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Climate Data Records and user service of the EUMETSAT Satellite Application Facility on Climate Monitoring

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In recent decades climate variability and change have caused impacts on natural and human systems on all continents. Observations are needed to understand and document these interactions of the climate system. They are increasingly based on remote sensing from satellites which offer global scale and continuous coverage.
Only long term and consistent observations of the earth system allow us to quantify impacts of climate variability and change on the natural and human dimension. From this understanding one can estimate and eventually predict future states of the earth system and quantify its vulnerability and resilience to continuing anthropogenic forcing.

Since about 15 years, the EUMETSAT Satellite Application Facility on Climate Monitoring (CM SAF, www.cmsaf.eu) develops capabilities for a sustained generation and provision of Climate Data Records (CDRs) derived from operational meteorological satellites.
The ultimate aim is to make the resulting data records suitable for the analysis of climate variability and the detection of climate trends.
The product portfolio of the CM SAF comprises long time series of Essential Climate Variables (ECVs) related to the energy & water cycle as defined by Global Climate Observing System (GCOS).

The CDRs are made available via a web user interface which also allows applying post-processing procedures, such as the extraction of sub-areas or re-projection. The planned climate data records to be released until the end of the current project phase CDOP-3 will cover several cloud parameters, surface albedo, radiation fluxes at top of the atmosphere and at the surface, land surface temperature, precipitation as well as different water vapour parameters and fluxes. As for the already released data sets, different areas of the globe will be covered in varying temporal resolution depending on the satellite type. This contribution will present the new releases of CM SAF climate data records planned for CDOP-3 and will give a general overview of the current and planned re-processing activities at the CM SAF. The concept of providing TCDR as long term data sets in connection with providing related ICDR in near real time suitable for climate monitoring applications will be shown. In addition, the offered user services of CM SAF will be presented.