



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

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

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

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

CISMART/Transport Canada Workshop on Ship Noise Mitigation Technologies

November 28-29, 2018

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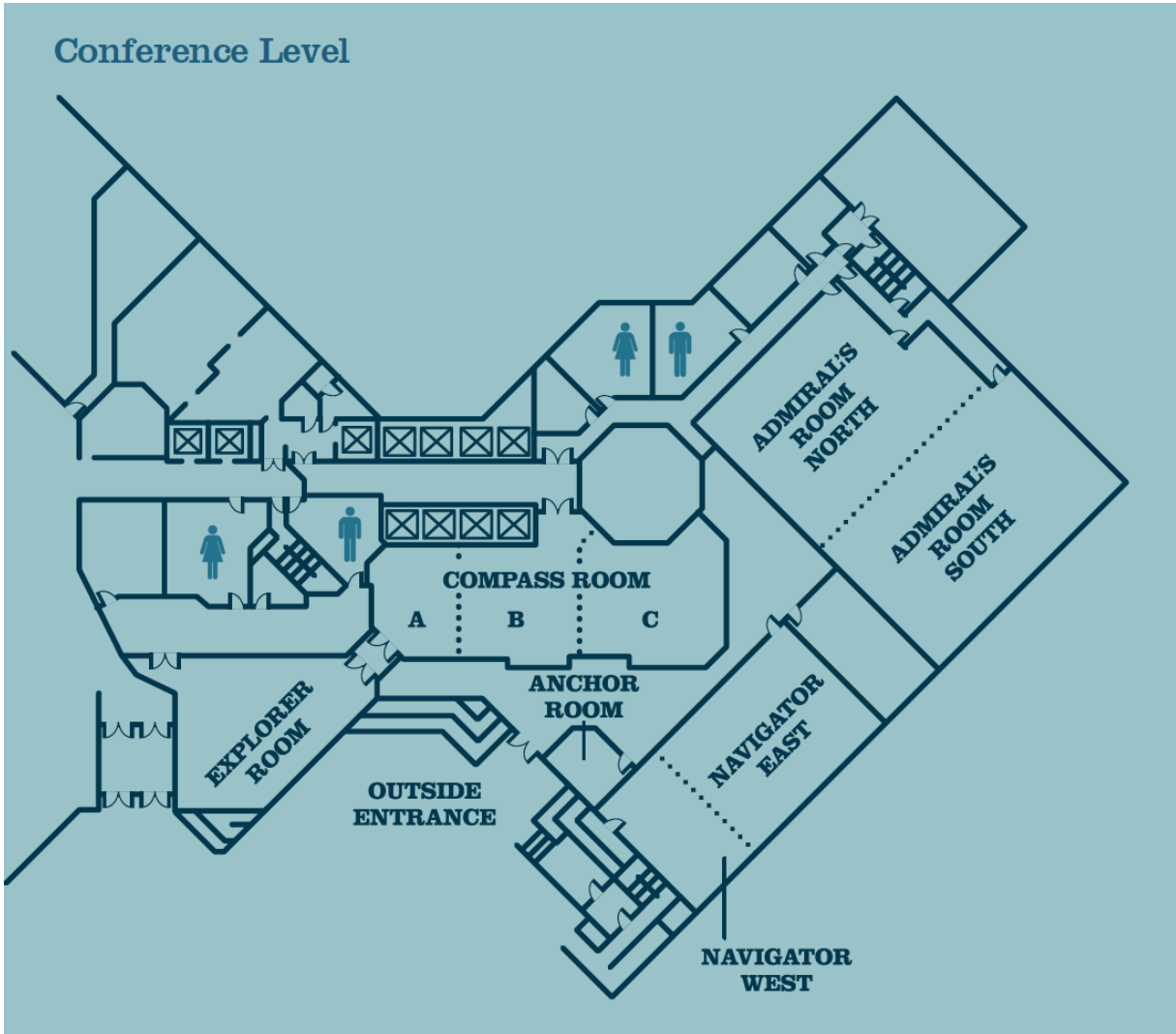
Thursday, November 29, 2018

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

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Floor Plan and Meeting Rooms