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**AGENDA ITEM 6: DBCP and OceanOPS report**

**AGENDA ITEM 6.1: DBCP and OceanOPS report**

**SUMMARY**

This document provides a report on status of DBCP, Technical Coordinator activities, and overall GOOS, OceanOPS activities related to DBCP, including recommendations to the panel for approval and actions/decisions required.

Mr Long Jiang's work included supporting DBCP chair, Dr. Boris Kelly-Gerreyn, the Executive Board, Task Teams, Action Groups, and members upon request, etc.

Mr Jiang recalled the GOOS Observations Coordination Group tasked OceanOPS to monitor and integrate metadata of all networks. OceanOPS has therefore developed a system to harmonize and integrate metadata, full details at <https://ocean-ops.org/metadata>. This included csv templates for moored and drifting buoys: <https://www.ocean-ops.org/metadata/#platform-metadata-submission-supported-formats>. He noted the OCG endorsed the OceanOPS metadata system and affiliated templates and invited operators to share metadata to OceanOPS and use the templates as much as possible. In current template, there are several mandatory items for buoys: 1) program, 2) buoy model, 3) deployment location (latitude, longitude), 4) deployment date, 5) deployment ship, 6) telecommunication system/number, 7) sensors, and 8) WMO ID if already allocated. For moored buoys, there is redeployment function that allows copy similar metadata information from previous deployment in the web dashboard.

OceanOPS also developed API interface for machine-to-machine metadata exchange with operators, and automatic WMO ID allocation. He reminded the automatic interface will follow [WIGOS Guide](#) (edition 2021, chapter 10.2) to rule out region-specific scheme for all mobile platforms (drifters, Argo floats and ocean gliders, etc.), so that the first two digits will no longer indicate WMO regions. This has been tested and used by certain drifter operators without major issues, however, he did notice cases of confusion raised by data users.

Mr Jiang reported **BUFR migration** stagnated at 61% for **moored buoys** in agreed TM315008 format. He appreciated Germany started the migration process and encouraged other moored buoys operators not yet fully compliant to undertake same migration as soon as possible.

Mr Long Jiang reported overall status of the global drifting buoys array (Figure 1).

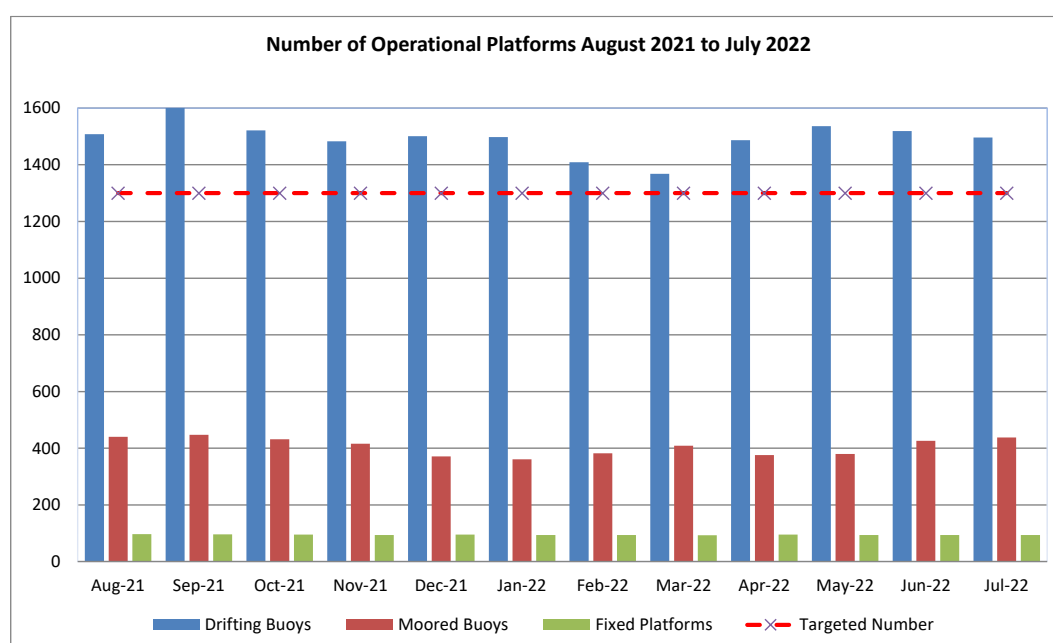


Fig. 1 Monthly average of operational units

From August 2021 to July 2022, monthly average number of operational units: 1494 drifters, 406 moored buoys, 94 fixed platforms, and 36 tsunameters. It showed 5.7% drop of drifters and 2% for moored buoys.

Mr Jiang analyzed yearly deployment trend of drifters by ocean basin from 2012 to 2021(Figure 2). There occurred obvious overall decrease of deployments for the global

drifters array in the past ten years, especially in 2019 due to the pandemic, this is especially true for Indian Ocean. While during the same period deployments in the Atlantic Ocean and Polar regions picked up slightly.

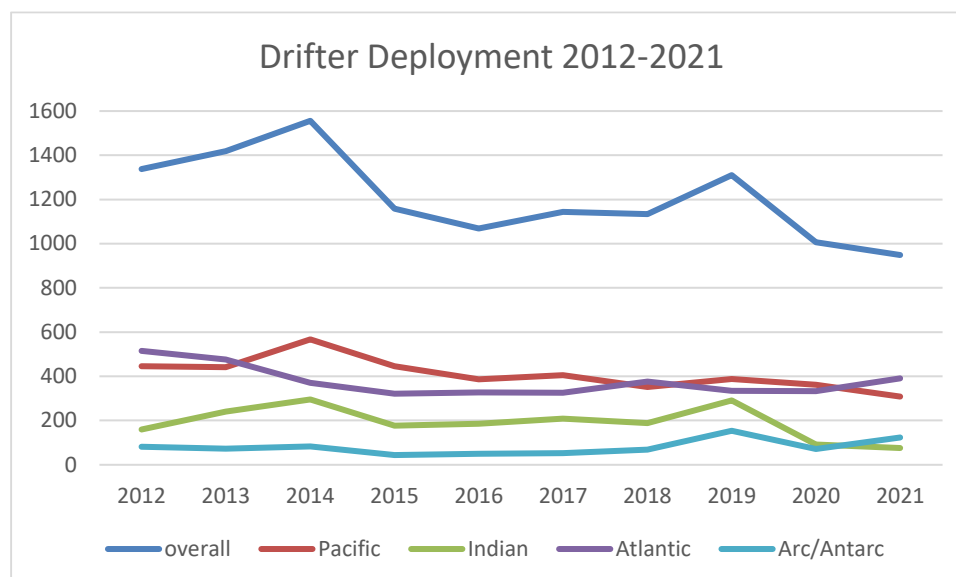


Fig. 2 Drifter yearly deployment 2012 – 2021, globally and by basin

He further analyzed deployments against targets in the Atlantic (121%), Indian (73%) and Pacific Ocean (67%) in the past ten years. While overall trend in the Atlantic drops, it is always above 100% in the past ten years. The Indian Ocean experienced dramatic fluctuation over the same period, with two peaks in 2014 and 2019, then slumped to current less than 10% in Aug 2022. In the Pacific, it also rose to peak in 2014, and lost momentum gradually. Based on data above, Indian Ocean needs greater attention for deployments/re-deployments of buoys in the coming years. Mr. Jiang noted the Indian Ocean Observation Coordination meetings organized by OceanOPS and noted with appreciation to the bilateral arrangements of USA with India and Indonesia to resume deployments as soon as early 2023 and encouraged other members operating in the Indian Ocean to work with USA fill in the gaps, especially drifters that are relatively less complex to deploy.

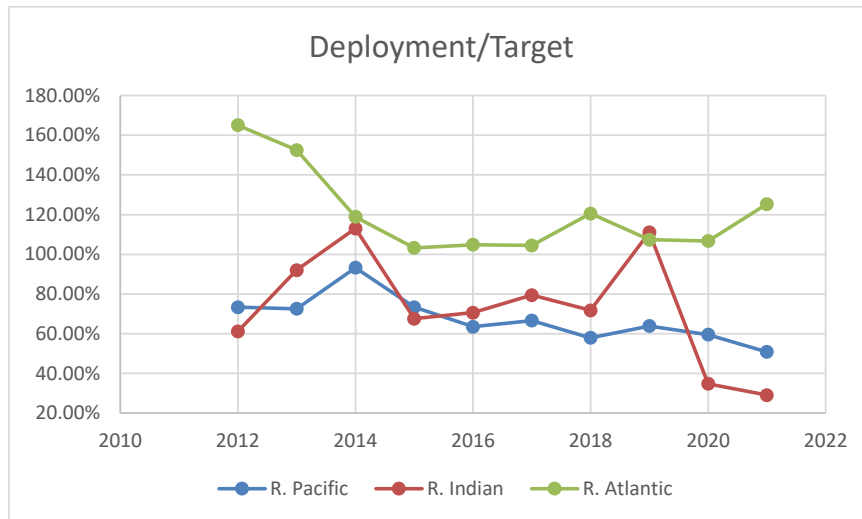


Fig. 3 Drifter yearly deployment against targets, 2012 - 2021

For coastal/national moored buoys, there are only data available from June 2016 at OceanOPS. He analyzed operational units against target (300) from June 2016 till July 2022. The monthly average over the period is nearly 100%, while clear fluctuation occurs due to seasonal deployments for example in the Great Lakes.

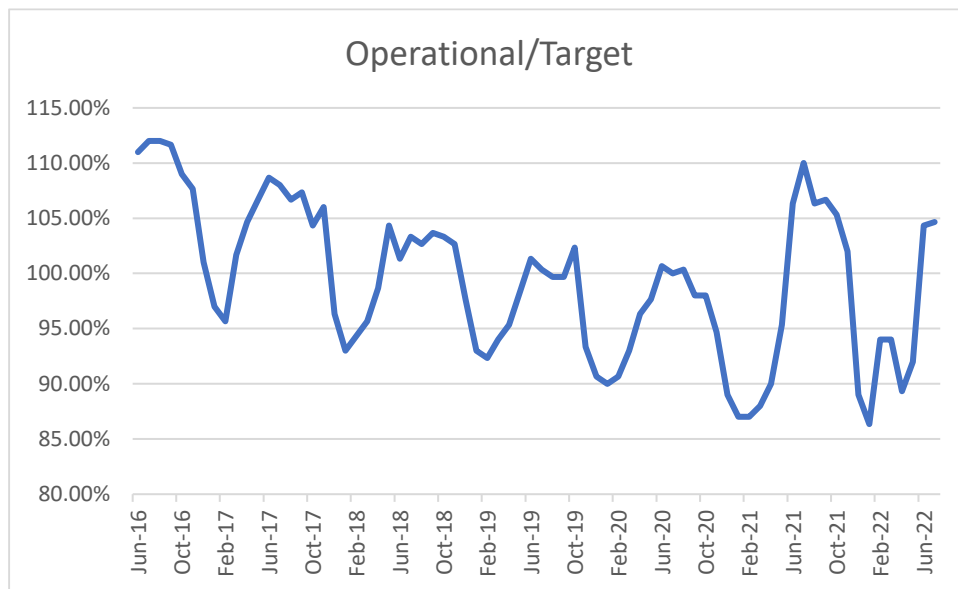


Fig. 4 Amount of operational coastal/national moored buoys against target (300),  
June 2016 to July 2022

For the global tropical moored buoys in the same period, monthly average is 73%, while overall decrease trend observed.

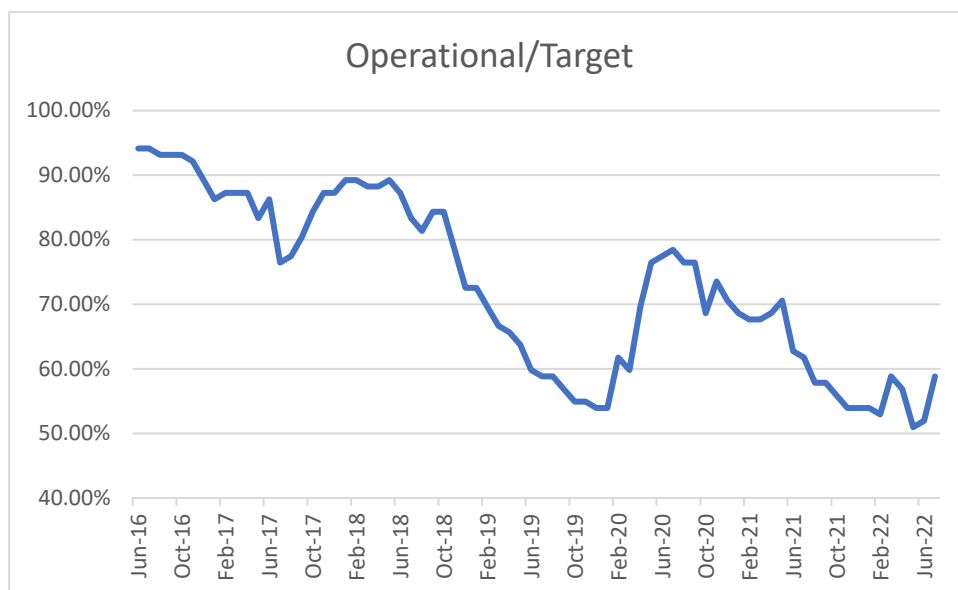


Fig. 5 Amount of operational global tropical moorings against target (102),  
June 2016 to July 2022

For tsunameters, it never reached 80% of targeted 64 operational units, and averaged at 56% in the same period.

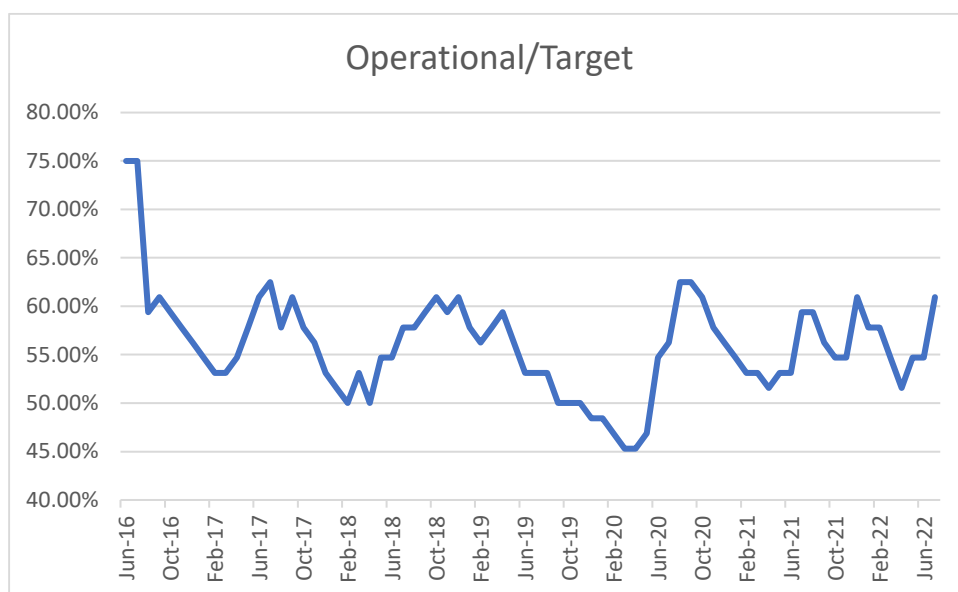


Fig. 6 Amount of operational tsunameters against target (64), June 2016 to July 2022

Regarding **data availability**, while global drifters array exceeded targets for years, **wave data from drifters** on the GTS are still less than 1%. Their monthly average time delay is 35 minutes, while July 2022 witnessed a spike up due to dramatic outliers of polar buoys. Monthly SLP observations averaged 62% in the past intersessional period, improved from 56% in last reporting period. Mr Jiang further recalled the WMO Congress-17 [requested](#) Members to fund and install barometers on all newly deployed drifters, and made [Recommendation 18](#) on marine observing system for numerical weather prediction, specifically on [DBCP barometer drifter upgrade scheme](#), with the support of NOAA's Global Drifters Program. Mr Jiang invited operators interested or need help, to contact [AOML](#) and/or [Scripps](#) for details.

Regarding activities of **Task Teams**, Mr Jiang reminded the Panel that all six TTs have reviewed their terms of reference and invited members to review for final approval. He highlighted virtual wave workshop by Task Team on Wave Measurements 11-12 October 2022 (<https://goosocean.org/wm-2022>), and virtual part of First Training workshop for the Mediterranean by Task Team on Capacity Building 9-11 November 2022 (<https://goosocean.org/medi-1>).

Mr Jiang informed the Panel that the [pilot wave drifter deployment](#) for Solomon Islands has been well underway, he worked with WMO legal office, procurement, and finance to sort out bidding process and letter of agreement in consultation with SIO. Mr Jiang also thanked SPC for providing shipping arrangements of the two drifters.

Mr Jiang submitted an abstract on work of DBCP Task Team on **Environmental Stewardship**, at the SeaTech Week, Brest France.

During the intersessional period, the TC communicated closely with the WMO and IOC community. He has developed another 5 issues of [DBCP newsletters](#), reaching more than 500 stakeholders of ocean observations of the WMO and IOC. Mr Jiang contributed to the paper "The Effects of the Pandemic on Observing the Global Ocean" led by Tim Boyer to be published by Bulletin of the American Meteorological Society (BAMS).

During absence of WMO secretariat on special leave in the past year, Mr. Jiang provided supports to all DBCP related activities, including organization and preparation

of DBCP-37 (with Mr Serge des Champ) and DBCP-38, besides his TC tasks of DBCP (70%) and OceanSITES (30%). In addition, Mr Jiang also provided supports to regional marine instrument centres (RMICs) for coordination and integration with all measurement related centres of the WMO, and collaboration with IOC. Major recommendations of RMIC activities **have been adopted** by WMO INFCOM-2 (24-28 October, 2022).

Mr. Jiang also informed the DBCP that due to formalization of OceanOPS office in Brest, France and further integration of OCG networks, he was assigned to take care of coordination of other fixed stations, incl. GLOSS and High Frequency Radars. Mr. Jiang showed great interest in extending his coordination role, while raised caution of time and resources for fulfilling all requirements and expectations that vary across different networks.

Mr Jiang drew attention of the DBCP of the ocean expansion of WMO Global Basic Observing Network, and informed SST and AP from buoys and VOS will be considered. In the meantime, rolling review of requirements (RRR) on ocean was revitalized after JCOMM disbandment and WMO reform, the GOOS OCG will play a more active role in supporting and facilitation ocean application in RRR and update of WMO statement of guidance.

## OceanOPS highlights

1. OceanOPS [report card 2022](#) was published with a dedicated session on buoy data application for coastal inundation modelling and forecast.
- 2.

### A. INTRODUCTION/SUMMARY<sup>1</sup>:

(approximate length half (1/2) a page to include in final report)

### B. ACTIONS/DECISIONS<sup>2</sup> REQUIRED:

- (a) Adopt draft Action (Decision)<sup>2</sup> [0.0.0/1](#) —*Action (Decision) title*;
  - 1)
  - 4)

### C. RECOMMENDATIONS<sup>3</sup> :

- (a) Adopt draft Recommendation<sup>3</sup> [0.0.0/1](#) — *Recommendation title*;

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<sup>1</sup> Half a page or less of Summary

<sup>2</sup> An Action/Decision is an item directly related to DBCP and on which DBCP can action or decide directly. Details on rational for the action/decision should be included in the Background under Draft Actions/Decisions.

<sup>3</sup> A Recommendation involves proposed action(s) on another body outside of DBCP (e.g. SOT, GOOS, WMO, IOC, INFCOM etc.). Details on rational for the Recommendation should be included in the Background under Draft Recommendation.



## C. BACKGROUND INFORMATION (**not to be included in the session report**):

### References (if any):

1. OCG-13 website/documents:  
[https://goosocean.org/index.php?option=com\\_oe&task=viewEventRecord&eventID=3423](https://goosocean.org/index.php?option=com_oe&task=viewEventRecord&eventID=3423)
2. OceanOPS 5-year strategy:  
<https://www.ocean-ops.org/strategy/>
3. Ocean Observing System Report Card:  
<https://www.ocean-ops.org/reportcard2022>
4. WMO Ocean video:  
<https://www.youtube.com/watch?v=1WmWnHUVWtM>
5. OceanOPS data tracking module:  
<https://www.ocean-ops.org/board/wa/DataTrackingModule>
6. OceanOPS metadata standard for GOOS networks:  
<https://www.ocean-ops.org/metadata/>
7. Example training videos for OceanOPS dashboard:  
<https://youtu.be/TkOgHoa8baQ> ; <https://youtu.be/tmxVBRwFNu4>
8. Data Mapping – Draft data flow charts developed with IOC:  
<https://drive.google.com/drive/u/0/folders/12QJZ7N1ivpi32DE8MhOHh23WF8bRdqAP>
9. GOOS metadata standard, draft documentation:  
<https://www.ocean-ops.org/metadata>
10. OSCAR/WIGOS  
  
<https://oscar.wmo.int/surface/index.html#/search/station/stationReportDetails/0-22000-0-5SRJ82U>
11. Wave workshop, 11-12 October 2022  
  
[https://goosocean.org/index.php?option=com\\_oe&task=viewEventRecord&eventID=3623](https://goosocean.org/index.php?option=com_oe&task=viewEventRecord&eventID=3623)
12. Part I of First DBCP Mediterranean Training Workshop on Ocean Observations and Data Applications, 9-11 November 2022  
  
[https://goosocean.org/index.php?option=com\\_oe&task=viewEventRecord&eventID=3648](https://goosocean.org/index.php?option=com_oe&task=viewEventRecord&eventID=3648)
13. Sixth workshop of the Regional Marine Instrument Centre for Asia Pacific  
  
[https://goosocean.org/index.php?option=com\\_oe&task=viewEventRecord&eventID=3322](https://goosocean.org/index.php?option=com_oe&task=viewEventRecord&eventID=3322)

14. WMO INFCOM-2

<https://meetings.wmo.int/infCOM-2/SitePages/Session%20Information.aspx>

15. Rolling Review of Requirements and Statement of Guidance

<https://community.wmo.int/rolling-review-requirements-process>

### **Draft Actions/Decisions**

*[Comment: Details on main points and arguments leading to formulation of draft actions/decision presented in this document]*

### **Draft Recommendations**

*[Comment: Details on main points and arguments leading to formulation of draft actions/decision presented in this document]*