WMO OMM

WEATHER CLIMATE WATER
TEMPS CLIMAT EAU

World Meteorological Organization
Organisation météorologique mondiale
Organización Meteorológica Mundial
Всемирная метеорологическая организация
المنظمة العالمية للأرصاد الجوية
世界气象组织

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Anexo: 1 (disponible en inglés solamente)

Asunto: Taller sobre la mejora de las observaciones y la investigación oceánicas y el intercambio gratuito de datos, a fin de promover servicios que contribuyan a la protección de la vida y los bienes (Ocean-safe), (Ginebra, Suiza, 5 y 6 de febrero de 2019)

Finalidad: Designar a un experto para que asista al Taller

Estimado señor/Estimada señora:

Sin duda recordará la Recomendación 14 (EC-70) — Garantía de suficientes observaciones y datos en el ámbito de la meteorología marina para la seguridad de la navegación y la protección de la vida humana y de los bienes en zonas costeras y alejadas de la costa. Cúmpleme informarle de que, atendiendo a esa Recomendación, la Organización Meteorológica Mundial (OMM) está organizando un taller, que tendrá lugar en Ginebra (Suiza) los días 5 y 6 de febrero de 2019 y que será su contribución a la fase de planificación (2019—2020) del Decenio de las Naciones Unidas de las Ciencias Oceánicas para el Desarrollo Sostenible (2021—2030).

Uno de los resultados más importantes del Taller será la formulación de un conjunto de recomendaciones destinadas al Decimoctavo Congreso Meteorológico Mundial, que contendrá normas y una lista práctica de variables oceanográficas y meteorológicas marinas, incluidas aquellas correspondientes a zonas económicas exclusivas, indispensables para la emisión de avisos de tormenta oportunos y exactos en pro de la seguridad de la vida humana en el mar y la protección de la vida y los bienes en zonas costeras y alejadas de la costa. En el anexo a la presente carta figura la nota conceptual con el programa preliminar.

Habida cuenta del interés de su país por las cuestiones marinas, el comité organizador le agradecería que designara a un experto para que participara en el Taller.

A efectos administrativos, le agradecería que comunicase a la Secretaría de la OMM, a la atención del señor E. Charpentier, jefe de la División de los Sistemas de Observación (por conducto de la dirección de correo electrónico acatcheside@wmo.int), **lo antes posible y, en todo caso, no más tarde del 25 de enero de 2019**, si su experto podrá asistir al Taller.

Quisiera aprovechar esta oportunidad para expresarle mi agradecimiento por su apoyo a las actividades marinas.

Le saluda atentamente.

(W. Zhang)
por el Secretario General

A los Representantes Permanentes (o Directores de los Servicios Meteorológicos o Hidrometeorológicos) de los Miembros de la OMM

WMO Technical Workshop (draft - 20181219)

Enhancing ocean observations and research, and the free exchange of data, to foster services for the safety of life and property

A contribution to the planning phase (2019–2020) of the United Nations Decade of Ocean Science for Sustainable Development (2021–2030)

(Geneva, 5-6 February 2019)

The safety and wellbeing of people throughout the world and the economic benefits to all nations are at the centre of the WMO mandate and action. To address meteorological hazards, strengthen resilience in the face of climate change and variability, and build the scientific knowledge base for sustainable development, sustained oceanographic and marine meteorological (ocean/met.), observations and their free and unrestricted exchange are critical.

While the oceans cover more than 70% of the Earth surface, the natural system is fully coupled between the atmosphere and ocean and the delivery of effective and improved marine and weather services depends on both atmospheric and oceanic information. The growth of seamless forecasting systems means that meteorological services need an increasing amount of quality information about the ocean and the atmosphere above the ocean surface in order to be able to deliver the weather, marine and climate services derived from the use of such prediction systems. Ocean and marine-focused services particularly need both ocean and atmospheric information. Examples of products and services and the required data are provided in table 1.

This workshop is organized by WMO with the support of its technical commissions and co-sponsored programmes[1].

The workshop will consider the evolving requirements for ocean observation and research in support of WMO Application Areas with focus on marine meteorological services, which particularly rely on global and high resolution numerical weather prediction. The following Applications, which also rely on ocean observations will also be addressed: tropical cyclone, storm surge and high impact weather forecasting, sub-seasonal to longer range prediction, climate monitoring, climate modelling, climate impact analysis and climate services. As an example, Observing System Simulation Experiments (OSSEs) and sensitivity analyses could be used to investigate the importance of data collected within EEZs. The workshop may consider proposing a pilot activity in this regard.

To address such requirements, ocean/met observations are made in the framework of WMO initiatives such as the WMO Integrated Global Observing System (WIGOS), the World Weather Watch (WWW), and the Global Atmosphere Watch (GAW). Different collection means are used, such as ships of opportunity, data buoys and installations, profiling floats, remote sensing by satellites, and cabled observatories, to support critical services relying heavily on free and unrestricted exchange of the collected data.

The expected outcome of the workshop will be a set of recommendations with relevant standards and a workable list of marine meteorological and oceanographic variables (see

[1] The Joint WMO-IOC Technical Commission on Oceanography and Marine Meteorology (JCOMM), the Commission for Basic Systems (CBS) and the Commission for Instruments and Methods of Observation (CIMO) and its co-sponsored WMO-IOC-ISC World Climate Research Programme (WCRP), IOC-WMO-UNEP-ISC Global Ocean Observing System (GOOS) and WMO-IOC-UNEP-ISC Global Climate Observing System (GCOS).

note[2]), including from exclusive economic zones, indispensable for the issue of timely and accurate storm warnings for the safety of life at sea and the protection of life and property in coastal and offshore areas. Two sets of recommendations are foreseen:

(1) Short term approach with focus on facilitating the making of surface marine meteorological observations in support of safety of like and property at sea;
(2) Longer term approach, and future collaboration with the IOC of UNESCO with regard to ocean observations requirements, including in coastal regions, in particular in support of Earth System Prediction and climate services.

This outcome will be submitted to the World Meteorological Congress for consideration in the updating of Resolution 9 (Cg-IX) and they will be offered as a contribution to the United Nations Decade of Ocean Science for Sustainable Development and its objectives I (Knowledge of the ocean system), III (Ocean-related hazards) and IV (Cooperation in observation, data and other infrastructure).

The workshop will be organized in conjunction with the 2018 face-to-face meeting of UN-Oceans, the UN interagency coordination mechanism on ocean affairs, which will be hosted by WMO at the Headquarters. It will also entail the demonstration of the role of the WMO-IOC JCOMM *in situ* Observations Programme Support Centre (JCOMMOPS) for the distribution of ocean data.

Participation in the workshop will be by invitation to high-level experts in the fields of operational oceanography and marine meteorology, ocean research, instruments and methods of observation, and the law of the sea, as well as representatives of UN-Oceans members.

***Organizing Committee**: Chair: Tom Cuff JCOMM/SCG); Members: Jon Turton (JCOMM/OCG), Erik Andersson (ECMWF), Glenn Nolan (EuroGOOS), Martin Visbeck (WCRP JSC), Johan Stander (JCOMM Co-President), Emma Heslop (IOC of UNESCO), Prof. Tullio Scovazzi.*

Table 1: Examples of products and services and required data.

Requirements	***Products and services***	***Required data***
Maritime distress	· *Warnings, bulletins* · *Maritime Safety Information* · *Forecasts of* ○ *Weather (tropical cyclones, storms, wind, precipitation, temperature, snow & frost),* ○ *Sea-state (waves, currents)* ○ *Sea-ice &. Icebergs*	· *Satellite observations (e.g. wind, sea-ice, sea surface temperature)* · *In situ observations (atmosphere, cryosphere, ocean)*
Reduce risks of pollution		
Emergency response to pollution		
Search and rescue operations		

[2] The GOOS strategic mapping tool has been developed to help provide an overview of the Global Ocean Observing System components. This visualization of the system shows the links to the Essential Ocean Variables identified by the GOOS Expert Panels, highlighting how they are efficiently measured through the observing networks to contribute to societal benefits in accordance with GOOS mandates: http://www.goosocean.org/index.php?option=com_content&view=article&id=120&Itemid=277

Fleet management & ship routing planning	· *Climate outlook information (future)* · *Climatological information (history)*	

WMO Technical Workshop

Enhancing ocean observations and research, and the free exchange of data, to foster services for the safety of life and property

(Geneva, 5-6 February 2019)

Draft programme *(v0.2 29 Nov. 2019)*

Tuesday 5 February 2019

9:00 – 9:30	**Opening (SG, ASG)** **Introduction to sessions 1 and 2 (Co-chair A)**
9:30 – 10:30	**Session 1 (socio-economic benefits): Socio-economic benefits of WMO Applications using marine meteorological and oceanographic observations** **Lectures (10 min each):** ● SDG 14/Future Earth – Martin Visbeck (WCRP, GEOMAR, Germany) ● Medium to long range forecasting – Erik Andersson (ECMWF) ● Copernicus Marine Service - Karina von Schuckmann or Pierre-Yves Le Traon (Mercator Ocean) ● Requirements of maritime transportation, incl. safety – IMO - TBD ● Coastal application and other marine meteorological services – Nick Ashton (UK) ● Severe weather – DRR – Fred Branski (USA) or Sarah Jones
10:30 – 11:00	**Break**
11:00 – 12:30	**Panel discussion (90 min) – Possible panelists:** ● Martin Visbeck (WCRP) ● Erik Andersson (ECMWF) ● Sarah Jones (DWD) or Oystein Hov (Norway) ● Karina von Schuckmann or Pierre-Yves Le Traon (Copernicus Marine Service) ● Johan Stander (GFCS) ● IMO representative - TBD ● Tom Cuff or Fred Branski ● John Wilkin **Questions for Panel Discussion:** 1. How SDG 14 is relevant to protection of life and property at sea ? 2. How critical are WMO Applications to protection of life and property at sea ?

12.30 – 13.30	**Lunch**
13:30 – 14:00	**Live demonstration of JCOMMOPS tools**
14:00 – 15:30	**Session 2 (data needs and gaps): The need for observations, assessed gaps and the evolving capabilities for the collection and distribution of oceanographic and marine meteorological data in support of WMO Application Areas to address safety of life and property at sea** **Lectures (15 min each):** ● How protection of life and property at sea relies on WMO Application Areas (e.g. NWP) and observations - Nick Ashton (15 min) ● Topical Cyclone forecasting requirements - Daniel Brown (NHC, USA) (15 min)) ● WIGOS Framework and outcome of the International Workshop on the Impact of Various Observing Systems on NWP – Erik Andersson (ECMWF) (15 min) - Note: the presentation will bring focus on the need for marine meteorological and ocean observations ● Requirements of ocean modelling for ocean observations – OOPC – John Wilkin (USA) (15 min) ● Implementation of Ocean Observing Networks and trends with focus on coastal aspects (e.g. innovations, new technology) – Jon Turton (15 min) ● Ship Observations Team (SOT) implementation and issues – Henry Kleta (Germany), Voluntary Observing Ship Scheme (VOS) Panel (VOSP) Chair on behalf of SOT (15 min)
15:30 – 16:00	**Break**
16:00 – 17:30	**Session 2 (continued)** **Lectures (30 min each):** ● Monitoring of Ocean Observing Networks and support for addressing the gaps in particular in coastal regions – Mathieu Belbéoch **Panel discussion (60 min) – Possible panelists:** ● Erik Andersson (ECMWF) ● John Wilkin (USA) ● Tom Cuff (USA) ● Jon Turton (OCG vice-Chair) ● Mathieu Belbéoch (JCOMMOPS)

	● Henry Kelta (VOSP Chair, on behalf of SOT) **Questions for Panel Discussion:** 1. What are the most critical applications areas requiring marine meteorological and oceanographic observations to allow WMO to address its mandate to protect life and property, in particular in coastal regions ? 2. What are the most critically needed atmospheric, marine meteorological and ocean observations variables to address the needs of these applications ? 3. What are the emerging required atmospheric, marine meteorological and ocean observations variables to address the needs of these applications ? 4. What are the most critical observational gaps in coastal areas to address the needs of these applications ? 5. What are the main obstacles when it comes to filling these gaps ?

Wednesday 6 February 2019

9:00 – 10:30	**Recap of day 1 (30 min)** **Session 3 (Legal regime and practice): The international regime and the practice for the collection of Ship-based observations and other type of mobile marine meteorological platform data in coastal areas and the role of WMO** **Lectures (30 min each):** ● Operational activities and marine scientific research under UNCLOS - Ms Gabriele Goettsche-Wanli, Director, UN/DOALOS *(confirmed)* ● Open legal questions on operational meteorological observations in marine waters within national jurisdiction - Tullio Scovazzi ● Polar Code requirements - TBD
10:30 – 11:00	**Break**
11:00 – 12:30	**Session 3 (continued)** **Lectures (30 min each):** ● Recent initiatives in WMO and IOC frameworks ● National experience regarding current regime - Germany ● TBD
12.30 – 13.30	**Lunch**

13:30 – 15:30	**Panel discussion (120 min)** ● Prof. Fred Soons (Netherlands) *(confirmed)* ● Elie Jarmache (France) *(confirmed)* ● Prof. Tullio Scovazzi (Italy) *(confirmed)* **Questions for Panel discussion** 1. *What is the regime for operational activities, such as meteorological observations, under the Law of the Sea Convention? How can "operational" activities be distinguished from "marine scientific research"?* (Gabriele Goettsche-Wanli, Director, UN/DOALOS) 2. *A country such as the USA has clearly identified the collection of marine meteorological data and other routine ocean observations - used for monitoring and forecasting of ocean state, natural hazard warnings and weather forecasts, and climate prediction - not to be marine scientific research. What is the position of other countries?* (Prof. Fred Soons, Utrecht University) *3.* *What principles can be used to facilitate the conduct of operational meteorological observations at sea (not aimed to the exploitation of marine resources) with the necessary freedom and timeliness to serve the purpose of the protection of life and property?* (Elie Jarmache, Member of the legal and technical commission of the International Seabed Authority and of the scientific council of the Institut du droit économique de la mer, Monaco) 4. *The Convention for the Safety of Life at Sea (Chapter 5, Safety of Navigation; Regulation 5, Meteorological services and warnings) requests Contracting Governments undertake to encourage the collection of meteorological data by ships at sea and to arrange for their examination, dissemination and exchange in the manner most suitable for the purpose of aiding navigation (this data includes atmospheric pressure, wind, air temperature, sea surface temperature, wave height and sea ice extent). What is the legal regime of such observations on surface compared to those in the water column?* (Prof. Tullio Scovazzi, University of Milan Bicocca) 5. *Based on the legal regime and the established practice of States, as well as the opinion formulated by the President of the Third Committee of UNCLOS III, what can be inferred about the legal status of routine meteorological observations at sea, including in exclusive economic zones?* (All)
15:30 – 16:00	**Break**

16:00 – 17:30	**Session 4 (Conclusion): Way forward and recommendations of the workshop** **Panel Discussion (60 min) – Possible panelists:** • Chairs Sessions 1, 2 and 3 • Jon Turton (UK) • Oystein Hov (Norway) • Fred Branski (USA) or CBS/WIGOS rep. • Legal expert **Guidance for Panel Discussion:** Panel discussion will seek to consolidate the views of the workshop during previous Sessions discussions, in particular to identify a number of principles and technical elements to be brought to WMO Congress. This may include for examples: relevance of WMO activities and applications to address socio-economic benefits, incl. in support of safeguarding life and property at sea; critical variables and observations gaps; how legal framework could be clarified, updated in such a way to facilitate the making of observations in coastal regions in support of WMO applications; etc. **Conclusion (30 min) (Chair Session 1, ASG):** Key principles and technical elements (e.g. list of critical variables to be observed and reported; list of emerging variables increasingly required) for a WMO 18-Cg resolution (or WMO-IOC), which may be transmitted to UN processes (UNGA and/or ICP).

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