

ENVISAT

The ENVISAT satellite was launched in March 2002. Owned by European Space Agency (ESA), this big “last dinosaur” with all together 10 instruments will serve many purposes. Operational systems have been developed for mapping, sea ice- and oil slick monitoring, and ship detection.

KSAT downloads radar data from the *Advanced Synthetic Aperture Radar* (ASAR) instrument, which is similar to the SAR instrument onboard other radar satellites. Data from the ASAR instrument supports many industries such as fishing, shipping, agriculture, oil and gas exploration and the military.



ENVISAT – “the last dinosaur”

ASAR is an all-weather, day or night radar-imaging instrument with different polarization opportunities. Important new capabilities of ASAR include beam steering for acquiring images with different incidence angles, dual polarization and wide swath coverage. Users have access to a variety of beam selections that can image swaths from 56 to 405 kilometers in width, with resolutions from 30 to 150 meters and at incidence angles from 15 to 45 degrees.

Data is downloaded in real time to ground receiving stations or stored on the onboard tape recorder until ENVISAT is within range of a receiving station.

Products

The former ERS-satellite high-resolution products PRI, SLC, and GEC will be continued for image mode, and generated for alternating polarization mode on user request.

Image mode (IM)

- 30 m resolution (similar to ERS-2)
- 7 swaths (15 to 45 degrees incidence angle)
- VV or HH polarization
- Up to 100 km swath

Alternating polarization mode (AP)

- Same swaths as IM
- 2 images of the same scene with different polarization combination (HH/VV, HH/HV or VV/VH)
- Reduced radiometric resolution compared to IM
- Up to 100 km swath

Wide swath mode (WS)

- Combination of 5 sub swaths (S2 - S6)
- Medium resolution ~ 150 m
- 405 km swath

KSAT also offers special sub swath combination products.

Product level definition

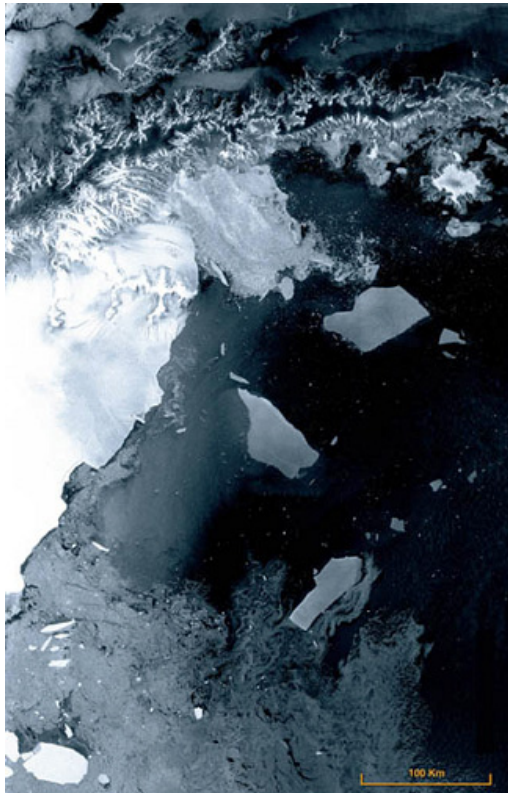
Data from all the ENVISAT instruments are classified according to a hierarchical data product scheme. This scheme consists of:
Level 0: Reformatted, time-ordered satellite data (no overlap), in computer-compatible format

Level 1b: Consists of geolocated engineering calibrated products

Level 2: Consists of geolocated geophysical products

Near real-time: Generated in near real-time

Off-line: Generated from consolidated Level 1b products



Antarctic, 18 March 2002

ENVISAT technical specifications

Launch	1 March 2002
Payload mass (the instruments)	2050 kg
Planned mission length	5 years
Number of instruments	10
Orbit	Sun synchronous altitude 800 km
Inclination	98 degrees
Time for one orbit	101 minutes
Cycle	35 day repeat. Due to wide swaths by some of the instruments, the whole Earth is covered just within a few days.

ENVISAT ASAR products

ASAR	Processing level	Image HH or VV	Alternating polarization HH/VV or VV/VH or HH/HV	Wide swath HH or VV
Level 0	Level 0	ASA_IM_OP	ASA_APH_OP ASA_APV_OP ASA_APC_OP	ASA_WS_OP
Level 1b	Medium Resolution	ASA_IMM_1P	ASA_APM_1P (selectable polarisation)	ASA_WSM_1P
Level 1b	Single Look Complex (SLC)	ASA_IMS_1P	ASA_APS_1P	
Level 1b	Precision Image	ASA_IMP_1P	ASA_APP_1P	

Specific KSAT products

All Level 1b images are also available with selectable pixel size with an optional average

Contact

Please find more information about our products and services at www.ksat.no.

If you have further questions, please contact our VP Marketing: Fredrik Landmark (fredrik.landmark@ksat.no) or our Customer Support: Rolf-Terje Enoksen (rolft@ksat.no).

Specifications are subject to change without notice.