DBCP and OceanOPS

DBCP– 38, Hybrid meeting, Geneva, Switzerland, 1-4 November 2022

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OUTLINE

- Overview
- Data sharing and quality control
- Key variables (SST, AP, Wave, etc.)
- EXB, TTs, AGs, etc.
- Issues and proposed way forward

WMO Vision, Mission, Objectives and Strategy

VISION 2030

By 2030, we see a world where all nations, especially the most vulnerable, are more resilient to the socioeconomic consequences of extreme weather, climate, water and other environmental events; and underpin their sustainable development through the best possible services, whether over land, at sea or in the air *(and in space)*

OVERARCHING PRIORITIES

- Preparedness for, and reducing losses from hydrometeorological extremes
- Climate-smart decision-making to build resilience and adaptation to climate risk
- Socioeconomic value of weather, climate, hydrological and related environmental services

CORE VALUES

- **Accountability** for Results and **Transparency**
- **Collaboration** and **Partnership**
- **Inclusiveness** and **Diversity**

LONG-TERM GOALS

1 Services	2 Infrastructure	3 Science & Innovations	4 Member Services	5 Smart Organization
Better serve societal needs	Enhance Earth system observations and predictions	Advance targeted research	Close the capacity gap	Strategic alignment of structure and programmes

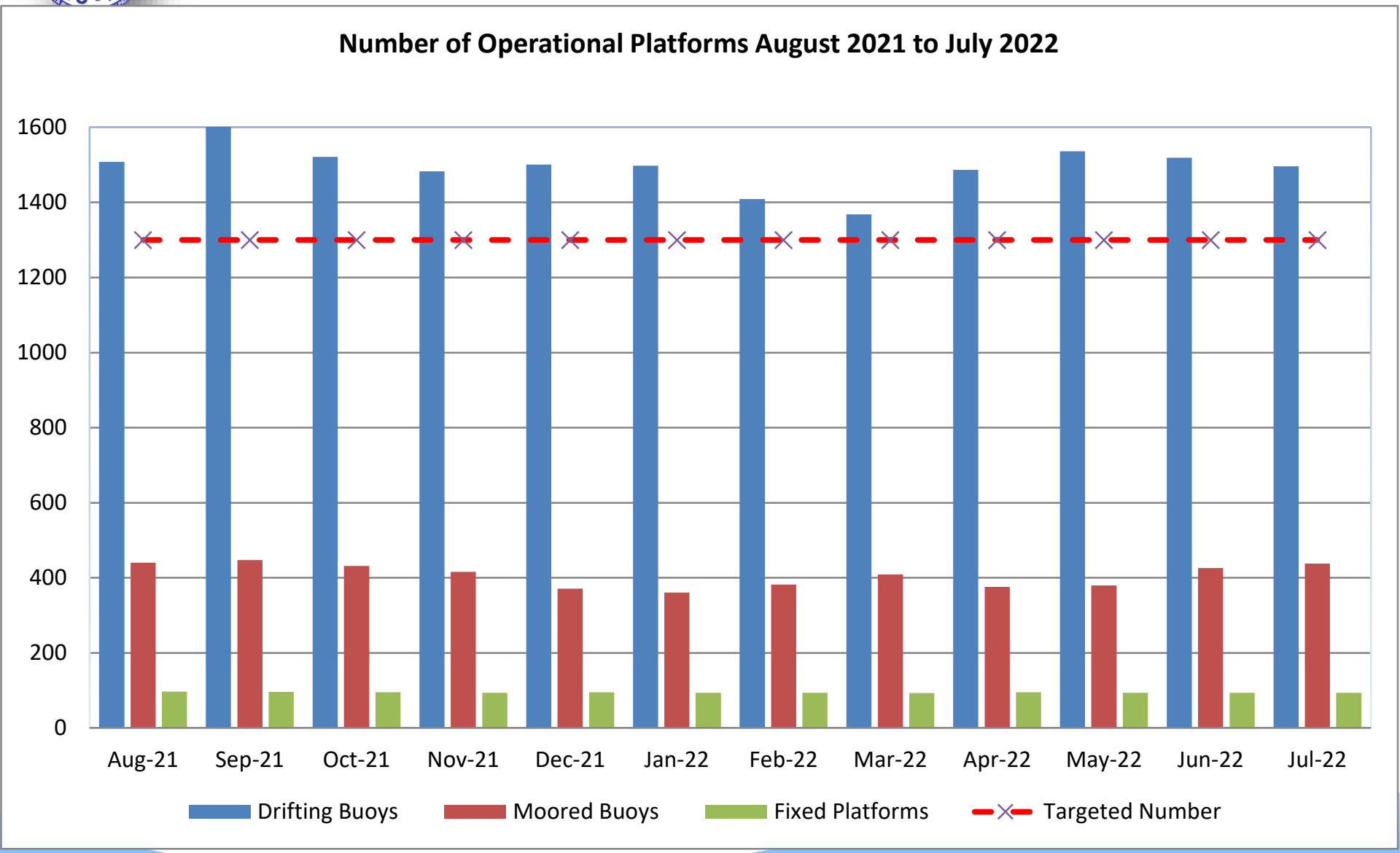
STRATEGIC OBJECTIVES

FOCUSED ON 2020-23

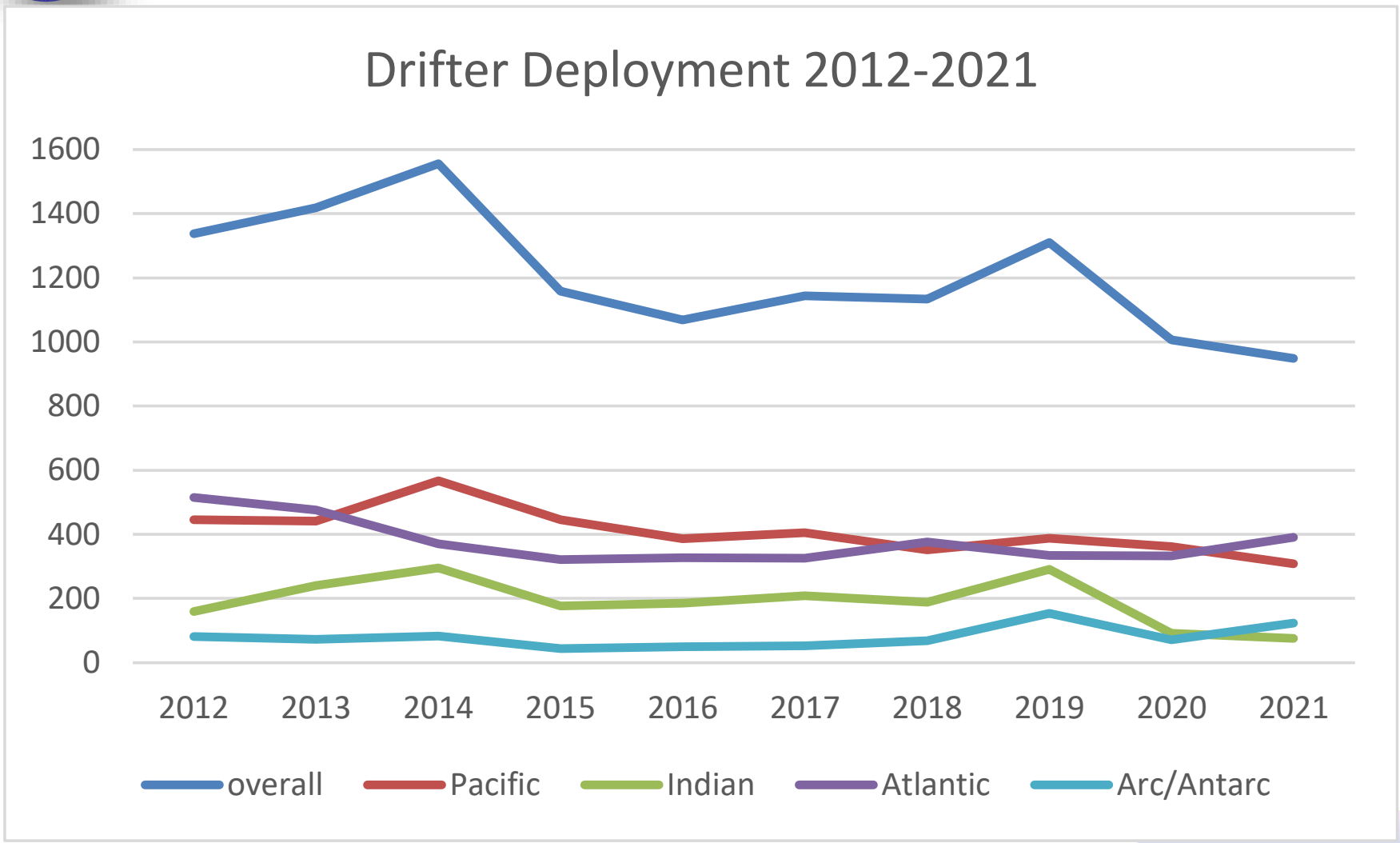
1 Services	2 Infrastructure	3 Science & Innovations	4 Member Services	5 Smart Organization
• Strengthen **national multi-hazard early warning/alert systems** • Broaden provision of **policy- and decision-supporting climate, water** and **weather services**	• Optimize **observation data acquisition** • Improve access to, exchange and management of **Earth system observation data and products** • Enable access and use of **numerical analysis and prediction products**	• Advance **scientific knowledge of the Earth system** • Enhance **science-for-service value chain** to improve predictive capabilities • Advance **policy-relevant science**	• Enable developing countries to **provide** and **utilize essential weather, climate, hydrological** and related **environmental services** • Develop and sustain **core competencies** and **expertise** • Scale up **partnerships**	• Optimize WMO **constituent body structure** • Streamline WMO **programmes** • Advance **equal, effective** and **inclusive participation**

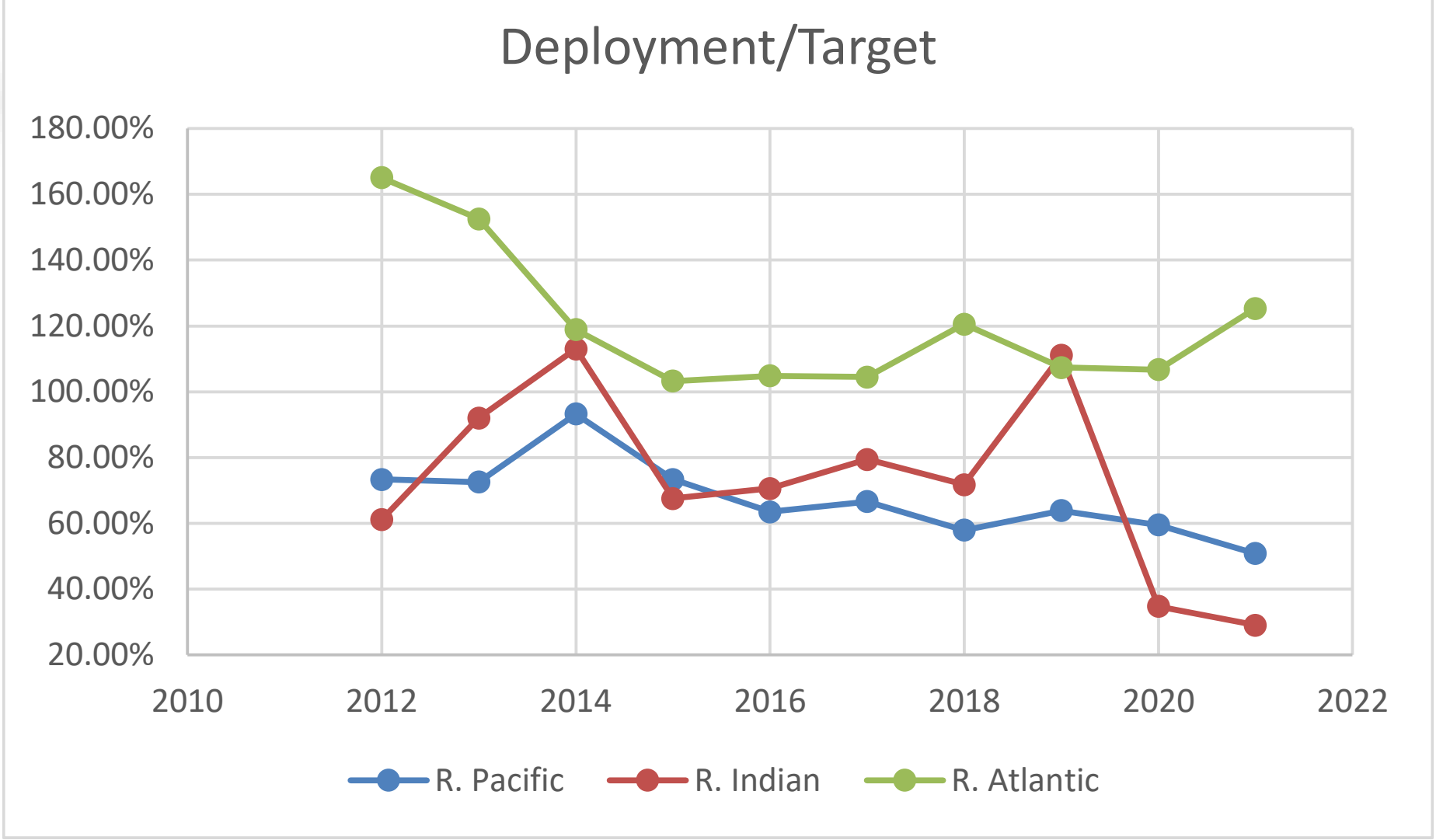
WMO OMM

See https://library.wmo.int/index.php?lvl=notice_display&id=21525


Number of Operational Platforms August 2021 to July 2022
1600
1400
1200
1000
800
600
400
200
0
Aug-21
Sep-21
Oct-21
Nov-21
Dec-21
Jan-22
Feb-22
Mar-22
Apr-22
May-22
Jun-22
Jul-22
Drifting Buoys
Moored Buoys
Fixed Platforms
Targeted Number

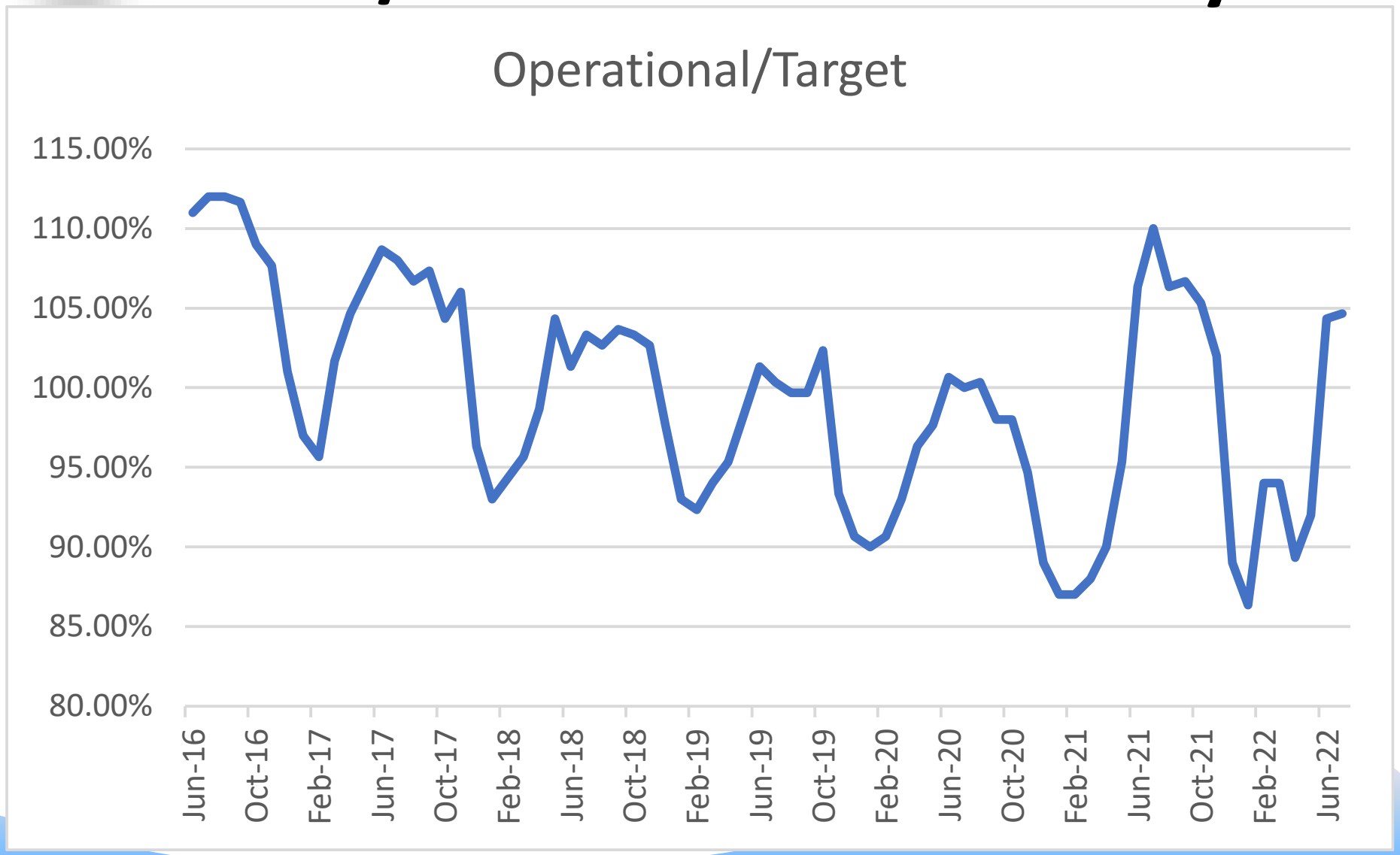
Drifters


Drifter Deployment 2012-2021
1600
1400
1200
1000
800
600
400
200
0
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
overall
Pacific
Indian
Atlantic
Arc/Antarc



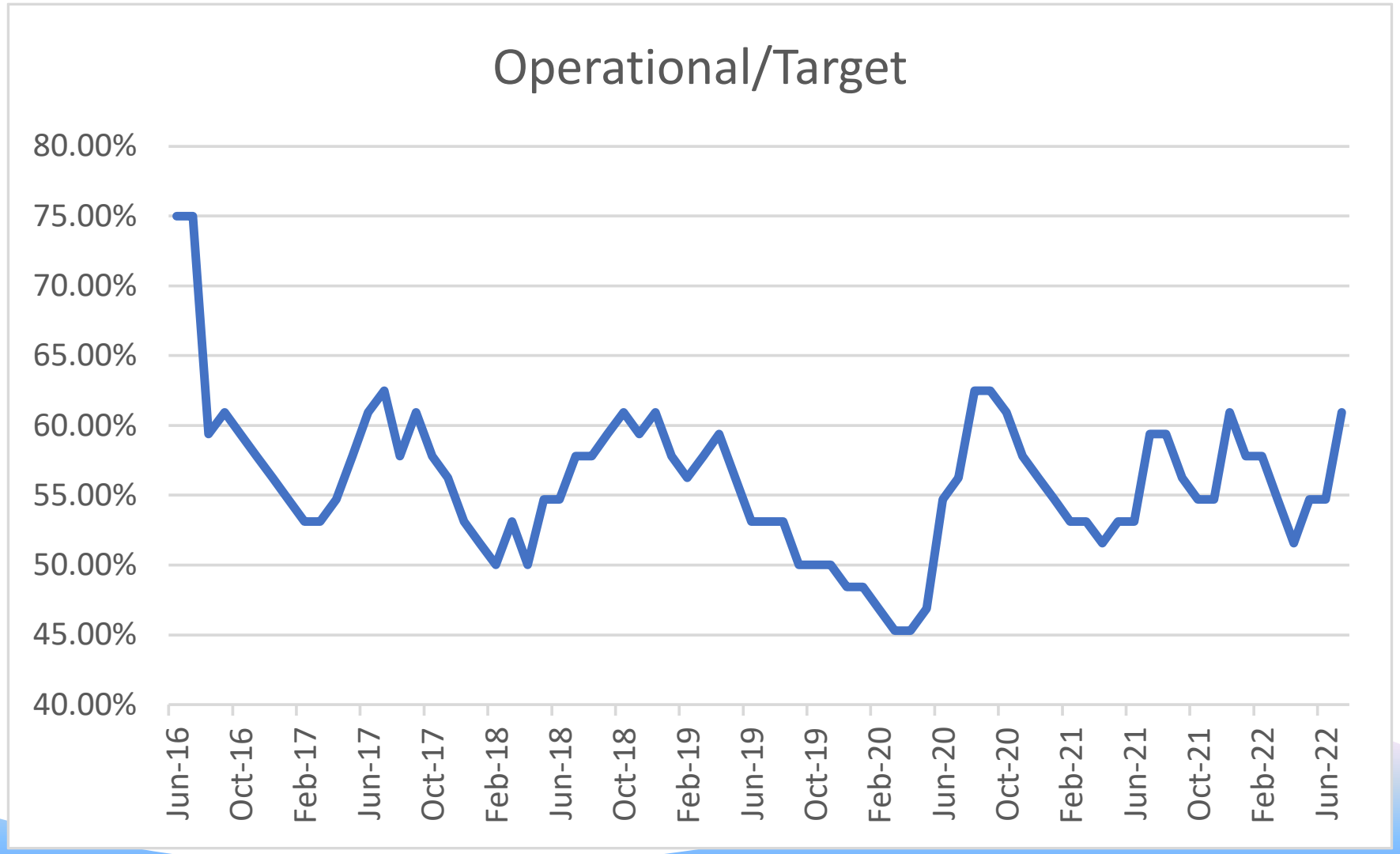
Indian Ocean Coordination Meetings
Bi-lateral agreements
BMKG

Coastal/national Moored Buoys



Global Tropical Moored Buoys

Tsunameters

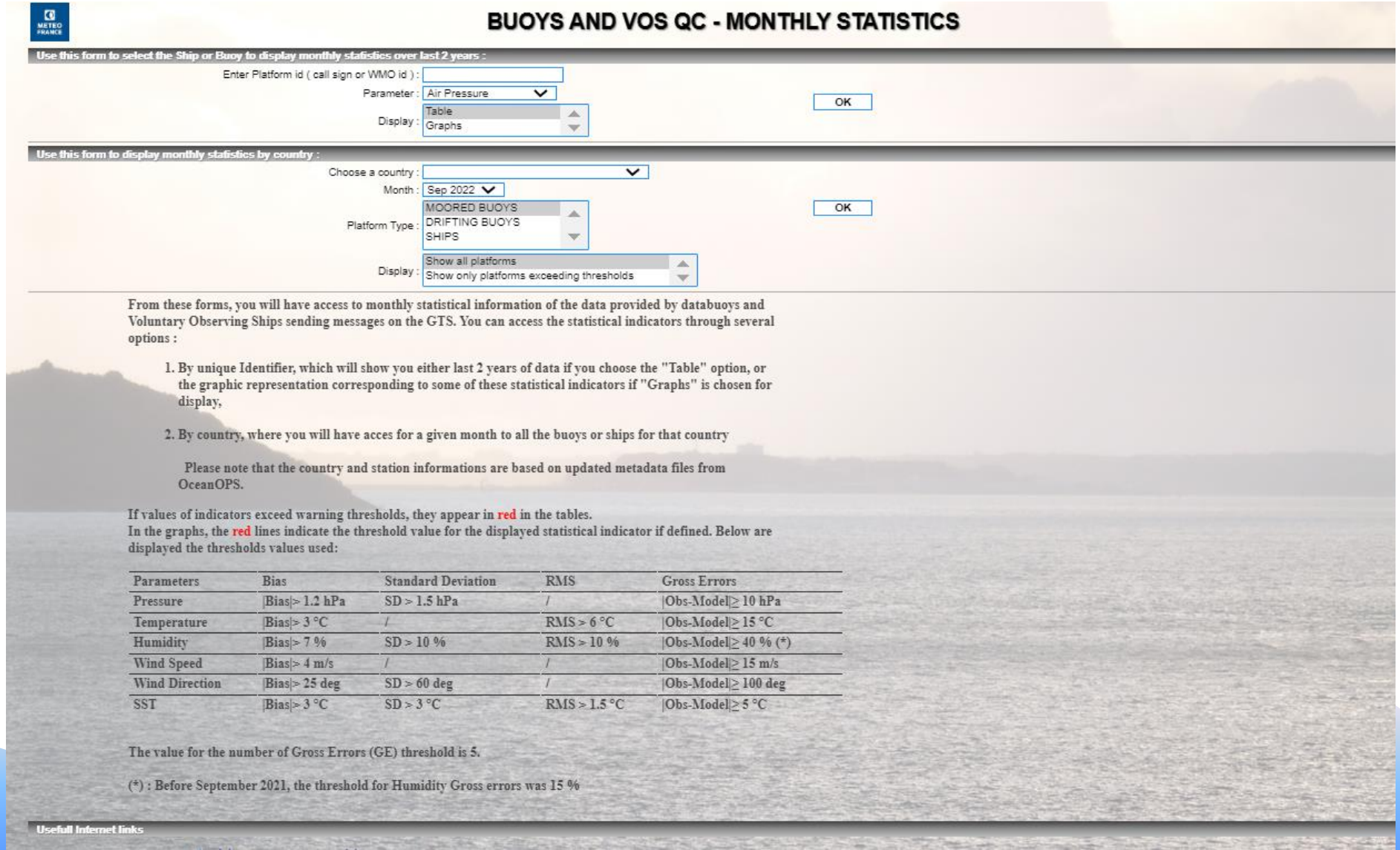


BUFR Migration Moored Buoys

Country	Migration Rate
Australia	0
Canada	0
France	100%
Greece	100%
India	0
Ireland	100%
Portugal	100%
Norway	100%
Republic of Korea	0
Spain	100%
UK	0
USA	70% (100% tropical)

New QC tool at MeteoFrance

http://esurfmar.meteo.fr/qctools/statistics/statistics.php



BUOYS AND VOS QC - MONTHLY STATISTICS

Use this form to select the Ship or Buoy to display monthly statistics over last 2 years :

Enter Platform id (call sign or WMO id) :

Parameter : Air Pressure

Display : Table / Graphs

OK

Use this form to display monthly statistics by country :

Choose a country :

Month : Sep 2022

Platform Type : MOORED BUOYS / DRIFTING BUOYS / SHIPS

Display : Show all platforms / Show only platforms exceeding thresholds

OK

From these forms, you will have access to monthly statistical information of the data provided by databuoys and Voluntary Observing Ships sending messages on the GTS. You can access the statistical indicators through several options :

1. By unique Identifier, which will show you either last 2 years of data if you choose the "Table" option, or the graphic representation corresponding to some of these statistical indicators if "Graphs" is chosen for display,

2. By country, where you will have acces for a given month to all the buoys or ships for that country

Please note that the country and station informations are based on updated metadata files from OceanOPS.

If values of indicators exceed warning thresholds, they appear in red in the tables.
In the graphs, the red lines indicate the threshold value for the displayed statistical indicator if defined. Below are displayed the thresholds values used:

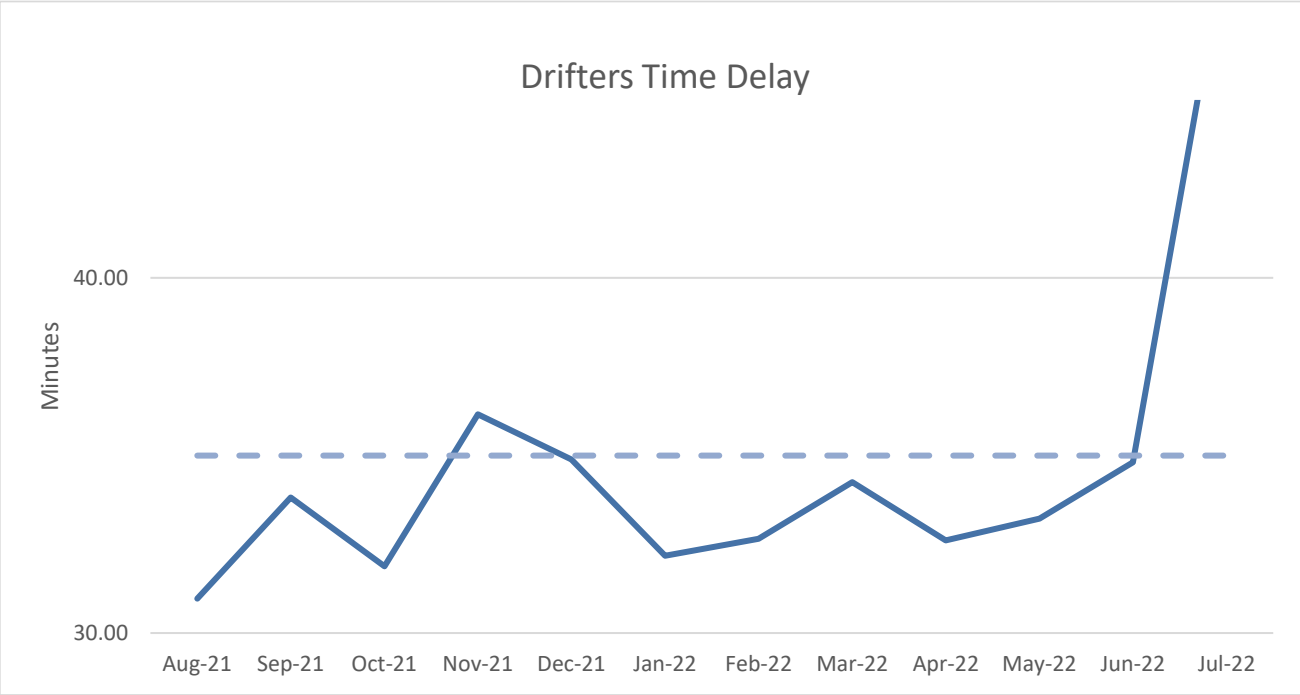
Parameters	Bias	Standard Deviation	RMS	Gross Errors
Pressure	|Bias|> 1.2 hPa	SD > 1.5 hPa	/	|Obs-Model|≥ 10 hPa
Temperature	|Bias|> 3 °C	/	RMS > 6 °C	|Obs-Model|≥ 15 °C
Humidity	|Bias|> 7 %	SD > 10 %	RMS > 10 %	|Obs-Model|≥ 40 % (*)
Wind Speed	|Bias|> 4 m/s	/	/	|Obs-Model|≥ 15 m/s
Wind Direction	|Bias|> 25 deg	SD > 60 deg	/	|Obs-Model|≥ 100 deg
SST	|Bias|> 3 °C	SD > 3 °C	RMS > 1.5 °C	|Obs-Model|≥ 5 °C

The value for the number of Gross Errors (GE) threshold is 5.

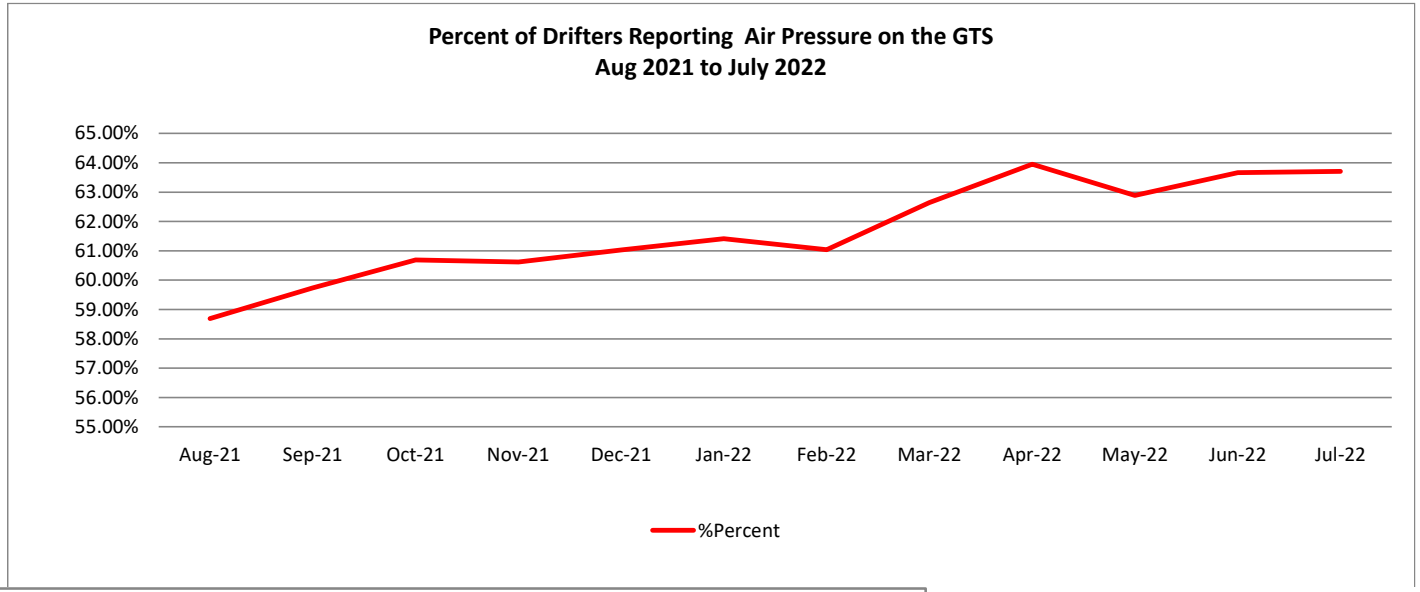
(*) : Before September 2021, the threshold for Humidity Gross errors was 15 %

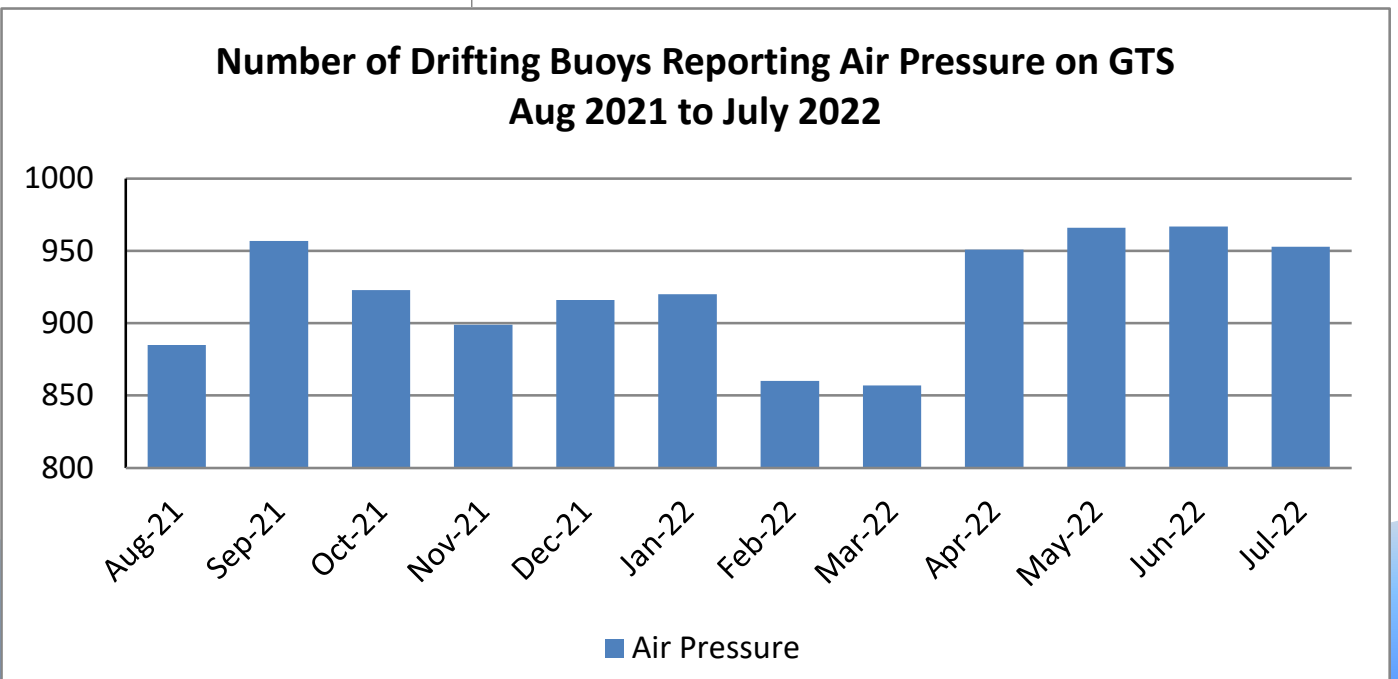
Usefull Internet links

Drifters Timeliness



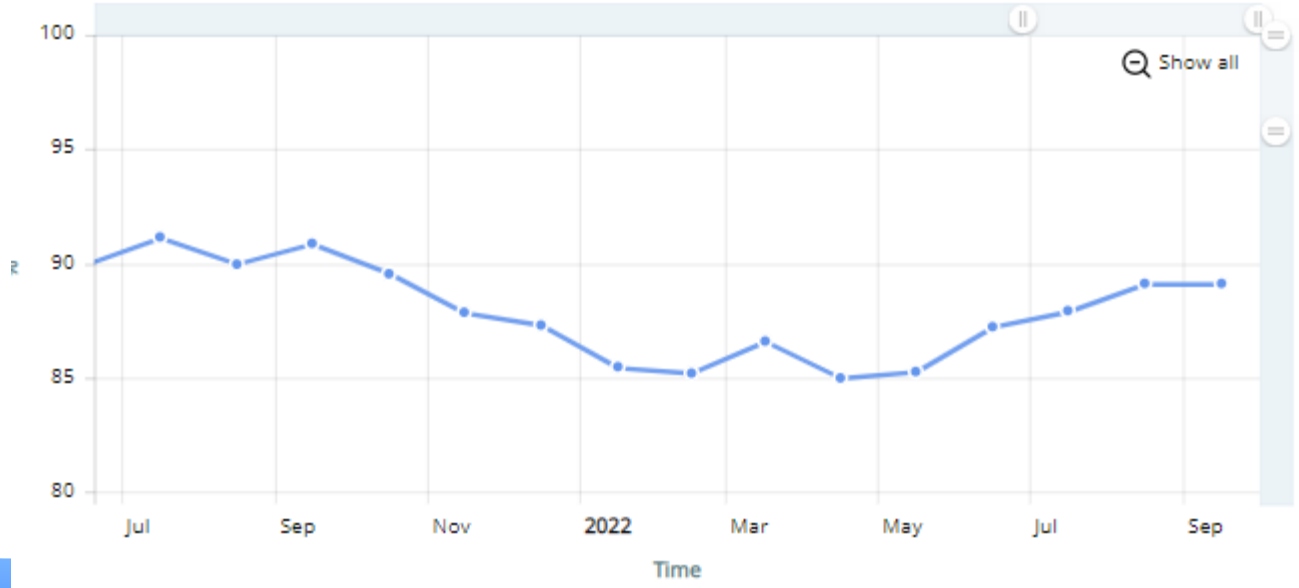
Barometric Pressure





Wave Data


100
95
90
85
80
Show all
Jul
2017
Jul
2018
Jul


100
95
90
85
80
Show all
Jul
Sep
Nov
2022
Mar
May
Jul
Sep
Time

Buoy lifetime and Environmental Stewardship

- Overall
  - Average 687 days
  - Median 584 days
- One case
  - Longest 901 days
  - Median 384 days
- >50% beached
- ~6% recovered

Task Teams

ToRs, meetings with DBCP chair

TT-DM (comparisons, GDACs report, new data stream)

TT-MB (OceanOPS template, GTMA issues)

TT-WM (workshop, metadata GDAC?)

TT-CB (Medi-1, wave drifters, participants)

TT-ES (survey, SeaWeek)

TT-DBPD (OBPs)

TT-User (TC studies, RRR, GOOS Co-design)

Groups

- **GDP**
- IABP/IPAB
- **IBPIO**
- **ITP**
- ESURFMAR
- Vandalism

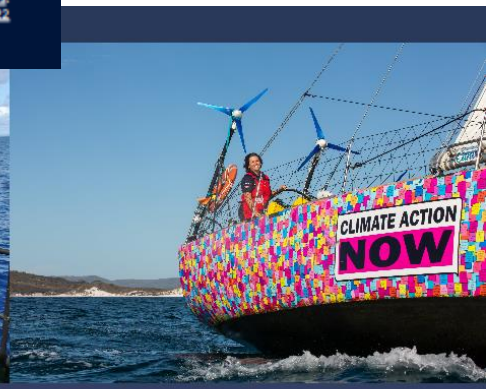
OceanOPS

- OceanOPS report card 2022
- Data mapping (17th Nov)
- Metadata structure and templates
- WSI allocation API
- Odyssey project
- GBON—RRR– Co-design
- EEZs
- TRUSTED, EuroSea

OceanOPS report card 2022

GOOS *in situ* networks [1]	Implementation	Data & metadata			Best practices [6]	GOOS delivery areas [7]		
	STATUS [2]	REAL TIME [3]	ARCHIVED DELAYED MODE [4]	META-DATA [5]		OPERATIONAL SERVICES	CLIMATE	OCEAN HEALTH
Ship based meteorological - SOT	★★☆	★★☆	★★☆	★★☆	★★☆	✓	✓	
Ship based oceanographic - SOT	★★☆	★★½	★★★	★½☆	★★☆	✓	✓	
Repeated transects - GO-SHIP	★★½	Not applicable	★★★	½☆☆	★★★		✓	✓
Sea level gauges - GLOSS	★★½	★★☆	★★★	★☆☆	★★☆	✓	✓	
Time series sites - OceanSITES	★★☆	Not applicable	★★½	★★☆	★★☆		✓	✓
Moored buoys - DBCP	★★½	★★★	★★★	★★☆	★★½	✓	✓	✓
Tsunami buoys - DBCP	★★☆	★★★	★★★	½☆☆	★★★	✓		
HF radars	★½☆ Emerging	★½☆	½☆☆	★☆☆	★★★	✓	✓	
Drifting buoys - DBCP	★★★	★★½	★★½	★½☆	★★★	✓	✓	
Profiling floats - Argo	★★★	★★★	★★★	★★★	★★☆	✓	✓	
Deep & biogeochemistry floats - Argo	★☆☆ Emerging	★★½	★★½	★★★	★★☆	✓	✓	✓
OceanGliders	½☆☆ Emerging	★★☆	★☆☆	★½☆	★★☆	✓	✓	✓
Animal borne sensors - AniBOS	½☆☆ Emerging	★☆☆	★★☆	½☆☆	★★☆	✓	✓	✓

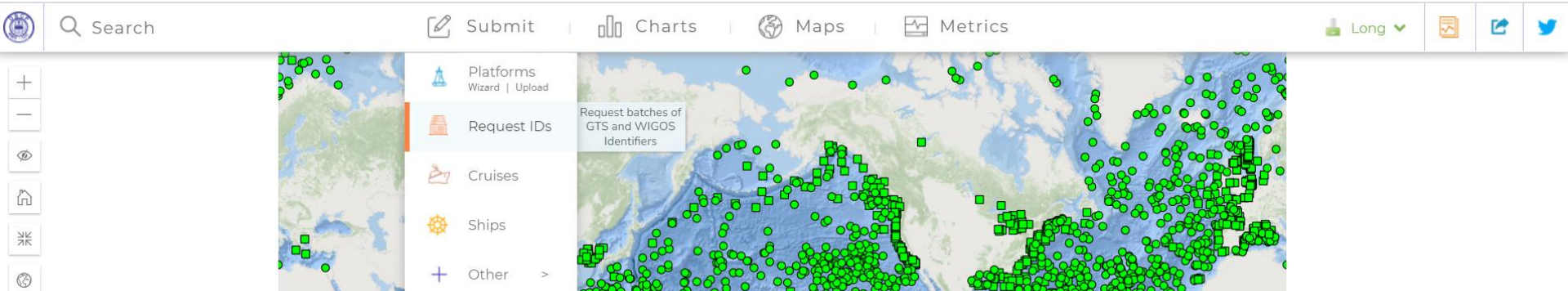
(1) More information at www.goosocean.org (2) Status: status of the implementation compared to the community widely adopted targets when it exists; network self-assessed status when target doesn't exist. (3) Real time: data freely available, without any restriction, on Global Telecommunication System of WMO and internet. (4) Archived delayed mode: data of the highest quality available for scientific analysis (e.g. climate studies). (5) Metadata: information required by OceanOPS. (6) Best Practices: community reviewed and easily accessible documentation encompassing the observations lifecycle (7) See Network Specification Sheets: www.goosocean.org > Observations > Network Specification Sheets. More information on networks status & indicators definition at: ocean-ops.org/reportcard2022

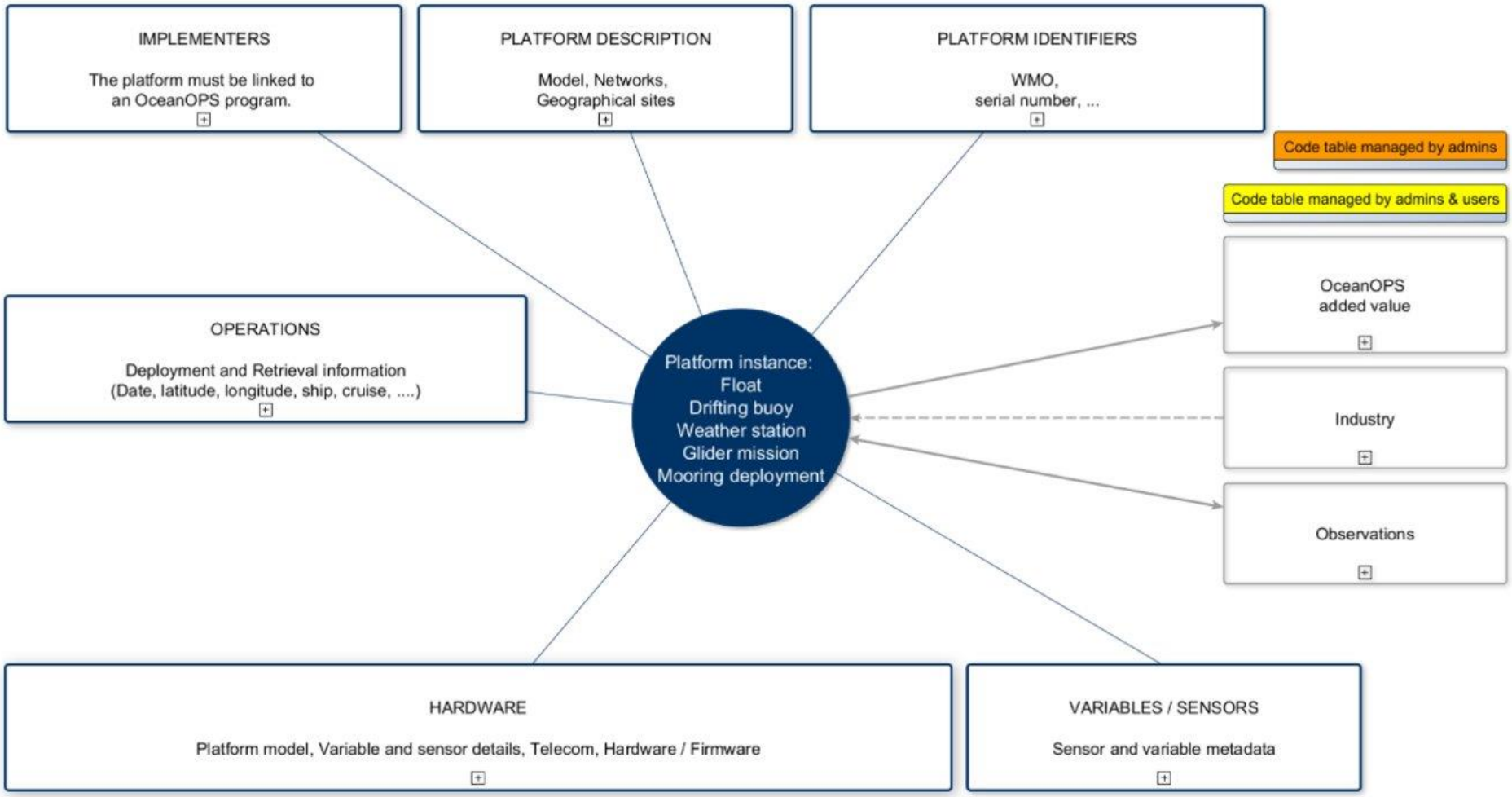


- https://www.ocean-ops.org/reportcard/reportcard2022.pdf

Data and metadata mapping

- OCG data management
  - Roundtable 17 Nov
- Metadata structure and templates
  - https://www.ocean-ops.org/metadata
- WSI automation and API
  - https://www.ocean-ops.org/api/1/help/#about-the-api




IMPLEMENTERS
The platform must be linked to an OceanOPS program.
PLATFORM DESCRIPTION
Model, Networks, Geographical sites
PLATFORM IDENTIFIERS
WMO, serial number, ...
Code table managed by admins
Code table managed by admins & users
OPERATIONS
Deployment and Retrieval information (Date, latitude, longitude, ship, cruise, ...)
Platform instance:
Float
Drifting buoy
Weather station
Glider mission
Mooring deployment
OceanOPS added value
Industry
Observations
HARDWARE
Platform model, Variable and sensor details, Telecom, Hardware / Firmware
VARIABLES / SENSORS
Sensor and variable metadata

Odyssey Project

- Ocean Summit, Brest, France

GBON/RRR/Co-design

- Primary consideration
  - NWP and climate
- Possible networks (TBC)
  - DBCP, VOS, Argo
- Possible variables (TBC)
  - Drifters: SST, AP
  - Moorings: surface met + upper ocean Temp, S
  - VOS: Surface met v.
  - Argo: upper ocean Temp, S

Ad hoc

- **TRUSTED FRM HRSST**
  - Tailored metadata management (Mathieu's presentation)
  - Project overview and buoy analysis (Anne's and Marc's presentations)
- **EUROSEA**
  - Tide gauges/GLOSS
  - HFRadars
  - Eulorian stations

Proposed Actions and Recommendations

- Metadata integration with OceanOPS
- Regular monitoring and communication with counterparts
- Indian Ocean, South Atlantic
- Data value and impact, success stories
- Knowledge and information management (websites and NRT with OceanOPS…)
- Connections with GBON
- New data contributors (incl. upgrades barometer, wave sensors)

Thank you!

Questions?