***Forecaster Competency 4: Portfolio Information Note***

***C4 Ensure the quality of marine meteorological information and services***

***Competency Description:***

**Forecasts, warnings and related products are provided within a quality management framework.**

**Considerations on using Portfolio**:

Portfolio can be an important assessment method for Competency 4 to supplement more directly assessed evidence gathered by the assessor.

For example, data quality control procedures may not be used during Direct Observation if no outlying data is found, and no forecast amendment procedures may be used if errors do not occur or if the weather does not exhibit substantial changes. Emergency procedures for system failures are hopefully rarely used, and therefore unlikely to be demonstrated. Moreover, some aspects of the QMS will not be implemented until *after* a severe event, such as seeking and responding to customer feedback and implementing remedial actions.

For this reason, the Portfolio evidence can play an important role in a competency assessment implementation for QMS performance criteria (C4.1-4.5).

**Recommendations**:

Portfolio evidence for Competency 4 might cover all the Performance Criteria required. For example, a report or case study might document QMS procedures that were used, or would be used, during a part of or throughout the process of providing forecasts and warnings for severe weather events. This includes the analysis and diagnoses phases, the product dissemination and customer communication phase, and during post event follow up and reporting. Management should agree on a report structure, perhaps using the competency framework as a model, to help ensure that the report is relevant to the assessment process. The Performance Criteria and background knowledge and skills to assess for Competency 4, from WMO-No. 1209, are provided below for reference.

**Performance criteria**

1. Apply the organization’s quality management system and procedures as required;
2. Assess the impact of known observational error characteristics (for example, bias, achievable accuracy and limitations of observations and sensing methods) on forecasts and warnings;
3. Verify and validate marine meteorological data, products, forecasts and warnings (timeliness, completeness and accuracy) using real-time verification tools;
4. Monitor the functioning of operational systems, gather and assess customer comments, suggestions and complaints, and take remedial actions when necessary;
5. Identify and evaluate weather forecasting and warning problems and determine appropriate corrective and preventive action for continuous improvement.

**Background knowledge and skills to assess**

* Knowledge of quality management principles, practices and procedures;
* Knowledge of SOPs for forecasts and warnings;
* The ability to utilize verification techniques and statistics;
* Knowledge of contingency plans;
* Knowledge of stakeholder needs;
* Knowledge of relevant stakeholder operations and need for and applications of forecasts, including:
  + Stakeholder operations (for example, procedures, tactics, planning processes and cycles);
  + Stakeholder limitations, including operating limits, legal constraints and geopolitical limits;
  + Stakeholder expectations;
  + General knowledge of stakeholder terminology such as nautical terms, acronyms, abbreviations and technical terms related to forecast variables (for example, state of the sea, currents, waves, swell, tides), and awareness of measurement units preferred by the customer ;
  + Knowledge of stakeholder communication and security systems, if required;
* Knowledge of the impact of weather variables, parameters and phenomena on stakeholder operations and activities