

## ENVISAT ASAR MONTHLY REPORT

## DECEMBER 2007



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#### 1 EXECUTIVE SUMMARY

This document summarizes the instrument and product quality status as derived from data acquired during December 2007. No major anomalies have been experienced during this period. Details of a re-calibration of image and alternating polarisation mode products are described in this report.

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. Details of the re-calibration of image and alternating polarisation mode products at the end of 2006 are described in chapter 5. This re-calibration has an impact on radar cross-section measurements made from all IM and AP products acquired since the start of the ASAR mission. Radiometric stability is measured by means of ASAR transponders. Detailed results are provided in chapter 6. An updated list of auxiliary data files is provided in chapters 7 and 8.



#### 2 INSTRUMENT STATUS

#### No major anomalies experienced during the reporting period.

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 polarization transmit failed since 12th April 2004
- > TRM-15 in tile A1: failed to transmit in V polarization since 17th May 2004
- > TRM-06 in tile A1: failed to transmit in V polarization since 17th November 2004
- > TRM-12 in tile C4: failed to transmit in H polarization since 16th January 2005
- > TRM-02 in tile D3: failed to transmit in V polarization since 20th November 2005
- > TRM-03 in tile A3: failed to transmit in H polarization since 28th January 2007
- ➤ TRM-01-02-03-04 in tile B3: failed to transmit in H & V polarization since 2nd February 2007
- > TRM-02 in tile B1: failed to transmit in H polarization since 6th May 2007.

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. The following instrument unavailability has been occurred during the reporting period.

| Unavailability report reference | Start                                     | Stop                                      |
|---------------------------------|-------------------------------------------|-------------------------------------------|
| EN-UNA-2007/0257                | 1 Dec 2007 19:08:03.275<br>Orbit = 30084  | 1 Dec 2007 22:20:26.017<br>Orbit = 30086  |
| EN-UNA-2007/0261                | 3 Dec 2007 21:42:20.000<br>Orbit = 30114  | 4 Dec 2007 18:12:14.000<br>Orbit = 30127  |
| EN-UNA-2007/0270                | 9 Dec 2007 07:52:41.000<br>Orbit = 30192  | 9 Dec 2007 11:32:07.149<br>Orbit = 30194  |
| EN-UNA-2007/0266                | 11 Dec 2007 08:06:00.000<br>Orbit = 30221 | 11 Dec 2007 11:36:13.000<br>Orbit = 30223 |
| EN-UNA-2007/0278                | 13 Dec 2007 06:22:00.000<br>Orbit = 30248 | 13 Dec 2007 15:04:39.000<br>Orbit = 30254 |

#### 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.esa.int/pcs/envisat/asar/disclaimer. Please note that the full disclaimer list is also available in Appendix B.

During December 2007 one new disclaimer was issued:

• 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



## 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), | IS2   | VV           |
|      | including the Mediterranean Sea.            |       |              |

| Mode       | Where           | Polarization                                                  |  |  |  |  |  |
|------------|-----------------|---------------------------------------------------------------|--|--|--|--|--|
| Global     | Everywhere else | <b>HH:</b> over land, ice and sea-ice including the following |  |  |  |  |  |
| Monitoring |                 | areas:                                                        |  |  |  |  |  |
|            |                 | - Europe                                                      |  |  |  |  |  |
|            |                 | - Antarctica extended                                         |  |  |  |  |  |
|            |                 | - Artic                                                       |  |  |  |  |  |
|            |                 | - Greenland and Greenland Sea                                 |  |  |  |  |  |
|            |                 | - Labrador Sea and North of Canada                            |  |  |  |  |  |
|            |                 | - Kara Sea                                                    |  |  |  |  |  |
|            |                 | - Baffin Bay                                                  |  |  |  |  |  |
|            |                 | - Golf of Mexico & Caribbean Sea                              |  |  |  |  |  |
|            |                 | 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.

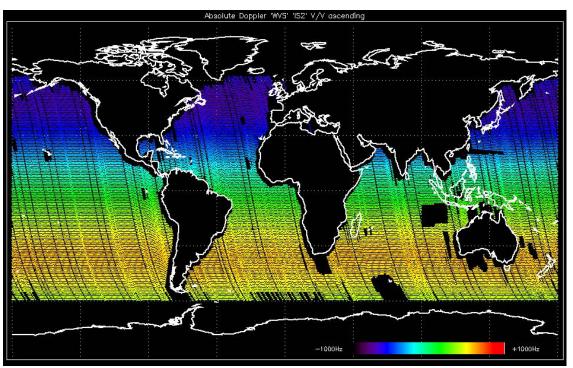


### 4 DOPPLER MONITORING

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

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



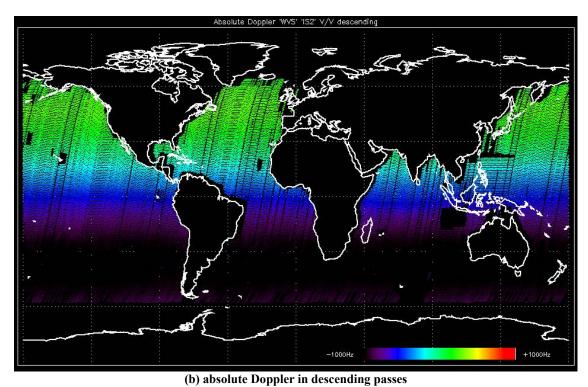
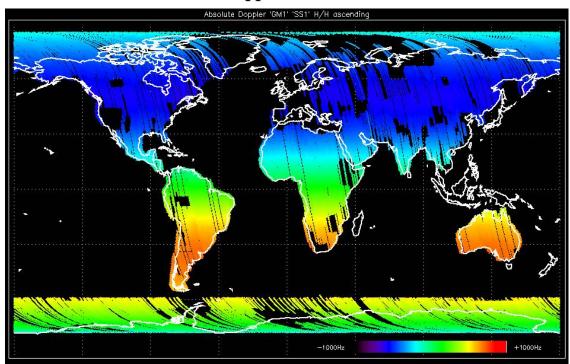


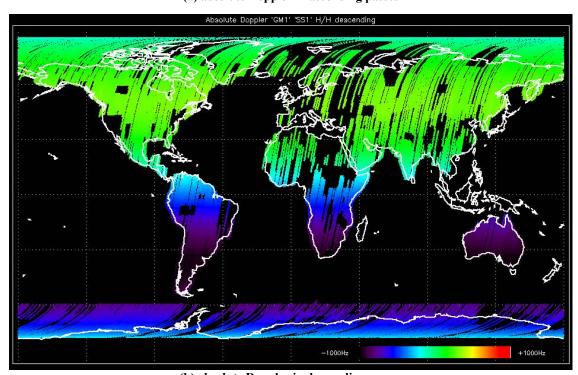
Figure 4.1: Absolute Wave mode Doppler evolution over the world



#### *4.2* Absolute GM SS1 Doppler Centroid Evolution



(a) absolute Doppler in ascending passes

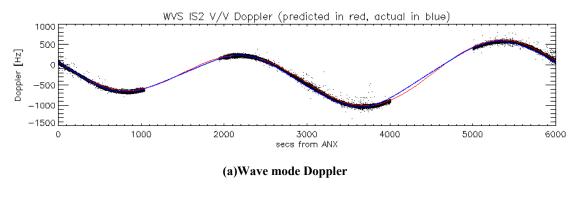


(b) absolute Doppler in descending passes
Figure 4.2: Absolute GM mode Doppler evolution over the world



## 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.



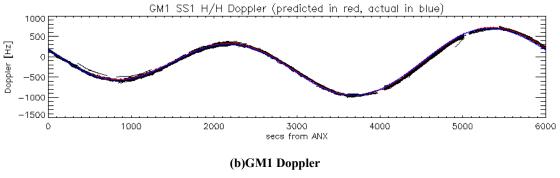
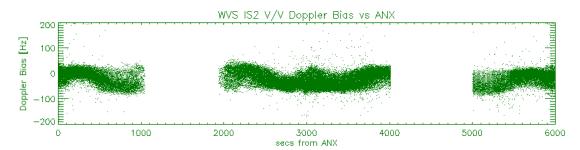


Figure 4.3: Absolute Doppler Centroid evolution wrt elapsed seconds since ANX

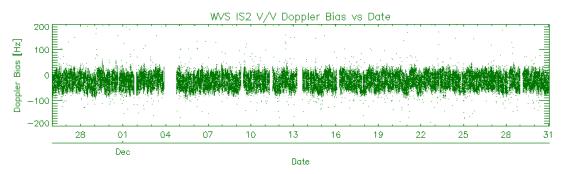


# 4.4 Residual Doppler Centroid Evolution vs. ANX and Time of Day

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.



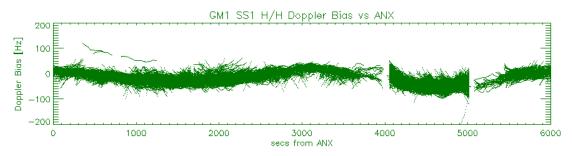
(a) residual Doppler evolution vs elapsed seconds since ANX



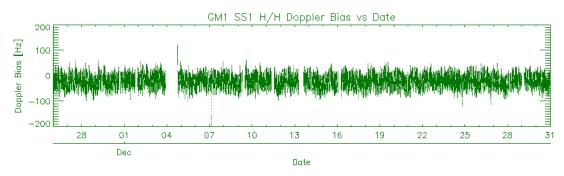
(b) residual Doppler evolution versus time of day

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 THE RE-CALIBRATION OF IMAGE AND ALTERNATING POLARISATION MODES

A radiometric re-calibration of ASAR Image and Alternating Polarisation modes was performed in December 2006 and January 2007. Following the successful re-deployment of three ASAR transponder from The Netherlands to Kalimantan (Indonesia), Resolute (Canada) and Ottawa (Canada) since mid 2006, many more transponder measurements have been made. This has made it has been possible to perform a detailed analyses of the ASAR transponder relative radar cross-section (rcs) as a function of product type, swath and polarisation. This analysis showed the necessity of performing a re-calibration of IM and AP products via the generation of revised calibration constants. The product types affected by this re-calibration are IMP, IMG, IMS and IMM together with APP, APG, APS and APM. The re-calibration is applicable for all products acquired since the start of the ASAR mission.

Table 5.1 below gives the difference between the old and new calibration constants,  $\Delta K$ , where  $K_{new} = K_{old} + \Delta K$  (changes other than 0dB are marked in red). The consequence of the new calibration constants on distributed and point target radar cross-section measurements is  $RCS_{new} = RCS_{old} - \Delta K$ .

| Product | Pols  | IS1   | IS2   | IS3   | IS4   | IS5   | IS6   | IS7   |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|
| APP     | VV VH | 0.00  | -0.62 | -0.91 | -0.42 | -0.62 | -0.44 | -1.02 |
| APP     | HH HV | 0.00  | -1.08 | -1.12 | -0.48 | -0.85 | -1.02 | -1.53 |
| APG     | VV VH | 0.00  | -0.63 | -1.07 | -0.37 | -0.52 | -0.30 | -1.09 |
| APG     | HH HV | 0.00  | -1.01 | -1.13 | -0.49 | -0.94 | -1.29 | -1.56 |
| APS     | VV VH | 0.00  | -0.39 | -1.34 | 0.00  | 0.00  | -0.63 | -0.62 |
| APS     | НН HV | 0.00  | -0.90 | -1.63 | 0.00  | -0.83 | -1.66 | -1.30 |
| APM     | VV VH | -0.26 | -0.84 | -0.59 | -0.29 | 0.00  | 0.48  | 0.70  |
| APM     | НН HV | 0.00  | -0.52 | -0.39 | 0.28  | 0.62  | 1.03  | 0.78  |

Table 5.1(a). ASAR ΔK (dB) for AP products



| Product | Pol | IS1   | IS2   | IS3   | IS4   | IS5  | IS6   | IS7   |
|---------|-----|-------|-------|-------|-------|------|-------|-------|
| IMP     | VV  | 0.46  | 0.30  | 0.51  | 0.41  | 0.27 | 0.75  | 0.73  |
| IMP     | НН  | 0.00  | 0.00  | -0.43 | 0.00  | 0.00 | 0.00  | -0.34 |
| IMG     | VV  | 0.68  | 0.32  | 0.51  | 0.40  | 0.00 | 0.44  | 0.78  |
| IMG     | НН  | 0.28  | 0.00  | -0.64 | 0.00  | 0.00 | 0.00  | -0.80 |
| IMS     | VV  | 0.00  | -0.35 | 0.48  | -0.24 | 0.00 | 0.00  | 0.65  |
| IMS     | НН  | -0.43 | -1.14 | -0.86 | -0.70 | 0.00 | -0.64 | -0.79 |
| IMM     | VV  | 1.13  | 0.64  | 0.69  | 0.57  | 0.95 | 0.00  | 0.98  |
| IMM     | НН  | 1.06  | 0.00  | 0.00  | -0.36 | 1.07 | 1.03  | 0.00  |

Table 5.1(b). ASAR ΔK (dB) for IM products

After the re-calibration activity the following XCA auxiliary files were generated and disseminated to the processing centres in order for the new K values to be included in IM and AP product headers:

- ASA XCA AXVIEC20070130 105508 20020413 000000 20030211 000000
- ASA XCA AXVIEC20070130 110635 20030211 000000 20030601 000000
- ASA XCA AXVIEC20070130 111029 20030601 000000 20030804 000000
- ASA XCA AXVIEC20070130 111245 20030804 000000 20040412 000000
- ASA XCA AXVIEC20070130 111449 20040412 000000 20050101 000000
- ASA XCA AXVIEC20070130 111710 20050101 000000 20050914 000000
- ASA XCA AXVIEC20061221 143253 20050916 195733 20071231 000000

Note that the first date & time corresponds to the generation date & time, the second corresponds the start validity date & time while the third corresponds to the end validity date & time.

The radar cross-section measurements presented in Section 6 below have been corrected for the new IM and AP calibration constants.



## 6 IMAGE QUALITY AND RADIOMETRIC ANALYSIS

The analysis of the ASAR transponders is used to characterise ASAR products in term 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)<sup>1</sup> 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 |                  | Relative RCS [dB] |       |       |       |       |       |       |  |  |  |  |
|---------|------------------|-------------------|-------|-------|-------|-------|-------|-------|--|--|--|--|
| type    | All Swaths       | IS1               | IS2   | IS3   | IS4   | IS5   | IS6   | IS7   |  |  |  |  |
| IMP     | -0.18±0.57       | -0.06             | -0.17 | -0.45 | -0.26 | -0.07 | -0.05 | -0.27 |  |  |  |  |
| IMG     | -0.12±0.59       | -0.17             | -0.18 | -0.34 | -0.27 | 0.19  | 0.08  | -0.08 |  |  |  |  |
| IMS     | -0.12±0.55       | -0.16             | -0.05 | -0.46 | -0.27 | -0.05 | 0.06  | -0.12 |  |  |  |  |
| IMM     | $-0.03 \pm 0.99$ |                   |       |       |       |       |       |       |  |  |  |  |
| APP     | -0.09±0.41       | -0.37             | -0.22 | -0.07 | -0.02 | -0.03 | 0.07  | -0.07 |  |  |  |  |
| APG     | -0.08±0.50       | -0.33             | -0.21 | 0.00  | -0.12 | -0.14 | 0.20  | -0.09 |  |  |  |  |
| APS     | -0.10±0.52       | -0.21             | -0.26 | 0.02  | -0.31 | -0.15 | 0.10  | 0.06  |  |  |  |  |
| APM     | $0.02 \pm 1.29$  |                   |       |       |       |       |       |       |  |  |  |  |
| WSM     | $0.38 \pm 1.05$  |                   |       |       |       |       |       |       |  |  |  |  |

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.

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<sup>&</sup>lt;sup>1</sup>The relative RCS is defined as the difference between the nominal RCS and the measured RCS.



| Product | Relative RCS [dB] |       |       |       |  |  |
|---------|-------------------|-------|-------|-------|--|--|
| type    | VV                | НН    | VH    | HV    |  |  |
| IMP     | -0.10             | -0.33 |       |       |  |  |
| APP     | 0.00              | -0.08 | -0.10 | -0.07 |  |  |

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. Please note that the performance for WSM products are given only for transponders reprocessed with 40m pixel spacing.

| Product<br>Type | Azimuth Res (m)        | Range Res<br>(m)  | ISLR (dB)        | PSLR (dB)         | SSLR (dB)         | No of<br>Resul<br>ts |
|-----------------|------------------------|-------------------|------------------|-------------------|-------------------|----------------------|
| IMP             | 22.13±0.50             | (figure 5.1a)     | -13.47±0.54      | -16.69±1.00       | -22.74±1.76       | 347                  |
| IMG             | 22.41±0.47             | 21.8 – 35.8       | -13.55±0.55      | -16.90±1.04       | -23.54±1.70       | 333                  |
| IMS             | 4.77±0.04<br>5.55±0.07 | 9.43±0.05         | -14.45±0.29      | -19.13±0.50       | -28.38±0.62       | 330                  |
| IMM             | $146.84 \pm 4.12$      | $133.18 \pm 6.45$ | $-7.88 \pm 4.13$ | $-15.98 \pm 2.66$ | $-17.11 \pm 4.63$ | 223                  |
| APP             | 27.61±0.79             | (figure 5.1b)     | -12.87±0.47      | -19.13±0.99       | -27.04±1.61       | 133                  |
| APG             | 27.70±0.76             | 22.6 – 36.4       | -12.94±0.49      | -19.23±0.97       | -27.70±1.30       | 132                  |
| APS             | 4.42±1.83              | 8.40±0.07         | 3.95±2.49        | -1.98±1.38        | -16.90±4.33       | 131                  |
| APM             | $145.57 \pm 4.51$      | $132.90 \pm 6.89$ | $-7.82 \pm 6.83$ | $-15.07 \pm 4.31$ | $-15.89 \pm 7.92$ | 49                   |
| WSM             | 107.24±2.26            | 122.81±10.76      | -9.06±3.92       | -18.83±1.27       | -17.35±5.69       | 56                   |

Table 6.3: ASAR IRF parameters per product type



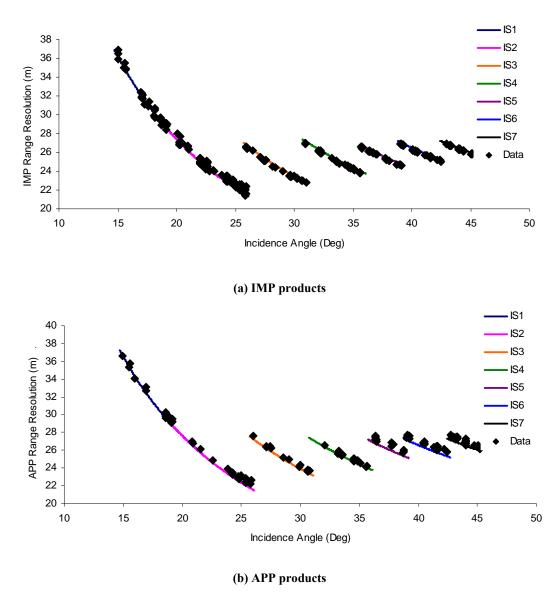
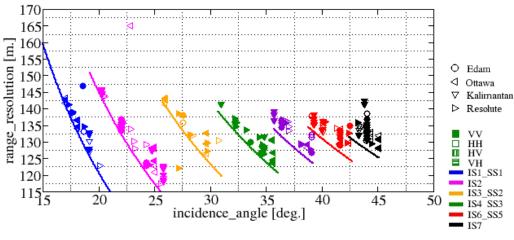
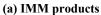
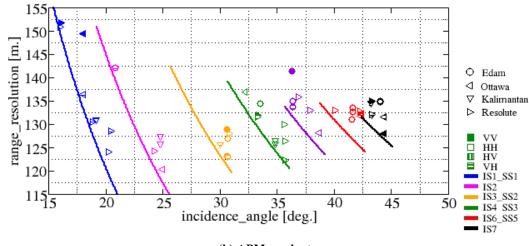


Figure 6.1: Range resolution as a function of the incidence angle for the IMP and APP products



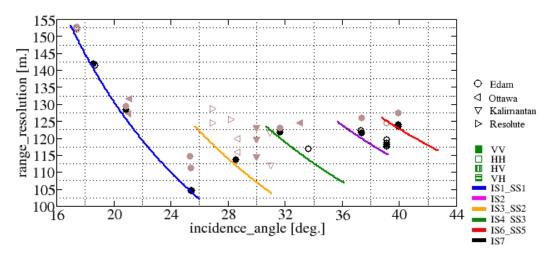






(b) APM products





(c) WSM products. Black symbols stand for the 40m pixel spacing data while brown are for 75m pixel spacing

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.

| <b>Product Type</b> | 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.

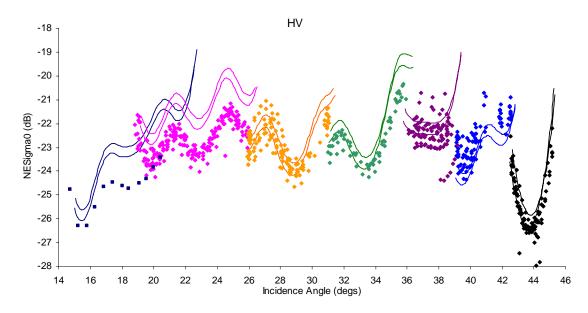


Figure 6.3(a). NESigma0 measurements for IM/AP HV polarisation.



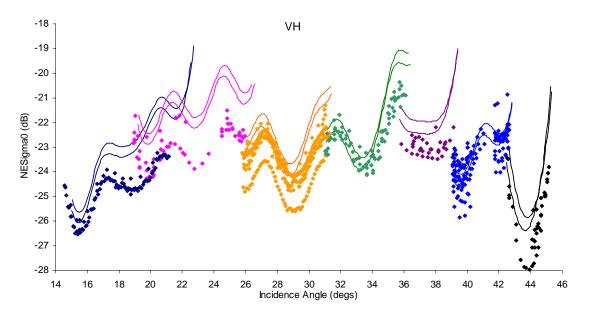


Figure 6.3(b). NESigma0 measurements for IM/AP VH polarisation.

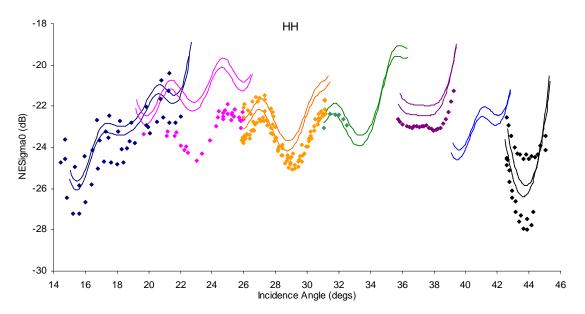


Figure 6.3(c). NESigma0 measurements for IM/AP HH polarisation.



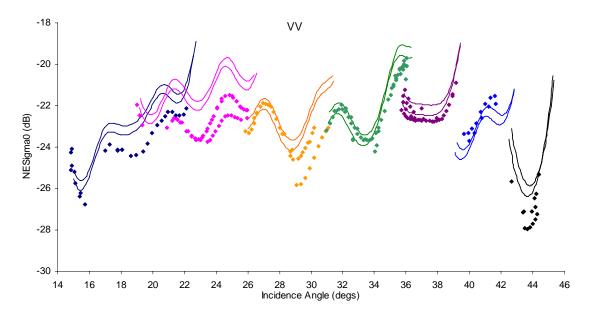


Figure 6.3(d). NESigma0 measurements for IM/AP VV polarisation.

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.

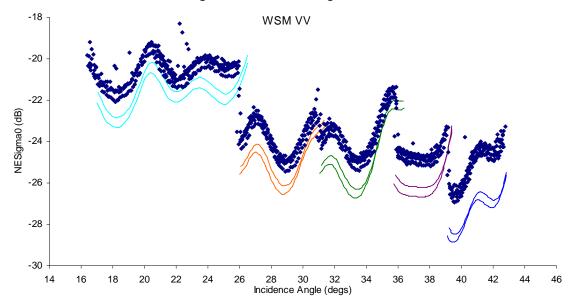


Figure 6.4(a). NESigma0 measurements for WSM VV polarisation.



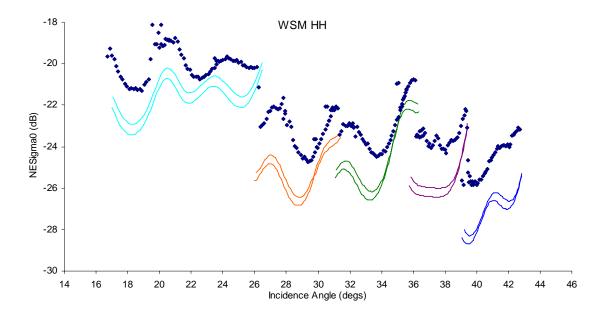


Figure 6.4(b). NESigma0 measurements for WSM HH polarisation.



### 7 ELEVATION ANTENNA PATTERN MONITORING

## 7.1 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 |            | RI         | CENT ELEV  | ATION ANTE | NNA PATTER | N UPDATES  |            |            |            |
|---------|-----|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| SS1     | НН  | 27/08/2003 |            | 06/04/2004 | 12/08/2004 |            | 13/10/2005 | 19/12/2005 | 15/02/2007 |            |
| SS1     | w   | 27/08/2003 |            | 06/04/2004 |            |            | 13/10/2005 | 19/12/2005 | 22/02/2007 |            |
| IS1     | НН  |            | 09/12/2003 |            |            |            |            |            |            | 18/12/2007 |
| IS1     | W   |            | 09/12/2003 | 06/04/2004 |            |            |            |            |            | 17/05/2007 |
| 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 |
| IS2     | W   |            | 09/12/2003 | 06/04/2004 |            |            | 03/11/2005 |            |            | 17/05/2007 |
| 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 |
| IS3_SS2 | W   | 27/08/2003 |            |            | 12/08/2004 |            | 13/10/2005 |            | 22/02/2007 | 17/05/2007 |
| 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 |
| IS4_SS3 | W   |            |            |            |            | 27/10/2004 | 13/10/2005 |            | 22/02/2007 | 17/05/2007 |
| 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 |
| IS5_SS4 | W   | 27/08/2003 |            |            |            |            | 13/10/2005 |            | 22/02/2007 | 17/05/2007 |
| 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 |
| IS6_SS5 | W   |            |            | 00.01.0001 |            |            | 13/10/2005 | 00 00 0000 | 22/02/2007 | 17/05/2007 |
| 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 |
| IS7     | VV  |            |            |            |            |            |            | 22/22/2000 | 47.07.0000 | 17/05/2007 |
| IS7     | HV  |            |            |            |            |            |            | 23/02/2006 | 17/07/2006 | 17/05/2007 |
| IS7     | VH  |            |            |            |            |            |            | 23/02/2006 | 17/07/2006 | 17/05/2007 |

## 7.2 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.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.



| Swath &      | Source          | Update time<br>(file used in<br>operations | ANTENNA PATTERNS UPDATES IN THE ASAR EXTERNAL CALIBRATIO                  |          | Applicable to data acquired between: |  |
|--------------|-----------------|--------------------------------------------|---------------------------------------------------------------------------|----------|--------------------------------------|--|
| polarization |                 | since 1 day<br>after this<br>date)         |                                                                           | Start    | Stop                                 |  |
| IS1 VV       | RF              | 20020813                                   | ASA_XCA_AXVIEC20020813_080042_20020413_000000_20021231_000000             | 20020413 | 20021231                             |  |
|              | NA <sup>1</sup> | 20021107                                   | ASA_XCA_AXVIEC20021107_144746_20020413_000000_20021231_000000             | 20020413 | 20021231                             |  |
|              | RF              | 20021122                                   | ASA_XCA_AXVIEC20021122_130838_20020413_000000_20021231_00000 <sup>2</sup> | 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                             |  |
| 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                             |  |

<sup>&</sup>lt;sup>1</sup> A corrupted IS1 VV pattern was included into the ASA\_XCA\_1P file updated of 11 Nov. 2002

 $<sup>^2</sup>$  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\_00000 is the same as in ASA\_XCA\_AXVIEC20020813\_080042\_20020413\_000000\_20021231\_000000



|        | RF | 20071218 | ASA XCA AXVIEC20071218 082742 20070204 165113 20081231 000000 | 20070204 | 20081231 |
|--------|----|----------|---------------------------------------------------------------|----------|----------|
| 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 |
|        | 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 |
| 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 |



|            |    |          |                                                               |          | l Í      |
|------------|----|----------|---------------------------------------------------------------|----------|----------|
|            | RF | 20051103 | ASA_XCA_AXVIEC20051103_160021_20050101_000000_20050914_080040 | 20050101 | 20050914 |
|            | RF | 20070517 | ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| 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 |



|            | 5.5  | • • • • • • • • • • • • • • • • • • • • |                                                               | 20040442 | • • • • • • • • • • • • • • • • • • • • |
|------------|------|-----------------------------------------|---------------------------------------------------------------|----------|-----------------------------------------|
|            | 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   | 20070222                                | ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000 | 20070204 | 20071231                                |
|            | RF   | 20070517                                | ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000 | 20070204 | 20071231                                |
| 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                                |
| 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 |
|            | RF | 20070222 | ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000 | 20070204 | 20071231 |
|            | RF | 20070517 | ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| 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 |



| I          | 1  | 1        |                                                               | 1        | 1 1      |
|------------|----|----------|---------------------------------------------------------------|----------|----------|
|            | RF | 20070215 | ASA_XCA_AXVIEC20070215_184638_20070204_165113_20071231_000000 | 20070204 | 20071231 |
|            | RF | 20070517 | ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| IS4 HV     | RF | 20021217 | ASA_XCA_AXVIEC20021217_150852_20020413_000000_20031231_000000 | 20020413 | 20031231 |
| to         | 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 |



|            |    |          |                                                               | ĺ        |          |
|------------|----|----------|---------------------------------------------------------------|----------|----------|
| 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 |
| 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 |
| _          | 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 |



|            | D.F. | 20020025 | 4.6.4. 4.7.4. 4.7.4.7.6.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0   | 20020211 | 20021221 |
|------------|------|----------|---------------------------------------------------------------|----------|----------|
|            | 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 |
| 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 |
|            | RF   | 20070215 | ASA_XCA_AXVIEC20070215_184638_20070204_165113_20071231_000000 | 20070204 | 20071231 |
|            | RF   | 20070517 | ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000 | 20070204 | 20071231 |
| 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 |
| 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 |
| 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 |



| 1      | ı  | I        |                                                               | ı        | 1 1      |
|--------|----|----------|---------------------------------------------------------------|----------|----------|
|        | 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 |
|        | 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 |
| 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 |
|        | 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 |



### 8 AUXILIARY FILES UPDATE

# 8.1 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 have been disseminated.

## **Processor configuration file (CON)**

#### **Current versions**

```
ASA_CON_AXVIEC20071218_084201_20070204_165113_20081231_000000
ASA_CON_AXVIEC20070215_183645_20050916_195733_20070204_165113
ASA_CON_AXVIEC20070202_163902_20030601_000000_20050916_195733
ASA_CON_AXVIEC20060614_160050_20021017_130000_20030601_000000
```

#### **Previous versions**

```
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)**

#### **Current versions**

```
ASA_XCA_AXXIEC20070215_184408_20050916_195733_20070204_165113
ASA_XCA_AXXIEC20070215_184408_20050916_195733_20070204_165113
ASA_XCA_AXXIEC20070130_111710_20050101_000000_20050914_000000
ASA_XCA_AXXIEC20070130_111449_20040412_000000_20050101_000000
ASA_XCA_AXXIEC20070130_111245_20030804_000000_20040412_000000
ASA_XCA_AXXIEC20070130_111029_20030601_000000_20030804_000000
ASA_XCA_AXXIEC20070130_110635_20030211_000000_20030601_000000
ASA_XCA_AXXIEC20070130_105508_20020413_000000_20030211_000000
```



#### **Previous versions**

ASA\_XCA\_AXVIEC20070517\_153558\_20070204\_165113\_20071231\_000000
ASA\_XCA\_AXXIEC20070222\_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\_20030804\_000000
ASA\_XCA\_AXVIEC20060620\_133829\_20030804\_000000\_20030211\_000000
ASA\_XCA\_AXVIEC20060620\_133829\_20030804\_000000\_20030211\_000000
ASA\_XCA\_AXVIEC20060620\_133829\_20030804\_000000\_20030211\_000000
ASA\_XCA\_AXVIEC20060620\_145317\_20020413\_000000\_20050914\_000000
ASA\_XCA\_AXVIEC20060123\_133247\_20050101\_000000\_20050914\_000000
ASA\_XCA\_AXVIEC20051013\_151933\_20040412\_000000\_20050101\_000000

## **Instrument auxiliary file (INS)**

#### **Current versions**

ASA\_INS\_AXVIEC20071218\_083603\_20070307\_060000\_20081231\_000000 ASA\_INS\_AXXIEC20070227\_105626\_20070228\_060000\_20071231\_000000 ASA\_INS\_AXXIEC20070306\_164819\_20070307\_060000\_20071231\_000000 ASA\_INS\_AXXIEC20061220\_105425\_20030211\_000000\_20071231\_000000 ASA\_INS\_AXXIEC20031209\_113259\_20021030\_110000\_20030211\_000000

#### **Previous versions**

ASA\_INS\_AXXIEC20070223\_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\_12530\_20020815\_131000\_20021017\_162400

#### External characterization file (XCH)

#### **Current version**

ASA XCH AXVIEC20051219 162547 20020301 000000 20081231 000000

#### **Previous versions**

ASA\_XCH\_AXXIEC20020308\_113032\_20020301\_000000\_20021231\_000000
ASA\_XCH\_AXXIEC20021018\_121101\_20020301\_000000\_20021231\_000000
ASA\_XCH\_AXXIEC20021030\_125700\_20020301\_000000\_20021231\_000000
ASA\_XCH\_AXXIEC20021217\_151302\_20020301\_000000\_20031231\_000000
ASA\_XCH\_AXXIEC20031209\_112947\_20020301\_000000\_20041231\_000000
ASA\_XCH\_AXXIEC20041215\_180350\_20020301\_000000\_20051231\_000000
ASA\_XCH\_AXXIEC20051219\_162547\_20020301\_000000\_20081231\_000000



These files as well as the previous versions of them can be downloaded from: http://earth.esa.int/services/auxiliary\_data/asar/.

# 8.2 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 May2003. 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

 $\checkmark$  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\_0000000 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\_00 0000 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)

### 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.



# APPENDIX A: INSTRUMENT UNVAILABILITIES 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<br>Orbit = 14004 | 03/11/2004 10:04:58<br>Orbit = 14004 |
| EN-UNA-2004/0270                | 07/11/2004 03:41:28<br>Orbit=14054   | 07/11/2004 08:00:03<br>Orbit=14060   |
| EN-UNA-2004/0276                | 12/11/2004 21:46:59<br>Orbit = 14140 | 12/11/2004 23:43:46<br>Orbit = 14141 |
| EN-UNA-2004/0281                | 16/11/2004 02:34:15<br>Orbit = 14185 | 16/11/2004 03:16:49<br>Orbit = 14186 |
| EN-UNA-2004/0290                | 21/11/2004 19:36:58<br>Orbit = 14267 | 21/11/2004 22:19:32<br>Orbit = 14269 |
| EN-UNA-2004/0299                | 29/11/2004 00:42:03<br>Orbit = 14370 | 29/11/2004 03:09:35<br>Orbit = 14372 |
| EN-UNA-2004/0307                | 05/12/2004 15:06:14<br>Orbit = 14465 | 05/12/2004 15:35:42<br>Orbit = 14465 |
| EN-UNA-2004/0309                | 09/12/2004 00:32:56<br>Orbit=14513   | 09/12/2004 00:56:03<br>Orbit=14514   |
| EN-UNA-2004/0314                | 27/12/2004 01:50:26<br>Orbit=14772   | 27/12/2004 07:10:58<br>Orbit=14775   |



|                  | 01/01/2005 20:17:59                    | 01/01/2005 22:37:38                    |
|------------------|----------------------------------------|----------------------------------------|
| EN-UNA-2005/0002 | Orbit=14854<br>07/01/2005 03:00:00     | Orbit=14856<br>07/01/2005 13:00:00     |
| EN-UNA-2005/0005 | Orbit=14936                            | Orbit=14936                            |
| EN-UNA-2005/0010 | 07/01/2005 13:00:00<br>Orbit=14936     | 07/01/2005 18:20:00<br>Orbit=14939     |
| EN-UNA-2005/0011 | 09/01/2005 06:39:29<br>Orbit=14961     | 09/01/2005 06:45:03<br>Orbit=14961     |
| EN-UNA-2005/0020 | 20/01/2005 16:49:16<br>Orbit = 15124   | 20/01/2005 17:05:23<br>Orbit = 15125   |
| EN-UNA-2005/0032 | 27/01/2005 19:59:57<br>Orbit = 15226   | 27/01/2005 22:52:29<br>Orbit = 15228   |
| EN-UNA-2005/0039 | 05/02/2005 06:12:44<br>Orbit = 15347   | 05/02/2005 09:46:32<br>Orbit = 15349   |
| EN-UNA-2005/0009 | 09/02/2005 08:38:15<br>Orbit = 15406   | 10/02/2005 00:17:26<br>Orbit = 15415   |
| EN-UNA-2005/0054 | 21/02/2005 14:07:52<br>Orbit=15581     | 21/02/2005 15:53:57<br>Orbit=15582     |
| EN-UNA-2005/0071 | 10/03/2005 10:38:15<br>Orbit = 15822   | 10/03/2005 10:49:45<br>Orbit = 15822   |
| EN-UNA-2005/0072 | 10/03/2005 20:02:46<br>Orbit = 15828   | 10/03/2005 22:00:18<br>Orbit = 15829   |
| EN-UNA-2005/0073 | 12/03/2005 15:51:15<br>Orbit = 15854   | 12/03/2005 15:56:28<br>Orbit = 15854   |
| EN-UNA-2005/0078 | 17 Mar 2005 01:00:00<br>Orbit = 15917  | 17 Mar 2005 13:00:00<br>Orbit = 15924  |
| EN-UNA-2005/0093 | 22/03/2005 09:03:10<br>Orbit = 15993   | 22/03/2005 09:09:10<br>Orbit = 15993   |
| EN-UNA-2005/0103 | 02/04/2005 02:48:28<br>Orbit = 16147   | 02/04/2005 06:35:25<br>Orbit = 16149   |
| EN-UNA-2005/0109 | 06/04/2005 02:53:21<br>Orbit = 16204   | 06/04/2005 06:10:08<br>Orbit = 16206   |
| EN-UNA-2005/0113 | 13 /04/ 2005 20:21:40<br>Orbit = 16315 | 13 /04/ 2005 20:21:40<br>Orbit = 16315 |
| EN-UNA-2005/0125 | 21/04/2005 04:17:47<br>Orbit = 16419   | 21/04/2005 04:17:47<br>Orbit = 16419   |
| EN-UNA-2005/0149 | 12 /05/ 2005 10:50:00<br>Orbit = 16724 | 12 /05/ 2005 10:50:00<br>Orbit = 16724 |



|                               | 18/05/2005 01:49:01   | 18/05/2005 01:49:01   |
|-------------------------------|-----------------------|-----------------------|
| EN-UNA-2005/0159              | Orbit = $16804$       | Orbit = $16804$       |
| EIV 6101 2003/013)            | 18 /05/ 2005 13:57:30 | 18 /05/ 2005 13:57:30 |
| EN-UNA-2005/0161              | Orbit = 16812         | Orbit = $16812$       |
| EIV 6101 2003/0101            | 20/05/2005 12:09:50   | 20/05 2005 12:09:50   |
| EN-UNA-2005/0164              | Orbit = $16839$       | Orbit = $16839$       |
| LIV-01VI-2003/0104            | 01/06/2005 16:44:17   | 01/06/2005 16:51:19   |
| EN-UNA-2005/0182              | Orbit = 17014         | Orbit = $17014$       |
| EN-UNA-2005/0188              | 06/06/2005 08:11:25   | 06/06/2005 09:42:14   |
| LIV-01VII-2003/0100           | Orbit = $17080$       | Orbit = $17081$       |
| EN-UNA-2005/0190              | 11/06/2005 03:19:14   | 11/06/2005 06:35:30   |
| LIV-01VII-2003/0170           | Orbit = 17149         | Orbit = 17151         |
| EN-UNA-2005/0212              | 01/07/2005 13:54:40   | 01/07/2005 16:14:21   |
| LIN-01NA-2003/0212            | Orbit = 17442         | Orbit = $17443$       |
| EN-UNA-2005/0216              | 04/07/2005 02:55:43   | 04/07/2005 06:13:02   |
| LIN-01NA-2003/0210            | Orbit = $17478$       | Orbit = $17480$       |
| EN-UNA-2005/0223              | 5/07/2005 17:16:39    | 5/07/2005 17:27:11    |
| EIN-UINA-2003/0223            | Orbit = 17501         | Orbit = $17501$       |
| EN-UNA-2005/0231              | 10/07/2005 11:15:25   | 10/07/2005 11:22:12   |
| LIV-01VI -2003/0231           | Orbit = 17569         | Orbit = $17569$       |
| EN-UNA-2005/0239              | 16/07/2005 21:03:12   | 16/07/2005 21:09:19   |
| E11-01111-2003/0237           | Orbit = 17661         | Orbit = $17661$       |
| EN-UNA-2005/0258              | 24/07/2005 07:22:41   | 24/07/2005 07:31:40   |
| 21 ( 31 (11 2 0 0 0 ) 0 2 0 0 | Orbit = 17767         | Orbit = $17767$       |
| EN-UNA-2005/0269              | 03/08/2005 22:01:30   | 03/10/2005 22:08:56   |
|                               | Orbit = 17919         | Orbit = 17919         |
| EN-UNA-2005/0285              | 15/08/2005 03:41:02   | 15/08/2005 07:33:52   |
|                               | Orbit = $18080$       | Orbit = $18082$       |
| EN-UNA-2005/0305              | 22/08/2005 01:25:33   | 22/08/2005 08:50:14   |
|                               | Orbit = 18178         | Orbit = 18183         |
| EN-UNA-2005/0325              | 24/08/2005 07:50:16   | 24/08/2005 07:55:55   |
|                               | Orbit = 18211         | Orbit = 18211         |
| EN-UNA-2005/0350              | 31/08/2005 04:11:27   | 31/08/2005 07:37:21   |
|                               | Orbit = $18309$       | Orbit = 18309         |
| EN-UNA-2005/0357              | 06/09/2005 21:02:54   | 06/09/2005 21:33:29   |
|                               | Orbit = 18405         | Orbit = 18405         |
| EN-UNA-2005/0355              | 07/09/2005 04:20:00   | 07/09/2005 13:40:00   |
|                               | Orbit = 18409         | Orbit = 18415         |
| EN-UNA-2005/0365              | 14/09/2005 07:51:31   | 14/09/2005 12:53:26   |
|                               | Orbit = 18511         | Orbit = 18514         |
| EN-UNA-2005/0440              | 21/10/2005 09:22:00   | 21/10/2005 09:34.58   |
|                               | Orbit = $19042$       | Orbit = $19042$       |



| EN-UNA-2005/0441       | 23/10/2005 14:46:45      | 23/10/2005 14:46:55      |
|------------------------|--------------------------|--------------------------|
| EIN-UINA-2003/0441     | Orbit = 19074            | Orbit = 19074            |
| EN-UNA-2005/0465       | 20/11/2005 23:20:25      | 20/11/2005 23:28:50      |
| EN-UNA-2003/0403       |                          |                          |
| EN IDIA 2005/0472      | Orbit = 19480            | Orbit = 19480            |
| EN-UNA-2005/0473       | 11/12/2005 14:04:37.000  | 11/12/2005 14:14:52.000  |
| ENLINIA 2005/0455      | Orbit = 19775            | Orbit = 19775            |
| EN-UNA-2005/0477       | 18/12/2005 03:45:26.000  | 18/12/2005 07:11:19.000  |
|                        | Orbit = 19869            | Orbit = 19871            |
| EN-UNA-2006/0009       | 9 Jan 2006 07:22:23.000  | 9 Jan 2006 09:05:12.000  |
|                        | Orbit = 20186            | Orbit = 20187            |
| EN-UNA-2006/0022       | 25 Jan 2006 20:24:55.000 | 25 Jan 2006 20:31:34.000 |
|                        | Orbit = 20423            | Orbit 20423              |
| EN-UNA-2006/0038       | 07/02/2006 01:34:22.000  | 07/02/2006 05:19:30.000  |
|                        | Orbit = 20598            | Orbit = 20600            |
| EN-UNA-2006/0052       | 17/02/2006 02:45:18.000  | 17/02/2006 06:41:47.000  |
|                        | Orbit = 20741            | Orbit = 20744            |
| EN-UNA-2006/0060       | 19/02/2006 15:08:07.273  | 19/02/2006 15:10:44.706  |
|                        | Orbit = 20777            | Orbit = 20778            |
| EN-UNA-2006/0069       | 22/02/2006 11:00:16.000  | 22/02/2006 11:21:32.000  |
|                        | Orbit = 20818            | Orbit = 20818            |
| EN-UNA-2006/0073       | 24/02/2006 02:19:08.441  | 24/02/2006 02:23:14.554  |
|                        | Orbit = 20841            | Orbit = 20841            |
| EN-UNA-2006/0084       | 28/02/2006 07:39:56.000  | 28/02/2006 07:49:38.000  |
|                        | Orbit = $20902$          | Orbit = $20902$          |
| EN-UNA-2006/0102       | 20/03/2006 07:03:30.000  | 20/03/2006 07:20:49.559  |
|                        | Orbit = $21188$          | Orbit = 21188            |
| EN-UNA-2006/0108       | 28/03/2006 00:39:22.000  | 28/03/2006 13:13:20.000  |
|                        | Orbit = $21298$          | Orbit = 21306            |
| EN-UNA-2006/0120       | 06/04/2006 02:09:26.446  | 10/04/2006 17:23:03.000  |
|                        | Orbit = $21428$          | Orbit = 21495            |
| EN-UNA-2006/0122       | 12/04/2006 20:14:00.000  | 12/04/2006 20:19:54.776  |
|                        | Orbit = $21525$          | Orbit = 21525            |
| EN-UNA-2006/0130       | 19/04/2006 08:18:12.000  | 19/04/2006 12:00:36.000  |
| 21, 01,11, 2000, 012,0 | Orbit = 21618            | Orbit = 21620            |
| EN-UNA-2006/0136       | 24/04/2006 07:09:20.000  | 24/04/2006 07:16:59.000  |
| EIV 61VII 2000/0130    | Orbit = 21525            | Orbit = 21689            |
| EN-UNA-2006/0140       | 25/04/2006 14:55:00.000  | 25/04/2006 15:02:48.000  |
| 1211-01111-2000/0140   | Orbit = 21708            | Orbit = 21708            |
| EN-UNA-2006/0143       | 30/04/2006 13:55:00.000  | 30/04/2006 14:04:03.000  |
| L11-011/A-2000/0143    | Orbit = 21779            | Orbit = 21779            |
| EN LINA 2006/0151      |                          |                          |
| EN-UNA-2006/0151       | 10/05/2006 19:59:10.000  | 10/05/2006 20:01:38.000  |
|                        | Orbit = 21926            | Orbit = 21926            |



|                                         | 44/07/2006 05 55 55 55 55 | 44/07/2007 05 11 20 20 2 |
|-----------------------------------------|---------------------------|--------------------------|
| EN-UNA-2006/0155                        | 11/05/2006 06:33:32.000   | 11/05/2006 06:41:29.000  |
| 777 777 C C C C C C C C C C C C C C C C | Orbit = 21932             | Orbit = 21932            |
| EN-UNA-2006/0167                        | 22/05/2006 11:04:00.000   | 22/05/2006 11:23:16.000  |
|                                         | Orbit = 22092             | Orbit = 22092            |
| EN-UNA-2006/0171                        | 25/05/2006 07:39:00.000   | 25/05/2006 07:45:47.000  |
|                                         | Orbit = 22133             | Orbit = 22133            |
| EN-UNA-2006/0185                        | 03/06/2006 22:31:12.000   | 04/06/2006 00:37:03.000  |
|                                         | Orbit = 22271             | Orbit = 22272            |
| EN-UNA-2006/0186                        | 04/06/2006 20:07:16.000   | 04/06/2006 22:58:54.000  |
|                                         | Orbit = 22283             | Orbit = 22285            |
| EN-UNA-2006/0188                        | 10/06/2006 20:17:47.000   | 10/06/2006 22:35:24.000  |
|                                         | Orbit = 22369             | Orbit = 22371            |
| EN-UNA-2006/0190                        | 13/06/2006 07:14:05.000   | 13/06/2006 07:18:46.000  |
|                                         | Orbit = 22405             | Orbit = 22405            |
| EN-UNA-2006/0200                        | 22/06/2006 17:42:40.000   | 22/06/2006 17:49:40.000  |
|                                         | Orbit = 22540             | Orbit = 22540            |
| EN-UNA-2006/0204                        | 24/06/2006 07:17:00.000   | 24/06/2006 07:23:52.000  |
|                                         | Orbit = 22562             | Orbit = 22562            |
| EN-UNA-2006/0212                        | 01/07/2006 08:09:30.000   | 01/07/2006 08:16:10.000  |
|                                         | Orbit = 22663             | Orbit = 22663            |
| EN-UNA-2006/0230                        | 26/07/2006 13:28:00.000   | 26/07/2006 13:41:43.000  |
|                                         | Orbit = $23024$           | Orbit = 23024            |
| EN-UNA-2006/0235                        | 2/8/2006 13:30:01.335     | 2/08/2006 13:33:09.238   |
|                                         | Orbit = 23124             | Orbit = 23124            |
| EN-UNA-2006/0237                        | 4/8/2006 10:21:22.000     | 4/8/2006 10:30:10.000    |
|                                         | Orbit = 23151             | Orbit = 23151            |
| EN-UNA-2006/0240                        | 8/8/2006 08:19:23.000     | 8/8/2006 08:28:56.000    |
|                                         | Orbit = 23207             | Orbit = 23207            |
| EN-UNA-2006/0248                        | 14/8/2006 15:20:59.000    | 14/8/2006 15:24:38.000   |
|                                         | Orbit = 23297             | Orbit = 23297            |
| EN-UNA-2006/0254                        | 21/8/2006 14:47:52.107    | 21/8/2006 14:55:47.108   |
|                                         | Orbit = 23397             | Orbit = $23397$          |
| EN-UNA-2006/0257                        | 24/8/2006 16:40:50.000    | 24/8/2006 16:47:19.000   |
|                                         | Orbit = $23441$           | Orbit = 23441            |
| EN-UNA-2006/0261                        | 29/8/2006 09:12:28.052    | 29/8/2006 12:35:07.052   |
|                                         | Orbit = $23508$           | Orbit = $23508$          |
| EN-UNA-2006/0263                        | 03/09/2006 06:20:00.000   | 03/09/2006 06:28:16.000  |
|                                         | Orbit = $23578$           | Orbit = 23578            |
| EN-UNA-2006/0266                        | 03/09/2006 17:59:17.000   | 03/09/2006 18:07:40.000  |
|                                         | Orbit = $23585$           | Orbit = 23585            |
| EN-UNA-2006/0280                        | 16/09/2006 14:12:15.000   | 16/09/200616:21:03.000   |
| . 21.11 2000, 0200                      | Orbit = $23769$           | Orbit = 23770            |
| EN-UNA-2006/0290                        | 23/09/2006 13:53:10.877   | 23/09/2006 16:00:55.216  |
|                                         |                           |                          |



|                     | Orbit = 23869           | Orbit = 23870           |
|---------------------|-------------------------|-------------------------|
| EN-UNA-2006/0298    | 1/10/2006 14:43:21.000  | 1/10/2006 16:41:12.000  |
| EN-UNA-2000/0298    | Orbit = 23984           | Orbit = 23985           |
| EN-UNA-2006/0299    | 2/10/2006 14:10:16.000  | 2/10/2006 14:33:51.000  |
| EIN-UINA-2000/0299  | Orbit = 23998           | Orbit = 23998           |
| EN-UNA-2006/0300    | 3/10/2006 13:38:04.000  | 3/10/2006 13:57:04.000  |
| EN-UNA-2000/0300    | Orbit = 24012           | Orbit = 24012           |
| EN-UNA-2006/0303    | 6/10/2006 10:57:34.000  | 6/10/2006 11:15:30.000  |
| EN-UNA-2000/0303    | Orbit = 24053           | Orbit = 24053           |
| EN-UNA-2006/0307    | 14/10/2006 13:38:33.000 | 14/10/2006 13:38:52.000 |
| EN-UNA-2000/0307    | Orbit = 24169           | Orbit = 24169           |
| EN-UNA-2006/0314    | 17/10/2006 19:53:41.000 | 17/10/2006 20:00:54.000 |
| EN-UNA-2000/0314    | Orbit = 24216           | Orbit = 24216           |
| EN-UNA-2006/0316    | 18/10/2006 14:07:37.000 | 18/10/2006 16:15:23.000 |
| L11-011/A-2000/0310 | Orbit = 24227           | Orbit = 24228           |
| EN-UNA-2006/0322    | 24/102006 09:35:01.000  | 24/10/2006 09:42:25.000 |
| 211 0111 2000/0322  | Orbit = 24310           | Orbit = $24310$         |
| EN-UNA-2006/0333    | 02/11/2006 14:30:52.000 | 02/11/2006 16:48:39.000 |
| E11 0111 2000/0333  | Orbit = $24442$         | Orbit = 24443           |
| EN-UNA-2006/0338    | 08/11/2006 14:50:09.000 | 08/11/2006 16:51:03.000 |
| 211 0111 2000/0330  | Orbit = $24528$         | Orbit = 24529           |
| EN-UNA-2006/0342    | 15/11/2006 16:10:05.724 | 15/11/2006 18:05:13.248 |
| 211 0111 2000/03 12 | Orbit = $24629$         | Orbit = 24630           |
| EN-UNA-2006/0343    | 20/11/2006 13:30:36.000 | 20/11/2006 14:04:27.000 |
|                     | Orbit = $24699$         | Orbit = $24699$         |
| EN-UNA-2006/0345    | 22/11/2006 06:56:58.000 | 22/11/2006 07:27:33.000 |
|                     | Orbit = $24723$         | Orbit = $24724$         |
| EN-UNA-2006/0350    | 24/11/2006 14:49:34.000 | 24/11/2006 15:09:01.000 |
|                     | Orbit = 24757           | Orbit = $24757$         |
| EN-UNA-2006/0357    | 28/11/2006 07:58:29.000 | 30/11/2006 13:29:00.000 |
|                     | Orbit = $24810$         | Orbit = $24842$         |
| EN-UNA-2006/0360    | 01/12/2006 12:44:47.000 | 01/12/2006 13:16:28.000 |
|                     | Orbit = 24856           | Orbit = 24856           |
| EN-UNA-2006/0362    | 02/12/2006 01:46:48.000 | 02/12/2006 07:38:30.000 |
|                     | Orbit = $24863$         | Orbit = 24867           |
| EN-UNA-2006/0364    | 04/12/2006 12:50:04.000 | 04/12/2006 13:24:50.000 |
|                     | Orbit = 24899           | Orbit = 24899           |
| EN-UNA-2006/0369    | 12/12/2006 14:24:33.000 | 12/12/2006 14:32:26.000 |
|                     | Orbit = 25014           | Orbit = 25014           |
| EN-UNA-2006/0372    | 12/12/2006 18:02:17.000 | 16/12/2006 02:58:44.000 |
|                     | Orbit = 25016           | Orbit = 25065           |
| EN-UNA-2006/0378    | 24/12/2006 11:07:30.000 | 24/12/2006 11:14:05.000 |
|                     | Orbit = 25184           | Orbit = 25184           |



| EN-UNA-2006/0383    | 27/12/2006 14:15:30.000 | 27/12/2006 17:39:31.000 |
|---------------------|-------------------------|-------------------------|
| EN-ONA-2000/0303    | Orbit = 25229           | Orbit = $25231$         |
| EN-UNA-2007/0003    | 03/01/2007 09:08:30.000 | 03/01/2007 09:14:26.000 |
| LIN-01NA-2007/0003  | Orbit = $25326$         | Orbit = 25326           |
| EN-UNA-2007/0007    | 06/01/2007 02:40:22.000 | 06/01/2007 04:15:17.000 |
| EN-UNA-2007/0007    | Orbit = $25365$         | Orbit = 25366           |
| EN-UNA-2007/0015    | 22/01/2007 23:29:00.000 | 23/01/2007 12:14:00.000 |
| EN-UNA-2007/0013    | Orbit = 25606           | Orbit = 25614           |
| EN-UNA-2007/0029    | 02/02/2007 03:29:56.000 | 02/02/2007 20:06:32.000 |
| EIN-OINA-2007/0029  | Orbit = $25752$         | Orbit = $25762$         |
| EN-UNA-2007/0029    | 02/02/2007 20:41:46.000 | 04/02/2007 16:51:13.000 |
| EIN-OINA-2007/0029  | Orbit = $25762$         | Orbit = $25789$         |
| EN-UNA-2007/0038    | 09/02/2007 16:07:58.000 | 09/02/2007 16:36:05.000 |
| EN-UNA-2007/0036    | Orbit = $25860$         | Orbit = $25860$         |
| EN-UNA-2007/0039    | 10/02/2007 20:17:43.000 | 10/02/2007 21:31:10.000 |
| EN-UNA-2007/0039    | Orbit = $25876$         | Orbit = 25877           |
| EN-UNA-2007/0041    | 12/02/2007 00:47:33.000 | 12/02/2007 04:52:37.000 |
| EN-ONA-2007/0041    | Orbit = 25893           | Orbit = 25896           |
| EN-UNA-2007/0053    | 03/03/2007 11:31:22.000 | 03/03/2007 12:05:49.000 |
| LIN-01NA-2007/0033  | Orbit = $26172$         | Orbit = $26172$         |
| EN-UNA-2007/0054    | 03/03/2007 14:28:29.000 | 03/03/2007 14:59:00.000 |
| LIV-01V/1-2007/0054 | Orbit = $26174$         | Orbit = $26174$         |
| EN-UNA-2007/0055    | 04/03/2007 13:07:07.000 | 04/03/2007 14:25:55.000 |
| 2007/0022           | Orbit = $26187$         | Orbit = 26188           |
| EN-UNA-2007/0059    | 05/03/2007 16:51:22.000 | 05/03/2007 17:16:25.000 |
| 2007,0009           | Orbit = $26204$         | Orbit = 26204           |
| EN-UNA-2007/0064    | 15/03/2007 06:58:21.000 | 15/03/2007 07:05:53.000 |
|                     | Orbit = $26341$         | Orbit = 26341           |
| EN-UNA-2007/0070    | 17/03/2007 10:51:59.000 | 17/03/2007 11:00:38.000 |
|                     | Orbit = $26372$         | Orbit = $26372$         |
| EN-UNA-2007/0078    | 23/03/2007 02:48:45.000 | 23/03/2007 07:43:17.000 |
|                     | Orbit = 26453           | Orbit = 26456           |
| EN-UNA-2007/0090    | 31/03/2007 21:39:01.000 | 01/04/2007 01:39:09.000 |
|                     | Orbit = 26579           | Orbit = $26581$         |
| ENLINIA 2005/0000   | 02/04/2007 23:50:12.000 | 03/04/2007 07:08:35.000 |
| EN-UNA-2007/0088    | Orbit = $26609$         | Orbit = 26613           |
| ENLINIA 2007/0102   | 15/04/2007 09:16:02.000 | 15/04/2007 09:33:26.000 |
| EN-UNA-2007/0102    | Orbit = $26786$         | Orbit = 26786           |
| ENLINIA 0007/0110   | 23/04/2007 01:05:10.000 | 23/04/2007 04:54:28.000 |
| EN-UNA-2007/0112    | Orbit = $26896$         | Orbit = 26898           |
| ENLINIA 2007/0122   | 11/05/2007 06:19:33.000 | 11/05/2007 06:41:03.000 |
| EN-UNA-2007/0122    | Orbit = $27156$         | Orbit = $27157$         |
| 1                   | 01011 - 27130           | O1011 - 2/13/           |



|                    | T                        |                          |
|--------------------|--------------------------|--------------------------|
|                    | Orbit = 27297            | Orbit = 27299            |
| EN-UNA-2007/0134   | 27/05/2007 00:57:47.000  | 27/05/2007 01:01:20.000  |
|                    | Orbit = 27382            | Orbit = 27382            |
| EN-UNA-2007/0136   | 27/05/2007 07:13:18.000  | 27/05/2007 13:55:30.000  |
|                    | Orbit = 27386            | Orbit = 27390            |
| EN-UNA-2007/0165   | 27 Jun 2007 12:30:00.000 | 27 Jun 2007 12:43:09.000 |
| EIN-UINA-2007/0103 | Orbit = 27833            | Orbit = 27833            |
| EN-UNA-2007/0176   | 10 Jul 2007 16:55:13.000 | 10 Jul 2007 17:29:05.000 |
| EIN-UINA-2007/0170 | Orbit = 28022            | Orbit = 28022            |
| EN-UNA-2007/0178   | 16 Jul 2007 22:04:59.000 | 17 Jul 2007 07:10:43.000 |
| EN-UNA-200//01/8   | Orbit = 28111            | Orbit = 28116            |
| EN-UNA-2007/0187   | 22 Jul 2007 21:05:00.000 | 22 Jul 2007 21:36:04.000 |
| EIN-UINA-200//018/ | Orbit = 28196            | Orbit = 28196            |
| EN-UNA-2007/0219   | 24 Sep 2007 21:44:16.000 | 25 Sep 2007 18:23:08.000 |
| EN-UNA-2007/0219   | Orbit = 29112            | Orbit = 29125            |
| EN-UNA-2007/0223   | 24 Sep 2007 12:27:00.000 | 27 Sep 2007 18:43:58.000 |
| EIN-UINA-2007/0223 | Orbit = 29107            | Orbit = 29153            |
| EN-UNA-2007/0225   | 29 Sep 2007 13:30:25.000 | 29 Sep 2007 16:45:43.000 |
| EIN-UINA-2007/0223 | Orbit = 29179            | Orbit = 29181            |
| EN-UNA-2007/0243   | 31 Oct 2007 05:47:44.000 | 31 Oct 2007 06:00:00.000 |
| EN-UNA-2007/0243   | Orbit = 29632            | Orbit = 29633            |
| EN-UNA-2007/0254   | 30 Nov 2007 5:13:30.890  | 30 Nov 2007 17:32:51.718 |
| EIN-UINA-2007/0234 | Orbit = 30068            | Orbit = 30069            |
| EN-UNA-2007/0257   | 1 Dec 2007 19:08:03.275  | 1 Dec 2007 22:20:26.017  |
| EN-UNA-2007/0237   | Orbit = $30084$          | Orbit = 30086            |
| EN-UNA-2007/0261   | 3 Dec 2007 21:42:20.000  | 4 Dec 2007 18:12:14.000  |
| EIN-UINA-2007/0201 | Orbit = 30114            | Orbit = $30127$          |
| EN-UNA-2007/0270   | 9 Dec 2007 07:52:41.000  | 9 Dec 2007 11:32:07.149  |
| EIN-UINA-2007/0270 | Orbit = $30192$          | Orbit = $30194$          |
| EN-UNA-2007/0266   | 11 Dec 2007              | 11 Dec 2007 11:36:13.000 |
|                    | 08:06:00.000             | Orbit = 30223            |
|                    | Orbit = $30221$          | 01011 - 30223            |
|                    | 13 Dec 2007              | 13 Dec 2007 15:04:39.000 |
| EN-UNA-2007/0278   | 06:22:00.000             | Orbit = 30254            |
|                    | Orbit = $30248$          | 01011 - 30234            |



# 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 <a href="http://earth.esa.int/pcs/envisat/asar/disclaimer/">http://earth.esa.int/pcs/envisat/asar/disclaimer/</a>.

• 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 22<sub>nd</sub> 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.

#### <u>Problem description:</u>

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.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 acquistion 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:



#### • 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

### <u>Problem Description:</u>

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:



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

Warning: Deagraded 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-posteriory' 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:



• 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:



• 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 07:35:40to 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:



• 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: