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.

By Adam Minter

34 16 May 2017 23:00

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...

Read More

About Sea Traffic Management

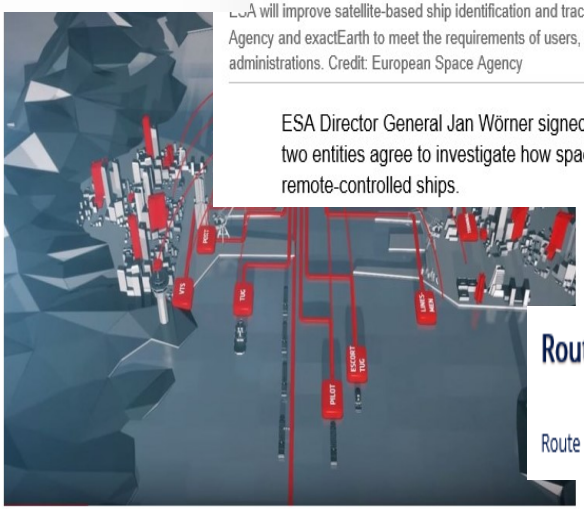
STM – THE NEXT STEP FOR A SAFER, MORE EFFICIENT AND ENVIRONMENTALLY FRIENDLY MARITIME SECTOR

Space technology to drive autonomous ships

December 1, 2017

ESA will improve satellite-based ship identification and tracking in partnership with the European Maritime Safety Agency and exactEarth to meet the requirements of users, particularly those of government agencies such as coastal administrations. Credit: European Space Agency

ESA Director General Jan Wörner 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.



Route plan exchange format - RTZ

Route plan exchange is used in conjunction with ECDIS to IEC 61174.

THE PORT CDM CONCEPT – A FINALIST FOR INNOVATION AWARD

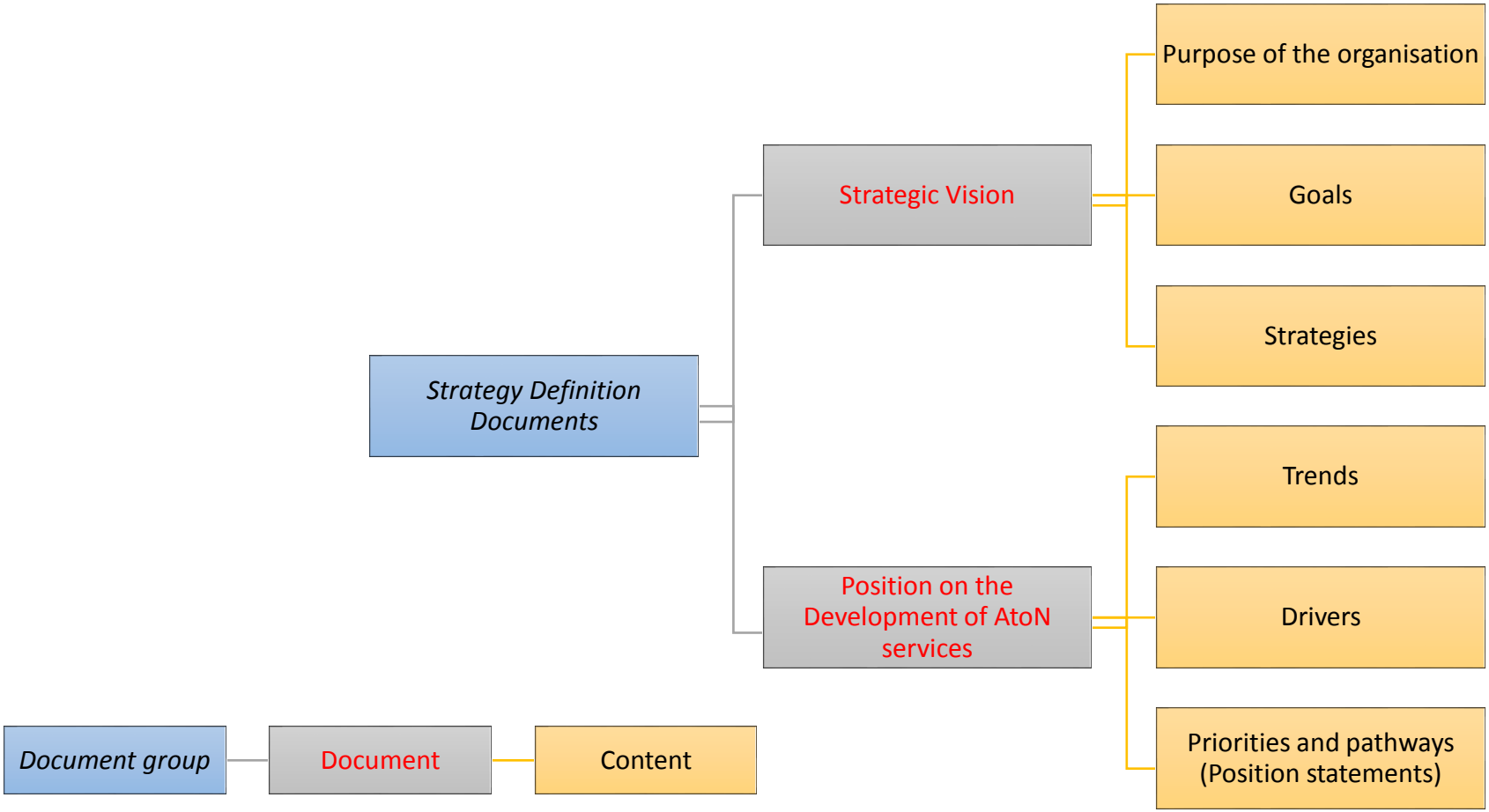
Multiple Initiatives

- 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) revison
- 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

IALA Strategic Vision



Strategic Vision – Goals and Strategies to 2026

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

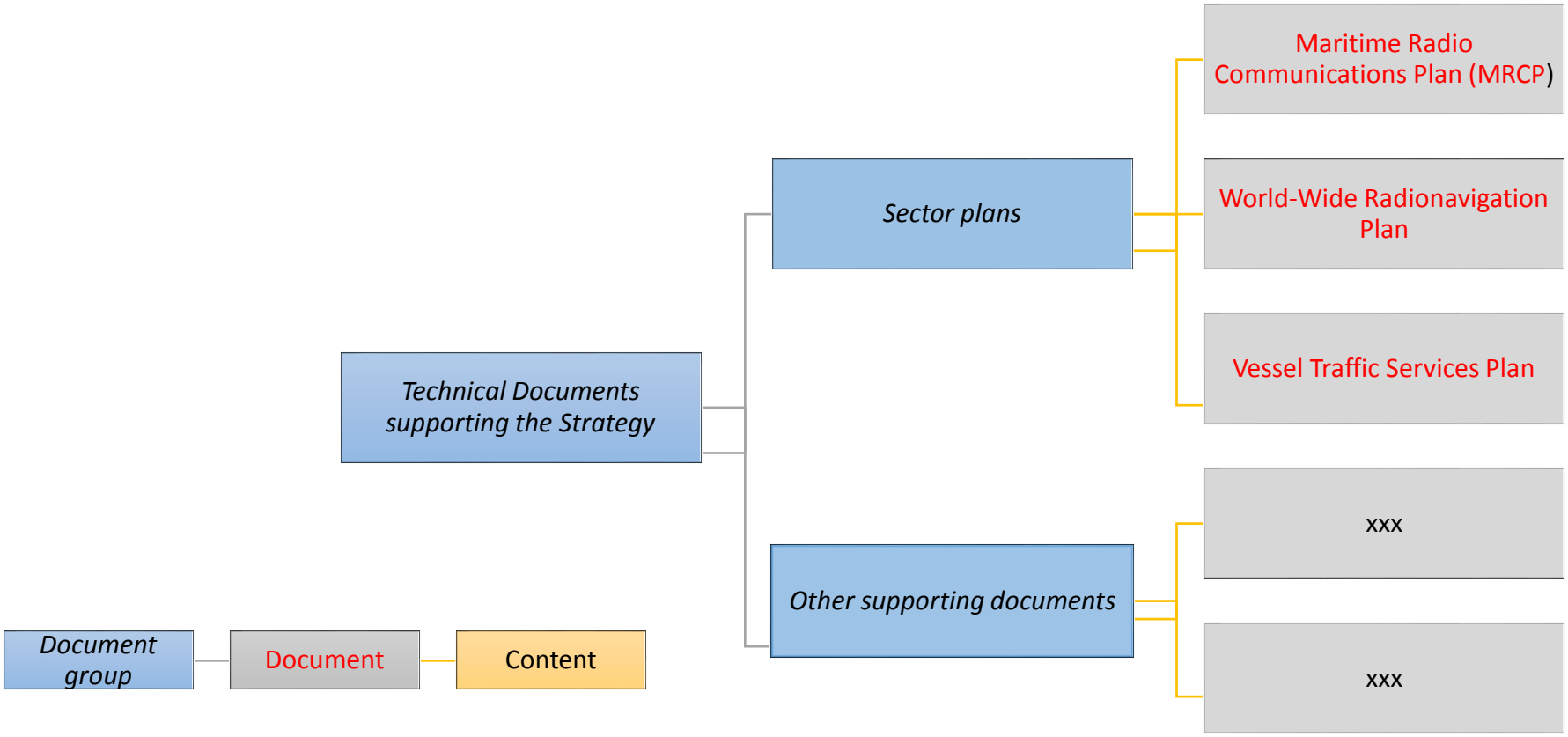
  - S5 - Harmonise the information structure and communications for future navigation by creating standards, and by cooperation with other international organisations, to achieve worldwide interoperability of shore and ship systems.

  - 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 Position Statement, Example - VDES

- 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

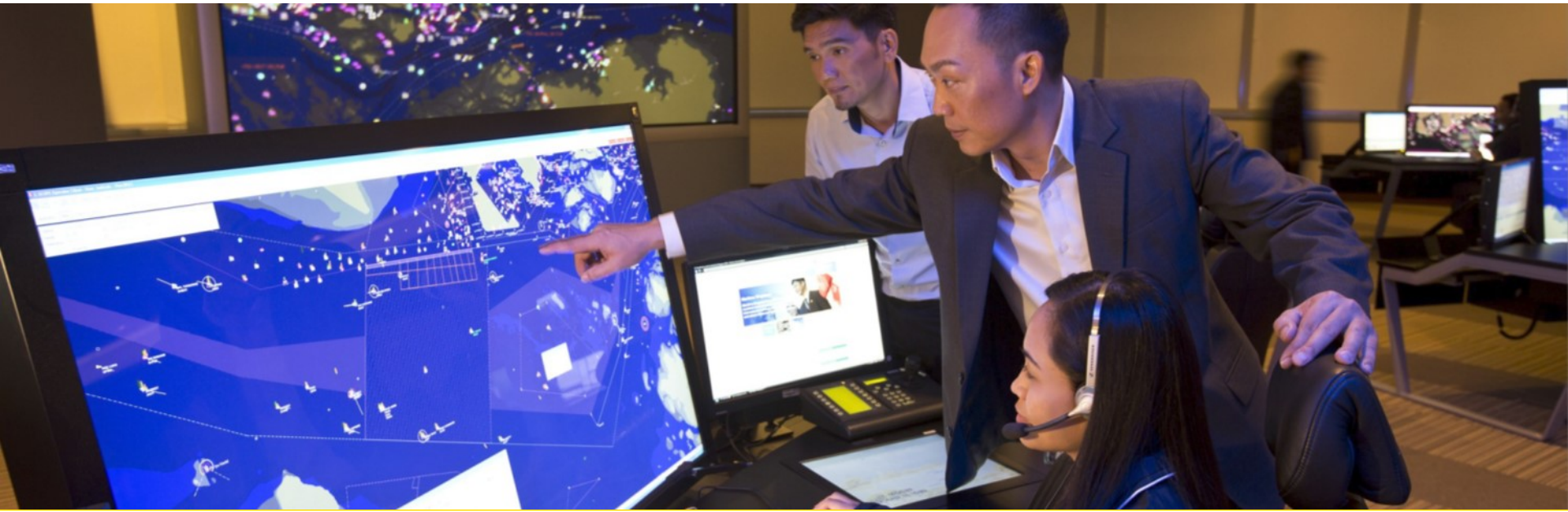


2. Focus Areas

- 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

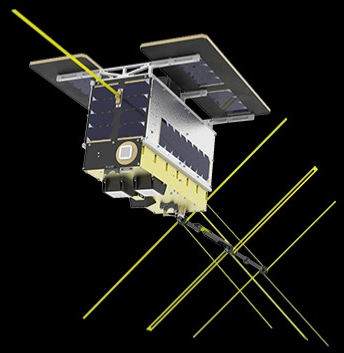


Port Operations

- 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



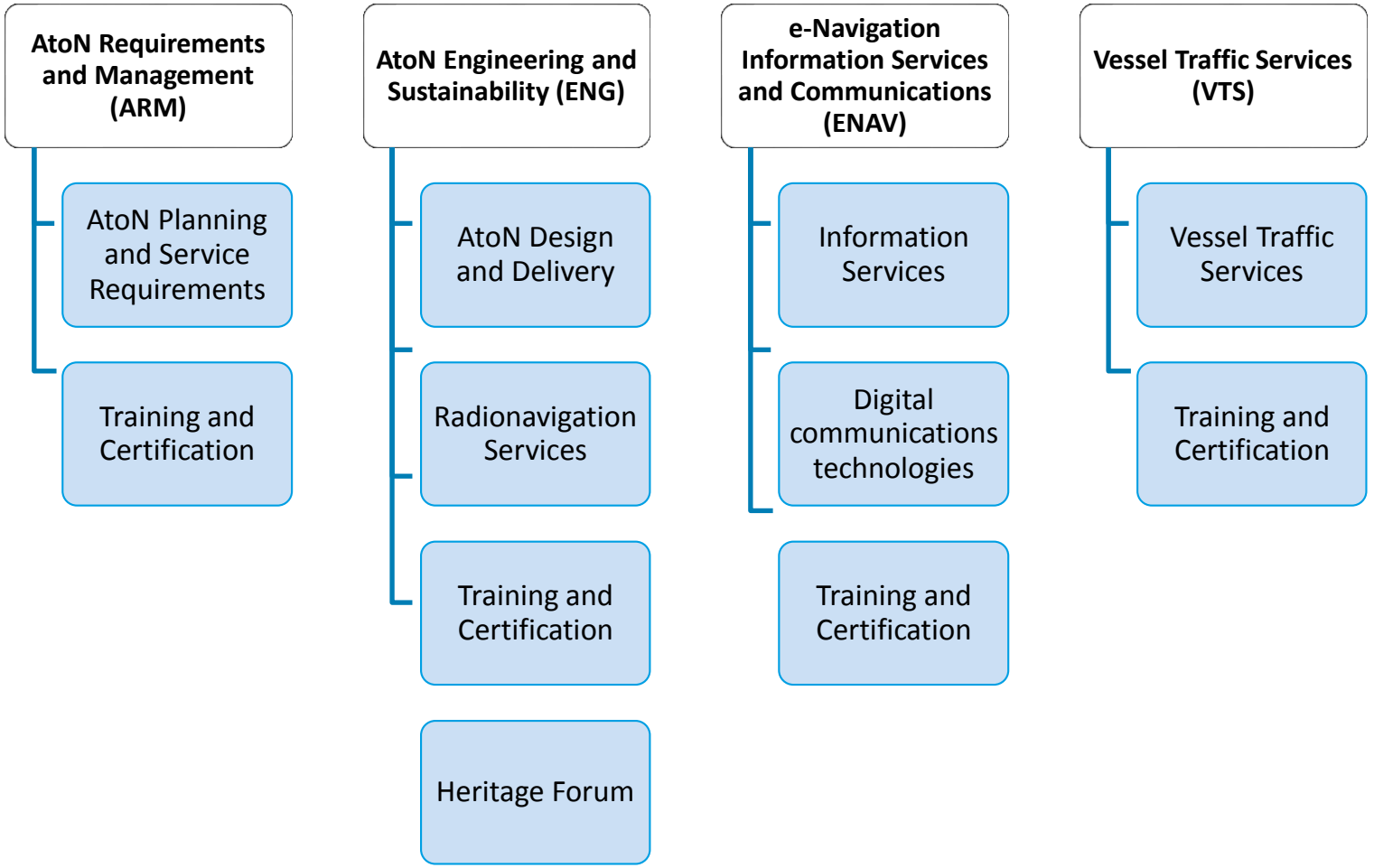
3. Committee Structure

- Number of Committees
- Responsibilities
- Leadership

Shore Services and Connectivity

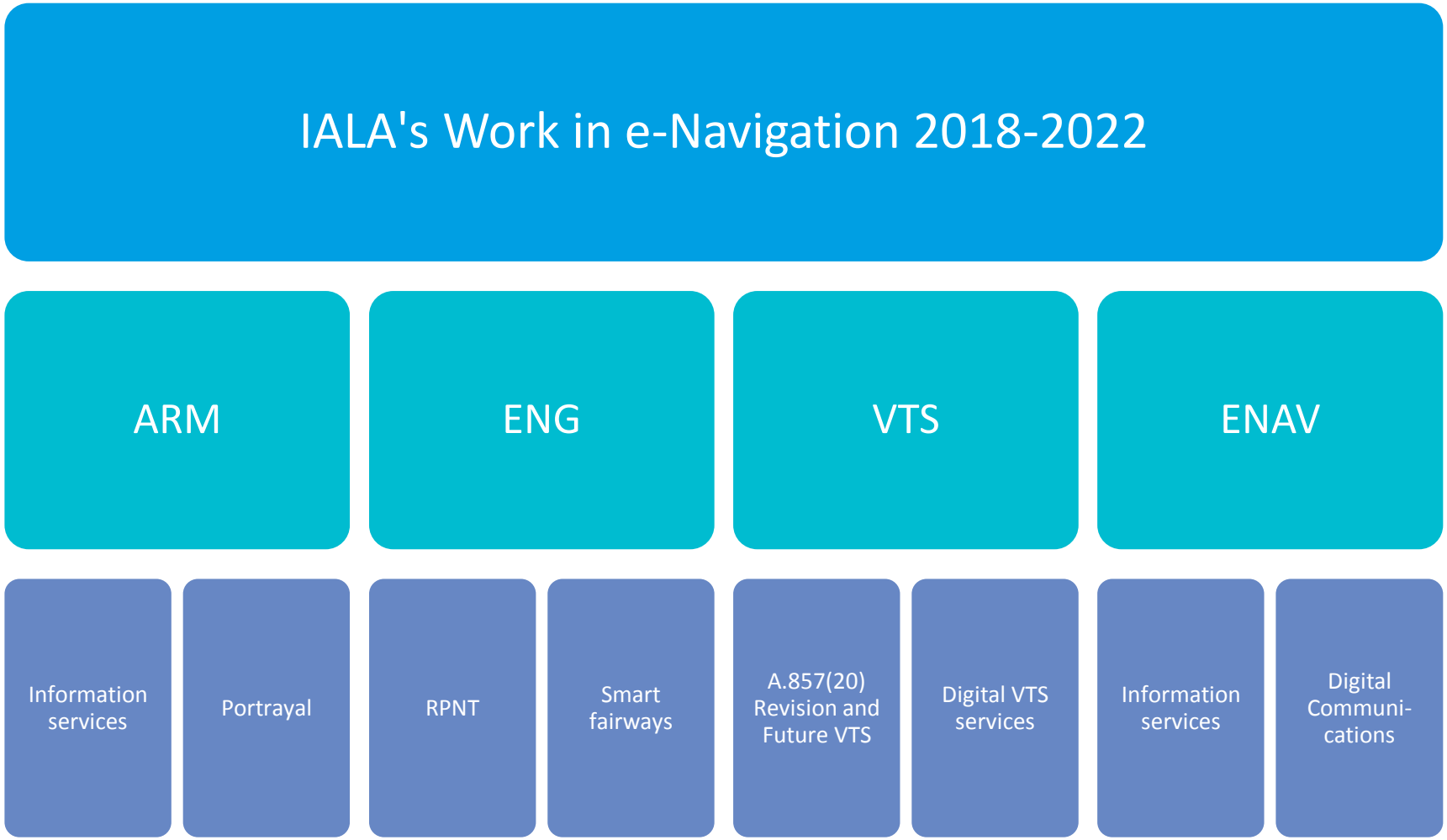
- Harmonised data models
- Connectivity, including communications
- Resilient positioning
- Future digital Vessel Traffic Services
- Shore services from Competent Authorities

IALA Committee Structure for 2018-2022



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

IALA Committee Roles in e-Navigation to 2022



THANK YOU

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