National Network for Innovative Shipbuilding, Marine Research and Training (iSMART)

Progress Report

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Outline

- The iSMART Network Concept

- Approach
    - Engaging Canada's marine sector
    - Two workshops

- Summary of UBC Workshop

The iSMART Concept

- The objectives of iSMART :

  - Encourage collaborative and innovative marine research among Canadian universities/colleges, research institutions, government agencies and the private sector that reflects the needs of the Canadian marine community and supports Canadian competitiveness on the global stage.

  - Establish a national shipbuilding/marine network to undertake relevant applied research and contribute to the development of innovative technologies.
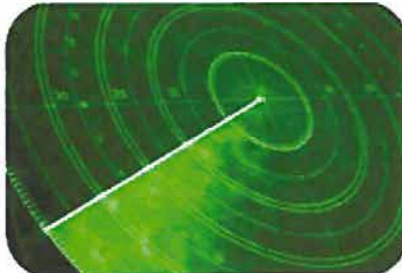
The iSMART Concept

- The objectives of iSMART (continued):

  - Improve marine-related educational programs to yield highly-qualified graduates for employment in Canadian industry and government.

  - Provide contractors with potential areas for investment that could generate long-term economic benefits for the broader marine sector in Canada while helping the contractors meet their obligations under the Industrial and Technological Benefits (ITB) Policy.

- Examples of Sub-Sectors (source: ISED)

Shipbuilding, Repair, Maintenance and Refit

Mission Systems

Ship Platform Systems

Offshore Oil and Gas Structures and Equipment

Ocean Technologies

Design, Engineering and Related Professional Services

The Approach

- In developing iSMART, it was considered important to engage with the Canadian marine community, seek the input, and gain a level of commitment to iSMART.

- Two one-day workshops were planned for seeking input from the stakeholders (academia, industry and government):

  - The UBC Workshop on July 6, 2016
  - The MU Workshop on September 26, 2016

The UBC Workshop

- The overall objective of the one-day workshop was to establish the technology areas that iSMART should focus on and also solicit input on how the Network should be organized.

- The workshop participants were carefully invited to broadly represent the Canadian marine community.

- There were approximately equal numbers of participants from industry, academia and government (35 people in total).

- The morning sessions were devoted to providing a context for the discussions.

- Presentation topics:

  - A general overview of current trends in the world marine industry,

  - How marine technology is developed in different countries,

  - An overview of current capabilities in marine technology of Canadian universities, and

  - Presentations from industry and government on how the presenters' organizations currently satisfy their research and training needs. They also provided input on how iSMART could be organized.

- Identifying which marine research themes are considered most relevant for Canada.

- Establishing which organizational model would be most suitable for iSMART and also which is the best strategy to adopt for setting up the Network.

- Breakout sessions were held in which groups of five or six participants brainstormed the issues and then presented their findings to the entire workshop.

The UBC Workshop – Key Findings

- Technologies

- Education and Training

- Strategy and Roadmap Development

- Potential Models for iSMART

- Next Steps

Key Findings – Technology Themes

- The first seven technologies were identified in order of importance

    - **Green ship technologies**

    - **Marine simulation**

    - **Advanced shipbuilding technologies**

    - **Ship design issues concerned with systems design and modeling**

    - **Arctic technology**

    - **Cyber security**

    - **Automation and control**

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

- The appearance of Arctic technology is of course a reflection of Canada's major interest in the Arctic.

Key Findings – Education and Training

- The main recommendations for improving education and training in marine sector are

  - **Greater use of work-terms**

  - **Curriculum improvements**

  - **Mid-career training**

  - **Better preparation for high school students / greater awareness**

  - **Practical shipyard experience**

- A separate iSMART workshop is needed to discuss education and training.

Key Findings – Strategy and Roadmap Development

- In developing a strategy for implementing iSMART, the following factors were considered in order of importance:

  - **Emphasize research needs of Canadian marine industry**

  - **Form multi-university partnerships in Canada**

  - **Create/state a clear purpose and terms of reference**

  - **Technological business opportunities**

  - **Act as a clearinghouse for current funding sources**

Key Findings – Models for iSMART

- The participants were asked to consider what type of organization iSMART should adopt.

- A few existing collaborative arrangements in North America and Europe were discussed.

- Subsequent investigations suggest that CARIC (Consortium for Aerospace Research and Innovation in Canada) might be an excellent model for iSMART.

Key Findings – Next Steps

- Issues that should be given priority in initiating the process of setting up iSMART as recommended by the participants in order of priority are:

  - **Get buy-in from industry**

  - **Establish sources of funding**

  - **Develop membership for the National Network**

  - **Get buy-in from government**