



Sentinel-1A – Launching the first satellite and launching the operational Copernicus programme

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ABSTRACT

The first Copernicus satellite, Sentinel-1A, is prepared for launch in April 2014. It will provide continuous, systematic and highly reliable radar images of the Earth. Sentinel-1B will follow around 18 months later to increase observation frequency and establish an operational system.

Sentinel-1 is designed to work in a pre-programmed conflict-free operation mode ensuring the reliability required by operational services and creating a consistent long-term data archive for applications based on long time series. This mission will ensure the continuation and improvement of SAR operational services and applications addressing primarily medium- to high-resolution applications through a main mode of operation that features both a wide swath (250 km) and high geometric (5×20 m) and radiometric resolution, allowing imaging of global landmasses, coastal zones, sea ice, polar areas, and shipping routes at high resolution.

The Sentinel-1 main operational mode (Interferometric Wide Swath) will allow to have a complete coverage of the Earth in 6 days in the operational configuration when the two Sentinel-1 spacecraft will be in orbit simultaneously. High priority areas like Europe, Canada and some shipping routes will be covered almost daily. This high global observation frequency is unprecedented and cannot be reached with any other current radar mission. Envisat, for example, which was the ‘workhorse’ in this domain up to April 2012, reached global coverage every 35 days.

Sentinel-1 data products will be made available systematically and free of charge to all users including institutional users, the general public, scientific and commercial users.

The transition of the Copernicus programme from the development to operational phase will take place at about the same time when the first Sentinel-1 satellite will be launched. During the operational phase, funding of the programme will come from the European Union Multiannual Financial Framework (MFF) for the years 2014-2020.

The EU Copernicus Regulation, laying down the legal basis for the EU operational Copernicus programme, is currently in its final phase of approval by the European Parliament and Council.

Based on this, the future EU-ESA Copernicus Agreement will define the modalities for the cooperation between ESA and the EU for the period 2014-2020 and will regulate the budget implementation tasks entrusted to ESA by the EU for the accomplishment of the space segment and the programme operations phase. The agreement, once signed, will pave the way for important procurements over the next seven years in the Earth observation domain.