

IAF EARTH OBSERVATION SYMPOSIUM (B1)  
Future Earth Observation Systems (2)

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EUMETSAT'S FUTURE LOW EARTH ORBIT SATELLITE PROGRAMMES PROVIDE  
CONTINUITY OF OBSERVATIONS AND DATA SERVICES**Abstract**

EUMETSAT currently operates three satellite programmes in LEO: EPS, Jason and Sentinel-3 - the latter on behalf of the European Commission's Copernicus programme, complimenting observations from geostationary orbit. The combination of LEO and geo-stationary programmes delivers a variety of global measurements of ocean, land and atmosphere - essential for weather forecasting/climate monitoring - and real-time observations for Nowcasting. EUMETSAT's current EPS programme consists of a series of three polar orbiting Metop satellites, flown successively from 2006, operated from EUMETSAT ground facilities. It increases direct socio-economic benefits to EUMETSAT Member States and leverages additional benefits through integration into the Joint Polar System (JPS) with NOAA, in addition to cooperation in the context of CGMS and WMO. Metop-A (launched 2006) and Metop-B (launched 2012) are in a polar orbit and provide detailed observations of the global atmosphere, oceans and continents. The two satellites operate in parallel. Metop-C is planned to be launched in September 2018. The follow-on EPS Second Generation Programme (EPS-SG) is expected to be one of the most important sources of satellite observations for all forecasts based on NWP models in the 2021–2040 timeframe. EPS-SG represents Europe's contribution to the future Joint Polar System (JPS), planned to be established together with NOAA, following on from the Initial Joint Polar System (IJPS). Jason-3 and Jason-CS (Sentinel-6) are contributing missions of the European Union's Copernicus Earth Observation programme. They deliver complementary data to the Sentinel data, satisfying a whole range of observational requirements. Jason-3 was launched in 2016 and Jason-CS (Sentinel-6) is expected to be launched end 2020. As part of its ocean surface topography mission supporting operational oceanography, Jason-3 secures provision of data for key Copernicus services, in particular the Copernicus Marine Service. By combining Jason-3 and two Jason-CS satellites, the continuity of critical high precision observations of ocean surface topography until 2030+ is secured, in synergy with the marine mission of Copernicus Sentinel-3 – operated by EUMETSAT on behalf of the European Commission. The Copernicus Sentinel-3 marine mission's main objective is to determine parameters such as sea-surface topography, sea -surface temperature and ocean- surface colour. With these future programmes developed in cooperation with ESA and National Agencies such as CNES and DLR, and with the geostationary Meteosat Third Generation (MTG) programme EUMETSAT will ensure consistent and timely observations of weather, environment and climate from space aiming to save lives, prevent economic loss and support sustainable development and innovation.