



WORLD CLIMATE RESEARCH PROGRAMME

WMO Rolling Review of Requirements (RRR)

Observing Systems Capability Analysis and Review Tool (OSCAR)

Michel Rixen
WDAC6 meeting
22-23 March 2017
Frascati, Italy



WCRP Application Areas

WCRP in OSCAR is currently organized with the following application areas:

- CliC
 - GEWEX
 - CLIVAR
 - SPARC
 - SOLAS
 - Climate Modeling Research
-
- Some inputs as old as 1998
 - Attempt to review them in 2012 ...
 - Challenge: diversity of our research: global, regional, processes, links to services, etc
 - Evidence that some of those inputs are used by space agencies to justify new mission requirements

Example: climate modeling

Requirements defined for *Climate Modelling Research* (13)

This table shows all related requirements. For more operations/filtering, please consult the full list of [Requirements](#)

Note: In reading the values, goal is marked **blue**, breakthrough **green** and threshold **orange**

Id	Variable	Layer	App Area	Uncertainty	Stability / decade	Hor Res	Ver Res	Obs Cyc	Timeliness	Coverage	Conf Level	Val Date	Source
223	Aerosol mass mixing ratio	LS	Climate Modelling Research	10 %		50 km		6 h	30 d	Global	tentative	1998-10-29	WCRP
		HT		15 %		100 km		24 h	45 d				
		LT		20 %		500 km		7 d	60 d				
226	Atmospheric temperature	HS&M	Climate Modelling Research	1 K		50 km		3 h	30 d	Global	reasonable	1998-10-29	WCRP
				2 K		100 km		6 h	40 d				
				3 K		500 km		12 h	60 d				
227	Atmospheric temperature	LS	Climate Modelling Research	0.2 K		10 km	0.2 km	60 min	30 d	Global	reasonable	2012-12-01	WCRP
		HT		0.5 K		50 km	1 km	3 h	45 d				
		LT		2 K		250 km	3 km	6 h	60 d				
230	Downward short-wave irradiance at TOA	TOA	Climate Modelling Research	0.1 W.m ⁻²		25 km		24 h	30 d	Global	reasonable	1998-10-29	WCRP
				0.3 W.m ⁻²		50 km		2 d	45 d				
				1 W.m ⁻²		100 km		6 d	90 d				
231	Sea surface temperature	Sea surface	Climate Modelling Research	0.5 K		50 km		60 min	30 d	Global ocean	reasonable	1998-10-29	WCRP
				1 K		100 km		3 h	45 d				
				2 K		250 km		12 h	60 d				
232	Sea-ice cover	Sea surface	Climate Modelling Research	5 %		15 km		24 h	30 d	Global ocean	reasonable	1998-10-29	WCRP
				10 %		50 km		3 d	45 d				
				50 %		250 km		15 d	90 d				
233	Significant wave height	Sea surface	Climate Modelling Research	0.5 m		100 km		12 h	30 d	Global ocean	reasonable	1998-10-29	WCRP
				0.7 m		150 km		18 h	45 d				
				1 m		250 km		24 h	60 d				
234	Specific humidity	HS&M	Climate Modelling Research	5 %		50 km		3 h	30 d	Global	reasonable	1998-10-29	WCRP
				10 %		100 km		6 h	45 d				
				20 %		250 km		12 h	60 d				
235	Specific humidity	HT	Climate Modelling Research	5 %		25 km		60 min	30 d	Global	reasonable	2012-12-01	WCRP (M.Rixen)
				10 %		37 km		3 h	45 d				
				20 %		50 km		6 h	60 d				

Possible approach

- 1) (GCOS) “**Climate Monitoring**” – long-term, global, observations of ECVs to monitor climate and climate change to underpin assessments such as those of the IPCC and providing a baseline understanding of climate change. Nearly all of the requirements in the implementation plan fit into this category;
- 2) (GCOS) “**Climate Services**” – monitoring to support climate services such as adaptation and mitigations. These may be global, regional or national and will depend on national priorities, aims and objectives. There are a few terrestrial requirements in this category;
- 3) (WCRP?) “**Climate Science**” – specific monitoring that meets the needs of specific scientific studies such as those of WCRP already in OSCAR which would be integrated into this category. None of the requirements from the implementation plan would be in this category.

The third application area, climate science, could be the home for the 6 different application areas that are currently listed under WCRP.

Questions

1. A new structure of WCRP Application Areas?
2. Level of granularity?
3. Approach to revise inputs?
4. Who? Via WDAC members?