

## **Proposed text for inclusion within an IALA communication to IMO**

“In response to the desire expressed by IMO Council at its 114<sup>th</sup> Session to collect input to the planning process in the form of comments from member states as well as IGOs and NGOs on Trends Developments and Challenges, I wish to provide the following information and trust that it will benefit the planning within IMO.

The International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) was one of the first NGOs to be accorded consultative status at IMO. This was granted in 1961, four years after IALA's foundation in 1957.

### **IALA's purpose**

The aim of IALA is to foster the safe and efficient movement of vessels through the improvement and harmonisation of marine aids to navigation worldwide, and by other appropriate means for the benefit of the maritime community and the protection of the environment.

### **Governance**

IALA is governed by a Council of 24 national representatives. The IALA Secretariat is headed by a Secretary-General.

### **The IALA Strategic Vision and the focus of IALA's work**

Under a Strategic Vision adopted in 2014, IALA is directing its work towards two Goals for 2026

- 1) *Ensure that aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, are harmonised through international cooperation and the provision of standards*
- 2) *All coastal states have contributed to an efficient global network of aids to navigation and services for the safety of navigation, through capacity building and the sharing of expertise*

To this end, a set of Strategies has been formulated, as well as Priorities for IALA's current 2014-2018 work period. The complete IALA Strategic Vision may be found on the IALA website at [http://www.iala-aism.org/files/Vision/iala\\_strategic\\_vision.pdf](http://www.iala-aism.org/files/Vision/iala_strategic_vision.pdf) It is also attached here as Annex 1.

### **Technical Committees**

With a focus on the two Goals, IALA operates four technical Committees. The purpose of the Committees is the creation of standards, recommendations, and guidelines in draft form, for approval by the IALA Council and, in the case of Standards, by the General Assembly. After approval, these documents are published on the IALA website for public access.

Each Committee has a series of Technical Domains within which it works.

- Aids to Navigation Requirements and Management Committee
  - <http://www.iala-aism.org/meetings-events/committees/anm.html>
- Vessel Traffic Services Committee

- <http://www.iala-aism.org/meetings-events/committees/vts.html>
- Engineering and Sustainability Committee
  - <http://www.iala-aism.org/meetings-events/committees/eep.html>
- E-Navigation Committee
  - <http://www.iala-aism.org/meetings-events/committees/enav.html>

### **The IALA World Wide Academy**

The IALA World Wide Academy (WWA) is an integral, but independently funded part of IALA. It commenced operations in January 2012. The IALA World-Wide Academy is the vehicle by which IALA delivers training and capacity building.

The Academy develops model courses on aids to navigation training, operates an accreditation system for aids to navigation training authorities, and manages systematic aids to navigation capacity building to enable National Authorities to meet their obligations under the UNCLOS and SOLAS Conventions.

The Academy Master Plan 2015-2019 may be found at website page <http://academy.iala-aism.org/mission-and-aims/master-plan.html> The Plan is also attached here as Annex 2.

### **Change of IALA status**

In 2014 the IALA General Assembly adopted a resolution for a change to IGO status stating that the new status should be achieved as soon as possible (General Assembly Resolution A.01 of 27 May 2014). The change will benefit the safety of navigation and the protection of the environment via increased harmonisation of aids-to-navigation.

IALA has worked closely with the IMO since 1961 and expects that IGO status will strengthen cooperation. IALA has submitted an “INF” paper to IMO Council explaining this change

### **Trends, Developments, and Challenges**

IALA provides the following points for consideration by IMO in its forward planning. We have purposely limited these points to a small number.

#### **e-Navigation**

If the potential of e-navigation can be developed to increase the efficiency of shipping, there should be a reduction in bunker fuel use and a consequent reduction in emissions. Improved and harmonised maritime information services from shore authorities can contribute to this improvement in efficiency. Better and harmonised information display has the potential to increase safety by improving the situational awareness of bridge teams. These benefits will be greatest with harmonised development of e-navigation technology, development of Maritime Service Portfolios, and earlwidspread modernisation of bridge systems.

One matter that is of concern is the almost-universal reliance on GNSS for position and timing, and the vulnerability of GNSS to intentional jamming and to natural phenomena such as space weather. Although two GNSS systems are in operation, and two more are under development, and this will give extra resilience, all GNSS

systems are subject to the same vulnerability. IALA is in favour of resilient positioning and timing for e-Navigation, and terrestrial radio-navigation back-up appears to be best for this. Loran-C and Chayka systems are in service in some areas and DGNSS is provided by Medium Frequency radio beacons in many regions. IALA's view on existing radio-navigation back-up for GNSS is that Loran-C and Chayka do not offer sufficient positioning accuracy, eLoran appears unlikely to be widely adopted, even if it is developed, and GNSS corrections from DGNSS radio beacons are no longer needed. IALA believes that the conversion of existing DGNSS beacons to "R-mode" positioning (now under development) is the best solution to the terrestrial back-up requirement. These beacons can also be used for NAVDAT information broadcast, so that the positioning back-up and the distribution of maritime information can be effected from the same network of stations.

#### The importance of capacity building

The work of the IALA World Wide Academy is directed to capacity building in developing states. The Academy stresses the understanding of international obligations under SOLAS and other conventions and the consequent need for provision of a sufficient network of aids to navigation and related services. IALA sees the need for the work of the Academy continuing well into the medium term, but is dependent on a small number of funding states and organisations in order to carry out its work.

#### Arctic navigation

Growing use of the Northern Sea Route and other Arctic waters, including by passenger cruise vessels, highlights the potential dangers from incomplete hydrographic information and the scarcity of aids to navigation in the area. IALA and IHO are in consultation on how to respond to this development. Provision of physical aids to navigation is difficult, costly, and can damage the environment, so it is likely that provision of virtual aids to navigation and of maritime service portfolio information will be by terrestrial or satellite radio broadcast. This will be especially so in areas away from human settlements and ports. Coordination of Arctic nations' work is necessary to achieve harmonisation of shore services.

#### Maritime safety

Construction of offshore renewable energy structures in or close to busy shipping routes with consequent reduction of sea room is of increasing concern to shore authorities. The reduction in sea room in the North Sea is a specific example.

IALA provides its members with guidance on marking these structures with aids to navigation but believes that the needs of safe navigation should be taken into account at the planning stages. This appears to be an area where IMO leadership is desirable.


I would be grateful if you would take this information into account, and hope that it will benefit the planning within IMO.

Yours etc.

Francis Zachariae

Secretary General

## 1. Annex 1 – The IALA Strategic Vision

	<b>THE STRATEGIC VISION FOR IALA for the period 2014-2026</b> (Approved by the IALA Council at its 56th session, 2013-12-11)	
<b>Purpose</b>	<p>The aim of IALA is to foster the safe and efficient movement of vessels through the improvement and harmonisation of marine aids to navigation worldwide, and by other appropriate means.</p> <p><i>Our motto - "Successful voyages, sustainable planet."</i></p>	
<b>Goals for 2026</b>	G1 - Aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, are harmonised through international cooperation and the provision of standards	G2 - All coastal states have contributed to an efficient global network of aids to navigation and services for the safety of navigation, through capacity building and the sharing of expertise
<b>Strategy for 2014-2026</b>	G1 S1 - Develop standards suitable for direct citation by States in areas deemed important by the General Assembly, and continue to improve strong governance, including document policy and procedure for standards	G2 S1 - Position IALA as the source of standards, knowledge, and expertise that will enable States to undertake and share the technical development of aids to navigation, in accordance with UNCLOS, SOLAS, and other obligations.
	G1 S2 - Improve and harmonise the delivery of VTS globally and in a manner consistent with international conventions, legislative frameworks and public	G2 S2 - Continue to develop capacity building activities to improve the global operations and management of aids to navigation systems and related services
	G1 S3 - Harmonise the information structure, Maritime Service Portfolios, and communications for e-Navigation by creating standards, and by cooperation with other IGOs, to achieve worldwide interoperability of shore and ship systems, including IMO sustainability goals for a maritime transport system.	G2 S3 - Coordinate the further development of VTS, e-Navigation, and short range aids to navigation, taking into account new technologies and sustainability.
	G1 S4 - Work towards the transformation of IALA into an IGO, to enable the organisation to better fulfil its objectives, subject to General Assembly decision.	G2 S4 - Create standards for the design and analysis of aids to navigation systems in areas where increasing environmental and economic developments are affecting navigable waters.
	G1 S5 - Ensure that the resources and capabilities of the Secretariat are sufficient to enable IALA and its committees and organs to reach its goals.	
<div><b>IALA's Strategic Domain</b><ul style="list-style-type: none"><li>• The term 'Marine Aid to Navigation' means a device, system, or service, external to a vessel, designed and operated to enhance safe and efficient navigation of all vessels and/or vessel traffic</li><li>• The organisation shall have a consultative, recommendatory, and technical nature</li></ul></div>		





## THE STRATEGIC PLAN FOR IALA for the work period 2014-2018 (Approved by the IALA Council at its 56th session, 2013-12-)

To attain our goals we will pursue a strategy, over the next four years, of focusing on our product structure, including creating a limited suite of standards to strengthen their usefulness and effectiveness. The content will emphasise coordination of the development and harmonisation of VTS, e-Navigation, and short range aids to navigation.

We will work to build capacity for managing and operating aids to navigation around the world in order to raise the current level of provision.

Subject to approval of the General Assembly, the status of the organisation will change from a NGO to an IGO in order to strengthen its impact on the safety of navigation and better facilitate the activities of the organisation.

### Priorities 2014-2018

Our Priorities for the four-year work period 2014-2018 are the following.

P1 - Transform the IALA product line by redefining and restructuring existing documentation to meet the future needs of the organisation, including document content, the approval process, and accessibility.

P8 - Provide guidance on management, engineering, and sustainability in aids to navigation, particularly concerning modern materials and light sources

P2 - Deliver a limited suite of high level standards suitable for direct citation by States and by other international organisations.

P9 - Promote the demonstration of e-Navigation services, through the provision of test beds, and the harmonisation of results.

P3 - Develop guidance on positioning, communications, Maritime Service Portfolios, and data modelling for e-Navigation

P10 - Develop guidance on information management, portrayal, and new technologies for VTS.

P4 - Develop guidance for the delivery of VTS, including communications, human factors, qualifications, and training.

P11 - Develop funding sources, programs and delivery options for The World Wide Academy.

P5 - Develop guidance on aids to navigation in navigable waters affected by operational limitations

P12 - As part of the WWA Master Plan, prioritise and conduct needs-assessment missions and related capacity-building activities, and further the use of Model Courses by national authorities.

P6 - Develop a forward plan for future delivery of aids to navigation systems and related services including VTS, taking account of developments in technology and changing needs.

P13 - Define common metrics and evaluation techniques, including risk analysis methodologies, for use in determining aids to navigation solutions.

P7 - Continue to improve guidance on light and vision aspects of marine signalling, consolidating documentation.

P14 - Promote technology transfer and knowledge sharing concerning aids to navigation.

**2. Annex 2 – The IALA World Wide Academy Master Plan 2015-2019**

# MASTER PLAN 2015 – 2019

---

Academy Strategy Document

Academy Board 11/19/2014



## 1. Introduction.

- 1.1 The IALA World-Wide Academy (The Academy) is an integral part of IALA. Thanks to sponsorship from a number of institutions, The Academy is self-funding. This enables it to pursue actively its role which was ratified by a Decision taken at the 52<sup>nd</sup> IALA Council Meeting. This stressed the particular importance of The Academy's role in Capacity Building and Training. The strategy for these two key deliverables is set out in a Master Plan.
- 1.2 The first Master Plan covered the four year period ending at the first Board Meeting in 2016 when an election of the three honorary members will fall due<sup>1</sup>. However the output of The Academy exceeded expectations. A decision was therefore taken at the 6<sup>th</sup> Board Meeting in April 2014 to review The Academy's strategy and produce a new Master Plan covering the five year period 1<sup>st</sup> January 2015 to 31<sup>st</sup> December 2019.
- 1.3 This Master Plan is supplemented by detailed annual Action Plans which cover the forthcoming year. The Action Plan for 2015 is at Appendix I to this Plan. Each subsequent Action Plan will be approved by The Academy Board at its autumn meeting. Both the Master Plan and annual Action Plans will be forwarded to Council for formal endorsement.
- 1.4 A key element supporting the work of The Academy is the technical and expert advice provided by existing IALA Committees upon whom The Academy depends and with whom the Academy will maintain a close and positive relationship. To ensure that this positive liaison is maintained, an Academy representative will brief each Committee at their biannual meetings. Dates for these briefings will be included in the annual Action Plans.

## 2 Capacity Building Strategy

- 2.1 The Academy Capacity Building strategy - the "4A" model set out in the first Master Plan - remains unchanged. It is based on a four-stage process.
  - **Stage 1:** Raising the **Awareness** of Executives in Ministries and senior managers of aids to navigation service providers charged by Competent Authorities for such services. This is achieved through targeted "Level 1+" seminars. The intended outcome of such seminars is for some or all Competent Authorities to ask The Academy to conduct a specific or regional needs assessment on their behalf.
  - **Stage 2:** Conduct an **Assessment** of needs for that State or group of States based on a visit by Academy-sponsored experts.
  - **Stage 3:** Produce an **Analysis** of requirements, based partly on available AIS data from several sources.
  - **Stage 4:** The intended deliverable for the four-stage process is to produce a list of **Actions** to meet the requirements identified during Stage 3 based on the principle of "SMART" objectives<sup>2</sup>.

### Capacity Building Target Regions

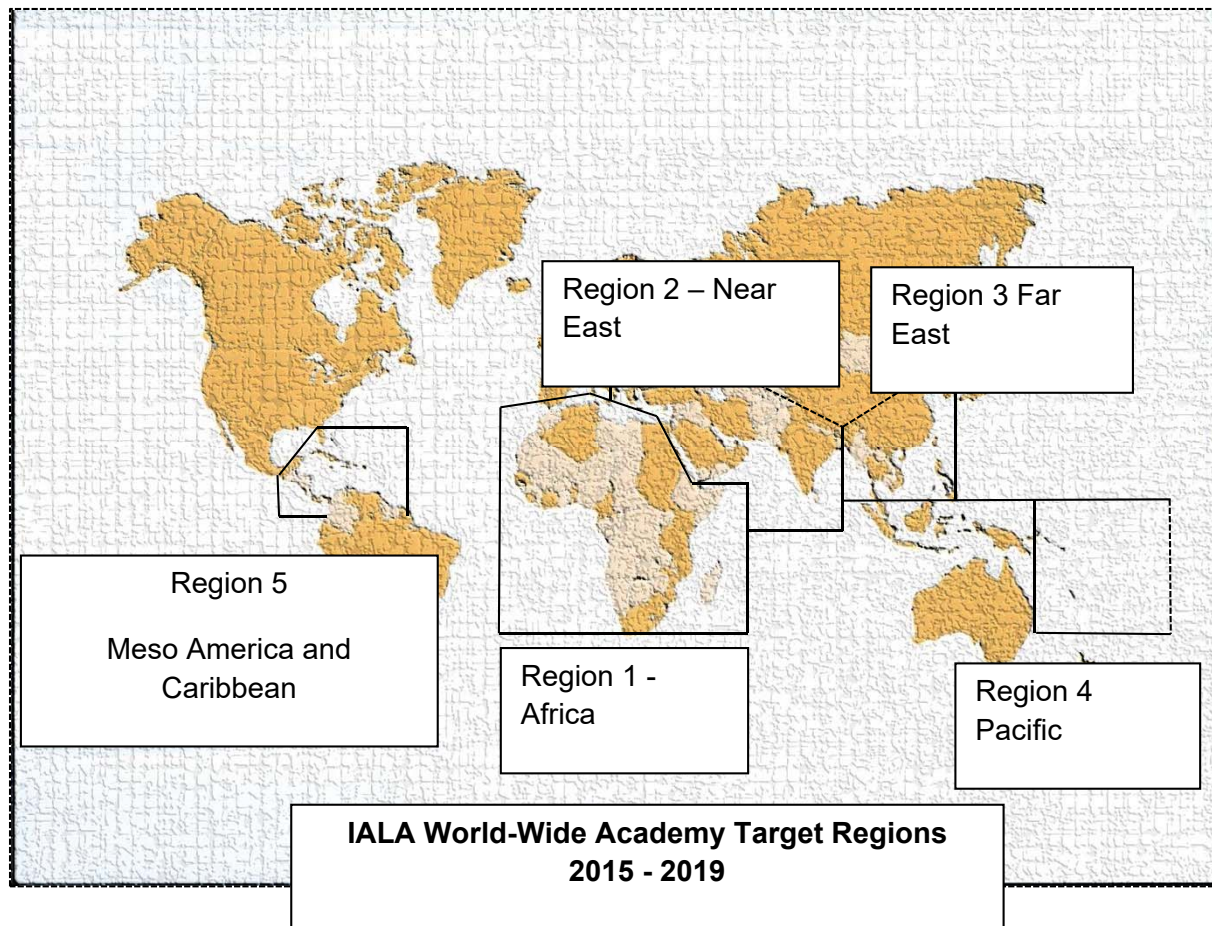
---

<sup>1</sup> Existing Board Members may be re-elected

<sup>2</sup> Targets to be Specific; Measurable; Achievable; Realistic and Timely



- 2.2 The first Master Plan used the delimitations of the IHO Regional Hydrographic Commissions (RHCs) to define 7 target regions. Seventy-five States within these regions which were not IALA members or members or observers of RHCs were designated as “Target States”. Countries in the Black Sea and Mediterranean regions were not included. A well-established IALA national member was identified in each region as a Regional Point of Contact (RPOC). This proved to be a reasonable first attempt at determining which countries should be targeted for capacity building.
- 2.3 The second Master Plan has reviewed the limits of the regions and the countries within them. Factors affecting that review were:
- Adoption of recommendations from Stage 2 missions resulted in a significant improvement in aids to navigation service delivery by the State visited
  - A number of target States identified in 2012 have joined IALA
  - The use of RPOCs was found no longer to be necessary
  - IHO regions do not match those of the IMO
  - Within Africa, Anglophone and Francophone countries were not geographically grouped together.
- 2.4 **Review of Target States from 2015.** The rationale behind the list of new target States was based on the 2011 UN list of 48 Least Developed Countries (LDC) and the April 2014 IMF list of Developing Economies (DE). Some countries were listed on both. All DE countries including those in the Baltic, Black Sea and Mediterranean regions were included. Land-locked nations were discounted. IALA national members, including those on the LDC list were then removed as they can develop capacity by interaction through its Committee Structure or by specific requests to The Academy. A revised list of Target States for the period 2015 – 2019 is at Annex A. This list represents a truly “world-wide” vision of where the Academy’s training and capacity building activity should be concentrated.
- 2.5 **Regional Hydrographic Commissions.** Participation at Regional Hydrographic Commissions has enabled The Academy to interact with several target States that were unable to attend the Level 1+ awareness seminars. This reinforced the UN “Delivering as One” capacity building strategy. Several of the States in the revised list of regions are members or observers in more than one Hydrographic Commission (HC). Continued participation in selected HCs will enable IALA’s capacity building strategy to be developed further through contacts with those States.
- 2.6 **Stage 1 Strategy.** As part of its Stage 1 “Awareness” strategy, The Academy successfully delivered a number of “Level 1+” awareness seminars from 2012 to 2014. Several of these were joint capacity building seminars with the IMO and IHO. The Academy recognizes the value of these joint seminars and intends to refine their delivery in the future through targeted seminars focusing on a specific geographical region or on specialist topics



### Stage 2 Strategy

2.7 The aim of the second stage of the Academy's CB strategy is to conduct a needs assessment mission to a specific State or group of States based on a visit by Academy-sponsored experts. Five such missions were conducted in 2013 and 2014. It is anticipated that up to six such missions will be conducted annually by the end of 2019.

2.8 A priority list for Stage 2 missions has been established. This has been based on the perceived degree of risk from an assessment of the following nine categories:

- Level of awareness by the national Competent Authority (CA)
- Level of awareness by the AtoN service provider
- AtoN service delivery
- Stakeholder liaison
- AtoN training accreditation process
- Level 1 AtoN Manager training
- Level 2 AtoN Technician training
- Compliance with IALA publications
- VTS service delivery (if appropriate)

2.9 The higher the average rating in the categories listed above, the lower the perceived level of risk. Target States with a rating of 3 or less have the highest priority. The aim is to lobby those States to invite the Academy to conduct a Stage 2 needs assessment mission within the next two years. States with a rating between 4 and 6 will be lobbied to request a Stage 2 mission within 6 years. States with a rating of 7 or higher that request a needs

assessment mission will be accommodated as soon as Academy resources permit, but in any case within 12 years.

### **3 Model Courses and Training**

- 3.1 There are two categories of IALA training - Vessel Traffic Service (VTS) training and AtoN training.

#### **VTS Training**

- 3.2 Details of VTS training are contained in IALA Recommendation V-103 and its four model course syllabi V-103/1-4. VTS model courses are developed by the VTS Committee, liaising with The Academy when appropriate, before they are submitted directly to Council for approval<sup>3</sup>.
- 3.3 VTS training based on the V-103 suite of model courses is delivered by Accredited Training Organisations (ATO). The Academy maintains the register of VTS ATOs and administers requests from VTS Competent Authorities for assistance with the accreditation process by IALA-endorsed VTS experts.

#### **AtoN Training**

- 3.4 The Academy works closely with IALA Committees; their Working Groups, and where appropriate with IALA Industrial Members, to ensure that AtoN model courses and other training documentation are maintained in the most efficient manner for the benefit of IMO-accredited training institutes; IALA Members and potential Members and their accredited training institutes and organisations.
- 3.5 Details of AtoN training are set out in IALA Recommendation E-141. This training is categorised as Level 1 for AtoN managers and Level 2 for AtoN technicians. At the end of 2014 there were five Level 1 and 33 Level 2 model courses, all of which can be downloaded from the IALA website. These model courses will be updated regularly and new model courses will be developed as required.
- 3.6 All new AtoN model courses and revisions are input to the AtoN Engineering and Sustainability Committee (ENG). Final drafts are forwarded directly to The Academy Board for approval before being sent to Council for endorsement.
- 3.7 “The successful delivery of AtoN services depends upon competent and experienced personnel to implement and maintain such aids”<sup>4</sup>. The Academy recognises that capacity building depends principally on target States having an adequate resource of trained AtoN managers both within the Competent Authorities and within the AtoN service providers. Qualified and experienced managers can then oversee the training of AtoN technicians.
- 3.8 The Academy does not generally deliver AtoN training itself. Academy strategy for AtoN training is to facilitate it regionally by ATOs established at appropriate hubs in each of the

---

<sup>3</sup> The VTS Committee has appointed a dedicated rapporteur to advise it of Academy activity concerned with VTS matters

<sup>4</sup> IALA Recommendation E-141 paragraph 1.1.2

target capacity building regions. However until sufficient ATOs have been established, The Academy will consider delivering an annual one-month Level 1 AtoN Manager course at IALA Headquarters aimed primarily as a “train-the-trainer” opportunity. Level 1 AtoN Manager training documentation produced by The Academy can be supplied to other ATOs under the terms of a tailored Memorandum of Understanding.

- 3.9 The Academy also delivers an annual five-day seminar on the use of the IALA Risk Management Toolbox and an annual 2-day introduction to e-navigation course. The Academy has no plans to deliver any Level 2 training itself. However it will facilitate such training by ATOs as appropriate if requested to do so by the relevant Competent Authority

## **4 Funding**

- 4.1 The Academy relies on generous sponsorship from a number of sources. Such sponsorship is either donated directly or in kind through the provision of services and personnel. The Board of The Academy will continue to seek sponsorship from existing and potential sponsors to ensure that adequate funding is available to meet its Council-approved plans.
- 4.2 The Academy budget covering all its activities is submitted annually for approval by the Board. Major sponsors are provided with appropriate reports of how their funding is targeted at its two key deliverables of capacity building and training.

## **5 The Master Plan – Key Actions**

- 5.1 The Academy’s Master Plan for the period 2015 – 2019 focusses on the following key actions:
- Continue the programme of targeted “Stage 1 Awareness” seminars until all target States have achieved a satisfactory level of awareness
  - Maintain a close liaison with members of the Joint Capacity Building Committee in accordance with the United Nations “Delivering as One” strategy
  - Participate actively in Regional Hydrographic Commissions to demonstrate the effectiveness of “Delivering as One”.
  - Expand the programme of “Stage 2 Needs Assessment” technical missions utilising IALA-endorsed experts where appropriate.
  - Maintain close liaison with IALA Committees to ensure that capacity building initiatives and existing and future model courses are developed appropriately.
  - Encourage the establishment of regional Accredited Training Organisations and facilitate AtoN and VTS training in them.
  - Maintain adequate funding for these actions

Region 1 Africa	Target States - Total 20	Anglophone	Francophone	IHO RHC
Region 1A Africa Anglophone (AA)	Angola	x		SAIHC
	Cape Verde	x		EAtHC
	Eritrea	x		NIOHC
	Gambia	x		EAtHC
	Ghana	x		EAtHC
	Liberia	x		EAtHC
	Libya	x		none
	Namibia	x		SAIHC
	Sao Tome & Principe	x		EAtHC
	Seychelles	x		SAIHC
	Somalia	x		NIOHC
	Sudan	x		NIOHC
	<b>Region 1A States</b>	<b>12</b>		
Region 1B Africa Francophone (AF)	Congo (Dem. Republic of)		x	EAtHC
	Congo (Republic of)		x	EAtHC
	Equatorial Guinea		x	EAtHC
	Guinea-Bissau		x	EAtHC
	Madagascar		x	SAIHC
	Mauritania		x	EAtHC
	Morocco		x	EAtHC
	Togo		x	EAtHC
	<b>Region 1B States</b>		<b>8</b>	

Region 2 - Near East	Target States - Total 13	IHO RHC
	Albania	MBSHC
	Bahrain	RSAHC
	Bangladesh	NIOHC
	Georgia	MBSHC
	Jordan	NIOHC
	Lebanon	MBSHC
	Lithuania	BShC
	Maldives	NIOHC
	Montenegro	MBSHC
	Pakistan	RSAHC
	Sri Lanka	NIOHC
	Syria	MBSHC
	Yemen	NIOHC

Region 3 - Far East	Target States - Total 5	IHO RHC
	Brunei Darussalam	EAHC

	Cambodia	EAHC
	Korea (Dem. Peoples Republic)	EAHC
	Myanmar	EAHC
	Timor-Leste (East Timor)	EAHC
<b>Region 4 - Pacific</b>	<b>Target States - Total 12</b>	<b>IHO RHC</b>
	Cook Islands	SWPHC
	Kiribati	SWPHC
	Marshall Islands	SWPHC
	Micronesia (Fed. States of)	none
	Nauru	none
	Niue	SWPHC
	Palau	SWPHC
	Samoa	SWPHC
	Solomon Islands	SWPHC
	Tonga	SWPHC
	Tuvalu	SWPHC
	Vanuatu	SWPHC
<b>Region 5 -Meso-America and Caribbean</b>	<b>Target States - Total 19</b>	<b>IHO RHC</b>
	Antigua & Barbuda	MACHC
	Bahamas	MACHC
	Barbados	MACHC
	Belize	MACHC
	Costa Rica	MACHC
	Dominica	MACHC
	Dominican Republic	MACHC
	El Salvador	MACHC
	Grenada	MACHC
	Guatemala	MACHC
	Guyana	MACHC
	Haiti	MACHC
	Honduras	MACHC
	Nicaragua	MACHC
	Saint Kitts and Nevis	MACHC
	Saint Lucia	MACHC
	Saint Vincent & Grenadines	MACHC
	Suriname	MACHC
	Trinidad & Tobago	MACHC