

New R&D on ECVs that were started in CCI



Selection of activities will be based on criteria already defined by Member States [ESA/PB-EO(2009)32, rev. 1]:

- Response to GCOS requirements (revised in 2016 in GCOS-200)
- Availability, quality, uniqueness and importance of the satellite data
- Maturity of retrieval algorithms
- Ability to capitalise on European scientific expertise
- Prospects for transition to an external operational context



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Atmosphere	Ocean	Terrestrial
Composition	Surface	
Aerosol Properties	Sea Surface Temperature	Land Cover
Carbon Dioxide & Methane	Sea Level	Fire Disturbance
Ozone	Sea Ice	Soil Moisture
Long-Lived Greenhouse Gases	Ocean Colour	Glaciers and Ice Caps
	Sea State	Ice Sheets
Upper Air	Current	Snow Cover
Cloud Properties	Sea Surface Salinity	Albedo
Temperature	Carbon Dioxide Partial Pressure	Leaf Area Index (LAI)
Water Vapour	Phytoplankton	FAPAR
Wind Speed and Direction	Ocean Acidity	Lakes
Earth Radiation Budget	Sub Surface	Above Ground Biomass
Surface	Carbon	Permafrost
Surface Air Pressure	Current	Ground Water
Surface Air Temperature	Nutrients	River Discharge
Surface Precipitation	Ocean Acidity	Soil Carbon
Surface Radiation Budget	Oxygen	
Water Vapour (Surface humidity)	Salinity	
Near-Surface Wind Speed, Dir	Temperature	
	Tracers	
	Global Ocean Heat Content	

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- Improve **quality** of ECV products closer to meeting GCOS goals (e.g. accuracy, spatial resolution, long term stability), and improve cross-ECV **consistency**.
- Develop algorithms for "difficult" **ECV variables** required by GCOS, e.g. regional sea-level, coastal ocean colour, aerosol absorption, sea-ice drift.
- Extend ECV **length** by developing methods to bring older less well-calibrated satellite instruments into the time series (e.g. AVHRR), and develop **corrections** for future instrument degradation.
- Exploit the **new capabilities** of Sentinel and Earth Explorer instruments, e.g. new types of measurement, new spectral bands, wider swaths, higher resolution.
- Develop climate-quality methods to join-up **multi-mission time series**, especially where there are **gaps**, e.g. Envisat to Sentinel-1/3.
- Increase maturity of ECV product **uncertainty estimates**.
- Develop better **merged** ECV products.
- Perform **algorithm round-robins** to assess promising new ECV retrieval techniques.



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Focus on solving specific R&D issues in response to the ECV needs of climate science and climate services

Duration: 3 year projects

Schedule: ITT issue in mid 2018

Call Type: Open, competitive ITT

Plan to issue a second call in ~ 2021 with similar budget

