IALA’S WORK IN E-NAVIGATION

Michael Card
e-Navigation origins

The early work of IALA on e-Navigation
Autonomous Ships Will Be Great

Doing away with sailors will make the high seas safer and cleaner.

London Times – “We’d Be Lost Without GPS Says Royal Institute of Navigation”
December 5, 2017

Blog Editor’s Note: The British government has been actively addressing this issue. See the economic impact analysis they did earlier this year. We understand additional work...

About Sea Traffic Management

STM - THE NEXT STEP FOR A SAFER, MORE EFFICIENT AND ENVIRONMENTALLY FRIENDLY MARITIME SECTOR

Space technology to drive autonomous ships
December 1, 2017

ESA Director General Jan Woerner signed a Memorandum of Intent with Rolls-Royce today, as the two entities agree to investigate how space technology can be used to develop autonomous and remote-controlled ships.

THE PORT CDM CONCEPT – A FINALIST FOR INNOVATION AWARD

Route plan exchange format - RTZ
Route plan exchange is used in conjunction with ECDIS to IEC 61174.
Multiple Initiatives

- EfficienSea 2
- STM Validation
- IHO S-100 and IALA S-200
- Smart Navigation
- VDES development
- FERNS role and reach
- R-Mode using VDE signals and MF
- VDE trials, in E2 etc.
- RTZ
- A.857(20) revision

- IMO HGDM (ends 2018?)
- IMO SIP (future ?)
- Single Window initiatives
- MASS projects and study groups
- International PortCDM Council
- MRN
- Maritime Connectivity Platform
- Charter party contract revision
- VDES Satellites already in orbit
- AMRDs and MAtoNs
1. Course over the Ground

• Strategic Vision
• Committees
• IALA Council and the Policy Advisory Panel
Strategic Vision – Goals and Strategies to 2026

• **G1** – Marine Aids to Navigation are harmonised through international cooperation and the provision of standards

  • **S5** - Harmonise the information structure and communications for future navigation by creating standards, and by cooperation with other international organisations, to achieve worldwide interoperability of shore and ship systems.

  • **S6** - Improve and harmonise the delivery of VTS globally and in a manner consistent with international conventions, national legislation and public expectations, to ensure the safety and efficiency of vessel traffic and to protect the environment.
IALA will work to develop VDES as a successor to the present AIS, including AIS frequencies AIS1 and AIS2. Shore authorities should consider converting their existing AIS base station networks to VDES base station networks as soon as the technical characteristics of VDES have been finalised and equipment is available.

VDES is expected to become an important means for shore authorities to provide toll-free harmonised digital maritime services in coastal and harbour areas and free the channels AIS1 and AIS2 for safety of navigation.

VDES will require upgrading of ship AIS systems to the VDES standard. This may involve firmware upgrade for some newer AIS ship units or replacement of hardware for older units.

IALA will maintain its online register of AIS Application Specific Messages and will encourage the moving of these and other messages which are not for safety of navigation from AIS1 and AIS2 to other VDES channels.
Technical Documents Supporting the Strategy

- Maritime Radio Communications Plan (MRCP)
- World-Wide Radionavigation Plan
- Vessel Traffic Services Plan
- Other supporting documents

Document group  Document  Content
2. Focus Areas

- The Efficiency of Sea Traffic
- The Efficiency of Port Operations
- Digital Connectivity and the Provision of Maritime Services
Sea Traffic and Coastal

• The Efficiency of Sea Traffic
  • Sea Traffic Management concepts
  • A new vision for VTS – “Future VTS”
    • Digital provision of services
  • And possibly the merging of VTS and STM into new Shore Centres
Port Operations

- The Efficiency of Port Operations
  - Future Harbour VTS managing ship movements for maximum port efficiency
  - Pilotage, Reporting, Berth services, Customs, MASS services
  - Port CDM - coordinating local services and ship-shore interaction
  - Resilient PNT
  - Inland [river] transportation coordination
Digital Connectivity and Maritime Services

• Digital Connectivity and the Provision of Maritime Services
  • Harmonised digital connectivity
  • Coordinated digital services, global and regional
  • Harmonised messages allowing all stake-holders to create own services
3. Committee Structure

- Number of Committees
- Responsibilities
- Leadership
Shore Services and Connectivity

- Harmonised data models
- Connectivity, including communications
- Resilient positioning
- Future digital Vessel Traffic Services
- Shore services from Competent Authorities
IALA Committee Structure for 2018-2022

- **AtoN Requirements and Management (ARM)**
  - AtoN Planning and Service Requirements
  - Training and Certification
  - Heritage Forum

- **AtoN Engineering and Sustainability (ENG)**
  - AtoN Design and Delivery
  - Radionavigation Services
  - Training and Certification

- **e-Navigation Information Services and Communications (ENAV)**
  - Information Services
  - Digital communications technologies
  - Training and Certification

- **Vessel Traffic Services (VTS)**
  - Vessel Traffic Services
  - Training and Certification
<table>
<thead>
<tr>
<th>Committee</th>
<th>Work Domains (from Standards structure)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AtoN Requirements and Management (ARM)</strong></td>
<td></td>
</tr>
<tr>
<td>AtoN Planning and Service Requirements</td>
<td>Obligations and regulatory compliance</td>
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<td>Risk Management</td>
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<td></td>
<td>Levels of service objectives</td>
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<td>Quality management</td>
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<td>AtoN Planning</td>
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<td>Virtual marking</td>
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<tr>
<td><strong>Information Services</strong></td>
<td>Management of Maritime Service Portfolios and S-200</td>
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<tr>
<td></td>
<td>Terminology, symbology, and portrayal</td>
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<td><strong>AtoN Engineering and Sustainability (ENG)</strong></td>
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<td>AtoN Design and Delivery</td>
<td>Visual signalling</td>
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<td>Range and performance</td>
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<td>Design, Implementation &amp; Maintenance</td>
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<td>Power systems</td>
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<td>Floating AtoN</td>
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<td>Environment, Sustainability &amp; Legacy</td>
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<td><strong>Radionavigation Services</strong></td>
<td>Satellite positioning and timing</td>
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<td>Terrestrial positioning and timing</td>
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<td>Racon &amp; radar positioning</td>
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<td>Augmentation services</td>
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<td><strong>e-Navigation Information Services and Communications (ENAV)</strong></td>
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<td>Digital Communications Technologies</td>
<td>Wide/Medium bandwidth systems (AIS &amp; VDES)</td>
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<td>Narrow bandwidth systems (NAVDAT, MF beacons, etc.)</td>
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<td>Harmonised maritime connectivity</td>
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<td>Information Services</td>
<td>Data models and data encoding (IVEF, S-100, S-200, ASM, etc.)</td>
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<td>Vessel tracking and data exchange systems</td>
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<td>e-Navigation user requirements</td>
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<td>VTS implementation</td>
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<td>VTS operations</td>
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<td>VTS technologies</td>
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<td>VTS Auditing and assessing</td>
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<td>VTS additional services</td>
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IALA Committee Roles in e-Navigation to 2022

IALA's Work in e-Navigation 2018-2022

ARM
- Information services
- Portrayal

ENG
- RPNT
- Smart fairways

VTS
- A.857(20) Revision and Future VTS
- Digital VTS services

ENAV
- Information services
- Digital Communications
THANK YOU

Michael Card