



Regional Seminar on Safety of Navigation

**Accra, Ghana
7 to 9 April 2014**

REPORT

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The opinions expressed in this report are solely those of the authors
and do not in any way reflect the opinions or policies
of the International Maritime Organization, the International Hydrographic Organisation and the
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Summary and Recommendations

This three-day Accra regional seminar on safety of navigation was not designed at conferring specific qualification, but it was rather an awareness exercise or a briefing for the authorities in charge of maritime safety, and the other participants, to provide an overview on the way to improve safety of navigation and the efficiency of maritime traffic. Its content was based on the “IALA model course E-141/2 on Senior Management Training” with additional emphasis on hydrography and routing measures. However, taking into account the short duration of the seminar, the presentation of the different topic remained at the principle level and the delivery was of general nature consisting more of an overview of the coastal State obligations since the implementation of the revised SOLAS chapter V in 2002 and of the more recent tools developed to improve safety of navigation and traffic monitoring.

The seminar was held in Accra, Ghana, from 7 to 9 April 2014, and was beautifully hosted by the Ghana Maritime Authority. It was attended by 42 participants coming from Cape Verde, Equatorial Guinea, The Gambia, Ghana, Liberia, Nigeria and Sierra Leone. Although the format of this three-day seminar was initially aimed at the information of the authorities and the executives in charge of maritime safety and safety of navigation, the participants’ profession or responsibilities were more various than those. According to the general opinion expressed at the end of the seminar, all the participants appreciated and benefited from the information received.

In concluding the seminar, the participants wished to underline some of the key points developed during the meeting to improve maritime safety and maritime domain awareness, and adopted twelve recommended actions on:

- ✓ the adherence to IHO and IALA for those countries which are not already members,
- ✓ encouraging effective participation in meetings of IMO, IHO,
- ✓ the implementation of a national coordinated network interfaced with the NAVAREA Coordinator and the relevant charting authorities,
- ✓ signing acceptance of the IALA Maritime Buoyage System Agreement,
- ✓ co-operating, where appropriate, concerning the use of IALA’s risk management tools,
- ✓ the need to define and declare the VTS type, service level and VTS area,
- ✓ encouraging the IALA Member States to consider joining IALA-NET,
- ✓ encouraging the exchange of experience and knowledge at the regional level among neighbouring countries,
- ✓ considering the possibility of establishing one or more regional training organizations or institutions to achieve accreditation by the Competent Authorities in the region,
- ✓ considering using the expertise within IMO and IALA to conduct needs assessment missions,
- ✓ encouraging the participating countries to ratify and implement the IMO Conventions for countries not yet Parties to SOLAS and its Protocols, and
- ✓ requesting from the participants to IMO, IHO and IALA to continue their efforts in addressing safety of navigation in other regions by organizing similar activities in the future.

The full text of the Recommendations is at **Annex 1**.

1. Background and objective

This report deals with the development and presentation of the three-day regional seminar on safety of navigation in the West and Central African region. The seminar was held in Accra, Ghana, from 7 to 9 April 2014. It was attended by 42 participants coming from Cape Verde, Equatorial Guinea, The Gambia, Ghana, Liberia, Nigeria and Sierra Leone.

The seminar was delivered by:

- ✓ Captain Beatrice Vormawah, Head TC Implementation & Co-ordination Section, Dept. for MSA & IS, Maritime Safety Division, International Maritime Organisation (IMO) ;
- ✓ Mr Gilles Bessero, Director, International Hydrographic Organisation (IHO) ;
- ✓ Rear Admiral Jean-Charles Leclair, Dean of the International Association for Marine Aids to Navigation and Lighthouses Authorities (IALA) World-Wide Academy (WWA) ;
- ✓ Chief Engineer Jacques Manchard, Senior Adviser to IALA.

Country presentations were delivered by representatives of Cape Verde, Equatorial Guinea, Gambia, Ghana, Liberia, Nigeria and Sierra Leone.

The 2000 amendment of SOLAS chapter V which entered into force on 1 July 2002 has reinforced the obligations of coastal States, in particular regarding hydrography and aids to navigation. At the same time, new systems and equipment, such as AIS, have been developed to monitor the maritime traffic along the coasts and to facilitate coastal navigation. Tools are also now available to analyse risks of collision and grounding as required by SOLAS. The e-Navigation concept, which will result by continuous exchange of information between ships and shore, and shore and ships, is progressing well and will be ready to be implemented within few years. All those recent changes and progress should be known by all executives and authorities in charge of maritime safety and safety of navigation. This is why the IALA WWA has developed a “Level 1+” model course for senior management (E-141/2)”, on which this seminar was based.

The seminar hosted in Accra was the sixth such awareness seminar, initially during two days, but following a very positive liaison with the IMO and IHO as part of the United Nations “Delivering as One” capacity building initiative, it was extended to three days to incorporate country presentations; a greater emphasis on hydrography; compliance with other SOLAS chapters and risk assessment using the IALA risk management toolbox. It was the third organized in Africa by the Academy, and the second with IMO and IHO.

2. Preparation of the seminar

Due to the quality of the liaison between the Academy and the IMO, and following the awareness seminar conducted in Sydney, Australia, in November 2012, a proposal was made by the IMO to arrange an extended seminar in mid-2013. This event took place in Bangkok from 4th to 8th June 2013. The IMO generously agreed to organise the event under its Integrated Technical Cooperation Programme (ITCP) and sponsored attendance by delegates.

The same cooperation between IMO, IHO and IALA WWA was put in place for the awareness seminar conducted in Nouakchott, Mauritania, from 23 to 25 September 2013, for African French speaking countries (a first awareness seminar for the English speaking African countries having been delivered in Cape Town, South Africa, from 31 May to 1 June 2012).

The proposal for organising the three-day seminar for the English speaking African countries came after the success of the Mauritania Seminar and was supported by IALA WWA, IMO and IHO. The Ghana Maritime Authority also accepted with great kindness to host the meeting.

The support and superb organization provided by the Ghana Maritime Authority, and the government of Ghana cannot be overestimated. The selection of the modern and perfectly equipped Movenpick Ambassador Hotel, Accra, as the venue for the seminar was an inspired choice. We take the opportunity that this report provides to thank formally Hon. Mrs Dzifa Attivor, Minister of Transport, and Mr Peter Issaka Azuma, Director General of the Ghana Maritime Authority, who delivered the speeches at the Opening and Closing Ceremonies, and their dedicated staff, who worked tirelessly to ensure that the seminar proceeded so efficiently. They were supported before, during and after the seminar by IMO staff in the Headquarters in London and in Accra. The IALA Secretariat and IHO also provided their usual impeccable administrative support. This report also enables well deserved thanks to go to all of them.

For the 6th Awareness seminar, the Academy participation was funded mainly by its major sponsor, the International Foundation for Aids to Navigation (IFAN). The participation by Mr Gilles Bessero was made possible by in-kind sponsorship from the International Hydrographic Organisation. Their support is acknowledged with many thanks.

To help the representatives of the countries to prepare their participation to the seminar, a Competent Authority questionnaire (see **Annex 2**) was prepared by IMO, IHO and IALA. It was sent to the participants, with the IMO Feedback questionnaire (see **Annex 3**).

The attendance of participants from invited countries was sponsored by IMO through its Integrated Technical Co-operation programme (ITCP). The administrative, travel and related documentary arrangements were competently and mainly carried out by IMO secretariat, with the efficient assistance of the Ghana Maritime Authority.

A special thanks go to Mrs Eleanor Pratt, Deputy Director, Public Relations, Ghana Maritime Authority (GMA). Of course, the IMO, IHO and IALA WWA lecturers and secretariat would also like to acknowledge the very efficient help given by all the GMA Staff, for their warm welcome, their support and their efforts to facilitate their work in Accra.

3. The participants

A list of 42 participants, including the 4 lecturers, is attached as **Annex 5** to this report. The biggest number (28) of them was from Ghana, 6 other countries being each represented by 1 participant (Nigeria, Gambia) or 2 (Cape Verde, Equatorial Guinea, Liberia, Sierra Leone).

Although this three-day seminar is aimed at the information of authorities and executives in charge of maritime safety and safety of navigation, the variation in the participants' profession or responsibilities was broader than that. This was not a handicap for the success of the seminar. Many of the participants gained new knowledge from the seminar, providing them with a better understanding of the maritime traffic in general and the near future implementation of the e-Navigation with the development of interaction between ships and shore. Therefore, from this experience, there is no reason to limit the number of participants to future events of this kind.

4. Development of the seminar

Jean-Charles Leclair and Jacques Manchard arrived in Cape Town two days before the event and met with IMO and the organisers from Ghana Maritime Authority beforehand. It gave them the opportunity to discuss practical details and to visit the Movenpick Ambassador Hotel premises for the seminar.

Visiting delegates mainly arrived the day before the seminar, opened on Monday, 7 April 2014.

The opening ceremony commenced at 10:00 hrs with preliminary remarks by Rear Admiral Muhammed Munir Tahiru, Chairman of the opening ceremony, followed by a welcome address from Mr I.P. Azuma, Director General of GMA, a speech from Mrs Beatrice Vormawah on behalf of IMO, IHO and IALA, and was concluded by a keynote address presented by The Hon. Dzifa Attivor (Mrs), Minister of Transport. Copies of the different interventions are at **Annex 4**.

The lectures started immediately after the opening ceremony, and were conducted on the basis of the programme (see **Annex 6**), as detailed in paragraph 5 below, up to Wednesday 9 April at 15:30.

A group photograph was taken the last day.

Upon completion of the seminar, flash memory sticks were distributed to all, containing a complete set of the presentations delivered, IMO and IHO documentation, the list of the IALA Recommendations and Guidelines, the NAV Guide, the VTS Guide. A paper copy of the final version of the recommendations adopted by the participants was also distributed.

5. Content of the seminar

The seminar was not designed to confer specific competencies on its participants. It was rather an awareness exercise or briefing tailored for the authorities in charge of maritime safety, aids to navigation service providers and other maritime specialists, in order for them to get an overview of methods to improve safety of navigation and the efficiency of maritime traffic in the region. Part of its content was based on the syllabus of “IALA model course E-141/2 on Senior Management Training”. The presentation of the different topics covered the principles of aids to navigation service delivery. This focused on the obligations placed on coastal States since the implementation of the revised SOLAS chapter V in 2002 and of more recent tools developed to improve safety of navigation and traffic monitoring. It was extended to three days to incorporate country presentations; a greater emphasis on hydrography; compliance with other SOLAS chapters and risk assessment using the IALA risk management toolbox.

A total of 3 completed IALA questionnaires and of 30 completed IMO Evaluation questionnaires were received.

Details of 18 presentations delivered during the 11 Sessions (see **Annex 6**) are listed below.

Session 1 - Opening Ceremony and Introduction to the course

The opening ceremony commenced at 10:00 hrs, under the chairmanship of Rear Admiral Muhammed Munir Tahiru, with an Opening Prayer from Mr Seth Afotey Odai. After an introduction of the Chairman by Mrs Eleanor Pratt, Deputy Director, Public Relations, Ghana Maritime Authority, Rear Admiral Muhammed Munir Tahiru delivered the Chairman’s Remarks, before the Welcome Address delivered by the Director General of the Ghana Maritime Authority, Mr Peter Issaka Azuma (see **Annex 4**).

Remarks were then made by Captain Beatrice Vormawah, Head of the Technical Cooperation Implementation and Co-ordination Section, Department for Member State Audit & Implementation Support, Maritime Safety Division, International Maritime Organization, who stressed, on behalf of the IMO Secretary General, Mr Koji Sekimizu, that maritime education and training was one of the key pillars of safe management of shipping. She said that IMO had developed its Integrated Technical

Cooperation Programme to assist the implementation of safe navigation in key regions. A proper understanding of risks is key to the implementation of the IMO “Accident Zero” initiative.

The Keynote Address was delivered by Hon. Dzifa Attivor (Mrs), Minister of Transport. She highlighted the three key areas for navigational safety: regulations for safe navigation issued by the IMO and standards for aids to navigation and nautical charts developed respectively by IALA and the IHO. She noted that participation by these three key organizations at this seminar was a clear demonstration of support for the United Nations “Delivering as One” joint capacity building strategy. She welcomed all participants and the lecturers and declared the seminar open (see **Annex 4**).

Following the Chairman’s Closing Remarks, Ms Lydia Odai-Tettey provided the vote of thanks and a closing prayer delivered by Mr Seth Afotey Odai.

The work of the seminar began at 11:30 hrs. The IALA WWA Dean presented the objectives of the seminar, with the definition of different aspects of safety at sea, including maritime safety, safety of ships and safety of navigation. He explained how the participants should work, and briefed the delegates on the function of the two questionnaires. The first sent by IMO, was important for the lecturers so they could have a good understanding of the situation in the country, and right addresses. The second, an assessment questionnaire, needed to be completed through the seminar, and given to Jacques Manchard at the end of the seminar.

The IALA WWA Dean then introduced himself, the other presenters, before asking delegates to introduce themselves. Introductions from participants indicated a strong representation from senior management in the respective Competent Authorities.

The IALA WWA Dean stressed that it was not a training seminar for the managers of aids to navigation (AtoN), rather an awareness seminar for senior managers. He noted that the seminar’s objectives take into account the big changes of the last ten years (in particular the implementation of AIS), to give to the participants knowledge and vision for next years. He referred to the development of e-Navigation by the IMO, a concept now, but with big impact on the communications in the future, and especially new operational centres to deal with. So important investments will have to be done in the future by coastal States.

The seminar aimed at answering questions such as what has happened during the last past years, what are the new tools, what to do in the near future for the IMO mandatory audit, covering not only the ship safety aspect, but also SOLAS Chapter V (Safety of Navigation), and Chapter IV (GMDSS). An element to be taken into account is the fact that accidents in relation with the safety of navigation are as numerous as the one’s caused by safety of ships! The delegates could now make very good progress.

The agenda was presented and adopted.

Session 2 – International Organizations and their role in safety of navigation

IMO’s mandate on Safety of Navigation and Capacity Building Strategy was delivered by Captain Beatrice Vormawah. She thanked the IALA World-Wide Academy for its co-operation in developing seminars such as those conducted in Bangkok, Nouakchott and now in Accra. Partnership and working together, with the IHO, is the only method of achieving international maritime safety. There is a need for Capacity Building (programmes, work with IALA and IHO). She stressed that taking part in the decision making process at IMO was essential in that regard. She described the basic history of IMO, with the structures, including the new sub-committees (NSCR, etc), and the recent works (Polar routes, outcomes of NAV59 and MSC 92).

After lunch on the first day, a presentation on IHO was delivered by Mr Gilles Bessero, Director of the IHO. He explained the goals and responsibilities of the International Hydrographic Organization, as well as the role and structure of IHO organs. He focused on the obligations of coastal States contained in UNCLOS and in Chapter V of the SOLAS Convention, and highlighted the importance of the World-Wide Navigation Warning Service. He stressed the importance of hydrography as a principal support of the economy at sea and ashore, including the hinterland. He then explained IHO's policy and actions regarding its capacity building activity, describing past actions, the action plan for the present year and the years ahead. He pointed the low number of Member States in Africa, and invited the delegates to attend the next conference of the East Atlantic Hydrographic Commission, scheduled from 16 to 18 September 2014, Casablanca (Morocco), and the Fifth Extraordinary International Hydrographic Conference, from 6 to 10 October 2014, Monaco.

A presentation on IALA and the IALA World-Wide Academy was delivered by Rear Admiral Jean-Charles Leclair, the IALA WWA Dean. Having introduced IALA, pointing the importance to become member (not many people are interested in AtoN, IALA is the way to meet other people, and to progress) and its proposal to change its status to an Inter-Governmental Organisation (IGO) in due course, he outlined the tools available to deliver its objective. He then briefed on the Academy and its major sponsorship from IFAN – a charity funded by ship-owners, as well as contributions from other organizations. He reported that there were 19 target States in the Africa region. He went on to explain the training and accreditation process for both VTS and AtoN courses before detailing the WWA achievements in its first two years. He highlighted the one month AtoN Level 1 course organised in IALA HQ in March/April 2014.

Mona Lisa Video

The presentation was followed by a video on sea traffic management (STM) – the “Mona Lisa 1” concept- a description of what could be a new Sea Traffic Management between ships bridges and sea traffic coordination centres for benefit of efficiency of navigation, and with respect of safety and environment, utilizing potential of information technology. It looks as a dream, but not so far from the reality for some ships: already big container ships companies monitor their ships in such manner, 24 hours a day. Mona Lisa is one of the test beds in implementation of e-Navigation.

Session 3 – International Organizations concerned and Legislation

The IALA WWA Dean provided a brief on the other international organizations involved in safety of navigation. He introduced all international organizations concerned with the safety of navigation before moving on to the obligations of coastal States. He drew attention to the undertaking by coastal States to adopt international recommendations and guidelines; i.e. those published by IALA. He explained the adoption of the IALA Marine Buoyage System, the existing International Regulations – Conventions, Recommendations, Guidelines. He insisted on the need of national regulations (merchant shipping act), noting that nobody should implement AtoN without the appropriate decision of the Competent National Authority (CNA) and that the CNA should publish the list of all the AtoN (official register, with a maintenance chart). He indicated that there is also a need to have separate budget, and to organize an annual review meeting.

Session 4 - Navigation

The concept and accuracy of Navigation was delivered by Mr Gilles Bessero. He recalled that freedom of navigation is a basic principle with a few exceptions and noted that navigation is more an art than a science. He emphasized that maritime traffic is very important but hardly visible (more than 90% of goods and communications) and is a high-risk activity: 700 accidents per year, including 100 ship groundings, 60% of accidents caused by direct human errors. A brief on nautical publications and Maritime Safety Information (MSI) was delivered, stressing the importance of up to date information.

The IMO mandatory carriage requirement for ECDIS and its implementation plan were explained, as the development of Electronic Navigational Charts to be used with ECDIS.

Session 5 - Visual and radio aids to navigation

Mr Jacques Manchard opened the second day with a presentation on visual aids to navigation; sound signals and power supply which comprised a review of short range and traditional AtoN with interactive audience participation. He followed this with radio aids to navigation and satellite radionavigation systems, another review of radio AtoN with a focus on IALA's World Wide Radio Navigation Plan.

Mona Lisa 2 Movie

The IALA WWA Dean proposed the screening of the "Mona Lisa 2" video which presented a proposed "cloud" voyage data sharing concept between all ships and shore organizations in the region covered by the footprint.

After the movie, the participant from Nigeria pointed the fact that as such an easy access is possible, there is a risk of criminal activities. The IALA WWA Dean said that it was a normal way to react from master and ship owner perspective, and it needed to be taken in account. The AIS data (broadcasting) are available everywhere along the coasts. Aviation had the same problem. The data are available for planes with minutes of delay. It could be the same for ships. There was a need to start discussing the matter regarding security and safety aspects. The aim is efficiency of navigation, against ships waiting at anchor.

Session 6- Ships' Routeing and Reporting

Ships' routeing and reporting was delivered by Captain Beatrice Vormawah. She highlighted SOLAS V Chapter, regulations 10 and 11, as well as IMO Publication "Ships' Routeing" (2010 Edition) before moving on to procedures and responsibilities.

This was followed by a presentation by Mr Jacques Manchard on AIS and other technologies. In that presentation Mr Manchard described the use of AIS as an AtoN. This reviewed the technical aspect of AIS transceivers and messages which included real and virtual AtoN, remote monitoring and chaining. He touched on LRIT before detailing the development of Automatic Identification Systems (AIS) using Denmark's experience commencing in 2007. He briefed on AIS data sharing in the Baltic/North Sea and in African regions and the use of satellite AIS data which can be a cost-effective solution to collecting maritime traffic patterns. He highlighted its limitations due to "slot data collision" in the coastal zones. He suggested that one solution could be to integrate terrestrial and satellite AIS data.

Session 7- Traffic Monitoring

The IALA WWA Dean started his presentation by providing the definitions of "VTS" and the "Competent Authority". These are contained in IMO VTS Resolution A857 (20) and he proposed that its content should be incorporated in national legislation. He then reviewed VTS in general, drawing attention to the IMO Secretary General's "Accident Zero" proactive campaign, before covering global interaction with vessel traffic management/monitoring information systems under the heading of Maritime Operational Services (MOS).

Then he proposed some solutions to facilitate the role of coastal States to fulfil all their different obligations created by IMO years after years, and to organize a global monitoring of their waters for maritime domain awareness and the future implementation of e-Navigation.

The following presentation was on IALA-NET. After describing the principles of data sharing via IALA-NET, the IALA WWA Dean drew attention to IALA Recommendation E-142 on this subject. He explained the advantages of having access to the IALA-NET system for data sharing and encouraged IALA National Members to join IALA-NET. He recalled that AIS data cannot be classified and are available from commercial organizations. IALA-NET is free and complemented other systems.

Then Mr Gilles Bessero delivered a presentation on the IMO e-Navigation concept and the work of its correspondence group. This included the definition and application of e-Navigation; considerations of the human interface; the overarching architecture based on the S-100 exchange format and regional test beds and their harmonisation. He stressed the importance of maintaining high standards of conventional seamanship within the e-Navigation environment. Director Bessero highlighted the role played by the IHO in the e-Navigation concept, pointing the fact that navigation is driven by electronic systems, and that there is a continuous acceleration of technological developments.

Session 8 – Country presentations

Before the presentations were delivered, the need for the participants to fill the IALA and the feedback questionnaires was reminded.

Cape Verde

There are a total of 10 islands, with a 726,000 km² EEZ.

A presentation of the equipment was made: GMDSS; 24h/7days VHF; AIS (since 2006, 3 shore stations, cooperation with USA); Navtex station, with two broadcasts; SAR services, under cooperation with IMO; LRIT joint Africa Centre; 72 lighthouses (22 port approaches, 50 coastal); cooperation on hydrography with Portugal. A VTS has been implemented in August 2014, on operation in December 2014, and a second phase is scheduled for June 2015 (equipment received last week, ready to install), with 9 radars (coastal VTS).

Equatorial Guinea

The process of the implementation of the maritime administration is on-going.

The Gambia

There is a lack of manpower, so if AIS is still working, GMDSS is not functional.

Ghana

A description of the legal regime, the aids to navigation, the SAR and the VTMS has been made.

The coastline is of about 230 nautical miles long.

Ghana is member of IMO, applying UNCLOS, SOLAS, MARPOL, SAR, and initiates action towards IHO membership.

The domestic regulation is based on the Shipping Act 645, established in 2003 (NtoM and Nav Warnings, establishment and management of AtoN), and on the Ghana shipping regulations (protection of offshore and assets). IMO approved mechanism for protected areas, to be avoided, will be presented in IMO at the next MSC meeting.

Proposals are made to share with other countries, as cooperation has been put in place already with Republic of Korea, with EU for GMDSS, for AIS, with Spain for VTS.

The AtoN approach buoyage of ports, with 7 lighthouses, depends of port authorities.

A SAR sub-centre has been established at Tema, with IMO support, and is part of the Monrovia MRCC.

The equipment of the VTMS, enhancing continuous electronic surveillance of the entire coast of Ghana, includes: one LRIT Data Centre, 8 AIS for AtoN, 8 meteorological sensors, 2 GMDSS antennas (at Tema), 8 hydrological sensors. There are 4 control centres, 8 remote sensor sites, 3 remote base stations and 10 monitoring stations.

In response to the IALA WWA Dean asking who is in charge of that impressive installation, the answer was that the GMA is responsible for the GMA HQ Accra National Control Centre and the Navy for the 3 others (East, West and Navy HQ Area Control Centres).

Liberia

Liberia signed most of conventions, but is not member of the IHO or IALA. There are about 4 000 ships under the State flag. Everything has to be reborn, there are none operational AtoNs: ports should restore the traditional buoys ... There are many problems with ship wrecks, very numerous, result of the war, hazards to navigation.

There is no hydrographic structure, no cooperation with other countries. But recently, assessments were necessary for cables, it was successful after contact with IMO to define the safety zone, and prevent activities. A MOU with the UK Hydrographic Office for surveys, use of charts should be put in place.

There is a need for dredging from 9 to 12 m in channels, and from 6 to 9 m in ports, and to be ready for the traffic progress. There is no VTS, but one MRCC, run by the Ministry of Defence, for SAR with a regional cooperation, monitoring surveillance of the traffic ...

After a question about ocean and river regulation, Liberia indicated they have a separate framework for ocean and river regulation.

Nigeria

Safety of navigation is run by several entities: NIMASA (Nigerian Maritime Administration and Safety Agency), NNHO (Nigerian Navy Hydrographic Office - charting), NPA (Nigerian Ports Authority - safety of navigation inshore from the fairway buoy, VTS, TSS, AtoN, channel dredging), NIW (National Inland waterways). The MSI organization is not yet implemented; a new decision should be taken to launch it again. There is a MOU with the Navy for meteorological information. The AtoN implementation is on-going along the coast, as wreck investigations, to remove them. After request by the Transport Ministry, the implementation of the London Protocol 1972 has been done. A chart depot is to be put in place, for Notice to Mariners. Capacity Building actions are conducted with the support of universities.

At the end of the presentation, a video clip on safety was presented, and it was said to Ghana that it was not yet in place, but a very valuable project, with a capacity of implementation of about 70%.

Sierra Leone

The length of the coast line is about 400 km. The obligations and the responsibility for AtoN are specified in the Merchant Shipping Act. The implementation of AtoN belongs to port authorities. There is no VTS. There is no hydrographic centre. A Maritime Committee, including the major stakeholders (fish, security, ...), meets once a week.

Conclusion of the session

Lecturers and participants were impressed by the quality and the details provided by the distinguished delegates who delivered country briefs in such a professional manner. They saw real merit in including similar briefs delivered in accordance with guidelines developed by IMO in all future joint IMO/IHO/Academy seminars.

Session 9 - Management of AtoN services

Mr Jacques Manchard opened the third day with a presentation on aspects of the responsibilities of Competent Authorities concerned with AtoN management. The first part of the presentation focused on the management of AtoN services concentrating on levels of service, operational performance statements, navigation and strategic plans. In the part of the presentation on maintenance, tendering, environmental preservation and historic lighthouses he reviewed the requirement to deliver a service

that met the requirements of the mariner while minimising the cost of that service. He then considered contractual factors and guidelines before briefing on the aim to preserve and exploit historic lighthouses where appropriate. Reference to IALA Recommendations and Guidelines were given for the benefit of participants.

Session 10 – An introduction to The IALA Risk Management Tools

The IALA WWA Dean Jean-Charles Leclair gave an overview of the three IALA Risk Management Tools before defining “risk” and reviewing how simulation using both traditional and the emerging “numerical navigator” modelling can be used in the management of risks.

He described the quantitative “IWRAP Mk2” tool and its development from 2006. He explained that the model, based on AIS data, generates the likelihood of collisions and groundings in a particular waterway. Starting with a simple 3 x 3 risk matrix he explained the basic probabilistic IWRAP algorithm, its assumptions and the use of causative factors.

The IALA WWA Dean then screened a real IWRAP analysis based on the Danish Straits. This showed the distribution associated with each leg of the waterway. He advised that the latest edition of IWRAP contained an analysis on ships’ emissions. The programme is available free of charge for IALA members. A commercial version is also available, which enters the AIS data available for the area to consider automatically.

Rear Admiral Jean-Charles Leclair gave a presentation on the Port and Waterway Safety Assessment (PAWSA) tool which addressed those AtoN and other mitigations measures that were most effective. He briefed that PAWSA was a MS Excel-based tool run using a group of about 30 experts (users, stakeholders and regulators) over a two day period. The 4 x 6 waterway risk model (matrix) was introduced. The IALA WWA Dean advised that the IALA CD guide on running PAWSA was very comprehensive, but depended on English being the common language. The Academy was working on a model course for running a regional PAWSA in which local languages could be used. One of the inputs for such a course would ideally be electronic charts on which density plots could be overlaid.

In the third part of the presentation, the IALA WWA Dean covered how simulation techniques could be used to investigate the consequences of modifying traffic patterns by adding additional mitigations measures to avoid existing dangers.

Session 11 – Final discussion and debrief

Jean-Charles Leclair moderated the debriefing discussion during which the consensus was of general satisfaction with very few criticisms raised.

Recommendations

A draft document was proposed containing some recommendations derived from the three days of presentations and exchanges of opinion, knowledge and experiences. After some discussion and amendments, twelve recommendations were adopted by consensus. Those are listed in the summary on pages 3 and at **Annex 1** to this report.

Closing Ceremony

The closing ceremony began with an opening prayer by Mr Seth Afotey Odai.

Then, brief remarks were delivered by Mr Jacques Manchard, IALA Senior Adviser, who thanked the Ministry of Transport from the Republic of Ghana, the Ghana Maritime Authority, IMO, IHO and the

team in charge of the preparation of the seminar. He acknowledged a fruitful opportunity to give lectures with his colleagues, for the 38 participants, coming from 7 African countries. The quality of the welcome, the facilities, and the impressive work done to organize that very important event were pointed, as well as the efficient support to allow all participants to benefit from that general presentations of methods to be able to increase the safety of navigation and efficiency of the maritime traffic in that part of the world. This knowledge will be transferred to their colleagues in their administration.

The closing remarks were given by Mr Peter Issaka Azuma, Director General of the Ghana Maritime Authority (GMA). He was sure that at the end of the seminar the objectives, to enable participants to acquire the requisite knowledge and skills on ship's routing services, aids to navigation and the use of risk assessment techniques for shipping routes and navigational channels within the sub-region, has been met, and would allow them to address issues relating to the safety and security of navigation. Finally, Mr Peter Issaka Azuma closed the seminar by thanking the participants, the lecturers, its own staff and the three international organizations that had taken the initiative to organize such a very useful event. He concluded by wishing everyone a safe return back home and hoped that they will have other opportunities to return to Ghana.

A vote of thanks was delivered by Mrs Rose-Vera Nsiah, and the Closing Prayer by Mr Seth Afotey Odai.

Mr Peter Issaka Azuma presented a certificate of attendance to each participant together with Captain Vormawah for IMO and Mr Jacques Manchard for IALA, and declared the seminar closed.

6. Assessment

The last session had been devoted to general discussion and evaluation of the seminar by the participants. It appeared that each participant could benefit from the general character of the seminar and its prospective aspect regarding the evolution of maritime traffic.

Subsequent analysis of feedback forms completed by participants indicated that the aim of this awareness seminar of giving an overview of methods to improve safety of navigation and the efficiency of maritime traffic in the region was considered to have been met. There was unanimous agreement that seminar deliverables and competencies gained will benefit all Administrations and that transfer of knowledge to colleagues in those Administrations and other stakeholders will be achieved.

7. Conclusions and recommendations

Apart from one participant, there was no negative feedback concerning the seminar. Indeed it was overwhelmingly welcomed by the participants who judged it to have met its objective fully. The value and effectiveness of "Delivering as One" was demonstrated once again.

The participants adopted unanimously the conclusions and recommendations as reported in **Annex 1**.

Annex 1



Regional Seminar on Safety of Navigation Accra, Ghana 7 to 9 April 2014

Recommendations

States attending the regional awareness seminar on safety of navigation should consider:

1. Recalling the 2050 Africa's Integrated Maritime Strategy, to consider the advantages of becoming members of IHO and IALA for those who were not yet members.
2. To encourage effective participation in meetings of IMO, IHO (including the Eastern Atlantic Hydrographic Commission) and IALA, and therefore to gain updated technical knowledge in their respective domains and to get the opportunity to exchange views and experiences with delegations on similar matters and to benefit from capacity building programmes, when applicable.
3. In pursuit of the IHO capacity building strategy, to consider ways and means to improve the collection and dissemination of nautical information through implementing a national coordinated network interfaced with the NAVAREA Coordinator and the relevant charting authorities.
4. To encourage the acceptance and signing the IALA Marine Buoyage System (2010)¹.
5. To co-operate in the use of IALA's risk management tools (IWRAPII and PAWSA), in order to analyse the degree of risk both within the waters of each coastal State and regionally.
6. To define and declare the VTS type service level and VTS area for those countries which have been providing the services but have not yet formally defined and declared the same or those which intend to provide the services in the future. This should be done in accordance with IMO Resolution A.857(20).
7. IALA National members to consider joining IALA-NET in accordance with IALA Recommendation E-142.

¹ For the Agreement, a letter shall be send by the Competent Authority to the Secretary General of IALA, explaining that that administration, in charge of the aids to navigation services of that country, wishes to become part of the Agreement on the IALA Marine Buoyage System (2010). The letter should specify in which region the country wants to be located and, if the system is not yet implemented, what should be the date when the implementation should become effective. Otherwise, the letter indicates that the system is applied.

8. To encourage and facilitate the exchange of experience and knowledge at the regional level among neighbouring countries in order to improve maritime safety and maritime domain awareness.
9. To consider the possibility of establishing one or more regional training organizations or institutions to achieve accreditation by the Competent Authorities in the region so that they can get the benefit of facilitating either VTS or AtoN training, or both, based on IALA Model Courses.
10. In pursuit of the second phase of the IALA World-Wide-Academy's capacity-building strategy, using the expertise within IMO and IALA, to conduct needs assessment missions for waters of coastal States and adjacent waters.
11. To encourage the participating countries to ratify and implement the IMO Conventions for countries not yet Parties to SOLAS and its Protocols.
12. A request from the participants to IMO, IHO and IALA to continue their efforts in addressing safety of navigation in other regions by organizing similar activities in the future.

Annex 2

Regional Seminar on Safety of Navigation Accra, Ghana 7 to 9 April 2014

IALA World-Wide Academy – Competent Authority Questionnaire

Notes for Competent Authorities²:

If an answer is not known please insert “NK”

If an answer is not applicable, please insert “NA”

I GENERAL INFORMATION³	Date:	
1. Name of State:		
2. Full contact details for the Ministry/Administration/Organisation and Senior Executive within the Competent Authority responsible for:		
a. Vessel Traffic Services (VTS)		
Name of Ministry/Administration/Organisation		
Name and Title of Senior Executive		
Address		Telephone: + Fax: + E-mail: QMS⁴ used:
b. Aids to Navigation (AtoN) services (if different to the above)		
Name of Ministry/Administration/Organisation		
Name and Title of Senior Executive		
Address		Telephone: + Fax: + E-mail: QMS used:
c. Full contact details of the Maritime Authority and Senior Executive of the Maritime Authority		
Name of Ministry/Administration/Organisation		
Name and Title of Senior Executive		
Address		Telephone: + Fax: +

² This is the IMO Competent Authority in each IMO/IALA Member State with overall responsibility for the establishment and operation of Vessel Traffic Services and/or aids to navigation and as regulated by SOLAS Chapter V Regulations 12 and 13

³ IALA Member States are encouraged to also complete the existing IALA Questionnaire on the number and type of existing or planned AtoN which is distributed by email in December each year

⁴ Quality Management System

		E-mail: QMS used:
d. Details of other government bodies covering safety of navigation related activity ⁵		
Name and address of Government Body	Navigational Safety or Environmental Protection	
	Global Maritime Distress and Safety System (GMDSS)	
	Navigation warnings (local) Navigation warnings (coastal)	
	National Coordinator for World-Wide Navigational Warning Service (WWNS)	
	Hydrographic services	
	Protection of the Marine Environment	
	Other	
e. Details of Accredited Maritime Training Organisations or Institutes		
Name of Training Organisation⁶	IMO; STCW or IALA courses conducted⁷	Date of White List or Training Organisation Accreditation
II. Amplifying Information		
1. International Conventions (Please circle the relevant answer)	a. Is your State a party to the following international instruments?	
	UNCLOS 82	YES/NO/ NK
	SOLAS	YES/NO/ NK
	MARPOL	YES/NO/ NK
	STCW	YES/NO/ NK
	Load Line	YES/NO/ NK
	TONNAGE	YES/NO/ NK

⁵ It is understood that one government authority or Ministry might have responsibility for more than one aspect of navigational safety

⁶ Including Universities

⁷ Such as IALA Model Course E-141 (AtoN Management) or V-103 (Vessel Traffic Services)

	COLREGs	YES/NO/ NK
	IHO	YES/NO/ NK
2. Maritime Law and Boundaries	a. Does your State have its own Maritime Law?	YES/NO/In Preparation/NK
	b. Are the agreed limits of your maritime boundaries agreed with adjacent or opposite States?	YES/NONE/ NOT ALL/NK/NA
3. IMO Voluntary Audit Scheme ⁸	a. Has your State been subjected to the IMO Voluntary Audit Scheme	
	b. If the answer to 3(a) above is Yes, please send a copy of the IMO Voluntary Audit Scheme questionnaire, with the work programme and the process, as attached documents	
4. Search and Rescue	How many SAR or MRCC centres in your State? Name and title of responsible Head Address Telephone: + Fax: + E-mail:	
5. GMDSS and Nautical Information	a. In which NAVAREA does your State lie?	
	b. Who is your State's MSI coordinator? Name and title of responsible Head Address Telephone: + Fax: + c. E-mail:	
	d. How many Coastal Radio Stations in your State transmit NAVTEX messages	
6. Commercial and Military ports	a. How many commercial ports are responsible for the operation and maintenance of their own AtoN?	
	b. Do your military bases operate and maintain their own AtoN?	YES/SOME/NO/NA/NK
7. Vessel Traffic Services (a)	a. How many VTS Centres operate in your State?	

⁸See IMO Resolution A.974(24)

	b. Are all operators trained in accordance with IALA Recommendation V-103?	YES/SOME/OTHER/NA / NK
	c. Does your State operate a Ship Reporting System?	YES/NO/NA/NK
Vessel Traffic Services (b)	d. How many maritime traffic routing schemes exist in your waters?	IMO Adopted: Not (yet) adopted by IMO:
8. National AtoN service provider, if different from Section I 2(b)	a. Who is the national AtoN service provider? Name and title of responsible Head Address Telephone: + Fax: + E-mail:	
	b. Are some AtoN in your waters operated or maintained under commercial contract?	YES/NO/NK
	c. Are ships required to pay any form of levy or fee for the use of AtoN services?	YES/SOME/NO/NK
	d. How many AIS stations operate in the waters of your State?	
	e. Does your State contribute to IALA-Net?	YES/NOT YET/NO/NA/NK
Hydrographic services	Name and title of responsible Head Address Telephone: + Fax: + E-mail:	
	Ensured functions: Nautical information Hydrographic surveys Nautical Charting	By the State By another State (indicate which State)
	Is your State a member of a Regional Hydrographic Commission?	YES – Name: NO/NK

9. Environment protection	a. Does any particularly sensitive maritime area exist in your State waters?	Yes/Not yet/No/NA/NK
	b. How many maritime accidents occurred in your waters during the last five years?	
	c. How many disasters due to oil pollution occurred in your waters during the last five years?	
	d. Is your State member of a regional environment protection program?	YES – Name: NO/Not yet/NA/NK
	Name and title of the person in charge of combating oil pollution Address Telephone: + Fax: + E-mail:	
10. Ship Registration	How many ships larger than 100GT are on your State's Register?	Passenger: Cargo: Fishing: Other:
11. Port State Control	Does your State carry out Port State Control? Address Telephone: + Fax: + E-mail:	YES/NOT YET/NO/NK
III Other Comments by Competent Authority		

Thank you for completing this questionnaire. Please either scan and email your reply to academy@iala-aism.org or give it to [insert IALA WWA member of staff]

Annex 3
Regional Seminar on Safety of Navigation
Accra, Ghana
7 to 9 April 2014



EVALUATION QUESTIONNAIRE FOR STRATEGY OFFICIALS

**Sub-regional seminar to raise awareness on Ship Routeing System and Vessel Traffic Services (VTS)
to enhance safety of navigation in the West and Central African region
Accra, Ghana from 7 to 9 April 2014**

Arrangements prior to the activity

- | | | | | | | |
|---|----------------------------------------------------------------------------------------|------------------------------|-----------------------------|----|--------------------------|------------------------------|
| 1 | Was the invitation received in good time? | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> | |
| 2 | Did you receive the information listed below about the event before your participation | | | | | |
| | • on its objective and scope | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> | |
| | • subject areas and programme | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> | |
| 3 | Were the instructions on the following clear and easy to understand? | | | | | |
| | • profile required of participant | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> | |
| | • completion and submission of the nomination form | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> | |
| 4 | Did you receive logistical information on | | | | | |
| | • venue | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> | |
| | • travel arrangements | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> | N/A <input type="checkbox"/> |
| | • DSA payments | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> | N/A <input type="checkbox"/> |
| | • accommodation | Yes <input type="checkbox"/> | No <input type="checkbox"/> | | | N/A <input type="checkbox"/> |

During the activity

- | | | | | | | |
|---|--------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------------------------------|
| 5 | To cover the topics fully, was the event <i>(please check the appropriate box)</i> | | | | | |
| | (1) too long | <input type="checkbox"/> | (2) just right | <input type="checkbox"/> | (3) too short | <input type="checkbox"/> |
| 6 | How do you rate the event with regard to the following? <i>(tick one box in each case)</i> | | | | | |
| | | excellent | good | satisfactory | poor | |
| | Venue | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | Facilities | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | Equipment | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 7 | How would you rate the following aspects? <i>(tick one box in each case)</i> | | | | | |
| | | excellent | good | satisfactory | poor | |
| | Group workshops | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | N/A <input type="checkbox"/> |
| | Discussion opportunities | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | N/A <input type="checkbox"/> |
| | Clarity of Meeting objectives | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | N/A <input type="checkbox"/> |
| 8 | How would you rate the use of the following? <i>(tick one box in each case)</i> | | | | | |
| | | excellent | good | satisfactory | poor | |
| | Day 1 – morning session | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | N/A <input type="checkbox"/> |
| | Day 1 – afternoon session | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | N/A <input type="checkbox"/> |

Day 2 – morning session	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	N/A <input type="checkbox"/>
Day 2 – afternoon session	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	N/A <input type="checkbox"/>
Day 3 – morning session	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	N/A <input type="checkbox"/>
Day 3 – afternoon session	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	N/A <input type="checkbox"/>

At the end of the activity

9 Please rate each facilitator with regard to the following (*check one box in each case*)

Name of lecturer (to be inserted)	excellent	good	satisfactory	poor	
.1 _____					N/A <input type="checkbox"/>
delivery of presentation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ability to guide discussions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
effectiveness in:					
• answering questions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• suggesting solutions to problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Name of lecturer (to be inserted)	excellent	good	satisfactory	poor	
.2 _____					N/A <input type="checkbox"/>
delivery of presentation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ability to guide discussions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
effectiveness in:					
• answering questions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• suggesting solutions to problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Name of lecturer (to be inserted)	excellent	good	satisfactory	poor	
.3 _____					N/A <input type="checkbox"/>
delivery of presentation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ability to guide discussions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
effectiveness in:					
• answering questions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• suggesting solutions to problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

(Please use additional sheets if the number of lecturers exceeds 3).

10 What topics were of most interest and relevance to your Administration?

11 Are there any topics which should be added? Yes No

If yes, please list them:

12 Do you consider that the objective of the event was met? Yes No

13 Are the outcomes achieved likely to be useful to your Administration? Yes No

14 Will you have the opportunity to transfer the knowledge gained to your colleagues at work? Yes No

Comments:

We greatly appreciate your time in completing this evaluation questionnaire. It contains important information that will assist IMO in determining the success and impact of the activity. Thank you.

Annex 4
Regional Seminar on Safety of Navigation
Accra, Ghana
7 to 9 April 2014
Opening and Closing Ceremonies: opening and closing speeches

CHAIRMAN'S OPENING REMARKS (ACCEPTANCE SPEECH) AT SEMINAR

Hon. Minister for Transport
Representative of the IMO Secretary General
Director General, Ghana Maritime Authority
Chief Executives of Agencies under Ministry of Transport
Delegates of Participating Countries
Distinguished Guests
Participants
Ladies and Gentlemen

Thanks for the introduction and the very kind words said about me in the introduction. I am not a bad person but sometimes it is re-assuring to hear people say such nice things about me.

It is a great pleasure and honor to me to be asked to chair the opening ceremony of this important seminar. I wholeheartedly accept my assignment and with God's guidance and your kind cooperation. I will do my uttermost to steer this ceremony to a successful end. I thank you most sincerely for the opportunity.

I understand this meeting, is an awareness seminar for the 8 Anglo-phone West African coastal countries. It is being organized by the International Maritime Organization (IMO) under its Integrated Technical Cooperation Programme (ITCP), in association with the International Hydrographic Organization (IHO) and the International Association of Marine Aids to Navigation and Lighthouse Authorities World-Wide Academy (ALA WWA).

The Seminar will cover the topics:

- Aids to navigation,
- Hydrography,
- Nautical charting,
- Vessel traffic services and
- Ship routeing.

The initiative is meant to equip operators in the Region with the requisite knowledge to improve the safety of navigation along their coasts and for that matter along the Gulf of Guinea.

The Gulf of Guinea which borders all our countries is a busy shipping lane. It is traversed by all the ships that trade between Europe and Africa as well as the artisanal and industrial fishing fleets. The shipping traffic which was already phenomenal has increased substantially in recent times with many of the countries in the Region now either producing or prospecting for oil. In addition to the oil and gas tankers which carry the products from the oil fields there are also the many supply and offshore support vessels which service the installations. Added to the problem of increased traffic is further complicated by the presence of several underwater installation in the area such as submarine pipelines and cables which need to be protected. With the increased shipping traffic and underwater activities naturally comes increased risk of accidents. There is therefore an urgent need to take action along the lines that will be discussed at this seminar if we are to prevent such accidents from happening.

Most of our countries lie downstream of the Gulf of Guinea; a shipping accident involving the breach of the tanks of an oil tanker laden with persistent oil (God forbid) can spell doom for our economies. This will be in addition to any loss of life and environmental damage that may occur. The need to improve the safety of navigation along our coasts and in the Gulf of Guinea so as to hugely reduce or possibly prevent accidents cannot therefore be overemphasized. We need to constantly update our navigation charts as well as among other things to ask for vessel traffic services and ship routing for the area.

But this is my layman view you are the experts perhaps I should wait for your recommendations or views after the seminar. One thing I am sure of is that our authorities in charge of the safety of navigation will need to put in place prudent measures to ensure safe navigation in the area.

This seminar could not therefore have come at a better time. From the programme I have in front of me I am confident the seminar will not only equip you with the knowledge to put in place the right measures but will also enable you to interact among yourselves and exchange ideas on the way forward. I have no doubt that you will all find the seminar useful.

I wish you very good deliberations.

WELCOME ADDRESS BY MR PETER ISSAKA AZUMA, DIRECTOR-GENERAL OF THE GHANA MARITIME AUTHORITY AT THE REGIONAL AWARENESS SEMINAR ON SAFETY OF NAVIGATION, ACCRA, 7TH - 9TH APRIL, 2014

Mr. Chairman

Hon. Minister

Representatives of the IMO Secretary General

The IMO Regional Coordinator for West and Central Africa

Distinguished Resource Persons

Colleagues Chief Executives

Distinguished Participants

Members of the Press

Ladies and Gentlemen,

It is a pleasure to welcome you to the opening ceremony of this very important 3 days Regional Seminar aimed at creating awareness on Safety of Navigation among others.

Specifically, I particularly welcome our foreign participants some of whom are visiting Ghana for the very first time. I wish you a pleasant stay and trust that you will make time to enjoy the city of Accra.

Mr. Chairman,

Let me use this opportunity to express the Ghana Maritime Authority's appreciation to the International Maritime Organisation for using the bulk of the TCP Fund for providing technical assistance to developing countries. Ghana on her part will continue to collaborate with the IMO to promote awareness on the importance of implementing the organisation's conventions codes and instruments for development purposes in West Africa.

It is against this background that the Ghana Maritime Authority under the auspices of the Ministry of Transport accepted to jointly organized this seminar with the International Maritime Organization (IMO).

Mr. Chairman,

The seminar is being attended by representatives from eight (8) countries of the West and Central African Sub Region, namely, Cape Verde, The Gambia, Equatorial Guinea, Ghana, Liberia, Sao Tome and Principe, Nigeria, and Sierra Leone.

The objective of the seminar is to enable participants to acquire the requisite knowledge and skills on ships' routing services, aids to navigation and the use of risk assessment techniques for shipping routes and navigational channels within our sub region.

Mr. Chairman,

The topics to be discussed will touch on requirements to enhance safety of navigation along our respective shipping corridors within the framework of the IMO instruments and those of the International Hydrographic Organization (IHO) and the International Association of Lighthouse Authorities (IALA). Other topics to be considered at this seminar include visual and radio aids to navigation, ships' routing and reporting, vessel traffic monitoring as well as international conventions and guidelines on the safety of navigation and how these are implemented in national legislation.

Distinguish Ladies and Gentlemen.

I am particularly pleased with these topics and it is my expectation that at the end of this seminar participant would enhance their capacities in addressing issues relating to the safety and security of navigation.

Mr. Chairman,

I conclude by expressing on my own behalf and that of the Ghana Maritime Authority special gratitude to the IMO for its collaborative efforts with the GMA over the last 5 years in promoting regional capacity building in the maritime sector.

I also thank our distinguished participants as well as the resource persons for responding to our invitation to attend this workshop.

I urged all participants to get actively involved in the discussions. I trust that at the end of the seminar participants will go back to their countries equipped with the requisite knowledge and skills for implementing measures that will ensure safe and secure navigation within the wider West African Sub Region.

Mr. Chairman, Hon. Minister, Distinguish Invited Guests, Ladies and Gentlemen on this note I formally welcome you all and thank you for your attention.

**SPEECH BY HON. DZIFA ATTIVOR, MINISTER OF TRANSPORT AT THE
REGIONAL SEMINAR TO RAISE AWARENESS ON SHIPS' ROUTEING
SYSTEM AND VESSEL TRAFFIC SERVICES, ACCRA GHANA
FROM 7TH - 9TH APRIL, 2014**

Mr. Chairman

The Director General, Ghana Maritime Authority

Representatives of the IMO

Distinguished Resource Persons

Distinguished Participants

Distinguished Invited Guests

Members of the Press

Ladies and Gentlemen,

It gives me great pleasure to be here this morning to deliver the keynote address at the opening of the Regional Seminar to raise awareness on Ships' Routeing Systems and Vessel Traffic Services.

First of all, let me on behalf of His Excellency, President John Dramani Mahama, the Government and people of Ghana welcome all of you especially the foreign participants who have responded to our invitation to participate in this very important Seminar.

Your very presence here in Accra is an ample demonstration of the importance that your Governments attach to issues relating to Ships' Routeing systems and its impact on the safety of life at sea, the security of navigation and the protection of the marine environment.

Mr. Chairman,

Permit me to use this opportunity to commend the key partners in the organization of this seminar, namely the International Maritime Organization (IMO) and the Ghana Maritime Authority (GMA) for the very active role they have played in making this seminar a reality.

In addition to being co-sponsors of the Seminar, I am informed that the IMO was also instrumental in assembling all the knowledgeable participants from the various countries as well as the resource persons to ensure the success of this Seminar.

Mr. Chairman,

The practice of following predetermined routes originated as far back as the 19th century and was adopted, for reasons of Safety, by shipping companies operating passenger ships across the North Atlantic. With the passage of time, related provisions were incorporated into the International Convention for the Safety of Life at Sea (SOLAS).

Today, ships' Routeing systems have been established in major congested shipping areas all over the world and there is overwhelming evidence that as a result of these schemes the number of maritime casualties, particularly collisions involving ships have been dramatically reduced.

Ships' Routeing systems therefore contribute immensely to the realization of the mission of the International Maritime Organization to ensure safe, secure, efficient shipping and the protection of the marine environment.

As I mentioned earlier, the global criteria for adopting Ships' Routeing systems within the International Maritime Regulatory framework is enshrined in the International Convention on the Safety of Life at Sea (SOLAS) which was adopted by the IMO in 1974 and has been subsequently amended. I am pleased to mention that Ghana (and all participating countries here) are contracting parties to this very important Convention.

Today, in accordance with regulation 10.2 of the revised chapter V of the International Convention for the Safety of Life at Sea, IMO is recognized as the only UN specialized agency for establishing and adopting measures at an international level concerning routeing and areas to be avoided by ships whilst, in accordance with regulation 11.2 of the revised chapter V of the same Convention, IMO is recognized as the only international body for developing guidelines, criteria and regulations at the global level, including adoption of ship reporting systems.

In this respect, Contracting Governments to SOLAS who are obliged of establish Ships' Routeing systems in accordance with the guidelines and criteria developed by the IMO. Similarly, non contracting governments to SOLAS are also encouraged to take into account the IMO guidelines when implementing traffic separation schemes within their maritime jurisdictions.

Mr. Chairman

As we all may be aware, the economies of littoral states in our West African sub region depend largely on seaborne international trade and the shipping corridor has thus in recent times witnessed a significant increase in maritime traffic. These have been occasioned by the increase in trading activities particularly as a result of the offshore oil and gas exploration and production taking place within the sub region.

The socio - economic policies of our Government is aiming at making our sea ports safe enough to become preferred destinations where ships would converge to operate. In order to achieve this goal, it is important to implement initiatives and measures that would make our shipping corridors safe and secure with simplified schemes for traffic flow.

Mr. Chairman,

The only better way to improve the safety of navigation in our shipping corridors of high traffic density where freedom of movement of shipping could be inhibited by restricted sea room is to create Ships' Routeing and Vessel Traffic Services. By establishing a routeing system and vessel traffic service we can certainly be assured of the following:

- Reducing the incidence of head-on encounters by the separation of opposing streams of traffic;
- Reducing the dangers of collision between crossing traffic.
- organization of safe traffic flow in areas of concentrated offshore exploration or exploitation;

- Organized traffic flow in or around areas where navigation by all ships or by certain classes of ship is dangerous or undesirable;

- Organized safe traffic flow in or around environmentally sensitive areas;

- Reduction of risk of grounding by providing special guidance to vessels in areas where water depths are uncertain or critical; and

- Guidance of traffic to be clear of fishing grounds or organized traffic flow through fishing grounds.

Ladies and Gentlemen, Distinguished participants

I am actually hopeful that in the very near future, all countries in this West African Sub-region will establish Ships' Routeing schemes and thereby comply fully and effectively with Regulation V/10 of the 1974 SOLAS Convention, as amended.

In this regard, Mr. Chairman, I deem the objectives of this seminar as very appropriate, timely and relevant to the needs of our sub region. It is therefore my expectation that this seminar will take the participants through the mechanisms required for establishing Ships' Routeing schemes. It is also my fervent hope that at the end of this seminar, participants would have enhanced their skills and updated their knowledge on their responsibilities towards improving safety of navigation along the coastal waters in our sub region.

It is important to mention that the establishment of Ships' Routing system which includes Traffic Separation Scheme (TSS) requires measures to be put in place to monitor the traffic situation within and approaches to the system so as to ensure the provision of safe, secure and efficient traffic flow.

In this regard, I am pleased to inform you that Ghana has taken the first step in establishing a Vessel Traffic Management Information System (VTMIS) for enhanced surveillance of Ghana's maritime domain and the provision of services to mariners. This VTMIS system is expected to be commissioned by the end of this month after which it will assume a full and effective operational status.

Distinguish Ladies and Gentlemen,

The VTMIS is being coordinated by the Ghana Maritime Authority with participation from other relevant agencies such as the Navy, Ministry of Fisheries, Customs, the Narcotic Control Board, the Ghana Ports and harbours Authority and the National Security Agency among others. The System consists of a National Control Centre, three (3) Area Control Centres, ten (10) Monitoring Stations, eight (8) Remote Sensor Sites for coastal surveillance and three (3) Remote Base Stations for the Volta Lake.

Mr. Chairman,

The implementation of the VTMIS will provide a 24 hour electronic surveillance and monitoring of Ghana's coastline including the Economic Exclusive Zone (EEZ) to ensure the protection of our maritime resources as well as offshore installations, oil terminals, gas pipelines, prevent ship source pollution, illegal, unreported and unregulated (IUU) fishing, combat piracy, armed robbery and other unlawful activities at sea.

Mr. Chairman,

I also wish to mention that the implementation of the VTMIS will enable Ghana to participate fully in the Global Maritime Distress and Safety System (GMDSS) and in the Global Ship Reporting System using the Long Range Identification and Tracking System (LRIT) for ships as mandated by the IMO.

Finally, Distinguished Ladies and Gentlemen I would like to conclude my address by once more commending the IMO as well as participating countries for the interest shown in this very important Seminar and I do strongly believe that the seminar will further enhance our capacities so that we can all meet our responsibilities as coastal states.

Distinguished Ladies and Gentlemen,

On this note, it is my utmost pleasure to declare this seminar duly opened. I wish you all a very successful deliberation.

I thank you for your kind attention.

Annex 5
Regional Seminar on Safety of Navigation
Accra, Ghana
7 to 9 April 2014
List of Participants

NO.	FIRST NAME	SURNAM E	POSITION	ADMINISTRATION/ COMPANY	COUNTR Y	E-MAIL	TELEPHONE NUMBER
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Annex 6
Regional Seminar on Safety of Navigation
Accra, Ghana
7 to 9 April 2014

Programme

7th April 2014

- 09.00 – 10.30 Session 1 – Opening Ceremony and Introduction to the course
Opening Ceremony
Objectives of the Seminar
Maritime Safety, Safety of Ships/Safety of Navigation
- 10.30 – 11.00 *Coffee*
- 11.00 – 12.30 Session 2 - International Organisations and their role in safety of navigation
IMO Mandate and Overview
Capacity Building policy and action
IHO Organisation
Capacity Building strategy and programme
IALA Description
The IALA World-Wide Academy
- 12.30 – 14.00 *Lunch*
- 14.00 – 15.30 Session 3 - International Organisations concerned and Legislation
The other International Organizations involved in safety of navigation
International Regulations – Conventions. Recommendations, Guidelines
National Legislation
- 15.30 – 16.00 *Coffee*
- 16.00 – 17.30 Session 4 - Navigation
Concept and accuracy of navigation.
Positioning – Navigation – Timing on board
Nautical Charts and Publications and Maritime Safety Information
ENC – ECDIS (Issues)

8th April 2014

- 09.00 – 10.30 Session 5 - Visual and radio aids to navigation
Visual aids to navigation and sound signals
Power supply
Radio Aids to Navigation
Satellite Radionavigation Systems
- 10.30 – 11.00 *Coffee*
- 11.00 – 12.30 Session 6 - Ships' Routeing and Reporting
Ships' Routeing
Ships' Reporting
AIS, and other technologies
Other services to support safety of navigation in coastal areas
- 12.30 – 14.00 *Lunch*
- 14.00 – 15.30 Session 7 - Traffic Monitoring
VTS and beyond
Traffic Monitoring – IALA-NET
Development of e-Navigation
- 15.30 – 16.00 *Coffee*

16.00 – 17.30 Session 8 – Country presentations
Country presentation

9th April 2014

09.00 – 10.30 Session 9 - Management of AtoN services
Management

Maintenance, reliability and availability

Tendering process

Environment

Preservation of historical lighthouses and equipment

10.30 – 11.00 *Coffee*

11.00 – 12.30 Session 10 - An introduction to The IALA Risk Management Tools

Overview of the IALA Risk management Tools

12.30 – 14.00 *Lunch*

14.00 – 15.30 Session 11 - Final discussion and debrief

Discussion

Recommendations

Certificates award of attendance to all participants.

Closing ceremony