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# Industry Standards in Maritime -
# Case Navigation and Radiocommunication


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# Industry Standards in Maritime – Case Navigation and Radiocommunication

Seminar on Digitalization and Safety of Maritime and Technology Industry
Turku, 14 December 2023

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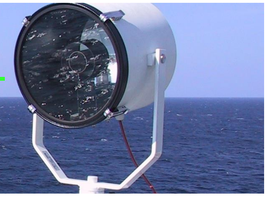
## About the presenter

Started working for the maritime industry in 2000 in Aspo Systems Oy, presently known as Furuno Finland Oy

Nominated expert in various IEC TC 80 and ISO TC 8 workgroups since 2013

# Industry Standards in Maritime - Case Navigation and Radiocommunication



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## Contents of this presentation

- The relation between Regulations and industry standards, mainly in the domain of maritime navigation and radiocommunication equipment and systems
- Relevant standardisation organisations and standard development process
- Examples of content of some industry standards in use today
- Who contributes the development of industry standards
- How to get involved – what's in it for you
- Examples of ongoing development








# Regulations and industry standards

- Maritime shipping is international business and is therefore regulated by international and Inter-Governmental organisations
  - Examples of related Inter-Governmental Organisations: IMO, ITU, IHO
  - Example of related international organisations: IALA, IACS
- Regulations are supported by international industry standards by:
  - Forming the basis for testing and certification of equipment and systems that are developed to meet the Regulations,
  - Providing further details on the requirements where needed, while keeping the content compliant with the original requirements stated in Regulations.






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# Regulations and industry standards

- International industry standards may provide specifications for additional voluntary functions, but in such way where the standard remains compliant with any Regulations that are applicable in the context of such standard.





**Sometimes industry standards may be developed to describe solutions that are not directly mentioned in Regulations**




# Relevant standardisation organisations

**ISO – International Organisation for Standardisation**

- ISO TC8 Ships and Marine Technology
  - Oldest technical committee in standardisation specifically related to shipbuilding
  - Mirrors the work of IMO MSC, MEPC and FAL
  - Several subcommittees and WGs, for example SC 6 Navigation and Ship operations, WG 10 Smart Shipping
  - Not only international shipping related, but works also on other aspects of marine technology such as dredging, ocean environmental sensor technology, etc.

**IEC – International Electrotechnical Commission**

- IEC TC18 Electrical installations of ships and of mobile and fixed offshore units
  - Standards for electrical installations and equipment of ships and of mobile and fixed offshore units
- IEC TC80 Maritime navigation and radiocommunication equipment and systems
  - Mirrors the work of IMO MSC, ITU, IACS and IALA for items related to maritime navigation and radiocommunication equipment and systems
  - Most of the standards developed by IEC TC80 are covering equipment that are subject to IMO carriage requirements.

**Regional standardisation organisations**





ISO

IEC International Electrotechnical Commission

**There are international and regional standardisation organisations**

RTCM

CEN CENELEC

ETSI


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# Typical standard development process

- Basic principle of standard development work is to reach consensus

| | Stages | Action | Documents |
|---|---|---|---|
| 1 | Preliminary (optional) | Preliminary work item added to the work programme | PWI — P-members decision required (simple majority) |
| 2 | Proposal | Proposal to start a new project comes from NC, TC, SMB, liaison org. | NP — Vote → RVN |
| 3 | Preparatory | Preparation of Working Draft within the working group (WD) | WD — Internal to WG, not circulated |
| 4 | Committee | Working draft circulated as Committee Draft (CD) | CD — Comments → CC |
| 5 | Enquiry | When mature, the CD is circulated as a Committee Draft for Vote (CDV) | CDV — Vote + Comments → RVC |
| 6 | Approval | Final Draft International Standard prepared from approved CDV and NCs comments (FDIS) | FDIS — Vote + Comments → RVD |
| 7 | Publication | IEC publishes International Standard (IS) | IS |

IEC International Electrotechnical Commission





**Maximum time to develop an idea to a draft standard is 24 months** (2/RVN–5/CDV)

**Approval will take typically 12-16 months** (5/CDV–7/IS)

**Cancellation limit is 5 years** (2/RVN–6/FDIS)


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# Examples of current industry standards

- Depending on need, the scope of an industry standard can vary from very detailed specification to being an overall description of a generic approach on a topic
- Industry standard is not normative *unless* it is referenced in normative way in Regulations, for example EU Marine Equipment Directive (MED)

Examples from NAVCOM domain:

- horizontal standard: IEC 61162 - interfaces
  - Describes the format of data exchange between equipment and systems
  - Applicable to most NAVCOM equipment onboard
- (vertical) equipment standard: ISO 11674 - Heading control system
  - Describes specific functional and performance requirements and their tests for autopilot
- Voluntary standard: ISO 19847, 19848
  - Shipboard data servers and standard data
  - Describes method for collecting, storing and reporting of shipboard data in a standardised format
  - Not referenced in normative way by regulations, a purely voluntary industry standard

$--HDT, x.x, T*hh<CR><LF>

Heading, degrees true



Antti Kukkonen

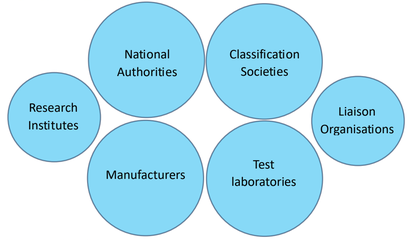


**Industry standards are not normative unless referenced in normative way in Regulations**




# Who contributes

- Industry standards are developed by voluntary experts working for equipment and system manufacturers, classification societies, national authorities supervising compliance to regulations and for test houses providing compliance assessment of equipment and systems. Research Institutes and organisations in liaison may sometimes provide project specific or other contribution.









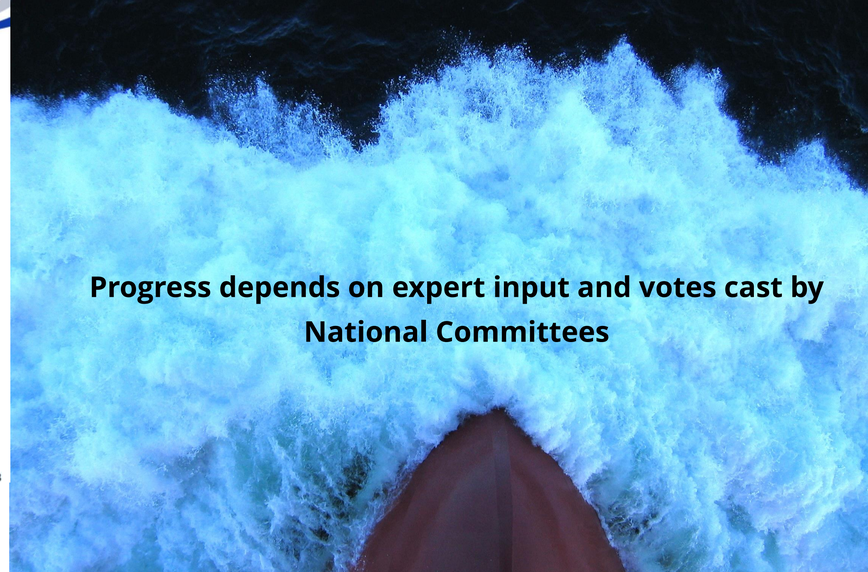


# Who contributes

- To formalise and provide structure on the input from experts, committees are managed by yet other voluntary individuals. Typical committee structure includes:
  - Nominated project leaders for specific projects (for example development or maintenance of a standard)
  - Convenors for workgroups, project teams and maintenance teams
  - Committee secretary and Committee chair
  - Committees are further supported by the central secretariat of the standardisation organisation who provides framework for voting, final editing, publication and sales of developed standards
- Progress of all work items depend on inputs received from voluntary experts and votes cast by National Committees










# How to get involved

- Industry standardisation is open for everyone
  - Participation happens through your national member body
    - in Finland SESKO for IEC, SFS for ISO and TRAFICOM for ITU.
- When you have a good idea and want to contribute industry standardisation with it:
  - Study which existing standard you want to contribute with your idea - if none exists yet, new work proposals for completely new standards are always welcome within the scope of a committee,
  - Have yourself nominated as a national expert in a relevant Technical Committee and workgroup,
  - Formulate the idea in a document and submit this to the committee or workgroup,
  - Prepare to offer yourself for the position of project leader to bring your idea forward and in this role lead the development towards consensus with other industry experts present in the workgroup.





SESKO

TRAFICOM
Liikenne- ja viestintävirasto

SFS METSTA

**Attend through your national member organisation**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# What's in it for You

- By participating you will:
  - Have opportunity to reach other experts within the industry worldwide and reflect your ideas with them,
  - Have opportunity to get your idea or solution included as a part of a document representing international consensus,
  - Have a good understanding of the content of an upcoming standard ~1-2 years before the standard becomes available in public for purchase.
- Good to know:
  - Prepare your proposal well, 2 years goes very fast in international environment
  - Be active and attend all related meetings – and coffee breaks!
  - A standard alone does not create market for your idea or solution, but it may help,
  - You are expected to disclose any IPR that you may have or know about, on the content of work items proposed and handled




View ahead

Feedback

Recognition

"Standardisation is as easy as hay-making"

Not a silver bullet

Prepare well

Be active

Disclose any IPR




# Examples of ongoing development

- Implementation of IMO modernization of the GMDSS into applicable industry standards (IEC 61097 series)
- Implementation of support for IHO S-100 products (IEC 61174 ECDIS)
- VHF Data Exchange System (VDES) mobile station industry standard under development (IEC 63514)
- GPS related SBAS industry standard under approval (IEC 61108-7)
- EMC of Electrical and electronic installations in ships under review (IEC 60533)

- Implementation of Bridge Alert Management is underway (most equipment standards are affected, many completed, some under development, some yet waiting for review)

- Standards on ship-to-shore data exchange under development or completed (ISO 18131, ISO 23807, IEC 63173-1, IEC 63173-2)
- Interoperability of smart applications onboard ships under approval (ISO 4891)





Thank you for your attention -
Questions?


**Links:**

- IEC
  - IEC TC 18
  - IEC TC 80
- ISO
- ISO TC8
- SESKO
  - SESKO SR 18
  - SESKO SR 80
- SFS
  - Metsta SR 008

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