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Precipitation Products from the Hydrology SAF

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The EUMETSAT *Satellite Application Facility on support to Operational Hydrology and Water Management* (H-SAF) was established by the EUMETSAT Council on July 3, 2005 and started activity at the official date of September 1, 2005. The development programme duration was 5 years, ending on August 31, 2010. Soon after, the first phase of a follow-on *Continuous Operations-Development Programme* (CDOP-1) started with a 18-month period of duration. A following second phase (CDOP-2) should then provide long-term perspective (five years) to the initiative. The Italian Meteorological Service serves as *Host Institute* on behalf of 12 European countries.

H-SAF products concern precipitation, soil moisture and snow parameters. Some products are based only on satellite observations (OBS), while other products are based on the assimilation of satellite measurements/products into numerical models (ASS). In addition to products development and generation, H-SAF includes a products validation programme and a hydrological validation programme. The Italian Civil Protection Department (DPC) coordinates the validation programme. The following table presents the list of the precipitation products being generated within the CDOP-1 phase.

Here, we will focus on the OBS precipitation products that are based on algorithms developed by CNR-ISAC in collaboration with the international community. All these products were first generated during the H-SAF development programme and are now under continuous development in order to improve their performance. They are generated routinely at the Italian *Centro Nazionale di Meteorologia e Climatologia Aeronautica* (CNMCA), which is responsible of operational product generation and dissemination; in addition, they are generated in a pre-operational fashion, with a delay of few minutes to few hours from observation, depending on product and satellite data access.

Specifically, we will present and discuss the algorithms on which these precipitation products are based. We will also discuss the activities that are presently performed during CDOP-1 or are planned to be performed during CDOP-2, in order to enhance and improve algorithms and processing schemes and extend them to satellites that will be operational in the 2011-2017 timeframe – with special emphasis on the GEO *Meteosat Third Generation* (MTG) satellite which is scheduled to be launched by EUMETSAT in 2016, and on the LEO Core Observatory of the *Global Precipitation Measurement* (GPM) mission which will launched by NASA and JAXA in 2013.