

# Climate Data Records and user services of the EUMETSAT SAF on Climate Monitoring

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The Satellite Application Facility on Climate Monitoring (CM SAF), as part of EUMETSAT's SAF network, exploits satellite based remote sensing data to derive Climate Data Records (CDR) and Interim Climate Data Records (ICDR) of Essential Climate Variables (ECV) and other parameters with high relevance to the climate system. The main focus of the CM SAF Continuous Development and Operations Phase 3 (CDOP-3, 2017-2022) is to develop and improve methods to produce CDRs on an operational basis in a sustained mode. Data records are compiled from different sensor types on operational geostationary and polar orbiting meteorological satellites including instruments such as MVIRI, SEVIRI, GERB, AVHRR, HIRS, SSM/I, and SSMIS.

## Climate Data Records...

CM SAF's climate data records are based on carefully (inter-) calibrated satellite data using the latest version of the respective algorithms. The data records are generated in dedicated re-processing events. After a thorough validation and review by external experts, the data records are released and available to the users via the CM SAF data portal.

## Already released CDRs...

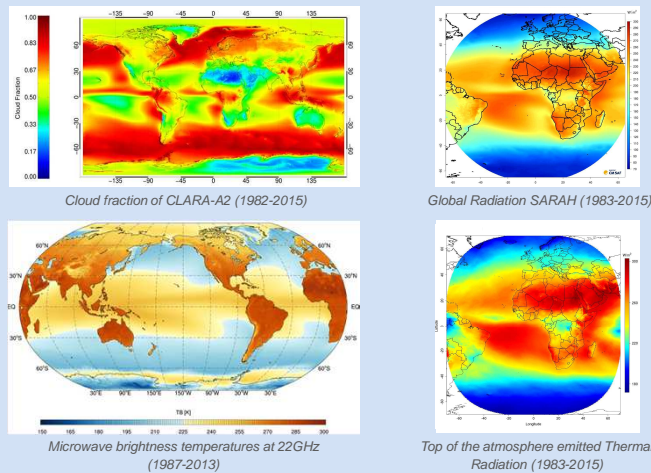
Along with the provision of its Environmental Data Records (EDR), CM SAF has already released several CDRs, summarised in Table 1. Further information can be found via the corresponding Digital Object Identifiers (DOI) available at [www.cmsaf.eu/doi](http://www.cmsaf.eu/doi).

[www.cmsaf.eu/](http://www.cmsaf.eu/)

Sensor	Parameter	Period	Coverage
<b>Fundamental Climate Data Record (FCDR)</b>			
SMR, SSM/IS	Microwave Radiances	1979-2015	global
<b>Thematic Climate Data Records (TCDR)</b>			
SSM/IS	Total integrated water vapour, evaporation, precipitation, freshwater flux, latent heat flux, near surface wind speed and humidity	1987-2015	global ice free ocean
ATOVS	Vertically integrated water vapour, humidity and temperature at pressure levels and layers	1999-2011	global
AVHRR GAC	Cloud parameters, surface radiation parameters, incl. albedo	1982-2015	global
SEVIRI	Cloud parameters, aerosol optical depth and free tropospheric humidity	2004-2015	Europe & Africa
GERB/SEVIRI	Top of atmosphere radiative fluxes	2004-2015	Europe & Africa
MVIRI	Surface Radiation	1983-2005	Europe & Africa
MVIRI/SEVIRI	Cloud parameters, surface radiation parameters, incl. albedo and land surface temperature	1983-2015	Europe & Africa
	Daylight	1983-2011	
	Top of atmosphere radiative fluxes	1982-2015	

Table 1: List of selected CM SAF CDRs until now

## Climatological means



## To be released in CDOP-3...

During CDOP-3 (2017-2022), CM SAF will continue to develop capabilities for a sustained generation and provision of CDRs derived from operational meteorological satellites. In particular, the generation of long term data records will be pursued. CM SAF will update several already released CDRs and will provide CDRs of additional parameters after careful validation and review of the data records. These data records will be based on calibrated and inter-calibrated data, too. A list of climate data records to be released until the end of CDOP-3 is given in Table 2. So-called Interim Climate Data Records (ICDRs) will be generated based on the respective algorithms of the previously released TCDR to allow continuation of the time series in shorter time latency.

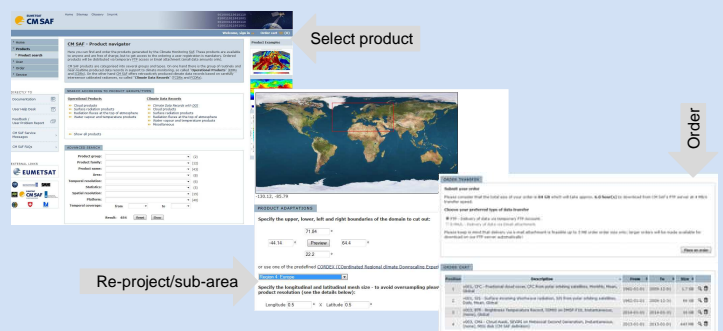
For CDOP-3 ICDRs using MSG/SEVIRI (based on CLAS-2 and SARAH-2) and AVHRR (based on CLARA-A2) will be generated. Updates based on the TCDRs released in CDOP-3 are foreseen for CDOP-4.

## User Help Desk

Data can be ordered through the CM SAF webpage [wui.cmsaf.eu](http://wui.cmsaf.eu) and are provided free of charge to any interested user (user registration is mandatory). A selection of sub-regions and re-projection of data is possible during the ordering process. Add-on products and ancillary data (e.g., lat/lon, land/sea mask, etc.) as well as example files are available on the webpage. Additionally, service messages, information on changes in processing, known product disruptions as well as a newsletter and documentation on the products is available on [www.cmsaf.eu](http://www.cmsaf.eu).

Sensor (Name)	Parameter	Period	Coverage
<b>Fundamental Climate Data Record (FCDR)</b>			
SMR, SSM/IS	Microwave Radiances	1987-2019	global
<b>Thematic Climate Data Records (TCDR)</b>			
SSM/IS (HOAPS)	Precipitation, evaporation, freshwater flux, latent heat flux, near surface wind speed and humidity, liquid water path, vertically integrated water vapour	1987-2019	global ice free ocean
Microwave Imager	Global precipitation	2002-2019	global
Various for 183.31 +/- 1 GHz Channel	Upper tropospheric humidity	1992-2020	global
HIRS (HECTOR)	Cirrus cloud amount, cloud top level	1980-2013	global
AVHRR GAC (CLARA)	Cloud parameters, surface albedo, surface radiation parameters, top of the atmosphere	1978-2018	global
SEVIRI(CLAAS)	Cloud parameters	2004-2020	Europe & Africa
MVIRI/SEVIRI	Land Fluxes, free tropospheric humidity, Top of the atmosphere	1983-2020	Europe & Africa
MVIRI/SEVIRI (SARAH)	Solar surface radiation parameters	1983-2020	Europe & Africa

Table 2: List of CM SAF CDR releases planned in CDOP-3



Screenshots of ordering process via the CM SAF Web User Interface

