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GLOSSARY
Acronyms and Abbreviations

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A

AATSR
Advanced Along-Track Scanning Radiometer; this instrument is in fact the same design as the ATSR-2 flying on ERS-2. It has four infrared channels and three visible channels. The swath, centered on the subsatellite ground track, is imaged under two different incidence angles in both spectral bands.

ACF
Auto-Correlation Function

A/D
Analogue / Digital

ADC
Analogue / Digital Converter

ADEOS
Advanced Earth Observation Satellite

ADS
Annotation Data Set

ADSR
Annotation Data Set Record

AMF
Air Mass Factor; a parameter which allows the transformation from slant column densities to cloumn densities along the line of sight.

AMI
Active Microwave Instrument, a part of ERS-1 and ERS-2 payload, incorporating image (SAR), wind (scatterometer), and wave (imagette) modes.

ANC
Ascending Node Crossing, the point in the orbit path of a satellite, where the orbit crosses the equator and the spacecraft moves from South to North.

AO
Announcement of Opportunity; the call for proposals to utilize a satellite mission. Utilization can mean data exploitation but also the opportunity to provide payloads.

AOCS
Attitude and Orbit Control; an important and complex subsystem of the satellite, providing measurement of the attitude in nominal and anomalous situations, and a range of actuators to modify attitude and attitude rates. It also provides the thrusters needed for orbit control and maintenance.

AOI
Announcement of Opportunity Instrument. These instruments are developed independently of ESA, under national funding. They have been selected following an Announcement of Opportunity, one of the selection criteria being the extent to which the AOI would enhance the overall measurement system.

ASAR
Advanced Synthetic Aperture Radar

Astrium
ESA partners for the Envisat satellite, see; http://www.astrium-space.com http://www.astrium-envisat.de

ATBD
Algorithm Theoretical Basis Document

ATSR
Along Track Scanning Radiometer

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AVHRR
Advanced Very High Resloution Radiometer

B

BIH
Bureau International de l'Heure

BRDF
Solid State Recorder

C

CCD
Charge Coupled Device, an integrating optical detector in the near infrared, visible and ultraviolet region

CCT
Computer Compatible Tape

CEOS
Committee on Earth Observation Satellites

CFRP
Carbon Fibre Reinforced Plastic, a very stiff, and lightweight material with negligible thermal expansion coefficient

CIS
Conventional Inertial System

CTS
Conventional Terrestrial System

CZCS
Coastal Zone Colour Scanner

D

DBU
Digital Bus Unit, which provides the electrical interface between the signals on the OBDH bus and terminal equipment such as ICU's.

Dobson units
Dobson Units (DU) are used to measure atmospheric trace gases such as ozone. If you took all the molecules of ozone from a column of air, and compressed these molecules to the base of the column itself at STP (0oC and 1 atm), they would form a slab. One DU is defined to be 0.01 mm thickness of this slab. In the case of ozone, 1 DU corresponds to 2.69x1016 molecules per square centimeter of column base. See an example.

DORIS
Envisat Instrument for Doppler Orbitography and Radiopositioning Integrated by Satellite

DSB

DSR
Data Set Record

E

ECMWF
European Centre for Medium-Range Weather Forecasts

EDI
ESA Developed Instrument. Such instruments are part of the Envisat industrial contract and are developed under full ESA responsibility

EM
Engineering Model

EMC
Electro-Magnetic compatibility

ENVISAT
ENVIronment SATellite

ERS
European Remote Sensing Satellite

ESA
European Space Agency

ESL
Expert Support Laboratory. The algorithms for Level 2 data processing comprise the retrieval of geophysical parameters from Level 1b (engineering) products. This step relies strongly on scientific inputs (e.g. methods for determing gas densities for atmospheric measurements) to be provided by scientific experts, i.e. the algorithms used in the operational processors are based on expert investigations. The Expert Support Laboratories are the formal implementation of this

philosophy.

F

FD
Fast Delivery

FDGDR
Fast Delivery Geophysical Data Record, the standard RA GDR data product, available in slightly reduced quality within a few hours of measurement.

FFT
Fast Fourier Transform

FM
Frequency Modulated (eo) or Flight Model (envisat)

FOCC
Flight Operations Control Centre, located at ESOC Darmstadt

FOS
Flight Operation Segment, composed of the Flight Operations Control Centre located at ESOC, Darmstadt and the associated command and control stations. It provides control of the satellite through all mission phases.

FR
Full Resolution

G

GCP Ground Control Points

GDR
Geophysical Data Record; the basic Level 2 product of RA-2.

GEM
Goddard Earth Model

GLI Global Imager

GOME
Global Ozone Monitoring Experiment

GOMOS
Global Ozone Measurement by the Occultation of Stars

GRS1984
Geodetic Reference System 1984

GSE
Ground Support Equipment

H

HR
High Resolution

HDDT
High Density Digital Tape

HLOP
High Level Operation Plan

HSM
High Speed Multiplexer, which assembles the payload science data into a continuous data stream

I

I
In-phase

ICU
Instrument Control Unit, a part of the distributed command and control function implemented on ESA spacecraft. The unit receives, decodes and executes high-level commands for its instrument, and autonomously performs health-checking and parameter monitoring. In the event of anomalies it takes autonomous recovery actions.

IFOV
Instantaneous Field of View

IGBP
International Geosphere-Biosphere Programme

IGDR
Interim Geophysical Data Record; the basic Level 2 product of RA-2. The term Interim refers to the fact that it is generated very soon after data acquisition so interim values of some parameters, such as the orbit, must be used until the full-precision values become available. Otherwise the product is identical to the GDR.

IJRS
International Journal of Remote Sensing

IRS

ISCCP
International Satellite Cloud Climatology Project

ISLR
Integrated Side Lobe Ratio

L

LBR
Low Bit Rate

LEOP
Launch and Early Orbit Phase, the critical first few orbits where appendage deployments are performed and the satellite is brought into a stable configuration.

LRAC
Low Rate Reference Archive Centre, colocated with the Payload Data Handling Station in Kiruna. Its primary goal is to maintain a Level 0 reference archive for all Low Rate instruments for the lifetime of the mission.

LRR
Laser Retro-Reflector

M

MDS
Measurement Data Set, a defined data entity within a product.

MERIS
Medium Resolution Imaging Spectrometer

MGVI
Meris Global Vegetation Index

MIPAS
Michelson Interferometer for Passive Atmospheric Sounding

MLST
Mean Local Solar Time, which in the context used here refers to the descending node of the sun-synchronous orbit. The true local solar time of the descending node varies by up to 15 minutes around this value due to the eccentricity of the earths orbit around the sun, which induces an uneven angular velocity around the sun, while th eorbital precession rate is constant. This effect is known as the equation of time.

MPH
Main Product Header, the main description record at the start of every product, it follows a generic format.

MPP
Milestone Payment Plan.

MWR
MicroWave Radiometer

MWS
MicroWave Radiometer (sometimes referred to as MicroWave Sounder)

N

NASA
National Aeronautics and Space Administration

NMSF
Net Multiplicative Scaling Factor

NRT
Near Real Time

N/S
North / South

O

OBDH
On-Board Data Handling, this term is used in the context OBDH Bus, which is a synchronous serial data exchange and time-management network used on-board ESA spacecraft.

OBRC
On Board Range Compression

OCI Ocean Colour Imager

OCM Ocean Colour Monitor

OCTS
Ocean Colour and Temperature Scanner

OGRC
On Ground Range Compression

OSMI

P

PAC
Processing and Archiving Centre; a concept which evolved from the PAF's of the ERS era. Their development and implementation is funded on a national basis while the operation for the services defined in the Payload Data Segment concept is provided by ESA.

PAF
Processing and Archiving Facility of the ERS-1/2 mission. Four PAFs are operational. These are the D-PAF (located at the German Remote Sensing Data Centre (DFD) at the DLR premises at Oberpfaffenhofen/Germany), the F-PAF at IFREMER (Brest/France), the I-PAF in Matera/Italy and the UK-PAF in Farnborough/UK.

PAR
Photosynthetically Active Radiation

PCD
Product Confidence Data, a coded set of quality flags generated at various stages of data processing.

PDHS
Payload Data Segment, comprises all those elements which are related to payload data acquisition, processing, archiving and those concerning the user interfaces and services.

PDS
Payload Data Segment, comprises all those elements which are related to payload data acquisition, processing, archiving and those concerning the user interfaces and services.

PEB
Payload Equipment Bay, part of the Payload Module of the Polar Platform.

PLC
Payload Carrier, part of the Payload Module of the Polar Platform.

PLM
Payload Module, the part of the Polar Platform which is mission-specific.

PMC
Payload Management Computer, located in the Payload Module, is responsible for command and control of the payload. It communicates with the on-board computer in the Service Module.

POLDER
Polarization and Directionality of the Earth's Reflectances

PPF
Polar Platform, a multimission spacecraft designed to accomadate large payloads in a sun-synchronous low earth orbit.

PPTL
Processor Point Target Linearity

PRARE
Precise Range and Range-rate Equipment

PRF
Pulse Repetition Frequency, the rate at which (typically) a radar emits transmit pulses.

PRI
Pulse Repetition Interval, the interval between radar pulses.

Q

Q
Quadrature

QA
Quality Assurance

Q/L
Quick-look

R

RA
Radar Altimeter

RA-2
Radar Altimeter-2

RAC
Reflective Acoustic Coupling; a type of surface acoustic wave device in which the acoustic signal undergoes a reflection.

RMS

Root Mean Square

RS

Remote Sensing

RTU

Remote Terminal Unit, a semi-intelligent device which is linked to the PMC by the OBDH bus and which proveides control and monitoring functions for relatively simple equipment such as power distribution units.

S

SAG

Science Advisary Group

SAGE I/II

Stratospheric Aerosol and Gas Experiment I and II

SAR

Synthetic Aperture Radar

SAW

Surface Acoustic Wave, refers to a device in which acoustic waves propagating on the surface of a piezo-electric crystal transfer a signal between two transducers. Extensively used for delay lines, both dispersive and non-dispersive.

SBUV

Solar Backscatter Ultraviolet, flown on NOAA weather satellites

S/C

Spacecraft

SCATT

Scatterometer

SCIAMACHY

Scanning Imaging Absorption Spectrometer for Atmospheric Cartography

SeaWiFS

Sea-Viewing Wide -Field-of-View Sensor

SLR

Satellite Laser Ranging station.

SPH

Secondary Product Header.

SSH

Sea Surface Height

StM

Structural Model

STP

Standart Temperature (0oC) and Pressure (1 atm)

T

TDT

Terrestrial Dynamic Time

TM

Telemetry

TOA

Top of Atmosphere

TOMS

Total Ozone Mapping Spectrometer, flown on Nimbus-7 and operational in 1978 - 1988.

TT&C

Tracking, Telemetry and Control, a term used to refer to the ground stations used in the day-to-day monitoring and control of a satellite. In the case of Envisat this function is performed by conventional S-band low-rate lnks to a ground station located in Kiruna.

TWT

Travelling Wave Tube, a microwave amplification device, which works by transferring energy from an electron beam to a wave propagating in a helix structure within the tube.

U

UET

User Earth Terminal

UNCFCCC

United Nation Framework Convention on Climate Change

UPS

Universal Polar Stereographic

USO

Ultra Stable Oscillator. an oscillator with a long term

frequency stability of the order 10^8.

UTC

Universal Time Coordinate (eo) or Universal Time Corrected (ENVISAT)

UTM

Universe Transverse Mercator

W

WRS

World Reference System

WS

Wind Scatterometer

WSC

Wind Scatterometer