



CANADIAN NETWORK FOR INNOVATIVE SHIPBUILDING, MARINE RESEARCH AND TRAINING | RÉSEAU CANADIEN POUR L'INNOVATION DANS LA CONSTRUCTION NAVALE, LA RECHERCHE MARINE ET LA FORMATION

## CISMaRT Workshop on Key Research Themes

November 27, 2018

Admiral's Room, Four Points by Sheraton, Halifax, Nova Scotia

**Tuesday, November 27, 2018**

<b>08:00 – 08:30</b>	Registration and Breakfast	
<b>08:30 – 09:15</b>	<ul style="list-style-type: none"> <li>Objectives and scope of the Workshop</li> <li>Overview of CISMaRT</li> <li>Progress made</li> <li>Next steps</li> </ul>	Workshop Facilitator: Roger Basu
<b>09:15 – 09:45</b>	<i>Technological Challenges Faced by the Canadian Navy Now and in the Future</i> Capt(N) Jacques P. Olivier, DND	
<b>09:45 – 10:15</b>	<i>Autonomous Ships and Uncrewed Workboats</i> Vince den Hertog, Robert Allan Ltd.	
<b>10:15 – 10:35</b>	<b>Coffee break</b>	
<b>10:35 – 11:05</b>	<i>Opportunities for ship time on CCG ships</i> Tarachand Satsangi, CCG	<ul style="list-style-type: none"> <li>CCG ship time: Ideas for use of ship time and guidelines</li> </ul>
<b>11:05 – 11:25</b>	Pilot Project #1: <i>Operational Capabilities of Low and Non-Ice Class Vessels in Ice</i> John MacKay, DRDC	<ul style="list-style-type: none"> <li>Overview and progress will be presented by a main participant of the project.</li> </ul>
<b>11:25 – 11:45</b>	Pilot Projects #2: <i>Development of Best CFD Modeling Practices for Problems Important to Marine Industry</i> Andrew Kendrick, VARD Marine	<ul style="list-style-type: none"> <li>Overview and progress will be presented by a main participant of the project.</li> </ul>
<b>11:45 – 12:05</b>	Pilot Project #3: <i>Effect of Manufacturing Tolerance on Propeller Performance</i> Bodo Gospodnetic, Dominis Engineering	<ul style="list-style-type: none"> <li>Overview and progress will be presented by a main participant of the project.</li> </ul>
<b>12:05 – 13:10</b>	<b>Lunch at Navigator Room</b>	<ul style="list-style-type: none"> <li>Group photo will be taken immediately before lunch</li> </ul>
<b>13:10 – 13:30</b>	<i>Introduction to the Innovation for Defence Excellence and Security Program (IDEaS)</i> Eric Fournier, Leader IDEaS	
<b>13:30 – 13:40</b>	<i>BMT Research Ideas</i> Charles Nisbet, BMT Canada Ltd.	
<b>13:40 – 14:00</b>	<i>Real World Application of Noise Control</i> Mark Oakes & Daniel E. Rolland, Alion Science and Technology Corporation	
<b>14:00 – 14:20</b>	<i>Industry Collaboration Opportunities with HydroComp's "Design for Sustainability Tool" Initiative</i> Don MacPherson, HydroComp, Inc.	
<b>14:20 – 14:40</b>	<b>Coffee break</b>	
<b>14:40 – 16:40</b>	Breakout sessions and general discussions  Breakout Rooms: Explorer, Admiral's, Compass	<ul style="list-style-type: none"> <li>Groups to discuss projects presented in previous session and propose projects</li> <li>Suggest modifications, if necessary, to proposed projects</li> </ul>
<b>16:40 – 17:00</b>	Closing remarks	
<b>18:00 – 19:30</b>	Reception at the Navigator Room	

## CISMART/Transport Canada Workshop on Ship Noise Mitigation Technologies

November 28-29, 2018

Admiral's Room, Four Points by Sheraton, Halifax, Nova Scotia

### Wednesday, November 28, 2018

#### Overall objectives:

- Identify technologies in ship design that are likely to reduce underwater vessel noise, including gaps, limits and barriers to adoption, and to inform international discussions on the need for a review of the existing IMO Guidelines.
- Propose projects to address the identified gaps

<b>07:30 – 08:00</b>	Registration and Breakfast	
<b>08:00 – 08:30</b>	Scope of the Workshop on ship noise mitigation technologies  <i>Canada's vision and plan on marine noise reduction</i> Michelle Sanders, Transport Canada	
<b>08:30 – 12:00</b>	<a href="#"><b>Short Course on Underwater Noise from Ships</b></a> Course Instructor: Michael Bahtiarian, Acentech	
<b>08:30 – 09:30</b>	Fundamentals of underwater sound	<ul style="list-style-type: none"> <li>• Basic introduction of noise (physical description, nomenclature, typical sound levels, etc.)</li> <li>• Shipboard noise sources and paths</li> <li>• Noise measurements</li> <li>• Sources of noise on ships (propeller, machinery, hull, etc.)</li> </ul>
<b>09:30 – 10:30</b>	Ship noise predictions	<ul style="list-style-type: none"> <li>• Airborne noise</li> <li>• Structureborne noise</li> <li>• Methods for predicting noise levels</li> <li>• Analysis methods (CFD, SEA, FEA, etc.)</li> <li>• Comparisons of measured and predicted noise levels</li> </ul>
<b>10:30 – 10:50</b>	<b>Coffee Break</b>	
<b>10:50 – 11:30</b>	Noise control treatments	<ul style="list-style-type: none"> <li>• URN reduction methods</li> <li>• Hull design</li> <li>• Propeller design</li> <li>• Noise control treatments</li> <li>• Isolation systems</li> <li>• Acoustic enclosures</li> <li>• Damping treatments</li> <li>• Shipbuilding QA/QC</li> </ul>
<b>11:30 – 12:00</b>	Acceptance criteria  Vessel case study	<ul style="list-style-type: none"> <li>• Description of damaging levels of noise on sea life</li> <li>• Existing criteria</li> <li>• Case study</li> </ul>
<b>12:00 – 13:00</b>	<b>Lunch at Navigator Room</b> – Screening of Video: <i>"Sonic Sea – Shipping"</i>	<ul style="list-style-type: none"> <li>• Group photo will be taken shortly before lunch.</li> </ul>

# CISMART

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<b>13:00 – 13:10</b>	<b>Overview of the afternoon session</b>	
<b>13:10 – 13:35</b>	<i>Overview of the AQUO, SONIC and related projects – main findings and next steps</i> Eric Baudin, Bureau Veritas	
<b>13:35 – 14:00</b>	<i>Underwater noise from ships – an operator’s perspective</i> Lee Kindberg, Maersk	
<b>14:00 – 14:25</b>	<i>The ECHO program – understanding the underwater noise environment off the coast of southern BC</i> Krista Trounce, Port of Vancouver	
<b>14:25 – 14:50</b>	<i>Propeller noise and its mitigation</i> Holly Neatby, DRDC Atlantic	
<b>14:50 - 15:10</b>	<b>Coffee Break</b>	
<b>15:10 – 15:50</b>	Breakout session	<ul style="list-style-type: none"> <li>• Rooms: Explorer, Admiral’s, Compass and Navigator</li> </ul>
<b>15:50 – 16:50</b>	Breakout presentations and general discussion	<ul style="list-style-type: none"> <li>• Including recommendations for future projects</li> </ul>
<b>16:50 – 17:00</b>	Closing remarks and preview of next day	

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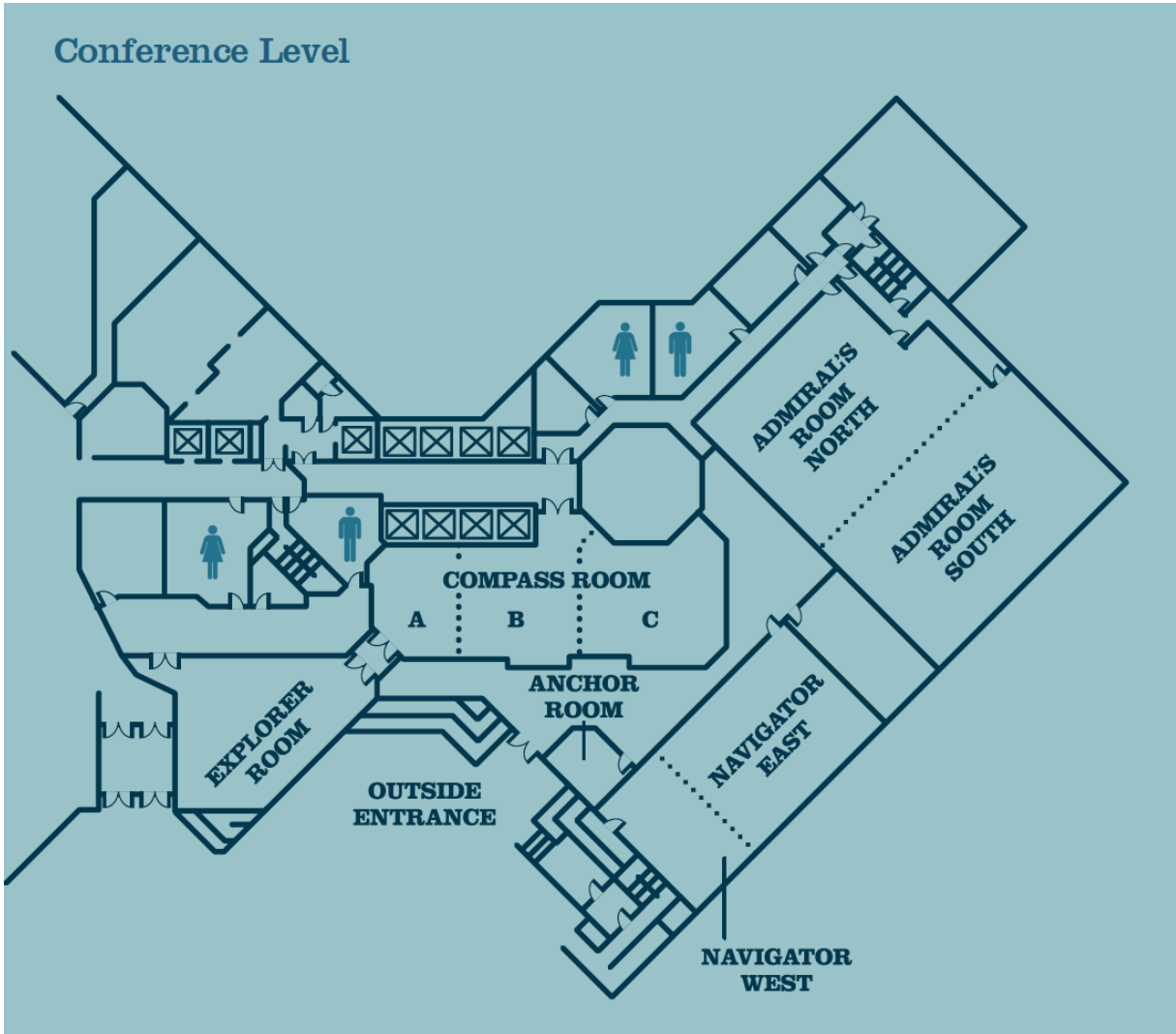
**Thursday, November 29, 2018**

<b>07:30 – 08:00</b>	Breakfast	
<b>08:00 – 08:10</b>	Overview of the final session	
<b>08:10 – 09:15</b>	<i>Technologies to mitigate underwater noise from ships</i> Andrew Kendrick, VARD Marine	
<b>09:15 – 10:15</b>	Breakout session	<ul style="list-style-type: none"> <li>• Rooms: Explorer, Admiral’s, and Navigator</li> </ul>
<b>10:15 – 10:35</b>	<b>Coffee Break</b>	
<b>10:35 – 11:50</b>	Breakout presentations and general discussion	<ul style="list-style-type: none"> <li>• Including recommendations for future projects</li> </ul>
<b>11:50 – 12:00</b>	Closing remarks	

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Floor Plan and Meeting Rooms