# Review of WWMIWS self-assessments 2018

[Source: WMO Overview comment]

A self-assessment report was completed by METAREA Coordinators in August 2018. The self-assessment primary purpose is to monitor the effectiveness of the WWMIWS. There were responses from 19 METAREA Coordinators, out of a possible 19 Issuing Services.

## Quality Management benchmarks

Stats based on number of METAREAs, plus duplicates if two issuing services for 1 METAREA.

|  |  |  |  |
| --- | --- | --- | --- |
| **Component** | **2018 result** | **2016 Result** | **2014 Result** |
| 4a i) MSI for all areas? | 18 from 22 | 20 from 23 | 14 from 15 |
| 4a iv) Beaufort 8 warnings? | 19 from 22 | 21 from 23 | 13 from 15 |
| 4a v) 2 broadcasts SafetyNet | 21 from 22 | 21 from 23 | 100% |
| 4a vi) MSI wind | 100% | 100% | 100% |
| 4a vii) MSI wave | 20 from 22 | 21 from 23 | 13 from 15 |
| 4a viii) MSI reduced visibility | 22 from 22 | 22 from 23 | 13 from 15 |
| 4a ix) MSI sea-ice | 10 from ?15? | 11 from 13 | 6 from 10 |
| MSI Ice accretion | 6 | 10 |  |
| 4a x) 24/7 real-time monitoring | 18 from 22 | 19 from 23 | 11 from 15 |
| 4a xii) SAR support | 21 from 22 | 20 from 23 | 13 from 15 |
| NAVAREA Coord contact | 18 from 22 |  |  |

**Key**

* Green = 100% compliance
* Orange = 1 to 3 METAREA 's not in compliance
* Red = 4 or more METAREA 's not in compliance

## Marine Competency Framework implementation

Stats based on individual NMHS who have WWMIWS issuing service status.

|  |  |  |
| --- | --- | --- |
|  | **2018** | **2016** |
| **Stage 0:** | 5 from 19 | 5 from 16 individual NMHS |
| **Stage 1:** | 4 from 19 | 2 from 16 |
| **Stage 2:** | 8 from 19 | 5 from 16 |
| **Stage 3:** | 2 from 19 | 4 from 16 |

|  |  |  |
| --- | --- | --- |
| **METAREA** | **2018 Status (stage)** | **2016 Status (stage)** |
| I | 2 | 1 |
| II | 1 | 1 |
| III | 2 | 2 |
| IV | 3 | 3 |
| V | 2 | 0 |
| VI | 1 | 0 |
| VII | 2 | 0 |
| VIII(N) | 0 |  |
| VIII (S) | 2 | 2 |
| IX | 0 | - |
| X | 2 | 2 |
| XI | 0 (China)  0 (Japan) | 0 |
| XII | Same as IV | 3 |
| XIII | 1 | - |
| XIV | 1 | 3 |
| XV | 2 | 0 |
| XVI | 0 | 3 |
| XVII | Same as XVIII | 2 |
| XVIII | 3 | 2 |
| XIX | 2 | - |
| XX | Same as XIII | - |
| XXI | Same as XIII | - |

## Quality Management implementation

Stats based on individual NMHS who have WWMIWS issuing service status.

|  |  |  |
| --- | --- | --- |
|  | **2018** | **2016** |
| **Level 1** | 7 of 19 | 5 of 17 |
| **Level 2** | 1 of 19 | 0 of 17 |
| **Level 3** | 1 of 19 | 1 of 17 |
| **Level 4** | 10 of 19 | 12 of 17 |

|  |  |  |
| --- | --- | --- |
| **METAREA** | **2018 QM Status** | **2016 Status** |
| I | 4 | Level 4 |
| II | 4 | Level 4 |
| III | 4 | Level 4 - Certified (Marine) 2015 |
| IV | 1 (USA) | Level 4 (Canada)  Level 1 (USA) |
| V | 4 | Level 4 |
| VI | 1 | Level 1 |
| VII | 4 | Level 4 |
| VIII (N) | 1 |  |
| VIII (S) | 4 | Level 4 |
| IX | 1 |  |
| X | 4 | Level 4 - Certified (Marine) 2013 |
| XI | 1 (China)  3 (Japan) | Level 1 (China)  Level 3 (Japan) |
| XII | Same as IV | Level 1 |
| XIII | 2 |  |
| XIV | 4 | Level 4 |
| XV | 4 | Level 4 |
| XVI | 1 | Level 1 |
| XVII | Same as XVIII | Level 4 |
| XVIII | 4 | Level 4 |
| XIX | 1 |  |
| XX | Same as XIII |  |
| XXI | Same as XIII |  |

## Q9. Capacity Building

For Canada (Applies to METAREA IV only)...Forecast personnel shortages mainly due to retirements and staffing re-assignments has resulted in an ongoing need for capacity building in that area. To address that issue, the MSC attempts to recruit a number of entry-level forecasters on an annual or semi-annual basis into its Meteorological Operational Internship Program (MOIP). Additionally, to address needs for capacity building in the sea-ice information & forecast program, a recent exercise in inter-agency capacity building involved a joint initiative between the Canadian Ice Service (CIS) and the CCG, whereby newly-trained Ice Service Specialists (ISS) graduated in Spring 2018 for deployment aboard CCG vessels sailing out of Vancouver & Newfoundland assigned to northern/Arctic patrol. This new crop of ISS staff will add extra information to marine weather observations from CCG vessels navigating ECCC-assigned METAREA waters including sky condition, visibility, precipitation & sea-surface temperature.

Training for tropical meteorology extreme events analysis (sub-tropical cyclones monitoring) and coastal tornadoes warnings research with GOES 16 analysis for extreme weather events forecasts monitoring

The Bureau is involved in a range of capacity development activities, for example through arrangements such as the Australia-Indonesia Maritime Plan of Action. There is an opportunity to propose activities through a Maritime Capacity Building Initiative (MCBI) led by the Australian Department of Foreign Affairs and Trade, during 2018-19 to 2020-22. The Bureau also recently hosted a delegation from SPC to share knowledge and training materials to support marine forecaster competency in the South West Pacific Islands.

PUTTING EDUCATIONAL/ GUIDANCE MATERIALS ON METEOROLOGICAL SERVICE PROVISION AND ALSO ON THE WORKING OF WWMIWS ON WEBSITE WILL BE A GREAT HELP.

More observations at sea including buoys,ships,radar as well as satellites are needed to verify the forecast.

Ocean modeling capability need to be enhanced.

Quality control management need to be implemented in the MSI services.

Testing and implementation of the new national manual on GMDSS information production (to be issued by the end of 2018) is planned for 2018-2019.

There are needs for capacity development and training in several NMHS of Metarea II, especially in Africa. Notice than Météo-France contributed to capacity building and training activities within Metarea II : - Training on fog and visibility reduction in Casablanca, Marocco, in October 2017, as part of the cooperation between Météo-France and the NMHS Marocco (2 trainers from Météo-France) - Eumetsat Workshop on use of scatterometer and altimeter data in marine meteorlogy, in Casablanca, Marocco, in December 2017 (2 trainers from Météo-France). - Training in marine meteorology, in Algeria in Avril 2018, as part of the cooperation between Météo-France and the NMHS Algeria (2 trainers from Météo-France) - Mission of expertise on the operation of a marine forecasting service in Tunisia, in March 2018 and June 2018, as part of the twinning between Météo-France and INM / NMHS Tunisia (1 expert from Météo-France).

Storm surge and sea ice forecasting.

Capacity building in the field of marine meteorology and numerical weather prediction for the development of better marine safety information.

Knowledge of relevant observing systems, platforms, and sensors that may include remote sensing (satellite altimeters, scatterometers, microwave sensors; radar, lightning detection systems); in-situ sensors (anemometers, tide gauges, moored wave buoys, drifting buoys, bottom pressure sensors); human observing procedures (ship, shore)

icing on vessels or structures

Knowledge of types and characteristics of wave and swell; generation and decay of wave and swell; and shallow water wave characteristics

METAREA V Forecasters must have a Bachelor or Master's degree in Meteorology and they undergo a training period under close supervision before becoming officially certified to work independently. On top of this general knowledge, capacity in Synoptic-scale and Tropical Meteorology is pursued through internships at NOAA/WPC's South American Desk and at NOAA/NHC. However, such internships are not available on a yearly basis.

Training personnel following the Marine Competency Framework

Working on the implementation of contingency plans for the Production of High Seas forecasts and warnings

## Q11. List of national meetings for marine safety

### National level meetings

ECCC routinely sends representatives from both the Meteorological Service of Canada (MSC) and the Canadian Ice Service (CIS) to the annual Canadian Marine Advisory Council (CMAC) meeting for Prairie & Northern Region, held on an annual basis and chaired jointly with the Canadian Coast Guard (CCG).

Additionally, the MSC Marine Sector Specialist met with the CCG NAVAREA coordinator in March 2018 to discuss issues related to NAV/METAREAs and the MSC Marine & METAREA Forecast Programs.

The Marine Sector Specialist maintains regular contact with the CGG NAVAREA coordinator relating to joint NAV/METAREA issues.

National meetings: -

* Maritime Governor’s national yearly seminar (april) –
* Marine Meteorological Centers yearly seminar (june) –
* MSI Coordination Committee meeting (december and may) –
* CONA National Oceanographic Committee working groups (monthly meetings) –
* CORECC Valparaiso Regional Climate Change Committee (november and july) –
* Chile Navy Climate Change Committee (september and june) –
* IMO audit preparation questions for Maritime Authorities (july) –
* Polar Code implementation panel under Flag States (march) –
* Buoy cooperation panel for exchange data projects (october and march) –
* National Emergencies Office working group on hydro-meteorological risks (monthly) –
* National Emergencies Office operational committee (severe weather events)

Meetings attended that were hosted by the Australian Maritime Safety Authority:

* Domestic Commercial Vessels Industry Advisory Council
* Fishing Industry Advisory Council
* Nav18 Navigational Safety Symposium
* Maritime Emergencies workshop
* Navigational Safety Advisory Group
* National Search and Rescue Council
* Australia & New Zealand Safe Boating Education Group (meets biannually, includes marine radio comms, surf lifesaving, maritime safety agencies)
* Regional Marine Consultative Committee meetings (includes marine rescue, fishing & shipping, port authorities, research, navy)

TAKES PART REGULARLY IN THE MEETINGS AND EXERCISES OF NATIONAL MARITIME SEARCH AND RESCUE COMMITTEE HEADED BY DG, INDIAN COAST GUARD.

CMA attended the 11th Ministerial Meeting for Marine Disasters Warning Service in Tianjin from 20th to 21st Sep. 2017. The participant were from China Maritime Search & Rescue Center，China Maritime Safety ,Ministry of Civil Affairs Administration，Ministry of Land and Resources and Fire-Fighting Bureau under the Ministry of Public Security.

The search and rescue office of the maritime security system of Peru.

Several national forums and seminars under federal, Ministry of Transport, Roshydromet umbrellas during 2017-2018 dedicated to support the increase and new ice classes vessels on the Northern Sea Route were conducted with a strong AARI of Roshydromet participation.

National Maritime Authority meetings:

* UK Safety of Navigation,
* UK Maritime Safety Information,
* UKSAR Aviation & Maritime Consultative Committee,
* Part of UK delegation to IMO MSC meeting

Meeting with the RCCNZ and Maritime NZ regarding Inmarsat changes.

Brazilian's Marine Meteorological Service Seminar (Niteroi, Brazil),

We participate in regular meetings with SAMSA (South African Maritime Safety Authority) (Part of IMO) Annual communication with IHO and share information. Attend 6 monthly search and rescue meetings which is also attended by IMO, IHO, SAMSA and all other players involved in search and rescue.

### International level meetings

* WWMIWS monthly video-conference (monthly meeting) –
* CPPS-GRASP video-conference (april, june, august) - South American METAREAs coordination group (V,VI,XV,XVI) video-conference –
* SOT-VOS panel (only e-mail contact until next PMO workshop) –
* IICWG meeting (yearly)

UNESCO/IOC:Symposium: Advances in Tsunami Warning to Enhance Community Responses (12-14 February 2018)

UNESCO/IOC:Seventh Meeting of the ICG/PTWS Regional Working Group on Tsunami Warning and Mitigation System in the South China Sea Region (ICG/PTWS WG-SCS-VII) (6–8 March 2018)

UNESCO/IOC:ICG/PTWS Steering Committee and Working Groups/Task Teams Meeting (4 - 8 June 2018) Fifty-first Session of the IOC Executive Council (3-6 July 2018)

AARI is participating in the International Ice Charting Working Group activity

IMO NCSR-5

WWNWS-9 (Cape Town, South Africa)

## Q12. Opportunities for improvement

### Capability

I suggest a METAREA Coordinator Exchange Program. METAREA Coordinators could be encouraged to make 1 week available per year to host other METAREA Coordinator and exchange experiences.

Increase in professional staff in meteorology.

The seasonal nature of ECCC’s METAREA Program, combined with retirements and staff re-assignments and the various inter-agency linkages may make the service somewhat vulnerable to discontinuities and occasional service “glitches”, especially during the start-up of the program at the beginning of the shipping season. Therefore, inclusion of a summary overview of the ECCC METAREA Program at the production centres, for example, during change-of-season seminars or similar… prior to the beginning of the northern/Arctic shipping season may be useful, to ensure continuity and smooth start-up of the service.

### Service delivery

MetService in the near future is looking at making high seas forecasts and warnings available in CAP and graphical formats.

CMA is planning to add ice information in the High Seas forecast with the help of China SOA.

Regulate the PanPan usage in the head text of MSI is an urgent job to be done.

China radio facsimile operations will be restored in October 2018, which needed to be registered in WMO and IMO.

Warnings for gale, TCs and low visibility should be broadcasted separately for the High Seas.

The Mauritius Meteorological Services(MMS) has recently been awarded the ISO 9001:2015 where its maritime services was included. The MMS continuously strive to upgrade its service within the government framework. There is a training for the technical support staff in collaboration with a local university so as to improve the service delivery. The MMS is in the initial phase of acquiring a state of the art operational wave and swell model for the region which will cover 8/1, 8/3 and part of 8/5.

We are planning to expand and improve our marine unit which will move to the Cape Town Weather Office within the next year (by 2019) (this will come with a number of changes to improve our marine services). We want to include sea ice and ice accretion products/services within the next few years (hopefully sooner than later). We also have plans to include forecasts and all required warning services for the entire METAREA to ensure all parameters as per the GDMSS and SOLAS are implemented (expectation is to implement from 2019). We are also looking at including a storm surge model to improve our storm surge warning service.

We have increased the number of numerical weather products and maritime forecasts available for the South East Pacific Ocean, including new detailed Antarctic iceberg charts, intensive use of social media for generate special warning information and. - Planning to develop more GOES 16 derived images for the public, including ocean and weather analysis - MSA 16-4 & 14-10 strengthen liaison and professional exchange between Navy Weather Services of Argentina, Brazil, Chile and Peru, for Antarctica campaigns and scientific cruises support, joint exercises and international sailing, to increase Voluntary Observations Ships.

Expand electronic charting, specifically with S-412 development. - Extend digital services. For example, most of the Atlantic offshore and high seas forecast grids (METAREA IV) are now operational. Forecast grids for the Pacific (METAREA XII) are expanding in experimental mode. These services need to continue to expand and be equal in priority to legacy graphics for use by mariners and in training requirements. - Plan for USA/European NMHS coordination in 2019 - Expand marine observations using AIS

Information from ECCC...Forecaster access to AIS would enhance service levels by enabling marine forecasters to focus on zone where there is known shipping, thereby enhancing/improving service to end-users. –

### Satellite dissemination

Transition from I3 to I4 in 2018 forms a significant gap in Inmarsat SafetyNET coverage in the central coastal areas and northward which are presently the areas of the most intense navigation on the NSR. Development of issuing services for this area should be considered.

Iridium satellite uplinks would allow for redundancy of coverage over northwestern METAREA IV. That said, it is quite likely that any commercial shipping navigating Hudson Bay & Approaches is already accessing METAREA forecasts via their own satellite internet comm systems. However, as an Issuing Service for its assigned METAREAs, the additional costs that may be associated with this mode of communications poses some concern for ECCC. –

-Inmarsat-C migration to AMER will result in enhanced coverage over western sections of METAREA XVII serviced by sat-c, while Stage 2 migration (POR to APAC) will result in degraded to nil signal coverage over most of METAREA XVII serviced by sat-c. So as to maintain optimized sat-c service levels within METAREA XVII, the Issuing Service (ECCC) plans to upload/broadcast forecast & sea-ice products for METAREA XVII over both APAC and AMER satellites. -Iridium satellite uplinks would allow coverage over northwestern sections of M17 which do not have guaranteed coverage by HF telex. Such a medium should provide more reliable communications than HF telex transmissions as well, which are susceptible to atmospherics. That said, it is quite likely that any commercial shipping navigating such regions are already accessing METAREA forecasts via their own satellite internet communications systems. However, as an Issuing Service for its assigned METAREAs, the additional costs that may be associated with this mode of communications poses some concern for ECCC. –

### Coordination

We plan to strengthen contacts with NMHS, thanks to the nomination of National Marine Services Focal Points. We would like to improve broadcast and availability of NAVTEX messages on the WIS and on the WWMIWS webportal, especially for the stations Sao Vicente (Cape Verde) and Dakar (Senegal). We plan to improve contingency plans in MetArea II (see point 10). We made some updates on the WWMIWS Website, developed and maintained by Météo-France. We plan to upgrade the WWMIWS portal by the end of 2018, in the framework of the WWMIWS Committee.

The following list of suggestions (from 2016 and 2014) would be reviewed and allocated a response at ETMSS-V.

| **Reference** | **Improvement suggestion** | **JCOMM action (status 2018)** |
| --- | --- | --- |
| MSA16-1 | The MMS staff has not benefited from capacity building over a long period of time. There is an urgency to develop a plan for training the staff in line with new technologies and development | Refer to TORs for Task Team on Marine Competency implementation |
| MSA16-2 | Graphical MSI products for wind/wave to accompany available ice graphical products already available via weather-facsimile broadcast from the Canadian Coast Guard station in Iqaluit NU. | On WWMIWS-1 agenda |
| MSA16-3 | We plan to make improvements in 2017 on the GMDSS Website developed and maintained by Météo-France : - changes in the source code to facilitate changes of GTS headers and titles – usability enhancements and new features, for example the possibility of subscription to the bulletins by email. | See WWMIWS workplan |
| MSA16-4 | Propitiate to Implement simulations of extreme events in the limits of the MetAreas and written communication protocols between neighboring MetAreas when extreme events affect them. b) Training in the use of remote sensing information. c) To suggest that through WMO if it is possible to organize workshops in South America held in Spanish leaded by developed countries that have a deeper knowledge in marine meteorology because it would be very important to have the experience and the knowhow of all of them to improve the Marine Services issued and broadcasted by ours National Weather Services. | Training needs to be prioritised by JCOMM Services Coordination Group. |
| MSA14-1 | The monitoring ability of GMDSS broadcast in real time must be encouraged and provided through training and equipment. | Completed, monitored in self-assessment |
| MSA14-2 | Additional slot for broadcast must be provided for tropical cyclone or other adverse conditions warnings as and when needed. | National issue |
| MSA14-3 | The ISO 9001 certification for the production of GMDSS MSI products must be encouraged as an urgent need through adequate training facilities. | Completed, monitored in self-assessment |
| MSA14-4 | Discussions have commenced between New Zealand and Australia regarding the arrangements for MSI broadcasts on SafetyNet for the Tasman Sea area. The aim of the discussions is to minimise service overlaps due to existing arrangements dating back over 30 years. | Completed |
| MSA14-5 | As stated previously in the report, improved coordination with Papua New Guinea and Australia is required to ensure that Tropical Cyclone warnings issued by PNG are broadcast on SafetyNet. | Completed |
| MSA14-6 | High seas forecast and warnings should be made available in a graphical format as well as in text | On WWMIWS-1 agenda |
| MSA14-7 | In high seas forecasts and warnings, it would be valuable to include information about the probability of severe phenomena (e.g., gales, heavy swell, etc.) | On WWMIWS-1 agenda |
| MSA14-8 | New Zealand and Australia plan to reduce the overlap between their high seas forecast and warning areas | Completed |
| MSA14-9 | Improvements to the methods for locating, and methods for forecasting, sea ice | Referred to ETSI and IICWG |
| MSA14-10 | Strengthen the liaison and professional exchange between Navy Weather Services of Argentina, Brazil and Chile, for Antarctic Campaigns support, joint exercises and international sailing, increasing the number of voluntary observations. | National issue |
| MSA14-11 | Depending on the anticipated amount of shipping, it may be desirable to eventually expand HF telex coverage over extreme northwestern portions of METAREA XVII, and also to expand NAVTEX coverage over Arctic waters offshore northern Alaska (note that the Issuing Service is uploading the FZAK61 PAFG NAVTEX marine forecast for Arctic Alaska coastal to SafetyNET because NAVTEX from USCG COMMSTA Kodiak is unreliable in that region). This of course would have to be done in collaboration with US and Canadian Coast Guards. | Closed. An issue for national marine safety agencies. |
| MSA14-12 | Also, the Issuing Service of MetArea XVII acknowledges its requirement to issue a separate warning bulletin for wind speeds equal to or greater than 34 knots and/or significant ice accretion, and is currently investigating the most effective means to implement this service aspect. In the interim, alert status for such warning events are stated within the METAREAs forecast bulletins, as part of the regular forecast and amendments. | Completed, monitored in self-assessment |
| MSA14-13 | Closer contact with MetArea XX (Russia) is required  - Currently exchanges ice-edge coordinates on a daily basis  \* Exchange of more parameters would be profitable for both parties | National issue |