SUMMARY

➢ About IALA
➢ The future
➢ Risk Management
➢ The World Wide Academy Strategy
➢ Delivering as one
➢ Recommendations
About IALA
International Association of Marine Aids to Navigation and Lighthouse Authorities
Aids to Navigation

A marine **aid to navigation (AtoN)** is:

“a device, system or service, **external to vessels**, designed and operated to enhance safe and efficient navigation of individual vessels and/or vessel traffic”

(Reference: NAVGUIDE 1.8 and introduction to Ch 3)

Not to be confused with a navigational aid (**navaid**) which is:

“an **instrument, device or nautical publication (NP) carried on board** a vessel for the purpose of assisting navigation”.
The Maritime Buoyage Agreement

IALA A and IALA B

During the IALA conference in November 1980 two navigation marking systems, i.e. the System A (red color for the left hand of the ship) and the System B (red color for the right hand of the ship), were combined into one - the IALA System.
Name the mark
Headquarters

St. Germain-en-Laye, near Paris, is the home base of IALA providing:

• Offices of the permanent secretariat and

• IT-equipped meeting rooms for technical committees, workshops and seminars
A Brief History of IALA

• Technical lighthouse conferences had been convened since 1929

• IALA was formed in 1957 as a technical association based in Paris to support the goals of those earlier conferences

• The organisation has a consultative, recommendatory, and technical nature and is a not-for-profit and non political international association with Non-Governmental Organisation status
Aids to Navigation
IALA Constitution Art. 1

“A device, system or service, external to vessels, designed and operated to enhance safe and efficient navigation of individual vessels and/or vessel traffic"

(Reference: NAVGUIDE 1.8)
Aids to Navigation

Not to be confused with a navigational aid (navaid) which is:

“an instrument, device or nautical publication (NP) carried on board a vessel for the purpose of assisting navigation”.

The IALA “Motto” and principal aims

"Successful voyages, sustainable planet"

- To harmonise standards for Aids to Navigation systems worldwide
- To facilitate the safe and efficient movement of shipping
- To enhance the protection of the marine environment
Four Types of Membership

• 85 National Members (Coastal States)
• 59 Associated Members
• 130 Industrial Members
• 47 Honorary Members
Governance structure

- General Assembly meets every 4 years (next 2022)
- Council (24 members) meets biannually
- Council Working Groups:
  - Strategy Group
  - Finance and Audit Committee
  - Policy Advisory Panel
  - Legal Advisory Panel
The Committees
The “Power House” of IALA

- AtoN Requirements and Management (ARM)
- Engineering and Sustainability (ENG)
- Vessel Traffic Services (VTS)
- e-Navigation (ENAV)
Publications
Main result of the Committees work

- **Standards** which can be referred to directly in IMO and other Conventions and national maritime laws

- **Recommendations** advise what should be done

- **Guidelines** advise how to implement the recommendations as “best practice”

- **Manuals** (NAVGUIDE; MBS; VTS Guide; CLU; IALA Dictionary)

- **Model courses** which provide guidance on the training of VTS personnel; Aids to Navigation Managers and Aids to Navigation Technicians.
IALA Website www.iala-aism.org

Select Products & Projects to download publications
Core Activities

- To bring together **AtoN experts** from around the world to enable them to exchange and compare their experiences and achievements in technical committees and working groups.

- To develop **common best practice standards** in the form of Recommendations and Guidelines to ensure that mariners have AtoN which will meet their needs both now and in the future.

- To encourage **cooperation between nations** to assist developing countries in establishing AtoN networks based on the degree of risk for the waterway concerned.

- To contribute to a **reduction in marine accidents; increased safety** of life and property at sea and the **protection of the marine environment**.
Organization

Three Pillars

• Policy and Technical Operations
• Administration and Finance
• The World-Wide Academy
Workshops of technical experts in a specific subject generate draft Guidelines and/or enable new skills to be acquired.

Seminars allow sharing of information and experiences for specialists through presentation of papers on a specific topic with discussion sessions.
Strategic Vision and Goals for 2026

Goal 1
Ensure that aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, are harmonized through international cooperation and the provision of standards.

Goal 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.
The Future
From a Non-Governmental Organization to an Intergovernmental Organization
IALA’s cooperation with other international organizations
Particular status or Memorandum of Understanding (MoU)

Consultative Status
IMO

MoU
IMO
CIRM
IMPA
The Nautical Institute
IHMA
IMSO
International Mobile Satellite Organization
PACIFIC COMMUNITY
Communauté du Pacifique
IALA’s future as an IGO
A major step in the evolution of IALA

• In May 2014 the IALA General Assembly passed a Resolution supporting the change of from that of a NGO to that of an international intergovernmental organization (IGO) - a major step in the evolution of IALA
• The Government of France has commenced diplomatic activities to inform the Governments of Member States of this proposed evolution
• A Diplomatic Conference will be convened – hopefully by 2019 after 3 PreDipConf (Paris 2017, Marrakesh 2018, Istanbul 2019)
• IALA’s core activities will not be affected
Advantages of IGO Status

• Increased international acceptance of Standards and existing Recommendations and Guidelines due to direct participation by Governments. Harmonization will be enriched.

• Enhanced liaison with IMO and IHO with IALA as an equal partner. Synergies between this trinity of excellence would make more efficient use of the resources available.

• Headquarters agreement with host nation will provide additional financial, operational and human resource capabilities and less bureaucratic hurdles for Members.
IALA membership fee

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Contribution (€)</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Member*</td>
<td>Authority legally responsible for aids to navigation in its country</td>
<td>16,170</td>
</tr>
<tr>
<td>Membre national</td>
<td>Administration légalement responsable d'aides à la navigation au niveau national</td>
<td></td>
</tr>
<tr>
<td>Industrial Member*</td>
<td>Manufacturer, distributor or consultant in aids to navigation</td>
<td>6,350</td>
</tr>
<tr>
<td>Membre industriel *</td>
<td>Fabricant, distributeurs d'aides à la navigation ou ingénieur conseil</td>
<td></td>
</tr>
<tr>
<td>Associate Member*</td>
<td>Port, scientific organisation or service responsible for aids to navigation in a specific area of a country</td>
<td>3,070</td>
</tr>
<tr>
<td>Membre associé *</td>
<td>Port, organisation scientifique ou service responsable d'aides à la navigation au niveau régional</td>
<td></td>
</tr>
</tbody>
</table>
Risk Management

The IALA Risk Management Toolbox
Navigational Risk

- Grounding
- Collision

...?
How?

- How to measure Traffic Volume?
- How to Quantify Risk?
IALA Risk Management Toolbox

PAWSA – 30 experts
IWRAP MkII – calculates statistics
SIRA – a few stakeholders who really care
### Risk Value Matrix (SIRA)

<table>
<thead>
<tr>
<th>CONSEQUENCE OR IMPACT</th>
<th>PROBABILITY OR LIKELIHOOD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very Rare (1)</td>
</tr>
<tr>
<td>Catastrophic (5)</td>
<td>5</td>
</tr>
<tr>
<td>Major (4)</td>
<td>4</td>
</tr>
<tr>
<td>Severe (3)</td>
<td>6</td>
</tr>
<tr>
<td>Minor (2)</td>
<td>2</td>
</tr>
<tr>
<td>Insignificant (1)</td>
<td>1</td>
</tr>
</tbody>
</table>
Risk Control Options (RCO)

RCO for each undesirable incident reduce the risk to a level (*As Low As Reasonably Practicable - ALARP*) which is acceptable to stakeholders.

The Risk Value will determine what action is required.

<table>
<thead>
<tr>
<th>Risk Value</th>
<th>Risk Category</th>
<th>Action Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 4</td>
<td>Green</td>
<td>Low risk. No RCOs unless implemented at low cost</td>
</tr>
<tr>
<td>5 - 8</td>
<td>Yellow</td>
<td>Moderate risk. Reduce to ALARP level through RCOs</td>
</tr>
<tr>
<td>9 - 12</td>
<td>Amber</td>
<td>High risk requiring RCO and significant funding</td>
</tr>
<tr>
<td>15 - 25</td>
<td>Red</td>
<td>Very high and unacceptable risk – immediate action required with major funding. Ports/waterways may need to close until risks are at ALARP level</td>
</tr>
</tbody>
</table>
The Higher the “Score” the greater the need

<table>
<thead>
<tr>
<th>Maturity of Maritime Management</th>
<th>Priority One</th>
<th>Priority Two</th>
<th>Priority Three</th>
</tr>
</thead>
<tbody>
<tr>
<td>high</td>
<td>States with smallest need</td>
<td>States with smaller need</td>
<td>States with some need</td>
</tr>
<tr>
<td>low</td>
<td>States with greater need</td>
<td>States with the greatest need</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Volume of Traffic and Degree of Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>low</td>
</tr>
<tr>
<td>high</td>
</tr>
</tbody>
</table>
## Target States 2017

<table>
<thead>
<tr>
<th>Degree of Need</th>
<th>Africa</th>
<th>Europe</th>
<th>Asia</th>
<th>Pacific</th>
<th>Americas</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smallest need</td>
<td>1</td>
<td>12</td>
<td>7</td>
<td>1</td>
<td>6</td>
<td>27</td>
</tr>
<tr>
<td>Smaller need</td>
<td>10</td>
<td>16</td>
<td>13</td>
<td>8</td>
<td>13</td>
<td>60</td>
</tr>
<tr>
<td>Some need</td>
<td>6</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>18</td>
</tr>
<tr>
<td>Greater need</td>
<td>7</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>7</td>
<td>22</td>
</tr>
<tr>
<td>Greatest Need</td>
<td>14</td>
<td>2</td>
<td>7</td>
<td>0</td>
<td>4</td>
<td>27</td>
</tr>
</tbody>
</table>

If a State is on the target list, it has yet to demonstrate its capability to meet its obligations under SOLAS Chapter V so that MSI and AtoN services are delivered to full international standards.
### Those in need

<table>
<thead>
<tr>
<th>Priority 1</th>
<th>Priority 2</th>
<th>Priority 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AFRICAN REGION</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Africa anglophone</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eritrea</td>
<td>Gambia</td>
<td>Namibia</td>
</tr>
<tr>
<td>Ghana</td>
<td>Liberia</td>
<td>Seychelles</td>
</tr>
<tr>
<td>Lybia</td>
<td>Nigéria</td>
<td></td>
</tr>
<tr>
<td>Sierra Leone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Somalia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sudan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tanzania</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Africa francophone</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benin</td>
<td>Cameroon</td>
<td>Cote d'Ivoire</td>
</tr>
<tr>
<td>Comoros</td>
<td>Gabon</td>
<td>Tunisia</td>
</tr>
<tr>
<td>Congo (Democratic Republic)</td>
<td></td>
<td>Madagascar</td>
</tr>
<tr>
<td>Congo (Republic)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guinea</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mauritanie</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Africa lusophone</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Angola</td>
<td>Mozambique</td>
<td>Sao Tome &amp; Principe</td>
</tr>
<tr>
<td>Guinea Bissau</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Priority**
- **1**
- **2**
- **3**
The World-Wide Academy
Training and capacity building
Accredited Training organisations (29)

- France *2
- Canada
- China
- Korea *2
- Malaysia
- Oman
- Portugal
- Spain
- Suriname
- Ukraine
- UAE
- Argentina
- South Africa
- Argentina

- India
- Fiji
- Chile
- Brazil
- Saudi Arabia
Capacity Building Strategy

Seminar

Mission

Review
Future Possible Training Hubs

Strategy is to have at least one Accredited Training Organization in each Target Region. Some ATOs to develop as regional training hubs. IALA WWA to facilitate where requested through MOUs.

<table>
<thead>
<tr>
<th>Region</th>
<th>VTS</th>
<th>AtoN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa (A)</td>
<td>Abidjan</td>
<td>South Africa</td>
</tr>
<tr>
<td>Africa (F)</td>
<td>Casablanca</td>
<td>Morocco</td>
</tr>
<tr>
<td></td>
<td>France</td>
<td></td>
</tr>
<tr>
<td>Near East</td>
<td>Abu Dhabi</td>
<td>Oman</td>
</tr>
<tr>
<td>Far East</td>
<td>Malaysia</td>
<td>Malaysia</td>
</tr>
<tr>
<td></td>
<td>Singapore</td>
<td>China</td>
</tr>
<tr>
<td></td>
<td>Japan</td>
<td></td>
</tr>
<tr>
<td>SW Pacific</td>
<td>Australia</td>
<td>Fiji (SPC)</td>
</tr>
</tbody>
</table>
Training organisations within Africa

- Accredited:
  - VTS: Algeria, South Africa
  - AtoN: Morocco, South Africa

- Possible:
  - VTS: Côte d’Ivoire, Egypt, Morocco
  - AtoN: Egypt
Level 1 AtoN Managers owning the certificate

51 owners within Africa: Benin (2), Cameroon (1), Comoros (2), Côte d’Ivoire (2), Democratic Republic of Congo (1), Djibouti (1), Gabon (2), Ghana (1), Guinea (2), Kenya (1), Liberia (1), Madagascar (3), Mauritius (1), Morocco (14), Togo (1), Senegal (1), Somalia (1), South Africa (11), Sudan (1)
AtoN Managers
Level 2 training participants

7 managers and technicians:
Djibouti (1), Comoros (3), Congo (1), Madagascar (1), Senegal (1)
Delivering as One
IMO, IHO, IALA
For consistent implementation and strengthening of international standards, capacity building actions are essential
Generalities – Hydrographic Conferences

Regular participation by IALA as an observer at the Hydrographic Commissions (EAtHC, NIOHC, SAIHC) meetings provided an ideal opportunity for follow-up “awareness” briefings with African States representatives.

The provision of both VTS and AtoN services should be based on a formal analysis of maritime traffic patterns and risk. The same applies to the provision of hydrographic services.
Regional hydrographic Conferences

- EAtHC - CHAtO
  Lisbon, Portugal, 2012
  Casablanca, Morocco, 2014
  Cadiz, Spain, 2016
  *Lagos, Nigeria, 2018*

- SAIHC - CHAIA
  Maputo, Mozambique, 2014
  Dar-Es-Salaam, Tanzania, 2015
  Cape Town, South Africa, 2016
  St Gilles, La Réunion, 2017
  Seychelles, 2018

- NIOHC
  Cairo, Egypt, 2017
IMO Audit

October 2005: IMO introduced a Voluntary Audit Scheme for IMO Member States (VIMSAS). States could ask IMO to check their compliance with IMO Statutory Instruments including SOLAS V Regulation 13.

References: IALA Guidelines No. 1054; 1115 on preparing for an audit on AtoN Service/VTS delivery.

The Audit Scheme is mandatory (legally enforceable) from 1st January 2016 onwards (26th Assembly Resolution A.1018(26) Nov 2009). National Authorities will be audited at some time after 2016.
<table>
<thead>
<tr>
<th>Year</th>
<th>No.</th>
<th>Country</th>
<th>Year</th>
<th>No.</th>
<th>Country</th>
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<tbody>
<tr>
<td>2016</td>
<td>1</td>
<td>Guinea-Bissau</td>
<td>2018</td>
<td>51</td>
<td>Djibouti</td>
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<tr>
<td></td>
<td>2</td>
<td>Guinea</td>
<td></td>
<td>67</td>
<td>Kenya</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Côte d'Ivoire</td>
<td></td>
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<td>Sudan</td>
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<td></td>
<td>5</td>
<td>Togo</td>
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<td>70</td>
<td>Sao Tome and Principe</td>
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<tr>
<td></td>
<td>6</td>
<td>Mauritania</td>
<td></td>
<td>71</td>
<td>Equatorial Guinea</td>
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<td>Angola</td>
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<td>Sierra Leone</td>
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<td>Seychelles</td>
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<td>United Republic of Tanzania</td>
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<td>22</td>
<td>Egypt</td>
<td></td>
<td>82</td>
<td>Comoros</td>
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<tr>
<td>2017</td>
<td>26</td>
<td>Ghana</td>
<td></td>
<td>83</td>
<td>Uganda</td>
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<td>Zimbabwe</td>
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<td>Libya</td>
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<td>35</td>
<td>Democratic Republic of the Congo</td>
<td>93</td>
<td>Mozambique</td>
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<td>37</td>
<td>Cape Verde</td>
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<td></td>
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<td></td>
<td>48</td>
<td>Madagascar</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
IMO Audit Instruments

- SOLAS – including Chapter V Regulation 12 & 13
- Maritime Pollution (MARPOL)
- Collision Regulations (COLREGS)
- Standards of Training Certification and Watchkeeping (STCW)
- Load Lines (LL)
- Tonnage Convention
Recommendations
SAIHC15 participants
Recommendations

It is recommended to SAIHC 15 participants:

➢ To be compliant with IMO Statutory Instruments
➢ To implement the action plans taking in account IALA WWA report recommendations
➢ To send participants to the IALA Technical Committees, to take benefits of the IALA membership, and increase the safety of navigation in their coastal States’ waters
➢ To train AtoN and VTS staff to allow them performing the required tasks

IALA could support coastal States in need (IMO Audit, CB, training)