**COMPETENCY 1: ANALYSE AND ROUTINELY MONITOR THE ICE CONDITIONS AND PARAMETERS**

**Competency Description:**

Integrate multiple remote sensing sources, meteorological and oceanographic data, and auxiliary data sources, to continually monitor the ice conditions. Use applicable geographical information systems and local standard operating procedures to produce timely and accurate sea ice analyses. Determine the need for issuance, cancellation or amendment/update of forecasts and warnings according to documented thresholds and regulations.

**Performance Criteria:**

(1) Use effectively suitable near real time satellite data, relevant derived products and in-situ observations when monitoring and analysing the ice conditions;

(2) Compare current forecasts and warnings against current ice conditions;

(3) Based on the monitoring/analysing of the ice conditions and parameters, warnings issued by other ice services, and model guidance, appraise the need for amendments to forecasts and updates of warnings against established and documented criteria.

**Background knowledge, skills and abilities**

 Knowledge of the ice products (routine and non-routine), their issue times and the priorities applied in the region

 Knowledge of potential ice hazard conditions and events for specific regions

 Knowledge of non-routine weather conditions and local effects that trigger ice pressure warnings, rapid closing of coastal leads warnings and special ice warnings

 Knowledge of meteorological and ice analysis techniques (subjective and objective)

 Knowledge of sea ice physics

 Knowledge of relevant observing systems, platforms, and sensors that may include remote sensing (satellite altimeters, microwave sensors); radar, in-situ sensors (moored wave buoys, drifting buoys, bottom pressure sensors, ice thickness sensors); human observing procedures (ship, shore) and how their advantages and limitations vary with respect to prevailing seasonal and meteorological/ice conditions

 Knowledge of bathymetry, coastal geomorphology, marine climatology, oceanic currents, any local marine phenomena, local weather systems, and their potential impacts on ice movement, development, melt and decay in the area of responsibility

 The ability to perform manual/subjective analysis (including techniques for analysis in data sparse areas)

 The ability to perform analysis on ice-related images

 The ability to translate information from automated products into routine ice products

 The ability to apply statistical analysis, geographical information system processes and other informational techniques to data, which has a geographical or geospatial aspect