TITLE: ENVISAT-1 PRODUCTS SPECIFICATIONS

VOLUME 4: PRODUCTS OVERVIEW

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ESA APPROVAL :

SUMMARY: This document specifies the ENVISAT-1 products.

DRL 3-3 of contract 27/11/95-761.

Company internal reference: 50-7316 Proposition:

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CHANGE RECORD

ISSUE	REVISION	DATE	CHANGE STATUS	ORIGIN
1	A	12/01/96	Issue 1	
1	B	16/02/96	SCR #16, CR #16 Issue 1, Revision B Reason for Change: Updated to reflect information in PO-TN-ESA-GS-0381 and to address RIDs of Feb. 2/96 pertaining to the Level 0 structure. MPH, SPH, DSD, and DSR structures modified. Table added showing generalized Level 0 product structure. RIDs Addressed: ESA/0001: FEP header defined ESA/0002: PF-Host time stamp clarified ESA/0004: Processing PCD added ESA/0006: AF PCD ADS and DSD added ESA/0007: page A-3 updated ESA/0008: page B-3 updated ESA/0009: Table 8.1.1 modified ESA/0011: TBD changed to Range/ Doppler ESA/0013: FEP header defined ESA/0014: Table 8.4.7.4-2 corrected CSF/1: filename in MPH corrected CSF/2: page A-3 updated	

ISSUE	REVISION	DATE	CHANGE STATUS	ORIGIN
			CSF/3: MPH PCD information updated CSF/5: DSD added to Level 0 SPH CSF/6: Section on AATSR updated and re-issued CSF/8: AATSR_O Summary Sheet updated	
1	C	04/04/96	SCR #38, CR #38 Issue 1, Revision C Reason for Change: Updated Sections 1-6, 17 and Annex A to reflect changes discussed at the Products Review Meeting #1, March 5-8, 1996, as per action item "AI MDA 6 April 96" from PO-MN-ESA-00416, Pg. 35.	Products Review Meeting #1
2	A	20/05/96	SCR #71, CR #71 Issue 2 Separate volume created. List of products updated from DocumentA-3. Section describing product summary sheets added.	
3	A	19/11/98	SCR #169, CR #169 Issue 3 Reason for Change: Updated with new AATSR product list.	Products Review Meeting #3

ISSUE	REVISION	DATE	CHANGE STATUS	ORIGIN
3	B	19/06/97	SCR #218, CR #218 Issue 3, revision B Reason for Change: Updated to reflect changes made in other volumes. All changes marked by change bars.	
3	C	28/11/00	Issue 3, Revision C Reason for Change: Updated for the following SPR : SPR-10000-0488-ESA ATS_MET_2P added in the table 4.2-1 Envisat Products.	

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REGISTER OF CHANGES

Affected pages:

4-2, 4-4, 4-6

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4 PRODUCTS OVERVIEW

4.1 PRODUCT IDENTIFICATION SCHEME

Each product is assigned an identifier of the following form:

WWW_XXX_YZ

where:

- WWW is the instrument name. Unused letters replaced with an underscore character. Instrument codes are:
  - ATS (AATSR: Advanced Along Track Scanning Radiometer);
  - ASA (ASAR: Advance Synthetic Aperture Radar);
  - DOR (DORIS: Doppler Orbitography and Radio-positioning Integrated by Satellite);
  - GOM (GOMOS: Global Ozone Monitoring by Occulation of Stars);
  - MER (MERIS: Medium Resolution Imaging Spectrometer);
  - MIP (MIPAS: Michelson Interferometer for Passive Atmospheric Sounding);
  - MWR (Microwave Radiometer);
  - RA2 (Radar Altimeter 2);
  - SCI (SCIMACHY: Scanning Imaging Absorption Spectrometer for Atmospheric Cartography);
  - TLM (Housekeeping Telemetry).

- XXX is the mode (when relevant) or contains letters used to differentiate between several products created at the same processing level (e.g., several Level 2 products. Unused letters are replaced by underscore characters. These codes are instrument specific.
- Y is the product level code:
  - 0: Level 0,
  - 1: Level 1B,
  - 2: Level 2,
  - B: Browse
- Z indicates whether the product is a Parent or Child (extracted) product:
  - P : Parent Product
  - C : Child Product

Note that YZ = EH for Extracted Instrument Header products.

4.2 PRODUCT SUMMARY TABLES

The complete list of ENVISAT-1 products is summarized in Table4.2-1. Note that the list does not include child products which may be extracted from parent products off-line. It does include those extracted products which are to be systematically produced in Near-Real-Time however.

Table4.2-1 Envisat Products

Instrument / mode	Product ID	Description
AATSR	ATS_NL__0P	AATSR Level 0
	ATS_TOA_1P	AATSR Full Resolution Top of Atmosphere Radiance (TOAR) for all channels/both views
	ATS_NR__2P	AATSR Geophysical Product for Ocean, Land and Atmosphere
	ATS_AR__2P	AATSR Spatially Averaged Sea/Land Surface Temperature
	ATS_MET_2P	AATSR Spatially Averaged Sea Surface Temperature for Meteo users.

Table4.2-1 Envisat Products

Instrument / mode	Product ID	Description
	ATS_AST_BP	AATSR Browse Product (3 colour composite)

Table4.2-1 Envisat Products

Instrument / mode	Product ID	Description
ASAR	ASA_EC__0P	ASAR Level 0 External Characterization
	ASA_MS__0P	ASAR Level 0 Module Stepping Mode
WV	ASA_WV__0P	ASAR Level 0 Wave Mode
	ASA_WVI_1P	Wave Mode SLC Imagette and Imagette Cross Spectra
	ASA_WVS_1P	Wave Mode Imagette Cross Spectra
	ASA_WVW_2P	Wave Spectra Product
GM	ASA_GM__0P	ASAR Level 0 Global Monitoring Mode
	ASA_GM1_1P	Global Monitoring Mode Image (stripline)
	ASA_GM__BP	Global Monitoring Mode Browse Product (stripline)
IM	ASA_IM__0P	ASAR Level 0 Image Mode
	ASA_IMS_1P	Image Mode SLC Image
	ASA_IMP_1P	Image Mode Precision Image
	ASA_IMG_1P	Image Mode Geocoded Image
	ASA_IMM_1P	Image Mode Medium Resolution Image (stripline)
	ASA_IM__BP	Image Mode Browse Product (stripline)
AP	ASA_APH_0P	ASAR Level 0 Alternating Polarization (Xpolar H)
	ASA_APV_0P	ASAR Level 0 Alternating Polarization (Xpolar V)
	ASA_APC_0P	ASAR Level 0 Alternating Polarization (Copolar)
	ASA_APS_1P	Alternating Polarization SLC Image
	ASA_APP_1P	Alternating Polarization Precision Image
	ASA_APG_1P	Alternating Polarization Geocoded Image
	ASA_APM_1P	Alternating Polarization Medium resolution Image (stripline)
	ASA_AP__BP	Alternating Polarization Mode Browse Product (stripline)
WS	ASA_WS__0P	ASAR Level 0 Wide Swath
	ASA_WSM_1P	Wide Swath Mode Medium Resolution Image (stripline)
	ASA_WS__BP	Wide Swath Mode Browse Image (stripline)

Table4.2-1 Envisat Products

Instrument / mode	Product ID	Description
DORIS	DOR_NAV__0P	DORIS Navigator Level 0
	DOR_DOP_0P	DORIS Doppler Level 0
	DOR_DOP_1P	DORIS Doppler Level 1B
GOMOS	GOM_NL__0P	GOMOS Nominal Mode Level 0
	GOM_MM__0P	GOMOS Monitoring Modes (either Linearity, Uniform, or Spatial Spread data)
	GOM_TRA_1P	Geolocated and Calibrated Transmission Spectra and Photometer Fluxes
	GOM_LIM_1P	Geolocated and Calibrated Background Spectra
	GOM_EXT_2P	Residual Extinction Product
	GOM_NL__2P	Temperature and Atmospheric Constituent profiles
	GOM_RR__2P	Extracted Profiles for Meteo Users contains extracted profiles at reduced spatial resolution for NRT dissemination to Meteo users
MERIS	MER_RV__0P	MERIS Level 0 Reduced Field of View
	MER_CA__0P	MERIS Level 0 Calibration (all calibration modes)
RR	MER_RR__0P	MERIS Level 0 Reduced Resolution
	MER_RR__1P	Reduced Resolution Geolocated and Calibrated TOA Radiance (stripline)
	MER_RR__2P	Reduced Resolution Geophysical Product for Ocean, Land and Atmosphere (stripline)
	MER_LRC_2P	Extracted Cloud Thickness and Water Vapour for Meteo users Level 2 Product generated from MER_RR__2P (Cloud thickness and water vapour content for the Meteo at reduced resolution > 5 km) (stripline)
	MER_RRC_2P	Extracted Cloud Thickness and Water Vapour (non-Meteo users) Level 2 product extracted from MER_RR__2P (Cloud thickness and water vapour content at nominal RR resolution) for NRT distribution (stripline)

Table4.2-1 Envisat Products

Instrument / mode	Product ID	Description
FR	MER_RRV_2P	Extracted Vegetation Indices Level 2 product extracted from MER_RR__2P (Vegetation indices including atmospheric corrections for selected land regions) for NRT distribution (stripline)
	MER_RR__BP	Browse (covers FR and RR requirements) (stripline)
	MER_FR__0P	MERIS Level 0 Full Resolution
	MER_FR__1P	Full Resolution Geolocated and Calibrated TOA Radiance
	MER_FR__2P	Full Resolution Geophysical Product for Ocean, Land and Atmosphere
MIPAS	MIP_RW__0P	MIPAS Raw Data and SPE Self Test Mode Data
	MIP_LS__0P	MIPAS Line of Sight Level 0
	MIP_NL__0P	MIPAS Nominal Level 0
	MIP_NL__1P	Geolocated and Calibrated Spectra
	MIP_NL__2P	Temperature, Pressure and Atmospheric Constituents Profiles
	MIP_NLE_2P	Extracted Temperature, Pressure and Atmospheric Constituents Profiles for NRT dissemination
MWR	MWR_NL__0P	MWR Level 0
RA-2	RA2_CAL_0P	RA2 Calibration and BITE Mode Level 0
	RA2_ME__0P	RA2 Measurement Mode Level 0
	RA2_MW__1P	Geolocated and Calibrated Altimeter Waveforms with TOA Microwave Brightness Temperatures
	RA2_FGD_2P	Fast delivery Geophysical Data record from RA-2 and Water Vapour/Liquid Content from MWR. Available 3 hours after data acquisition
	RA2_IGD_2P	Intermediate Geophysical Data record from RA-2 and Water Vapour/Liquid Content from MWR. Processed off-line and available 3-5 days after acquisition
	RA2_GDR_2P	Geophysical Data Record from RA-2 and Water Vapour/Liquid Content from MWR. Processed off-line and available 50 days after acquisition

Table4.2-1 Envisat Products

Instrument / mode	Product ID	Description
	RA2_WWV_2P	Wind/Wave product with height information for NRT dissemination to Meteo users
	RA2_MWS_2P	Sensor Data Record from RA-2, Water Vapour/Liquid Content from MWR and Individual Uncalibrated Waveforms from RA-2.
SCIAMACHY	SCI_NL__0P	SCIAMACHY Level 0
	SCI_NL__1P	Geolocated and Calibrated Spectra contains: Geolocated and Radiometrically and Spectrally Calibrated Limb and Nadir Absorption and Emmission Spectra
	SCI_NL__2P	Vertical Profiles contains: Vertical Profiles and Total Column Amount of Temperature, Pressure and Various Trace Gases
	SCI_RV__2P	Selected Vertical Profiles for Meteo users
Auxiliary Data	See Volume 16 and individual instrument volumes (Volumes 6 to 15)	Includes other files needed for creation of the instrument products.
Extracted Instrument Header	WWW_XXX_EH (where WWW_XXX is the code for the Level 0 product)	This product is used for instrument health monitoring. It contains selected Level 0 source packet fields for a selected time interval. See Volume 17
Extracted Calibration	Same as Level 0 IDs but with the P changed to a C	Extracted Calibration products are Level 0 child products (i.e. a selected portion of the Level 0 product is extracted to form a child product)
House Keeping Telemetry	TLM_HK__0P	Satellite platform monitoring data.

4.3 PRODUCT SUMMARY SHEETS

At the end of each volume describing the products for an individual instrument Product Summary Sheets are included. The Product Summary sheets are extracted from the PDS Data Dictionary Tool, and summarize the key characteristics of the data contained within each product. An example of the Product Summary Sheet

format and a description of the information it contains is included below for reference.

Example Product Summary Sheet

PRODUCT ID	**10 character PDS Product ID**
PRODUCT NAME	**name given to the product**
DESCRIPTION	**verbal description of the product**
APPLICATIONS	**the primary use of the product**
DELIVERY TIME	**from where and when the product is available to users**
COVERAGE	**geographic coverage of the product**
THROUGHPUT	**rate of production of the product**
PRODUCT SIZE	**estimated maximum size of the product (this is the size of the archived product unless otherwise indicated)**
GEOMETRIC SAMPLING	**sampling interval of the data (pixel spacing if image data)**
GEOMETRIC RESOLUTION	**spatial resolution of the data**
GEOMETRIC ACCURACY	**spatial accuracy of the data**
RADIOMETRIC RESOLUTION	**radiometric resolution of the data**
RADIOMETRIC ACCURACY	**radiometric accuracy of the data**
AUXILIARY DATA INCLUDED	**list of auxiliary data included with the main measurement data in the product**
ALGORITHMS USED	**a list of the algorithms applied at the processing level at which the product was created -- note: this is only a list of algorithms used, this document does not contain comprehensive algorithm descriptions.**
NOTES	**additional information describing the product**

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