DATA BUOY COOPERATION PANEL
Forty-first Session

29 – 31 October 2025
Virtual Meeting

Meeting Report No. 72

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WORLD METEOROLOGICAL ORGANIZATION

INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION (OF UNESCO)

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DBCP REPORT No:72

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Executive Summary

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GENERAL SUMMARY OF THE WORK OF THE DBCP-41 SESSION

1. Opening and Welcome to the DBCP-41 Session

The forty-first session of the Data Buoy Cooperation Panel (DBCP) was opened by Mr. Lance Braasch, who moderated the beginning of the meeting and introduced the chair, Ms. Nelly Florida Riama.

1.1. Opening Remarks DBCP chair

In her opening remarks, Ms. Riama welcomed participants from across the globe, noting that the session marked the first planned online meeting following the hybrid format agreed upon at DBCP-40. She highlighted that this approach enhances inclusiveness, sustainability, and continuity, enabling members from all regions to participate actively. The Chair recalled that the DBCP, as a joint body of WMO and IOC under the framework of the Global Ocean Observing System (GOOS) and the Observations Coordination Group (OCG), plays a key role in increasing the quantity, quality, and timeliness of oceanic and atmospheric data to support global weather and ocean forecasting as well as climate research.

Ms. Riama emphasized that the Global Basic Observation Network (GBON) remains a strong example of international cooperation, with thousands of drifting, moored, and tsunami buoys providing essential data daily. She noted that although OceanOPS maps indicate good coverage, some regional gaps persist, reminding members that maintaining a global network depends on shared commitment and collaboration. She underlined that no single nation can sustain the network alone, and the success of the Panel relies on joint efforts among members and partners. The Chair expressed appreciation to all participants and special invitees, noting that over ninety participants from thirty-five countries had registered for the meeting. She thanked the WMO and IOC Secretariats, as well as those involved in organizing the event, for their contributions. Ms. Riama reflected on the DBCP's strategy, which provides a clear roadmap to sustain, coordinate, and innovate ocean buoy observations, and she encouraged continued collaboration, outreach to new institutions and young professionals, and the promotion of innovation to sustain the Panel's mission into the future.

1.2 Remarks from IOC

Ms. Joanna Post, Head of the Observations and Services Section at the IOC of UNESCO, delivered remarks on behalf of IOC. She reflected on the progress made by the DBCP, emphasizing its critical role in the Global Ocean Observing System (GOOS) and commending the achievements of its working groups and contributing nations. She praised recent initiatives such as the capacity-building workshop in INCOIS and the launch of the new website, which have strengthened DBCP's visibility and impact. Ms. Post also acknowledged the strong collaboration between IOC and WMO, particularly through the Joint Collaborative Board, and emphasized the importance of expanding the Global Basic Observing Network (GBON) to include essential ocean variables, with DBCP playing a key role in that effort.

She further discussed the importance of data coordination and integration, referencing the work of the Observation Coordination Group (OCG) and the cross-network data implementation strategy aimed at achieving FAIR compliance. Under the GOOS 2025–2027 work plan, efforts are being made to link ocean observations more closely with national and international data management infrastructures. Ms. Post also introduced a reform initiative for GOOS, driven by the need to adapt to future challenges and funding realities. This reform, being developed in collaboration with Accenture and various stakeholders, will be presented to the GOOS Steering Committee and governing bodies in

2026. She concluded by expressing gratitude to the technical and logistical teams, especially Ms. Champika Gallage and Ms. Nelly Riama, and to China for its financial contributions to DBCP capacity-building activities, wishing all participants a productive meeting.

1.3 Remarks by WMO

Ms. Champika Gallage delivered remarks on behalf of her director, Albert Fischer, emphasizing the panel's vital role in supporting global weather and climate services through ocean and atmospheric monitoring. She highlighted the DBCP's contributions to the Early Warning for All initiative and praised the session's focus areas: improving data and metadata availability, exploring new data sources, and strengthening engagement with buoy data users. These priorities are essential for ensuring timely and accessible observations. She also acknowledged the panel's alignment with key WMO frameworks, including the WMO Integrated Global Observing System (WIGOS) and the Global Basic Observing Network (GBON), noting that DBCP's work is fundamental to meeting the standards and goals of these systems.

Ms. Gallage stressed the importance of high-quality, real-time buoy data for weather prediction, climate monitoring, and disaster warnings. She underscored the DBCP's role in helping WMO members fulfill their commitments to sustainable and integrated global observing capabilities. By enhancing observational density and metadata quality, the panel ensures that the network remains responsive to user needs. She concluded by expressing gratitude to the organizing team, especially Ms. Mia Khusnul Khotimah and Ms. Yuliana Purwanti, for their efforts in preparing the meeting, and encouraged all participants to actively engage in discussions to ensure a productive and impactful session.

1.4 Objectives of the Meeting

Ms. Riama outlined the objectives of the forty-first session, noting that it served as a coordination platform bringing together DBCP members, task teams, working groups, action groups, and the broader ocean observing community. The meeting aimed to review progress during the intersessional period, share best practices, and plan future activities that will enhance DBCP's contribution to the Global Ocean Observing System. She stated that discussions would focus on three key areas: (1) improving data and metadata availability and quality; (2) exploring new and emerging data sources and technologies; and (3) strengthening engagement with the buoy data user community. Ms. Riama encouraged all participants to share updates on their national and collaborative activities and to work together toward greater data integration and the long-term sustainability of global ocean observations.

2. National Report

National reports provide information on the national data buoy activities during the previous and also upcoming intersessional periods. The activities cover the information across the value chain from observations to services and also the the information on new technology developments, vandalism activities and major opportunities and challenges/risks during the upcoming year and how DBCP can most effectively assist. 17 national reports were received and 12 countries and territories made oral presentations.

The session on national reports was chaired by Ms. Nelly Riama. Mr. Martin Kramp from OceanOPS introduced the automated national reports, explaining the process used to pre-compile country reports based on data and metadata available in OceanOPS systems as of September 2025. He demonstrated how these reports help identify discrepancies in metadata records between national records and the OceanOPS database, supporting improved metadata management and data flow monitoring. Mr. Kramp illustrated

examples using the Australian report, showing platform information, sensor details, and network participation. He emphasized the importance of maintaining up-to-date metadata and contact information and encouraged members to review and correct metadata gaps to enhance accuracy in both OceanOPS and Observing Systems Capability Analysis and Review (OSCAR) tool.

2.1. Australia

Australia's report was presented by Mr. Joel Cabrie, who described the country's buoy fleet comprising drifting, wave, and moored buoys operated by the Bureau of Meteorology. He reported that all platforms share real-time data via the GTS and that coverage extends across Australian coastal waters, the Indian and Southern Oceans, and the Coral Sea. There were no vandalism incidents reported for 2024. Plans for the coming year include reseeding the Indian Ocean, maintenance of moored buoys, and trials of new buoy designs such as Scripps mini-buoys and biodegradable drifters. Mr. Cabrie commended the automated reports as a valuable exercise for identifying metadata gaps and suggested including fields for active GTS bulletin headers and deployment-agent information in future reporting.

2.2. Iran

The report from the Islamic Republic of Iran was presented by Mr. Behzad Layeghi, who provided an overview of the national marine meteorological buoy network. The Iranian Meteorological Organization operates buoys along both southern and northern coasts, covering the Persian Gulf, Oman Sea, and Caspian Sea. The network includes Oceanor, Ondra, and Datawell buoy types, measuring meteorological and ocean parameters. Mr. Layeghi described the specifications and locations of several buoys, noting that three new units are planned for installation in 2026 to replace older systems, built domestically and designed to improve measurement quality and reliability.

2.3. Canada

Mr. Michael Earle presented the national report from Canada on behalf of the Meteorological Service of Canada (MSC). He outlined the composition of the national moored and drifting buoy networks, totaling over sixty platforms across the Pacific, Atlantic, and Arctic regions, as well as inland lakes. He reported high data availability (around 99 %) across the moored network and noted that the drifting buoy array in the Arctic and Beaufort Sea continues to support weather and marine safety services. Challenges included one moored buoy lost during severe weather and logistical constraints affecting seasonal deployments. Mr. Earle highlighted ongoing testing of new Iridium beacons and sonic anemometers and the installation of seal-resistant cages to mitigate equipment damage. Canada identified discrepancies in metadata between its records and OceanOPS and will collaborate with OceanOPS to resolve them. He emphasized the value of DBCP guidance on metadata update procedures and the importance of studies quantifying the impact of buoy data to support network planning and funding.

2.4. Ecuador

Ms. Pritha Tutasi presented Ecuador's report, outlining progress and challenges in developing the national ECOMOR program, established to build a sustained marine observation network in Ecuadorian waters. The system currently comprises four moored buoys located off Esmeraldas, Salinas, the Galapagos Islands, and within the Hermandad Marine Reserve. These sites provide key data for monitoring the eastern tropical Pacific, supporting national forecasts and climate research. Ms. Tutasi reported two vandalism incidents in 2025, resulting in equipment damage and data losses, but confirmed that the network continues to provide valuable data for operational bulletins, model validation, and marine resource management. She emphasized the program's contribution to Ecuador's

early warning and climate monitoring capabilities and its pioneering deployment within a protected marine reserve.

2.5. Peru

Mr. Gibson Marques Hernández presented the national report of Peru on behalf of the Instituto del Mar del Perú (IMARPE). He outlined the ongoing activities related to the operation and maintenance of the national buoy program, which supports both marine research and operational forecasting. The Peruvian network consists of several coastal and offshore moored buoys deployed along the Pacific coast, providing real-time meteorological and oceanographic observations such as sea-surface temperature, salinity, and wind parameters. Mr. Hernández reported that IMARPE continues to integrate buoy data into national oceanographic monitoring and modelling systems to improve forecasts of coastal variability and marine conditions. He noted that while the overall network performance has improved, challenges persist related to vandalism and sensor maintenance due to harsh marine environments. IMARPE is planning additional deployments to strengthen coverage and is exploring collaborations through the DBCP to enhance technical capacity and data exchange.

2.6. India

Mr. Pattabhi Rama Rao presented India's national report, highlighting that the Indian National Centre for Ocean Information Services (INCOIS) and partner institutions continue to operate a comprehensive ocean observation network that includes moored and drifting buoys, wave rider systems, and coastal observation platforms. The National Data Buoy Program, managed jointly by INCOIS and the National Institute of Ocean Technology (NIOT), has contributed significantly to ocean state forecasts, cyclone monitoring, and early-warning services in the Indian Ocean region. Mr. Rao reported on recent upgrades to buoy instrumentation, including barometric pressure sensors and improved communication systems, as well as initiatives to expand coverage in under-observed areas. He also noted India's contributions to regional and global programs under the DBCP and the Global Ocean Observing System (GOOS). The presentation emphasized the continued integration of ocean observations into the country's early-warning framework and the importance of international cooperation for sustained observations in the Indian Ocean.

2.7. China

Ms. Xue Xinyang delivered the report from China, providing an overview of activities undertaken by the National Marine Environmental Forecasting Center (NMEFC) and associated agencies. China's buoy network, consisting of both coastal and deep-sea moored buoys, continues to support marine disaster prevention, ocean forecasting, and climate studies. The presentation highlighted ongoing innovations in buoy design, including the development of smart observation platforms equipped with high-accuracy sensors and real-time data transmission via BeiDou satellite systems. Ms. Xue mentioned that China has strengthened its contribution to the DBCP through data sharing and technology transfer initiatives, and has actively participated in vandalism-reduction campaigns. Efforts are being made to enhance coordination between national programs and OceanOPS to ensure accurate metadata representation. China reaffirmed its commitment to further collaboration with the DBCP community and to expanding its observation capabilities in support of global ocean monitoring.

Discussion

Following the national reports, Ms. Riama thanked the presenter and commended the national efforts in ocean observation, particularly of the buoys. She noted the challenges faced and requests to the DBCP.

2.8. Hong Kong, China

Mr. C. K. Chow presented the national report from Hong Kong, China, on behalf of the Hong Kong Observatory. He reported the deployment of three Met Ocean SVP buoys in 2025, with two more planned, targeting tropical cyclone monitoring in the South China Sea and Western North Pacific. No vandalism was noted until October, when one buoy grounded. Plans for 2026 include four deployments with similar objectives. Mr. Chow described technical features, including GPS, Iridium transmission, and sensors for sea-level pressure and surface acceleration, supporting real-time forecasting. He expressed interest in exploring wind and wave sensors and equipment for ocean heat content measurement.

2.9. Portugal

Mr. Nuno Gonçalo Rufino Zacarias presented Portugal's national report, detailing a network of 16 observation points, with eight near the mainland and others in the Azores and Madeira Islands. Currently, eight points are operational, using Datawell, Wavescan, and Seawatch buoys equipped with wave, temperature, and meteorological sensors. Data support marine safety, model validation, and research, accessible via the Hydrographic Institute portal. Mr. Zacarias reported 17 drifter deployments in the Atlantic and noted metadata discrepancies with OceanOPS, committing to updates with local authorities.

2.10. France

Mr. Christophe Guillerm presented France's national report on behalf of Météo-France, describing six moored buoys in the Mediterranean and Gulf of Gascony, plus six wave riders in overseas territories. One buoy was damaged by a ship in 2025. Plans for 2026 include deploying additional buoys and wave riders. Mr. Guillerm highlighted a "turbo mode" for high-frequency data during extreme events and the development of an open API for data access. He confirmed alignment with OceanOPS reports after minor corrections.

2.11. UK

Ms. Kirsten Stokes presented the UK's national report, outlining a network of 10 moored buoys, four light vessels, and one wave rider, supporting weather warnings and climate studies. Several moorings failed due to storms, prompting upgrades in redundancy, batteries, and sensors. The UK deployed 29 drifting buoys in the Indian Ocean and 12 in the Atlantic. Ms. Stokes noted minor inconsistencies in OceanOPS contacts and commended the automated reporting process.

2.12. Indonesia

Mr. Iyan Turyana presented Indonesia's national report, reporting nine active drifters from 74 deployments and two shallow-water floats from 24. The network includes HF radars, maritime weather stations, and vessel AWS. Research programs like Impulse and Triumph focus on Indonesian Throughflow dynamics. Future plans include eight wave riders, two coastal buoys, and 10 HF radars. Mr. Turyana highlighted developments in tsunami-detection buoys and cable-based systems, noting challenges with vandalism and sustainability.

Discussion

Ms. Champika Gallage thanked presenters and inquired about France's high-resolution data in events, with Mr. Guillerm confirming GTS availability for weather parameters like wind, pressure, and gusts. The meeting noted per comment from the Ifremer-based

GDACs for moored and drifting buoys that data of many instruments presented during the session are not publically available.The Chair concluded the session, thanking participants for insights and contributions.

3. Invited Speech

3.1 Buoy data for Modelling and Associated Challenges

In his presentation, Mr. Vijay Tallapragada from NOAA's National Centers for Environmental Prediction (NCEP) highlighted the critical role of buoy data in numerical weather prediction (NWP), data assimilation, and verification. He emphasized how drifters, moored buoys, and profilers provide essential observations for constraining ocean surface states, anchoring satellite retrievals, and capturing subsurface structures like heat and salinity. Mr. Tallapragada showcased operational systems such as the Real-Time Ocean Forecast System (RTOFS), which uses HYCOM Ocean and Community Ice CodE models to integrate buoy data with satellite observations, leading to improved representations of sea surface temperature (SST), salinity, and currents. Examples from hurricanes like Dorian, Melissa, and Helene demonstrated how buoy data enhances forecasts by accurately capturing cold waves, upwelling, and currents reducing biases and supporting intensity predictions. Additionally, he discussed transitions to advanced coupled systems like JEDI for better integration of buoy observations into global forecast models, and their use in validating ocean analyses against ground truth data.

Mr. Tallapragada also addressed buoy applications in wave modeling with WaveWatch III, where data tunes parameters for significant wave heights, improving predictions for swells and hazardous events. He noted deployments of Lagrangian drifters for atmospheric river forecasting, yielding up to 6% improvements in precipitation forecasts for regions like Southern California. Challenges include data sparsity, quality control issues, biases, and representativeness errors in gridded models. Looking ahead, he advocated for expanded sensor capabilities on buoys to capture near-surface and subsurface data continuously, including biogeochemistry and full wave spectra, while fostering synergies with satellites, uncrewed systems, and ship-based analogies to advance Earth system modeling and long-term monitoring.

Several questions from the audience addressed the integration and impact of buoy data in weather prediction models. Mr. Tallapragada explained that assimilated wave data influences forecasts for up to five days in short-range predictions, with accuracy improvements in coupled models being actively assessed, citing examples from European and UK Met Office models showing better performance over individual components. NCEP's upcoming coupled Global Forecast System (GFS) implementation next year was highlighted as promising similar gains. On drifter data, Mr. Tallapragada discussed the balance between representation errors (constrained by data assimilation systems) and instrument errors (mitigated by calibration), emphasizing quality control to avoid negative impacts. He affirmed the feasibility and necessity of assimilating wave observations into wave models for enhanced results, particularly in coastal applications, and noted that even limited drifters and floats remain effective for regional models by aiding evaluation and physics improvements. Fixed buoys have lower quality control acceptance rates as they serve as ground truth, and while operational centers do not conduct Observing System Experiments (OSE/OSSEs), NOAA labs provide expertise in optimal buoy network design. He also touched on localization impacts and invited collaborations for sharing new observations to refine model usage.

Mr. Arief inquired about the need for data assimilation in high-resolution regional models when initial and boundary conditions come from already-assimilated global models. Mr. Tallapragada responded affirmatively, explaining that global models operate at coarse resolutions (around 25 km), missing finer details that regional models (e.g., 3-5 km) can

capture through direct assimilation of high-resolution in situ data. He noted differences in representativeness errors between global and regional scales, underscoring the value of regional data assimiltaion despite its complexity in handling background error covariances. The session concluded with thanks from the chair, Nelly, who encouraged further email discussions using Mr. Tallapragada's provided contact, and applause for his contributions.

3.2 Status of the Global Wave Database

Mr. Ludovic Drouineau presented the status of the Global Wave database, highlighting recent maps of 652 platforms measuring waves over the last 30 days. 486 of them share data using WMO-IDs, with 447 of them having available metadata at OceanOPS. .Data from more than 160 instruments were collected from various sources and not using WMO-IDs. He noted inactive Brazilian and Taiwanese buoys requiring reconnection and expanded the discussion to include drifting buoys and sail drones, with recent access to sail drone data facilitated by Meteo France. Data sharing is prominent from sources like NDBC (USA), Australia, Europe via Copernicus, and Korea through GTS, enabling dedicated contacts with European institutions. Two portals manage access: the French Odatis and the European Copernicus, managed by Ifremer and Mercator Ocean International, respectively. The evolution of platforms shows growth in measurements of wave height, period, direction, and spectral information, which is crucial for model improvements. Quality control is conducted in near real-time and delayed modes by Puertos De l'Estado and NOW System, involving automatic tests, visual inspections, and feedback to providers for refined data products tailored for modelers.

In updates for 2024-2025, Mr. Drouineau reported switching the Canadian data source to ERDDAP, boosting platforms from under 10 to 40-43, and incorporating feedback from delayed mode to enhance near real-time data flagging. Copernicus Marine introduced a Python toolbox for regional and periodic data subsetting, while Ifremer is developing an API-equipped website to include data up to the last hour by year's end. New features include adding main wave direction spectra for the French Atlantic coast by early 2026. Future studies in 2026-2027 will explore integrating tide gauge data for harbor agitation (focusing on exterior gauges) and waves from HF radars, starting with pilot sites for qualification and expansion. Drouineau urged DBCP to connect more networks like India's WAMAN for historical or near real-time data, reconnect to Taiwan, and emphasize the importance of moored buoys during events like hurricanes. He also raised concerns about preserving private data from competitors like Sofar for long-term archiving, suggesting access after 5-10 years to benefit the scientific community.

Following the presentation, Mr. Lance Braasch thanked Mr. Drouineau and invited questions. Mr. Braasch inquired about the Sofar drifters shown on a map, with Mr. Drouineau confirming they are not shared on the Global Telecommunication System (GTS) due to their commercial nature, requiring payment for access. Mr. Braasch also sought details on saildrone locations, prompting Mr. Drouineau to note the need for better color differentiation on maps and mentioning one in the Gulf of Mexico. A participant asked about incorporating wave data from ships, to which Mr. Drouineau responded that while tide gauges and HF radars are under exploration, ship-based radars are mainly for research, citing a private company like Ocean Sync as an example. Ms. Champika Gallage appreciated the establishment of e Global Data Assembly Center (GDAC) for moored buoys after years of waiting, recommending tracking user statistics to assess diversity and usage of the GDAC, and propose to add a link to GDAC on the new DBCP website. Mr. Mathew Belbeloch highlighted that about 30% of wave moored buoys are not on the GTS and OceanOPS, urging actions from OceanOPS and Ifremer to identify operators, provide technical support, and facilitate sharing data and metadata, especially for countries like Indonesia.

Further comments emphasized data gaps and policy considerations. Mr. Drouineau pointed out the scarcity of data in the Southern Hemisphere, noting interest from Peru and Ecuador

in DBCP assistance for deployment. Mr. Pattabhi Rama Rao addressed the query on connecting India's WAMAN network, explaining that data from Exclusive Economic Zones (EEZ) is currently not shared but currently under policy review for potential international collaboration and data sharing. Mr. Arief from Indonesia inquired about standardizing tide gauge wave measurements along coastlines, often in sheltered harbors; Mr. Drouineau offered to connect him with Begonia from GLOSS network in this regard. Mr. Belbeloch reiterated the WMO's unified data policy, which encourages members to share core physical surface observations for early warnings, underscoring the importance of open data for global benefits.

4. OCG Direction

In her presentation, Ms. Ann Zinkann, representing the Observations Coordination Group (OCG) under GOOS, provided an update on behalf of David Legler. She emphasized OCG's role in coordinating 13 mature and four emerging global networks, including new endorsements for FVON (Fishing Vessel Observing Network), Soconet (Carbon Network), Smart Cables, and Sun Fleet (formerly Uncrewed Surface Vehicle Network). Key progress since OCG 16 includes updating network specification sheets, advancing the data implementation plan, finalizing OceanOPS service level agreements and letters of agreement, rolling out the OceanOPS Passport for critical metadata traceability, and appointing new vice chairs: Ms. Nelly Riama for executive roles and Mr. Abed El Rahman Hassoun for standards and best practices. Ms. Zinkann highlighted the first Statement of Guidance for ocean earth system applications within WMO, which identifies 37 variables consistent with GOOS EOVs, conducts gap analyses for 10 high-impact variables (e.g., prioritizing gaps in red for high, orange for medium), and offers recommendations to support operational services and a global basic ocean observing network.

Looking ahead, Ms. Zinkann outlined ongoing efforts such as developing metadata passport guidance, improving network data flows, exploring EOV monitoring tools, drafting a five-year OceanOPS strategic plan with stakeholder input, and finalizing the GOOS status report. She also noted evolving relationships with the private sector and reassessing OCG's future, including revitalizing the metrics team. For DBCP discussions, she posed thought-provoking points on leveraging opportunities like expanding GBON in oceans to address gaps, implementing the OCG data strategy, strategizing for the evolving ocean observing enterprise, integrating systems across platforms with a focus on societal impacts (e.g., through Ocean Observing Co-design), and addressing concerns over changing ship resource availability. Ms. Zinkann encouraged clear messaging on network societal benefits to secure funding and foster broader engagement.

5. Task Team and Working Group reports/workplans

5.1 E-SurfMar

Mr. Olivier Desprez De Gésincourt provided an update on the E-SurfMar program under EUMETNET, focusing on surface marine observations in the North Atlantic and Mediterranean regions, including moored buoys, drifting buoys, and Ship Observation Team (SOT) matters. This year, the program involved around seven meetings to review networks and scientific assessments. Key activities included purchasing and deploying approximately 50 drifters (below the usual target of 100 for maintaining 200 in the area from the North Pole to 20°S), with 25 trusted drifters featuring high-resolution sea surface temperature (HRSST) sensors in collaboration with CLS and EUMETNET, alongside quality control (QC) and reporting. Additional deployments comprised about 40 SVP-B drifters and 10 ice drifters, with plans for 60 more by year-end through the NAWDIC campaign in the North Atlantic. Recoveries were limited to under 10 due to logistical challenges. The program also advanced environmental initiatives, such as developing a wooden buoy with

new barometer integration, electronic boards, and designs for testing in 2026; integrating electronics into bio-plastic hulls with grants for ecotoxicity and biodegradability evaluations; and conducting a life cycle analysis of SVP-B buoys. Other achievements included nearly completing the deployment of nine deep-sea moorings in the Mediterranean Sea to enhance data in areas prone to extreme events, deploying drifters via cargo sailboats, coordinating NAWDIC Med deployments, and implementing a new metadata format aligned with OceanOPS requirements since January 2025.

Strategically, E-SurfMar aligns with DBCP pillars of scientific and operational excellence, technology innovation, and environmental stewardship, with top actions centered on maintaining the surface marine observation network, prospecting new capabilities like mini USVs (planned for assessment in 2026 with startup Ocean), and exploring bio-sourcing materials. Success is measured by integration into a comprehensive network involving stakeholders like GDP, OceanOPS, and Ships of Opportunity, as well as fostering common community requirements and agility for future restrictions. For next year, focus areas include adjusting drifter numbers, deploying Batch 7 of 25 trusted drifters globally, continuing collaborations with EUMETSAT and CLS on HRSST ice buoys, improving QC tools, sustaining ice buoy deployments to the North Pole, advancing environmental projects (wooden and bio-plastic buoys), monitoring small USVs, coordinating NAWDIC North Atlantic deployments, and conducting a design study for the next E-SurfMar phase starting in 2029. Recommendations emphasize ongoing synergies with GDP and satellite agencies via SVP-BRST buoys for calibration/validation, encouraging use of QC tools, addressing drifters' environmental impact, and thanking European, US, and Canadian partners for deployments. Mr. Desprez highlighted the importance of DBCP coordination through its coordinator and Service Level Agreement (SLA), urging members to contribute to its financing, and raised concerns about traceability for data corrections (e.g., pressure biases) before GTS transmission, suggesting potential new BUFR formats or task team collaboration.

Following Mr. Desprez's presentation, Mr. Braasch expressed gratitude for the excellent update and highlighted the significant contributions of E-SurfMar and Météo-France to the community. Ms. Annie Arumsari inquired about capacity-building initiatives within E-SurfMar, such as internships or field participation opportunities for members and students to gain practical experience in buoy deployment and management. Mr. Desprez clarified that no such programs currently exist under E-SurfMar, though EUMETNET has a dedicated capacity-building framework he could explore further; he noted the suggestion as a potential requirement for the next phase and committed to consulting his operations manager. Mr. Braasch then addressed chat comments on bias correction in data, proposing deeper discussions under the Task Team on Data Management (TTDM) and a review of governing documents for updates, with Mr. Desprez agreeing to follow up.

5.2 IABP and IPAB

There was no representation from IABP and IPAB at this session.

5.3 Tsunameter

There was no representation from Tsunameter at this session.

5.4. Task Team on Wave Measurements

Mr. Robert Jensen, serving as rapporteur for the Task Team on Wave Measurements (TT-WM) chaired by Candice Hall, presented an update at DBCP-41. He emphasized TT-WM's role as the focal point for wave measurement issues across the DBCP. This year, the team held two formal meetings and addressed six key actions: evaluating the feasibility of including wave data from HF radar and saildrones (ongoing due to limited capacity, with plans to engage platform operators for future comparisons); hosting a second Wave

Measurement Workshop (originally scheduled for November 18-19, 2025, but delayed indefinitely due to the shutdown); supporting OceanOPS, TT-DM, and TT-MB on cross-network metadata and data standards for waves, including the OSCAR Metadata Pilot Project (completed for 2025); aiding the Coriolis/Copernicus Global Wave Database (completed with ongoing support); assessing a consolidated Wind-Waves GDAC (completed and integrated into the Global Wave Database); and developing QC flag documentation for wind-generated surface gravity wave frequency spectra (ongoing). Highlights included an article in the March 2025 DBCP Newsletter on advancing global wave observations, evaluations of operational and pre-operational systems leading to about eight new journal papers (e.g., on measuring ocean surface waves and marine renewable energy applications), and ongoing intra-measurement comparisons such as in Lake Superior (involving DWR, NDBC 3DMG, OWL, and mini-wave buoy sensors) and NDBC's DART testing with tethered SOFAR Spotter buoys (field tests complete, analysis underway), with a planned Pacific met-ocean buoy comparison in spring. A full publications list will be in the DBCP-41 final report.

Strategically, TT-WM aligns with DBCP pillars of impact and value, scientific and operational excellence, and technology innovation, with key actions promoting ocean buoy use, leading in scientific and tech development, standardizing processes, promoting best practices, and encouraging R&D. Success is measured by the number of peer-reviewed publications and presentations on high-quality wave data, benchmarking against international standards via platform comparisons, and adoption/assessments of emerging technologies through publications and guidance contributions. For next year, focus areas include organizing the delayed Wave Measurement Workshop or seminars to disseminate progress on metadata, the global database, and user requirements; continuing support for cross-network metadata harmonization; reviewing the Coriolis/Copernicus Global Wave Database for moored buoys to meet user needs; and ongoing testing/evaluation of measurement systems to maintain confidence in the global wave observing system. Mr. Jensen reiterated the need to finalize QC flag documentation for reporting at DBCP-42. Requests to DBCP include continued logistical support for TT-WM, the workshop, and the Global Wave Database.

5.5. Task Team on Data Management

Mr. Lance Braasch, co-chair and rapporteur for the Task Team on Data Management (TT-DM) alongside Mr. Shaun Dolk, presented an update at DBCP-41, noting that the report was abridged due to U.S. constraints preventing Mr. Dolk's contributions. The team held no formal meetings this year, operating on an ad hoc basis where issues prompt discussions, with membership open via the group email for anyone interested in joining. Completed actions included reviewing minimum WIGOS metadata requirements for the OSCAR/Surface pilot, examining the DBCP Data Policy Annex II (unchanged but discussed), and engaging in OCG Round Table and Task Team discussions to align with the OCG data implementation strategy. The OSCAR/Surface Metadata Pilot is expected to wrap up next year, despite delays from contractual bureaucracy. Actions not progressed include mapping the OceanOPS metadata schema to formats like WIGOS Metadata Representation (WMDR), though recent presentations suggest progress is underway but not yet released. New topics added involve formalizing deployment metadata exchange protocols and discussing real-time handling of sensor biases versus blacklisting, including implications for existing systems.

Strategically, TT-DM aligns with DBCP pillars of impact and value, and scientific and operational excellence, with top actions focused on following and promoting international data-sharing practices, standardizing processes across global ocean observing networks, and adopting best practices in data lifecycle management. Success is measured by metadata and data accuracy, availability, and timeliness, emphasizing DBCP's core role in data cooperation. Key highlights this year include submitting a request to WMO for delegation of issuer identifier 22000 for marine platforms to enable direct metadata

submission to OSCAR/Surface, PMEL's development of an ERDDAP database for moored buoy metadata with an extensible machine-to-machine (M2M) interface (encouraging broader adoption), and Météo-France's relaunch of QC Tools buoy maps for enhanced utility. For next year, focus areas encompass completing the OSCAR/Surface pilot, expanding ERDDAP interfaces to additional platform types (e.g., drifters), reviewing and incorporating deployment metadata protocols into best practices, and convening discussions on sensor bias reporting, calibration traceability, and impacts on operational forecast centers and GTS/WIS 2.0 data providers. Actions and recommendations include advancing the pilot as an exemplar, ongoing review of metadata best practices as a living document, developing a framework for deployment metadata ingest into repositories, and addressing sensor biases. Requests to DBCP involve OceanOPS providing a database schema map for data and metadata (noting ingress/egress with OSCAR/Surface and OceanOPS Passport, anticipated soon) and encouraging platform operators and users to communicate specific needs for OceanOPS SLA, especially for Standard+ services, to TT-DM and the Executive Board.

5.6. Task Team on Moored Buoys

There was no representation from TT on Moored Buoys at this session.

5.7. Task Team on Capacity Development

Mr. Fan Jiang, chair of the Task Team on Capacity Development (TT-CD), reported its intersessional activities, including seven teleconferences organized to prepare for a key workshop. Two actions from DBCP-40 were addressed: the completed action aligned capacity development with GOOS-identified gaps, referencing the 2020 UNESCO Global Ocean Assessment Report, which highlighted Asia as having the largest gaps and prioritized the Caribbean and Africa; accordingly, this year's workshop targeted West Africa and Southeast Asia to bridge these. The ongoing action involves seeking additional financial opportunities, collaborating with the POGO program, the Indonesian Aid Program, and exploring cost-effective approaches. A major highlight was the Training Workshop on Ocean Observations for Operational Services in the Indian Ocean, held 5-7 August 2025 and hosted by the Indian National Centre for Ocean Information Services (INCOIS), organized by WMO and IOC. It attracted 65 participants from 14 countries (41 in-person, 24 online, including 35 trainees and 21 speakers), featuring three packed days on topics like ocean observing systems, data quality control, regional coordination, practical sessions on INCOIS operations, remote sensing, open data analysis, and group discussions on national challenges and opportunities. Metrics showed 32% women participants, high satisfaction (average score 5.68/6) for content, quality, and delivery, particularly the balance of theory and hands-on elements, and resulted in clear recommendations from national reports and discussions, which TT-CD plans to turn into near-future activities.

Strategically, TT-CD aligns with DBCP pillars of impact and value, international cooperation and partnerships, and diversity and inclusivity, with success measured by participant diversity, marked this year by welcoming first-time participants from Guinea, the Islamic Republic of Iran, and Comoros, broadening geographic scope and reinforcing inclusivity. For next year (2026-2027), key focuses include conducting two workshops: one in the Pacific Islands to advance wave drifter deployment processes, and another in Africa or the Caribbean emphasizing diversity and inclusivity; Mr. Jiang invited countries expressing interest in regional training to contact him for support. Actions and recommendations encourage DBCP members and Member States to express interest in hosting capacity-building workshops, ideally integrating drifter deployment activities. The ask from DBCP is to systematically coordinate technical and capacity-development workshops under the DBCP and OCG umbrella, co-locating them where appropriate to optimize resource utilization and ensure cost-effectiveness.

Discussion

Following the presentations of TT-WM, TT-DM and TT-CD, Ms. Nelly Florida Riama invited discussion. She addressed membership openness and Ms. Pritha Tutasi's query on 2026 training, with Mr. Jiang suggesting offline talks. Ms. Anni Arumsari suggested engaging other task teams in further discussions to align capacity development activities with their specific needs. Mr. Jiang supported the idea by advocating for joint workplans and coordinated invitations. Mr. Ian Sears shared NOAA's Sofar buoy tethering success in collocating for the intercomparison of waves. The Chair noted Mr. Pattabhi Rama Rao's comment on INCOIS training links.

5.8. Working Group on Vandalism

Ms. Anni Arumsari Fitriany from BMKG Indonesia presented a report on the Working Group on Data Buoy Vandalism, noting no formal meetings were held this year, only informal ones within her BMKG team, and inviting other DBCP members and experts to join the group. The sole action from the previous session, ensuring continuous sharing of best practices among members to accelerate tackling vandalism, was completed through activities like summarizing vandalism incidents from national reports, which identified at least five countries affected in 2025: India (4 incidents), Germany (1), Finland (1), Ecuador (2), and South Korea (6). She highlighted Ecuador's shared best practices, including engagement with maritime authorities for exclusion buffers and patrols, mooring design reviews for cable protection and anti-tamper features, planned awareness meetings in Q1-2026 with fishing guilds and port captains (using Spanish materials on safety and public value), and suggestions like QR labels for info pages, community guardian programs, and sacrificial elements to minimize damage. A key achievement was organizing an international webinar on 23 October 2025, in collaboration with NIOT (India) and BMKG, featuring five experts sharing national experiences from India and Indonesia on vandalism, best practices in anti-theft technology (e.g., technical hardening, hidden GPS trackers, buoy shapes), community outreach (e.g., Weather Field School for Fishermen, multilingual campaigns), and actionable outcomes like recommendations for a National Task Force for Buoy Vandalism and capacity-building programs on anti-theft buoys. The group also developed draft recommendations to DBCP-41.

The working group aligns with DBCP strategic pillars of impact and value (Pillar 1, enhancing awareness for resilient data flow in weather/climate services), technology innovation (Pillar 3, promoting advanced anti-theft tech like hidden GPS trackers, improved moorings, and protective guards), international cooperation and partnerships (Pillar 5, fostering collaborations among members and institutions like BMKG, NIOT, and BRIN via the webinar), and additionally supports diversity and inclusivity (Pillar 6, through broad engagement in online sharing). Success is measured by continued sharing sessions on anti-theft tech, community outreach, and institutional arrangements. For next year, the focus remains on organizing sharing sessions of best practices among members, potentially including compiling them on a website in discussion with the Secretariat. Proposed actions and recommendations to DBCP include promoting and implementing sharing on advancements in buoy security/resilience, community initiatives like Weather Field Schools and guardian programs, and strengthening mechanisms like National Task Forces for maritime asset protection. The ask from DBCP is to continue encouraging members to share experiences on technical innovations, operational procedures, and community approaches, while promoting enhanced collaboration on cross-boundary incidents involving vandalized or adrift buoys through timely communication, coordinated recovery/repair, and lessons learned.

5.9. Task Team on Environmental Stewardship

There was no representation from TT on Environmental Stewardship at this session.

5.10. Task Team on Data Impact and Value

Mr. Marc Lucas, chair and rapporteur of the Task Team on Impact & Value (TT-IV), highlighted two formal meetings held this year along with side discussions with Mr. Shaun Dolk from NOAA and Mr. Olivier Desprez de Gésincourt. The team's five key actions focused on identifying user communities, their data needs and usage, means of data distribution, creating relevant metrics for data buoy usage, and determining optimal communication methods. This year, progress was made on the first three actions, with plans to advance the remaining two next year. A major achievement was finalizing and distributing an online questionnaire in two rounds, garnering 181 replies and initiating preliminary analysis, including graphs to visualize responses. Mr. Lucas encouraged all participants to contribute, emphasizing the questionnaire's role in understanding data buoy impact across scientific, early warning, and other communities.

Strategically, TT-IV aligns with DBCP's objective of advancing ocean science for measurable benefits to global, regional, and local users, with top actions centered on understanding user needs along the value chain, promoting observation impact studies (e.g., NOAA's presentation on data buoy use), and encouraging data utilization among members, partners, and researchers. Success is measured by increased DBCP mentions in publications for visibility, boosted funding for buoys, and expanded membership. For next year, priorities include building DBCP and TT-IV membership, further advertising the questionnaire for more contributions, analyzing responses to produce a short report, and beginning work on data distribution methods and metrics to clearly demonstrate buoy impact. Recommendations urge raising awareness of underfunding for in situ observations (noting a European disconnect between oceanographic and meteorological communities), integrating observations into digital twins, AI/ML, and initiatives (stressing their fundamental role in training data), and encouraging national weather prediction centers to publish impact metrics like data denial studies or forecast sensitivity to observation impact (FSOI) exercises. Mr. Lucas requested continued logistical support from DBCP (thanking Mr. Martin Kramp), efforts to grow TT-IV's active membership, or consideration of dissolving the team if deemed unnecessary.

5.11. SMART Cables

Mr. Bruce Howe provided an update on the SMART (Science Monitoring And Reliable Telecommunications) cables initiative, which integrates environmental sensors measuring temperature, pressure, and seismic motion, into submarine telecommunications cables to enhance global ocean observation, particularly for tsunami detection. He highlighted a map of existing and planned systems, noting a wet demonstration in the Mediterranean and upcoming installations in 2027: the Portugal system, the Atlantic Cam with 20 bottom nodes, and New Caledonia to Vanuatu with four nodes, expanding from about 70 DART buoys to add 24 multi-sensor modules. Progress is advancing in regions like the North Atlantic, subpolar areas extending to the Arctic, the Caribbean via IOCaribe, South America (including Brazil's interagency group and a Drake Passage feasibility study funded by the Latin American Development Bank), and India. Brief interventions from Indonesian representatives Mr. Iyan Turyana and Mr. Wahyu Pandoe confirmed the InaCBT system's status, with an implementation agreement for data sharing to BMKG, one sensor operational at 2100 meters depth, and communication issues with the second. Mr. Pattabhi Rama Rao from India's INCOIS described plans for a submarine cable observatory in the Bay of Bengal near the Andaman and Nicobar Islands, featuring two scientific nodes connected to a landing station, with tender processes underway and a side meeting planned at the upcoming ODTP.

Mr. Howe emphasized the ongoing activity of the International Tsunami Partnership, suggesting it update the Essential Ocean Variable (EOV) specification sheet for sea surface height (noting an empty tsunami data column), revise the future systems spreadsheet, and elevate the DART tsunami network's presence within the GOOS program in preparation for the new SMART systems adding 24 tsunami-related sensor packages. He referenced a

recent European Commission conference on digital connectivity, where funding opportunities for international submarine projects include environmental monitoring and SMART components, exemplified by Portugal securing 56 million euros out of 154 million for their system. A conference poll highlighted "SMART" as a central keyword for the next five-year plan, underscoring its role in supporting infrastructure and logistics costs often borne by external funding. Mr. Howe concluded by positioning SMART cables as a valuable addition to the global ocean observing system.

Discussion

The Chairs endorsed the continuation of the Task Team on Impact & Value (TT-IV), praising its success with the user survey with Mr. Braasch emphasized the critical need for high-quality metadata alongside observations to enable proper classification in AI and digital twin models. He thanked Bruce Howe for the SMART cables update and offered support to strengthen DART tsunami network within the GOOS program. Participants congratulated all presenters for their excellent intersessional work. Ms. Gallage urged WG Vandalism to use the official Ocean Best Practices System (OBPS) guidelines for any new best-practice document to ensure endorsement and publication on OBPS portal, and encouraged Marc Lucas to prominently feature the TT-IV survey results on the upcoming new DBCP website for maximum visibility. Mr. Joel Cabrie highlighted that membership shortages as a recurring theme across all TT and WG, and called for a clear panel action requiring every member to actively recruit new participants from their countries. Mr. Bayu Edo Pratama proposed to the Vandalism Working Group the creation of a simple shared database or reporting mechanism for vandalism incidents to identify hotspots, seasonal/regional patterns, and effective prevention strategies; Ms. Arumsari welcomed the idea and committed to pursuing it in the next intersessional period.

6. Update from OceanOPS (metadata status & SLA)

Mr. Martin Kramp emphasized OceanOPS's role in monitoring OCG networks through shared data and metadata, aligned with WMO and OCG strategies. Building on national reports discussed previously, he provided a global overview for 2024: the drifter array featured 2156 platforms (2155 distinct WMO IDs), with 1400 in OSCAR, balanced deployments (1638) and closures (1630), predominantly using Iridium telecommunications and deployed via various vessels, contributing variables like sea surface temperature and pressure. For moored buoys, 643 operational platforms were noted, with redeployments often reusing WMO IDs but incrementing WIGOS identifiers, showing stable numbers (121 deployed, 122 closed), deployed mainly by research vessels and providing a broader set of variables. Tsunameters totaled 47, mostly DART buoys, with Mr. Kramp acknowledging limited focus on this network this year but planning more attention ahead.

Mr. Kramp stressed the importance of metadata and data availability for accurate monitoring, offering assistance to countries lacking compliance to appear in global maps and statistics. He highlighted issues like metadata without public data (potential flow problems) or public data without sufficient metadata, demonstrating submission methods and proposing updates to a header list via the data management team to identify operators from GTS data. OceanOPS products include dashboards for dynamic views (e.g., Australian contributions overlaid with drifter density), static maps (e.g., overarching DBCP and 5x5 degree drifter situations), and key performance indicators (KPIs) showing trends like decreasing drifter data volume, divided into implementation, data flow, and instrumentation phases. These products aim to identify and close gaps. Mr. Kramp caled for collaboration with a task team to review and evolve them, including adaptations to the QC relay tool for blacklisted instruments, now sent only to operations managers.

Mr. Thomas Latter introduced the OceanOPS Passport, a concept developed with the OCG data task team, comprising controlled metadata with unique identifiers and a permanent WIGOS station ID, exportable to standards like WMDR for OSCAR and schema.org for search engines, with a completeness score. Workflows include API pushes, file harvesting, or manual GUI uploads, with a lightweight push API in development (MVP in production, tested with GDP AOML), supported by user interfaces, online guides, lookup tables, and mapping to formats like CSV and WCMP2 for WIS2.0. Mr. Mathew Belbeoch discussed the SLA framework endorsed by OCG, with levels (baseline, standard, standard+) costing staff time plus 15% overhead, anticipating ~78K USD contributions for 2025 to support drifters, moored buoys, and tsunameters flexibly. He urged diversification of support beyond US/European reliance, noted positive developments like new IT staff and Ifremer hosting migration, and encouraged international cooperation to reverse declining drifter trends, aiming to sign the SLA by year-end for 2026 implementation.

7. Progress Report of Data Centers

7.1 Coriolis

Mr. Ludovic Drouineau delivered a rapid update on the GDAC for moored and drifting buoys at Coriolis. For moored buoys, he reported 857 fixed platforms active in the last 30 days: 558 with WMO IDs (86 more than OceanOPS), plus 299 without WMO IDs. He highlighted the challenge of defining "moored buoys" across overlapping networks (national wave stations, meteorological & oceanographic stations, OceanSites, EMSO). For drifting buoys, Coriolis processed data from GTS, E-SURFMAR, and the Antarctic Buoy Programme (including ice buoys), recording a sharp decline in 2025 numbers and 222 more platforms than OceanOPS: 152 unregistered (mostly Scripps) and ~50 ice buoys. ~200 Pacific Gyre lab drifters flagged for bad positions yet circulating on GTS. Regular updates performed through AOML and he requested machine-to-machine formats (e.g., CSV) to automate updates and showcased duplicate detection efforts, highlighted that this is important for their delayed mode products. He also presented upcoming 2026–2027 CLS work on drogue-off detection using wind-current angle clustering.

Mr. Drouineau demonstrated data visualization tools, including Copernicus Marine Toolbox and Ifremer API and an interactive map by his colleague Marceau displaying all drifting-buoy observations near Florida, and a global heat map of Coriolis observations.

In the brief Q&A, Mr. Kramp commented on known synchronization issues already under discussion: lab-test drifters closed in OceanOPS after 30 days of no data despite GTS transmission, ambiguity on whether ice buoys belong fully to the drifting array or should split into complementary networks, and persistent discrepancies in moored-buoy counts (OceanOPS ~320 vs Coriolis ~800) requiring metadata ingestion solutions. Mr. Braasch acknowledged these as pipeline items for offline resolution. Mr. Khafid asked about data-access; Ludovic confirmed Coriolis/Ifremer portal offers simple CSV/NetCDF downloads by region, period, and instrument type.

7.2 MEDS

There was no representation from MEDS Canada at this session.

8. Financial Report

Ms. Champika Gallage provided a comprehensive update on the DBCP's financial situation, summarizing the funding structure, key contributors, and allocation mechanisms. She

highlighted that DBCP relies on voluntary contributions from a handful of long-standing members, including NOAA (USA) as the largest under a five-year agreement, alongside others like Environment and Climate Change Canada, Météo-France, Met Office (UK), and EUMETNET. Funds are managed through two WMO trust funds (the Ocean Observing Network Trust Fund and OceanOPS Trust Fund) and a special DBCP account at IOC/UNESCO for contributions from China's Ministry of Natural Resources. These funds support DBCP and SOT activities, with allocations specified by donors for fractions dedicated to DBCP-specific work, SOT, and OceanOPS services, including website maintenance and improvements. Gallage emphasized the critical role of these contributions in sustaining operations over the past 3-4 decades, noting that without them, DBCP could not function as it does.

For 2024, accounts started with approximately 130K USD, received 38K in contributions, and spent around 50K primarily on capacity development and executive travel, ending with about 130K USD. Transitioning to 2025 reporting in CHF (per panel agreement at DBCP-40 for operational ease), the year began with roughly 120K CHF, received 22K CHF, and after expenditures on similar activities, balanced at 123K CHF as of August 31, with IOC funds declining due to missing expected contributions from China for 2024-2025. The proposed 2026 budget, seeking panel approval, anticipates a carried-forward balance of about 120K CHF (adjusting for potential unaccounted expenses), expects 20K CHF in income, and allocates 4K CHF for hosting DBCP-42 (as requested by Météo-France), 6K CHF for chair/executive board travel to key meetings, and 15K CHF for capacity development, projecting an end balance of 114K CHF. On the IOC side, only 5K CHF is proposed for capacity development due to limited funds, raising concerns about sustaining activities without renewed Chinese support.

Ms. Gallage also outlined funds earmarked for OceanOPS to service DBCP's three networks (moored buoys, drifting buoys, tsunameters) under the Service Level Agreement (SLA) framework, with 79K USD received in 2024 and 64K USD by August 2025, plus SOT contributions from the same donors, but noted a funding shortfall for desired services. She urged more members to contribute or increase levels to bridge gaps and encouraged the panel to prioritize SLA needs via the Executive Board.

In discussion following the presentation, Mr. Lance Braasch emphasized formalizing SLA requests through written submissions to the Executive Board for better organization, particularly for standard-plus services. Mr. Martin Kramp inquired about travel expense eligibility, asking if funds extend beyond the chair to vice-chairs and the Technical Coordinator (TC), noting SOT's practices; Ms. Gallage clarified it's for the Executive Board generally, with TC travel typically covered by OceanOPS, but decisions rest with the board and panel. Mr. Braasch suggested earmarking such travel in the SLA for identified tasks, and Ms. Riama agreed. Mr. Joel Cabrie proposed a structured approach, like sending a form or spreadsheet for input by a deadline, which Mr. Braasch endorsed as aligning with circular practices. With no objections, the panel approved the 2026 expenses as proposed.

9. Panel Organization

9.1 DBCP Operating Principles

Mr. Lance Braasch opened Section 9 of the DBCP meeting on panel organization, focusing on agenda item 9.1 regarding revisions to the DBCP operating principles, described as the foundational document outlining the panel's functions and procedures. He noted that revisions were first discussed at DBCP 39, continued through the Executive Board and DBCP 40, and made available online via SharePoint in both marked-up and final versions. Key updates included aligning with current practices, such as structuring technical coordination through Service Level Agreements (SLAs) with OceanOPS, shifting to in-person meetings every two years with virtual formats in between, and extending Executive

Board terms from two to three (each lasting two calendar years) to accommodate the reduced meeting frequency. This change was highlighted as consistent with the SOT governance structure. Mr. Braasch invited questions and proposed panel approval of the updated document.

No immediate questions arose, though Ms. Gallage reminded participants that edited and clean versions were provided in meeting documents and suggested allowing a brief period for review if needed. Mr. Joel Cabrie proposed polling the floor immediately to see if anyone required more time, otherwise proceeding with approval. With no hands raised to postpone, the panel adopted the revised operating principles without objections.

9.2 ExB composition

Ms. Champika Gallage presented the current composition of the DBCP Executive Board, noting the lengths of service for each member and highlighting that, under the newly approved operating principles, all are eligible for additional terms. She reported that most members expressed willingness to continue in their roles, with the exception of Mr. Andri Ramdani, who is stepping down from his position focused on operational excellence, leaving it vacant. Ms. Gallage opened the floor for nominations or self-nominations for any positions, particularly the vacant one, and invited interested parties to propose candidates.

Ms. Annie Arumsari Fitriani from Indonesia nominated Mr. Bayu Edo Pratama for the operational excellence role. The nomination received support, and Mr. Pratama, present at the meeting, confirmed his acceptance of the responsibilities. With no objections or alternative nominations raised, the group welcomed Mr. Pratama to the board. Ms. Gallage concluded that the Executive Board for the next intersessional period would remain unchanged except for replacing Mr. Andri Ramdhani with Mr. Bayu Edo Pratama, expressing thanks and returning the floor to the chair.

9.3 DBCP website

Ms. Mia Khusnul Khotimah introduced the new DBCP website as a refreshed platform designed to enhance accessibility and consistency, currently hosted in a test environment on OceanOPS with a provided URL for preview, set to replace the existing site soon. She highlighted the simplified layout with key sections including "Who We Are" for governance and structure, "Data and Network" for status reports, maps, and data sharing manuals, "Resources" for standards, best practices, and photo galleries, and "Learning" for educational materials on DBCP initiatives. She requested task teams to review their respective content for accuracy, updates, and missing documents, urging them to submit edits and confirmations by November 7 to ensure the site reflects current and precise information. She emphasized the importance of feedback from the community and invited participants to explore the site immediately and provide inputs to refine it as the primary hub for DBCP information.

Mr. Arief from Indonesia suggested adding an event calendar for DBCP-related activities, allowing members to post and share upcoming events. Ms. Champika Gallage reminded the panel of the need for self-sufficiency in maintenance, urging in-kind contributions from members to keep content updated, as resources are limited. Mr. Joel Cabrie inquired about the website updating processes, prompting Mr. Martin Kramp to explain the technical setup involving zip file overrides for non-IT specialists, with minor edits possible on the fly. Mr. Lance Braasch proposed migrating to a GitHub repository for version control, issue tracking, and community pull requests, noting it would provide a public forum for changes without requiring advanced programming skills.

10. Next Session and Closing

The panel discussed the next session, tentatively scheduled for La Reunion in October 2026, hosted by France, with Mr. Christophe Guillerm confirming efforts to organize and suggesting week 44 to avoid conflicts. Final dates will be confirmed.

In closing remarks, Ms. Nelly Riama thanked participants, Executive Board, task team chairs, focal points, and the secretariat for productive discussions yielding recommendations on memberships, collaborations, and innovations. She encouraged contributions to the newsletter and emphasized sustaining DBCP's impact on global ocean challenges. Mr. Lance Braasch echoed thanks and looked forward to intersessional work. The session concluded with well-wishes, adjourning at 15:45 UTC on 31 October 2025.

Annex 1
Agenda

1 Opening and Welcome to DBCP-41

2 National Reports

3 Invited speech
- 3.1 Buoy data for Modelling and Associated Challenges
- 3.2 Status of the Global Wave Database

4 OCG direction

5 Task Team and Working Group reports/workplans
- 5.1 E-SurfMar
- 5.2 IABP & IPAB
- 5.3 Tsunameter
- 5.4 TT Wave Measurements
- 5.5 TT Data Management
- 5.6 TT Moored Buoys
- 5.7 TT Capacity Building
- 5.8 WG Vandalism
- 5.9 TT Environmental Stewardship
- 5.10 TT Data Impact and Value
- 5.11 SMART Cables

6 Update from OceanOPS (metadata status & SLA)

7 Progress report of data centers
- 7.1 Coriolis
- 7.2 MEDS

8 Financial Report

9 Panel organization
- 9.1 DBCP Operating Principles
- 9.2 ExB composition
- 9.3 DBCP website

10 Next session and closing

Annex 2
Actions and Recommendations

Actions:

DBCP Members

1. DBCP platform operators to connect more networks like India's WAMAN for historical or near real-time data, reconnect to Taiwan, and emphasize the importance of moored buoys during events like hurricanes.
2. DBCP Members to provide a clear action requiring every member to actively recruit new participants from their countries.

Task Team on Data Management:

3. TTDM to have further discusssion with ESurfMar on bias correction in data.
4. TTDM to advancing the WIGOS metadata requirements for the OSCAR/Surface pilot as an exemplar, ongoing review of metadata best practices as a living document, developing a framework for deployment metadata ingest into repositories, and addressing sensor biases.

Task Team on Wave Measurement:

5. TTWM to finalize QC flag documentation.

Task Team on Impact and Value:

6. TT-IV to work with secretariat to feature the TT-IV survey results on the new DBCP website.

Working Group on Vandalism and Outreach:

7. WG Vandalism to use the official Ocean Best Practices System (OBPS) guidelines for any new best-practice document.
8. WG Vandalism to create a simple shared database or reporting mechanism for vandalism incidents to identify hotspots, seasonal/regional patterns, and effective prevention strategies

OceanOPS:

9. OceanOPS and IFREMER (GDAC for Moored buoys) to identify operators of moored buoys which are not in OceanOPS, provide technical support, and facilitate sharing data and metadata.
10. OceanOPS to formalize SLA requests through a detailed written submissins to the DBCP Executive Board for better organization, particularly for standard-plus services.

Secretariat:

11. Secretariat to add a link to the Coriolis Global Wave Database GDAC on the new DBCP website.

Recommendations:

1. DBCP members to contribute to SLA financing.
2. Platform operators and users to communicate specific needs for OceanOPS SLA, especially for Standard plus services, to TT-DM and the Executive Board.
3. DBCP members and Member States to express interest in hosting capacity-building workshops.
4. To continue promoting and implementing sharing on advancements in buoy security/resilience, community initiatives like Weather Field Schools and guardian

programs, and strengthening mechanisms like National Task Forces for maritime asset protection.

5. DBCP members to continue sharing experiences on technical innovations, operational procedures, and community approaches, while promoting enhanced collaboration on cross-boundary incidents involving vandalized or adrift buoys through timely communication, coordinated recovery/repair, and lessons learned.
6. DBCP Executive Board to support to strengthen DART tsunami network within the GOOS program.
7. DBCP to divers financial support beyond US/European reliance.
8. DBCP to sign the SLA by year-end for 2026 implementation.
9. Secretariat to add an event calendar in the new website for DBCP-related activities, allowing members to post and share upcoming events.
10. Members to provide in-kind contributions to website keep content updated, as resources are limited.
11. Secretariat to migrate the website to a GitHub repository for version control, issue tracking, and community pull requests.
12. Chairpersons from SOT and DBCP TTs for performance measurement, impact and value discuss with OceanOPS (and potentially other panel members) a strategy for aligned or joined products, and review Maps, KPIs etc

Annex 3
Links to Related Documents

Related documents:
DBCP-41-Doc 5.1 Expert E-SurfMar_ Action Group Report.docx
DBCP-41-Doc 7.2 Canadian_GDAC_report_2025.pdf
DBCP-41-Doc 7.4.1-GDAC-Coriolis-driftingBuoys.docx
DBCP-41-Doc 7.4.3-GDAC-Coriolis-MooredBuoys.docx
DBCP-41-Doc 8.0-Financial report-V2.pdf
DBCP-41-Doc 9.1-Operating-Principles-2024-V1_cleaned20Oct2025.docx
DBCP-41-Doc 9.1-Operating-Principles-2024-V1_withreview20Oct2025.docx
National Reports
Presentations
Photo Screenshots

Annex 4
List of Participants

Online

NO	NAME	AFFILIATION	COUNTRY
1.	Abdo Swedan	N/A	Libya
2.	Aidan McMahon	Australian Bureau of Meteorology	Australia
3.	Alfi Rusdiansyah	National Research and Innovation Agency (BRIN)	Indonesia
4.	AlvaroSantiago Scardilli	Servicio de Hidrografía Naval	Argentina
5.	Andy Sybrandy	Pacific Gyre	USA
6.	Ann-Christine Zinkann	OCG	USA
7.	Anne Reed	EUMETSAT	Germany
8.	Anni Arumsari Fitriany	BMKG	Indonesia
9.	Bayu Edo Pratama	BMKG	Indonesia
10.	Behzad Layeghi	Islamic Republic of Iran Meteorological Organization	Iran
11.	Bruce Howe	JTF SMART Cables Department of Ocean and Resources Engineering, University of Hawaii	United States
12.	Champika Gallage	WMO	Switzerland
13.	Chow Chi Kin	Hong Kong Observatory	Hong Kong, China
14.	Christophe Billon	Meteo France	France
15.	Chunying Liu	NOAA	USA
16.	David Velasco	Nortek	USA
17.	Derya Itir Vennin	Intergovernmental Oceanographic Commission of UNESCO	UNESCO
18.	Ludovic Drouineau	Institut Français de Recherche pour l'Exploitation de la Mer, Ifremer, Centre de Bretagne	France
19.	Fan Jiang	Harbin Engineering University	China
20.	Fraser Cunninghan	UK Met Office	UK
21.	Gabriele Nardone	Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA)	Italy
22.	Gary Corlett	EUMETSAT	Germany
23.	Gibson Dicovichs Marquez Hernandez	Marina de Guerra del Perú, Dirección de Hidrografía y Navegación	PERU
24.	Gono Gbanmou	Direction Nationale de Météorologie de Guinée	Guinea
25.	Christophe Guillerm	Météo France, Centre de Météorologie Marine	France

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26.	Houssem Smeti	University of Monastir	Tunisia
27.	Iyan Turyana	National Research and Innovation Agency (BRIN)	Indonesia
28.	Ian Sears	NOAA/NWS/NDBC	USA
29.	Jenny Chiu	Fisheries and Oceans Canada	Canada
30.	Jing Li	Intergovernmental Oceanographic Commission of UNESCO	France
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Table of Abbreviations

AARI	Arctic and Antarctic Research Institute
ADCP	Acoustic Doppler Current Profilers
AG	Action Groups
AIS	Automatic Identification System
AniOBS	Animal Borne Ocean Sensors
AOML	Atlantic Oceanographic and Meteorological Laboratories
ASAP	Automated Shipboard Areological Program
BGC	Biogeochemical
BoM	Bureau of Meteorology
BOON	Boundary Ocean Observing Network
BMKG	Indonesia Agency for Meteorology Climatology and Geophysics
BUFR	Binary Universal Form for Representation of meteorological data
CDIP	Coastal Data Information Program
CSV	Comma-Separated Values
DAC	Data Acquisition Centres
DBCP	Data Buoy Cooperation Panel
EEOO	Extreme Events, and Ocean Observations
EEZ	Exclusive Economic Zones
EOI	Expression Of Interest
EOV	Essential Ocean Variables
ES	Environmental Stewardship
ESM	Earth System Monitoring
ETOOFS	Expert Team on Operational Ocean Forecast System
EU	European Union
EXB	Executive Board
FAIR	Findable, Accessible, Interoperable and Reusable
FRM	Fiducial Reference Measurements
FTP	File Transfer Protocol
GBON	Global Basic Observing Network
GCOS	Global Climate Observing System
GDAC	Global Data Assembly Centre
GDP	Global Drifter Programme
GDPFS	Global Data Processing and Forecasting System
GHFR	Global High-Frequency Radar
GHG	Greenhouse Gas
GOOS	Global Ocean Observing System
GTS	Global Telecommunication System
HKO	Hong Kong Observatory
IABP	Interagency Arctic Buoy Program
IMOS	Integrated Marine Observing System
IOC	Intergovernmental Oceanographic Commission
IODE	International Oceanographic Data and Information Exchange
IPAB	International Programme for Antarctic Buoys
ITEX	Iceberg Tagging EXperiment
ITP	International Tsunameter Partnership
ITU	International Telecommunication Union
JCB	Joint Collaborative Board
KOPRI	Korean Polar Research Institute
LDL	Lagrangian Drifter Laboratory
MB	Moored Buoy
MCDS	Marine Climate Data System
MEDS	Marine Environmental Data Section
MTS	Marine Technology Society
NCM	National Center for Meteorology
NDBC	National Data Buoy Centre

NIOT	National Institute of Ocean Technology
NIPR	National Institute for Polar Research
NMS	National Meteorological Services
NOAA	National Oceanic and Atmospheric Administration
NWP	National Weather Prediction
OBPS	Ocean Best Practices System
OCG	Observations Coordination Group
PMEL	Pacific Marine and Environmental Lab
Q&A	Questions and Answers
QC	Quality Control
RRR	Rolling Review of Requirement
S&T	Science and Technology
SIDS	Small Island Developing States
SIO	Scrips Institute of Oceanography
SIZRS	Seasonal Ice Zone Reconnaissance Surveys
SLP	Sea Level Pressure
SOFF	Systematic Observation Financing Facility
SOOP	Ship of Opportunity Programme
SOOS	Southern Ocean Observing System
SOP	Standing Operating Procedure
SOT	Ship Observations Team
SST	Sea Surface Temperature
SVP	Surface Velocity Programme
TAO	Tropical Atmospheric Ocean
TC	Technical Coordinator
TPOS	Tropical Pacific Observing System
TT	Task Teams
UK	United Kingdom
UNESCO	United Nations Educational, Scientific and Cultural Organization
US	United States
USACE	US Army Corps of Engineers
USV	Unmanned Surface Vehicles
VOS	Voluntary Observing Ships
WDQMS	WIGOS Data Quality Monitoring System
WG	Working Groups
WIGOS	WMO Integrated Global Observing System
WIPPS	WMO Integrated Prediction and Processing System
WM	Wave Measurements
WMO	World Meteorological Organization
XBT	EXpendable BathyThermograph