

**Agenda item 9 – IALA TECHNICAL ACTIVITIES**

**9.7 EEP**

**9.7.2 Documents to note**

***9.7.2-2 EEP Current work programme updated at EEP21***

**Note by the Secretariat**

**1 SUMMARY**

This report summarises the status of the EEP Committee work programme at the end of the four year work period 2010 – 2014. The report includes the mapping of EEP Committee work against IALA strategic focus as well as progress on work programme deliverables.

**2 ACTION REQUESTED**

The Council is requested to Note.

## EEP Committee Work Programme (2010 – 2014)

(Changes at EEP21 are highlighted in green)

In the work of the Committee, the following general aspects are to be taken into consideration:

- Strategic focus of IALA;
- Harmonized use of Definitions and Terms;
- Work Programme 2010 – 2014.

Task	Estimated number of sessions	Comments	Strategy element(s)
1 Knowledge Sharing / Knowledge Management, taking into account open source software	4		3.4, 4.11, 5.2, 8.1, 10.3, 10.9, 13.3, 7.1
2 AtoN Engineering	7	Workshop 2012	1.2, 5.2, 5.6, 5.8, 6.1, 10.3, 10.5, 10.11, 12.1, 13.1, 13.2, 13.6
3 Visual perception of lights and daymarks	7		1.2, 3.4, 5.1, 5.4, 5.6, 5.8, 8.1, 10.2, 10.10, 13.6, 15.1
4 Power Systems and Energy Storage	3		5.6, 5.8
5 Remote Control and Monitoring	3		5.6
6 Environment and safety	5		5.1, 10.6, 10.12, 10.13, 14.1
7 Aids to Navigation Training, IALA WWA	7	Seminar 2013	1.2, 3.4, 3.5, 5.3, 5.6, 18.1
8 Product Procurement	7		10.9, 13.3, 17.1
9 Heritage and Conservation	7	Seminar 2013	10.6, 10.8, 13.1, 13.6
10 Civil Engineering and Structures.	5		5.1, 10.6, 10.8, 12.1, 13.1
11 Risk Assessment Techniques in AtoN Design and maintenance	4	Annual seminar	3.5, 5.6, 10.7
12 Quality Management	4		6.1, 6.2, 6.3, 7.1, 10.8
13 e-Navigation across Committees	7		5.7, 5.8, 10.5, 13.1, 13.2
14 Polar Engineering	4	Workshop 2013, with other Committees	3.5, 5.7, 11.1, 11.2, 11.3

Task	Estimated number of sessions	Comments	Strategy element(s)
15 The use of Audible Signals as aids to navigation	2 – 4	<i>Together with the ANM Committee</i>	5.4, 5.6
16 Workshops and Seminars	7		3.5, 6.1

## Monitoring Items

Task	Duration	Comment	Strategy element(s)
M1 Developments in Aids to Navigation	Continuous	Adrian Wilkins	1.2, 5.6, 8.1
M2 Developments in Renewable Energy Sources	Continuous	Moray Waddell	1.2, 8.1
M3 Developments in Battery Technology	Continuous	Jonas Lindberg	1.2, 8.1
M4 Developments in New Light Sources	Continuous	Malcolm Nicholson	1.2, 3.2, 8.1, 10.10
<del>M5 IALA Certification Process</del>	<del>Continuous</del>	<del>Wayne Danzik</del>	<del>10.9, 13.3</del>
M6 CIE-IALA Liaison	Continuous	Malcolm Nicholson	1.2, 5.6, 5.8, 8.1, 10.2, 10.10, 15.1
M7 IALA Dictionary	Continuous	Omar Frits Eriksson	
M8 Developments in AIS AtoN	Continuous	Mariano Luis Marpegan	

## Deferred Items

Task	No. of sessions	Comment	Strategy element(s)
D1 None at this time			

## **ANNEX A      DETAILED EEP WORK PROGRAMME 2010-1014**

This list is not in any order of priority

### **1      KNOWLEDGE SHARING / KNOWLEDGE MANAGEMENT**

Develop procedures for informal sharing of information between members. IALA Reference Library. Develop and populate the IALAWIKI with information on Aids to Navigation (AtoN) not included in official IALA documents.

### **2      ENGINEERING – VISUAL AIDS**

Provide guidance on vertical divergence of lights, focal plane height, sector lights, daymark design, surface colours, buoy design tools (SW), buoy motion and stability and AtoN maintenance procedures. Guidance on synthetic moorings and optimising mooring design. Consider how to deal with calculation of availability of a system of synchronised lights in the case of a failure of one element. Guidance on mitigating the adverse effect of Sea Bird colonies at AtoN stations and structures.

### **3      VISUAL PERCEPTION OF LIGHTS AND DAYMARKS**

Provide guidance on apparent intensity, probability of detection of visual aids, human perception of flickering light, conspicuity of lights and conspicuity of daymarks. Gather visual signalling documents in a suite of documents. CIE Reporteur with respect to Conspicuity of Lights.

### **4      POWER SYSTEMS AND ENERGY STORAGE**

Provide guidance on Hybrid power systems, sustainable energy systems, batteries, emerging energy storage systems.

### **5      REMOTE CONTROL AND MONITORING**

Provide guidance on Remote Control and Monitoring (RCM) in the e-Navigation architecture, RCM strategies and harmonised protocols.

### **6      ENVIRONMENT AND SAFETY**

Provide guidance on methods for determining and reducing carbon footprint of AtoN services, handling of mercury in lighthouses, worker safety, treating legionella and coli bacteria in water supplies of unmanned stations. Consequences of global warming in terms of storm events and sea level rising on AtoN provision and maintenance. Update the IALA Green Guide.

### **7      AIDS TO NAVIGATION TRAINING, IALA WWA**

Assist in developing the World Wide Academy, e-training.

### **8      PRODUCT CERTIFICATION**

Continue to support the IALA certification scheme. Maintain and develop product certification templates. Consider developing an IALA Product Guide.

### **9      HERITAGE AND CONSERVATION**

Maintain the IALA Lighthouse Conservation Manual. Give guidance on the process of transferring redundant lighthouses including site remediation. Selection and display of historic artefacts. Report on case studies. Document history of floating AtoN. Promote an international network for historic lighthouses.

### **10      CIVIL ENGINEERING AND STRUCTURES**

Revise Lighthouse Maintenance Guidance, give guidance on anti-fouling techniques (marine growth) for floating aids, boat landings, etc., building maintenance and conditioning in low energy

environments, low power ventilation systems, avoiding condensation and engineering for natural disasters. AtoN structures in natural disaster areas.

## **11 RISK ASSESSMENT TECHNIQUES IN ATON DESIGN AND MAINTENANCE**

Provide guidance on risk management as an integral part of the provision of aids to navigation services. Framework for determining Total Cost of Ownership of AtoN equipment and systems, investment priorities. Assist in developing the IALA Risk Management Toolbox and ensure that the methods used are standardized and widely accepted.

## **12 QUALITY MANAGEMENT**

Provide guidance on Quality management in Aids to Navigation Engineering, quality assurance of Aids to Navigation services, further work on Key performance indicators.

## **13 E-NAVIGATION ACROSS COMMITTEES**

Develop EEP role in engineering, human factors, system reliability and RCM aspects of e-Navigation. Requirements for physical AtoN in the e-Navigation world. Interfacing visual AtoN to e-Navigation. AIS on AtoN, using binary messages for monitoring AtoN operational status. Modulation of light sources to produce automatic identification and RCM.

## **14 POLAR ENGINEERING**

Provide guidance on the design of AtoN systems, including aspects of e-Navigation, suitable for the Arctic environment, supporting the opening of new routes in polar waters.

## **15 THE USE OF AUDIBLE SIGNALS AS AIDS TO NAVIGATION**

Examine the use of Audible Signals as aids to navigation and develop an IALA Guideline on their future. This work will be conducted in conjunction with the ANM Committee.

## **16 WORKSHOPS AND SEMINAR**

- 17 Seminar on IALA Risk Management Toolbox, with marine incident causation – Annually - IALA
- 18 Seminar on Model training courses covering different AtoN systems and services (EEP) Promotion of the World Wide Academy - 2013 (WG3)
- 19 Workshop – Fixed and Floating AtoN (incorporates IALABATT/IALALITE and Floataid) – France – 2012 (WG4)
- 20 Seminar on Preservation of Lighthouse Heritage, Athens June 2013 (WG2)
- 21 Workshop on Arctic engineering aspects (civil engineering, power systems, environment) - 2013 (WG1)
- 22 Workshop on Practical aspects of installing e-Navigation infrastructure (future WP?) (WG1)

## DETAILED WORK PROGRAMME (AS UPDATED AT EEP21)

## WG1 – AtoN Infrastructure Design and Maintenance - Chairman: A. Wilkins

Task No	Task	Obj No	Objective	Activity No	Details of work to be undertaken	Expected completion	Comments
2	AtoN Engineering	2.1	Provide guidance on buoy design tools (SW), buoy motion and stability and AtoN maintenance procedures.	2.1.1	Update Guidelines 1006, 1047 regarding recent experience with plastic buoys and associated cost implications.	EEP21	New information received being incorporated in updates. Unable to be finalised due to the extent of new information
				2.1.2	Revision of Guideline 1012 on lightning protection, to include the disposal of radioactive lightning conductors.	EEP19	Completed at EEP20
				2.1.3	A new Guideline on the 'Practical Aspects of Installing AIS AtoN on Buoys and Beacons'	EEP21	Completed at EEP19
				2.1.4	A new Guideline on the Hydrostatic Design of Buoys as an AtoN Platform	EEP20	Completed at EEP20 Information from Brest Workshop is now included
		2.2	Guidance on synthetic moorings and optimising mooring design.	2.2.1	Update Guideline 1066 regarding recent experience with synthetic moorings and associated cost implications.	EEP19	Completed at EEP18
		2.3	Consider how to deal with calculation of availability of a system of synchronised lights in the case of a failure of one element.	2.3.1	Liaise with ANM regarding the availability of synchronised light channels and Revise Guideline 1069 Synchronisation of Lights	EEP17	Completed at EEP17

Task No	Task	Obj No	Objective	Activity No	Details of work to be undertaken	Expected completion	Comments
		2.4	Guidance on mitigating the adverse effect of Sea Bird colonies at AtoN stations and structures	2.4.1	Prepare a new Guideline on Bird Deterrence	EEP19	Completed at EEP19
4	Power Systems and Energy Storage	4.1	Provide guidance on Hybrid power systems, sustainable energy systems, batteries, emerging energy storage systems	4.1.1	Revise Guideline 1067-3 Electrical Energy Storage	EEP17	Completed at EEP16
5	Remote Control and Monitoring	5.1	Provide guidance on Remote Control and Monitoring (RCM) in the e-Navigation architecture, RCM strategies and harmonised protocols.	5.1.1	Liaise with e-NAV regarding the engineering content of A-126	EEP21	On-going – further liaison planned
11	Risk Assessment Techniques in AtoN Design and Maintenance	11.1	Provide guidance on risk management as an integral part of the provision of aids to navigation services.	11.1.1	Develop new Guideline on risk assessment techniques in AtoN design and maintenance.	EEP20	Draft Guideline outline developed Committee concluded that the data available does not warrant a new Guideline but should be retained as an Information Document. Completed at EEP20
		11.2	Assist in developing the IALA Risk Management Toolbox and ensure that the methods used are standardized and widely accepted.	11.2.1	Assist in developing the IALA Risk Management Toolbox and ensure that the methods used are standardized and widely accepted.	EEP21	No EEP input required at this stage – currently being dealt with by Risk Management Toolbox Steering Group.
12	Quality Management	12.3	Update relevant sections of NAVGUIDE	12.3.1	Review and update NAVGUIDE Sections 3.2, 4.23, 6.5.4, 6.7, Chapter 7, 8.4	EEP20	Co-ordinated by WG3

Task No	Task	Obj No	Objective	Activity No	Details of work to be undertaken	Expected completion	Comments
13	e-Navigation across Committees	13.1	Develop EEP role in engineering, human factors, system reliability and RCM aspects of e-Navigation.	13.1.1	Identify and provide guidance on engineering, human factors, system reliability and RCM aspects of e-Navigation	EEP21	On-going – refer to activity 5.1.1
		13.2	Requirements for physical AtoN in the e-Navigation world. Interfacing visual AtoN to e-Navigation.	13.2.1	Identify requirements and interfaces for physical AtoN in the e-Navigation world.	EEP21	Liaison note written to e-NAV at EEP20 On-going liaison planned regarding physical AtoN in e-Nav environment
		13.3	AIS on AtoN, using binary messages for monitoring AtoN operational status.  Provide input to the development of the S100 AtoN Registry	13.3.1  13.3.2	Update Recommendation A-126 to incorporate any relevant engineering information.  Liaise with e-NAV regarding the development of the S100 AtoN Registry	EEP20	Original activity removed as it is covered under activity 5.1.1 Task to educate EEP committee on detail of S100 – speaker being arranged for EEP20 Presentation delivered at EEP20 On-going liaison planned regarding development of the S100 AtoN Registry
		13.4	Develop standard format for the exchange of AtoN product information	13.4.1	Develop new Guideline and XML schema for AtoN product data	EEP19	Moved from WG3 Completed at EEP18.
14	Polar Engineering	14.1	Produce new Guidelines on the engineering aspects of AtoN in Polar regions	14.1.1	Produce new Guidelines on the engineering aspects of AtoN in Polar regions	EEP21	Draft Guideline outline developed. Workshop proposal developed Completed at EEP21



Task No	Task	Obj No	Objective	Activity No	Details of work to be undertaken	Expected completion	Comments
15	The use of Audible Signals as Aids to Navigation	15.1	Examine the use of Audible Signals as aids to navigation and develop an IALA Guideline on their future.	15.1.1	Liaise with ANM Committee regarding the future use of audible AtoN signals and consider the preparation of a new Guideline	EEP18	This work will be conducted in conjunction with the ANM Committee. Concluded that no engineering input is required - this topic can be dealt with by the ANM committee. Completed at EEP18
				15.1.2	Consider developing a new Guideline on the installation and operation of audible AtoN signals	EEP20	No further work is required on this topic. Completed at EEP19
16	Workshops and Seminars	16.1	Workshops and Seminars	16.1.1	Subject to Council approval, hold a Workshop on Arctic engineering aspects (civil engineering, power systems, environment) – April 2013 Agree scope the event Determine a location and host for the event Prepare submission for council approval Organise Seminar	EEP 21	Timing for workshop now proposed to be September 2013  Workshop successfully concluded in Greenland in Oct 2013

Sessions WG1 – AtoN Design and Maintenance - Chairman: A. Wilkins

Item	1 5	16	17	18	19	20	21	Comments
2.1.1	■	■	■	■	■	■	■	Unable to be finalised due to the extent of new information
2.1.2		■	■	■	■			Completed at EEP20
2.1.3	■	■	■	■	■	■	■	Completed at EEP19

2.1.4		■	■	■	■	■		Completed at EEP20
2.2.1	■	■	■	■	■			Completed at EEP18
2.3.1	■	■	■	■				Completed at EEP17
2.4.1		■	■	■	■			Completed at EEP19
4.1.1	■	■	■					Completed at EEP16
5.1.1		■	■	■	■	■	■	On-going – further liaison planned
11.1.1	■	■	■	■	■	■		Completed at EEP20
11.2.1		■	■	■	■	■	■	Completed
12.3.1			■	■	■	■		Completed at EEP20
13.1.1	■	■	■	■	■	■		On-going – refer to activity 5.1.1
13.2.1	■	■	■	■	■	■		On-going liaison planned regarding physical AtoN in e-Nav environment
13.3.2				■	■	■		On-going liaison planned regarding development of the S100 AtoN Registry
13.4.1			■	■	■			Completed at EEP18
14.1.1		■	■	■	■	■	■	Completed at EEP21
15.1.1		■	■	■				Completed at EEP18
15.1.2		■	■	■	■	■		Completed at EEP19
16.1.1			■	■	■	■	■	Workshop successfully concluded in Greenland in Oct 2013

## WG2 – Heritage, Conservation and Civil Engineering - Chairman: B. McIntosh

Task No	Task	Obj No	Objective	Activity No	Details of work to be undertaken	Expected completion	Comments
9	Heritage and Conservation	9.1	Maintain the IALA Lighthouse Conservation Manual.	9.1.1	Update the IALA Lighthouse Conservation Manual Update existing chapters Include additional guidelines from previous session as new chapters Include additional guidelines from current session as new chapters. Publish new version 2 on Heritage page on IALA Website	EEP21	On-going
		9.2	Selection and display of historic artefacts.	9.2.1	Produce new guideline on selection and display of historic artefacts Provide guidance on the selection and display of historic artefacts on and off the lighthouse Provide examples of best practise	EEP17	Completed at EEP17
		9.3	Give guidance on the process of transferring redundant lighthouses including site remediation.	9.3.1	Produce new guideline on Management of Surplus Lighthouse Property. Include site remediation and making the site safe for transfer. Provide guidance on maintaining safeguards to the heritage value of the lighthouse site as a whole.	EEP19	Completed at EEP19
		9.4	Report on case studies.	9.4.1	Report on Case Studies Produce Case Study reports for Nakkehoved and Cabo Mayor Lighthouses projects and post on Heritage website page.	EEP19	No further input received – this activity is considered complete. Completed at EEP19

				9.4.2	Investigate opportunities for additional projects suitable for case studies.	EEP21	Post additional case studies on IALA website when received
		9.5	Document history of floating AtoN.	9.5.1	Document History of Floating Aids to Navigation	EEP21	Document now contains 100 pages Completed at EEP21
				9.5.2	Publish booklet on History of Floating Aids to Navigation and post on website	EEP21	Funding opportunities for publishing being explored
		9.6	Promote an international network for historic lighthouses.	9.6.1	Re-Issue Questionnaire on Complementary Uses of Historic Lighthouses  Revise questionnaire to clarify results of previous questionnaire  Include section on knowledge and use of IALA Lighthouse Conservation Manual  Summarise statistics from questionnaire, produce report on results and publish on Heritage page of website  Review work programme on basis of results	EEP21	On-going

				9.6.2	<p>Promote an international network for historic lighthouses.</p> <p>Develop an international web link to historic lighthouse documents through the IALA website</p> <p>Develop Heritage page of IALA Website to allow publication of heritage related documents and to improve availability to other bodies.</p> <p>Explore with the editor of the IALA Bulletin the possibility of publishing a document on historic light vessels and service vessels worldwide on Heritage website page</p>	On-going	<p>On-going – making use of IALA bulletin, IALA Wiki, email groups etc.</p> <p>A heritage page has also been included in the new IALA website</p>
10	Civil Engineering and Structures	10.1	Give guidance on anti-fouling techniques (marine growth) for floating aids, boat landings, etc.	10.1.1	Produce guideline on anti-fouling techniques (marine growth) for floating aids, boat landings, etc.	EEP19	Floating AtoN component transferred to WG1. Completed at EEP19
		10.2	Building maintenance and conditioning in low energy environments, low power ventilation systems, avoiding condensation.	10.2.1	<p>Expand the Guideline on Building maintenance and conditioning in low energy environments and guidance on low power ventilation systems and avoiding condensation.</p> <p>Consult with members and other bodies to obtain information on the problems and solutions in their region.</p> <p>Revise the Guideline to include new information</p>	EEP21	On-going Information received to date has been placed on the IALA Wiki

				10.2.2	Revise Lighthouse Maintenance Guidance Identify relevant Guidelines Update existing Guidelines with respect to Lighthouse Maintenance Develop new Guidelines to complete the required information	EEP21	Completed at EEP21 – further revision of documents in planned for the next work term
		10.3	Engineering for natural disasters. AtoN structures in natural disaster areas.	10.3.1	Provide guidance on protection and repair of Aid to Navigation Structures in Natural Disaster Areas  Provide information on reinforcement and management of AtoN structures in natural disaster areas, time permitting, in the context of  Reinforcement of lighthouses in natural disaster-prone areas  Management of earthquake/tsunami damaged structures  Take natural disasters into account, when designing new constructions  Possible addition to the NAVGUIDE or Conservation Manual	EEP21	Information will be posted on the new IALA website.  Completed at EEP21
		12.4	Update relevant sections of Navguide	12.4.1	Review and update NAVGUIDE Section 8.11	EEP19	Coordinated by WG3 Completed at EEP18
12	Quality Management						

16	Workshops and Seminars	16.2	Workshops and Seminars	16.2.1	<p>Subject to Council approval, hold a Seminar on Maintaining Historic Lighthouses – late May / early June 2013 update on problems, solutions for repair and maintenance and the future use of historic lighthouses.</p> <ul style="list-style-type: none"> <li>• Agree scope the event</li> <li>• Determine a location and host for the event</li> <li>• Prepare submission for council approval</li> <li>• Organise Seminar</li> </ul>	EEP21	<p>Seminar proposal approved by Council 53.</p> <p>Seminar successfully concluded in Greece June 2013.</p>
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Sessions Heritage and Civil Engineering - Chairman: B. McIntosh

Item	15	16	17	18	19	20	21	Comments
9.1.1	■	■	■	■	■	■	■	On-going
9.2.1	■	■	■					Completed at EEP17
9.3.1		■	■	■	■			Completed at EEP19
9.4.1			■	■	■			Completed at EEP19
9.4.2						■	■	Additional case studies will be posted on the IALA website when received
9.5.1	■	■	■	■	■	■		Completed at EEP21
9.5.2						■	■	Funding opportunities for publishing being explored
9.6.1	■	■	■	■	■	■		On-going
9.6.2	■	■	■	■	■	■	■	On-going – making use of IALA bulletin, IALA Wiki, email groups etc. for sharing information
10.1.1	■	■	■	■	■			Completed at EEP19 - Floating AtoN component transferred to WG1.
10.2.1	■	■	■	■	■	■	■	On-going - Information received to date has be placed on the IALA Wiki

10.2.2				■	■	■	■	Completed at EEP21 – further revision of documents in planned for the next work term
10.3.1			■	■	■	■		Completed at EEP21
12.4.1			■	■	■			Completed at EEP18
16.2.1	■	■	■	■	■	■	■	Seminar successfully concluded in Greece June 2013.

### WG3 – Environment, Quality Assurance and Publications - Chairman: D. Jeffkins

Task No	Task	Obj No	Objective	Activity No	Details of work to be undertaken	Expected completion	Comments
1	Knowledge Sharing / Knowledge Management, taking into account open source software	1.1	Develop procedures for informal sharing of information between members.	1.1.1	Develop procedures for informal sharing of information between members.	EEP21	Procedures for adding content to the IALA Wiki completed at EEP 21. Further work in this area is planned.
		1.2	IALA Reference Library. Develop and populate the IALAWIKI with information on Aids to Navigation (AtoN) not included in official IALA documents.	1.2.1	Develop and populate the IALAWIKI with information on Aids to Navigation (AtoN) not included in official IALA documents.	EEP21	IALA Wiki is operational and will be further developed during the next work term.
6	Environment and Safety	6.1	Provide guidance on methods for determining and reducing carbon footprint of AtoN services, handling of mercury in lighthouses, worker safety, treating legionella and coli bacteria in water supplies of unmanned stations.	6.1.1	Develop new Guideline on methods for determining and reducing carbon footprint of AtoN services, possibly through an additional chapter in the Green guide.	EEP21	Incorporate into Green Guide update Completed at EEP21
				6.1.2	Revise NAVGUIDE content for guidance on safe handling and management of mercury.	EEP18	Completed at EEP18
				6.1.3	Develop new Guideline on treating legionella and coli bacteria in water supplies of unmanned stations.	EEP21	Information received will be posted on the IALA Wiki.



Task No	Task	Obj No	Objective	Activity No	Details of work to be undertaken	Expected completion	Comments
							Completed at EEP21
				6.1.4	Develop new Guideline on development of safety management for AtoN activities	EEP19	Completed at EEP19
		6.2	Consequences of global warming in terms of storm events and sea level rising on AtoN provision and maintenance.	6.2.1	Incorporate consideration of the implications of global warming on AtoN provision in the 'Green Guide'.	EEP21	Incorporate into Green Guide update Completed at EEP21
		6.3	Update the IALA Green Guide.	6.3.1	Revise Guideline 1036 IALA Green Guide	EEP21	Completed at EEP21
7	Aids to Navigation Training	7.1	Assist in developing the World Wide Academy, e-training.	7.1.1	Develop new Model Course for the Accreditation of Level 1 AtoN Training	EEP18	Completed at EEP17
				7.1.2	Develop Model Course for Accreditation of Level 2 AtoN Technician Develop detailed Model Courses for Level 2 AtoN Technician Training	EEP18 EEP21	Completed at EEP16 Completed at EEP21 - All level 2 technicians model courses now complete
8	Product Procurement	8.1	Provide guidance on the procurement of AtoN equipment and systems.	8.1.1	Review Withdrawn Product Certification scheme including references in other documents and make recommendations Develop new Guideline on the procurement of AtoN equipment Procurement of AtoN equipment and systems.	EEP21	Completed at EEP21 – new Guideline not required
		8.2	Maintain and develop product templates.	8.2.1	Maintain and develop product templates. Templates can be annexed in the Procurement	EEP21	Completed at EEP21 – On-going review planned

Task No	Task	Obj No	Objective	Activity No	Details of work to be undertaken	Expected completion	Comments
					Guideline.		
		8.3	Consider developing an IALA Product Guide.	8.3.1	Develop IALA product guide database schema	EEP18	Completed at EEP16. AtoN products are now displayed on the revised IALA website.
				8.3.2	Develop new Guideline and XML schema for AtoN product data exchange	EEP19	Task moved to WG1
12	Quality Management	12.1	Provide guidance on Quality management in Aids to Navigation Engineering, quality assurance of Aids to Navigation services	12.1.1	Contribute to the review of Recommendation 0-132 on quality management for aids to navigation authorities	EEP20	Completed at EEP18
				12.1.2	Review Guideline 1052 on quality management in aids to navigation service delivery	EEP21	Completed at EEP18
				12.1.3	Manage Review of NAVGUIDE Review and update NAVGUIDE Section 8.3, 8.7, 8.8, 8.9, 8.10, 8.12	EEP21	Completed at EEP20
		12.2	Further work on Key performance indicators.	12.2.1	Develop Guideline on key performance indicators	EEP21	Completed at EEP21 – information received posted on IALA Wiki
16	Workshops and Seminars	16.3	Workshops and Seminars	16.3.1	Subject to Council approval, hold a Seminar on Model training courses covering different AtoN systems and services (Promotion of the IALA World-Wide Academy) 2013. Agree scope the event Determine a location and host for the event Prepare submission for council	EEP 21	This task is being undertaken by the WWA  EEP will assist the WWA where required

Task No	Task	Obj No	Objective	Activity No	Details of work to be undertaken	Expected completion	Comments
					approval Organise Seminar		

## Sessions Environment, Quality Assurance, and Publications - Chairman – D. Jeffkins

Item	15	16	17	18	19	20	21	Comments
1.1.1			■	■	■	■	■	Completed at EEP21
1.2.1			■	■	■	■	■	Completed at EEP21
6.1.1		■	■	■	■	■		Completed at EEP21
6.1.2	■	■	■	■				Completed at EEP18
6.1.3		■	■	■	■	■		Completed at EEP21
6.1.4	■	■	■	■	■			Completed at EEP19
6.2.1				■	■	■		Completed at EEP21
6.3.1		■	■	■	■	■		Completed at EEP21
7.1.1	■	■	■	■				Completed at EEP17
7.1.2	■	■	■	■	■	■	■	Completed at EEP21 - All level 2 technicians model courses now complete
8.1.1			■	■	■	■	■	Completed at EEP21 – new Guideline not required
8.2.1	■	■	■	■	■	■	■	Completed at EEP19 - Floating AtoN component transferred to WG1.
8.3.1	■	■	■	■				Completed at EEP16
12.1.1			■	■	■	■		Completed at EEP18
12.1.2				■	■	■	■	Completed at EEP18
12.1.3	■	■	■	■	■	■	■	Completed at EEP20
12.2.1				■	■	■	■	Completed at EEP21 – information received posted on IALA Wiki
16.3.1			■	■	■	■	■	This task is being undertaken by WWA

## WG4 – Light and Vision - Chairman: M. Nicholson

Task No	Task	Obj No	Objective	Activity No	Details of work to be undertaken	Expected completion	Comments
2	Engineering Visual Aids –	2.5	Update IALA Recommendation E-110	2.5.1	Update IALA Recommendation E-110, with respect to the characteristics of the EWMB	EEP19	Completed at EEP18
3	Visual Perception of Lights and Daymarks	3.1	Provide guidance on apparent intensity, probability of detection of visual aids, human perception of flickering light, conspicuity of lights, conspicuity of daymarks.	3.1.1	Continue the development of Draft Guideline 1073 on Conspicuity of AtoN Signal Lights at Night.	EEP16	Completed at EEP16
		3.2	Gather visual signalling documents in to a more logical suite of documents and examine how this might reflect on all EEP documents.	3.2.1	Review present and developing IALA documents related to visual signalling and gather into a suite of documents similar to the E200 concept.	EEP20	Scope has been expanded to cover all EEP documents
		3.3	Develop guidance on the degradation of LED light sources.	3.3.1	Update Guideline 1043 on Light Sources used in AtoN, to include additional information on LEDs.	EEP17	Completed at EEP17
		3.4	Provide guidance on vertical divergence of lights, focal plane height, sector lights, daymark design, surface colours.	3.4.1	Consider providing guidance on focal plane height of AtoN	EEP20	Review and update guidance on vertical divergence
				3.4.2	Revise Guideline 1041 on Sector Lights to include new work on this subject.	EEP20	Carried over to EEP22
				3.4.3	Develop new Guideline on Design of Daymark.	EEP20	Completed at EEP19
				3.4.4	Revise Recommendation E108 on Surface Colours to include measurement of surface colours.	EEP20	Completed at EEP20

Task No	Task	Obj No	Objective	Activity No	Details of work to be undertaken	Expected completion	Comments
		3.5	CIE Rapporteur with respect to Conspicuity of Lights	3.5.1	Monitor and report on relevant CIE work on visual AtoN.	EEP21	On-going
		3.6	Illumination of structures	3.6.1	Update Guideline 1061 on Light Applications - Illumination of Structures to include information on the use of colour floodlighting of lighthouses.	EEP21	Further input papers expected for EEP22
12	Quality Management	12.5	Update relevant sections of NAVGUIDE	12.5.1	Review and update NAVGUIDE Sections 3.1, 3.2	EEP20	Completed at EEP18 Co-ordinated by WG3
13	e-Navigation across Committees	13.4	Modulation of light sources to produce automatic identification and RCM.	13.4.1	Develop the concept of visible light for data communications, providing guidance if appropriate	EEP21	Information collected to date will be posted on the IALA Wiki. No action on IALA Guidance at present
16	Workshops and Seminars	16.4	Workshops and Seminars	16.4.1	<p>Subject to Council approval, hold a Workshop – Fixed and Floating AtoN (incorporates IALABATT/IALALITE and FLOATAID) 2012</p> <p>Agree scope the event</p> <p>Determine a location and host for the event</p> <p>Prepare submission for council approval</p> <p>Organise Seminar</p>	EEP20	Workshop successfully concluded in Brest Oct 2013.

## Sessions Light and vision – Chairman – M. Nicholson

Item	15	16	17	18	19	20	21	Comments
2.5.1				■	■			Completed at EEP18
3.1.1	■	■						Completed at EEP16
3.2.1			■	■	■	■		Scope has been expanded to cover all EEP documents
3.3.1	■	■	■					Completed at EEP17
3.4.1			■	■	■	■		?
3.4.2		■	■	■	■	■		?
3.4.3		■	■	■	■			Completed at EEP19
3.4.4			■	■	■	■	■	Completed at EEP20
3.5.1	■	■	■	■	■	■	■	On-going
3.6.1			■	■	■	■	■	?
12.5.1			■	■	■	■		Completed at EEP18
13.4.1	■	■	■	■	■	■	■	Completed at EEP21
16.4.1		■	■	■	■	■		Workshop successfully concluded in Brest Oct 2013