Status of ESA CCI

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CCI objectives

Realize the full potential of the long-term global EO archives that ESA, together with its Member states, has established over the last thirty years.....

..... as a significant and timely contribution to the ECV databases required by the United Nations Framework Convention on Climate Change

6 Years / 75 M€

CCI now 13 ECVs

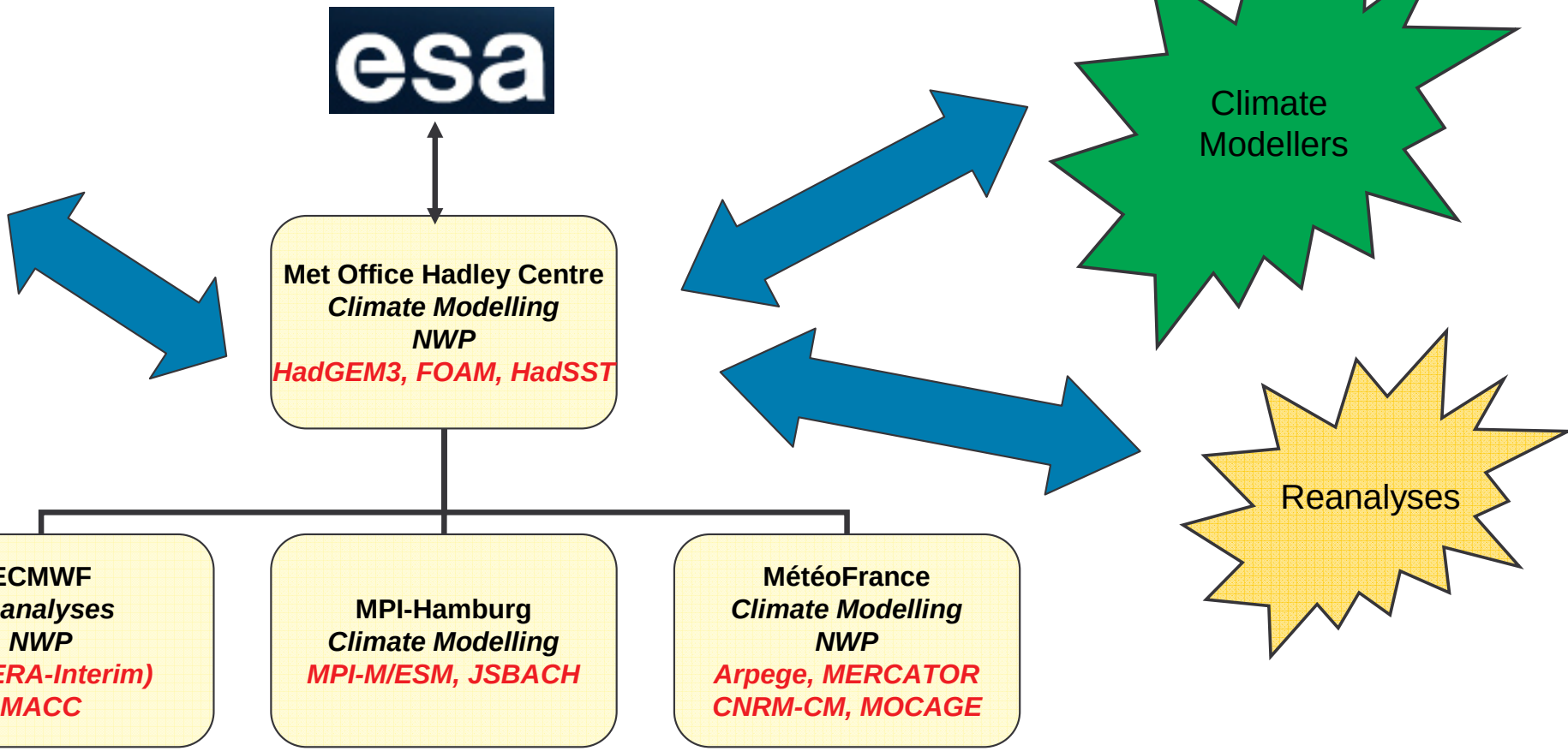
Atmosphere	**Surface**	**Air temperature; Precipitation, Pressure, Surface radn budget, Wind**
	Upper Air	**Clouds, Wind, Earth Radn Budget** **Upper air temp, water vapour**
	Composition	**Carbon dioxide, methane & GHGs** **Ozone, Aerosol properties**
Ocean	**Surface**	**SST, Sea-level, Sea-ice, Ocean colour** **Sea state, Salinity, CO_2 partial pressure**
	Sub-surface	**Temperature, Salinity, Current, Nutrients, Carbon, Ocean Tracers, Phytoplankton**
Terrestrial	**Glaciers & Ice caps, Land cover, Fire disturbance, FaPAR, LAI, Albedo, Biomass,Lake levels, Snow cover, Soil moisture, Water use, Ground water, River discharge, Permafrost, Seasonally frozen ground, Ice Sheets**	

ECV Teams

GCOS ECV	CCI Project	Science Leader
A.6	Cloud_cci	Deutscher Wetterdienst (*R.Hollmann)*
A.9	Ozone_cci	BIRA-IASB (*M. Van Roozendael*)
A.10	Aerosol_cci	DLR / FMI (*T Holzer-Popp / G.De Leeuw*)
A.8	GHG_cci	U.Bremen IUP (*M.Buchwitz)*
O.3	Sea_Level_cci	LEGOS-CNES (*A Cazenave*)
O.1	SST_cci	U. Edinburgh (*C Merchant*)
O.6.1/2	Ocean_Colour_cci	Plymouth Marine Laboratory (*S. Sathyendranath)*
T.3.1/2	Glaciers_cci	U. Zurich (*F.Paul)*
T.6.1	Landcover_cci	Université Catholique de Louvain (*P.Defourney*)
T.10	Fire_cci	U. Alcala (*E.Chuvieco)*
O.5	Sea_Ice_cci	NERSC, *(S. Sandven)*
T.4	Ice_Sheets_cci	DTU Space *(R. Forsberg)*
T.11	Soil_Moisture_cci	TU Vienna *(W. Wagner)*

Climate Modeling Users Group

- Sea-ice
- Sea-level
- Sea surface temperature
- Ocean Colour
- Glaciers and ice caps
- Land Cover
- Soil moisture
- Ice sheets
- Fire disturbance
- Cloud properties
- Ozone
- Aerosols
- Greenhouse Gases



Sensors used

ECV	AATSR/ATSR-2	MERIS	SPOT VGT	Landsat TM	ASAR	SEVIRI	MODIS	Sciamachy	GOSAT	GOME-1/2	AVHRR	GOMOS	IASI	AIRS	AMSU	ACE	SeaWIFS	MPAS	OMI	RADALT	TMI/AMSR-E	Scatterometer	SMMR	TMI	SMOS	AMSR-E	WINDSAT	SSM/I	PARASOL
SST	■					■					■										■									
Sea level																				■										
Ocean colour		■					■										■													
Sea-ice																														
Clouds	■	■					■				■																			
GHG		■						■	■				■	■	■	■		■												
Aerosol	■	■						■		■	■	■							■											■
Ozone								■		■		■						■	■											
Fire	■	■	■																											
Landcover		■	■		■																									
Glaciers				■																										
Soil moisture																						■	■	■	■	■	■	■		
Ice sheets																														

N.B. These are sensors used for production of CDRs not validation of them

CCI Key Points

- **User requirements determined for all ECVs including GCOS input.**
- **Open process of algorithm inter-comparison and selection to define best techniques**
- **Long term preservation of data archives and seamless access for users (e.g. Earth System Grid for modelers)**
- **CDRs will be openly and independently verified, validated and assessed for their utility**

Integrated view of ECVs

1. **Through ensuring common input datasets are used for CDR creation and in some cases common pre-processing (e.g. geolocation, land/sea mask, cloud detection)**
2. **Through comparisons of CDRs for different ECVs (e.g. SST, sea-level, sea-ice and ocean colour)**
3. **Through comparisons of CDRs with model fields (e.g. GHG and Ozone CDRs and MACC model profiles/total column amounts) CMUG will be involved in development of observation simulators. Pre-cursors of ECVs will be used for preparation.**
4. **Through studying teleconnections (e.g. El-Nino SST shows consistent impact on cloud fields, fires).**
5. **Through assimilation of CDRs and to assess impact on analyses and predictions (e.g. SST in ERA-Interim)**

Interaction with other programmes

- **GCOS** *updated requirements*
- **WCRP** *GEWEX, WGCM,..*
- **Obs4MIPS** *CCI data to be provided*
- **EMBRACE** *to use CCI data to verify regional climate models*
- **CMIP5** *to use datasets to compare with ensemble of climate models*
- **Reanalyses** *EARCLIM, CFSR, MERRA, EURO4M, ..*

Any questions?

Please visit

www.esa-cci.org

for more information