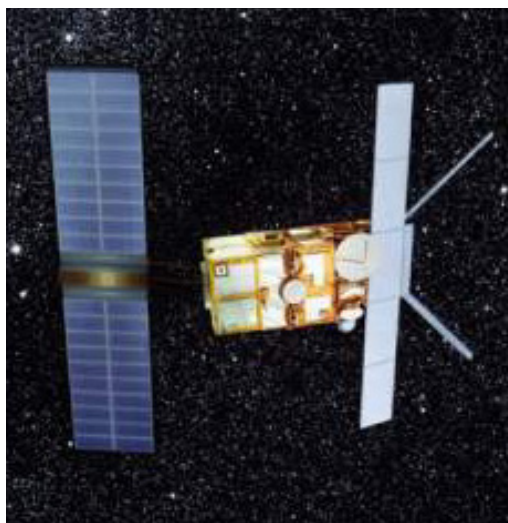


ERS-2

The ERS-2 satellite is equipped with a synthetic aperture radar (SAR) instrument capable of observing the Earth independent of darkness and clouds. This has become a significant asset for Earth observation in the often very cloudy Arctic.

Experience has proven that the ERS-2 satellite is valuable for a number of environmental applications and research purposes. Kongsberg Satellite Services (KSAT) provides most of the ESA standard products, in addition to our own products (table 1).



The ERS-2 satellite, launched by ESA in 1995

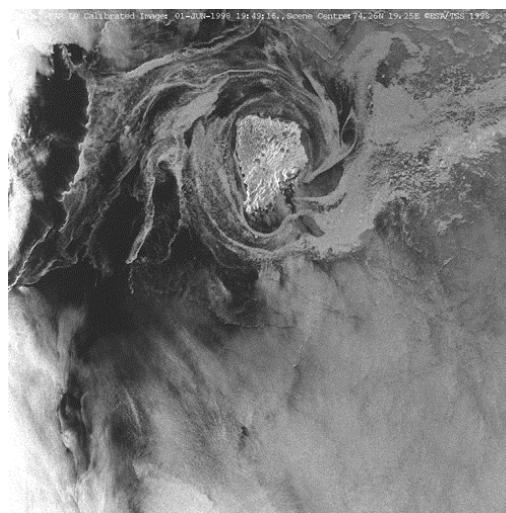
Near real-time

All ERS-2 images cover an area of 100 x 100 kilometres, with georeferenced coding. The processing time is 6 minutes, and images are available for our customers in less than a half hour.

ERS satellite sensor specifications

Orbit: Polar orbiting, sun synchronous
Altitude: 782 – 785 kilometres

Inclination: 98,5 °
Period: 100 minutes each orbit
Repeat cycle: 35 days
Orbits per day: 14
SAR frequency: 5.3 Ghz (C-band)
Polarization: Linear vertical (VV)
Incidence angle: 23° mid-swath



ERS-2 image acquired over Bjørnøya, Norway

Product description

Inputs to the SAR-processing are signals detected by the SAR-instrument operating in image mode. The applied algorithm is the two-dimensional extended exact transfer function (EETF) algorithm developed by the Norwegian Defence Research Establishment (FFI) and implemented by Kongsberg Spacetec.

Format

The full resolution image (FRI) and low-resolution image (LRI) products are KSAT specific, consisting of the image matrix data with a small section header added. The other ERS-2 products are standard ESA CEOS-format.

Calibration and georeferencing

The precision corrected image (PRI), single look complex (SLC) and fast delivery copy (FDC) products are calibrated according to the ESA ERS-2 product specifications. The FRI and LRI products have been gain normalized, but additional calibration parameters can be supplied. Latitude and longitude information are calculated for each image line in the start, mid and end positions of the PRI and FDC products. Resampling has been performed to suit a true ground range projection system defined by the spacecraft nadir track and beam position direction.

Delivery

All ERS products processed at KSAT may be delivered on-line (< 2 hrs), either by Internet or ISDN. Off-line delivery (< 3 days) on CD-ROM and Exabyte is also available.

Contact

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

If you have further questions, please contact our Customer Support: Rolf-Terje Enoksen (rolft@ksat.no).

Product characteristics	Full resolution (FRI)	Low resolution (LRI)	Precision corrected (PRI)	Fast delivery copy (FDC)	Single look complex (SLC)	Raw data (RAW)
Pixel size range azimuth	20.0 m 15.9 m	100 m 79.5 m	12.5 m 12.5 m	20.0 m 15.9 m		
Image area range azimuth	100 km 96 km	100 km 96 km	100 km 102.5 km	100 km 96 km		100 km 110 km
Image size range azimuth	5002 pixl. ¹ 6300 lines	1002 pixl. ¹ 1260 lines	8000 pixl. ¹ 8200 lines ³	5000 pixl. 6300 lines	2500 samples ² 15000 lines	5616 samples ² 27000 lines
Pixel representation	16 bits	16 bits	16 bits	16 bits	16I, 16Q complex	10 bits (5 bit I, 5 bit Q)
Product location accuracy range azimuth	200 m 1500 m	200 m 1500 m	100 m 200 m	200 m 1500 m	200 m	
Total product volume	ca. 63 Mb	ca. 2.4 Mb	ca. 131 Mb	ca. 63 Mb	ca. 150 Mb	ca. 190 Mb
Annotation in image	Lat/long of image centre + the 4 corners	Lat/long of image centre + the 4 corners	Lat/long of image centre + the 4 corners. Lat/long image lines	Lat/Long of image centre + the 4 corners. Lat/long image lines		
Projection	Ground range	Ground range	Ground range	Ground range	Slant range	Slant range
Product format	KSAT-format	KSAT-format	CEOS	CEOS	CEOS	CEOS
Number of looks	3	ca. 22	3	3	1	

¹ pixels per line, ² samples per line, ³ at least

