



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

# Canadian Network for Innovative Shipbuilding, Marine Research and Training (CISMART)

## *Overview and Updates*

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Memorial University

**Presented at MASS'17**

**October 31, 2017**



# Outline

- Mission, vision and values
- Engaging Canada's marine technology sector
- Technical and training priorities
- Network governance and structure
- Progress made so far
- Next steps and timelines

# CISMaRT

- CISMaRT is a **NATIONAL** network formed on September 26, 2016.
- CISMaRT grew from the identification of technological and training challenges facing the Canadian shipbuilding and marine industry with the renewal of the Canadian Navy and Coast Guard fleets, expansion of the northern water routes of the Arctic and emphasis on the environment and green ship technologies.

# CISMaRT

- Its research and training priorities focus on engineering and the technological aspects important to the marine sector.
- CISMaRT is a unique national network in the marine technology sector complementary to other ocean-science-focused networks.



# Mission

CISMaRT is dedicated to being a world-class network within which its members undertake collaborative R&D in marine technology and improve education and training of highly qualified personnel for Canada's current and future shipbuilding and marine industries.

# Vision

To achieve high quality innovative marine technology R&D and related educational and training initiatives to the primary benefit of the Canada's shipbuilding and marine industry, to contribute to Canada's economic growth, and to support Canadian competitiveness on the global stage.

# Values

- A commitment to collaborative R&D and inventive education and training initiatives of high value to the Canadian marine industry
- A promise to involve all aspects of the marine industry in R&D and education/training projects
- A focus on a high impact contributing to Canadian competitiveness through innovation and commercialization
- An undertaking to form alliances, nationally and internationally, with organizations from the broader marine sector to foster projects of mutual interest

# Engaging Canada's marine sector

- In developing CISMaRT, the Canadian marine community was engaged to gain their input and a level of commitment to the national network.
- Two one-day workshops were held for seeking input from 41 organizations (23 industry, 9 academia and 9 government):
  - UBC Workshop on July 6, 2016
  - MUN Workshop on September 26, 2016





# Key findings – technology themes

- Seven technological areas were identified:

- **Green ship technologies**
- **Marine simulation**
- **Advanced shipbuilding technologies**
- **Ship design and modeling**
- **Arctic technology**
- **Marine safety and cyber security**
- **Automation and control**



- The importance of these themes is consistent with the opinions of the broad global marine community.

# Key findings – education and training

- The main recommendations for improving education and training in the marine technology sector are:
  - **Greater use of work-terms**
  - **Curriculum improvements**
  - **Mid-career training**
  - **Better preparation for high school students/greater awareness**
  - **Practical shipyard experience**

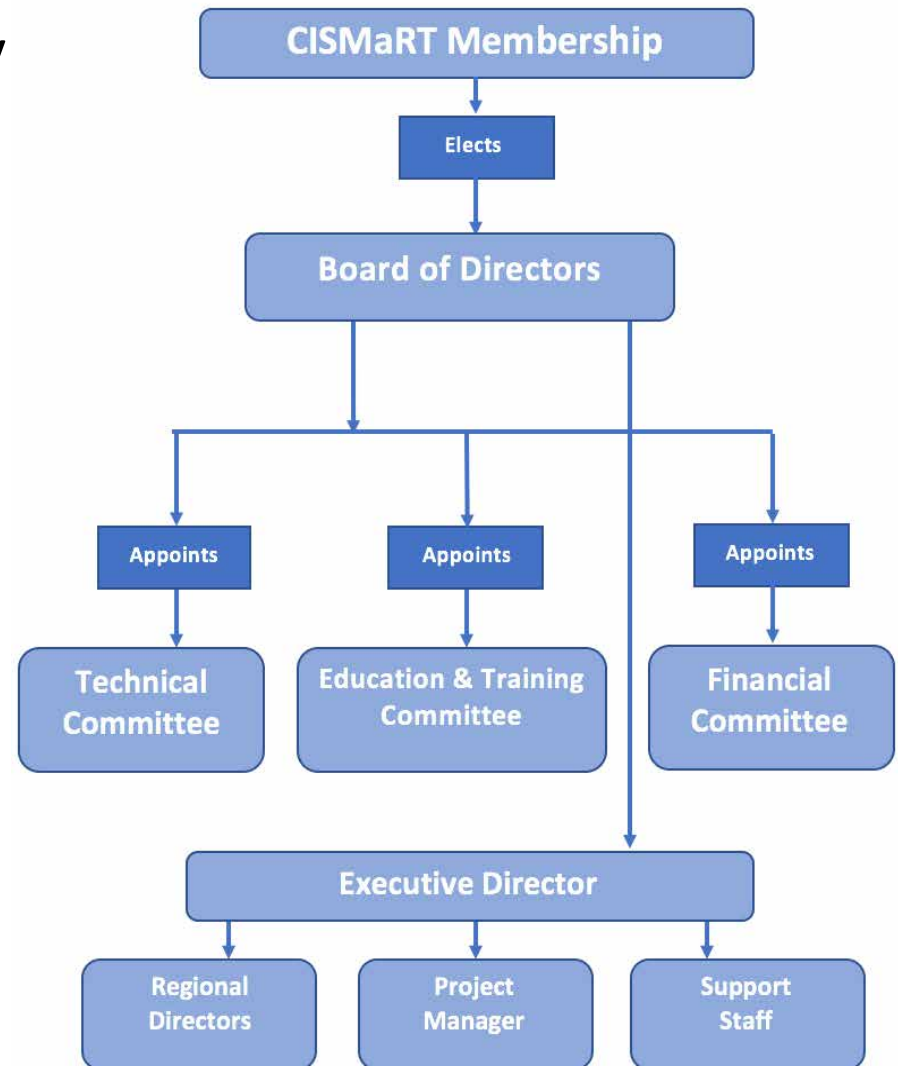


# Key findings – model for CISMaRT

- The model for CISMaRT is based on the successful experiences of CARIC (Consortium for Aerospace Research and Innovation in Canada).
- CISMaRT recognizes the differences between Canada's aerospace and marine industries.

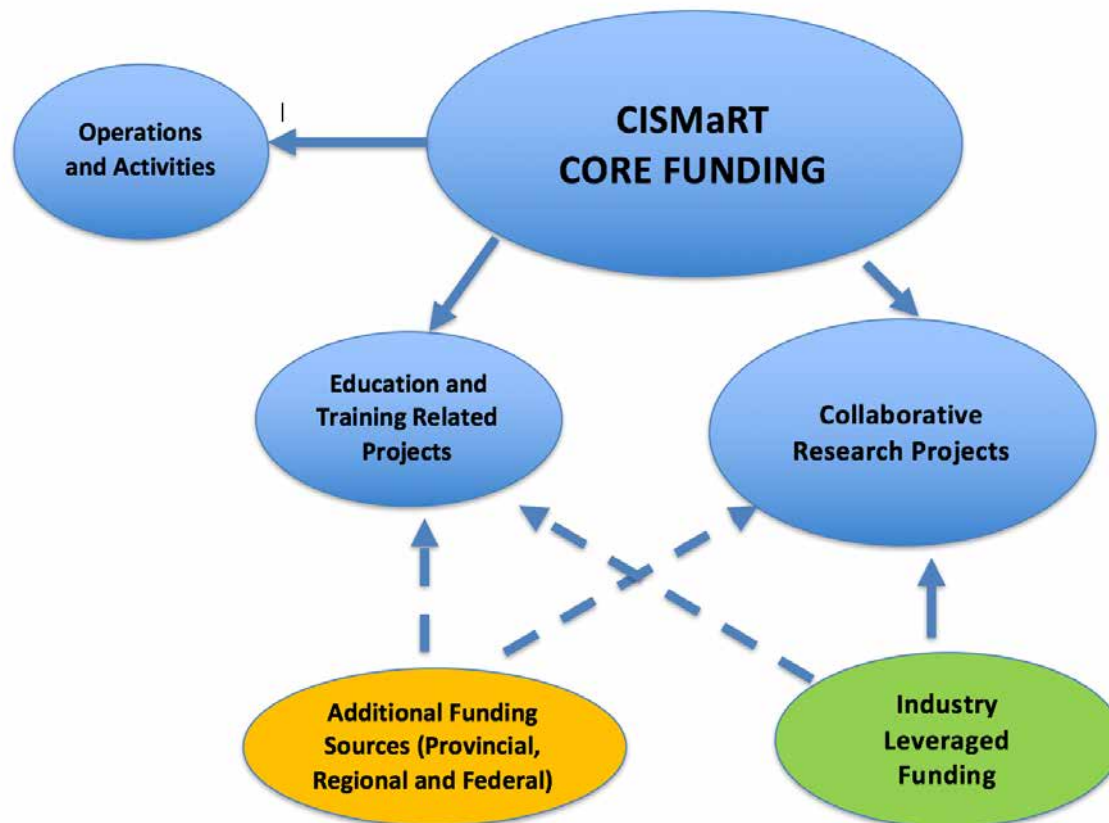
# Organizational structure

- Current activities are managed by an Interim Board (9 members)
- Board will be supported by:
  - Technical Committee
  - Education and Training Committee
  - Financial Committee
- Executive Director and staff will
  - Manage CISMART and administer projects
  - Interact with the wider marine sector
  - Head office at St. John's and regional offices in Vancouver and Ottawa



# Funding model

- Supporting collaborative R&D and training projects with CISMART's core funding, leveraged funds from industry, federal, provincial and regional funding sources.



# Membership

- CISMaRT is membership-based and seeks participation from industry, government and academia.
- The current membership comprises 37 organizations drawn from across Canada representing the broader marine sector including three key stakeholders: industry, government and academia.

## Progress made - strategic plan

- Supported by ISED, a Strategic Plan has been developed – four strategic goals:
  - Become the Canadian network uniting the clusters of R&D and technical expertise under a collaborative umbrella to the benefit of the Canadian shipbuilding and marine industry and the Canadian economy.
  - Foster innovative and sharing culture by helping members to deliver leading-edge and innovative R&D that will address current and future needs of the shipbuilding and marine industry in Canada.

# Progress made - strategic plan

- Create and lead initiatives to improve the education of highly qualified personnel relevant to Canada's shipbuilding and marine industry through collaborative and innovative training programs reflecting the needs of students and personnel working in Canada's marine sector.
- Collaborate with other Canadian and international networks to support research and training outcomes.



# Progress made - workshop on education and training

**C I S M a R T**

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## WORKSHOP MARINE EDUCATION AND TRAINING

**JULY 11<sup>th</sup>**  
**2017**

Sheraton Ottawa Hotel  
Ottawa  
**8:00 AM – 5:00 PM**

For more information, please contact  
**Dr. Wei Qiu** | [qiuw@mun.ca](mailto:qiuw@mun.ca)



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# Progress made - workshop on education and training

- Perspectives from senior representatives from industry, government and academia on education and training in the marine industry were presented
- The current state of education and training in Canada's marine sector, strategies for addressing the challenges, and potential methods for providing solutions were discussed
- Recommendations were made for Canada's marine education and training
- Draft report to be circulated for feedback/comment in a couple of weeks



# Next steps

- Developing detailed implementation plan for the national network (*supported by ACOA and MUN, \$250K, started*).
- Preparing proposals for the core funding.
- Developing pilot projects
  - Will provide momentum for CISMART
  - Assist in publicizing CISMART and growing membership
  - Help refine policies and procedures for conducting collaborative research and educational/training initiatives

# Next steps – pilot projects under development

## #1 Operational Capabilities of Low and Non-ice-class Vessels in Ice

- Project value: \$1.16M over 4 years
- Partners: MUN, DRDC, Vard Marine, ABS, InnovativeNL and NSERC

## #2 Development of QA Guidelines for Best Computational Fluid Dynamics (CFD) Modeling Practice in Naval Architecture

- Project value: \$300K-400K over two years
- Potential partners: MUN, UNB, DRDC, Vard Marine, Envenio, NSERC, MITACS, ACOA, ...

It is anticipated that both projects will start in early 2018.



## Next steps – NCE LOI under development

- Developing a letter of intent (LOI) for a Networks of Centres of Excellence (NCE) application by involving many CISMART members and new partners.
- Requesting \$10M from NCE over 5 years.
- The proposed NCE will support and strengthen the Canadian shipbuilding and marine engineering sector through innovative and collaborative research and development on **smarter**, **greener** and **safer** technologies; and meet the sector's sharply increasing technical and human resource demands.

# Next steps - timelines

- Official website - Dec 2017
- Education and training framework (final version) – Dec 2017
- Program Manager to support collaboration and activities – Jan 2018
- Term of references for technical and education committees – March 2018
- Research framework including IP policies – March 2018
- Board of Directors - to be elected by Jan 2019.

# Contact Information

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# More Information

Please visit

temporary website:

<http://www.engr.mun.ca/~NNISMRT/>

Username: shipnetwork

Password: UBC\_MUN2016!

The website will be replaced by [www.cismart.ca](http://www.cismart.ca) without a password soon...