



SEALEVEL_CCI project

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ESA CCI project



11 projects:

- Atmosphere (4)
- Land (3)
- Ocean (3)

Duration : 3 years
Mid 2010- Mid 2013

Target: Climate modeling
community





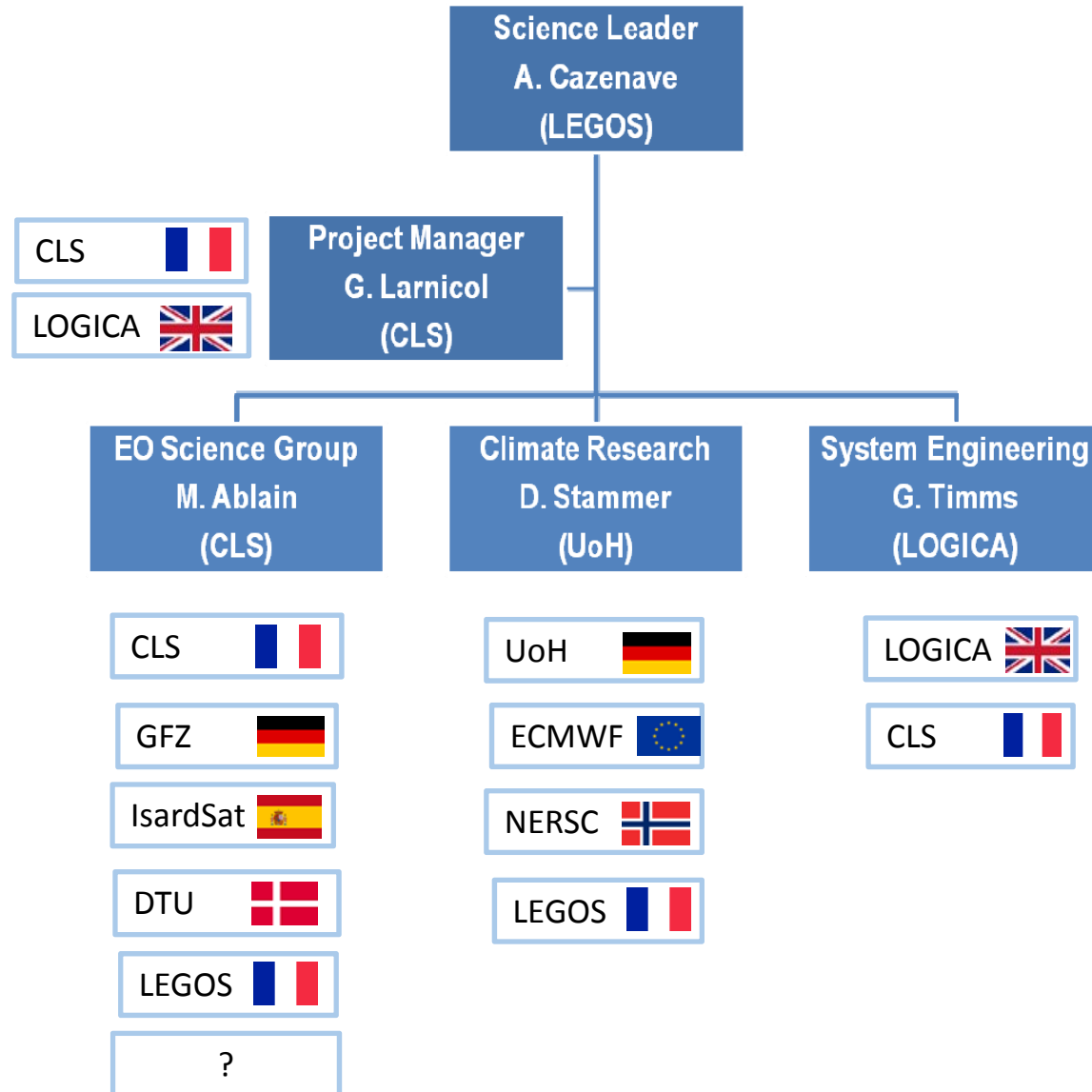
ESA CCI project



- **Develop and validate algorithms** to meet GCOS ECV requirements for (consistent, stable, error-characterized) global satellite data products from multi-sensor data archives
- **Optimize impact of ESA EO missions** data on climate data records
- Produce, within R&D context, most complete and consistent possible **multi-sensor global satellite data products** for climate research and modelling
- Generate complete **specifications for an operational production system**
- Strengthen **inter-disciplinary cooperation** between international earth observation, climate research and modelling communities, in pursuit of scientific excellence



The project team





Project scope



→ Produce ECV data sets for the Sea Level variable

Applying the new algorithms developed and selected through a round robin exercise

→ Improve the ECV assessment process

- Improve the error characterization at the algorithm level
- Involve ocean (UoH, ECMWF) and climate modelling community (NERSC)
- Reinforce the links with other ECVs, and other Climate Research groups

→ Provide detailed specification for the future operational system (phase 2 of the CCI project)



We are not starting from scratch !

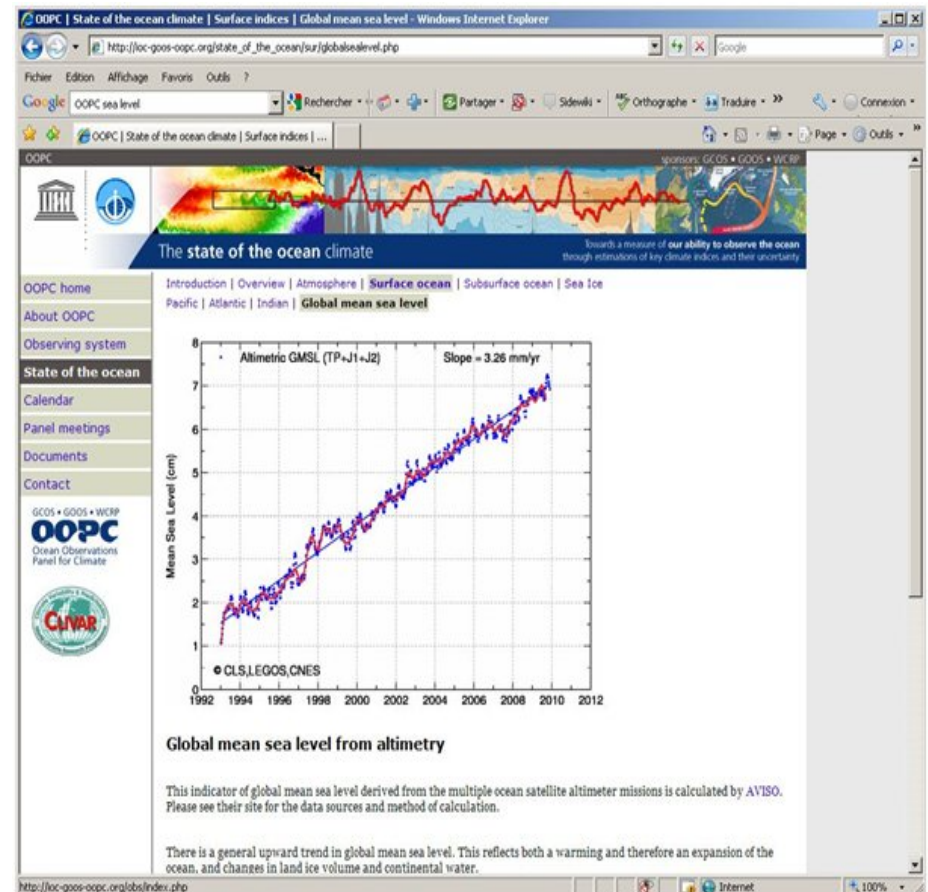


→ The project is based on an existing group and infrastructure (LEGOS/CLS/CNES)

The ECV products has been already referenced in international/intergov bodies/agencies (OOPC, CEOS, EEA,...)

→ Dedicated algorithms for Climate: retrieval of large scale low frequency signal, avoid drift,...

→ Optimise the use of ESA missions : Produce an improved multi-missions





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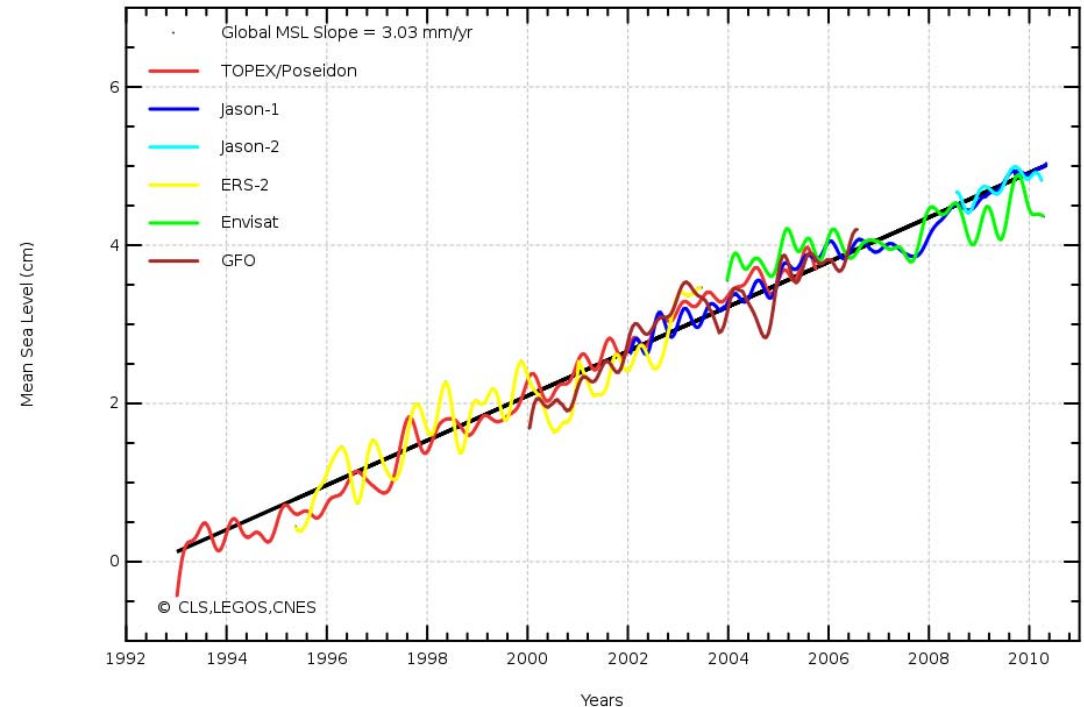


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Error characteristics



→ we should complete/improve some column of this table...



SSH components	Spatial				Temporal			
	50 km	500 km	Bias		20 days	1 year	Global Drift	
Altimeter range	2 à 4 cm	?	?	< 10 cm	< 0.5 cm	?	?	0
Sea state bias	<	?	?	< 3 cm	?	?	?	< 0.1 mm/yr
Orbit	0	0	< 2 cm	< 5 mm	0	< 2 cm	< 1 cm	< 0.2 mm/an
Ionosphere	?	< 1 cm	?	< 1 cm	< 1 cm	?	E?	0
Wet tropo	< 1 cm	< 1 cm	< 1 cm	< 1 cm	< 1 cm	< 1 cm	< 1 cm	< 0.3 mm/an
Dry tropo	< 1 cm	< 0.5 cm	< 0.5cm	0	< 1 cm	< 1 cm	0	< 0.1 mm/an
DAC	< 0.5 cm	1 à 3 cm	<3cm	0	< 3 cm	< 3 cm	1 cm	?
Oceanic tide	< 2 cm	1 à 3 cm	< 1 cm	0	?	?	?	0
Terrestrial tide	?	?	< 1 cm	0	?	?	?	0
Polar tide	?	?	< 5 mm	0	0	?	< 5 mm	0
MSS	< 1 cm	< 1 cm	< 3 cm	?	x	x	x	x



Potential links with OSTST



→ Collect User Requirements

a survey was sent 2 weeks ago

→ Scientific results obtained by the project should be presented at the OSTST

algorithm development covers all the spectra of the altimetry processing (geophysical and instrumental corrections, generation of level 3, level4 products, ...)

could be presented during the specific splinter sessions or during a splinter dedicated to climate issue...

→ Round-Robin exercise (algorithm selection)...

consists in generating all the validation diagnostics necessary to perform the selection (expert team)

is an open exercise where external contributions are welcome