is also available at <http://earth.eo.esa.int/pcs/envisat/asar/disclaimer/>.

- From 10-Jul-2003 20:20 UTC to 11-Jul-2003 16:57 UTC.

Problem description:

Degraded radiometric quality due to an instrument anomaly.

Affected products:

All ASAR products, including level 0 products, acquired during this period.

- From 03-Aug-2003 21:15 UTC to 04-Aug-2003 12:43 UTC.

Problem description:

Degraded radiometric quality due to an instrument anomaly.

Affected products:

All ASAR products, including level 0 products, acquired during this period.

- From 19-Oct-2003 12:50:59 UTC to 20-Oct-2003 15:37:47.000 UTC

Problem description:

Degraded radiometric quality due to an instrument anomaly.

Affected products:

All ASAR products, including level 0 products, acquired during this period.

- From 28-Oct-2003 06:26:28 UTC to 28-Oct-2003 13:10:01 UTC

Problem description:

Data not acquired in Yaw Steering Mode but in Fine Pointing Mode (FPM). Large Doppler frequency values are expected.

Affected products:

All ASAR products, including level 0 products, acquired during this period.

- From 4-Dec-2003 21:5:23 UTC to 4-Dec-2003 22:03:31UTC

Problem description:

Data not acquired in Yaw Steering Mode but in Fine Pointing Mode (FPM). Large Doppler frequency values are expected.

Affected products:

All ASAR products, including level 0 products, acquired during this period.

- From 11-Dec-2003 01:45:00 UTC to 11-Dec-2003 15:11:15 UTC

Problem description:

Degraded radiometric quality due to an instrument anomaly.

Affected products:

All ASAR products, including level 0 products, acquired during this period.

- From 04-Jan-2004 09:15:00 UTC to 05-Jan-2003 15:25:20 UTC.

Problem description:

Degraded radiometric quality due to an instrument anomaly.

Affected products

All ASAR products, including level 0 products, acquired during this period.

- From 13-Feb-2004 13:38 UTC to 14-Feb-2004 11:06:01 UTC.

Problem description:

Degraded radiometric quality due to an instrument anomaly.

Affected products:

All ASAR products, including level 0 products, acquired during this period.

- From 20-Feb-2004 18:00 UTC to 23-Feb-2004 13:08 UTC.

Problem description:

Degraded radiometric quality due to an instrument anomaly.

Affected products:

All ASAR products, including level 0 products, acquired during this period.

- From 18-Nov-2003 until 22-May-2004 00:00:00 UTC

Problem description:

Degraded ASAR GM products location accuracy.

Affected products:

All ASAR GM level 1 products (ASA_GM1_1P), acquired during this period.

Correction:

The location error in ASA_GM1_1P products acquired before 22nd of May 2004 can be corrected by the user multiplying the line numbers in the Geolocation Grid ADS by 0.97169.

- From 21-Jun-2004 07:56:33 UTC to 22-Jun-2004 11:50:18 UTC

Problem description:

Degraded Attitude Stability. Instrument operating in Yaw Steering Mode (YSM) rather than in Stellar YSM. A positive Doppler bias of about 300 Hz is observed on data acquired during this period.

Affected products:

All ASAR products, including level 0 products, acquired during this period.

- From 04-Aug-2004 02:00 UTC to 04-Aug-2004 09:26:00 UTC.

Problem description:

Degraded radiometric quality due to an instrument anomaly.

Affected products:

All ASAR products, including level 0 products, acquired during this period.

- From 16-Sep-2004 03:36:39UTC to 16-Sep-2004 08:53:15 UTC

Problem Description:

Degraded radiometric quality due to an instrument anomaly.

Affected products:

All ASAR products, including level 0 products

- From 12-Sep-2004 03:46:00 UTC to 12-Sep-2004 12:40:00 UTC

Problem Description:

Degraded radiometric quality due to an instrument anomaly.

Affected products:

All ASAR products, including level 0 products

- From 12-Aug-2004 13:53:54 UTC to 12-Aug-2004 19:09:50 UTC

Problem Description:

Degraded radiometric quality due to an instrument anomaly.

Affected products:

All ASAR products, including level 0 products

- From 14-AUG-2004 07:36:00 UTC to 17-AUG-2004 10:57:45 UTC

Problem Description:

Degraded radiometric quality due to an instrument anomaly.

Affected products:

All ASAR products, including level 0 products

- From 02-NOV-2004 14:17:25 UTC to 03-NOV-2004 10:04:58 UTC

Problem Description:

Degraded radiometric quality due to an instrument anomaly.

Affected products:

All ASAR products, including level 0 products

- From 05-DEC-2004 10:03:48 UTC to 05-DEC-2004 15:35:45 UTC

Problem Description:

Degraded radiometric quality due to an instrument anomaly.

Affected products:

All ASAR products, including level 0 products

- From 13-APR-2002 to 11-FEB-2003

Problem Description:

The absolute calibration factor annotated in all ASAR level 1 products acquired between 13-APR-2002 and 11-FEB-2003 and processed between 01-AUG-2003 and 29-NOV-2004 is not correct. These products with incorrect calibration factor annotated in the Main Processing Parameters ADS can be identified by checking the auxiliary files used for processing. The name of the auxiliary files used in the processing is provided in the product SPH (use “view as HTML” in EnviView to visualise them). Products with incorrect calibration factor have been processed with the following external calibration auxiliary file:

ASA_XCA_AXVIEC20030801_134802_20020413_000000_20030211_000000

The correct calibration factors for these products are provided in the following auxiliary file:

ASA_XCA_AXVIEC20041129_173057_20020413_000000_20030211_000000

available on line at: http://earth.eo.esa.int/services/auxiliary_data/asar/

Affected products:

All ASAR level1 products.

- From 09-JAN-2005 03:13:21 to 09-JAN-2005 06:45:03 UTC

Problem Description:

Due to an on-board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 product is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 25-JAN-2005 to 02-FEB-2005

Problem Description:

Due to a problem on the ESRIN Low Bit Rate acquisition chain, the ASAR Wave and GM data could be of bad quality.

Affected products:

All ASAR Low bit rate products (Wave and GM), including level 0 products acquired at PDHS-E (ESRIN)

- From 22-MAR-2005 00:54:10 to 22-MAR-2005 00:54:10

Problem Description:

Due to an on-board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 product is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 12-MAY-2005 07:26:02 to 12-MAY-2005 10:50:00

Problem Description:

Due to an on-board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 product is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 18-MAY-2005 10:58:16 to 18-MAY-2005 13:58:00

Problem Description:

Due to an on-board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 product is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 01-JUN-2005 13:29:28 to 01-JUN-2005 16:45:00

Problem Description:

Due to an on-board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 product is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 05-JUL-2005 14:16:58 to 05-JUL-2005 17:27:11

Problem Description:

Due to an on-board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 product is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 24-JUL-2005 02:22:42 to 24-JUL-2005 07:31:40

Problem Description:

Due to an on-board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 product is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 03-AUG-2005 17:09:54 to 03-AUG-2005 22:08:56

Problem Description:

Due to an on-board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 product is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 24-AUG-2005 01:09:08 to 03-AUG-2005 07:55:55

Problem Description:

Due to an on-board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 product is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 14-SEP-2005 08:00:40 to 16-SEP-2005 19:57:33

Problem Description:

Quality of ASAR Level-1 and Level-2 products is slightly degraded due to a temporal modification of the antenna radiation patterns. Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products are clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

From 16-SEP-2005 19:57:33 to 14-OCT-2005 00:00:00

Problem Description:

Quality of ASAR Level-1 and Level-2 products acquired between 16-09-2005 19:57:33 UTC and 14-10-2005 00:00:00 is slightly degraded for NRT products while it is nominal products generated on-request after 14-10-2005 00:00:00. Quality of products acquired after 14-10-2005 00:00:00 is nominal.

Affected products:

All ASAR level 1 and level 2 products

- From 21-OCT-2005 07:34:39 to 21-OCT-2005 09:34:58

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 01-MAR-2002 00:00:00 to 10-FEB-2006 00:00:00

Warning: Degraded geolocation accuracy

Problem Description:

There is a shift in the zero-Doppler azimuth times annotated in the AP Level-1 products (this applies to the product zero-Doppler times and does not apply to other external times, such as the state vectors azimuth times). Full details on the impact on the product geolocation accuracy and the strategy for correcting products 'a-posteriori' can be found on http://envisat.esa.int/dataproducts/availability/disclaimers/PQD_0082ASA_all.pdf.

Affected products:

All ASAR Alternating Polarisation (AP) Level-1 products processed with PF-ASAR version lower than 4.02. The PF-ASAR 4.02 is available at the following centres for which the installation date is reported: PDHSK (02-02-2006), PDHSE (02-02-2006), I-PAC (02-02-2006), LRAC (02-02-2006), UK-PAC (07-02-2006), D-PAC (09-02-2006).

- From 20-NOV-2005 20:15:13 to 20-NOV-2005 23:28:50

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 11-DEC-2005 10:53:54 to 11-DEC-2005 14:14:52

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 25-JAN-2006 17:10:27 to 25-JAN-2006 20:31:34

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 22-FEB-2006 00:43:46 to 22-FEB-2006 11:21:32

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 22-FEB-2006 10:12:25 to 22-FEB-2006 15:14:13

Warning: Degraded ASAR Global Monitoring Mode radiometric quality

Problem Description:

Radiometric quality of ASAR Global Monitoring Mode (GMM) data acquired on 22 February from 10:12:25 UTC until 15:14:13 UTC, corresponding to orbits 20818, 20819 and 20820 may be degraded since a test with the ASAR instrument will be performed during this time. Data acquired during this time interval in modes other than GMM is NOT affected. GMM data acquired immediately before and after this period is NOT affected.

Affected products:

ASAR Global Monitoring Mode (GMM) products

- From 28-FEB-2006 02:37:34 to 28-FEB-2006 07:49:38

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 20-MAR-2006 02:12:44 to 20-MAR-2006 07:20:50

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation

of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 12-APR-2006 19:53:48 to 12-APR-2006 20:19:55

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 24-APR-2006 03:47:51 to 24-APR-2006 07:17:00

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 25-APR-2006 13:22:31 to 25-APR-2006 15:02:48

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 30-APR-2006 10:53:00 to 30-APR-2006 14:04:03

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 11-MAY-2006 03:13:20 to 11-MAY-2006 06:41:30

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 22-MAY-2006 07:32:43 to 22-MAY-2006 11:23:16

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 25-MAY-2006 02:33:46 to 25-MAY-2006 7:45:47

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 22-JUN-2006 16:00:00 to 22-JUN-2006 17:49:40

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 01-JULY-2006 03:00:00 to 01-JULY-2006 08:16:10

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 26-JULY-2006 13:15:00 to 01-JULY-2006 13:41:43

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 04-AUG-2006 07:15:00 to 04-AUG-2006 10:30:10

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 08-AUG-2006 01:38:00 to 08-AUG-2006 08:28:56

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 17-AUG-2006 03:26:46 to 21-AUG-2006 14:56:00

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 24-AUG-2006 12:56:47 to 24-AUG-2006 16:47:19

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 03-SEP-2006 01:19:40 to 03-SEP-2006 06:28:16

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 03-SEP-2006 16:05:12 to 03-SEP-2006 18:07:40

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 06-OCT-2006 07:35:40 to 06-OCT-2006 11:15:30

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 17-OCT-2006 16:23:20 to 17-OCT-2006 20:00:54

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 24-OCT-2006 04:43:30 to 24-OCT-2006 09:42:25

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation

of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 24-DEC-2006 07:51:56 to 24-DEC-2006 11:14:05

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 03-JAN-2007 07:37:20 to 03-JAN-2006 09:14:26

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 04-FEB-2007 16:51:13 to 23-FEB-2007 00:00:00

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. NRT products processed by the following auxiliary data: ASA_XCA_AXXIEC20061221_143253_20050916_195733_20071231_000000, ASA_CON_AXXIEC20061107_090002_20050916_195733_20071231_000000, ASA_CON_AXVIEC20070215_184018_20070204_165113_20071231_000000 has significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM). The products are being reprocessed.

Affected products:

All ASAR products, including level 0 products

- From 03-MAR-2007 08:23:44 to 03-MAR-2007 12:05:49

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 15-MAR-2007 02:09:10 to 15-MAR-2007 07:05:53

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 17-MAR-2007 07:43:40 to 17-MAR-2007 11:00:38

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 15-APR-2007 07:32:22 to 15-APR-2007 09:33:26

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

During June 2007 one new disclaimer was issued:

- From 27-JUN-2007 10:58:54 to 27-JUN-2007 12:43:10

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 22-JUL-2007 20:41:47 to 22-JUL-2007 21:36:04

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation

of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 04-DEC-2007 18:06:43 to 06-DEC-2007 00:17:30

Warning: Degraded geolocation accuracy

Problem Description:

ASAR data acquired between orbits 30127 and 30145 show a variable location error in azimuth, ranging up to 12 km. The problem is fully corrected for ASAR data acquired since orbit 30146.

Affected products:

All ASAR products, including level 0 products

- From 01-NOV-2007 00:00:00 to 28-FEB-2007 00:00:00

Warning: Degraded ASAR GM product quality

Problem Description:

Due to archiving problem, the overall quality of ASAR GM products acquired between November 2006 and February 2007, covering the South America and Indonesia areas might be degraded. Processing artifacts as azimuth stripe and subswaths discontinuity are visible. A reprocessing activity is currently on-going. ASAR GM users are invited to check the available quick-looks by Eoli before ordering the products.

Affected products:

All ASAR products, including level 0 products

- From 25-JUL-2008 07:00:00 18:06:43 to 25-JUL-2008 11:40:00

Warning: ASAR antenna gain problem

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products

- From 31-DEC-2008 22:16:43 to 01-JAN-2009 06:39:43

Warning: Degraded geolocation accuracy.

Problem Description:

ASAR data acquired between orbits 35755 and 35759 show a variable location error in azimuth, ranging up to 6.18 km. The problem is fully corrected for ASAR data acquired since orbit 35760.

Affected products:

All ASAR products, including level 0 products.

- From 15-FEB-2009 22:16:43 to 16-FEB-2009 13:09:00

Warning: Envisat Yaw Steering.

Problem Description:

Envisat switched automatically in Yaw Steering Mode (YSM) from 15/02/2009 03:38:34 to 16/02/2009 13:09:00, due to an anomaly which affected Star Tracker 3.

The anomaly was caused by an unexpected bright object, different from the programmed star the star tracker was pointing to. The event was interpreted by the onboard software as two simultaneous target objects in the field of view and generated a suspension command, which in turn triggered the service module to switch to Yaw Steering Mode.

The Yaw Steering Mode implies a slight degradation of the general attitude stability, which does not substantially affect instrument data quality. Products acquired during YSM were therefore archived and distributed nominally.

Affected products:

All ASAR products, including level 0 products.

- From 05-MAR-2009 19:18:01 to 06-MAR-2009 15:10:02

Warning: Envisat Yaw Steering.

Problem Description:

Envisat switched automatically in Yaw Steering Mode (YSM) from 05-MAR-2009 19:18:01 to 06-MAR-2009 15:10:02, due to an anomaly which affected Star Tracker 3.

The anomaly was caused by an unexpected bright object, different from the programmed star the star tracker was pointing to. The event was interpreted by the onboard software as two simultaneous target objects in the field of view and generated a suspension command, which in turn triggered the service module to switch to Yaw Steering Mode.

The Yaw Steering Mode implies a slight degradation of the general attitude stability, which does not substantially affect instrument data quality. Products acquired during YSM were therefore archived and distributed nominally.

Affected products:

All ASAR products, including level 0 products.

- From 12-APR-2009 16:10:50 to 12-APR-2009 19:20:00

Warning: ASAR antenna gain problem.

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products.

- From 26-Dec-09 04:23:35 to 26-Dec-09 08:14:53

Warning: ASAR antenna gain problem.

Problem Description:

Due to an on board anomaly, data acquired during this period is affected by a change of the antenna radiation pattern. The overall quality of these data is degraded. Radiometric normalisation of level 1 products is clearly corrupted, with significant residual antenna pattern modulation and differences from sub-swath to sub-swath in the ScanSAR cases (WS and GM).

Affected products:

All ASAR products, including level 0 products.

- From 11-Jan-2010 11:34:56 to 11-Jan-2010 19:05:37

Warning: Envisat Yaw Steering

Problem Description:

Envisat switched automatically in Yaw Steering Mode (YSM) due to an anomaly. The Yaw Steering Mode implies a slight degradation of the general attitude stability, which does not substantially affect instrument data quality. Products acquired during YSM were therefore archived and distributed nominally.

Affected products:

All ASAR products, including level 0 products.

- From 26-May-2010 12:12:12 to 26-May-2010 16:45:02

Warning: Envisat Yaw Steering

Problem Description:

Envisat switched automatically in Yaw Steering Mode (YSM) due to an anomaly. The Yaw Steering Mode implies a slight degradation of the general attitude stability, which does not substantially affect instrument data quality. Products acquired during YSM were therefore archived and distributed nominally.

Affected products:

All ASAR products, including level 0 products.