

SENTINEL-3 MISSION OVERVIEW

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The series of Sentinel-3 satellites will provide global, frequent and near-realtime ocean, ice and land monitoring. Sentinel-3 will be particularly devoted to the provision of observation data in routine, long term (20 years of operations) and continuous fashion with a consistent quality and a very high level of availability. It will continue the successful observations of similar predecessor instruments onboard Envisat from 2012 onwards.

The Ocean and Land Colour Instrument (OLCI) is based on the Envisat MEdium Resolution Imaging Spectrometer Instrument (MERIS) instrument. It fulfils ocean-colour and land-cover objectives with a larger swath and additional spectral bands. The Sea and Land Surface Temperature radiometer (SLSTR) is based on Envisat's Advanced Along Track Scanning Radiometer (AATSR). SLSTR has a double-scanning mechanism, yielding a wider swath and a complete overlap with OLCI. This enables the generation of a synergy product with a total of 30 spectral bands, fully co-registered for new and innovative ocean and land products.

The topography mission has the primary objective of providing accurate, closely spaced altimetry measurements from a high-inclination orbit with a long repeat cycle. It will complement the Jason ocean altimeter series monitoring mid-scale circulation and sea levels. The altimeter will be operated in two different modes, a classical low resolution mode and a synthetic aperture mode similar to CryoSat for increased along-track resolution and improved performance. Accompanying the altimeter will be a Precise Orbit Determination system and microwave radiometer (MWR) for removing the errors related to the altimeter signals being delayed by water vapour in the atmosphere. The altimeter will track over a variety of surfaces: Open ocean, coastal zones, sea ice and inland waters.

The conceptual designs of the major instruments and their basic performance parameters will be introduced together with the expected accuracies of the main data products.