Readme file for

SCIAMACHY Level 1b version 7.04 products

Field	*Contents*
Document Title	Read me file for SCIAMACHY Level 1b version 7.04 products
Reference	ENVI-GSOP-EOGD-QD-12-0114, Issue 1.2 Date 10/05/2012
Affected data sets	This readme file applies to the SCIAMACHY Level 1b Near-Real-Time and Off-Line products (SCI_NL__1P) generated with IPF 7.04.
Abstract	Major fields of improvement in version 7.04 compared to version 7.03, and details on the Level 1b data set from the full mission reprocessing campaign version 7.04-W
Product Specification References	• Input/Output Format (IODD): Balzer W. 2009. ENVISAT-1 SCIAMACHY Level 0 to 1b Processing, ENV-TN-DLR-SCIA-0005. • Algorithm Description (ATBD): Slijkhuis, S. ENVISAT-1 SCIAMACHY Level 0 to 1c Processing, ENV-ATB-DLR-SCIA-0041, Issue 5, 08.05.2008. • Product Specification: PO-RS-MDA-GS-2009, Volume 15, Issue 3L .
Filled by	SPPA Engineer
Change log	This document shall be amended by releasing a new edition of the document in its entirety. The Table below records the history and issue status of this document. <table><tr><th>Issue</th><th>Date</th><th>Change</th></tr><tr><td>1.0</td><td>04/10/2011</td><td>First release</td></tr><tr><td>1.1</td><td>08/02/2012</td><td>Overall revision Added - Paragraph "Data Reprocessing with version 7.04-W" - Paragraph "Restituted Attitude and Orbit Files" - Paragraph "Calibration concept"</td></tr><tr><td>1.2</td><td>10/05/2012</td><td>Fixed links for Anomaly web page in Paragraph "Restituted Attitude and Orbit Files"</td></tr></table>

Description	

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The major changes of the new Level 1b version 7.04 products compared to its predecessors of version 7.03 are reported in the table below.

Item	Improvement	Affected channel
CFI software	Replacement of CFI version 5.6 with version 5.8.1	n.a.

The latest SCIAMACHY Level 1b consolidated data set - generated with IPF version 7.04 and upgraded processing stage flag "W" (replacing the previous flag "U") - adopted improved auxiliary files to fix incorrect calibration information enclosed in the previous Level 1b data (version 7.03-U). For the resulting overall improvement in the data quality, users are recommended to use the new reprocessed SCIAMACHY Level 1b products (7.04-W).

IPF 7.04 Level 1 processor

A new SCIAMACHY processor (IPF 7.04) was developed in order to meet the requirements for the ENVISAT 2010+ mission extension project aimed to extend the ENVISAT mission beyond its nominal lifetime of five years.

Since 22 October 2010, the ENVISAT satellite has been placed in a new orbit, 17.4 km lower than the original one. With the modified scenario, a new mission phase has started with operations planned up to end of 2013. More details are available at http://earth.esa.int/object/index.cfm?fobjectid=7223

The SCIAMACHY processor was changed to be compliant with the new orbit scenario. No evolution aspects in the algorithm for the Level 0 to 1b data processing were included into IPF 7.04, but the CFI library implemented in prior IPF 7.03 (i.e. CFI 5.6) was replaced with new CFI routines version 5.8.1 (Linux 32 bit) capable to handle measurements for both the old and the new satellite's orbit. As established during validation, CFI 5.8.1 has no influence on data processing performance, and no impact on the generated SCIAMACHY Level 1b products was detected.

IPF 7.04 is used for the operational processing of near-real-time and off-line SCIAMACHY Level 1b data since June 2010. No format change has been introduced in the Level 1b product version 7.04.

Level 1b products generated from 02 November 2010 onwards for the ENVISAT mission extension orbit scenario report in the mission phase MPH ASCII field value 3 instead of previous value 2.

IPF	Processing Centre	Activation	
		Date	Start Orbit
7.04	PDHS-E	15 June 2010	43355
	PDHS-K	15 June 2010	43347
	D-PAC	17 June 2010	43375

Data Reprocessing with version 7.04-W

Data reprocessing is fundamental to improve the quality of the existing data sets and generate coherent long term series of geophysical parameters to be used for atmospheric applications, such as climate studies and trend analysis.

During 2010, the complete SCIAMACHY Level 1b data set was reprocessed with IPF version 7.03 - processing flag "U" - and provided to the user community. In May 2011, significant shortcomings in the Level 1b data were identified: not up-to-date auxiliary information was integrated into SCIAMACHY Level 1b GADS. In order to provide correct calibrations and assure the best possible data for the subsequent Level 2 reprocessing, a new reprocessing campaign was performed, using the latest IPF version 7.04 and an improved set of auxiliary files.

The last SCIAMACHY Level 0-1b reprocessing campaign was completed in November 2011 using IPF version 7.04. All the resulting Level 1b consolidated present the upgraded processing stage flag "W" (replacing the previous flag "U").

The Level 1b reprocessing activity covered orbits from 02 August 2002 (orbit 2204) to the activation of the off-line forward processing with IPF 7.04 and processing stage flag "W" on 21 September 2011 (orbit 49999). The new SCIAMACHY reprocessed Level 1b data set has been merged with the operational consolidated Level 1b forwards data production started with IPF 7.04-W from orbit 50000.

Users are recommended to use the new reprocessed SCIAMACHY Level 1b (SCI_NL__1PW) products as they adopt improved auxiliary files which fix incorrect calibration information affecting the previous Level 1b data set (version 7.03-U) with a resulting overall improvement of the data quality for the complete mission. The latest SCIAMACHY Level 1b consolidated data are identified via the following flags reported in the MPH and in the product filename.

MPH Field	Value
Processing stage flag	W
Software version	SCIA/7.04

An overview of the status of the SCIAMACHY consolidated Level 1b data set version 7.04-W hosted on the D-PAC FTP server is provided at http://earth.eo.esa.int/pcs/envisat/sciamachy/full_mission_dataset/

Access to SCIAMACHY products can be provided to existing ESA Proposals and/or Registrations by contacting EO Helpdesk, or through a new user Registration on the ESA EOPI Portal.

Calibration options

Spectral Stray Light

The spectral stray light was for channels 2-8 initially described by means of focused ghosts and a uniform stray light component per channel. Fit residuals for ozone retrieval in channel 2 pointed towards residual stray light effects, clearest in the deep absorption lines and channel overlap region. As of version 7, the spectral stray light for channel 2 is now described as the sum of ghosts and non-uniform stray light in the form of a matrix.

Memory Effect

The memory effect correction is an additive correction, which is applicable to data from channel 1 to 5, only. Physically, the actual readout of a detector pixel depends on its previous readout (memory). The amount of "memory" depends on the filling (i.e. the observed scene intensity).

Due to an improved parameterization, former uncertainties for high dynamic range ground scenes could be removed. It is now accurate to ± 5 binary units [B.U.]. However, three situations remain, for which the memory effect can only be estimated:

- Memory effect of First readout in a state
- Memory effect for the first Limb readout at a new tangent height
- Memory effect for co-added data

In these conditions the correction is principally less accurate, because it depends on the previous readout, which is unknown in these cases; an associated error cannot be specified. . There is a known error in the calculation of the memory effect for the first readout at a new tangent height in limb states. Due to this error there is a systematic offset at every other tangent height for limb profiles at the edges of the scan, which becomes non-negligible at tangent heights above 40 km. Users of data above this height (e.g. for normalization) should consider not to apply the memory effect correction.

Non Linearity Effect

This effect, which is a pure infrared detector effect and which therefore only effects channel 6 to 8, is now considered for the first time in operational data products. Being an additive correction, it is very sensible to further Level 2 processing steps, which it helps to largely improve.

Dynamic Bad & Dead Pixel Mask

Due to the manufacturing of the IR detectors, individual pixels in the detector do not response or show an abnormal behavior (e.g. high noise or random change of the dark signal). During on-ground calibration tests were made to identify those pixels. The result was put into a mask (DBPM) that shows for all pixels if they are usable (value 0) or if they are not (value 1).

After launch it was discovered that the IR detectors (especially channels 6+ to 8) are degrading with time, i.e. the number of abnormal pixels increases. The reason is

most likely fast protons hitting the detector, when ENVISAT passes through the SAA. In the new version of the processor a dynamic bad pixel mask is included to account for the additional degradation. Note that the mask is still regarded as experimental and the retrieved products should be carefully inspected. Future versions of the processor will contain an improved mask.

Dark Signal Correction

For channels 1 to 5, no problems are known with the provided dark signal correction (note, however, the spatial stray light mentioned below under Known Instrument Features). The behavior of IR channels 6 to 8 on the other hand is much more complex. In difference to the visible channels, the integration time dependent part of the dark signal has a strong thermal background component, which, in addition, is modified with the ice layer, known as contamination. In order to assure best possible dark signal correction for this part of the spectrum, the following steps have been taken.

- Dark signal characterization measurements are performed every orbit.
- Analysis of these measurements is made available to Level 0-1b processing via so-called auxiliary files. Especially for consolidated Level 1 products, it is assured that the IR channels are calibrated with dark signal correction derived from the same orbit. In near real time, the dark signal calibration can be out-dated by at most the turnaround times in the operational system. In addition, an orbit position dependent dark signal correction is considered

Etalon Correction

The etalon is an interference pattern, introduced by the protective coating of channel 1 to 5 RETICON detectors, seen as "periodic" bumps in the uncorrected signal.
Usually, these features are very stable, but may change after

- unintended interruptions/transitions to standby;
- planned interruptions like decontamination.

In the time between such an event and the next recalibration (a dedicated measurement is required, which usually is performed only once per week), the provided information will be wrong. I.e. it will lead to unintended spectral features in the calibrated radiance.

Spectral Calibration

Spectral calibration is the process to associate a wavelength to an individual detector pixel. It is achieved by looking to sources (special calibration lamp, sun) with known spectrum/spectral lines.

The spectral calibration quality is generally very good, except of channel 7 and 8 as well as for the channel overlap regions, where it is less good, due to systematic problems (e.g. insufficient number of calibration lines). An orbital dependency can be neglected. However, calibration quality might be affected by transient problems (see etalon).

Polarisation

Polarisation calibration is mandatory in case absolute calibrated radiance is required. In order to compensate for the polarisation sensitivity of the instrument which has a different throughput for parallel and perpendicular polarized light, the atmospheric polarisation needs to be determined and compensated by sensitivity parameters, which were derived during on-ground calibration. The latter are also called polarisation key-data.

The quality of the polarisation therefore depends on both, the absolute values of the retrieved atmospheric degree of polarisation but also the correctness of instrument polarisation key-data. But it also depends on further data treatment, whether the polarization correction improves the retrieval or not. Some recommendations:

- In case of full retrieval methods it is mandatory to apply.
- In case of monitoring data, polarisation calibration cannot be applied.
- In case of occultation data it is not recommended to apply polarisation, because the key-data do not properly consider the small aperture, which is used during the measurements.
- Due to the approach, spectral features in the instrument polarization key-data can never be excluded to appear in the corrected signal. They might disturb DOAS type retrievals.

The polarisation correction degrades somewhat with time due to degradation in the PMD signals. This effect is currently not covered by m-factors.

Radiance, Irradiance and Reflectance

Fully calibrated radiance of the observed ground scene is only one aspect of radiometric calibration. The quality of solar irradiance is also of great importance.

Revision and re-computation of involved calibration key-data widely removed the known offsets of SCIAMACHY solar irradiance. The agreement between reference spectra (Kuruzc) and SCIAMACHY is now in the order of 5 % or better.

Due to the proven consistency between radiance and irradiance calibration parameters, the reflectance (sometimes also referred to as sun normalized radiance) too, should benefit.

For the moment, the errors in SCIAMACHY reflectance (absolute) can be estimated as in the table below:

Channel	1	2	3	4	5	6	7	8
	3%	4%	3%	2%	6%	4%	3%	3%

These numbers are based on comparison with DAK model, GOME, AATSR and MERIS data (ACVE-III). For channels 7 and 8 they are based on lunar observations in comparison with channels 2 to 6. However, a statistical verification of this aspect is still outstanding and might improve the figures.

Also, it is important to mention that even though there might still be uncertainties on the absolute value of the reflectance, these generally do not disturb DOAS type retrievals, which are insensitive to broad band offsets in the reflectance.

Degradation correction

Degradation correction using m-factors is available since IPF version 7.03. M-factors are not part of the Level 1b product and are not used in the Level 0-1b processing itself. Instead, m-factor application is implemented in SCIAL1C (Version 2.1 onwards). The m-factor database can be downloaded from:
http://www.iup.uni-bremen.de/sciamachy/mfactors/

M-factors are used for some geophysical products in the Level 1b-2 processing.

On Ground Calibration Data (Key-Data)

The on-ground calibration of the instrument is represented in the so-called key data of the instrument. They are ultimately used to correct for polarization sensitivity of the instrument and to obtain absolutely calibrated spectra. Since processor version 7.03 an update to the stray light correction in channel 2 is available, which will benefit the radiometric calibration of this channel, in particular in the deep absorption lines and the channel overlap region with channel 1.

Solar Reference Spectra

Handling of solar reference spectra has been adapted to special needs of trace gas retrievals. Following recommendations from verification scientists, solar spectra, obtained from both, ESM and ASM calibration measurements will be provided in a calibrated and un-calibrated way (see table below).

In similarity to previous versions, the different types of spectra can be identified by identifiers (first field in the solar reference global annotation data set record).

In difference to previous versions, no solar reference spectra from occultation or sub-solar measurements are provided by the GADS, as they turned out to be of any use for trace gas retrievals.

Globally, it is recommended to use a "not radiometrically calibrated" ASMdiffuser spectrum (A0) for DOAS type applications. This diffuser results in reduced spectral features, which is beneficial to DOAS type retrievals. This does of course not mean that different spectra from the list below couldn't be taken. However, all retrieval methods requiring absolute calibrated radiance and irradiance shall use the calibrated ESM diffuser spectrum (D0).

ID	Content	Remark
D0	ESM diffuser, calibrated, ND filter in	Absolutely calibrated spectrum.
D1	ESM diffuser, calibrated, ND filter out	Absolutely calibrated spectrum. However, it is only updated once per month.
D2	ASM diffuser, calibrated	This spectrum is pseudo calibrated i.e. the ESM diffuser BRDF is applied to the ASM diffuser measurement.
E0	ESM diffuser, un-calibrated, ND filter in	Radiometric calibration not applied. Corresponds to D0.
E1	ESM diffuser, un-calibrated, ND filter out	Radiometric calibration not applied. Corresponds to D1.
A0	ASM diffuser, un-calibrated	Radiometric calibration not applied. Corresponds to D2.
A1	ASM diffuser, un-calibrated	Additive offsets removed, as a function of wavelength; spectrum of 09.04.2003. This spectrum was provided already in the past and will remain in the product.
N1	Placeholder – not used	
N2	Placeholder – not used	
N3	Placeholder – not used	
N4	Placeholder – not used	
N5	Placeholder – not used	

Known Instrument Features

Please find below a list of known instrument features, which might get in conflict with intended data usage.

- Spectral feature around 480 nm caused by a change of a channel separating dichroic filter.
- Mid-scale spectral feature around 350 nm (channel 2), probably caused by non-uniformity of detector pixels. Size of the feature depending on the intensity distribution of ground scene.
- Light Leak in channel 7 hampering all retrievals in channel 7.
- Varying throughput due to ice in channels 6, 7 and 8, partly compensated by m-factors.
- Uncorrected scan-angle dependent broadband degradation impacting especially channels 1 and 2.
- Spatial stray light resulting from scattering off the scan- and/or telescope mirrors affects limb dark measurements around sunrise. Also other very high contrast scenes may be affected, like high bright clouds below the limb field of view. The spatial stray light extends to a few degrees and is wavelength and angle dependent.
- NRT and consolidated data set do not have the same attitude information, which can result in larger uncertainties in limb pointing information.
- During time intervals where ENVISAT is working in Yaw Steering Mode (YSM) only a degraded pointing performance was achieved especially for limb and occultation data. Limb-Mesosphere states (state ID 55) are treated as regular Limb states in the calibration which is not optimised for that height region. It is recommended not to apply polarisation correction to these states.

Impact of ENVISAT Orbit Change

The following applies to limb tangent heights retrieved since orbit 45262 (27 October 2010).To account for the reduced orbit altitude after the ENVISAT orbit manoeuvre end of October 2010 those ESM settings in the Basic Scan Profile table reflecting a fixed line-of-sight altitude had to be adjusted. This occurred with the upload of the new final flight configuration on 27 October 2010. A detailed description of the modifications is given in the Operations Change Request no. 48 (OCR_048). Note that the number of vertical steps has been reduced by one from 31 to 30. Verification of the modified configuration revealed that the tangent heights derived with the CFIs when viewing in limb type geometry did not fully comply with the specified values

State	Nominal Orbit	
	Start	Stop
	Tangent height (km)	
limb (28-37,40,41)	-6.3	264
limb_mesosphere (27)	153.5	n.a.
mesosphere_thermosphere (55)	153.3	370
State	Mission Extension Orbit	
	Start	Stop
	Tangent Height (km)	
limb (28-37,40,41)	-6.2	270
limb_mesosphere (27)	158.2	n.a.
mesosphere_thermosphere (55)	158	350

Table 1: Executed tangent heights in several limb type states for the nominal and mission extension orbit. Note that 'start' refers to the first altitude from where the line-of-sight immediately moves to the first measurement altitude, i.e. horizontal scan, by one vertical step of about 3 km. The column labelled 'stop' indicates the altitude where the final dark current pointing occurs.

Between orbits 45262 and 45864 (07 December 2010) the states from table 1 were executed with Basic Scan Profile settings yielding start/stop altitudes as listed in table 1. For the limb states 28-37 and 40/41 this is equivalent to a final horizontal scan at about 90 km.

State	Mission Extension Orbit	
	Start	Stop
	Executed (km)	
limb (28-37,40,41)	-2.7	263
limb_mesosphere (27)	152.3	n.a.
mesosphere_thermosphere (55)	152.3	370*

Table 2: Executed tangent heights in several limb type states for the mission extension orbit with the new Basic Scan Profile table ESM settings as tested on 7 December 2010 and permanently uploaded in orbit 46340 (this is an orbital mean value since the corresponding elevation angle is not Earth model corrected).*

Between orbits 45865 and 45868 on 07 December 2010 four test orbits with slightly modified Basic Scan Profile ESM parameters were scheduled. Only the stop altitude for state 55 could not be tested because mesosphere/thermosphere states were not planned for this day. The achieved altitudes were those listed in table 2 and were considered acceptable.

Between orbits 45869 and 46339 (10 January 2011) the Basic Scan Profile settings as uploaded in orbit 45262 were operational again yielding the tangent heights from table 1. From orbit 46340 (11 January 2011) on the Basic Scan Profile parameters tested on 07 December 2010 were permanently uploaded generating a new final flight configuration with retrieved tangent heights as listed in table 2.

Transient data quality degradation events

Decontamination intervals

During decontamination periods the SCIAMACHY detectors are heated in order to remove contamination. For the following time intervals SCIAMACHY was in decontamination mode (warm-up start to warm-up stop):

Orbit start/stop		Date start/stop		
2124	2175	27/07/2002	31/07/2002	
3746	3752	17/11/2002	18/11/2002	
4204	4428	19/12/2002	04/01/2003	
5718	5736	04/04/2003	05/04/2003	
6384	6420	21/05/2003	23/05/2003	
7574	7789	12/08/2003	27/08/2003	interleaved with transfer to HTR/RF
9407	9644	18/12/2003	03/01/2004	interleaved with transfer to HTR/RF
12031	12174	18/06/2004	28/06/2004	
14675	14860	20/12/2004	02/01/2005	
35574	35783	19/12/2008	03/01/2009	

Additional information can be found on the SOST web site (topic: Data Quality History): http://atmos.caf.dlr.de/projects/scops/
Any data products generated during these intervals are not to be used.

After decontamination has ended a cool down phase starts. Starting in 2003, the cool down phases are as follow (note: the first cool down period in 2003 was spoiled by an instrument anomaly):

Orbit start/stop		Date start/stop	
5736	5766	05/04/2003	07/04/2003
6420	6449	23/05/2003	25/05/2003
7789	7827	27/08/2003	29/08/2003
9644	9673	03/01/2004	05/01/2004
12174	12208	28/06/2004	30/06/2004
14860	14912	02/01/2005	05/01/2005
35783	35848	03/01/2009	07/01/2009

During this period detector temperatures are not stable and data quality within might be reduced.

Instrument Anomalies

After instrument switch-offs detector temperatures need some time to stabilise again. During this time the measurements of especially the IR detectors may be degraded.

For a list of affected periods see
http://atmos.caf.dlr.de/projects/scops/ under "Data Quality History"

Pointing Anomalies

During the following periods ENVISAT was operated in Yaw Steering Mode (instead of Stellar Yaw Steering Mode) which reduces the pointing accuracy:

9280	9328	09-DEC-2003 10:00:00	12-DEC-2003 17:48:32	attitude tests
12070	12087	21-JUN-2004 07:56:33	22-JUN-2004 11:50:18	reduced pointing performance
45261	45353	27-OCT-2010 01:43:53	02-NOV-2010 10:25:00	orbit change

Other periods of potentially reduced pointing performance during e.g. orbit control manoeuvres are listed on http://atmos.caf.dlr.de/projects/scops/ under "Data Quality History".

Auxiliary Data Files (ADF)

For operation of the SCIAMACHY Level 1 processor a set of in-flight calibration data files (ADFs) is processed:

- SCI_LK1_AX (orbital)
- SCI_SU1_AX (daily)
- SCI_SP1_AX (weekly)
- SCI_PE1_AX (orbital)

A complete set of these ADFs is generated operationally, compliant with IPF 7.04. In addition for SCIAMACHY full mission reprocessing, the historic ADF data set was generated as well.

Restituted Attitude and Orbit Files

During the data processing of SCIAMACHY Level 1b products with IPF version 7.04 a subset of products was identified that is of reduced data quality caused by missing restituted attitude and restituted orbit ADFs.

- **Restituted Attitude Files**: In the SCIAMACHY consolidated Level 1b version 7.04-W data set generated from the last Level 0-1b full-mission reprocessing campaign and from the operational forward processing with IPF 7.04, a subset of SCIAMACHY consolidated Level 1b products was processed without the expected ENVISAT restituted Attitude Data File (AUX_FRA_AX). This file (one for each orbit) is handled automatically by the orbit propagation CFI and contains the AOCS parameters and information

about the attitude of the ENVISAT spacecraft (roll, pitch and yaw). If the AUX_FRA file is available to the Level 0-1b processing the information therein is extracted and provided as AOCS parameters, mis-pointing angles and rate to the target calculation of the geolocation module. On the contrary, the AOCS parameters need to be calculated and the mis-pointing information has to be set to zero with consequent impact on data accuracy. A list of SCIAMACHY consolidated Level 1b products version 7.04-W generated during the last full-mission reprocessing campaign without the expected restituted attitude file (AUX_FRA_AX) is available http://earth.eo.esa.int/pcs/envisat/sciamachy/reports/anomalies/missing_aux_fra.txt.

- **Restituted Orbit Files:** In the SCIAMACHY consolidated Level 1b version 7.04-W data set generated from the last Level 0-1b full-mission reprocessing campaign and from the operational forward processing with IPF 7.04, a subset of SCIAMACHY consolidated Level 1b products was processed using the predicted orbit state vector (AUX_FPO) file instead of the expected restituted orbit state vector (AUX_FRO) file. The orbit state vector is used internally by the PDGS processing chain as an input for the orbit propagation software. For Near-real-time processing the predicted state vector (AUX_FPO_AX) reported in the MPH of the level 0 product is applied for the definition of the geolocation of the measurements, because no better orbital information is available by that time. During off-line processing also the restituted orbit state vector products are available and provided to the processing environment. Whenever a restituted orbit state vector file (AUX_FRO) is available, it shall be used instead of the predicted orbit state information. The accuracy of the ENVISAT orbit state vector restitution impacts the obtained spatial accuracy of the measurements. The spatial accuracy obtained adopting the AUX_FPO file is 920 m along-track and 15 m across-track; while adopting the AUX_FRO file is 60 m along-track and 15 m across-track. For limb measurements the attitude control system of the satellite is more important for the spatial accuracy. Due to this control system the tangent height may not be calculated better than ± 6 km according to a viewing stability of ± 0.1° into limb direction. A list of SCIAMACHY consolidated Level 1b products version 7.04-W generated during the last full-mission reprocessing campaign with predicted orbit state vector (AUX_FPO) in place of the expected restituted orbit state vector (AUX_FRO) file is available http://earth.eo.esa.int/pcs/envisat/sciamachy/reports/anomalies/missing_aux_fro.txt.

For both issues, the corresponding Level 2 consolidated products version 5.02-W are impacted as well.

Additional Resources

Additional information on status and recent changes to the SCIAMACHY instrument, its data processing and products' quality, calibration activities and validation campaigns can be found in the SCIAMACHY Bi-Monthly Reports published on-line on a regular basis and available at
http://earth.eo.esa.int/pcs/envisat/sciamachy/reports/bimonthly/

A web-page reporting anomalies in the SCIAMACHY data production with detailed information on the affected products, anomaly investigation status and recovery action is available at
http://earth.eo.esa.int/pcs/envisat/sciamachy/reports/anomalies/

WWW References	Data Quality History: SOST web-page at http://atmos.caf.dlr.de/projects/scops/
Inputs	SCIAMACHY Quality Working Group, SCIAMACHY validation team, SCIAMACHY IDEAS (Instrument Data quality Evaluation and Analysis Service) team
Originator	Angelika Dehn
Approver	Bojan Bojkov