



19th Meeting of the International Ice Charting Working Group

Executive Summary Report

The 19th meeting of the International Ice Charting Working Group (IICWG) was held in Helsinki, Finland during September 24-28, 2018. The meeting was hosted by the Finnish Meteorological Institute. Seventy-eight attendees representing 43 organizations from 14 countries participated. The meeting included a technical tour of the Arctech Helsinki Shipyard where an icebreaking (ARC7) tanker destined for service on the Northern Sea Route was under construction .

The theme for the meeting was “*Ice Information for Navigating the Sub-Polar Seas*”.

Significant Outcomes

ESA High Priority Candidate Missions

The meeting was briefed on the six candidate missions that ESA has deemed high priority for its next generation of earth observation satellites. Three of these are considered Polar missions: ROSE-L (L-band Synthetic Aperture Radar), CIMR (Passive Microwave Radiometer), and the Snow and Ice Topography Mission (Radar/Laser Altimeter). While it is clear that the first two are most relevant for operational ice charting, there are differing advantages to each. The outcome of the discussion was that, while the IICWG would like very much for both the ROSE-L and CIMR missions to go forward, if a choice must be made, the priority is ROSE-L. The L-Band SAR, in tandem with the C-Band Sentinel-1s, offers the best potential for identifying icebergs, rough and ridged ice, and low concentrations of sea ice near the ice edge, all of which pose the greatest hazards to marine safety.

“Big Data” and Machine Learning

The meeting included three plenary sessions in which the participants discussed the issues of “big data” and machine learning as applied to ice charting. Ice services are struggling to manage large volumes of remote sensing data and are working on ways to implement more automated analysis procedures. It was evident in the discussions that ice services are gradually moving to more and more machine production of ice information and that the role of human analysts is changing to more quality control, greater attention to difficult and tactically important ice situations, and the production of more tailored support. The pace at which this is happening varies widely across ice services. Also implicated in these issues is the prospect of cloud computing. While the technological advantages of processing data in the cloud are well recognized, issues of trust and national security factor into the decisions. The group also recognized that there is room for both government and commercial ice services but that it is important for them to work together to avoid confusion in the marine community. Generally, government ice services are aimed at overall marine safety while commercial services support operations for particular clients but the boundary is fuzzy and varies widely among jurisdictions.



INTERNATIONAL ICE CHARTING WORKING GROUP (IICWG)

Training for Polar Navigators

Representatives from the Nautical Institute, the Makarov Training Center, the Marstal Maritime Education Center, and Satakunta University participated in the meeting to convey their polar navigation training programs and needs. It was generally agreed by all that the basic Polar Code requirements for training in ice navigation are inadequate to produce truly qualified operators. While some ice services already have close collaboration with local maritime training centres, this is not universal. An IICWG task team will work with the Institutes to find ways to improve ice information training.

PAME Arctic Shipping Best Practices Information Forum

The PAME Arctic Shipping Best Practices Information Forum web portal prominently features the Ice Logistics Portal. This is effectively raising the profile of the Ice Logistics Portal. The meeting discussed the importance of maintaining up to date information on the Portal and also the desire to increase the amount of ice information available – in particular, climatological information that mariners have said they need for planning purposes. A task team was formed to look at these possibilities and determine how best to action them.

IICWG Interaction with the Arctic Council

Finland's chairmanship of the Arctic Council has raised meteorological information for the Arctic as an important initiative. The new chair has indicated that this will continue as priority when it Iceland takes over in 2019. The IICWG adopted a task item to interact with the Icelandic programme committee to provide advice and expertise on ice information.

Re-Organized Structure of the IICWG

The IICWG has always tried to maintain an informality aimed at action and results. Recognizing that its Standing Committee structure had become more process-oriented and less focussed on results, the meeting agreed to a structural change to abolish the Standing Committees. In their place, a number of Task Teams were created, each lead by an issue champion and with specific goals to address over a relatively short time frame. At this meeting, eight Task Teams were created to address Iceberg Modelling, Uncertainty in Ice Charts, E-Navigation, Mariner Training Needs, Ice Analyst/Forecaster Competencies, Contributions to the Regional Climate Centres, ROSE-L Technical Issues, and Interaction with the Arctic Council.

IICWG-XIX Press Release

The IICWG issued a press release noting that ““Extreme variability, both on a regional scale and from one year to the next, makes knowledge of local and regional ice conditions critically important for any maritime operations in the vicinity of sea ice or icebergs. The International Ice Charting Working Group urges all vessel operators to include procedures to obtain up-to-date ice information in their operations manuals – whether navigating in the IMO Polar Code regions or not.”

IICWG-XX

The 20th Meeting of the IICWG will be held in Copenhagen, Denmark during September 23-27, 2019 at the invitation of the Danish Meteorological Institute.

IICWG Secretariat – October 8, 2018