Joint conference of e-Navigation Underway (North America) 2017 with Ocean Innovation 2017

Conclusions and Recommendations

Conclusions

1. **Private/Public Partnerships**
   Private/Public Partnerships are a viable way to fill user needs

2. **Value of AIS Data**
   AIS data is a marketable commodity

3. **Maritime Domain Awareness**
   In addition to navigational safety and facilitation of transportation, MDA can be used by (indigenous) communities to share situational awareness

4. **Navigational Display Types**
   Information relevant to safe navigation can be presented on devices beyond traditional ECDIS and ECS (i.e. Tablets, Smart Phones)

5. **Real-Time Monitoring**
   Machine-based real-time ship traffic analysis that uses rules to interpret a ship's behavior can automatically alert Shore-based authorities of potentially dangerous situations well before they become critical

6, **AIS Infrastructure**
   Tracking open ocean polar ship traffic can successfully be achieved using satellite-based systems, however, marine domain awareness of polar near shore traffic and traffic through marine life protection and shallow areas requires an infrastructure of interconnected terrestrial AIS stations

7. **ENC's**
   Currently Electronic Nautical Charts (ENC's) of some polar ports are inadequate

8. **Hydrophones**
   Hydrophones can detect marine life in real-time that mariners could use to minimize interference

9. **Navigational Display**
   Display near real-time ice information as a layer on the navigation display along with ice radar information.

10. **Suggested Routes**
    Route exchange can be used to suggest routes that take into account shore-based expertise and experience as well as traffic congestion and berth availability

11. **Autonomous Ships**
    Social and legal acceptance of autonomous ships lags well behind technology currently being developed and tested

12. **Governance**
    Governance of Maritime Connectivity Platform and MSP's that will use MCP requires an international governance structure that has yet to be established

13. **Ice Thickness Sensors**

Recommendations

1. Safety of shipping can be improved by using real-time ship traffic analysis

2. Encourage International Collaboration to develop World-wide Standards

3. Improve digital wireless communications infrastructure in polar regions

4. ASM to convey Max Wave Height

5. ECDIS Systems software meet minimum software standards (IEC 62288 Ed 2)

6. Require display ASM Information on radar

7. Traditional navigation methods will need to be taught to mariners even in the age of highly automated bridge systems particularly in polar regions

8. GNSS systems used in polar regions should be able to use all available GPS Satellite Systems