15-7: Nominate individuals to liaise with the JCOMM Expert Team on Operational Ocean Forecasting in development of The Guide, Observation Requirements, Performance Monitoring, and Data Assimilation. (Ref: Action 14-5)
Responsible: Science Committee Co-chairs
Due Date: November 30, 2015
Status: CLOSED. The ET-OOFS Operational Ocean Forecasting System Guide is to be published and presented at the JCOMM-5 meeting to be held from 25 - 31 October 2017, Jakarta, Indonesia. An earlier draft of the guide does contain a “Sea-Ice Forcings” section which notes “need more details from Sea-Ice modelers”. Dean Flett has written to Fraser Davidson, leader of ET-OOFS to determine what more is needed from IICWG and ice modellers. A new action 18-1 was raised to bring this issue to JCOMM.

15-16: Undertake an inventory of capability in the Southern Ocean METAREA Preparation Services.
Responsible: Vasily Smolyanitsky, Scott Carpentier
Due Date: On-going
Status: CLOSED. Inventory of the Southern Ocean METAREAs capabilities was undertaken in 2018 by the WMO Worldwide Met-Ocean Information and Warning Service Committee (WWMIWS) as a part of bi-annual inventory of capabilities of ALL World Ocean METAREAs. The WWMIWS document is available as a part of WWMIWS-1 documentation and is also included in the IICWG-XIX registrants’ package. It provides a snapshot of METAREAs general capabilities along with particular issues for specific METAREAs. The WWMIWS-1 session decided to undertake a dedicated inventory for the polar regions jointly with JCOMM ETSI. A new IICWG action item 19-1 is proposed.

16-5: Canvass captains of Antarctic ships to get an initial assessment of POLARIS as being applicable to Antarctic ice conditions. British Antarctic Survey to include their POLARIS feedback
Responsible: Neal Young, Alvaro Scardilli, Roberto Diaz, Keld Qvistgaard, Marc deVos
Due Date: IICWG-XIX
Status: OPEN. Alvaro has produced a brief summarizing comments from 8 Argentine captains who deploy every summer to Antarctica. Roberto provided additional comments from vessels in Punta Arenas. This is not a “one-shot” survey but should be continuing dialogue and should be the subject of a discussion/session at IICWG-XVIII.

17-1: Promote the availability of ice charts in S-411 format with the ECDIS manufacturers.
Responsible: Jürgen Holfort
Due Date: IICWG-XIX
Status: OPEN. To be revised at this meeting.
17-5: Explore the idea of including Ice Service point of contact information as a required element of the Polar Code Polar Waters Operating Manuals. Prepare a recommendation for the IICWG to consider sending to the IMO.

- **Responsible:** Dave Jackson
- **Due Date:** Dec 31, 2017
- **Status:** OPEN. A new Point of Contact is needed as Dave has retired.

17-6: Form an IICWG Task Group to participate in the continued development of POLARIS particularly with respect to its applicability in the Southern Ocean.

- **Responsible:** Dave Jackson, Secretariat, Marc de Vos
- **Due Date:** Dec 31, 2107
- **Status:** OPEN. A new Point of Contact is needed as Dave has retired. There is a new sampling campaign on a South African research vessel that could be of interest. Marc de Vos added.

17-12: Produce a draft Strategic Vision document for the IICWG. As background, should consider strategic plans from individual ice services as well as the North American Ice Service and the European Ice Services. The vision should also include a strategy for engagement with all stakeholders.

- **Responsible:** Dave Jackson, Ruth Lane, Kristen Serumgard, Andrew Fleming, Alvaro Scardilli
- **Due Date:** When the draft is approved, this can be closed.
- **Status:** OPEN. To be discussed on Friday.

18-1: Develop a briefing note for Tom Cuff so he can raise the issue of ice input for the ET-OOF Guide on Operational Ocean Forecasting at JCOMM-V (25-29 October 2017). Tom to report back to IICWG following JCOMM-V.

- **Responsible:** Phil Reid, Secretariat, Tom Cuff
- **Due Date:** Briefing note required by October 15
- **Status:** OPEN. A briefing note was sent to Tom on October 23. Tom to report at IICWG-XIX.

18-2: Ice Services to investigate Passive Microwave Radiometer data from the Chinese FY-3 and U.S. JPSS satellites to determine their usefulness for operations.

- **Responsible:** Nick Hughes (Met No), Caryn Panowicz
- **Due Date:** April 30, 2018
- **Status:** CLOSED. The FY-3 satellite program is planned to continue well into the future. FY-3B and -3C are currently operational and FY-3D is in a commissioning orbit ready to become operational. The data is publicly available from the Fengyun Satellite Data Center portal (http://satellite.nsmc.org.cn/portsite/default.aspx). However, there are
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some issues with FY-3. A briefing note to the IICWG was provided to IICWG-XIX for a more complete examination.

18-3: Write a letter to ESA regarding the potential Passive Microwave Radiometer data gap and informing them of our concerns and intentions re: FY-3 and JPSS.
Responsible: Secretariat, Co-chairs
Due Date: Nov 30, 2017
Status: CLOSED. Message was sent to Mark Drinkwater by the Secretariat in June 2018 to advise him of our actions.

Responsible: IICWG participants
Due Date: 15 October 2017
Status: CLOSED.

18-5: Data Committee to hold “early scoping” discussions on the differences in Cryonet and GCW observing methodologies that can be captured in the metadata.
Responsible: Sean Helfrich
Due Date: Dec 31, 2017
Status: CLOSED. It has been determined that ice charts are not recommended for GCW CyroNet or contributing stations because they do not meet requirements for commitment of operational continuity, up-to-date and available metadata and were also not appropriate sources for being GCW contributing stations.

18-6: Identify data layers for SOOSMap that the IICWG thinks should be available through the Southern Ocean Observing System.
Responsible: Andreas Cziferszky, Pip Bricher
Due Date: Dec 31, 2017
Status: CLOSED. Sea ice concentration, edge and type layers already exist within SOOS via collaboration with the EU EMODnet project, providing direct and in-browser access to up-to-date and archived CMEMS data products. Antarctic ice charts (US, Russian, Norwegian) are not considered relevant for the SOOS target audience at this point. SAR and Optical satellite data, whilst potentially relevant for SOOS users, should not be incorporated to SOOS at this stage due to the nature and volume of these datasets. SOOS will provide its users with a summary of potentially relevant satellite data access portals (e.g. polarview.aq, Copernicus Scihub, earthdata.nasa.gov, etc.). No further IICWG action is advised at this time but may become useful in future.

18-7: Develop software to transform ASPeCT code to SIGRID-3 code. Work with the Data Committee to share the code.
18-8: Report on the JCOMM-5 outcome regarding the issue that GMDSS replacement is not addressing weather and ice information.
Responsible: Tom Cuff
Due Date: Nov 30, 2017
Status: CLOSED. GMDSS isn’t being replaced. WWMIDS is the new acronym of the working group responsible for it. WMO manual 558 and 471 are the ones of interest. Sea ice is now a part of the manual to guide the Metareas that don’t normally have ice hazard information. JCOMM-5 have accepted this addition in the manual. Ice services should reach out to their Metarea coordinators to help with ice information being disseminated.

18-9: Explore opportunities to collaborate with partners to address the challenges and opportunities of big data approaches to ice service operations.
Responsible: Co-Chairs, Keld Qvistgaard
Due Date: IICWG-XIX
Status: OPEN. There are 3 sessions addressing this issues at this meeting. Action may be re-shaped following that.

18-10: Initiate work to develop an international standard for Polar Code ice information products.
Responsible: Keld Qvistgaard, Scott Graham, Jürgen Holfort, Caryn Panowicz
Due Date: IICWG-XIX
Status: OPEN. This is a long shot. 2 years ago a letter was sent out to get partial ice coverage included in the Polaris maps. However, we need to figure out if this information is useful. How is the polar code going to work for the mariners?

18-11: Investigate ways to encourage expedition ships to provide ice observations on the Global Telecommunications System.
Responsible: Nick Hughes, Lisa Kelley, Kirsten Serumgard
Due Date: April 2018
Status: OPEN.

18-12: Provide information about the Ice Logistics Portal to IAATO and AECO.
Responsible: Secretariat
Due Date: Dec 31, 2018
Status: CLOSED. Information sent to both organizations September 3, 2018.
18-13: All ice services to ensure that operational ice charts include ice concentrations and stages of development that are required for the Polar Code risk assessment.

Responsible: Ice Service Heads
Due Date: As soon as possible
Status: CLOSED as an On-going Requirement. The following services issue regular ice charts with concentrations and stages of development: Argentina, Canada, Greenland (DMI), U.S. National Ice Centre and Russia (AARI). The FMI/SMHI jointly produced Ice Chart for the Baltic Sea lays outside Polar code area thus it is not directly under this action item.

18-15: Identify gaps in the PAME Arctic Shipping Best Practices Forum portal and suggest ways to address them, including an extension to the Antarctic and historical data.

Responsible: Jürgen Holfort
Due Date: Dec 31, 2017
Status: OPEN. Marianne Thyrring presented the IICWG at the second meeting of the ASBPIF at which the Ice Logistic Portal was highlighted as an important node for the ASBPIF portal. We need to look at the Portal to see what is missing. This will be discussed later this week.

18-16: IICWG to prepare a formal response to the IACS/POLARIS committee recommending resolution of issues for use of POLARIS in Antarctic waters.

Responsible: David Jackson and POLARIS Task Group
Due Date: July 2018
Status: CLOSED. WE need to re-think this action since the POLARIS Task Group doesn’t exist. We will re-visit later.

18-17: Report on trials/pilots to broadcast ice charts and/or information with the VHF Data Exchange System (VDES).

Responsible: Mike Hicks
Due Date: IICWG-XIX
Status: OPEN. This is linked to an Iceberg Committee action.

18-19: Ice services to investigate the availability of historical ice concentration and stage of development data that could be put on the Arctic Shipping Best Practices Forum portal for use in Polar Code voyage planning and risk assessment.

Responsible: Jürgen Holfort, Ice Service heads
Due date: March 2018

18-20: All committees to look into the parking lot items and advise on what should be kept.

Responsible: Committee co-chairs
Due date: IICWG-XIX
Status: CLOSED as an on-going action.
18-21: Send a formal letter to the Nautical Institute indicating that the IICWG is interested in working with the NI to pursue the idea of standardized ice information training for mariners. Our work on ice analyst competencies may fit well with what should be taught to mariners and NI can help to structure what it should look like.

Responsible:  Dave Jackson, Secretariat to draft letter for co-chairs
Due date:  Nov 30, 2017
Status:  OPEN. A new Point of Contact is needed.

18-22: Form a task group to develop a roadmap for IICWG engagement with the Arctic Council. Consider issuing a global challenge for Ice Services relating to big data/data processing for improving future ice charts to interest the large NGO foundations to help the Ice Services.

Responsible:  Shanna Pitter, Secretariat
Due date:  Dec 31, 2017
Status:  OPEN. To be re-visited on Friday.