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| WEATHER CLIMATE WATER | **World Meteorological Organization**  **COMMISSION FOR WEATHER, CLIMATE, WATER AND RELATED ENVIRONMENTAL SERVICES AND APPLICATIONS**  **Second Session** 17 to 21 October 2022, Geneva | **SERCOM-2/INF. 5.1(4)** |
| Submitted by:  Chair of SC-MMO and Chair of SC-DRR  27.IX.2022 |

STATUS OF COMPETENCY IMPLEMENTATION FRAMEWORK ON MARINE AND TROPICAL CYCLONES

[SERCOM-2/INF. 5.1(4) is associated with [SERCOM-2/Doc. 5.1(4)](https://meetings.wmo.int/SERCOM-2/_layouts/15/WopiFrame.aspx?sourcedoc=/SERCOM-2/English/1.%20DRAFTS%20FOR%20DISCUSSION/SERCOM-2-d05-1(4)-DEVELOPMENT-AND-UPDATE-OF-COMPETENCY-FRAMEWORKS-draft1_en.docx&action=default): Development and Update of Competency Frameworks (Part V) (including Marine and Tropical Cyclones)]

### Marine

***Introduction***

In supporting [Resolution 6 (Cg-17)](https://library.wmo.int/doc_num.php?explnum_id=3138/#page=260), [Resolution 29 (Cg-18)](https://library.wmo.int/doc_num.php?explnum_id=9827/#page=110) and [Resolution 73 (Cg-18)](https://library.wmo.int/doc_num.php?explnum_id=9827/#page=239), the WMO Marine Services Division and WMO Education and Training Office, and the Standing Committee for Marine Meteorology and Oceanographic Services (SC-MMO) along with its Expert Team on Competency and Capacity Development (ET-CCD)) have been targeting efforts to improve and strengthen marine services delivery through capacity development activities. The following Information Document describes the work underway, current status and anticipated future activities.

**Status update of Marine Weather Forecaster Competency Implementation Framework**

In supporting [Resolution 6 (Cg-17)](https://library.wmo.int/doc_num.php?explnum_id=3138/#page=260) and [Decision 13 (EC-72)](https://library.wmo.int/doc_num.php?explnum_id=10504/#page=142), and acknowledging that the Marine Weather Competency Framework in the [*Compendium of WMO Competency Frameworks*](https://library.wmo.int/index.php?lvl=notice_display&id=21607) (WMO-No. 1209), the SC-MMO's ET-CCD and WMO Secretariat have been developing the appropriate tools to support the implementation of the Marine Weather Forecaster competencies:

1. **Competency Assessment Implementation Plan for Marine Weather Forecaster (MWF)**

To help the process of implementation, globally, of the marine weather competencies, the WMO Secretariat and ET-CCD have developed a Proposed Competency Assessment Implementation Plan for Marine Weather Forecaster (MWF). This is a 9-step process that begins with the review of assessment methods and principles provided in the[*Compendium of WMO Competency Frameworks*](https://library.wmo.int/index.php?lvl=notice_display&id=21607) (WMO-No. 1209):

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| **Proposed Steps** | | **Due** | **Status** |
| 1 | Review assessment methods and principles provided in WMO-No. 1205 and within the Aviation competency assessment site | July 2022 | √ |
| 2 | Identify and consult with partners, particularly NMHSs who have implemented successful competency assessment programmes and developed or used existing supporting resources | March 2023 | X |
| 3 | Adapt existing guidance on conducting competency assessment | Dec.  2022 | + |
| 4 | Identify learning resources to support training for each competency area | Dec. 2022 | + |
| 5 | Develop communications plan for socializing the assessment initiative | Dec. 2022 | + |
| 6 | Leverage existing training opportunities and learning resources about competency assessment (including the WMO ETR Office project to train regional experts) | Dec. 2022 | + |
| 7 | Identify and contact partners, particularly regional partners, for promotion | March 2023 | X |
| 8 | Create data collection repository on completion status, and reporting methods (Check WMO Community site) | March 2023 | X |
| 9 | Launch and promote a coordinated global implementation (i.e., implement the communications plan and offer support as needed) | March 2023 | X |

Status: **√** = Complete or in implementation, **+** = In progress, X = pending

1. **Marine Weather Competency Toolkit**

Related to Steps 3 to 6 on the table above, a Marine Weather Forecaster (MWF) Competency Toolkit is being developed for use by meteorological marine services, including recommendations for existing training. Using the Competency Assessment Toolkit developed by the CAeM Expert Team on Capacity Development as a model, the Marine Weather Forecaster competency toolkit is being developed and populated. The aim of the toolkit is to provide suggestions for assessing each of the five competency requirements of marine weather forecasters as stated in WMO-No. 1209.

The Toolkit is on track to be completed by the end of 2022 and will be made available on an open website for Members to use, (Steps 7 to 9 of the above Plan) by the end of the first quarter of 2023.

In addition, the WMO Marine Services Course (described next), Phase II, includes an activity in which participants conduct a Marine Forecaster competency self-assessment, which will help prepare them for the formal assessment process.

For further information on Marine Competency see <https://community.wmo.int/MMOP/Marine-Weather-Competencies>.

1. **Status update of the WMO Marine Services Course**

In response to [Resolution 15(Cg-18)](https://library.wmo.int/doc_num.php?explnum_id=9827/#page=103), [Resolution 29 (Cg-18)](https://library.wmo.int/doc_num.php?explnum_id=9827/#page=110) and [Resolution 71(Cg-18)](https://library.wmo.int/doc_num.php?explnum_id=9827/#page=235), the WMO Marine Services Division and the Education and Training Office have worked in close collaboration to develop the WMO Marine Services Course. This Course is strengthening the capacity of Members to deliver marine services., through two Phases: the first is online and the second is hybrid (online and face to face).

The First Phase promotes best practices for Impact-based Forecasting for marine customers, with a focus on familiarization and effective implementation of regulations for provision and continuous improvement of marine meteorological services. The Second Phase provides an opportunity for participants who successfully completed the First Phase to participate in a workshop where focus will be on strengthening the capacity for the areas of need identified, from the first Phase. It also includes practical effective customer-centric communication, consideration of impact-based forecasting and MHEWS in the context of marine services.

The Course partially addresses marine weather forecaster competencies by addressing several of the performance components of competency requirements of Marine Weather Forecasters as stated in WMO-No. 1209. At the end of the Course, participants receive Certificates stating which ones they have successfully completed.

Since 2019 the first phase (online) has been implemented in several regions, including:

1. Spanish-speaking countries of South America and Caribbean countries in RA III and RA IV: (March and June 2020);
2. English-speaking countries of the Pacific Islands in RA V (in August and December 2021);
3. English-speaking countries of the Caribbean region on RA III (March and June 2022);
4. English-speaking countries of Africa in RA I (Commenced August 2022 with expected completion in October);
5. The Second Phase for the RA V Pacific Islands will be held in September – October, hosted by the Cook Islands;
6. In 2023, the First Phase (online) will be conducted for RA I French speaking Countries (facilitated by Direction de la Méteorolgie nationale du Maroc) and for the Arabic speaking world (facilitated by RTC Egypt).

Other regions will receive the Course in the future.

For further information on the WMO Marine Services Course, including the Summary Reports from each region, see https://community.wmo.int/wmo-marine-services-course

1. **International Maritime Organization (IMO) Mariners Training**

The first WMO-IMO Symposium on Extreme Maritime Weather was held in London (October 2019) bringing together the metocean and stakeholder-user communities. One of the recommendations was to close the gap between Mariners and the Metocean Community. This was particularly around the need for better training of users, port authorities, national maritime administrators on how to use and identify metocean information. Likewise, the metocean community would benefit from understanding user needs, and especially the products that stakeholders find useful.

The SC-MMO's ET-CCD includes 2 IMO Experts, who have been working in collaboration with the WMO Secretariat to determine the best existing mechanisms to trigger the IMO revision of weather aspects to its training model for mariners, which has not been reviewed nor updated in some time. Part A of the IMO-International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (IMO-STCW) states that meteorological elements are Mandatory and that all mariners need to pass this component during an exam. The integration of metocean into the IMO Mariners training is of immediate interest to seafarers. The 2 IMO Experts in ET-CCD are critical in strengthening the link to the IMO-STCW and Mariners Training. Another area in which SC-MMO intends to work with IMO is on Ship Routing Service Qualification and Certification which is a need for all commercial shipping services. Additionally, the WMO Marine Services Course (mentioned above) is addressing the need for metocean staff to ‘get to know their customers’ to improve the ways forecasts and warnings are understood and used.

For further information on the Symposium in general, see https://community.wmo.int/activity-areas/Marine/Meetings/WMO-IMO-Symposium-extreme-maritime-weather, and for the latest status in preparation for the second Symposium, see SERCOM-2/INF 5.1(7)

**Tropical Cyclones**

### *Introduction*

Following the request made by the Sixteenth session of Congress ([paragraph 4.3.3, Cg-16, 2011](https://library.wmo.int/doc_num.php?explnum_id=3429/#page=92)), each tropical cyclone regional body developed a regional Tropical Cyclone Forecaster (TCF) Competency, which was approved by the respective Regional Association, where applicable. During the Ninth session of the Regional Specialized Meteorological Centres and Tropical Cyclone Warning Centres Technical Coordination Meeting (TCM-9, December 2018, [final report](https://wmoomm.sharepoint.com/:b:/s/wmocpdb/EYfhC-jRBo9IlWJgqB6NdYEBNiGeVIaV_A-0QCnalI4cZg?e=on75Mg)), it was agreed to move forward with regard to the TCF competency as follows:

1. Developing a global TCF competency based on the five regional ones (one for each of the Tropical Cyclone programme regional bodies) and
2. Adding the global TCF competency into the WMO [*Technical Regulations*](https://library.wmo.int/doc_num.php?explnum_id=10075) ([WMO No. 49](https://library.wmo.int/doc_num.php?explnum_id=10955)).

During TCM-9, concerns were raised about the sustainability of the updates of the global part of the competency in one hand, and of the five regional sets in another hand, in a consistent manner.

In 2022, the Advisory Group on Tropical Cyclones was informed that the approval of modifications in the WMO Technical Regulations follows a process up to Congress. As for the [*Compendium of WMO Competency Frameworks*](https://library.wmo.int/doc_num.php?explnum_id=10075) ([WMO-No. 1209](https://library.wmo.int/doc_num.php?explnum_id=10075)) published in 2019, in which the five regional TCF competencies can be added, the approval of the modification can be done anytime by the Technical Commission for Services (SERCOM), through its President and Management Group.

### *Recommendation from the Advisory Group on Tropical Cyclones (AG-TC) approved by its parent body the Standing Committee on Disaster Risk Reduction (SC-DRR)*

To move forward with the Tropical Cyclone Forecaster Competency Framework, the AG-TC recommends to add the [five sets of regional competencies](https://community.wmo.int/activity-areas/tropical-cyclone-programme-tcp) (one for each of the Tropical Cyclone Programme regional bodies) to the [*Compendium of WMO Competency Frameworks*](https://library.wmo.int/doc_num.php?explnum_id=10075)(WMO-No. 1209) than to the WMO [*Technical Regulations*](https://library.wmo.int/doc_num.php?explnum_id=10075) (WMO-No. 49).

Before simultaneously adding the five regional TC Forecaster Competencies to the Compendium, the AG-TC recommends that the regional competencies be reviewed and updated, with particular consideration given to the impact-based forecast and warning services approach, by the respective tropical cyclone regional bodies.

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