



## 22<sup>nd</sup> MEETING OF THE INTERNATIONAL ICE CHARTING WORKING GROUP

Videoconference - September 20-24, 2021

### Videoconference Agenda

*Ice Hazard Products and Services for Maritime Safety*

#### 1700 UTC

Eastern North America 1:00 p.m.  
Saint-Petersburg 8:00 p.m.

South America 2:00 p.m. Europe 7:00 p.m.

South Africa 7:00 p.m.

<b>SUNDAY SEPTEMBER 19</b>		
<b>1700 UTC</b>	<b>ICEBREAKER SOCIAL – 1</b> <b><i>An Informal Opportunity to Welcome New Colleagues and Renew Old Friendships</i></b>	
	• Co-Chair's Welcome	Marianne Thyrring (DMI)
	• Introduction of the Secretariat	John Falkingham
	• Introduction of Ice Service Heads	John Falkingham
	• Inside the U.S. National Ice Center / International Ice Patrol	CDR Casey Gon (USNIC)
	• Inside the Information Flow for the NSR at the Arctic and Antarctic Research Institute	Juliya Sokolova (AARI)
	• Invitation to registrants to introduce themselves	Marianne Thyrring
	• Session Sign-Off	Marianne Thyrring
<b>1800 UTC</b>	<b><i>End of Session</i></b>	

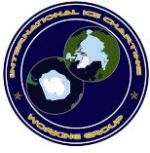
#### 2300 UTC

Pacific North America 4:00 p.m.  
Australia 9:00 a.m. Monday

Eastern North America 7:00 p.m.  
New Zealand 11:00 a.m. Monday

South America 8:00 p.m.

<b>2300 UTC</b>		
	<b>ICEBREAKER SOCIAL – 2</b> <b><i>An Informal Opportunity to Welcome New Colleagues and Renew Old Friendships</i></b>	
	• Co-Chair's Welcome	Russ White (ECCC)
	• Introduction of the Secretariat	John Falkingham
	• Introduction of Ice Service Heads	John Falkingham
	• Inside the U.S. National Ice Center / International Ice Patrol	CDR Casey Gon (USNIC)
	• Inside the Information Flow for the NSR at the Arctic and Antarctic Research Institute	Oleg Folomeev (AARI)
	• Invitation to registrants to introduce themselves	Russ White
	• Session Sign-Off	Russ White
<b>2400 UTC</b>	<b><i>End of Session</i></b>	



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*Ice Hazard Products and Services for Maritime Safety*

1100 UTC

Vancouver 4:00 a.m.

Ottawa/Washington 7:00 a.m.

South America 8:00 a.m.

Europe 1:00 p.m.

South Africa 1:00 p.m.

Saint-Petersburg 2:00 p.m.

Hobart 9:00 p.m.

New Zealand 11:00 p.m.

<b>MONDAY SEPTEMBER 20</b>		
<b>1000 UTC</b>	<b>TASK TEAM MEETINGS</b>	<b>Separate Rooms for each Task Team</b>
<b>1100 UTC</b>	<b>MEETING OPENING</b>	
1100-1105	<ul style="list-style-type: none"> <li>Video conference logistics</li> </ul>	John Falkingham
1105-1115	<ul style="list-style-type: none"> <li>Co-Chairs' Welcome &amp; Opening Remarks</li> </ul>	Marianne Thyrring (DMI) Russ White (ECCC)
1115-1200	<ul style="list-style-type: none"> <li>Update from all Ice Services on current plans and priorities               <ul style="list-style-type: none"> <li>Maximum 5 minutes each</li> </ul> </li> </ul>	Ice Service Heads
<b>1200 UTC</b>	<b>SESSION 1: Maritime Training Centre Engagement</b>	<b>Task Team 8-2 Keld Qvistgaard (DMI)</b>
1200-1220	<ul style="list-style-type: none"> <li>Task Team 8-2 completion report – gaps and recommendations</li> </ul>	Keld Qvistgaard
1220-1230	<ul style="list-style-type: none"> <li>New Initiatives identified by Task Team 8</li> </ul>	Keld Qvistgaard
1230-1300	<ul style="list-style-type: none"> <li>Plenary discussion on new initiatives and where we should go from here</li> </ul>	Co-Chairs
<b>1300 UTC</b>	<b>END OF SESSION</b>	
<b>1400 UTC</b>	<b>1<sup>st</sup> SCIENCE SESSION: Multi-Spectral SAR for Sea Ice and Icebergs</b>	<b>Wolfgang Dierking (AWI/UiT)</b>
1400-1420	<ul style="list-style-type: none"> <li>Multi SAR Band Intercomparison Part II: Operational Uses</li> </ul>	Constanza Salvó (SNHA)
1420-1440	<ul style="list-style-type: none"> <li>Ice Centre Experience with L-Band Imagery</li> </ul>	Melanie Lacelle (CIS)
1440-1500	<ul style="list-style-type: none"> <li>Alignment of L- and C-band Images</li> </ul>	Leif Eriksson (Chalmers)
1500-1520	<ul style="list-style-type: none"> <li>Automated Classification of Ice Using C+L (+X?) Bands</li> </ul>	Johannes Lohse (UiT/CIRFA)
1520-1540	<ul style="list-style-type: none"> <li>Arctic Navigation with COSMO-SkyMed - Italian Navy High North Campaign.</li> </ul>	Donatella Giampaolo (e-GEOS)
1540-1600	<ul style="list-style-type: none"> <li>Discussion / Q&amp;A</li> </ul>	Wolfgang Dierking
<b>1600 UTC</b>	<b>END OF 1<sup>st</sup> SCIENCE SESSION</b>	
	<b>END OF DAY 1</b>	



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*Ice Hazard Products and Services for Maritime Safety*

1000 UTC

Vancouver 3:00 a.m.

Ottawa/Washington 6:00 a.m.

South America 7:00 a.m.

Europe 12:00 p.m.

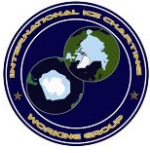
South Africa 12:00 p.m.

Saint-Petersburg 1:00 p.m.

Hobart 8:00 p.m.

New Zealand 10:00 p.m.

<b>TUESDAY SEPTEMBER 21</b>		
<b>1000 UTC</b>	<b>2<sup>nd</sup> SCIENCE SESSION - ICEBERGS</b>	<b>Marianne Thyrring</b>
1000-1020	<ul style="list-style-type: none"> <li>Ice Shelves and Interactions with Sea Ice and Ocean</li> </ul>	Wolfgang Rack (CanterburyU)
1020-1040	<ul style="list-style-type: none"> <li>ICE-PPR Iceberg Tagging Experiment 21 (ITEx21)</li> </ul>	John Woods (ONR)
1040-1100	<ul style="list-style-type: none"> <li>Public Iceberg Track Compilation Initiative from PERD Databases</li> </ul>	Philippe Lamontagne (CNRC)
1100-1120	<ul style="list-style-type: none"> <li>Iceberg Detections at C- and L-band</li> </ul>	Laust Færch (UiT)
1120-1140	<ul style="list-style-type: none"> <li>EMSA Vessel Detection Capabilities</li> </ul>	Sofia Freitas (EMSA)
1140-1200	<ul style="list-style-type: none"> <li>Operational Use of Iceberg Products (OUSEI)</li> </ul>	Ron Saper (Astrocom Assoc) / Kelley Dodge (C-CORE)
<b>1200 UTC</b>	<b>END OF 2<sup>nd</sup> SCIENCE SESSION</b>	
<b>1300 UTC</b>	<b>SESSION 2: ICEBERG AND SEA ICE HAZARD PRODUCTS</b>	<b>Task Teams 15&amp;16 Scott Weese (CIS) / Mike Hicks (IIP)</b>
1300-1315	<ul style="list-style-type: none"> <li>Task Team 15 – Iceberg Hazard Products Status Report</li> </ul>	Mike Hicks
1315-1330	<ul style="list-style-type: none"> <li>Task Team 16 – Sea Ice Hazard Products Status Report</li> </ul>	Scott Weese
1330-1410	<ul style="list-style-type: none"> <li>Panel discussion on Ice Hazards Products</li> <li>Panelists:               <ul style="list-style-type: none"> <li>Anders Bay Larsen, Royal Arctic Line</li> <li>Michael Lowe, US National Ice Center</li> <li>Peter Howard, USCGC MAPLE</li> <li>Annika Ogilvie, Fednav</li> <li>Philip Mann, Canadian Ice Service</li> </ul> </li> </ul>	Moderators: Mike Hicks Kevin Berberich (NIC)
1410-1440	<ul style="list-style-type: none"> <li>Plenary discussion on future ice hazard products work</li> </ul>	Co-Chairs
<b>1440 UTC</b>	<b>SESSION 3: ROSE-L</b>	<b>Task Team 1 Wolfgang Dierking (AWI/UiT)</b>
1440-1500	<ul style="list-style-type: none"> <li>ROSE-L Task Team Update               <ul style="list-style-type: none"> <li>Summary review of previous day's science session</li> <li>Status of team's progress / future of the task team</li> </ul> </li> </ul>	Wolfgang Dierking
<b>1500 UTC</b>	<b>END OF SESSION</b>	
<b>1600 UTC</b>	<b>SOCIAL SESSION: Polar Voyage Experiences</b> <i>First-hand accounts of two polar opposite voyages</i>	<b>Co-Chairs</b>
1600-1630	<ul style="list-style-type: none"> <li>Midwinter Northpolar Voyages of <i>Kapitan Dranitsyn</i></li> </ul>	Christian Haas (AWI)
1630-1700	<ul style="list-style-type: none"> <li>Antarctic Re-Supply Voyage of <i>Almirante Irizar</i></li> </ul>	Alvaro Scardilli (SHNA)
1700-1730	<ul style="list-style-type: none"> <li>Participants Q&amp;A</li> </ul>	Co-Chairs
<b>1730 UTC</b>	<b>END OF DAY 2</b>	



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Vancouver 4:00 a.m.

Ottawa/Washington 7:00 a.m.

South America 8:00 a.m.

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<b>WEDNESDAY SEPTEMBER 22</b>		
<b>1000 UTC</b>	<b>INFORMAL MEETINGS</b>	<b>Multiple Rooms available for different interests</b>
<b>1100 UTC</b>	<b>SESSION 4: ICEBERG MODEL CASE STUDIES AND SOLOKI</b>	<b>Task Teams 13&amp;14 Mike Hicks (IIP) / Jan Lieser (BOM)</b>
1100-1115	<ul style="list-style-type: none"> <li>Task Team 13 (Iceberg Model Case Studies) status report</li> </ul>	Mike Hicks
1115-1130	<ul style="list-style-type: none"> <li>Task Team 14 (SOLOKI) status report</li> </ul>	Andrew Fleming (BAS)
1130-1200	<ul style="list-style-type: none"> <li>Plenary discussion on future of Task Teams 13 &amp; 14</li> </ul>	Moderator: Andrew Fleming
<b>1200 UTC</b>	<b>SESSION 5: QUANTIFYING UNCERTAINTY IN ICE CHARTS</b>	<b>Task Team 12 Nick Hughes (METNorway)</b>
1200 -1210	<ul style="list-style-type: none"> <li>Task Team 12 Status Report</li> </ul>	Nick Hughes
1210-1225	<ul style="list-style-type: none"> <li>Quantifying Uncertainties in MET Norway and AARI Ice Charts for the Kara Sea</li> </ul>	Ekaterina Kim (NTNU)
1225-1300	<ul style="list-style-type: none"> <li>Plenary discussion on the future of Task Team 12</li> </ul>	Co-Chairs
<b>1300 UTC</b>	<b>END OF SESSION</b>	
<b>1400 UTC</b>	<b>3<sup>rd</sup> SCIENCE SESSION: Enhanced Approaches for Ice Information</b>	<b>Co-Chairs</b>
1400-1420	<ul style="list-style-type: none"> <li>Arctic In-situ Observations and Citizen Science</li> </ul>	Jeremy Wilkinson (BAS)
1420-1440	<ul style="list-style-type: none"> <li>SIKU: the Indigenous Knowledge Social Network as a tool for knowledge transfer and product improvement between Inuit and ice service specialists</li> </ul>	Joel Heath (Arctic Eider Society)
1440-1500	<ul style="list-style-type: none"> <li>New Global Ice Observations from Spire GNSS Reflectometry</li> </ul>	Jessica Cartwright (Spire Global)
1500-1520	<ul style="list-style-type: none"> <li>Integrating Automation into Operational Ice Services</li> </ul>	Alexandra Darden (USNIC)
1520-1540	<ul style="list-style-type: none"> <li>EisKlass2 – Artificial Intelligence for Ice Classification</li> </ul>	Lasse Rabenstein (DriftNoise) / Suman Singha (DLR)
1540-1600	<ul style="list-style-type: none"> <li>Ice Information Support to Vessels</li> </ul>	Bjørn Kay (SIMAC)
<b>1600 UTC</b>	<b>END OF 3<sup>rd</sup> SCIENCE SESSION</b>	
<b>1600 UTC</b>	<b>END OF DAY 3</b>	



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<b>THURSDAY SEPTEMBER 23</b>		
<b>1000 UTC</b>	<b>INFORMAL MEETINGS</b>	<b>Multiple Rooms available for different interests</b>
<b>1100 UTC</b>	<b>SESSION 6: AUTOMATED PRODUCTS IN OPERATIONS</b>	<b>Co-Chairs</b>
1100-1110	<ul style="list-style-type: none"> <li>Reminder – Key points from the IICWG task <i>Best Practices for Ice Service Value Chain Management</i></li> </ul>	Søren Olufsen (DMI)
1110-1125	<ul style="list-style-type: none"> <li>Results of the Kepler Project: Roadmap for an End-to-End Operational Monitoring System for Polar Regions</li> </ul>	Nick Hughes (METNorway)
1125-1140	<ul style="list-style-type: none"> <li>Report on the Ice Service Survey on the Use of Automated Products in Operations</li> </ul>	John Parker (CIS)
1140-1230	<ul style="list-style-type: none"> <li>Panel Discussion – Optimizing the mix of automated and manual products and processes for the best ice information services. Panelists:               <ul style="list-style-type: none"> <li>Nick Hughes, Norwegian Ice Service</li> <li>Kevin Berberich, US National Ice Center</li> <li>Scott Weese, Canadian Ice Service</li> <li>Keld Qvistgaard, Greenland Ice Service</li> <li>Gilles Garric, Mercator Océan</li> <li>Jacob Høyer, Danish Meteorological Institute</li> <li>Jeff Key, NOAA Center for Satellite Applications and Research</li> <li>Don Rudnickas, International Ice Patrol</li> </ul> </li> </ul>	Moderator: John Parker
1230-1300	<ul style="list-style-type: none"> <li>Plenary Discussion: Observations, Summary, and Action Plan</li> </ul>	IICWG-Co-Chairs
<b>1300 UTC</b>	<b>END OF SESSION</b>	
<b>1400 UTC</b>	<b>BUSINESS PLANNING SESSION FOR ICE SERVICE HEADS</b>	<b>Ice Service Heads/Reps</b>
	<ul style="list-style-type: none"> <li>Participation in this session is at the invitation of ice service heads</li> </ul>	
<b>1600 UTC</b>	<b>END OF SESSION</b>	
<b>1600 UTC</b>	<b>END OF DAY 4</b>	



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<b>FRIDAY SEPTEMBER 24</b>		
<b>1000 UTC</b>	<b>INFORMAL MEETINGS</b>	<b>Multiple Rooms available for different interests</b>
<b>1100 UTC</b>	<b>BUSINESS MEETING / SUMMARY AND CLOSE</b> <i>Participation in this session is at the invitation of ice service heads</i>	<b>Co-Chairs</b>
1100-1115	<ul style="list-style-type: none"> <li>WMO Re-Structuring</li> </ul>	John Parker (ECCC)
1115-1130	<ul style="list-style-type: none"> <li>JCOMM ETSI Transition – ensuring that the work of the Expert Team on Sea Ice is not lost</li> </ul>	Vasily Smolyanitsky (AARI) / Keld Qvistgaard / Alvaro Scardilli (SNHA)
1130-1215	<ul style="list-style-type: none"> <li>Business Plan for next 12 months               <ul style="list-style-type: none"> <li>Review all tasks</li> <li>Determine which tasks should be completed, cancelled, or revised</li> <li>Identify new tasks to address issues that have arisen during the meeting or over the past year</li> </ul> </li> </ul>	Co-Chairs
1215-1230	<ul style="list-style-type: none"> <li>Polar View – Ice Logistics Portal</li> </ul>	John Falkingham / Andrew Fleming
1230-1245	<ul style="list-style-type: none"> <li>Other Business</li> </ul>	Co-Chairs
1245-1300	<ul style="list-style-type: none"> <li>Meeting Comments               <ul style="list-style-type: none"> <li>What worked well? What could be improved?</li> <li>Suggestions for next meeting</li> </ul> </li> </ul>	All
1300-1310	<ul style="list-style-type: none"> <li>Planning for IICWG-XXIII               <ul style="list-style-type: none"> <li>Venue</li> <li>Organizing Committee</li> </ul> </li> </ul>	Secretariat / Alvaro Scardilli
1310-1320	<ul style="list-style-type: none"> <li>Co-Chairs Summary and Charge</li> </ul>	Co-Chairs
<b>1320 UTC</b>	<b>END OF SESSION</b>	
<b>1400 UTC</b>	<b>TASK TEAM MEETINGS</b>	<b>Multiple Rooms available</b>
	•	
	•	
	•	
<b>1600 UTC</b>	<b>END OF IICWG-XXII</b>	



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#### ACRONYMS

AAD	Australian Antarctic Division	IIP	International Ice Patrol
AARI	Arctic and Antarctic Research Institute	IMetO	Icelandic Meteorological Office
ASF	Alaska Satellite Facility	IMO	International Maritime Organization
ASRSC	Applied Science and Research Standing Committee	IPAB	International Programme for Antarctic Buoys
AWI	Alfred Wegener Institute for Polar and Marine Research	ITOPF	International Tanker Owners Pollution Federation Ltd.
BAS	British Antarctic Survey	JPL	Jet Propulsion Laboratory
BSIM	Baltic Sea Ice Meeting	KSAT	Kongsberg Satellite Services
BSH	Bundesamt für Seeschifffahrt und Hydrographie	MMA	Marstal Maritime Academy
BOM	Australian Bureau of Meteorology	MSC	Meteorological Service of Canada
CCG	Canadian Coast Guard	NAIS	North American Ice Service
CDPF	Canadian Data Processing Facility	NERSC	Nansen Environmental and Remote Sensing Center
CIRFA	Centre for Integrated Remote Sensing and Forecasting for Arctic Operations	USNIC	National Ice Center (United States)
CIS	Canadian Ice Service	METNorway	Norwegian Meteorological Institute
CLS	Collecte localisation satellites	NI	The Nautical Institute
CMEMS	Copernicus – Marine Environment Monitoring Service	NOAA	National Oceanic and Atmospheric Administration
CNES	Centre national d'études spatiales, France	NRCC	National Research Council Canada
COMNAP	Council of Managers of National Antarctic Programs	NRL	Naval Research Laboratory
CPOM	Centre for Polar Observation and Modelling	NSIDC	National Snow and Ice Data Center
CSA	Canadian Space Agency	NSOC	NOAA Satellite Operations Center
DICSSC	Data, Information and Customer Support Standing Committee	NTNU	Norwegian University of Science and Technology
DLR	Deutsches Zentrum für Luft- und Raumfahrt (German Aerospace Center)	NWS	National Weather Service
DMI	Danish Meteorological Institute	ONR	Office of Naval Research (U.S.)
ECCC	Environment and Climate Change Canada	SAWS	South Africa Weather Service
EC-PHORS	WMO Executive Council Panel of Experts on Polar and High Altitude Observations, Research and Services	SMHI	Swedish Meteorological and Hydrological Institute
EIS	European Ice Services	SMAC	Servicio Meteorológico de la Armada de Chile
EMSA	European Maritime Safety Agency	SHNA	Servicio de Hidrografía Naval de Argentina
ESA	European Space Agency	SOLOKI	Southern Limit of Known Ice
ETSI	Expert Team on Sea Ice	SPRI	Scott Polar Research Institute
FMI	Finnish Meteorological Institute	UAF	University of Alaska Fairbanks
GPS	Greenland Pilot Service	UCL	University College London
IAATO	International Association of Antarctic Tour Operators	UiT	University of Tromsø
IABP	International Arctic Buoy Program	UTAS	University of Tasmania
		WMO	World Meteorological Organization