

Report Card – Networks status

October 9, 2020

www.ocean-ops.org

Joint WMO-IOC Centre for Oceanography and Marine Meteorology in-situ Observations Programme Support



Introduction

The Report Card network status table is an attempt to provide messaging on the status of the global ocean observing system through the global networks, in order to communicate on progress and issues, to an audience of both observing system implementers and those investing in the ocean observing system, such as policymakers or national funding bodies. This document provides background on the criteria used to rate progress in the network table.

Status table content and meaning of the categories

Network Technical Coordinators at OceanOPS, together with OCG experts for Data and Best Practices, the OCG Executive Board, and OCG network chairs have discussed and agreed on the following status table.

GOOS <i>in situ</i> networks ⁱ	Implementation	Data and metadata			Best [®] Practices	est [®] GOOS delivery areas ⁷ ctices		
	Status ²	Real ³ time	Archived⁴ high quality	Metadata⁵		Operational services	Climate	Ocean health
Ship based meteorological measurements – SOT/VOS	**	***	***	**	**			
Ship based aerological measurements – SOT/ASAP	*	***	-	**	*			
Ship based oceanographic measurements – SOT/SOOP	**	***	***	**	**			
Sea level gauges- GLOSS	***	**	***	*	**			
Drifting and polar buoys - DBCP	***	***	**	**	**			
Moored buoys - DBCP	**	***	*	* *	**			
Interdisciplinary moorings - OceanSITES	**	*	*	**	**			
Profiling floats - Argo	***	***	***	***	**			
Repeated transects - GO- SHIP	***	*	***	**	***			



Report Card – Networks rating

OceanGliders	*	**	*	**	*		
	Emerging						· ·
HF radars	Emerging	***	***	*	***		
Biogeochemistry & Deep floats - Argo	* Emerging	***	*	***	**		
Animal borne ocean sensors - AniBOS	Emerging	***	*	*	**		

Meaning of the categories:

¹ More information at <u>www.goosocean.org</u>

²Status: status vs target, external target when exists, e.g. GCOS; network self-assessed status when target does not exist

³ Real time: data available on Global Telecommunication System of WMO

⁴Archived high quality: availability of delayed mode data with additional quality controls

⁵Metadata: information required by OceanOPS

⁶ Best Practices: community reviewed and easily accessible documentation encompassing the observations lifecycle ⁷See Network Specification Sheets: <u>www.goosocean.org</u> > Observations > Network Specification Sheets

Implementation/Status:

This is based on Network implementation plan and targets. We have 3 cases to consider:

- 1. Community widely adopted target (GCOS, WMO OSCAR, OceanObs'x9, etc.)
- 2. Network self-declared target
- 3. No target

When networks have a target, we can assess the operational status of the network vs this target. The KPI Activity at OceanOPS (<u>www.ocean-ops.org</u> > Metrics > KPIs) tracks this and provides a clear background metric.

The difficulty here is for networks that have no target at all; the score is self-evaluated by Networks.

- *: Activity <25%
- **: Activity 25-75%
- ***: Activity >75%

Data & Metadata:

Suggestions for the future: In the future, based upon the OGC data strategy and FAIR data principles, we will have a better way to quantify the data availability. As the networks and data systems mature, it is only natural to expect higher levels of service, and these expectations may result in fewer stars in network Report Cards.



1. Realtime (RT)

Basically 3 stars for RT data means: distribution in RT on the GTS with a given timeliness target.

*: embryo real time data distribution. Only a few platforms send data in real-time (*e.g.* GOSHIP/OceanSITES)

- **: <75% platform data on GTS, not using modern GTS templates (IE BUFR templates)
- ***: >95% platform data on GTS, using modern WMO-approved BUFR templates

2. Archived high quality

Here we have no indicator for all networks, so it is a self-assessed status on the availability of delayed mode data. On the web (GTS not relevant for DM data).

One indicator exists for Argo profiles: 80% of delayed mode eligible profiles are available \Leftrightarrow 3 stars

3. Metadata

Metadata as required by OceanOPS to do its monitoring work, capture a common denominator enabling an integrated view, and using reference tables (WIGOS, Seadatanet, ICES, etc.) as far as possible. A specification document is being prepared for discussion within OCG across all networks, but roughly OceanOPS metadata needs were exposed at OCG 10:

- Unique identifier, label (registration/certification process, the future WIGOS ID) \rightarrow interoperability key;
- Implementer (programmes, contacts, agencies, funding sources) → structuration of the components;
- Operations at sea (ships/cruises) → one of the critical links between the system elements. Deployment/retrieval dates/ship/cruise/lat/lon, etc.;
- Hardware: vocabulary to describe and regroup the "platforms" types, models, etc.;
- Sensors, parameters: vocabulary \rightarrow path to EOV/ECV with *e.g.* serial, depth/height;
- Telecommunications \rightarrow to oversee data distribution, additional tracking source. Check telemetry market evolution;
- Observations: available in RT or DM → the user perspective and data availability to be tracked and optimized. (via RT links to GTS/GDACs);
- Essential parameters as identified by the WIGOS metadata standard or network specifics.

*: we have a dot on the map, with a country but not much more, through a yearly update (*e.g.* GLOSS)

**: most of metadata needs covered regular updates - medium monitoring capacity

***: OceanOPS needs fully met, and routinely updated. WIGOS ID allocation done and metadata submitted routinely to WMO WIGOS/OSCAR – *i.e.* advanced monitoring capacity.

Best Practices

Regarding Best Practices a number of things were taken into account: the Best Practices of each network need to cover the observation 'lifecycle' - Deployment and sampling/SOP/operations, pre-mission preparation (*e.g.* calibration and validation), data retrieval and formatting, primary quality control and secondary quality control for all the EOVs (and sub-variables), that they sample. There also needs to be clear best practices around data documentation, access and archival.



Report Card – Networks rating

On top of having the best practices written, the ratings were based on how easily accessible the best practices are outside of the network community.

Additionally, the frequency of the update of the best practice has also been considered.

So, the scoring could be 2 stars meaning best practices were in place but only accessible through meeting reports which are difficult to find on various websites.

Alternatively, 2 stars may be that 2 or 3 manuals are easily available but do not cover the whole observing lifecycle, or they are very outdated.