

Agenda item: 4.1 Presentation of draft Standard structure
Mapping of Standards to Recommendations and Guidelines

Standard	General topic area	Recommendation		Guideline	
		No.	Name	No.	Name
AtoN Planning and Service Requirements	Maritime Buoyage System				
	Obligations, International & national criteria	E-105	The Need to Follow National and International Standards	1054	Preparing for a Voluntary IMO Audit on Aids to Navigation Service Delivery
	Levels of service objectives, Availability and Categories	O-130	Categorisation and Availability Objectives for Short Range Aids to Navigation	1004	Level of Service
				1035	Availability and Reliability of Aids to Navigation
				1037	Data Collection for Aids to Navigation Performance Calculation
	Risk Management Toolbox	O-134	The IALA Risk Management Tool for Ports and Restricted Waterways	1018	Risk Management
		O-138	The Use of GIS and Simulation by Aids to Navigation Authorities	1033	The Provision of Aids to Navigation for Different Classes of Vessels, including High Speed Craft
				1046	Response Plan for the Marking of New Wrecks
				1057	The use of Geographic Information Systems (GIS) by Aids to Navigation (AtoN) Authorities
				1058	The Use of Simulation as a Tool for Waterway Design and AtoN Planning
				1078	The Use of Aids to Navigation in the Design of Fairways
				1079	Establishing and Conducting User Consultancy by Aids to Navigation Authorities
				1097	Technical Features and Technology Relevant for Simulation of AtoN
				1104	The application of maritime surface picture for analysis in risk assessment and the provision of Aids to Navigation
	Quality management, Record keeping	O-132	Quality Management for Aids to Navigation Authorities	1052	Quality Management Systems for Aids to Navigation Service Delivery
		P-137	Quality Management for Competent Pilotage Authorities and Pilotage Service Providers		
		O-118	The Recording of Aids to Navigation Positions		
	Offshore signals, Bridge signals, Traffic signals	E-111	Port Traffic Signals		
		O-113	The Marking of Fixed Bridges and Other Structures over Navigable Waters		
		O-139	The Marking of Man-Made Offshore Structures		
	AIS, AIS AtoN, Virtual AtoN	O-143	Provision of Virtual Aids to Navigation	1081	Provision of Virtual Aids to Navigation
				1062	The establishment of AIS as an Aid to Navigation
				1082	An Overview of AIS
				1084	Authorisation of AIS AtoN
AtoN Design and Delivery	Visual AtoN	E-106	The Use of Retroreflecting Material On Aids To Navigation Marks Within The IALA Maritime Buoyage System	1023	The Design of Leading Lines
		E-108	The Surface Colours used as Visual Signal on Aids to Navigation	1041	Sector Lights
		E-110	The Rhythmic Characters of Lights on Aids to Navigation	1043	Light Sources used in Visual Aids to Navigation
		E-112	Leading Lights (*including Leading Line Design Program ver 2.02)	1048	LED Technologies and their use in Signal Lights
		E-200-1	Marine Signal Lights Part 1 - Colours	1049	The Use of Modern Light Sources in Traditional Lighthouse Optics
		O-104	Off Station Signals for Major Floating Aids	1051	Provision and Identification of Aids to Navigation in Built-up Areas
				1061	Light Applications Illumination of Structures
				1065	Aids to Navigation Signal Light Beam Vertical Divergence
				1069	Synchronisation of Lights

				1073	Conspicuity of AtoN lights at Night
				1094	Daymarks for Aids to Navigation
	Range and Performance	E-200-0	Marine Signal Lights Part 0 - Overview	1038	Ambient Light Levels at which Aids to Navigation Lights should switch on and off
		E-200-2	Marine Signal Lights Part 2 - Calculation, Definition and Notation of Luminous Range		
		E-200-3	Marine Signal Lights Part 3 - Measurement		
		E-200-4	Marine Signal Lights Part 4 - Determination and Calculation of Effective Intensity		
		E-200-5	Marine Signal Lights Part 5 - Estimation of the Performance of Optical Apparatus		
	Design, Implementation & Maintenance			1005	Contracting Out Aids to Navigation Services
				1007	Lighthouse Maintenance
				1012	The Protection of Lighthouses and other Aids to Navigation against Damage from Lightning
				1015	Painting Aids to Navigation Buoys
				1047	Cost Comparison Methodology of Buoy Technologies
				1076	Building Conditioning of Lighthouses
				1077	Maintenance of Aids to Navigation
				1091	Bird Deterrents
				1092	Safety Management for AtoN Activities
				1108	The Challenges of Providing AtoN services in Polar Regions
				1109	Theft and Vandalism Deterrents
	Power systems			1011	Standard Method for Defining and Calculating the Load Profile of Aids to Navigation
				1039	Designing Solar Power Systems for Aids to Navigation
				1064	Integrated Power Systems Lanterns (Solar LED Lanterns)
				1067-0	Selection of Power Systems for Aids to Navigation and Associated Equipment
				1067-1	Total Electrical Loads of Aids to Navigation
				1067-2	Power Sources
				1067-3	Electrical Energy Storage for Aids to Navigation
	Floating AtoN	E-107	Moorings for Floating Aids to Navigation	1006	Plastic Buoys
				1066	The Design of Floating Aid to Navigation Moorings
				1099	The Hydrostatic design of buoys
				1098	The Application of AIS - AtoN on Buoys
	Environment, Sustainability & Legacy			1036	Environmental Management in Aids to Navigation
				1063	Agreements for Complementary use of Lighthouse Property
				1074	Branding and Marketing of Historic Lighthouses
				1075	A Business Plan for the complementary use of a Historic Lighthouse
				1080	The Selection and Display of Heritage Artefacts
				1093	The Management of Surplus Lighthouse Property
	Additional AtoN systems, including Sound signal	E-109	The Calculation Of The Rnage Of A Sound Signal	1090	The Use of Audible Signals
Radionavigation Services	Satellite positioning and timing				
	Terrestrial positioning and timing				
	RACON & Radar positioning	e-NAV-146	Strategy for Maintaining Racon Service Capability	1010	Racon Range Performance
		R-101	Marine Radar Beacons (racons)		

	Terrestrial augmentation services (DGNSS)	R-115	The Provision Of Maritime Radionavigation Services In The Frequency Band 283.5-315 kHz In Region 1 and 285-325 kHz In Region 2 And 3	1016	Bilateral Agreements and Inter-Agency MOU’s on the Provision of DGNSS services in the frequency band 283.5 khz - 325 khz
		R-121	The Performance and Monitoring of DGNSS Services in the Frequency Band 283.5 - 325 kHz	1053	The Submission of a DGNSS Service for Recognition as a Component of the IMO WWRNS
		R-129	GNSS Vulnerability and Mitigation Measures	1060	Recapitalisation of DGNSS
		R-135	The Future of DGNSS	1112	Performance and Monitoring of DGNSS Services in the Frequency Band 283.5-325kHz
Vessel Traffic Services	VTS implementation	V-102	The application of the 'User Pays' principle to Vessel Traffic Services	1083	Standard Nomenclature to identify and refer to VTS centres
		V-119	The Implementation of Vessel Traffic Services		
		V-120	Vessel Traffic Services in Inland Waters		
	VTS operations	V-127	Operational Procedures for Vessel Traffic Services	1070	VTS role in managing Restricted or Limited Access Areas
				1071	Establishment of a Vessel Traffic Service beyond Territorial Seas
				1089	Provision of Vessel Traffic Services (INS, TOS & NAS)
				1102	VTS Interaction with Allied or Other Services
				1110	Use of Decision Support Tools for VTS Personnel
	VTS data and information management	V-125	The use and presentation of symbology at a VTS Centre		
	VTS communications				
	VTS technologies	V-128	Operational and Technical Performance of VTS Systems	1056	The Establishment of VTS Radar Services
				1111	Preparation of Operational and Technical Performance for VTS Equipment
	Auditing and assessing of VTS			1101	Auditing and Assessing VTS
				1115	Preparing for IMO Member State Audit Scheme (IMSAS) On Vessel Traffic Services
Training and Certification	Training and assessment	E-141	Standards for Traning and Certification of AtoN Personnel	1020	Training Related to AtoN
		V-103	Standards for Traning and Certification of VTS Personnel	1017	The Assessment of training requirements for existing VTS Personnel, candidate VTS Operators and the revalidation of VTS Operator Certificates
				1032	Aspects of Training of VTS Personnel relevant to AIS
				1103	Train the Trainer(VTS)
	Competency certification and revalidation			1100	The Accreditation and Approval Process for Aids to Navigation Personnel Training
				1014	The Accreditation and Approval Process for VTS Training
	Simulation in training			1027	Simulation in VTS Training
	Human factors and ergonomics			1045	Staffing Levels at VTS Centres
Digital Communication Technologies	Wide/Medium bandwidth systems (AIS & VDES)	A-123	The Provision of Shore Based Automatic Identification System (AIS)	1028	The Automatic Identification System (AIS) Volume 1, Part I Operational Issues
		A-124	The AIS Service	1029	The Universal Automatic Identification System (AIS) Volume 1, Part II – Technical Issues
		A-124 APPENDIX 0	References, Glossary of terms and Abbreviations		
		A-124 APPENDIX 1	Basic AIS Services, AIS Data Model and AIS Service specific MDEF sentences		
		A-124 APPENDIX 3	Distribution model		
		A-124 APPENDIX 4	Interaction and Data Flow Model of the AIS service		
		A-124 APPENDIX 5	Interfacing model of the AIS Service		
		A-124 APPENDICES 9/10/11	Functional Description of the AIS Service components (AIS-PCU, AIS-LSS & AIS-SM)		

		A-124 APPENDIX 12	Co-location issues at AIS Physical Shore Stations (AIS-PSS) and on-site infrastructure considerations		
		A-124 APPENDIX 14	FATDMA Planning and Operation of an AIS Service		
		A-124 APPENDIX 16	DGNSS Broadcasts from an AIS Service		
		A-124 APPENDIX 17	Channel Management by an AIS Service		
		A-124 APPENDIX 18	VDL Load Management		
		A-124 APPENDIX 19	Satellite AIS Considerations		
	Narrow bandwidth systems (NAVDAT, MF beacons)				
	Maritime Internet of Things (Intelligent sensors, AtoN monitoring)			1008	Remote Control and Monitoring of Aids to Navigation
Information Services	Harmonised maritime connectivity framework (CMDS)	e-NAV-140	The Architecture for Shore-based Infrastructure 'fit for e-Navigation'	1107	The Reporting of Results of e-Navigation Testbeds
		e-NAV-148	The need to implement regional e-Navigation solutions based on international standards	1113	Design and Implementation Principles for Hamonised System Architecture of Shore-based Infrastructure
				1114	A Technical Specification for the Common Shore-based System Architecture (CSSA)
	Data models and data encoding (IVEF, S-100, S-200, ASM)	e-NAV-144	Harmonized implementation of Application Specific Message (ASM)	1072	AtoN Information Exchange & Presentation
		e-NAV-147	Product Specification Development and Management	1085	Standard Format for Electronic Exchange of AtoN Product Information
		V-145	The Inter-VTS Exchange Format (IVEF) Service	1087	Procedures for the Management of the IALA Domains under the IHO GI Registry
				1088	Introduction to Preparing S-100 Product Specifications
				1095	Harmonised implementation of Application-Specific Messages (ASMs)
				1106	Producing an IALA S-100 Product Specification
	Data exchange systems (Traffic Information)	E-142	Maritime Data Sharing 'IALA-NET'	1050	The Management and Monitoring of AIS Information
				1086	The Global Sharing of Maritime Data & Information
	User requirements			1096	Anticipated user e-Navigation requirements from Berth to Berth, for AtoN Authorities
	Terminology and symbology (IALA Dictionary)			1105	Shore-side portrayal ensuring harmonisation with e-Navigation related information