**DATA BUOY COOPERATION PANEL (DBCP)**

**FORMAT FOR NATIONAL REPORTS ON CURRENT AND
PLANNED BUOY PROGRAMMES**

|  |  |
| --- | --- |
| **Country** | JAPAN |
| **Year** | 2021 |

**Please Identify your Programme’s Major Opportunities and Challenges/Risks during the upcoming year and how DBCP can most effectively assist your Programme.**

1. ***CURRENT PROGRAMME:***

**Please Identify your Programme’s Major Opportunities and Challenges/Risks during the upcoming year and how DBCP may assist your Programme.**

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| **Agency or programme** | Japan Meteorological Agency (JMA) |
| Number and type of buoys | (a) deployed during the year | - 16 drifting ocean data buoys with air-pressure, sea surface temperature and wave height/period sensors- 27 profiling floats |
| (b) operational as of 31 August | - 5　drifting ocean data buoys with air-pressure, sea surface temperature and wave height/period sensors- 53 profiling floats |
| (c) reporting on GTS as of 31 August | - 5　drifting ocean data buoys with air-pressure, sea surface temperature and wave height/period sensors- 53 profiling floats |
| Purpose of programme*(check/uncheck boxes using [\_] or [x] as appropriate)* | (a) operational | [x] - weather and sea condition monitoring (drifting buoy)- ocean state and climate monitoring (profiling float) |
| (b) met / ocean research | [x] (profiling float) |
| (c) developmental | [x] (profiling float) |
| Main deployment areas | Sea area around Japan |
| Vandalism incidents | (a) Number of incidents N/A |

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| **Agency or programme** | Japan Agency for Marine-Earth Science and Technology (JAMSTEC) |
| Number and type of buoys | (a) deployed during the year | - 22 (float) |
| (b) operational as of 31 August | - 5 surface moorings for meteorological and subsurface oceanographic (3 TRITON buoy, 2 RAMA buoys)- 189 (float) |
| (c) reporting on GTS as of 31 August | - 4 surface moorings for meteorological and subsurface oceanographic (2 TRITON buoys, 2 RAMA buoys)- 165 (float) |
| Purpose of programme*(check/uncheck boxes using [\_] or [x] as appropriate)* | (a) operational | [x] (buoy, float) |
| (b) met / ocean research | [x] (buoy, float) |
| (c) developmental | [x] (float) |
| Main deployment areas | buoy: Western tropical Pacific as TAO/TRITON array and the eastern Indian Ocean as RAMA arrayfloat : North pacific ocean, Southern ocean and Indian ocean |
| Vandalism incidents | (a) Number of incidents N/A |

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| **Agency or programme** | Okinawa Institute of Science and Technology Graduate University(OIST) |
| Number and type of buoys | (a) deployed during the year | - 42 surface drifting buoys |
| (b) operational as of 31 August | - 11 surface drifting buoys- 2 profiling floats |
| (c) reporting on GTS as of 31 August | N/A |
| Purpose of programme*(check/uncheck boxes using [\_] or [x] as appropriate)* | (a) operational | [ ] |
| (b) met / ocean research | [x]Oceanographic research |
| (c) developmental | [ ] |
| Main deployment areas | Mainly Okinawa trough for floats, off Onna Village Okinawa for buoys. |
| Vandalism incidents | (a) Number of incidents N/A |

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| **Agency or programme** | Kyoto University (KU) |
| Number and type of buoys | (a) deployed during the year | 4 (buoy) |
| (b) operational as of 31 August | 3 (buoy) |
| (c) reporting on GTS as of 31 August | 0 (buoy) |
| Purpose of programme*(check/uncheck boxes using [\_] or [x] as appropriate)* | (a) operational | [\_] |
| (b) met / ocean research | [x] (buoy) |
| (c) developmental | [\_] |
| Main deployment areas | Western North Pacific |
| Vandalism incidents | (a) Number of incidents N/A |

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| **Agency or programme** | Hokkaido University (HU) |
| Number and type of buoys | (a) deployed during the year | 0 (float) |
| (b) operational as of 31 August | 3 (float) |
| (c) reporting on GTS as of 31 August | 3 (float) |
| Purpose of programme*(check/uncheck boxes using [\_] or [x] as appropriate)* | (a) operational | [\_] |
| (b) met / ocean research | [x] (float) |
| (c) developmental | [\_] |
| Main deployment areas | Kuroshio Extension |
| Vandalism incidents | (a) Number of incidents N/A |

***2. PLANNED PROGRAMMES:***

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| --- | --- |
| **Agency or programme** | Japan Meteorological Agency (JMA) |
| Number and type of buoys | planned for deployment in the next 12 months | - 16 drifting ocean data buoys with air-pressure, sea surface temperature and wave height/period sensors- 27 profiling floats |
| Purpose of programme*(check/uncheck boxes using [\_] or [x] as appropriate)* | (a) operational | [x] - weather and sea condition monitoring (drifting buoys)- ocean state and climate monitoring (profiling floats) |
| (b) met / ocean research | [x] (profiling float) |
| (c) developmental | [x] (profiling float) |
| Main deployment areas | Sea area around Japan |

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| **Agency or programme** | Japan Agency for Marine-Earth Science and Technology (JAMSTEC) |
| Number and type of buoys | planned for deployment in the next 12 months | - 3 meteorological and subsurface oceanographic surface moorings (1 buoy and 2 RAMA buoys)- 20 (float) |
| Purpose of programme*(check/uncheck boxes using [\_] or [x] as appropriate)* | (a) operational | [x] (buoy, float) |
| (b) met / ocean research | [x] (buoy, float) |
| (c) developmental | [x] (float) |
| Main deployment areas | buoy: 13N-137E Surface Met-Ocean mooring and the eastern Indian Ocean as RAMA array |

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| **Agency or programme** | Okinawa Institute of Science and Technology Graduate University(OIST) |
| Number and type of buoys | planned for deployment in the next 12 months | 30 surface drifting buoys |
| Purpose of programme*(check/uncheck boxes using [\_] or [x] as appropriate)* | (a) operational | [ ] |
| (b) met / ocean research | [x]Oceanographic research |
| (c) developmental | [ ] |
| Main deployment areas | Mainly around Okinawa Islands |

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| **Agency or programme** | Kyoto University (KU) |
| Number and type of buoys | planned for deployment in the next 12 months | 12 (buoy) |
| Purpose of programme*(check/uncheck boxes using [\_] or [x] as appropriate)* | (a) operational | [\_] |
| (b) met / ocean research | [x] (buoy) |
| (c) developmental | [\_] |
| Main deployment areas | Western North Pacific |

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| **Agency or programme** | Hokkaido University (HU) |
| Number and type of buoys | planned for deployment in the next 12 months | 0 (float) |
| Purpose of programme*(check/uncheck boxes using [\_] or [x] as appropriate)* | (a) operational | [\_] |
| (b) met / ocean research | [\_] |
| (c) developmental | [\_] |
| Main deployment areas |  |

***3. TECHNICAL DEVELOPMENTS:***

|  |  |
| --- | --- |
| (a) Buoy design | * (JAMSTEC)
* Verification of accuracy of deep float’s CTD sensors.
* Deep floats observation in Pacific Ocean and Southern Ocean.
* Biological floats observation in Pacific Ocean.
* (KU)
* Size: 42cm x 31cm
* Weight: 5.3kg (7.4kg with external ballast chain)
* Solar Powered,
 |
| (b) Instrumentation | * (JAMSTEC)
* 2 Deep floats (0-6000m depth)
* 2 BGC floats (0-2,000-m depth) has equipped with some biogeochemical sensors. (pH,NO3,Chl,Oxygen)
* (KU)
* Ocean surface wave sensor
* Sea surface temperature sensor
 |

***4. PUBLICATIONS (on programme plans, technical developments, QC reports, etc.):***

- JAMSTEC

|  |  |  |
| --- | --- | --- |
| ***Ref*** | ***Title*** | ***Type[[1]](#footnote-1)*** |
| 1 | Horii, T., I. Ueki, and K. Ando (2020), Coastal upwelling events, salinity stratification and barrier layer observed along the southwestern coast of Sumatra, Journal of Geophysical Research: Oceans,125 e2020JC016287. https://doi.org/10.1029/2020JC016287. | (7) Data use |
| 2 | Kawai, Y., S. Hosoda, K. Uehara., and T. Suga (2021), Heat and salinity transport between the permanent pycnocline and the mixed layer due to the obduction process evaluated from a gridded Argo dataset. Journal of Oceanography, 77(1), 75–92, doi:10.1007/s10872-020-00559-1. | (7) Data use |
| 3 | Kobayashi, T. (2021), Salinity bias with negative pressure dependency caused by anisotropic deformation of CTD measuring cell under pressure examined with a dual-cylinder cell model,Deep-Sea Research Part-I, 167, 103420, https://doi.org/10.1016/j.dsr.2020.103420. | (3) Instrumentation, (4) Quality Management, (5) Data Management,  |
| 4 | Masuda, S. and S. Osafune (2021), Ocean state estimations for synthesis of ocean-mixing observations, Journal of Oceanography, 77(3), 359-366, 10.1007/s10872-020-00587-x. | (7) Data use |
| 5 | Matsumoto, K., Y. Sasai, K. Sasaoka, E. Siswanto, and M. C. Honda (2021), The Formation of Subtropical Phytoplankton Blooms Is Dictated by Water Column Stability During Winter and Spring in the Oligotrophic Northwestern North Pacific, Journal of Geophysical Research: Oceans, 126(4), e2020JC016864, doi:https://doi.org/10.1029/2020JC016864. | (7) Data use |
| 6 | Nagura, M. (2021). Spiciness anomalies of Subantarctic mode water in the south Indian Ocean. J. Clim., Vol. 34, No. 10, pp. 3927-3953. https://doi.org/10.1175/JCLI-D-20-0482.1. | (7) Data use |
| 7 | Siswanto, E., T. Horii, I. Iskandar, J. Lumban-Gaol, R. Y. Setiawan, and R. D. Susanto (2020), Impacts of climate changes on the phytoplankton biomass of the Indonesian Maritime Continent, Journal of Marine System, 212, doi: 10.1016/j.jmarsys.2020.103451. |  (7) Data use |
| 8 | Yamazaki, K., Aoki, S., Katsumata, K., Hirano, D., & Nakayama, Y. (2021), Multidecadal poleward shift of the southern boundary of the Antarctic Circumpolar Current off East Antarctica., Science Advances, 7(24), eabf8755, doi: https://doi.org/10.1126/sciadv.abf8755 | (7) Data use |

*(repeat rows in the table above as necessary)*

***5. ADDITIONAL COMMENTS:***

|  |  |
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| (a) Quality of buoy data | * (KU) Approximately +/- 2cm accuracy depends on field of view, weather conditions,and GPS system status
* ±0.1°C absolute accuracy ±0.02°C resolution
 |
| (b) Communications | * (KU) Iridium SBD (satellite)
 |
| (c) Buoy lifetimes | * (KU) Not specified
 |
| (d) Data Accessibility[[2]](#footnote-2) | * (KU) Plan to submit the data to GTS
 |
| (e) New Observations[[3]](#footnote-3) | * (KU) Plan to put more buoys around the Western North Pacific
 |
| (f) GFCS and WIGOS[[4]](#footnote-4) |  |
| (g) Additional Requirements[[5]](#footnote-5) |  |
| (h) DBCP Linkages[[6]](#footnote-6) |  |
| (i) Contribution to UN Decade and UN SDGs[[7]](#footnote-7) | ●  |
| (j) Other (i.e. Impact of COVID19 on observing systems and mitigation efforts) | * (JAMSTEC) We postponed the buoy replacing schedule due to COVID19.
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Note: It is recommended that this form is filled in electronically and returned also electronically to the Secretariat. A template of the form can be downloaded from the following SharePoint site:

[https://wmoomm.sharepoint.com/:w:/s/wmocpdb/EQ1z8KndbxREkzE6RH4NFkkBDdvOItne74OP8f4voMMSbg?e=pgru6r](https://wmoomm.sharepoint.com/%3Aw%3A/s/wmocpdb/EQ1z8KndbxREkzE6RH4NFkkBDdvOItne74OP8f4voMMSbg?e=pgru6r)

**ANNEX - FORM FOR REPORTING INCIDENTS OF VANDALISM ON DATA BUOYS**

|  |  |
| --- | --- |
| **Country** |   |
| **Contact person e-mail** |  |
| **Year** | **Buoy Location** | **Type of Buoy****(e.g. Tsunami / Met -Ocean Buoy/Drifter/ARGO floats/ Other)** | **Type of damage to buoy** | **Buoy id/WMO id** | **Number of days of transmission lost** | **Cost of replacement** | **Remarks****(e.g. whether photos have been taken)** |
| **Latitude** | **Longitude** |  |
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| **Efforts taken against vandalism** |   |
| **Awareness meeting Organised**  |  |
| **Suggestions (if any)** |  |
| **Photos on Vandalism** | (please include pictures if available; and email electronic versions to dbcp-tc@jcommops.org and dr.r.venkatesan@gmail.com) |

Note: It is recommended that this form is filled in electronically and returned electronically also to OceanOPS (dbcp-tc@jcommops.org and dr.r.venkatesan@gmail.com ). A template of the form can be downloaded from the following SharePoint site: [https://wmoomm.sharepoint.com/:w:/s/wmocpdb/EXsq1FXv0vpHmOjQA-tTobwBMrNnjXnaQok3oudPhKIb3A?e=2IR9Wh](https://wmoomm.sharepoint.com/%3Aw%3A/s/wmocpdb/EXsq1FXv0vpHmOjQA-tTobwBMrNnjXnaQok3oudPhKIb3A?e=2IR9Wh)

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1. : Types of publications: (1) Implementation, (2) Operations, (3) Instrumentation, (4) Quality Management, (5) Data Management, (6) Data collection and/or location, (7) Data use, (8) Other [↑](#footnote-ref-1)
2. How does the international community access the ocean observing data provided by your Organization [↑](#footnote-ref-2)
3. What new ocean observations does your Organization plan to make in the upcoming year (i.e. new parameters, expanding geographic scope, filling spatial or latency gaps)? [↑](#footnote-ref-3)
4. How do your Organization’s observations contribute to the WMO’s Integrated Global Observing System (WIGOS) and/or Global Framework for Climate Services (GFCS)? [↑](#footnote-ref-4)
5. What additional requirements (other than climate) does your organization have that are currently not adequately addressed by the DBCP? [↑](#footnote-ref-5)
6. How would your organization benefit from DBCP’s closer linkages to the Global Ocean Observing System(GOOS), Data Management and Modelling Communities? [↑](#footnote-ref-6)
7. How do your ocean observing networks contributing to the UN decade on Ocean Science and UN Sustainable Development Gloas . [↑](#footnote-ref-7)