The EUMETSAT contribution to the ECV services of the Copernicus Climate Change Service

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Implemented by the European Centre for Medium-Range Weather Forecasts (ECMWF) on behalf of the European Commission, the Copernicus Climate Change Service (C3S) offers open and free access to authoritative climate data and information in support of adaptation and mitigation strategies to climate change.

C3S provides access to climate data of the past, present and future through the Climate Data Store (CDS). Among these data, C3S monitors and harmonize historical records of satellite-based observations to derive global gridded Climate Data Records (CDRs) of Essential Climate Variables (ECVs). C3S uses the concept of ECV defined by the Global Climate Observing System (GCOS) to select those physical, chemical or biological variables that can build a reliable global picture of the Earth System climate and its evolution during the last decades. In total, C3S has already implemented services for 22 ECVs. The scientific requirements (such as space-time resolutions, accuracy and stability) for hosting CDRs of ECVs in the CDS are based on the GCOS guiding principles where possible.

The ECV products available in the CDS are organised around five thematic services: atmospheric physics, atmospheric composition, ocean, hydrology and cryosphere, and land biosphere. Aiming at providing state-of-the-art CDRs and services, C3S relies heavily on the upstream development work conducted in other European agencies and programmes. Among them, the EUMETSAT Satellite Application Facilities (SAFs) provide a key role in two C3S thematic services; the CM-SAF and ROM-SAF provide data and services to the atmospheric physics thematic service, whereas OSI-SAF does the same with the ocean service. The EUMETSAT contribution to C3S not only consist of brokering relevant climate datasets, but also the operationalization of production chains, comprehensive documentation associated to each data product, quality assurance, specialized user support and end user tools to foster user uptake.

In this presentation we will present the C3S ECV thematic services, and in particular the added value generated from the SAFs contribution to the C3S ECVs structure. We will also present future plans aimed at increasing the number of ECVs and possible scenarios where the SAFs contribution could be streamlined.