

ROM SAF RADIO OCCULTATION ACTIVITIES AND FUTURE DEVELOPMENTS

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The Radio Occultation Meteorology Satellite Application Facility (ROM SAF) is a decentralized operational processing facility under EUMETSAT. The objectives of the ROM SAF are to develop, generate, disseminate and archive operational GNSS radio occultation products for NWP, Climate and Space Weather applications.

The products are derived from measurements by RO instruments onboard the EUMETSAT missions Metop, Metop-SG and Sentinel-6A Michael Freilich, RO data from Spire processed by EUMETSAT, and data from other RO missions for reprocessing. ROM SAF produces reprocessed Climate Data Records (CDRs) extended in time by Interim Climate Data Records (ICDRs) for users requiring a higher degree of homogeneity of the RO data sets. The ROM SAF also maintains the Radio Occultation Processing Package (ROPP) that contains software modules that aid users wishing to process, quality control and assimilate radio occultation data from any radio occultation mission into NWP and other models.

The present contribution contains an overview of R&D plans for CDOP 4 (Continuous Development and Operations Phase 4), covering the period March 2022 to February 2027. CDOP 4 commitments include the continued provision of operational RO data for NWP and climate applications. In addition, for Metop-SG Day 2 ionosphere products (scintillations, electron density profiles) for space weather applications will be developed and produced operationally about one year after the launch of the first Metop-SG satellite. New releases of CDRs and ICDRs will include addition of uncertainty estimates and ingestion of new RO missions. For ROPP the plan includes development of forward models for assimilation of polarimetric and airborne RO measurements and development of a forward model for future LEO-LEO microwave occultations.

The Leading Entity of ROM SAF is the Danish Meteorological Institute (DMI), with four Cooperating Entities: ECMWF (European Centre for Medium-Range Weather Forecasts) in Reading, UK, Bologna, Italy, Bonn, Germany; IEEC (Institut D'Estudis Espacials de Catalunya), Barcelona, Spain; Met Office, Exeter, United Kingdom; and Wegener Center, University of Graz, Graz, Austria. Information about ROM SAF products and services are available at <http://rom-saf.eumetsat.int>