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Test tools and test data for the future EUMETSAT EPS-SG platform

Iryna Khlystova and Michela Sunda
EUMETSAT, Eumetsat Allee 1 D-64295 Darmstadt Germany

The EUMETSAT Polar System - Second Generation (EPS-SG) represents Europe's contribution to the future Joint Polar System (JPS), which is planned to be established together with the National Oceanic and Atmospheric Administration (NOAA) of the United States, following on from the Initial Joint Polar System (IJPS). Due to its global coverage and the variety of passive and active sensors on the EPS-SG platform, a significant positive impact on Numerical Weather Prediction (NWP) can be expected for all forecasts based on NWP in the 2020–2040 time frame. It will increase direct socio-economic benefits to Member States and leverage additional benefits through its integration into the JPS and cooperation in the context of CGMS and WMO.
For the EUMETSAT will develop the EPS-SG overall system of satellites and the Overall Ground Segment (OGS) and be responsible for the Payload Data Acquisition and Processing (PDAP) system. This will include all the functionality dedicated to the L0, L1 and L2 Operational Processor, for generation of the near-real time L1 and L2 mission central products. Also the European Space Agency will develop the EPS-SG satellites and a number of instruments, with CNES and DLR playing a key role. The general processing chain should be in place and be extensively tested before the first data set is sent from the space platform to the ground. For this, numerous test tools, such as satellite data simulators (IDS) and processors prototypes (GPPs and IPPs) need to be developed and operated before the launch of the satellites. EUMETSAT cooperated with several European agencies in order to provide all the testing items in time.
Here, we present the insight into the EPS-SG the logic of the test tools for the generation of the test data and provide insights into the modern space-based mission planning and preparation activities.