



Digital@Sea North America

(formerly e-Navigation Underway N.A.)



RTCM – the Beacon for Maritime
Communications and Navigation

Presented By: Ed Wendlandt
President

Digital@Sea North America

- Prior Conference Topics
- Conclusions/Recommendations from last meeting
- Theme and program for the upcoming conference
- Plans for future conferences



Enabling e-Navigation: Today and Tomorrow
Building the Infrastructure and Reaping the Benefits

November 12-13, 2019

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- **Prior Conference Topics**

- **Theme and Tagline**

- **Enabling e-Navigation: Today and Tomorrow,**
 - *Building the Infrastructure and Reaping the Benefits*

- **Keynote and Luncheon Speakers**

- VADM Daniel B. Abel, USCG, Deputy Commandant for Operations
 - Francis Zachariae, Secretary-General of IALA
 - Mr Mario Pelletier, Deputy Commissioner, Operations, Canadian Coast Guard



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- **Prior Conference Topics**

- ***Sessions***

- 1. E-Navigation Development and Infrastructure***

- IMO Developments
 - E-Navigation Solutions – Smart Navigation Project
 - The Maritime Connectivity Platform
 - Electronic Ship Reporting
 - Connectivity – Critical Key to Development
 - Top 5 COLREG Challenges facing Autonomous Vessel Operators

- 2. North American Governmental Plans and Programs***

- U.S. Army Corps of Engineers
 - NOAA Office of Coast Survey
 - U.S. Coast Guard Office of Navigation
 - Canadian Coast Guard Aids to Navigation and Waterways
 - Cyber Security



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- **Prior Conference Topics**

- *Sessions*

- 3. *New Technology and Tools***

- RCN Use of Augment Reality for Maintenance
 - Obstacle Zone by Target (OTZ) Information Display System
 - SMART Technology providing tangible benefits for the Maritime Industry
 - E-Navigation and Passage Planning
 - Sea Traffic Management

- 4. *Wrap Up – Conclusions and Recommendations***



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Conclusions

1. Connectivity and Data sharing will be key elements of any e-Navigation solution moving forward
2. Standardization and harmonization of e-Navigation aspects, including ship reporting elements is paramount
3. Ship owners/operators will likely invest in onboard ship reporting apps if they address reporting requirements in most ports
4. Adding recognition of Iridium and BeiDou as GMDSS service providers will expand the communication capabilities
5. Cyber Security is a growing concern. MSC-FAL.1/Circ.3 and MSC.428(98) are addressing cyber risks and risk management



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Conclusions

6. Maritime Services (MS) are under development. Korea's SMART Navigation Project is developing several Maritime Services utilizing the Maritime Connectivity Platform
7. MCP Consortium formed to provide development of reference Maritime Service implementations to enable others to adopt the implementation and provide the service
8. Augmented and Mixed Reality can be used to improve maintenance but also support other Maritime Services including Maritime Service 9 – Telemedical Assistance Service
9. The USACE initiative RIS - River Information Services – will make navigation data more accessible to users in operational decision making



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Recommendations

1. Automated ship reporting systems should allow countries to continue to receive PDF forms created out of the ship reporting database
2. Consider using the future standard for Route Plan Exchange (S-421, IEC 63173) as a basis and integrate other data elements as extensions to this standard
3. Cyber Security needs to be considered, including a framework for secure identity management (as provided by the MCP)
4. Existing data standards need to be enhanced. The IMO Common Maritime Data Structure (CMDs), i.e., S-100 standards, are to be used to ensure compatibility between different data sets



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Recommendations

5. Any activities need to ensure they consider improving standardization for the maritime domain
6. MS expansions should be worked on to ensure harmonization of services in the maritime domain
7. Continue development of autonomous maritime radio devices and identities
8. Continue to monitor and support work by Public Authorities to establish compatible systems for the electronic exchange of information
9. Monitor the deployment and testing of new satellite systems coming online such as OneWeb



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- ***Theme and Program Outline for the NEXT Digital@Sea North America***

- ***Theme: Navigating Our Digital Waterways***

- ***Sessions***

- 1. E-Navigation Plans and Implementation***

- Strategic Implementation Plan
 - IALA Digital@Sea Update
 - IHO Developments

- 2. North American Governmental Plans and Programs***

- U.S. Coast Guard Office of Navigation
 - Canadian Coast Guard Aids to Navigation and Waterways
 - U.S. Army Corps of Engineers
 - NOAA Office of Coast Survey
 - Canada Hydrographic Service



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– *Sessions (continued)*

3. *E-Navigation on the Horizon*

- VDES
- ASM via VDES
- VDES and PNT

4. *E-Navigation on the Horizon*

- ENAV via LEO
- Broadcast Notice to Mariners via the World Wide Web
- Waterways Assessment and Management System (WAMS) 2.0
- River Information Service

5. *E-Navigation Today*

- Under-keel clearance at Port of Long Beach
- Weather via Ship to AIS SAT
- Weather via AIS from Shore
- Antigua Single Window Reporting

6. *Report and Wrap-Up*



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Plans for Future Conferences

1. Alternate conferences between U.S. and Canada
2. Hold in conjunction with Canadian Mariners Workshop
3. Seeking opportunity to hold in conjunction with RTCM and NMEA annual conference
4. Resolve conflict with government fiscal year and proximity to D@S Asia Pacific.





Thank you!

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Communications