**COMPETENCY 4: ENSURING THE QUALITY OF ICE INFORMATION AND SERVICES**

**Competency Description:**

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

**Performance Criteria:**

(1) Apply the organization’s quality management systems and quality control procedures as required;

(2) Apply international standards on ice terminology;

(3) Assess the impact of known observational error characteristics (e.g. bias, achievable accuracy and limitations of observations and sensing methods) on forecasts and warnings;

(4) Verify and validate ice data, products, forecasts and warnings (timeliness, completeness, and accuracy), using real-time verification tools;

(5) Monitor the functioning of operational systems, gather and assess customer comments, suggestions and complaints, and take remedial actions when necessary;

(6) Identify and evaluate ice forecasting and warning related problems and determine appropriate corrective and preventive actions for continuous improvement.

**Background knowledge, skills and abilities**

 Knowledge of quality management principles, practices and procedures

 Knowledge of SOPs for forecast and warning

 The ability to utilize verification techniques and statistics

 Knowledge of contingency plans

 Knowledge of relevant stakeholder operations and needs for and applications of forecasts, including:

o Stakeholder operations (e.g., procedures, tactics, planning processes and cycles)

o Stakeholder limitations, including operating limits, legal constraints, geopolitical limits

o Stakeholder desired outcomes from operation

 General knowledge of stakeholder terminology such as nautical terms, acronyms, abbreviations, technical terms related to forecast variables (e.g., ice concentration, stage of development, thickness, ice movement, freeze up, ice deformation, state of the sea, currents, waves, swell, tides), and awareness of customer preferred measurement units

 Knowledge of stakeholder communication and security systems, if required

 Knowledge of the impact of ice conditions and parameters on stakeholder operations/activities