



CENTRE NATIONAL D'ÉTUDES SPATIALES

# **CEOS WG on Climate - 1<sup>st</sup> meeting**

**Frascati, Italy, 26-27 May 2011**

**Short CNES contribution**

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## CNES Climate change working group

- **End 2008, CNES implemented an internal Climate change WG, with the following objectives:**
  - to analyze the CNES contribution to the studies on climate change,
  - to position this contribution in the international context,
  - to make recommendations in order to enhance the efficiency and the visibility of this contribution.
- **The CNES WG Report has been reviewed and well-received by CNES scientific advisory groups. It has been recently endorsed by the CNES high-level management.**
- **Here we just present the main recommendations of this WG. A more detailed English version of the report will be made public within a few months.**

### Recommendations on space segments

1. For a R&D agency such as CNES, it is very difficult to reconcile the need for continuity of space measurements for the study of climate change and the mandate to develop innovative missions. The main recommendations of the WG are:

- to enlarge the concept of « innovation » and to look for innovation beyond satellite technology (innovation in programmatics, physics of the measurement, calibration, mission lifetime...),
- not to exclude climate « phase 2 missions » from CNES selection process, that is to say first missions of a recurrent series such as IASI/Metop, Jason-1, Sentinel-2a...

2. For CNES climate-oriented missions, to take into account GCOS climate monitoring principles in the mission requirements documents and to make the CNES technical project teams aware of them.

### Recommendations on ground segments

3. To insure the long-term preservation of CNES climate-oriented data and to acquire the corresponding reprocessing facilities (in coordination with similar national and European initiatives).

4. To continue and to promote the involvement of CNES in international intercalibration programmes such as GSICS and CEOS WGCV.

### Recommendations on data

5. To start a study, involving CNES scientific advisory groups, on the scientific and programmatic added-value of the reprocessing of CNES climate data (long series) in order to derive climate quality FCDR and ECV.

(This study must take into account already existing European and world programmes such as ESA CCI, SCOPE-CM...)

6. To define, with CEOS (in particular its Climate WG) and with CNES scientific advisory groups, the participation of CNES in a few interagency climate reprocessing activities in which the French expertise and data would be a relevant and significant contribution.

## Examples of CNES data available for FCDR/ECV

Missions et instruments du CNES	ATSR/M	ScalraB	Polaris/DEOS	Parasol	IASI	Calipso	Megha-Tropiquee	TRAQ/SIFTI	IASI-NG	SMI	MicroCarb	Merlin	Serie DO RIS	Topex/Poseidon	Serie Jason 2	Saral/AltiKa	CFOSAT	SWOT	Sentinel-3 (altimétrie)	SND 5	Serie SPOT	Pléiades	Végétation	Vent jul	Martigri
<b>ECV - Variables climatiques essentielles</b>																									
<b>Atmosphère</b>																									
Vent de surface	•													•	•	•	•	•	•	•					
Température de l'air à haute altitude					•				•																
Humidité	•		•	•	•	•	•	•	•	•															
Propriétés des nuages			•	•	•	•	•	•	•	•											•				
Précipitations							•																		
Bilan radiatif		•	•	•	•	•	•	•	•	•															
Ozone					•			•	•	•															
<b>Ré-analyses</b>																									
Aérosols			•	•	•	•		•	•	•															
Dioxyde de carbone, méthane et autres GES					•			•	•	•	•	•													
vent en altitude																									
<b>Océan</b>																									
Glace de mer																									
Niveau de la mer	•												•	•	•	•	•	•	•	•	•				
Température de surface					•				•												•				
Couleur de l'Océan			•	•						•													•		
Etat de la mer														•	•	•	•	•	•	•	•				
<b>Ré-analyses</b>																									
Salinité superficielle																					•				
<b>Terre émergée</b>																									
Lacs														•	•	•	•	•	•	•	•	•	•	•	•
Glaciers, calottes polaires			•	•						•										•			•	•	•
Couverture neigeuse			•	•						•										•			•	•	•
Albédo		•	•	•						•														•	•
Couverture des sols			•	•						•											•			•	•
fAPAR																				•				•	•
Indice foliaire (LAI)			•	•																				•	•
Biomasse																								•	•
Feux																					•			•	•
Humidité des sols																					•				