***Forecaster Competency 4: Simulation 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 Simulation**:

While Direct Observation using a think-aloud protocol and Experiential Questions can be used to elicit useful evidence of knowledge and skill of the individual being assessed regarding application of the organizational quality management system, it is unlikely that all aspects of the system can be demonstrated in even several assessment periods.

For example, data quality control procedures may not be used 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 sore 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 Simulation assessment method can play an important role in a competency assessment implementation for QMS performance criteria (C4.1-4.5). If Simulation is used as an assessment method for Competencies 1-3, QMS procedures can be required within those simulations to at least partially address assessment needs for Competency 4.

**Recommendations**:

Application of Simulation for C4, Ensure the quality of marine meteorological information and services, should attempt to gather evidence for each performance criterion. However, criterion 4.1, being the most general, can be used to encompass the other required knowledge and skills asked for in criteria 4.2-4.5

If Simulation is used as an assessment method for Competencies 1-3, it is unlikely that all QMS procedures will be called for. Forecast simulations that focus specifically on the QMS procedures (in other words, that do not ask for a forecast analysis and diagnosis to be fully conducted) can help to fill these gaps. Simulations can be used for rare, severe weather situations representing those locally important due to impacts. Several short simulations might be used to address a variety of situations demanding differing forecast decision processes.

QMS simulations might include the follow components of the forecast process:

1. Performing steps for identifying and addressing missing data or potential sources of error in observations that can impact the quality of a weather analysis.
2. Reviewing forecast products to identify errors in format or in following standard protocols.
3. Deciding if criteria for forecast amendments are met and performing the steps for amending marine forecasts and warnings.
4. Performing follow-up steps required after a severe weather event regarding responding to or obtaining customer feedback.
5. Following steps for responding to various kinds of systems failure? (data access, communications failure, etc.)
6. Using or interpreting outputs of an automated checking system if one is in place.