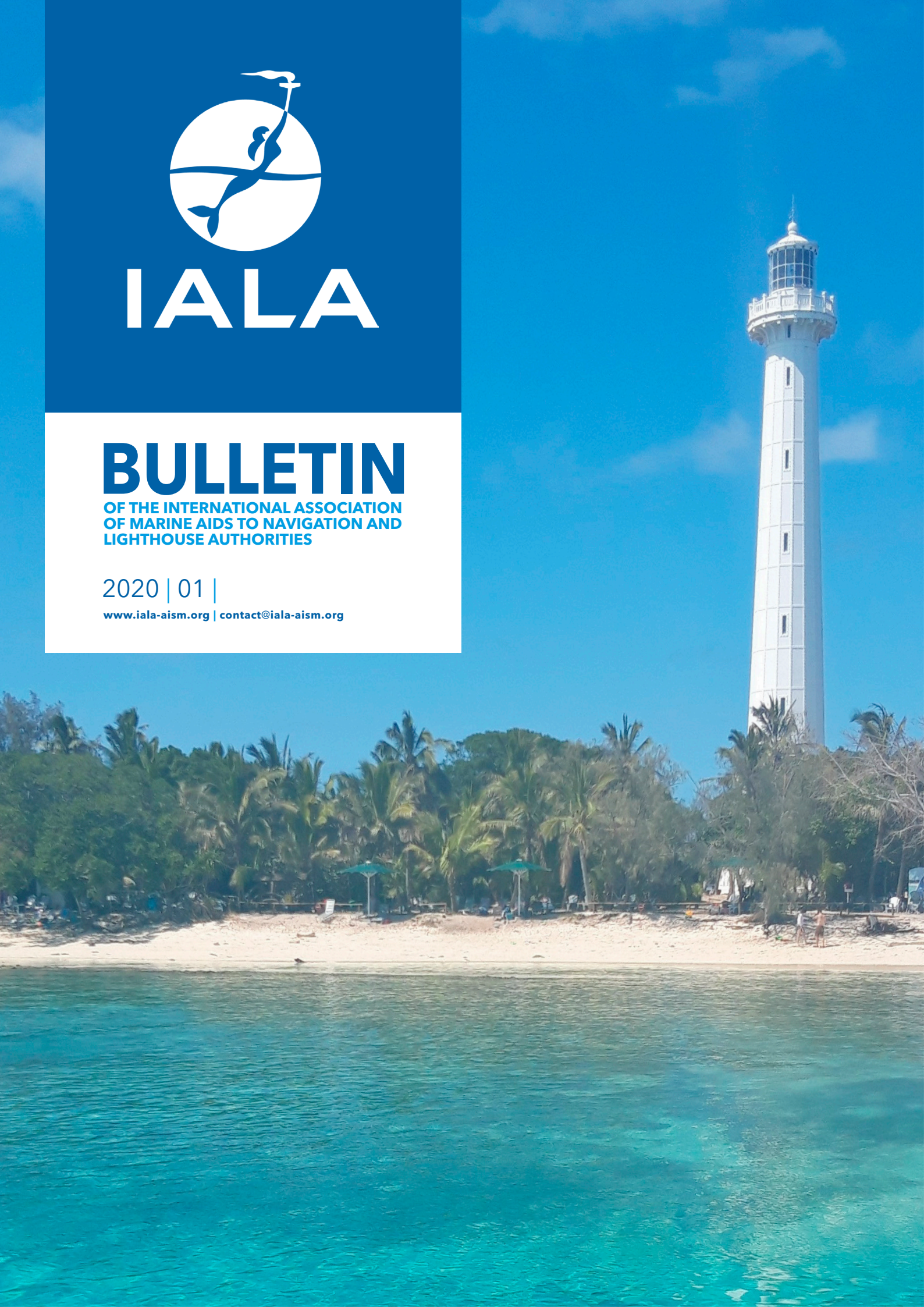

IALA

BULLETIN

OF THE INTERNATIONAL ASSOCIATION OF MARINE AIDS TO NAVIGATION AND LIGHTHOUSE AUTHORITIES

2020 | 01 |

www.iala-aism.org | contact@iala-aism.org

14TH IALA Symposium

Enhanced Maritime Safety and Efficiency by Connectivity

19 - 23 April 2020 Rotterdam I Netherlands

New dates: 19 to 23 April 2021

Proposed topics:

Organisational and legal challenges
VTS in a digital world
Navigation safety, efficiency and security in a digital world
VTS qualifications, training and certification
VTS and MASS - Responsibilities and consequences

IALA

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Amédée Lighthouse, Nouméa, New caledonia.

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A NOTE FROM THE SECRETARY-GENERAL'S DESK

Since the successful Diplomatic Conference to adopt the Convention on the International Organization for Marine Aids to Navigation took place in Kuala Lumpur in February, the world has been in the grip of the COVID-19 pandemic. Faced with this unprecedented challenge in our life time, the IALA Secretariat has moved swiftly to implement precautionary measures to avoid further transmission of the virus in our domain. It has done so following the advice provided by the World Health Organization, the Government of France, other Governments and actions taken by sister organizations. The measures have involved the cancellation or postponement, as appropriate, of Committee and other meetings, and halting the World-Wide Academy staff's travel for the purpose of conducting missions in situ.

The decision was also taken to postpone the four-yearly Symposium that was due to take place in Rotterdam from 25 to 29 May. The Dutch Ministry of Infrastructure and Water Management is now planning to stage it from 19 to 23 April 2021.

Sadly, the celebration of the main event for this year's celebration of World Marine Aids to Navigation Day, on 1 July, in Burgas, Bulgaria, has also had to be cancelled and a new date will be chosen as soon as the situation is more clear. It is hoped that a second event in Tokyo, Japan, will take place later this year.

The calendar of planned meetings during the second half of this year can be viewed on the website (https://www.iala-aism.org/product-category/calendar/). This includes the important Mid-Term Assembly of the Industrial members, due to take place at IALA headquarters from 5 to 6 October. Meanwhile, I have undertaken to work actively to ensure that IALA Industrial members are considered as suppliers of critical Marine Aids to Navigation infrastructure that is vital to the safe and efficient movement of world trade by sea, and their employees as "key workers", involved in the essential sector of maritime transportation. In this regard, I have written to National members and all other relevant authorities requesting that they will be allowed to remain operational during any potential restrictions related to the COVID-19 pandemic (the relevant Circular Letter is available here https://www.iala-aism.org/content/uploads/2020/04/CL-03-2020-COVID-19-Support-letter-to-Industrial-Members-002.pdf). This request is in the spirit of the campaign by the Secretary-General of the International Maritime Organization (IMO), and expressed in IMO Circular Letter No 4204/Add6 ("*Preliminary list of recommendations for Governments and relevant national authorities on facilitation of maritime trade during the COVID-19 pandemic*").

As a further COVID-19 protective measure, in particular to protect the staff of the IALA Secretariat, the headquarters in Saint Germain-en-Laye has been physically closed since mid-March. I am proud of all my colleagues, who are working remotely from home in their usual effective and efficient manner, attending to e-mails, responding to the main office telephone number, and conducting online meetings of Committee working groups and management teams. It goes to show how people can adapt quickly and competently when challenged by unavoidable necessity. Furthermore, the experience demonstrates the feasibility of a 'virtual IALA' ensuring the daily functioning of the Secretariat as would be expected from the membership.

The IALA Secretariat will continue to monitor COVID-19 related developments and make decisions on activities on a case-by-case basis, updating our website with any further news that

may affect members and our activities. I have been encouraged, and am very grateful, for the support of all concerned, not least the Committee chairs and vice-chairs, in minimizing the impact on the work programme and in advancing the work on important items, through e-mail correspondence and online meetings.

This edition of the Bulletin gives prominence to a report on the important Diplomatic Conference, which now needs to be followed up by concrete action on the part of coastal State Governments to sign the Convention so that they may commence the national ratification process as early as possible. I was very pleased that so many National members and Government representatives were able to travel to Kuala Lumpur from around the world, totalling well over 200 delegates. Their keen participation and spirit of cooperation reaffirmed IALA's global reach and added another milestone to its track record of tangible achievements as a widely recognized consultative organization working for the benefit of the maritime community at large.

I also draw readers' attention to the feature article on the successful conclusion of the VTS Committee's intensive work to overhaul and update the existing international guidelines for Vessel Traffic Services (VTS). These were adopted by the IMO in 1997, by way of Assembly Resolution A.857(20). The draft revised text for the new guidelines was unanimously agreed by the relevant IMO sub-committee in January, on grounds that it encourages a common, global understanding of the role, nature and scope of modern VTS systems making increased use of digital technologies, and the increased operational functions and attendant responsibilities of VTS authorities. Recognition of IALA's work by the IMO is highly significant, as well as evidencing widespread awareness that seafarers depend increasingly on VTS for safety of navigation in busy waterways and port approaches.

The mid-year Council (71st session) will be conducted as a virtual meeting (videoconference) from 3 to 4 June; a report on the 70th session is provided in this Bulletin and includes a list of newly approved documents.

Francis Zachariae

UN MESSAGE DU SECRÉTAIRE GÉNÉRAL

Depuis le succès de la Conférence diplomatique qui a adopté la Convention sur l'Organisation internationale pour les aides à la navigation maritime, tenue à Kuala Lumpur au mois de février, le monde s'est trouvé paralysé par la pandémie du COVID-19. Face à ce défi sans précédent dans le monde moderne, le Secrétariat a rapidement mis en place des mesures pour éviter la transmission du virus dans notre domaine, suivant en cela les recommandations de l'Organisation Mondiale de la Santé, du gouvernement français et d'autres gouvernements, ainsi que les actions d'autres organisations internationales. Ces mesures ont compris l'annulation ou, le cas échéant, le report des réunions de Commissions et d'autres réunions, ainsi que l'arrêt des déplacements des personnels de l'Académie pour des missions in-situ.

La décision a aussi été prise de repousser le Symposium qui devait se tenir à Rotterdam du 25 au 29 mai. Le ministère néerlandais de l'équipement et de la gestion de l'eau prévoit maintenant la tenue du Symposium du 19 au 23 avril 2021. Malheureusement, la manifestation attendue le 1er juillet à Burgas, en Bulgarie, pour célébrer la Journée mondiale des aides à la navigation maritime a dû aussi être annulée et une nouvelle date sera proposée quand la situation sera plus claire. On espère qu'un autre évènement pourra se tenir à Tokyo, au Japon, plus tard dans l'année.

Le calendrier des réunions prévues pour le deuxième semestre de cette année est consultable sur le site Internet (https://www.iala-aism.org/product-category/calendar/). Il inclut l'assemblée de mi-mandat des membres industriels, qui doit se réunir au siège de l'AISM les 5 et 6 octobre. Entre temps, je travaille activement à ce que les membres industriels soient considérés comme assurant l'infrastructure vitale que représentent les aides à la navigation maritime pour la sécurité et l'efficacité des mouvements du commerce maritime et de ses travailleurs impliqués dans le secteur essentiel du transport maritime. A cet égard, j'ai écrit aux membres nationaux et aux autorités concernées pour que ces industriels soient autorisés à poursuivre leurs activités pendant les restrictions liées à la pandémie du COVID-19 (la lettre circulaire diffusée peut être consultée ici : https://www.iala-aism.org/content/uploads/2020/04/CL-03-2020-COVID-19-Support-letter-to-Industrial-Members-002.pdf). Cette demande est formulée dans l'esprit de la campagne menée par le Secrétaire général de l'Organisation Maritime Internationale (OMI), exposée dans sa lettre circulaire 4204/Add6 ' *« Liste préliminaire de recommandations à l'intention des Gouvernements et des autorités nationales compétentes sur la facilitation du commerce maritime pendant la pandémie de COVID-19 »*.

Une autre mesure de protection contre le COVID-19, prise notamment pour préserver le personnel du Secrétariat, a été de fermer, à la mi-mars, les bureaux du siège. Je suis fier de tous mes collègues qui travaillent de chez eux, avec leur efficacité habituelle, répondant aux courriels, aux appels reçus au standard, tenant en ligne les réunions des groupes de travail des Commissions et autres réunions. Cela montre comment on peut s'adapter rapidement et avec compétence en cas de nécessité impérieuse. En outre, cette expérience montre la possibilité d'une AISM « *virtuelle* » assurant le fonctionnement attendu quotidiennement du Secrétariat par nos membres.

Le Secrétariat va continuer de surveiller l'évolution du COVID-19 et prendra ses décisions au cas par cas, publiant sur le site Internet tout ce qui sera susceptible d'affecter nos membres ou nos activités. J'ai été encouragé, et je leur en suis reconnaissant, par l'appui de tous ceux concernés, à commencer par les présidents et vice-présidents des Commissions, qui ont aidé à minimiser l'impact sur le programme de travail et à faire avancer les travaux sur les points importants, par courriel et par des réunions en ligne.

Ce numéro du Bulletin met en avant un rapport sur l'importante Conférence diplomatique qui maintenant demande à être suivie d'actions concrètes des gouvernements des Etats côtiers en vue de la signature de la Convention, pour que le processus de ratification commence le plus tôt possible. J'ai été très heureux de voir que tant de membres nationaux et de représentants de gouvernements du monde entier ont pu se rendre à Kuala Lumpur, permettant de réunir plus de 200 délégués. Leur participation active et leur esprit de collaboration ont réaffirmé la portée mondiale de l'AISM qui a franchi une nouvelle étape dans sa reconnaissance en tant qu'organisation consultative œuvrant pour le bénéfice de la communauté maritime.

J'attire aussi l'attention des lecteurs sur l'article qui fait état du succès des travaux de la Commission VTS sur la révision des lignes directrices internationales sur les services de trafic maritime. Celles-ci ont été adoptées par l'OMI en 1997 dans sa Résolution d'Assemblée A.857(20). Le Sous-comité concerné de l'OMI a approuvé à l'unanimité, au mois de janvier, le projet de texte pour de nouvelles lignes directrices, qui encourage une approche mondiale et commune du rôle, de la nature et de l'étendue des systèmes VTS modernes, qui utilisent plus les technologies numériques, et reconnaît les fonctions opérationnelles accrues et les responsabilités des autorités VTS. La reconnaissance des travaux de l'AISM par l'OMI est très importante, ainsi que la prise de conscience généralisée que les gens de mer dépendent de plus en plus des VTS pour la sécurité de la navigation dans des voies navigables très fréquentées et dans les approches portuaires.

Le Conseil de la mi-année (71ème session) prendra la forme d'une réunion virtuelle qui se tiendra les 3 et 4 juin. Ce numéro du Bulletin présente un rapport sur la 70ème session, ainsi qu'une liste des derniers documents approuvés.

Francis Zachariae

MENSAJE DEL SECRETARIO GENERAL

Desde la exitosa Conferencia Diplomática para adoptar el Convenio sobre la Organización Internacional de Ayuda a la Navegación Marítima en Kuala Lumpur en febrero, el mundo ha estado bajo el control de la pandemia COVID-19. Ante este desafío sin precedentes en nuestra vida, la Secretaría de la AISM se ha movido rápidamente para implementar medidas de precaución para evitar una mayor transmisión del virus en nuestro dominio. Lo ha hecho siguiendo los consejos proporcionados por la Organización Mundial de la Salud, el Gobierno de Francia, otros gobiernos y las acciones tomadas por organizaciones afines. Las medidas han implicado la cancelación o el aplazamiento, según corresponda, de los Comités y otras reuniones y la detención de los viajes del personal de la Academia Mundial con el fin de llevar a cabo misiones in situ.

También se tomó la decisión de posponer el Simposio de cuatro años que debía realizarse en Rotterdam del 25 al 29 de mayo. El Ministerio holandés de Infraestructura y Gestión del Agua está planeando su organización del 19 al 23 de abril de 2021.

Lamentablemente, la celebración del evento principal para la celebración en este año del Día Mundial de la Ayuda a la Navegación Marítima, el 1 de julio, en Burgas, Bulgaria, también tuvo que cancelarse y se elegirá una nueva fecha tan pronto como la situación sea más clara . Se espera que un segundo evento en Tokio, Japón, tenga lugar a finales de este año.

El calendario de reuniones planificadas durante el segundo semestre de este año se puede ver en el sitio web (https://www.AISM-aism.org/product-category/calendar/). Esto incluye la importante Asamblea de mitad de período de los miembros industriales, que tendrá lugar en la sede de AISM del 5 al 6 de octubre. Mientras tanto, me he comprometido a trabajar activamente para asegurar que los Miembros Industriales de AISM sean considerados proveedores de infraestructura crítica de Ayudas a la Navegación Marítima, lo que es vital para el movimiento seguro y eficiente del comercio mundial por mar, y sus empleados sean considerados como «trabajadores clave», involucrados en el sector esencial del transporte marítimo. En este sentido, he escrito a los miembros nacionales y a todas las demás autoridades relevantes solicitando que se les permita permanecer operativos durante cualquier restricción potencial relacionada con la pandemia COVID-19 (la Carta Circular correspondiente está disponible aquí https://www.iala-aism.org/content/uploads/2020/04/CL-03-2020-COVID-19-Support-letter-to-Industrial-Members-002.pdf). Esta solicitud incorpora el espíritu de la campaña del Secretario General de la Organización Marítima Internacional (OMI), y se expresa en la Carta Circular No 4204 / Add6 de la OMI (“*Lista preliminar de recomendaciones para los gobiernos y las autoridades nacionales pertinentes sobre la facilitación del comercio marítimo durante la pandemia de COVID-19*»).

Como medida adicional de protección contra la COVID-19, en particular para proteger al personal de la Secretaría de la AISM, la sede en Saint Germain-en-Laye ha estado físicamente cerrada desde mediados de marzo. Estoy orgulloso de todos mis colegas, que trabajan remotamente desde casa de la manera efectiva y eficiente habitual, atendiendo correos electrónicos, respondiendo al número de teléfono de la oficina principal y llevando a cabo reuniones en línea de los grupos de trabajo de los Comités y de los equipos de gestión. Esto muestra cómo las personas pueden adaptarse de manera rápida y competente cuando se enfrentan a una necesidad inevitable. Además, la experiencia demuestra la viabilidad de una «AISM virtual» que garantice el funcionamiento diario de la Secretaría como se esperaría de su membresía.

La Secretaría de la AISM continuará monitoreando los desarrollos relacionados con la COVID-19 y tomará decisiones sobre las actividades caso por caso, actualizando nuestro sitio web con cualquier otra noticia que pueda afectar a los miembros y nuestras actividades. Me ha alentado, y por ello estoy muy agradecido, el apoyo de todos los interesados, no menos los presidentes y vicepresidentes de los Comités, para minimizar el impacto en el programa de trabajo y avanzar en temas importantes, a través de correspondencia por correo electrónico y reuniones en línea.

Esta edición del Boletín da relevancia a un informe sobre la importante Conferencia Diplomática, que ahora debe ser seguida por una acción concreta por parte de los Gobiernos de los Estados Ribereños para firmar el Convenio para que éstos puedan comenzar el proceso de ratificación nacional lo antes posible. Me complació mucho que, tanto los miembros nacionales y como los representantes gubernamentales, pudieran viajar a Kuala Lumpur desde todo el mundo, con un total de más de 200 delegados. Su gran participación y espíritu de cooperación reafirmaron el alcance global de la AISM y agregaron otro hito a su trayectoria de logros tangibles como una organización consultiva ampliamente reconocida que trabaja en beneficio de la comunidad marítima en general.

También llamo la atención de los lectores sobre el artículo relacionado con la conclusión exitosa del trabajo intensivo del Comité VTS para revisar y actualizar las pautas internacionales existentes para los Servicios de tráfico de buques (VTS). Estos fueron adoptados por la OMI en 1997, mediante la Resolución de la Asamblea A.857 (20). El borrador del texto revisado para las nuevas directrices fue aprobado por unanimidad por el subcomité pertinente de la OMI en enero, con el argumento de que fomenta una comprensión común y global del papel, la naturaleza y el alcance de los sistemas VTS modernos que hacen un mayor uso de las tecnologías digitales, y el aumento de las funciones operativas y las responsabilidades correspondientes de las autoridades VTS. El reconocimiento del trabajo de la AISM por parte de la OMI es muy significativo, así como evidencia una conciencia generalizada de que la gente de mar depende cada vez más de los VTS para la seguridad de la navegación en las vías navegables congestionadas y los accesos a puerto.

El Consejo de mitad de año (71° período de sesiones) se llevará a cabo mediante una reunión virtual (videoconferencia) del 3 al 4 de junio; En este Boletín se proporciona un informe sobre la 70ª sesión e incluye una lista de los documentos recientemente aprobados.

Francis Zachariae

NEWS FROM IALA

NEW PUBLICATIONS

The Council met in December 2019 and **approved** the following new or revised publications:

RECOMMENDATIONS

-R0111 – Port Traffic Signals (Ed. 1.2)
-R0119 – VTS Implementation (Ed. 3)
-R1004 – Sustainability in the Provision of Marine Aids to Navigation (Ed. 2)
-R1018 – Responsible Design, Operation and Maintenance in the Provision of Marine Aids to Navigation (Ed. 1)
-R1019 – Provision of Maritime Services in the Context of e-Navigation in the Domain of IALA (Ed. 1)

GUIDELINES

-G1148 – Determination of Required Intensity for Marine Signal Lights (Ed. 1)
-G1149 – VTS Training for Deck Officers (Ed. 1)
-G1150 – Establishment of Vessel Traffic Services (Ed. 1)
-G1151 – Maintenance of AtoN Structures (Ed. 1)
-G1152 – SBAS Maritime Service (Ed. 1)
-G1153 – Template for the Review of Emerging Technologies for Possible Use by IALA Members (Ed. 1)

MODEL COURSES

-L1.1 – Marine Aids to Navigation Management (Ed. 3.1)

The Council also **revoked** the following Guidelines, which are superseded by newly approved documents:
-G1007 – Lighthouse Maintenance
-G1076 – Building Conditioning of Lighthouses

NEW MEMBERS

ASSOCIATE MEMBERS

-The Namibian Port Authority, *Namibia*
-Nigerian Maritime Coast Guard, *Nigeria*

INDUSTRIAL MEMBERS

-QingDao Hotech Automated Technology Co., Ltd, *People's Republic of China*
-Ningbo Botai Plastics Technology Co., Ltd, *Peoples' Republic of China*
-Maritime Atlantic Global SAS, *Colombia*
-Hormoz Berkeh, Ertebat Electronic Gil., *Iran*
-Marine Works Co., Ltd, *Republic of Korea*
-Jarzoe Builders, Inc., *Philippines*
-Orion Maritime Systems Pte Ltd, *Singapore*
-Maximum Protective International NV, *Suriname*
-Ecocoast Manufacturing LLC, *United Arab Emirates*

DISCONTINUED MEMBERSHIPS

INDUSTRIAL MEMBERS

-Wujiang Xinhua Navigation Aids Manufacture & Co. Ltd, *People's Rep of China*
-Beacon Co, *Egypt*
-Raad Bushehr Engineering Co, *Iran*
-Resinex Trading S.r.l, *Italy*
-Vesper Marine, New Zealand
-Depasa Marine International Ltd, *Nigeria*
-Continental Shipyards Ltd, *Nigeria*
-Dorruna Nigeria Ltd, *Nigeria*
-Tide Technologies, *Singapore*
-PMS Polietilen Mam San Tic A.S, *Turkey*
-The Babcock International Group, *United Kingdom*
-L-3 Communications, *USA*

INDUSTRIAL MEMBERS

-Comoros Port Authority, *Comoros*

IALA COUNCIL SESSION 70

THE COUNCIL MET FOR ITS 70TH SESSION FROM 10TH TO 13TH DECEMBER 2019 IN NOUMÉA, NEW CALEDONIA, TAKING BENEFIT OF THE SPC (SOUTH PACIFIC COMMUNITY) HEADQUARTERS' FACILITIES. MS KIM, YOUNG-SHIN, IALA PRESIDENT, WAS IN THE CHAIR. TWENTY-TWO OVER TWENTY-FOUR COUNCILLORS WERE IN ATTENDANCE OR HAD SENT REPRESENTATIVES.

DEVELOPMENTS SINCE THE 69TH SESSION

The Secretary-General reported on the developments since the 69th session.
The Committees, Policy Advisory Panel and Legal Advisory Panel had gathered over 400 participants at the Headquarters, to which the 47 participants in the Ranging Mode Workshop should be added.
As a follow-up of discussions at the 69th Council session a workshop had been planned in January 2020 to discuss the future of the DGNSS/DGPS stations.
IALA's efforts were recognized by the World Radiocommunication Conference where frequencies were allocated for the satellite VHF Data Exchange System.
Work towards the change of IALA status had come to a mile stone with the convening of a Diplomatic Conference in February 2020.
Preparations had continued for the first combined VTS-ENAV Symposium originally scheduled in May 2020 in Rotterdam, The Netherlands, with the completion of the technical programme and opening of online registration. In the meantime, the 7th session of the IMO Sub-Committee on Navigation, Search and Rescue (NCSR7) will consider the revision of its Resolution A.857(20) on Vessel Traffic Services with a view to adopting a new resolution in 2021.
The first celebration of the World Marine Aids to Navigation Day had received a fantastic support around the world. A main event had been organized in Spain by Puertos del Estado and the Council was to consider proposals for the 2020 main event. The ENG Committee, through its Heritage Working Group, will be tasked to select the *'Lighthouse of the Year 2020'*.
The Secretary-General concluded his report with a final touch on reorganization of the Secretariat: replacements for two staff members retiring in 2020 and the recruitment of one additional staff for the technical department.

AN ADEQUATE STRATEGY FOR NOW AND THE FUTURE

The Chair of the Council Strategy Drafting Group, Christian Forst of Germany, reported on the Strategy Workshop held the day before the Council opened, which, among others, discussed IALA's main role in the development of Maritime Autonomous Surface Ships (MASS).
The Councillors considered the revision of the IALA Position Paper on the Provision of Marine Aids to Navigation Services and, based on a recommendation made by the Strategy Drafting Group, decided to split it into two documents, one of them being on '*Drivers and Trends*'. Communication being more and more important nowadays IALA had developed a Communication Strategy to ensure that its aim, objectives and activities are communicated properly by stating them in clear, coherent, consistent and well-targeted messages for prompt communication with all relevant stakeholders.

A SANE FINANCIAL SITUATION

A profit can be expected at the end of the financial year, mainly due to a better recovery of bad debts and a reduction in expenditure after an expensive year 2018, which had seen a Conference and new recruitments in Secretariat staff.
The 2020 budget had been prepared in accordance and was approved by the Council.

A BUSY INDUSTRIAL ACTIVITY

The Industrial Members Committee was preparing their mid-term General Assembly, to be held at the IALA Headquarters the 5th and 6th October 2020. The IMC intends to create a code of conduct for Industrial members to ensure that they act in an ethical way and develop standardised and sustainable equipment. They also intend to ensure effective coordination between a growing number of Industrial members.

COMMITTEES' ACHIEVEMENTS

ARM Committee

The Committee got Council approval of a guidance note they had developed on various aspects of AtoN provision, intended for a National member. They also drafted input papers to ITU-R, which will need to be developed further before the Council approve them at another meeting.

General view of Council in session

ENG Committee

The Committee got Council approval of one revised and one new Recommendations, as well as of three new Guidelines and one revised Model Course. These documents are listed on Page 6 of this issue of the Bulletin.

VTS Committee

The Committee got approval of a revised Recommendation and two new Guidelines. These documents are listed on Page 6 of this issue of the Bulletin.
Progress on the revision of the IMO Resolution A.857(20) – Guidelines for Vessel Traffic Services, were reported, including the revision of all IALA documents on VTS, subsequent to the adoption by the Organization of the revised document.

ENAV Committee

The Committee got approval of a new Recommendation and a new Guideline. These documents are listed on Page 6 of this issue of the Bulletin.
The liaison notes prepared for the IHO on Web-based S-100 data exchange and for the IMO NCSR on 3GPP in the maritime domain, were approved.

THE WORLD-WIDE ACADEMY PREPARES FOR THE FUTURE

After reminding the Councillors of the Academy achievements since its inception in 2012 the Dean presented the project aiming at taking a closer look to the quality of VTS accreditation and achieving a truly world-wide training education. The latter would preferably involve the Academy most qualified students, chosen from the Alumni, who would become good quality lecturers.

A CONTINUED CO-OPERATION WITH OTHER INTERNATIONAL ORGANIZATIONS

Keeping its partner role in the international maritime community IALA was an active participant in recent international meetings, attending the IMO Council and Assembly held in November and December and the ITU World Radio Conference in October and November.
Co-operation with the IHO was active with the 3rd IHO/IALA technical co-operation meeting held in October.
Finally, IALA continuously supports the work of the FERNS, the Far East Radio Navigation Services intergovernmental organization, with two staff members attending the FERNS Council meeting in November.

MEMBERSHIP AND OTHER MATTERS

The Council ended its 70th session by reviewing membership matters (please refer to Page 6 for new and discontinued memberships) and hearing on the latest developments in the communication domain: Website, Bulletin, social media and annual report.
Video conference facilities for the Committee meetings will be considered to ease participation by some members.

The next Council meeting will take place by video conference on 3 and 4 June 2020.

Group photo at the bottom of Amédée Lighthouse

70ÈME SESSION DU CONSEIL DE L'AISM

Le Conseil s'est réuni pour sa 70ème session du 10 au 13 décembre 2019 à Nouméa, Nouvelle Calédonie, où il a bénéficié des installations du siège de la Communauté du Pacifique sud. Madame KIM Young-shin, présidente de l'AISM, dirigeait les débats. Vingt-deux des vingt-quatre conseillers étaient présents ou représentés.

Evolutions depuis la 69ème session
Le Secrétaire général présente les évènements intervenus depuis la 69ème session.
Les Commissions, le Comité directeur et le Comité juridique ont réuni au siège plus de 400 participants, auxquels il faut ajouter les 47 participants de l'atelier sur le R-Mode.
Comme convenu lors des discussions tenues à la 69ème session, un atelier est prévu en janvier 2020 pour débattre de l'avenir des stations DGNSS/DGPS.
Les travaux de l'AISM ont abouti à l'allocation de fréquences par la Conférence mondiale des radiocommunications pour la version satellite du système d'échange de données en VHF (VDES).
Les progrès réalisés en vue du changement de statut de l'AISM ont franchi une étape importante avec la convocation d'une conférence diplomatique en février 2020.
Les travaux de préparation continuent pour le premier Symposium VTS-ENAV qui était prévu pour mai 2020 à Rotterdam aux Pays-Bas ; le programme technique a été défini et l'inscription en ligne est ouverte. Dans l'intervalle, la 7ème session du Sous-comité de l'OMI sur la navigation, la recherche et le sauvetage (NCSR7) étudiera la révision de la Résolution A.857(20) – Lignes directrices pour les services de trafic maritime, en vue de l'adoption d'une nouvelle Résolution en 2021.
Les pays ont magnifiquement appuyé la première célébration de la journée mondiale des aides à la navigation maritime. La principale manifestation a été organisée en Espagne par Puertos del Estado et le Conseil va se pencher sur les offres pour celle de 2020. La Commission ENG, par le biais de son groupe de travail Patrimoine, sera chargée de sélectionner le *« phare de l'année 2020 »*.
Le Secrétaire général a conclu son rapport en abordant la réorganisation du Secrétariat : le remplacement de deux membres du personnel qui vont partir en retraite en 2020 et le recrutement d'une personne supplémentaire pour le service technique.

Une stratégie adaptée au présent et à l'avenir
Le président du groupe du Conseil pour la rédaction de la stratégie, Christian Forst, d'Allemagne, a fait un rapport sur l'atelier qui s'est tenu la veille de l'ouverture du Conseil et qui, entre autres choses, a discuté du rôle principal à jouer par l'AISM dans le développement des navires de surface autonomes.
Les conseillers ont étudié la révision du document présentant la position de l'AISM sur les services d'aides à la navigation maritime et, sur la base d'une recommandation du groupe de rédaction de la stratégie, a décidé de le scinder en deux documents, dont l'un d'eux s'intitulera *« Eléments moteurs et tendances »*.
La communication tenant de nos jours une place de plus en plus importante l'AISM a mis au point une stratégie de communication afin que son but, ses objectifs et ses activités soient convenablement communiqués. Ceux-ci seront énoncés au moyen de messages clairs, cohérents et bien ciblés, destinés à une communication rapide avec tous les acteurs concernés.

Une bonne santé financière
On peut espérer un bénéfice à la fin de l'année, principalement dû à un meilleur recouvrement des créances et une réduction des dépenses après une année 2018 particulièrement onéreuse en raison d'une Conférence et du recrutement de nouveaux personnels de secrétariat.
Le budget 2020 préparé en conséquence a été approuvé par le Conseil.

L'industrie toujours active
Le Comité des membres industriels (IMC) était en pleine préparation de son assemblée générale de mi-mandat, qui se tiendra au siège de l'AISM les 5 et 6 octobre 2020. L'IMC prévoit de créer un code de bonne conduite à l'intention des membres industriels, pour garantir une conduite éthique et des produits normalisés et durables. Il travaille aussi à une coordination efficace entre des membres industriels dont le nombre ne cesse d'augmenter.

Réalisations des Commissions
Commission ARM
La Commission a obtenu l'accord du Conseil pour la diffusion d'une note d'orientation sur divers aspects de la fourniture d'aides à la navigation maritime, rédigée à l'intention d'un membre national. La Commission a aussi préparé des soumissions à l'UIT-R, sur lesquelles elle devra approfondir son travail afin que le Conseil puisse les approuver lors d'une autre réunion.
Commission ENG
Le Conseil a approuvé plusieurs documents préparés par la Commission : une recommandation nouvelle et une révisée, de même que trois nouveaux guides et un modèle de cours révisé. La liste de ces documents figure en page 6 de ce numéro du Bulletin.
Commission VTS
Le Conseil a approuvé une recommandation révisée par la Commission, ainsi que deux nouveaux guides. Le détail de ces documents figure en page 6 de ce numéro du Bulletin.
Les progrès continuent sur la révision de la Résolution de l'OMI A.587(20) – Lignes directrices sur les services de trafic maritime, de même que la révision de tous les documents de l'AISM sur les VTS, nécessaire après l'adoption par l'Organisation du document révisé.
Commission ENAV
Le Conseil a approuvé une nouvelle recommandation et un nouveau guide préparés par la Commission. Ces documents figurent sur la liste publiée en page 6 de ce numéro du Bulletin.
Les notes de liaison préparées pour l'OHI sur l'échange de données S-100 par Internet et pour le Sous-comité NCSR de l'OMI sur 3GPP dans le domaine maritime, ont toutes deux été approuvées.

L'Académie mondiale prépare l'avenir
Après avoir rappelé les réalisations de l'Académie depuis sa création en 2012 le Doyen présente les projets d'amélioration de l'accréditation VTS et de formation mondiale. Cette dernière s'appuiera de préférence sur les étudiants les plus qualifiés de l'Académie, choisis parmi les anciens élèves,

qui seront de bons conférenciers.

La collaboration avec les autres organisations internationales se poursuit
Conservant son rôle de partenaire de la communauté maritime internationale l'AISM a participé activement à plusieurs réunions internationales. Elle a pris part à l'Assemblée générale et au Conseil de l'OMI pendant les mois de novembre et décembre, et à la Conférence mondiale des radiocommunications de l'UIT en octobre et novembre.
La collaboration avec l'OHI a donné lieu à une troisième réunion technique OHI/AISM, tenue au mois d'octobre.
Enfin, l'AISM continue d'appuyer les travaux du FERNS, l'organisation inter-gouvernementale chargée des services de radionavigation en Extrême-Orient. Deux membres du personnel se sont rendus à la réunion du Conseil du FERNS en novembre.

Adhésions et autres questions
La 70ème session du Conseil s'est achevée par les questions concernant les adhésions (voir page 6 pour les nouvelles adhésions et les suspensions), les derniers progrès pour les communications (site Internet, Bulletin, réseaux sociaux et rapport annuel).
On va étudier la possibilité d'utiliser la visio-conférence pour les Commissions afin de faciliter la participation de certains membres.

La prochaine réunion du Conseil se tiendra par visioconférence les 3 et 4 juin 2020.

70° PERÍODO DE SESIONES DEL CONSEJO DE LA AISM

El Consejo se reunió para su 70ª sesión del 10 al 13 de Diciembre de 2019 en Nouméa, Nueva Caledonia, aprovechando las instalaciones de la sede de la SPC (Comunidad del Pacífico Sur, por sus siglas en inglés). La Sra. KIM, Young-shin, Presidenta de la AISM, estuvo en la Presidencia. Veintidós de veinticuatro Miembros del Consejo asistieron o enviaron a sus representantes.

Desarrollos desde la 69ª sesión
El Secretario General informó sobre la evolución desde la 69ª sesión. Los Comités, el Panel Asesor de Políticas y el Panel Asesor Jurídico reunieron a más de 400 participantes en la Sede, a los que deberían agregarse los 47 participantes en el Taller de Modo de Alcance.
Como seguimiento de las discusiones en la 69ª Sesión del Consejo, se había planeado un taller en enero de 2020 para discutir el futuro

de las estaciones DGNSS / DGPS.
Los esfuerzos de la AISM fueron reconocidos por la Conferencia Mundial de Radiocomunicaciones donde se asignaron frecuencias para el sistema de intercambio de datos VHF por satélite.
El trabajo para el Cambio de Status de la AISM había llegado a un hito con la convocatoria de una Conferencia Diplomática en febrero de 2020.
Los preparativos continuaron para el Primer Simposio Combinado VTS-ENAV que fue programado en mayo de 2020 en Rotterdam, Holanda, con la finalización del Programa Técnico y la apertura del registro en línea. Mientras tanto, la séptima sesión del Subcomité de Navegación, Búsqueda y Rescate (NCSR7) de la OMI considerará la revisión de su Resolución A.857 (20) sobre los Servicios de Tráfico de Buques con miras a adoptar una nueva Resolución en 2021.
La primera celebración del Día Mundial de las Ayudas a la Navegación Marítimas recibió un apoyo fantástico en todo el mundo. Puertos del Estado había organizado un evento principal en España y el Consejo debía considerar las propuestas para el evento principal en 2020. El Comité ENG, a través de su Grupo de Trabajo de Patrimonio, tendrá la tarea de seleccionar el *«Faro del Año 2020»*.
El Secretario General concluyó su informe con un toque final sobre la reorganización del Secretariado: reemplazos para dos miembros del personal que se jubilarán en 2020 y la contratación de un personal adicional para el departamento técnico.

Una estrategia adecuada para el presente y el futuro
El Presidente del Grupo de Redacción de Estrategia del Consejo, Christian Forst de Alemania, informó sobre el Taller de Estrategia celebrado el día antes de la apertura del Consejo, donde, entre otros temas, se discutió el papel principal de la AISM en el desarrollo de los Buques de Superficie Autónomos Marítimos (MASS, por sus siglas en inglés).
Los Miembros del Consejo consideraron la revisión del Documento de Posición de la AISM sobre la Provisión de Servicios de Ayuda a la Navegación Marítima y, basándose en una recomendación hecha por el Grupo de Redacción de Estrategias, decidieron dividirlo en dos documentos, uno de ellos sobre "Conductores y Tendencias".
Al ser la comunicación cada vez más importante hoy en día la AISM ha desarrollado una Estrategia de Comunicación para garantizar que su dirección, objetivos y actividades se comuniquen de manera adecuada al establecerlos en mensajes claros, coherentes, consistentes y bien dirigidos para una comunicación rápida con todas las partes interesadas relevantes.

Una situación financiera sensata
Se puede esperar una ganancia al final del año financiero, principalmente debido a una mejor recuperación de las deudas incobrables y a una reducción de los gastos después de un costoso año 2018, que había visto una Conferencia y nuevas contrataciones en el personal de la Secretaría.
El presupuesto 2020 se había preparado de conformidad y fue aprobado por el Consejo.

Una actividad industrial ocupada
El Comité de Miembros Industriales estaba preparando su Asamblea General de mitad de período, que se celebrará en la Sede de la AISM los días 5 y 6 de octubre de 2020. El IMC tiene la intención de crear un Código de Conducta para los Miembros Industriales para garantizar que actúen de manera ética y se desarrolle equipamiento estandarizado y sostenible. También tiene la intención de garantizar una coordinación efectiva entre un número creciente de Miembros Industriales.

Los logros de los Comités
Comité ARM
El Comité obtuvo la aprobación del Consejo de una nota de orientación que se había desarrollado sobre diversos aspectos de la provisión de las AtoN, destinada a un Miembro Nacional.
También se redactaron documentos de entrada para el UIT-R, que deberán desarrollarse más antes de que el Consejo los apruebe en otra reunión.
Comité ENG
El Comité obtuvo la aprobación del Consejo de una Recomendación revisada y de una nueva, así como de tres nuevas Directrices y un Curso Modelo revisado. Estos documentos se enumeran en la página 6 de este número del Boletín.
Comité VTS
El Comité obtuvo la aprobación de una Recomendación revisada y dos nuevas Directrices. Estos documentos se enumeran en la página 6 de este número del Boletín.
Se informaron avances en la revisión de la Resolución A.857 (20) de la OMI - Directrices para los Servicios de Tráfico de Buques, incluida la revisión de todos los documentos de la AISM sobre VTS, luego de la adopción por parte de la Organización del documento revisado.
Comité ENAV
El Comité obtuvo la aprobación de una nueva Recomendación y una nueva Directriz. Estos documentos se enumeran en la página 6 de este número del Boletín.
Se aprobaron las notas de enlace preparadas para la OHI sobre el intercambio de datos S-100 basado en Web y para la NCSR de la OMI sobre 3GPP en el dominio marítimo.

La Academia Mundial se prepara para el futuro
Después de recordar a los Miembros del Consejo los logros de la Academia desde su inicio en 2012, el Decano presentó el proyecto con el objetivo de observar más de cerca la calidad de la acreditación VTS y lograr una educación de capacitación verdaderamente mundial.
Esto último implicaría preferiblemente a los estudiantes más calificados de la Academia, elegidos entre los alumnos, que se convertirían en profesores de buena calidad.

Una cooperación continua con otras organizaciones internacionales
Manteniendo su papel de socio en la comunidad marítima internacional, la AISM participó activamente en recientes reuniones internacionales, asistió al Consejo y la Asamblea de la OMI celebrados en noviembre y diciembre y a la Conferencia Mundial de Radio de la UIT en octubre y noviembre.
La cooperación con la OHI estuvo activa en la tercera reunión de cooperación técnica de la OHI / AISM celebrada en octubre.
Finalmente, la AISM apoya continuamente el trabajo de FERNS, la Organización Intergubernamental de Servicios de Navegación por Radio del Lejano Oriente, con dos miembros del personal que asisten a la reunión del Consejo de FERNS en noviembre.

Membresía y otros asuntos
El Consejo finalizó su 70ª sesión revisando los asuntos de membresía (consulte la página 6 para membresías nuevas y discontinuadas) y escuchando sobre los últimos desarrollos en el dominio de la comunicación: Sitio Web, Boletín, redes sociales e informe anual.
Se considerarán facilidades de videoconferencia para las reuniones del Comité para facilitar la participación de algunos miembros.

La próxima reunión del Consejo se realizará por videoconferencia los días 3 y 4 de junio de 2020.

WORKSHOP ON RANGING MODE

THE INAUGURAL WORKSHOP ON RANGING MODE WAS HELD BETWEEN THE 9 AND 12 SEPTEMBER 2019 AT IALA HEADQUARTERS, SAINT GERMAIN-EN-LAYE, FRANCE.
THE WORKSHOP WAS ATTENDED BY 47 PARTICIPANTS FROM 19 COUNTRIES.

The Workshop participants considered the various presentations that were made and the subsequent discussions in the working groups and concluded that:

- There is international recognition that the GNSS alone is insufficient for critical applications. The combined use of radionavigation and augmentation systems, including R-Mode, onboard maritime vessels is enabled by IMO Resolution MSC.401(95) on performance standards for multi-system shipborne radionavigation receivers.
- Achieving the standardized and world-wide implementation of R-Mode depends on effective harmonization with the work programmes of other interested international organizations such as the IMO and ITU.

DISCUSSIONS IN PLENARY AND WORKING GROUPS

Discussions were held in plenary and in breakout sessions on five broad themes.

REQUIREMENTS OF STAKEHOLDERS ON THE R-MODE SYSTEM

The stakeholder requirements were discussed in Plenary and found to create a strong basis for the further development of the IALA Guideline on Stakeholder Requirements for R-Mode by the ENG Committee.
The stakeholder requirements of R-Mode are also of importance to the IALA ENAV and ARM Committees from the technical and user perspectives respectively.

VDES R-MODE IMPLEMENTATION

This was discussed in a breakout group.
The Workshop welcomed the outcomes of the waveform measurement of VHF R-Mode on the Baltic Sea, Ammersee and the Bohai and Yellow Seas.
The Workshop endorsed the structure of the IALA Guideline G1139 annex related to R-Mode and further developed the VDES R-Mode base station architecture for consideration by the ENAV Committee.
Suggestions as to how to continue the development of IALA Guideline G1139 were made for consideration by the relevant IALA Technical Committees.
It was identified that benefits would be accrued by utilizing the data channel of VDES for the distribution of additional information relevant to navigation.

GUIDELINES ON IMPLEMENTATION OF R-MODE ON MF AND VHF

Breakout group 2 was tasked to work on potential guidelines.
The Workshop was of the view that it could be beneficial to provide a common Guideline for MF and VHF R-Mode implementation.
The system design and requirements should be scalable to enable various R-Mode implementations (contingency/back-up) in different areas.

PLATFORM FOR COORDINATION OF TEST FACILITIES AND TESTBEDS

This was discussed in Plenary and here was an agreed view that a collaboration platform for the use of testbeds could enhance and promote the development of R-Mode or other IALA activities. This could also serve to enhance collaboration with other organizations.
It was recognized that the governance of the collaboration platform needs to be solved and that IALA could play a leading role.

R-MODE DEVELOPMENT, STANDARDISATION AND IMPLEMENTATION ROADMAP

After presentation of the discussions held within breakout 3 the Workshop endorsed the R-Mode mind map and extended it by adding risks and opportunities for R-Mode and possible alternative applications of R-Mode.
A draft of an IALA R-Mode roadmap was developed based on the mind map. It was stressed that it is difficult to estimate the duration of processes and time schedules after the end of currently ongoing projects.

PANEL DISCUSSION

A panel discussion was held to try and answer ten questions of particular importance.

HOW DO YOU SEE THE SPECIFIC ROLE OF CIRM, IAIN AND IALA TO DO SOMETHING WITHIN THE SCOPE OF R-MODE SYSTEM?

IAIN is able to represent the views of the user and act as a facility for promulgating the concept of R-Mode and encouraging its community to stand up and support the system or to raise awareness so that users may consider what they want from such a system.
CIRM sees R-Mode as a business opportunity for its members who are equipment and technology manufacturers. CIRM members would seek to build products that are fit for purpose and meet the user needs, which should ideally be driven by regulation and supported by standards. These will be the main drivers for CIRM members, some of which were participating in the Workshop.
IALA is an international technical organization and not a regulator. Depending on the development status of R-Mode, IALA could do several things. A conceptual framework on R-Mode could be developed in IALA in many ways such as a Guideline or timeframe. IALA could promote R-Mode using its bulletin and other publications. There are a lot of good opportunities in IALA to support the development of R-Mode.

DO WE NEED A SUPRA-NATIONAL AUTHORITY FOR R-MODE AND IF YES, WHO CAN ACT AS THIS AUTHORITY?

Care is needed in the use of the term authority. The

example of the international consultative group for GNSS was suggested as a possible solution where coordination takes place with each respective constellation member with respect to matters such as commonality, conflicting signals and the management of constellations. Perhaps this could be a model for an R-Mode group but consideration would need to be given as to how it may be set up and it would need experienced personnel.

WHO CAN BE CALLED THE "FOUNDER" OR "OWNER" OF R-MODE IN THE FUTURE?

Using the term owner may not be the best option. The strength of the R-Mode system is its openness. A guiding light is needed but perhaps AIS could be looked at as example with the IMO performing the regulatory function, ITU dealing with spectrum issues and IALA dealing with operational standardization.

WHAT ARE THE RISKS WE HAVE TO CONSIDER WITH RESPECT TO R-MODE, SUCH AS THE INCREASING INFLUENCE OF SPACE-BASED AUGMENTATIONS?

A threat may be the timeline involved in the implementation of R-Mode. How long will it take to develop the system and technical specifications and put in place the regulatory framework. R-Mode is strong as it is terrestrially based but time could go against it. However, there is the opportunity to build something unique and the maritime sector could lead in solving a problem that could be of significant benefit to other transportation sectors (air, railroad etc.).

A major risk is that others do not see the need for R-Mode when there are other systems that give PNT solutions. Effort needs to be expended on making an operational and business case.

The requirements of R-Mode should be based on the requirements of the users and not technically driven. Many IALA National members are looking at how to maximise the benefit of existing infrastructure, using the existing DGNSS infrastructure is attractive and this opportunity should be promoted.

DO YOU SEE R-MODE WORKING ALONE OR AS A PART OF A MULTI-SYSTEM CONCEPT?

It is likely that, in the future, position and timing will be delivered by a system of systems which will complement one another. The SOLAS Convention resulted from the loss of the Titanic and that a downside of society is that it is possible to take horse to the water, but you cannot necessarily make it drink. The concern is that it may take a major loss of the GNSS resulting in a significant loss of life or major pollution incident before action is taken. A lot of effort needs to be expended on making the case for alternative systems that are completely independent from the one everyone relies on at the moment (GNSS).

Flexibility is important, R-Mode is an interesting answer to the problem but we need to keep an open mind on a possible system of systems. With MASS (Maritime Autonomous Surface Ships) and other autonomous applications being developed, the robustness of systems would be a major selling point.

COULD THE LEISURE MARKET ALSO BE OPEN TO R-MODE?

Leisure tend to purchase the minimum equipment that they need for basic navigation; regulation is a key driver for selling. It will be hard to sell R-Mode to leisure users but it may take a major loss of GNSS event to sell it.

COULD IALA PLAY A ROLE IN COORDINATING WITH OTHER BODIES AND ORGANISATIONS IN DIFFERENT TRANSPORT SECTORS THAT MAY BE THINKING THE SAME THING IN TERMS OF TIMING?

In terms of cooperation, IALA has many official meetings with the IMO and IHO and other related international organizations and can promote R-Mode at relevant meetings. A main area of focus at the moment is e-Navigation and the Maritime Services but it is recognized that R-Mode is a risk control option for e-Navigation. The selling point may be timing and not positioning. There are many users for whom time is fundamental such as the financial, broadcasting, mobile telecommunication and utilities sectors all of which need uninterrupted precision timing. If there is only one system, and that fails, there could be significant problems.

HOW CAN WE IMPROVE THE VISIBILITY OF THE R-MODE SYSTEM AND WHAT CAN YOUR ORGANIZATION DO WITHIN THIS SCOPE? HOW WE CAN PROMOTE R-MODE TO MAKE IT MORE POPULAR (WIDELY KNOWN)?

An IALA input paper at NCSR6 suggested R-Mode as a possible topic for the ITU WRC. One outcome of the submission was that the IMO asked to be kept updated on progress. One solution could be to make an input to NCSR7 providing an update. IALA also has status at the ITU so the terrestrial services group could also be a good forum and opportunity to talk across disciplines who may be interested in R-Mode.

Navigation institutes may be invited at international conferences organized by IALA Sister Organizations to consider R-Mode as a potential agenda item.

The IALA Workshop on the future use of DGNSS planned in Edinburgh in January 2020 would be a good opportunity to bring R-Mode to the attention of the participants. Additionally, the approval of the VDES satellite downlink by WRC19 could also be a change or milestone for some kind of event to promote R-Mode.

IS THERE ANY PREFERENCE BETWEEN VDES OR MF?

Flexibility is needed. MF presents technical challenges on the one hand but advantages in available spectrum on the other. From the user's perspective, simplicity is important. Mariners want equipment that tells them where they are and what time it is, they are not generally concerned as to the medium that is used. Requirements will vary with respect to the phase of navigation (i.e. deep sea vs. port and harbour). Users need reliable signals coming into their vessels to keep them safe.

WHEN DO YOU THINK R-MODE MAY BE FULLY OPERATIONAL?

Test beds are becoming operational and should be in a usable state by 2024. Regulations are needed and the best possible case for this is around 2022 from the IMO. Whilst a system may be serviceable and demonstrable the implementation of any carriage requirements may take many years. There is a risk that some older vessels may never have R-Mode systems fitted. A time frame of around 10 years would seem reasonable.

ATELIER SUR LE R-MODE

Le tout premier atelier sur le R-Mode (Ranging Mode) s'est tenu du 9 au 12 septembre au siège de l'AISM à Saint-Germain-en-Laye, en France.
L'atelier a réuni 47 participants venant de 19 pays.
Les participants ont bénéficié de diverses présentations et les débats qui les ont suivies au sein des groupes de travail ont donné à ces conclusions :

- Il est reconnu internationalement que le GNSS seul n'est pas suffisant pour les applications sensibles. L'utilisation combinée de la radionavigation et des systèmes d'augmentation, y compris le R-Mode, à bord des navires est rendue possible par la résolution de l'OMI MSC.401(95) sur les normes de performance des récepteurs de radionavigation multisystèmes de bord.
- La réalisation d'une mise en œuvre mondiale et harmonisée du R-Mode dépend d'une harmonisation efficace avec les programmes de travail des autres organisations internationales intéressées comme l'OMI et l'UIT.

TALLER SOBRE MODO DE ALCANCE

El Taller inaugural sobre el Modo de Alcance (R-Mode, por sus siglas en inglés) se llevó a cabo entre el 9 y el 12 de septiembre de 2019 en la Sede de la AISM en Saint Germain-en-Laye, Francia.
Al taller asistieron 47 participantes de 19 países.
Los participantes consideraron las diversas presentaciones que se hicieron y las discusiones posteriores en los grupos de trabajo y concluyeron que:

- Existe un reconocimiento internacional de que el GNSS por sí solo es insuficiente para aplicaciones críticas. El uso combinado de sistemas de radionavegación y de aumento a bordo de los buques, incluido el R-Mode, está habilitado por la Resolución de la OMI MSC.401 (95) sobre estándares de rendimiento para receptores de radionavegación multi-sistemas de a bordo.
- Lograr la implementación estandarizada y mundial de R-Mode depende de una armonización efectiva con los programas de trabajo de otras organizaciones internacionales interesadas como la OMI y la UIT.

WORKSHOP ON THE FUTURE OF MARINE RADIO-BEACON DGPS/DGNSS

THE WORKSHOP ON THE FUTURE OF MARINE RADIOBEACON DGPS/DGNSS WAS HELD BETWEEN THE 27 AND 31 JANUARY 2020 AT THE NORTHERN LIGHTHOUSE BOARD HEAD-QUARTERS, EDINBURGH, SCOTLAND.
THE WORKSHOP WAS VERY WELL ATTENDED BY 49 PARTICIPANTS FROM 22 COUNTRIES.

The Workshop participants considered the various presentations that were made and through discussion it was noted that:
- IALA recognises the important need to inform the mariner, in a clear and timely manner, if GNSS becomes unreliable;
- National competent authorities should take decisions based upon the volume of traffic and degree of risk and the need to ensure that integrity information is provided;
- contemporary GNSS stand-alone services do not provide integrity information to the users;
- satellite-based augmentation services (SBAS) provides system integrity information, but use the same frequency band as GNSS and are therefore equally susceptible to jamming and spoofing;
- current implementations of Receiver Autonomous Integrity Monitoring (RAIM) are considered inadequate due to the current lack of maritime specific RAIM algorithms;
- while the IALA maritime radiobeacon DGNSS concept improves positional accuracy somewhat, its main utility today is the provision of real-time integrity information;
- the IALA DGNSS concept is globally harmonised and compatible with most shipborne GNSS receivers but there is uncertain levels of use;
- the IALA DGNSS frequency allocation is recognised as a significant asset in global harmonisation;
- many DGNSS service providers are facing difficulties in continuing their services with ageing equipment requiring significant investments;
- some service providers have decided to discontinue their DGNSS services, while others have upgraded their equipment, but the majority have not made up their mind yet and are seeking guidance; and
- several different architectures are available and can modernise DGNSS implementation in a more cost-effective way.

Consequently, the Workshop agreed that IALA should consider:
- encouraging IALA members to ensure that GNSS integrity information is provided in their area of responsibility;
- encouraging IALA members who discontinue their DGNSS services, to seek alternative ways of informing mariners, in a clear and timely manner, if GNSS becomes unreliable; and
- identifying alternative new and innovative ways of providing GNSS integrity information to mariners and find ways to speed up their development, including:
  - harmonising maritime GNSS user integrity algorithms;
  - encouraging the development of MSR[1] test specification and its introduction on all vessels; and
  - introducing R-Mode and other solutions for mitigating GNSS vulnerabilities.
- considering how best to co-ordinate this work with other international bodies to achieve globally harmonised solutions.

Taking into consideration some of these key findings, a draft Guideline was produced which will be forwarded to the Policy Advisory Panel and the ARM and ENG Committees for further development.

WORKSHOP DISCUSSIONS

SOURCES OF POSITION INTEGRITY

After the history of DGNSS and maritime requirements were briefly presented, a number of sources of position integrity were explained.

A number of questions were asked from the floor and discussion highlighted the following:
- There was general consensus that the maritime RAIM implementations are currently not adequate and should be harmonised. It was believed that the IMO should consider requesting a test specification from the IEC.
- There was a discussion regarding the differences between maritime and aeronautical RAIM[2] which concluded that the RAIM algorithms are generally similar, but the operational environment is already defined for aviation, but there is significant work required to understand the maritime operational environment (noise, multipath etc) which would need to be considered in the definition of a suitable algorithm.
- It was further noted that the evolution of maritime user requirements could lead to changes in the algorithm used. Currently, algorithms are designed to identify single failed satellites, however with the move to multi-constellation receivers, a new algorithm may be needed to ensure efficient use of all available satellites and frequencies. Advanced RAIM and maritime M-RAIM[3] were mentioned as future developments.
- A general discussion on the maritime use of SBAS covered how the technical use of SBAS[4] in a type approved receiver, once available, should be usable within any SBAS service area. The political issues of recognising a maritime user and how maritime safety information (MSI) is promulgated were also discussed and the potential benefit of IMO recognition of a maritime SBAS, noting that this was discussed previously and the IMO decided there was no requirement to recognise augmentation. It was noted that there is ongoing discussion between different SBAS providers regarding maritime user recognition. **Finally, there may be benefit in IALA providing an input to the IMO and other bodies seeking clarification and reconsideration of SBAS recognition, whether as part of the IMO WWRNS or other means.**

- A question on the planned evolution for EGNOS maritime service V3 – A.915 was asked to the effect that if IMO Resolution A.915 was updated prior to 2025 (the planned evolution date) would this affect the EGNOS service level? Without knowing what changes were made to the maritime requirements, it was not possible to answer this question completely, only that the service provided would be tailored appropriately.

VIEWS AND OPINIONS

During the session four participants gave the view of, respectively, the mariner, two infrastructure providers and a receiver manufacturer.

A number of questions were asked from the floor and discussion highlighted the following:

- It was recognised that IEC test standards for the MSR were in need of development and identified that an organisation/person is needed to take the lead in this task.
- In regard to R-Mode[5] and positioning that provides sufficient geometry is essential.
- If you have a calculated R-Mode range and compare that measurement with the calculated GNSS position that you have then you have an uncorrelated test method (assuming independent time is used in R-Mode).
- Integrity monitoring will be a vital function going forward regardless of which option authorities decide to adopt with regards to DGPS / DGNSS. The output from this workshop should reflect this.

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- IALA should examine integrity and how we coordinate this work between organisations. Consideration should be given as to what can IALA do to help get test standards in place.
- Today's technology is great, but it can fail. Reliability of position is correct onboard – worst case
- The range of R-Mode is up to 200km but less than that at night.
- Over reliance on technology – high end user ok – how do we move from first class innovation to something of use to the bridge team that assists the mariner.
- Participants noted that the onboard environment is very complex - everything is a system and mariners have to understand all of these algorithms. Positioning is just one system that mariners have to be aware of and so there should be a simple solution regarding resilient PNT.
- Interference from solar cycles every 11 years effect GPS/GNSS and so therefore we must use a multi frequency approach or augmentation such as SBAS to ensure the integrity of the system.
- MSR Performance standard was completed in 2015 and it is on the IEC work plan but we need to have someone who has the time and financial support to get the work underway.

CASE STUDIES

A number of National authorities presented their preferred options regarding the future of their DGNSS/DGPS services and these options were to:

- ⇨ Maintain the current service;
- ⇨ Renew the service;
- ⇨ Provide multi-constellation augmentation;
- ⇨ Re-broadcast 3rd party corrections; and
- ⇨ Discontinue the service.

ATELIER SUR L'AVENIR DES BALISES DE DGPS/DGNSS MARITIME

L'Atelier sur l'avenir des balises de DGPS/DGNSS maritime s'est tenu du 27 au 31 janvier 2020 au siège Northern Lighthouse Board, le service d'aides à la navigation maritime d'Ecosse, à Edinbourg.
L'atelier a réuni 49 participants venant de 22 pays. Les participants ont bénéficié de nombreuses présentations et les discussions qui ont suivi ont montré que :

- L'AISM reconnaît l'importance d'informer le marin, de façon claire et rapide, en cas de manque de fiabilité du GNSS ;
- Les autorités nationales compétentes doivent baser leurs décisions sur le volume du trafic et le niveau de risque, et sur la nécessité de fournir une information d'intégrité ;
- Les services basés sur le seul GNSS ne fournissent pas à l'utilisateur d'information d'intégrité ;
- Les services d'augmentation par satellites (SBAS) fournissent une information d'intégrité, mais utilisent la même bande de fréquences que le GNSS et sont donc tout autant susceptibles de souffrir de brouillage et de perturbation volontaire ;
- Les mises en œuvre actuelles de la surveillance autonome de l'intégrité du récepteur (RAIM) ne sont pas adaptées, en raison du manque d'algorithmes RAIM spécifiquement maritimes ;
- Bien que le concept AISM de balises de DGNSS maritime améliore la précision de la position, sa principale utilité aujourd'hui est de donner une information d'intégrité en temps réel ;
- Le concept DGNSS de l'AISM est mondialement harmonisé et compatible avec la plupart des récepteurs GNSS mais leur degré d'utilisation est incertain ;
- L'attribution des fréquences DGNSS de l'AISM est reconnue comme un atout important dans l'harmonisation mondiale ;
- Beaucoup de fournisseurs de services DGNSS rencontrent des difficultés à poursuivre leurs services, en raison d'équipements vieillissants qui demandent des investissements considérables ;
- Quelques fournisseurs de services ont décidé de cesser leurs servies DGNSS, alors que d'autres ont rénové leurs équipements, mais la majorité n'a pas encore pris de décision et recherche des conseils ; et
- Plusieurs architectures différentes sont disponibles et peuvent moderniser la mise en place du DGNSS en le rendant plus rentable.

L'atelier a donc considéré que l'AISM devrait envisager de :

- Encourager ses membres à s'assurer qu'une information d'intégrité du GNSS est donnée dans leur zone de responsabilité ;
- Encourager ses membres qui cessent leurs services DGNSS à rechercher des moyens alternatifs d'informer les marins, de façon claire et rapide, en cas de manque de fiabilité du GNSS ; et
- Identifier des moyens alternatifs, nouveaux et innovants, de fournir aux marins une information d'intégrité, et trouver des moyens d'accélérer leur développement, y compris :
  - o En harmonisant les algorithmes d'intégrité du GNSS maritime ;
  - o En encourageant la mise au point d'une spécification d'essais MSR et son introduction sur tous les navires ; et
  - o En introduisant le R-Mode et d'autres solutions d'atténuation de la vulnérabilité du GNSS.
- Etudier le meilleur moyen do coordonner ces travaux avec d'autres organisations internationales pour arriver à des solutions mondialement harmonisées.

Sur la base de quelques-unes de ces considérations un projet de guide a été élaboré, qui sera envoyé au Comité directeur (PAP) et aux Commissions ARM et ENG qui poursuivront sa mise au point.

Two authorities indicated that they still need to decide on the future of their services.

The question and answer session included focus upon the content of the proposed draft Recommendation and Guidelines that will be output from this Workshop. Discussion highlighted that:

- It is recognised that GNSS alone meets the expectations of mariners regarding accuracy and therefore integrity is the main driver for augmentation.
- If a coastal state is aware of errors, then they must get this information to the mariner quickly as an MSI or Maritime Service.
- Training of the mariner is important, however, it is of concern that ships crews are reducing in numbers. Additionally, sea time for mariner training is reducing and this has an impact upon experience and knowledge.
- The mariner still requires technology to support them but unless IMO carriage requirements are updated then most ships will not adopt the equipment. There is a reasonable expectation that as ships become more autonomous, more reliable positioning equipment with greater redundancy will be required. However, autonomy shouldn't be confused with unmanned vessels of the mariner.
- A nation deciding on the future of their DGNSS / DGPS infrastructure is recommended to go through a consultation process. The question to stakeholders must be worded carefully so that it is open and does not contain leading questions (ref. IALA Guidelines on User Consultations). There could be an annex that includes an example questionnaire to be used for the user consultation process.
- The source of integrity, such as RAIM and SBAS, should be standardised. There is a need to consider how best to take this forward to the IMO. In the Guideline a timeline of relevant systems and activities should be included.
- It is important to provide notification of any changes in service to the stakeholders. Considering standards take approximately 5-10 years, bodies are encouraged to give enough time to take this time into account.
- What level of notification should we provide to our users.
- There will be a phased change towards new technology unless mandatory carriage and a date given when to change. Flag states could be making recommendations to their registry to renew technology onboard.
- It was noted that a ship lasts for 30 years and bridges are re-equipped every 10 years.
- IMO Resolution A.915 doesn't currently recognise emerging technologies and there is a compelling need for it to be updated.
- The risk lies with lower tonnage and non-SOLAS vessel. We can't lose focus on the ships that are less well equipped.
- It was noted that IMO sets out 'minimum' requirements and performance. National administrations can set higher standards if they choose.
- Solutions including what could be done pro-actively with the infrastructure.
- We should keep in mind continuity of shore-based systems between each country as vessels will not change from one system to another.
- It is very difficult to get global buy-in to one system. It would be regrettable to lose a system that is universally compatible.
- The implication of stopping DGPS transmission on AIS base stations that receive corrections from IALA beacons, should be considered.
- Is there a survey or study of jamming/spoofing incidents? There is a US Coast Guard website for recording jamming or spoofing.
- Another consideration would be to keep DGPS transmissions but in a lower availability. Could we tolerate a degrading service as we decommission?
- Consideration as to the implications and consequences to neighbouring states when you have a combined service.
- There is a need to capture the follow-on work. We need a standard for maritime RAIM and a standard for SBAS.
- Consideration should be given as to how we get the Multi System Receiver type approved and onboard ships?
- Authentication – when receiving corrections how do you know they are coming from a valid source and not as a result of 'spoofing'.
- Cyber security is a consideration we need to make especially when decommissioning sites as they maybe more susceptible.
- We should not forget that we have allocated frequencies for data exchange for maritime use. These frequencies could be used for more services such as warnings on jamming. We have a very valuable asset and we must not lose it.
- Maritime services on PNT and S-100 product specifications must be handled on this matter in the future.
- Whatever IALA does it must be recognised that we may need to accommodate different languages. This may have connotations on matters such as coding.
- Yesterday we were advancing to accommodate new technologies but today there is a lot of talk about decommissioning. The technology is advancing but we are withdrawing when we should improve safety.
- Vulnerabilities of some of the solutions is also an issue. These should be highlighted to the user by the swift publication of MSI.
- SBAS problems – coverage is predominately in the northern hemisphere and there are large parts of the world that currently have no integrity system. The intended IALA Guideline will be global so should try to address taking SBAS forward to areas such as the southern hemisphere that currently have not engaged with the technology.
- The mariner is currently unlikely to see an integrity alert on bridge equipment. How will the integrity alarm be integrated in the bridge systems to alert the mariner this maybe a question to take forward to IMO.
- WAAS[6] trials in Canada have been proven to be successful and includes an integrity alarm. There is no legislation preventing the use of WAAS in the maritime sector in Canada.
- RTCM has conducted a study of SBAS receivers and it was found that a high percentage did not use the integrity component of the SBAS message. There needs to be standardisation to ensure safe use.
- SBAS transmissions from the satellite share the same vulnerabilities as GNSS.
- It was stated that EGNOS EDAS[7] is more resilient when it comes to jamming or spoofing because it is transmitted over the internet.
- It would be positive if current DGPS systems remain in force whilst other technologies come to fruition.
- Operational commitments on accuracy should be specified.

FUTURE HARDWARE OPTIONS

Three presentations were made on future hardware options.

A number of questions were asked from the floor and discussion highlighted the following:

- With reference to R-Mode at MF, the issues related to the ambiguity resolution and the impact of sky wave effects were discussed, along with potential mitigation methods, however it was noted that the legacy user must be kept in our minds going forward too.
- It was recognised that thought must be given to the future use of bandwidths currently available as it takes time to go through processes with organisations such as the ITU, should any changes be required.

- Does the model of R-Mode MF accuracies include phase errors due to antenna and ground conductivity changes? The R-Mode project is aware of the problem of phase errors particularly with changes in the weather. There is a plan to measure and monitor the change noting that the infrastructure was not built for R-Mode and it's important to confirm that every component is able to be used to support R-Mode.
- There is a possibility to run R-Mode as a hybrid as most of the time GNSS is available and when it is, we should use it.
- GNSS is evolving including the potential introduction of authentication on the Galileo and GPS open services, however it should be noted that while authentication will give protection against spoofing, GNSS will remain vulnerable to jamming.
- It was noted that there is a need to examine the methods of identifying when there is a problem and for improved safety of navigation this means getting the message out to the user when there is an issue. Consideration should be given to how this is portrayed to mariners including alerts on ECDIS or other integrated bridge control systems.
- The systems that we have now such as RAIM don't currently share any information regarding integrity in a visible way.
- A roadmap has been developed in IALA for R-Mode. Currently the map states that the system could be operational by 2030.
- Consideration should be given to the effect of ionospheric delay and the effect the sun has on it, and therefore GNSS position accuracy requirements may not be achieved in some parts of the world unless augmented.
- Navigational aids on the road such as signs or stop lights give indications to users regarding navigational behaviour however in the maritime world there is no warning to behaviour such as this as there are no indications such as light & signals etc. Consideration could be given to developing methods of communicating such intentions.
- Given the potential to move the R-Mode MF CW[8] signals further apart in order to aid ambiguity resolution and potentially ease some of the skywave effects, it was noted that the German Aerospace Centre (DLR) has conducted simulations.
- Use the same frequency for more than one R-Mode station, how will this affect the accuracy between local clocks? We must have a standard to agree TDMA[9] implementation, so we are accurate in the time slot. We must think about what the length of a time slot should be.

[1] MSR = Multi-Systems Receiver
[2] RAIM = Receiver Autonomous Integrity Monitoring
[3] M-RAIM = Maritime RAIM
[4] SBAS = Satellite Based Augmentation Services
[5] R-Mode= Range Mode
[6] WAAS = Wide Area Augmentation System
[7] (EGNOS) EDAS = (EGNOS) Data Access Service
[8] (R-Mode) MF CW = (R-Mode) Medium Frequency Continuous Wave
[9] TDMA = Time-Division Multiple Access

TALLER SOBRE EL FUTURO DE LA RADIOBALIZA MARINA DGPS / DGNSS

El taller sobre el futuro de la radiobaliza marina DGPS / DGNSS se celebró entre el 27 y el 31 de enero de 2020 en la sede de la Junta de Faros del Norte, Edimburgo, Escocia.
El taller tuvo una buena asistencia con 49 participantes de 22 países.
Los participantes del Taller consideraron las diversas presentaciones que se hicieron y a través de la discusión se observó que:
• La AISM reconoce la importante necesidad de informar al navegante, de manera clara y oportuna, si el GNSS no es confiable;
• Las autoridades nacionales competentes deberían tomar decisiones basadas en el volumen de tráfico y el grado de riesgo y la necesidad de garantizar que se proporcione información de integridad;
• los servicios independientes GNSS contemporáneos no proporcionan información de integridad a los usuarios;
• los servicios de aumento basados en satélites (SBAS) proporcionan información de integridad del sistema, pero usan la misma banda de frecuencia que el GNSS y, por lo tanto, son igualmente susceptibles a interferencias y falsificaciones;
• las implementaciones actuales de Monitoreo de la Integridad Autónoma del Receptor (RAIM, por sus siglas en inglés) se consideran inadecuadas debido a la falta actual de algoritmos RAIM específicos marítimos;
• Si bien el concepto de la AISM de radiobaliza marítima DGNSS mejora un poco la exactitud posicional, su principal utilidad hoy en día es la provisión de información de integridad en tiempo real;
• El concepto DGNSS de la AISM está armonizado globalmente y es compatible con la mayoría de los receptores GNSS de a bordo, pero hay niveles de uso inciertos;
• la asignación de frecuencias DGNSS de la AISM se reconoce como un activo importante en la armonización global;
• muchos proveedores de servicios DGNSS enfrentan dificultades para continuar sus servicios con equipos antiguos que requieren inversiones significativas;
• algunos proveedores de servicios han decidido descontinuar sus servicios DGNSS, mientras que otros han actualizado sus equipos, pero la mayoría aún no se ha decidido y está buscando orientación; y
• varias arquitecturas diferentes están disponibles y pueden modernizar la implementación de DGNSS de una manera más rentable.

En consecuencia, el Taller acordó que la AISM debería considerar:
• alentar a los miembros de la AISM a garantizar que se brinde información de integridad GNSS en su área de responsabilidad;
• alentar a los miembros de AISM que suspenden sus servicios DGNSS, a buscar formas alternativas de informar a los navegantes, de manera clara y oportuna, si el GNSS se vuelve poco confiable; e
• identificar formas alternativas nuevas e innovadoras de proporcionar información de integridad GNSS a los navegantes y encontrar formas de acelerar su desarrollo, incluyendo:
o armonizar algoritmos de integridad de usuario marítimo GNSS;
o alentar el desarrollo de la especificación de prueba MSR y su introducción en todos los buques; e
o introducir el R-Mode u otras soluciones para mitigar las vulnerabilidades del GNSS.
• considerar la mejor manera de coordinar este trabajo con otros organismos internacionales para lograr soluciones globalmente armonizadas.

Teniendo en cuenta algunos de estos resultados clave, se produjo un borrador de Directriz que se enviará al Panel Asesor de Políticas y a los Comités ARM y ENG para su posterior desarrollo.

THE WAY TO INTERGOVERNMENTAL STATUS

DIPLOMATIC CONFERENCE IN KUALA LUMPUR MARCH 2020

BY SECRETARY-GENERAL FRANCIS ZACHARIAE

The Diplomatic Conference held in Kuala Lumpur, Malaysia from 25 to 28 February 2020 reached the result it was aiming at. This Conference marked a very important step for IALA as the Convention for the future Organization under intergovernmental status was adopted. More than 239 persons from 62 States participated in the Conference or were observers. Delegates with credentials from 50 States signed the Final Act of the Conference adopting the text of the Convention and two resolutions: one resolution on languages of the Organization and one on the signing ceremony in Paris in November 2020.

THE GENERAL ASSEMBLY RESOLUTION AND THE PREPARATORY DIPLOMATIC CONFERENCES

At its XIIth session held in A Coruña, Spain in May 2014, the IALA General Assembly adopted a resolution stating its firm belief that Intergovernmental Organization (IGO) status will best facilitate IALA's aims in the 21st century and determining that the new status should be achieved, as soon as possible, through the development of an international treaty instrument (GA Resolution A.01 of 27 May 2014).

The development of a treaty instrument took six years of international negotiation through three Preparatory Diplomatic Conferences and a Diplomatic Conference, with 200 or more participants each.

The draft Convention that was discussed during the Diplomatic Conference in Kuala Lumpur, Malaysia, was prepared at the Preparatory Diplomatic Conference in Istanbul, Turkey, in March 2019. The text discussed in Istanbul was finalized by the Legal Advisory Panel at an extraordinary meeting open to all National members in November 2018. The meeting used comments received from National members after the second Preparatory Diplomatic Conference held in Marrakech, Morocco, in February 2018. The first Preparatory Diplomatic Conference, where the initial discussions with Governments started, was hosted by the French Government in Paris in April 2017.

The development of a set of General Regulations, including Financial Regulations, is well advanced and the final draft is envisaged well before the first General Assembly of the new IGO. Meanwhile, the draft Headquarters Agreement needs to be finalized in cooperation with the Ministry of Foreign Affairs of the French Republic.

The Convention on the International Organization for Marine Aids to Navigation meets the requirements of the Vienna Convention for International Treaties and supersedes, upon fulfilment of agreed entry-into-force requirements (30 instruments of ratification, acceptance, approval or accession), the present IALA Constitution. It will be open for signature by all Member States of the United Nations in November 2020 hosted by the French Government.

A SMOOTH TRANSITION

The Convention includes robust arrangements for a smooth transition. These will ensure that the activities of IALA's organs and its technical work in the area of Marine Aids to Navigation will continue uninterrupted and that its responsibilities towards the maritime community will be undiminished and maintained with the customary high level of commitment and expertise.

The change of status will mark a major milestone in the life of IALA. However, it will not change IALA's principal aim, which is, as stated in its present Constitution, "*to foster the safe, economic and efficient movement of vessels*". Under the new Convention, IALA will also remain a consultative technical organization.

As regards the position of our very important Industrial members, the Convention follows the approach of the Convention of the World Tourism Organization, which designates companies involved in the business of promoting tourism as Affiliate Members to ensure their inclusion as an important category of its membership. IALA's Industrial members will thus be Affiliate Members of IALA as an IGO and this will ensure the continued, strong cohesion between Marine Aids to Navigation authorities and providers that has always been important for the work of IALA.

All present National members of IALA from States that will not immediately become Member States of the IGO shall, subject to their formal request, become Associate Members of the Organization for a duration of up to ten years from the date of entry into force of the Convention, unless the General Assembly decides to extend that period.

LANGUAGES

The question of the languages of the new Organization was discussed intensively during all four meetings. While there was agreement on the working language, English, the compromise of having the six languages of the United Nations (Arabic, Chinese, English, French, Russian and Spanish) was only achieved on the last day of the meeting of the Committee of the Whole in Kuala Lumpur.

As agreed in Resolution one of the Diplomatic Conference the General Assembly shall be conducted in all official languages and input papers, in the form of draft resolutions and the report, shall be translated into the official languages.
The Conference determined that the working language of the Organization will be English, and that the work and meetings of the Council, Committees and subsidiary bodies will be conducted in the working language.

It is the aspiration to make the outputs of the Organization, all the Guidance documents, available in the official languages with the help of the relevant Members over time.

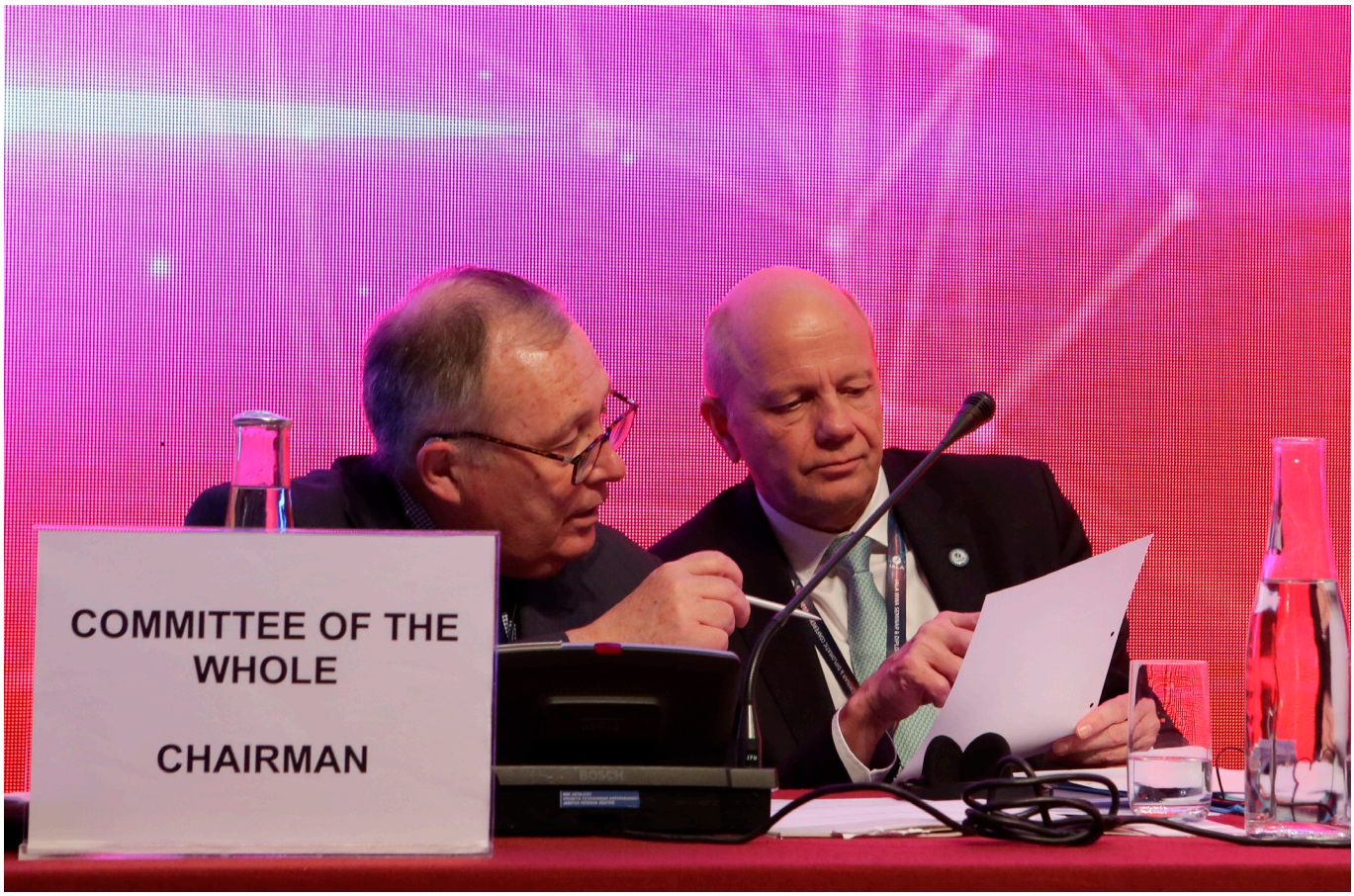
STRENGTHENING INTERNATIONAL COOPERATION

IALA has worked in close partnership with other international organizations for decades and wishes this collaboration to continue and grow. Elevating IALA's status to that of an IGO will make it a peer to organizations like the International Maritime Organization, the International Telecommunication Union, the International Hydrographic Organization and others, thereby strengthening existing cooperation. Furthermore, it will allow for a broader participation in IALA by States, at government level. This will assist IALA's aim to promote the greatest possible uniformity in Marine Aids to Navigation, in the spirit of the SOLAS Convention.

IALA's objectives and activities as an IGO will continue to be complementary to those of its peer IGOs. By working together as partner IGOs – with the respective mandate, role, and responsibilities of each transparent, mutually supportive, and commonly accepted – they will work more effectively through better coordination and greater integration of standards. Any overlap or duplication would also be easier to avoid, and the resulting creation of synergies would optimize available resources in the interests of the efficient movement of vessels, expeditious shipping traffic, maritime safety and protection of the environment.

The Convention will provide a fit-for-purpose international legal framework that ensures transparency and good governance, strengthens IALA's positions to work in close collaboration with Governments and other IGOs, and fosters its technical and consultative work as the leading international expert body concerned with Marine Aids to Navigation.

A special thanks and appreciation go to the Governments who accepted the enormous work and responsibility of hosting the three preparatory meetings and the Diplomatic Conference: France, Morocco, Turkey and Malaysia. Without their support this major project would never had succeeded.
The main output documents from the Conference – The Final Act, the two resolutions, the Convention and the reports – are available on the IALA web site https://www.iala-aism.org/meeting-docs/diplomatic-conference/



VERS LE STATUT INTERGOUVERNEMENTAL CONFÉRENCE DIPLOMATIQUE À KUALA LUMPUR, MARS 2020

PAR LE SECRÉTAIRE GÉNÉRAL FRANCIS ZACHARIAE

La Conférence diplomatique qui s'est tenue à Kuala Lumpur, en Malaisie, du 25 au 28 février 2020, est arrivée au résultat escompté. Cette Conférence représentait une étape importante pour l'AISM, car la Convention pour la future organisation de statut intergouvernemental y a été adoptée. Plus de 239 participants, venant de 62 Etats, y étaient délégués ou observateurs. Les délégués de 50 Etats, munis de pouvoirs, ont signé l'Acte final de la Conférence adoptant le texte de la Convention et deux résolutions : l'une sur les langues de l'organisation et l'autre sur la cérémonie de signature à Paris en novembre 2020.

LA RÉSOLUTION D'ASSEMBLÉE GÉNÉRALE ET LES CONFÉRENCES DIPLOMATIQUES PRÉPARATOIRES

Lors de sa XII^{ème} session à La Corogne, en Espagne en mai 2014, l'Assemblée générale de l'AISM a adopté une résolution affirmant sa conviction qu'un statut d'organisation intergouvernementale faciliterait au mieux la réalisation des objectifs de l'AISM au 21ème siècle et décidant qu'elle devait s'efforcer d'obtenir ce statut le plus rapidement possible en mettant au point un instrument de traité international (Résolution A.01 du 27 mai 2014).

La mise au point de cet instrument de traité a pris six ans de négociations internationales, par le biais de conférences diplomatiques préparatoires et d'une Conférence diplomatique, chaque évènement réunissant 200 participants ou plus.

Le projet de Convention discuté à Kuala Lumpur, en Malaisie, avait été préparé par la conférence diplomatique préparatoire tenue à Istanbul, en Turquie, en mars 2019. Le texte discuté à Istanbul avait été élaboré par le Comité juridique de l'AISM lors d'une réunion extraordinaire ouverte à tous les membres nationaux en novembre 2018. Cette réunion utilisait les commentaires reçus à la suite de la deuxième conférence diplomatique préparatoire tenue à Marrakech, au Maroc, en février 2018. La première conférence diplomatique préparatoire, où les discussions entre gouvernements ont commencé, avait été invitée par le gouvernement français à Paris, en avril 2017.

L'élaboration d'un Règlement général, incluant un Règlement financier, progresse bien et un projet définitif devrait être disponible bien avant la première Assemblée générale de la nouvelle Organisation. Entre temps, le projet d'accord de siège devra être finalisé, en collaboration avec le ministère des affaires étrangères de la République Française.

La Convention sur l'Organisation Internationale pour les Aides à la Navigation Maritime répond aux exigences de la Convention de Vienne sur les traités internationaux et remplacera les statuts actuels de l'AISM, après que les conditions d'entrée en vigueur seront remplies (30 instruments de ratification, acceptation, approbation ou accession). Elle s'ouvrira à la signature de tous les Etats Membres des Nations Unies en novembre 2020, à l'invitation du gouvernement français.

UNE TRANSITION SANS HEURTS

La Convention prévoit des conditions solides pour une transition sans heurts. Celles-ci assureront que les activités des organes de l'AISM, ainsi que ses activités techniques dans le domaine des aides à la navigation maritime, ne souffrent pas d'interruption et que ses responsabilités vis-à-vis de la communauté maritime ne diminuent pas et conservent leur niveau d'excellence en implication et en expertise.

Ce changement sera un évènement majeur dans la vie de l'AISM. Cependant, il ne changera pas son but principal qui est, comme défini dans ses statuts actuels, « *de veiller à ce que les mouvements des navires soient sûrs, économiques et efficaces* ». Sous la nouvelle Convention, l'AISM restera aussi une organisation technique consultative.
Pour ce qui concerne nos membres industriels, qui sont très importants, la Convention se rapproche de celle de l'Organisation Internationale du Tourisme, qui comprend en tant que membres affiliés des sociétés impliquées dans la promotion de l'industrie du tourisme, pour assurer leur inclusion dans une catégorie de membres importante. Les membres industriels de l'AISM seront donc membres affiliés de l'OIG et cela continuera d'assurer la forte cohésion entre les autorités d'aides à la navigation maritime et leurs fournisseurs, qui a toujours été importante pour les travaux de l'AISM.

Les membres nationaux de l'actuelle AISM qui appartiennent à des Etats qui ne deviendront pas immédiatement des Etats Membres de l'Organisation deviendront, sur leur demande officielle, membres associés de l'Organisation pour une durée n'excédant pas dix ans à partir de la date d'entrée en vigueur de la Convention, à moins que l'Assemblée générale décide d'étendre cette période.

LANGUES

La question des langues de la nouvelle Organisation a suscité d'intenses débats au cours des quatre réunions. Bien qu'il y ait eu accord sur la langue de travail, l'anglais, le compromis consistant à avoir comme langues officielles les six langues des Nations Unies (anglais, arabe, chinois, espagnol, français et russe) n'a été réalisé que le dernier jour de la réunion de la commission plénière à Kuala Lumpur.

Comme décidé par la Résolution numéro 1 de la Conférence diplomatique l'assemblée générale sera conduite dans les six langues officielles et les documents soumis sous forme de projets de résolutions, ainsi que le rapport, seront traduits dans toutes les langues officielles.

La Conférence a décidé que la langue de travail de l'Organisation sera l'anglais, et que les travaux

et les réunions du Conseil, des Commissions et des organes subsidiaires seront conduits dans la langue de travail.

L'intention est d'avoir les réalisations de l'Organisation, tous les documents guides, disponibles dans les langues officielles avec l'aide des membres concernés.

RENFORCER LA COOPÉRATION INTERNATIONALE

Depuis des décennies l'AISM travaille en partenariat étroit avec d'autres organisations et elle souhaite que cette collaboration continue et s'intensifie. Elever le statut de l'AISM à celui d'OIG la rendra organisation paire d'organisations telles que l'Organisation Maritime Internationale, l'Union Internationale des Télécommunications, l'Organisation Hydrographique Internationale et d'autres organisations, ce qui renforcera la collaboration existante. En outre, cela permettra une participation accrue des Etats, au niveau gouvernemental. Ceci aidera l'AISM dans son objectif de promotion de la plus grande uniformité possible dans les aides à la navigation maritime, dans l'esprit de la Convention SOLAS.

Les objectifs et activités de l'AISM en tant qu'OIG resteront complémentaires à ceux de ses OIG partenaires. En travaillant ensemble en tant qu'organisations partenaires – chacune dotée d'un mandat, d'un rôle et de responsabilités transparents, mutuellement soutenus et acceptés – elles seront plus efficaces, bénéficiant d'une meilleure coordination et d'une plus grande intégration de leurs normes. Les manques ou les doublons seront aussi plus faciles à éviter et la synergie ainsi créée optimisera les ressources disponibles, au bénéfice de l'efficacité des mouvements de navires, de la rapidité du trafic, de la sécurité maritime et de la protection de l'environnement.

La Convention constituera un cadre juridique international parfaitement adapté assurant transparence et bonne gouvernance, renforçant la position de l'AISM pour travailler en étroite collaboration avec les gouvernements et les autres OIG et fera de ses travaux ceux d'une organisation technique et consultative leader dans le domaine des aides à la navigation maritime.

Nous remercions particulièrement les gouvernements qui ont accepté les énormes tâches et responsabilités d'accueillir les trois réunions préparatoires et la Conférence diplomatique : la France, le Maroc, la Turquie et la Malaisie. Sans leur aide, ce projet d'envergure n'aurait jamais connu le succès.

Les principaux documents résultant de la Conférence – l'Acte final, les deux résolutions, la Convention et les rapports – sur disponibles sur le site Internet de l'AISM https://www.iala-aism.org/meeting-docs/diplomatic-conference/

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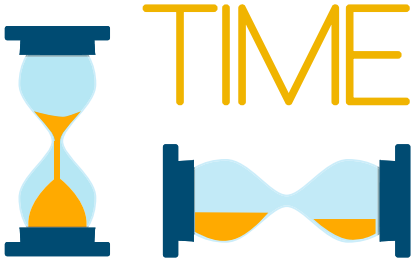

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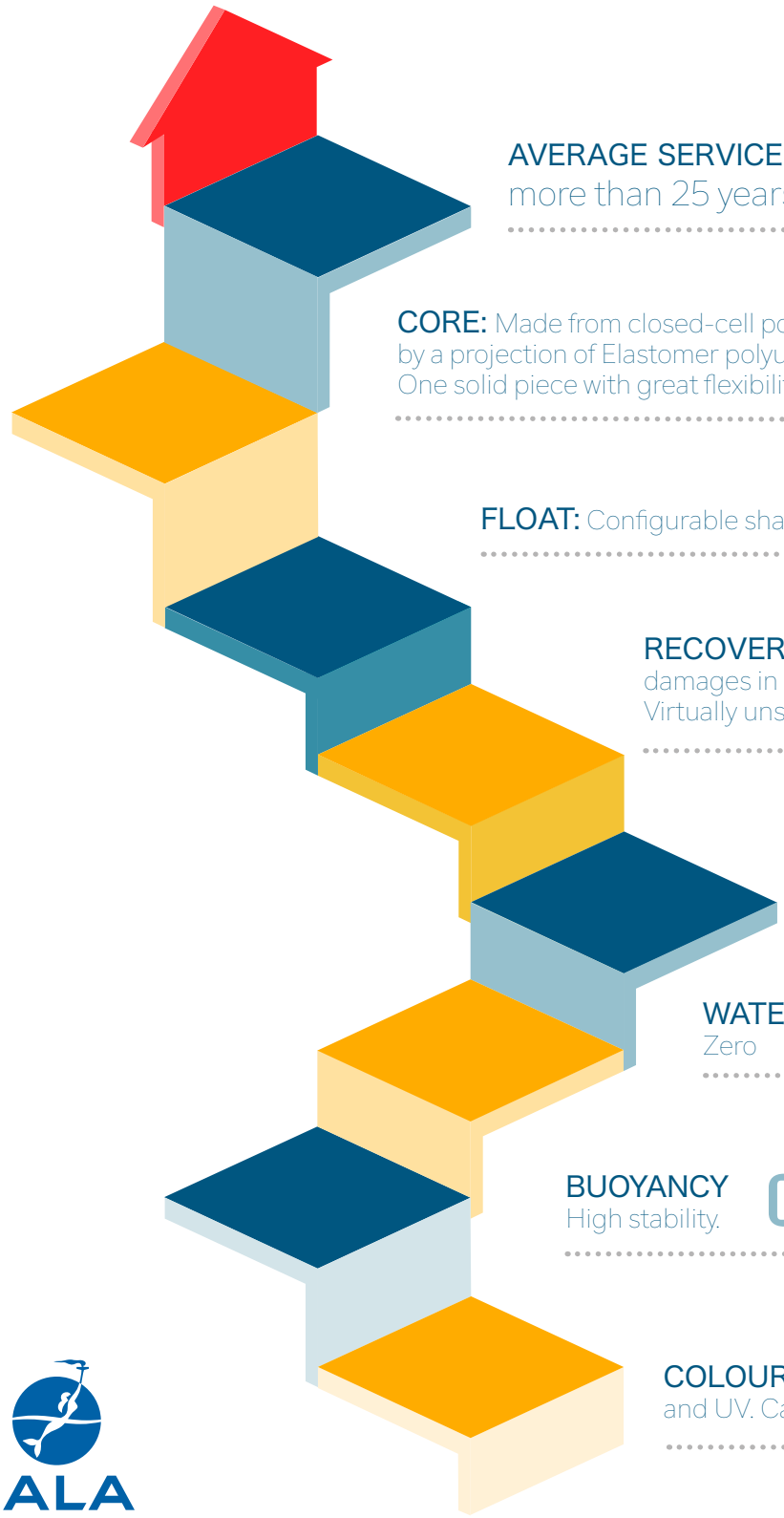

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CORE: Made from closed-cell polyethylene foam, covered by a projection of Elastomer polyurethane of 10mm thickness. One solid piece with great flexibility. 02

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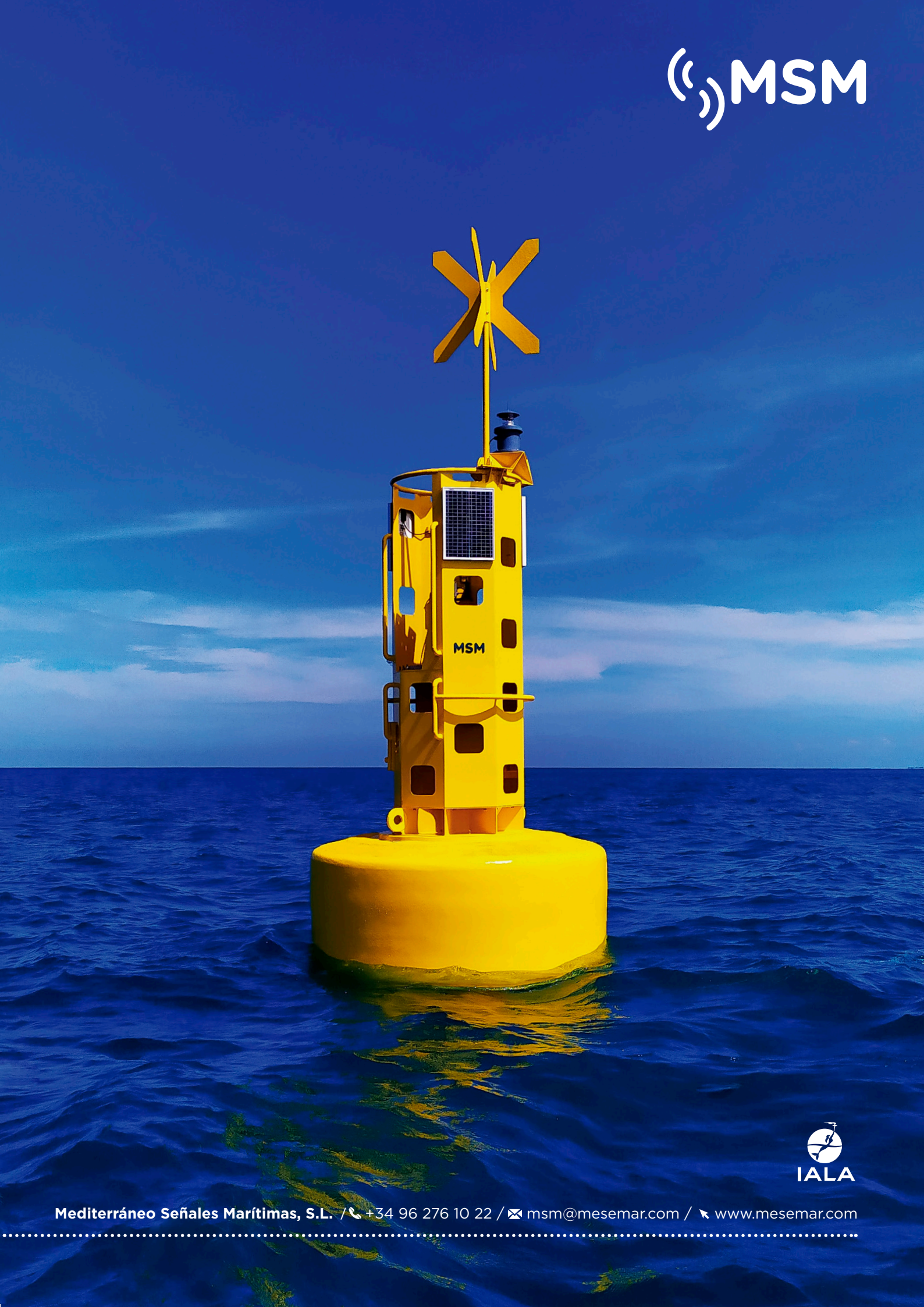
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EL CAMINO HACIA EL ESTATUS INTERGUBERNAMENTAL LA CONFERENCIA DIPLOMÁTICA EN KUALA LUMPUR, MARZO DE 2020

POR EL SECRETARIO GENERAL FRANCIS ZACHARIAE

La Conferencia Diplomática celebrada en Kuala Lumpur, Malasia, del 25 al 28 de febrero de 2020 alcanzó el resultado al que apuntaba. Esta Conferencia marcó un paso muy importante para la AISM al adoptar la Convención para la futura Organización bajo estatus intergubernamental. Más de 239 personas de 62 Estados participaron en la Conferencia o asistieron como observadores. Los delegados con credenciales de 50 Estados firmaron el Acta Final de la Conferencia adoptando el texto del Convenio y dos resoluciones: una resolución sobre los idiomas de la Organización y otra sobre la ceremonia de firma en París en noviembre de 2020.

LA RESOLUCIÓN DE LA ASAMBLEA GENERAL Y LAS CONFERENCIAS DIPLOMÁTICAS PREPARATORIAS

En su XII sesión, celebrada en A Coruña, España, en mayo de 2014, la Asamblea General de la AISM adoptó una resolución declarando su firme convicción de que el estado de la Organización Intergubernamental (OIG) facilitará mejor los objetivos de la AISM en el siglo XXI y determinará que el nuevo estado se alcance, lo antes posible, a través del desarrollo de un instrumento de tratado internacional (Resolución GA A.01 del 27 de mayo de 2014).

El desarrollo de un instrumento de tratado requirió seis años de negociación internacional a través de tres conferencias diplomáticas preparatorias y una conferencia diplomática, con 200 o más participantes cada una.

El proyecto de Convenio que se discutió durante la Conferencia Diplomática en Kuala Lumpur, Malasia, se preparó en la Conferencia Diplomática Preparatoria en Estambul, Turquía, en marzo de 2019. El Panel de Asesoría Legal finalizó el texto discutido en Estambul en una reunión extraordinaria abierta a todos los Miembros Nacionales en noviembre de 2018. La reunión utilizó los comentarios recibidos de los Miembros Nacionales después de la segunda Conferencia Diplomática Preparatoria celebrada en Marrakech, Marruecos, en febrero de 2018. El Gobierno francés organizó la primera Conferencia Diplomática Preparatoria, donde comenzaron las discusiones iniciales con los gobiernos en París en abril de 2017.

El desarrollo de un conjunto de Regulaciones Generales, incluyendo las Regulaciones Financieras, está muy avanzado y el borrador final está previsto mucho antes de la primera Asamblea General de la nueva OIG. Mientras tanto, el borrador del Acuerdo de Sede debe ser finalizado en cooperación con el Ministerio de Relaciones Exteriores de la República Francesa.

El Convenio sobre la Organización Internacional de Ayudas Marinas a la Navegación cumple con los requisitos de la Convención de Viena para los Tratados Internacionales y reemplaza, una vez cumplidos los requisitos acordados de entrada en vigor (30 instrumentos de ratificación, aceptación, aprobación o adhesión), a la Constitución actual de la AISM. Estará abierto a la firma de todos los Estados Miembros de las Naciones Unidas en noviembre de 2020, auspiciado por el Gobierno francés.

UNA TRANSICIÓN SUAVE

El Convenio incluye disposiciones sólidas para una transición sin problemas. Esto asegurará que las actividades de los órganos de la AISM y su trabajo técnico en el área de las Ayudas a la Navegación Marítima continúen sin interrupciones y que sus responsabilidades hacia la comunidad marítima no se reduzcan y se mantengan con el alto nivel habitual de compromiso y experiencia.

El cambio de estado marcará un hito importante en la vida de la AISM. Sin embargo, no cambiará su objetivo principal que es, como se establece en su Constitución actual, «*fomentar el movimiento seguro, económico y eficiente de los buques*». Según el nuevo Convenio, La AISM también seguirá siendo una organización técnica consultiva.

Con respecto a la posición de nuestros miembros industriales muy importantes, el Convenio sigue el enfoque del Convenio de la Organización Mundial del Turismo, que designa a las compañías involucradas en el negocio de promover el turismo como Miembros Afiliados para asegurar su inclusión como una categoría importante de su membresía. Por lo tanto, los miembros industriales de la AISM serán miembros afiliados de la AISM como OIG y esto asegurará la continua y fuerte cohesión entre las autoridades y los proveedores de Ayudas a la Navegación Marítimas, lo que siempre ha sido importante para el trabajo de la AISM.

Todos los actuales Miembros Nacionales de la AISM de los Estados que no se convertirán inmediatamente en Estados Miembros de la OIG, sujeto a su solicitud formal, se convertirán en Miembros Asociados de la Organización por un período de hasta diez años a partir de la fecha de entrada en vigor del Convenio a menos que la Asamblea General decida extender ese período.

IDIOMAS

La cuestión de los idiomas de la nueva Organización se debatió intensamente durante las cuatro reuniones. Si bien hubo acuerdo sobre el idioma de trabajo, el inglés, el compromiso de tener los seis idiomas de las Naciones Unidas (árabe, chino, español, francés, inglés y ruso) solo se logró el último día de la reunión del Comité del Todo en Kuala Lumpur.

Según lo acordado en la Resolución Uno de la Conferencia Diplomática, la Asamblea General se llevará a cabo en todos los idiomas oficiales y los documentos de entrada, en forma de proyectos de resolución y el informe, se traducirán a los idiomas oficiales.

La Conferencia determinó que el idioma de trabajo de la Organización será el inglés y que el trabajo y las reuniones del Consejo, los Comités

y los órganos subsidiarios se realizarán en el idioma de trabajo.

Es la aspiración de hacer que los resultados de la Organización y todos los documentos de orientación estén disponibles en los idiomas oficiales con la ayuda de los Miembros pertinentes con el tiempo.

FORTALECIMIENTO DE LA COOPERACIÓN INTERNACIONAL.

La AISM ha trabajado en estrecha colaboración con otras organizaciones internacionales durante décadas y desea que esta colaboración continúe y crezca. Elevar el estatus de la AISM al de una OIG la hará par de organizaciones como la Organización Marítima Internacional, la Unión Internacional de Telecomunicaciones, la Organización Hidrográfica Internacional y otras, fortaleciendo así la cooperación existente. Además, permitirá una participación más amplia en la AISM por parte de los Estados, a nivel gubernamental. Esto ayudará al objetivo de la AISM de promover la mayor uniformidad posible en las Ayudas a la Navegación Marítima, en el espíritu del Convenio SOLAS.

Los objetivos y actividades de la AISM como OIG continuarán siendo complementarios a los de sus OIG pares. Al trabajar de conjunto como OIG asociadas, con el mandato, el papel y las responsabilidades respectivos de cada uno transparentes, de apoyo mutuo y comúnmente aceptados, trabajarán de manera más efectiva a través de una mejor coordinación y una mayor integración de los estándares. Cualquier solapamiento o duplicación también sería más fácil de evitar, y la creación resultante de sinergias optimizaría los recursos disponibles en interés del movimiento eficiente de los buques, el tráfico expedito de la navegación, la seguridad marítima y la protección del medio ambiente.

El Convenio proporcionará un marco legal internacional adecuado para su propósito que garantice la transparencia y la buena gobernanza, fortalezca las posiciones de la AISM para trabajar en estrecha colaboración con los gobiernos y otras organizaciones intergubernamentales, y fomenta su trabajo técnico y consultivo como el principal organismo internacional de expertos relacionado con las Ayudas a la Navegación Marítimas.

Un agradecimiento especial y nuestra estimación a los gobiernos que aceptaron el enorme trabajo y la responsabilidad de organizar las tres reuniones preparatorias y la Conferencia Diplomática: Francia, Marruecos, Turquía y Malasia. Sin su apoyo, este importante proyecto nunca hubiera tenido éxito.

Los principales documentos de salida de la Conferencia - El Acta Final, las dos resoluciones, el Convenio y los informes - están disponibles en el sitio web de la AISM https://www.AISM-aism.org/meeting-docs/diplomatic-conference/

GUIDING THE WAY – THE REVISION OF THE IMO GUIDELINES FOR VESSEL TRAFFIC SERVICES

The SOLAS Convention provides the overarching international basis for vessel traffic services (VTS) within Regulation 12 of Chapter V on the Safety of Navigation. The Regulation introduces the well-known international definition of a VTS being *'to contribute to the safety of life at sea, safety and efficiency of navigation and protection of the marine environment, adjacent shore areas, work sites and offshore installations from possible adverse effects of maritime traffic'*.

In particular, the Regulation states that Contracting Governments, when 'planning and implementing VTS shall wherever possible, follow the guidelines developed by the Organization'. The guidelines referred to are clarified in a footnote to Regulation 12 as being the 'Guidelines on Vessel Traffic Services adopted by the Organization by resolution A.857(20)'.

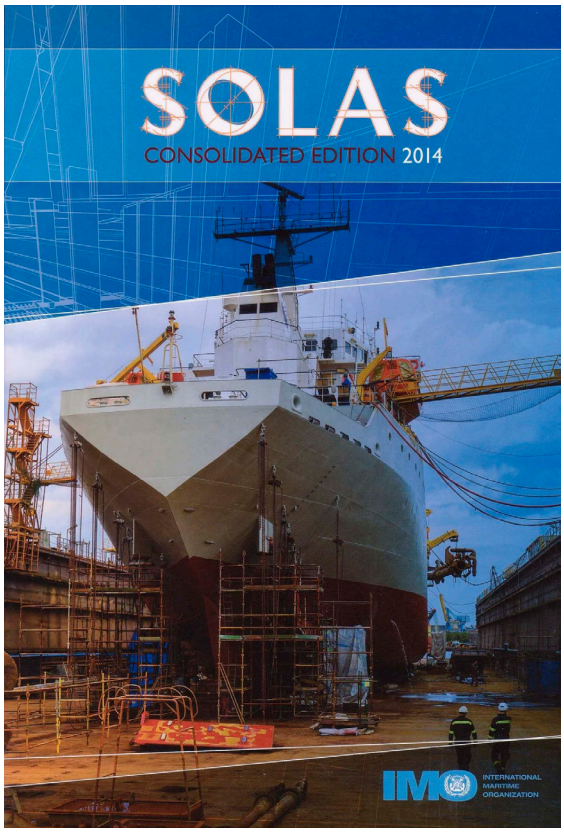
The IMO Guidelines on VTS (commonly known in the profession as simply A.857(20)), came into effect in 1997 and were developed to provide advice and guidance at a time when VTS was in its formative stages in many parts of the world. Importantly, at the time of the publication of the guidelines, the range of IALA recommendations, guidelines and model courses on VTS were not available.

Since their inception, the guidelines have remained an important instrument for the implementation and operation of a VTS. However, as VTS technology, training and operational experience grew, it became clear that some elements of the guidelines, which it was necessary to include at the time, were limiting the possibility of the continued development of VTS.

These constraints had long been recognised by the IALA VTS Committee who worked over several sessions to develop a proposal for a new IMO Work Programme output on the revision of the guidelines. This proposal was submitted to the IMO Maritime Safety Committee in 2018 by Australia and some 12 other co-sponsoring Member States and organisations including IALA.

Several specific areas were identified in the proposal as being the main drivers for the revision of the guidelines. These covered several areas including:

- The role of the Competent Authority and VTS Authority – in particular, the guidelines were considered as being overly prescriptive and did not recognise that circumstances may differ from country to country.
- The provision of a VTS beyond a territorial sea – the guidelines were silent on the ways that a VTS may contribute to the safety and efficiency of navigation beyond the territorial waters of a coastal State.
- Accommodating new developments such as the Maritime Services – the guidelines, in general, were written in a detailed manner, reflecting the absence of IALA standards at the time. This has made including new trends and developments challenging.
- The interpretation and application of the types of service – possibly the biggest area of concern was the way the three types of service - the information service, traffic organisation



service and navigational assistance service, were being interpreted.

- VTS qualifications, training and certification – the guidelines contained some 12 pages of dated advice on VTS training and certification which constrained the development of modern IALA training standards.
- The international recognition of IALA standards –it was determined that there was a need to recognise the inextricable link between SOLAS compliance and the effective implementation of the IALA standards.

Furthermore, the current guidelines are reasonably lengthy providing in-depth operational guidance on VTS. Whilst much of this is still generally relevant today, much of it is now also referenced in detail within the suite of IALA guidance documents. A key example of this can be found within Annex two of the guidelines where some 12 pages are devoted to advice on the recruitment, training and qualifications of VTS operators. Much of this has now been developed and further refined in what is probably one of the most well-known IALA recommendations, R0103(V-103) and its associated model courses.

The proposal for the revision of the guidelines was approved by the IMO Maritime Safety Committee and work commenced immediately on the revision of the guidelines. The VTS Committee established a task group and an interactive intersessional correspondence group consisting of some 44 participants from 24 organisations. The aim of the revised guidelines was to enable VTS to fulfil its role as a measurable and proactive instrument in the prevention of maritime incidents and accidents and provide a clear and concise framework for VTS globally in a harmonised manner.

The revised guidelines provide an inextricable link between SOLAS, the new guidelines and the wide suite of IALA standards. Specifically, the new guidelines explicitly recognise the contribution that the IALA standards and associated recommendations, guidelines and model courses make in achieving worldwide harmonisation of VTS and recommends that Contracting Governments to SOLAS take these into account. A clear example of the development of the recognition of the IALA standards in practice is contained within the revised guidelines content related to VTS training and qualifications. The new content provides high level direction to enable Competent Authorities to meet their obligations and provide a seamless link with IALA Standard S1050 on Training and Certification and its associated recommendations, guidelines and model courses.

The revised guidelines seek to provide a high-level framework for greater clarity on the governance of VTS provision through placing clear and logical responsibilities on the Contracting Government, Competent Authority related to the governance and oversight of VTS.

In turn, the national regulatory framework should be implemented by VTS Providers (replacing what is referred to as the VTS Authority in the current guidelines) who should adequately ensure that the essential requirements of an effective VTS are satisfied, specifically that:

- the VTS is achieving its objectives;
- appropriate equipment, systems and facilities are provided;
- the VTS is adequately staffed by trained and certified personnel; and
- information about the procedures of the VTS are promulgated in the appropriate nautical publications.

One of the changes of interest in the revised guidelines concerns the types of service. Currently, a VTS works within a framework of an information service, traffic organisation service and navigational assistance service. Some VTS authorities offer all three types of service, some two and some one. Some VTS authorities do not provide the full range of services for a range of misconceptions – for instance, some believe that organising traffic results in more liability and some believe that navigational assistance is remote pilotage.

The VTS Committee concluded that, in general, a deck officer, master, pilot or for that matter any user of a VTS may expect:

- To be provided with essential and timely information that could influence their passage through a VTS area. This may include information related to the traffic situation, weather, tidal conditions, berthing details and the availability of allied services etc.
- To have their movements within the VTS area managed and organised to avoid congestion, conflict, delays or issues that may impact upon their safe and efficient navigation.
- That their navigational safety will be monitored, and advice provided as appropriate, if they experience a dangerous situation such as a risk of grounding or collision or are otherwise proceeding into a difficult position that they would rather not find themselves in.

Essentially, these expectations are the current three types of service, but they are in fact the core purpose of a VTS. It is arguable that no organisation would make significant investment in VTS infrastructure and personnel and not expect them to provide good quality information at the right time, to organise traffic to ensure the efficient movement of vessels and to intervene to try and prevent a dangerous or unsafe situation from developing. Under the revised guidelines, these core purposes would be expected to be performed by every VTS provider.

In terms of the timeframe for the finalisation and publication of the revised guidelines, the submission had a successful first stage at the IMO with the approval of the NCSR Sub-Committee in January 2020. The next step is the Maritime Safety Committee later in 2020, following this stage the draft resolution and guidelines will then be passed to the IMO Assembly who next meet in late 2021 for adoption and subsequent publication.

In the meantime, the IALA VTS Committee is busy preparing updates to the key IALA recommendations, guidelines and model courses to give effect to the revised guidelines subject to their approval and adoption. IALA will of course keep everyone up to date with the latest developments.

OUVRIR LA VOIE – RÉVISION DES LIGNES DIRECTRICES DE L'OMI POUR LES SERVICES DE TRAFIC MARITIME

La Convention SOLAS, par sa Règle 12 du Chapitre V sur la sécurité de la navigation, offre un cadre directeur international pour les services de trafic maritime (VTS). Cette Règle donne la définition, bien connue au niveau international, d'un VTS comme devant : « *contribuer à la sécurité de la vie humaine en mer, à la sécurité et à l'efficacité de la navigation et à la protection de l'environnement marin, des zones côtières, des sites de travaux et des installations en mer, des conséquences néfastes du trafic maritime* ».

Plus particulièrement, la Règle précise que les gouvernements contractants, lors de la « *planification et la mise en œuvre doivent, partout où cela est possible, suivre les lignes directrices élaborées par l'Organisation* ». *Les lignes directrices auxquelles il est fait référence sont pr*écisées dans la note de bas de page de la Règle 12 comme étant « *les Lignes directrices sur les services de trafic maritime adoptées par l'Organisation dans sa Résolution A.857(20)*».

Les Lignes directrices de l'OMI sur les VTS (plus connues dans la profession sous la référence A.857(20)), ont pris effet en 1997 et ont été élaborées pour conseiller et guider à un moment où le VTS était en formation dans beaucoup d'endroits du monde. Il est important de noter que, lors de la publication des lignes directrices, la collection de recommandations, guides et modèles de cours de l'AISM sur les VTS n'était pas disponible.

Depuis leurs débuts, les lignes directrices sont un instrument important pour la mise en œuvre et le fonctionnement d'un VTS. Cependant, au fur et à mesure que la technologie, la formation et l'expérience de fonctionnement augmentent, on se rend compte que ce qu'il convenait d'y inclure à cette époque limite la possibilité de développement du VTS.

Ces contraintes avaient depuis longtemps été détectées par la Commission VTS de l'AISM, qui a consacré plusieurs sessions à élaborer une proposition visant à ajouter la révision des lignes directrices au programme de travail de l'OMI. Cette proposition a été soumise au Comité de sécurité maritime de l'OMI en 2018 par l'Australie et 12 autres Etats Membres et organisations, y compris l'AISM.

Plusieurs points spécifiques ont été identifiés comme les principaux éléments moteurs de la révision des lignes directrices, parmi lesquels :

- Les rôles de l'autorité compétente et de l'autorité de VTS – en particulier, les lignes directrices semblent trop prescriptives et ne reconnaissent pas que les circonstances peuvent varier d'un pays à l'autre.
- La mise en œuvre d'un VTS au-delà des eaux territoriales – les lignes directrices restent silencieuses quant aux moyens par lesquels un VTS peut contribuer à la sécurité et à l'efficacité de la navigation au-delà des eaux territoriales d'un Etat Membre.
- L'incorporation des nouveaux développements tels que les services maritimes – les lignes directrices, en générale, sont rédigées de façon très détaillée, reflétant l'absence de normes AISM à cette époque. L'introduction des nouvelles tendances et des nouveaux développements est donc un défi.
- L'interprétation et l'application des types de service – la plus grande source d'inquiétude étant probablement la façon dont on interprète les trois types de service – information, organisation du trafic et assistance à la navigation.
- Les qualifications, formation et certification en VTS – les lignes directrices contiennent quelque 12 pages de conseils dépassés sur la formation et la certification en VTS, qui limitent le développement des normes modernes de formation de l'AISM.
- La reconnaissance internationale des normes de l'AISM –il a été décidé qu'il fallait reconnaître le lien inextricable entre la conformité à la SOLAS et la mise en œuvre effective des normes de l'AISM.

En outre, les lignes directrices actuelles sont longues, décrivant en profondeur le fonctionnement du VTS. Bien que ce texte soit toujours d'actualité aujourd'hui, la collection des documents guides de l'AISM font référence à la plupart des éléments de ces lignes directrices. Un très bon exemple en est l'annexe 2 des lignes directrices où quelque 12 pages sont consacrées à des conseils pour le recrutement, la formation et la qualification des opérateurs de VTS. Tout ceci a maintenant été développé plus avant dans la recommandation de l'AISM qui est probablement la plus connue, la recommandation R0103(V-103), et dans ses modèles de cours associés.

La proposition de révision des lignes directrices a été approuvée par le Comité de sécurité maritime de l'OMI et les travaux ont tout de suite commencé. La Commission VTS a formé un group dédié et un groupe de travail par correspondance, ce dernier comprenant 44 participants de 24 organisations. Le but des lignes directrices révisées est de permettre au VTS de remplir son rôle d'instrument mesurable et proactif de la prévention des incidents et accidents maritimes, et de donner un cadre clair et concis pour un VTS mondialement harmonisé. Les lignes directrices révisées montrent un lien inextricable entre la SOLAS, les nouvelles lignes directrices et la large collection de normes AISM. Plus spécifiquement, les nouvelles lignes directrices reconnaissent explicitement la contribution apportée à l'harmonisation mondiale des VTS par les normes de l'AISM et leurs recommandations, guides et modèles de cours associés. Elles recommandent aussi que les gouvernements contractants à la SOLAS en tiennent compte. On trouve un exemple clair de la reconnaissance, dans la pratique, des normes AISM dans les éléments des lignes directrices révisées qui traitent de la formation et de la qualification VTS. Le nouveau texte donne aux autorités compétentes une orientation de haut niveau pour remplir leurs obligations, avec un lien direct vers la norme AISM S1050 sur la formation et la certification et les recommandations, guides et modèles de cours associés.

Les lignes directrices révisées tendent à fournir un cadre directeur pour une plus grande clarté sur la gouvernance de l'offre de VTS, en attribuant de façon claire et logique les responsabilités au gouvernement contractant et à l'autorité compétente.

Ensuite, le cadre règlementaire national doit être déployé par les fournisseurs de VTS (qui remplacent ce que les lignes directrices actuelles appellent autorité de VTS), qui devront s'assurer que les exigences principales d'un VTS efficace sont remplies, à savoir :

- Le VTS répond à ses objectifs ;
- Les équipements, systèmes et matériels appropriés sont fournis ;
- Le VTS bénéficie d'un personnel adéquat, formé et certifié ; et

- Une information sur les procédures du VTS figure dans les publications nautiques appropriées.

Un changement intéressant intervenu dans les lignes directrices révisées concerne les types de service. Actuellement, le cadre d'un VTS comprend un service d'information, un service d'organisation du trafic et un service d'assistance à la navigation. Quelques autorités de VTS offrent les trois types de service, quelques-uns en fournissent deux, d'autres un seul. Quelques autorités de STM n'offrent pas la gamme complète de services à cause d'idées fausses – par exemple certains pensent qu'organiser le trafic engendre une plus grande responsabilité juridique et d'autres que l'assistance à la navigation consiste dans le pilotage à distance. La Commission VTS a conclu que, en général, un officier de pont, un commandant, un pilote ou dans ce cas n'importe quel usager du VTS, peut s'attendre à :

- Obtenir l'information, essentielle et en temps opportun, qui pourra déterminer leur traversée de la zone du VTS. Cette information peut porter sur la situation de trafic, la météo, la marée, les détails d'accostage, la disponibilité des services connexes, etc…
- Voir leurs déplacements à l'intérieur de la zone du VTS gérés et organisés pour éviter affluence, conflit, retards ou autres problèmes qui pourraient affecter la sécurité et l'efficacité de leur navigation.
- Une surveillance de la sécurité de leur navigation et un conseil fourni en temps utile en cas de situation dangereuse telle qu'un risque d'échouage ou d'abordage, ou s'ils se dirigent vers une situation dans laquelle ils ne devraient pas se trouver.

Ces attentes correspondent aux trois types actuels de service, mais elles sont en fait l'essence même d'un VTS. On peut opposer qu'aucune organisation n'investirait sérieusement dans une infrastructure et un personnel VTS sans en attendre la fourniture d'une information de qualité en temps opportun, l'organisation du trafic pour assurer des mouvements de navires efficaces, et une intervention destinée à empêcher le développement de situations dangereuses ou à risque. Avec les lignes directrices révisées, on s'attend à ce que ces fonctions premières soient assurées par tous les fournisseurs de VTS.

En termes de calendrier pour la finalisation et la publication des lignes directrices révisées, notre soumission a passé la première étape avec succès avec l'approbation du Sous-comité NCSR de l'OMI en janvier 2020. La prochaine étape est le Comité de sécurité maritime, plus tard en 2020. Ensuite, les projets de résolution et de lignes directrices révisées seront envoyés à l'Assemblée générale de l'OMI, prévue en 2021, pour adoption et publication.

Dans l'intervalle, la Commission VTS est occupée à préparer les mises à jour des recommandations, guides et modèles de cours de l'AISM concernés. L'AISM tiendra bien sûr tout le monde informé des dernières évolutions.

GUIANDO EL CAMINO: LA REVISIÓN DE LAS DIRECTRICES DE LA OMI PARA LOS SERVICIOS DE TRÁFICO DE BUQUES

El Convenio SOLAS proporciona la base internacional general para los Servicios de Tráfico de Buques (VTS) dentro de la Regulación 12 del Capítulo V sobre Seguridad de la Navegación. El Reglamento introduce la conocida definición internacional de un VTS *"para contribuir a la seguridad de la vida en el mar, la seguridad y la eficiencia de la navegación y la protección del medio marino, las zonas costeras adyacentes, los lugares de trabajo y las instalaciones en alta mar de los posibles efectos adversos del tráfico marítimo."*

En particular, el Reglamento establece que los gobiernos contratantes, cuando *"planeen e implementen el VTS deben, siempre que sea posible, seguir las pautas desarrolladas por la Organización"*. Las Directrices a las que se hace referencia se aclaran en una nota al pie de página de la Regulación 12 como las *"Directrices sobre Servicios de Tráfico de Buques adoptadas por la Organización mediante la resolución A.857 (20)"*.

Las Directrices de la OMI sobre VTS (comúnmente conocidas en la profesión como simplemente A.857 (20)), entraron en vigencia en 1997 y se desarrollaron para proporcionar asesoramiento y orientación en un momento en que el VTS estaba en sus etapas formativas en muchas partes del mundo. Es importante destacar que, en el momento de la publicación de las Directrices, el alcance de las Recomendaciones, Directrices y Cursos Modelo de la AISM sobre VTS no estaba disponible.

Desde sus inicios, las Directrices han sido un instrumento importante para la implementación y operación de un VTS. Sin embargo, a medida que la tecnología VTS, la capacitación y la experiencia operativa crecieron, se hizo evidente que algunos elementos de las Directrices, que era necesario incluir en ese momento, limitaban la posibilidad del desarrollo continuo del VTS.

Estas restricciones habían sido reconocidas por el Comité VTS de la AISM, que trabajó durante varias sesiones para desarrollar una propuesta para un nuevo resultado del Programa de Trabajo de la OMI sobre la revisión de las Directrices. Esta propuesta fue presentada al Comité de Seguridad Marítima de la OMI en 2018 por Australia y otros 12 Estados Miembros y organizaciones copatrocinadoras, incluida la AISM.

Se identificaron varias áreas específicas en la propuesta como los principales impulsores para la revisión de las Directrices. Estas cubrieron varias áreas que incluyen:

- El papel de la Autoridad Competente y la Autoridad VTS: en particular, las Directrices se consideraron demasiado prescriptivas y no reconocieron que las circunstancias pueden diferir de un país a otro.
- La provisión de un VTS más allá del mar territorial: las Directrices no mencionaron las formas en que un VTS puede contribuir a la seguridad y eficiencia de la navegación más allá de las aguas territoriales de un Estado ribereño.
- Acomodar nuevos desarrollos como los Servicios Marítimos: las Directrices, en general, fueron escritas de manera detallada, reflejando la ausencia de estándares de la AISM en ese momento.

Esto ha hecho que sea un desafío el incluir nuevas tendencias y desarrollos.

- La interpretación y aplicación de los tipos de servicio, posiblemente el área de mayor preocupación fue la forma en que se interpretaron los tres tipos de servicio: el servicio de información, el servicio de organización del tráfico y el servicio de asistencia a la navegación.
- Calificación, capacitación y certificación del VTS: las Directrices contenían unas 12 páginas de consejos con fecha sobre capacitación y certificación de VTS que restringían el desarrollo de los estándares de capacitación modernos de la AISM.
- El reconocimiento internacional de los estándares de la AISM: se determinó que era necesario reconocer el vínculo inextricable entre el cumplimiento del Convenio SOLAS y la implementación efectiva de los estándares de la AISM.

Además, las directrices actuales son razonablemente extensas y brindan una guía operativa en profundidad sobre VTS. Si bien gran parte de ello sigue siendo relevante en la actualidad, otra parte también se menciona en detalle en el conjunto de documentos de orientación de la AISM. Un ejemplo clave de esto se puede encontrar en el Anexo dos de las Directrices donde se dedican unas 12 páginas a asesorar sobre el reclutamiento, capacitación y calificación de los operadores VTS. Gran parte de esto se ha desarrollado y perfeccionado aún más en lo que probablemente sea una de las recomendaciones más conocidas de la AISM R0103 (V-103) y sus Cursos Modelo asociados.

La propuesta de revisión de las Directrices fue aprobada por el Comité de Seguridad Marítima de la OMI y se comenzó a trabajar inmediatamente en la revisión de las Directrices. El Comité VTS estableció un grupo de tareas y un grupo de correspondencia inter-sesión interactiva, compuesto por unos 44 participantes de 24 organizaciones. El objetivo de las Directrices revisadas fue permitir que el VTS cumpliera su papel como instrumento medible y proactivo en la prevención de incidentes y accidentes marítimos y proporcionara un marco claro y conciso para el VTS globalmente y de manera armonizada.

Las Directrices revisadas proporcionan un vínculo inextricable entre el Convenio SOLAS, las nuevas Directrices y el amplio conjunto de estándares de la AISM. Específicamente, las nuevas Directrices reconocen explícitamente la contribución que las normas de la AISM y las Recomendaciones, Directrices y Cursos Modelo asociados proporcionan para lograr la armonización mundial del VTS y recomienda que los Gobiernos Contratantes del Convenio SOLAS los tengan en cuenta. Un claro ejemplo del desarrollo del reconocimiento de los estándares de la AISM en la práctica se aprecia en el contenido revisado de las Directrices relacionadas con la capacitación y la calificación del VTS. El nuevo contenido proporciona una dirección de alto nivel para permitir a las Autoridades Competentes cumplir con sus obligaciones y proporcionar un enlace continuo con el Estándar S1050 de la AISM sobre Capacitación y Certificación y sus Recomendaciones, Directrices y Cursos Modelo asociados.

Las Directrices revisadas buscan proporcionar un marco de alto nivel para una mayor claridad sobre la gobernanza en la provisión del VTS mediante la asignación de responsabilidades claras y lógicas para el Gobierno Contratante y la Autoridad Competente relacionada con la gobernanza y la supervisión del VTS.
A su vez, el marco regulatorio nacional debe ser implementado por los proveedores de VTS (que reemplazan a lo que se conoce como la Autoridad VTS en las Directrices actuales) que deben garantizar adecuadamente que se cumplan los requisitos esenciales de un VTS efectivo, específicamente en que:

- el VTS logre sus objetivos,
- se proporcionen equipos, sistemas e instalaciones apropiados;
- el VTS cuente con personal adecuado, capacitado y certificado; y
- la información sobre los procedimientos del VTS se promulgue en las publicaciones náuticas apropiadas.

Uno de los cambios de interés en las Directrices revisadas se refiere a los tipos de servicio. Actualmente, un VTS funciona dentro de un marco de servicio de información, de organización de tráfico y servicio de asistencia a la navegación. Algunas autoridades de VTS ofrecen los tres tipos de servicio, algunos dos y otros uno. Algunas autoridades de VTS no brindan la gama completa de servicios por una variedad de conceptos erróneos; por ejemplo, algunos creen que organizar el tráfico genera más responsabilidad y otros creen que la asistencia a la navegación es un practicaje remoto.

El Comité VTS concluyó que, en general, un oficial de cubierta, capitán, práctico o, para el caso, cualquier usuario de un VTS puede esperar:

- Recibir información esencial y oportuna que pueda influir en su paso por un área de VTS. Esto puede incluir información relacionada con la situación del tráfico, el estado del tiempo, las condiciones de las mareas, los detalles de atraque y la disponibilidad de servicios aliados, etc.
- Gestionar y organizar sus movimientos dentro del área del VTS para evitar congestiones, conflictos, demoras o problemas que puedan afectar su navegación segura y eficiente.
- Que se supervisará la seguridad de su navegación y se le brindará asesoramiento según corresponda, si experimentan una situación peligrosa, como un riesgo de varada o colisión, o si se encuentra en una posición difícil en la que preferirían no encontrarse.

Esencialmente, estas expectativas son los tres tipos actuales de servicio, pero de hecho son el propósito central de un VTS. Es discutible que ninguna organización realice una inversión significativa en la infraestructura y el personal de VTS y espere que se brinde información de buena calidad en el momento adecuado, que se organice el tráfico para garantizar el movimiento eficiente de los buques y que se intervenga para tratar de prevenir un peligro o que se desarrolle una situación insegura. Según las Directrices revisadas, se espera que todos los proveedores de VTS lleven a cabo estos propósitos centrales.

En términos del plazo para la finalización y publicación de las Directrices revisadas, la presentación tuvo una primera etapa exitosa en la OMI con la aprobación del Subcomité NCSR en enero de 2020. El siguiente paso es el Comité de Seguridad Marítima más adelante en 2020, Después de esta etapa, el proyecto de resolución y las directrices se pasarán a la Asamblea de la OMI, que se reunirá a fines de 2021 para su aprobación y posterior publicación. Mientras tanto, el Comité VTS de la AISM está ocupado preparando actualizaciones a las Recomendaciones, Directrices y Cursos Modelo de la AISM para dar efecto a las Directrices revisadas sujeto a su aprobación y adopción.

La AISM, por supuesto, mantendrá a todos actualizados con los últimos desarrollos.

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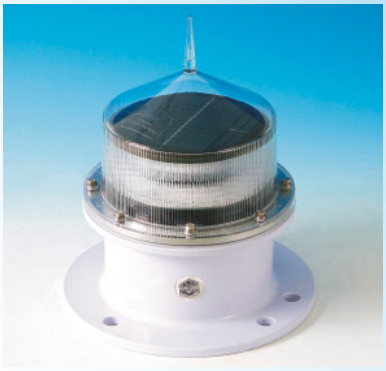
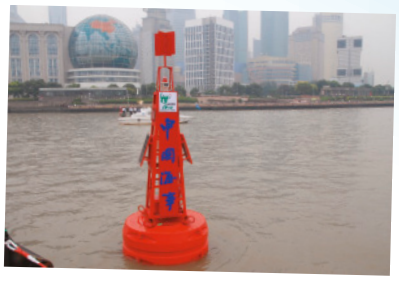


Marine lanterns



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DELIBERATIONS ON THE FUTURE VTS DEVELOPMENT FROM THE UPGRADE OF SHANGHAI VTS

BY ZHOU GUOXIANG, LIU WEI (WUSONG MSA, SHANGHAI 201908)

Since 2010, Shanghai Port has been the port with the world's largest container throughput for many years. In order to ensure the safe and efficient operation of the port, China Maritime Safety Administration (MSA) began to operate the Shanghai VTS in 1994, and Shanghai VTS will be upgraded to "*20 stations and 2 sub-centres*" in 2020. It will be one of the world's largest and most intelligent VTS centre in terms of radar station scale, coverage of waters, number of operators, vessel traffic flow and applications of new technology, and will continue to provide efficient and high-quality navigation safety services for Shanghai Port. Based on the background, objectives and specific content of the upgrade of Shanghai VTS, this article discusses prospects of the definition, functional performance and evolution of the future VTS.

INTRODUCTION

The first VTS took shape as shore-based radar in the Isle of Man applied to port monitoring in 1948[1]. Since then, VTS have been established all over the world. Till the end of 2018, there are more than 500 VTS centres in operation worldwide. China Maritime Safety Administration (MSA) will organize 62 VTS centres during the "*The Fourteenth Five-Year Plan*" period, including 14 centres alongside the Yangtze River and 48 centres in other coastal ports, accounting for 12 percent of the world's total. The application and development of VTS has greatly improved the efficiency and safety of navigation and protected the marine environment. The importance of VTS also been highly recognized by the international community. International organizations such as International Maritime Organization (IMO) and International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) have successively adopted a series of resolutions, recommendations and guidelines to regulate and promote the development of VTS [2-4]. In 1997, IMO adopted the resolution A.857(20) "*VTS GUIDELINE*", which

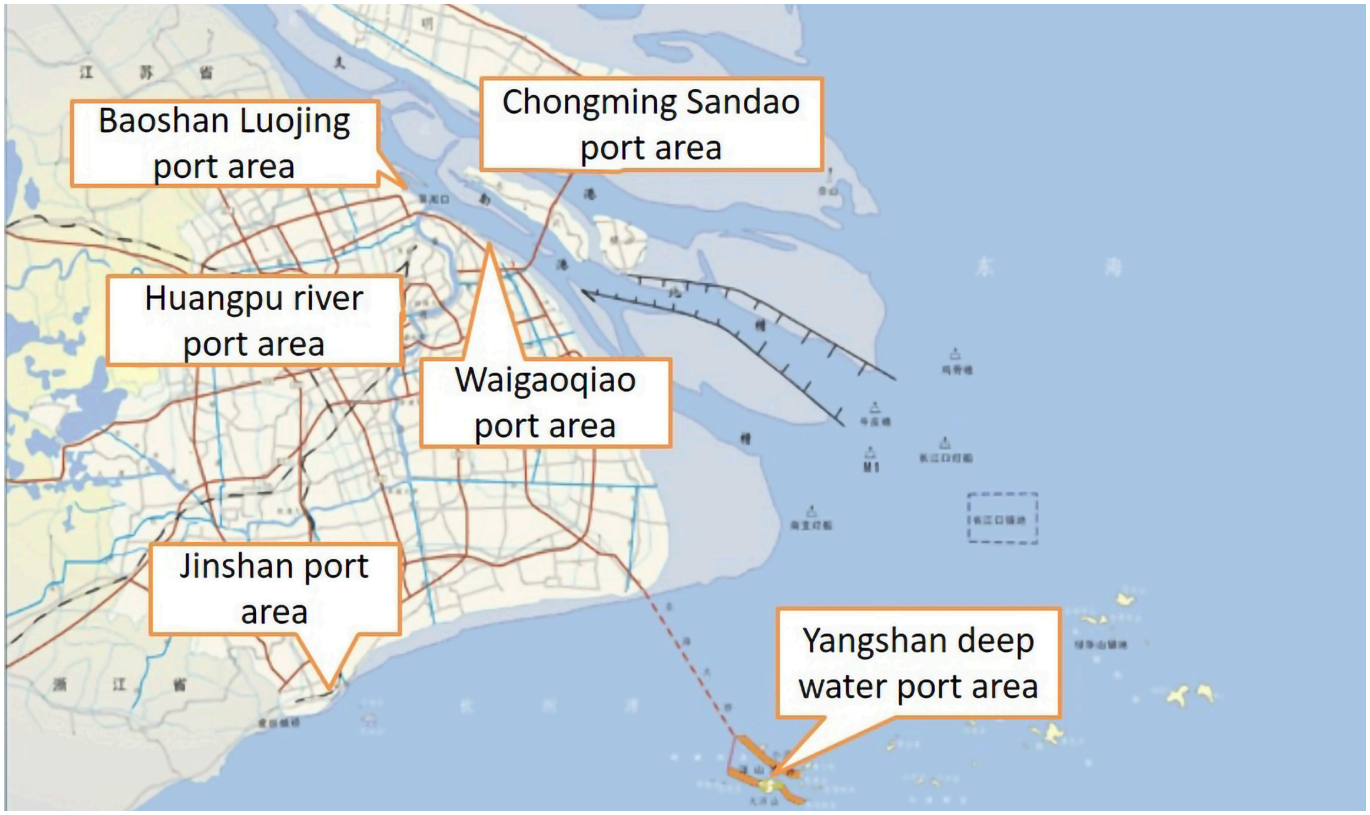

Fig 1 Distribution Shanghai Port Area

systematically elaborated on the general principles of VTS operation, the duties of the Contracting Government and the VTS centre, and the training of VTS personnel[5].

With the development of technology, VTS has developed from simple series of radar and high frequency, to computer integration, and then to intelligence dimensional change. The system equipment has been upgraded, the technical content of VTS system has been advanced, the application fields of VTS have been increased and the application waters have been expanded. With the deepening applications of VTS, its connotation also has been evolved [6].

Many contents of the A.857 (20) cannot adapt to the current situation and future development of VTS. Therefore, IALA and a number of member states including China issued a joint proposal to revise resolution A.857 (20). In January 2020, the revised VTS Guidelines was adopted at the 7th meeting of NCSR, making important progress in the revision [6]. Shanghai port is the port with the world's largest container throughput, complex navigation conditions, large vessel traffic flow and navigation density. The construction and development of Shanghai VTS and the operation efficiency are directly related to the future of Shanghai Port. Based on the above background, the future development of VTS was prospected and considered according to Shanghai VTS upgrade, which is in accordance with the future-oriented revision principle of resolution A.857 (20).

SHANGHAI PORT NAVIGATION ENVIRONMENT

Overview of Shanghai Port

Shanghai Port is located in the middle of the Chinese mainland with coastline exceeding 170km, which has abundant port resources and a vast economic hinterland. It is China's largest port and a world-famous trade port [8].
Shanghai Port area is scattered, as shown in figure 1, including Huangpu River Port Area, Baoshan Luojing Port Area, Waigaoqiao Port Area, Jinshan Port Area, Yangshan Deep-Water port area and Chongming Sandao Port Area. The distribution of the river system is three-stage bifurcation, four mouths into the sea, the fairway is crisscrossed, as shown in figure 2 and figure 3, including Huangpu River fairway, Shanghai Section of Yangtze River, Hangzhou Bay Channel, Yangshan Channel, North Branch Channel and North Port Channel. VTS has not yet covered the waters of Beigang Channel, Beizhi Channel and Chongming Sandao Port Area. The weather conditions of Shanghai Port are complex with many influencing factors and changing constantly. There are many gale days in Shanghai Port every year, with long duration and high wind speed. In spring, Shanghai Port is susceptible to fog. In summer, it is susceptible to typhoons, and in winter, it is susceptible to cold waves. The tidal type is an irregular half-day. The rising time is longer than the falling time, and has a high maximum flow rate. There are ships have dragging anchor or even collision accident due to the rapid flow.

The channel of Shanghai port is narrow and long, with many intersections and limited navigation

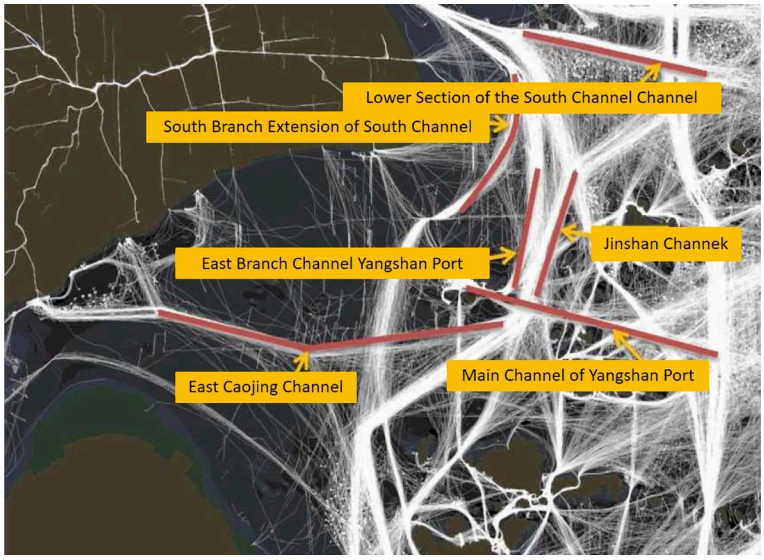

Fig 2 Ship trajectory of the Yangtze River Estuary and North areas

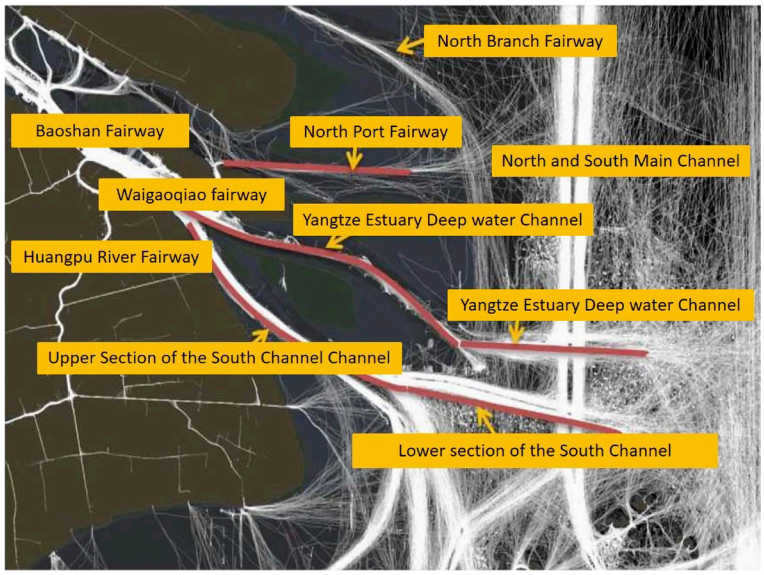

Fig 3 Ship trajectory of the Yangshan Deep-Water Port Area

resources [8]. The channel types include both natural river channels and artificial dredged channels. Among them, the Yangtze Estuary Deepwater Channel, known as the throat of the Yangtze River, is in a very important position. Anchorage resources are scarce, and often in the saturated running state. Affected by the water flow and the incoming sand, and the effects of extreme weather like typhoons, the channel conditions in the North areas are unstable and the depth of water changing frequently.

Characteristics of Traffic Flow in Shanghai VTS Area

According to statistics, in 2018, the inbound and outbound traffic flow of Shanghai Port exceeds 1.4 million, covering all types of vessels, and the daily average vessels exceeded 4,700, ranking the first in the world. (Data source: Shanghai MSA)

Characteristics of Ship Trajectory

The traffic trajectory in the Estuary of the Waters near Shanghai Port is shown in Figure 2 and Figure 3. The traffic trajectory is complex with more than 25 crossing areas. Limited by channel conditions, the

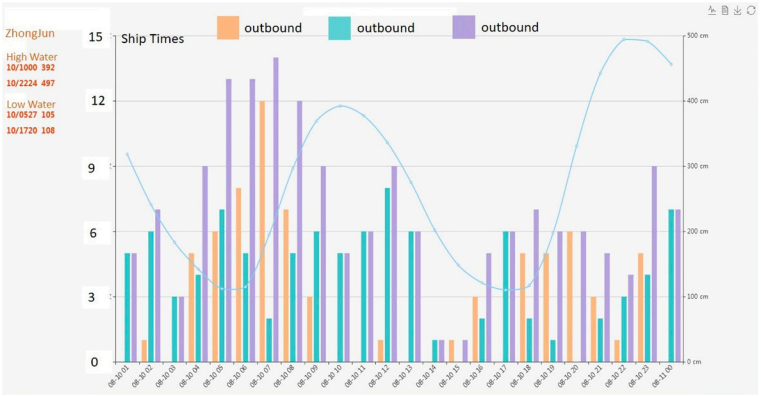

Fig 4 Ship flow in Yangtze Estuary Deep-Water Channel estuary with tides

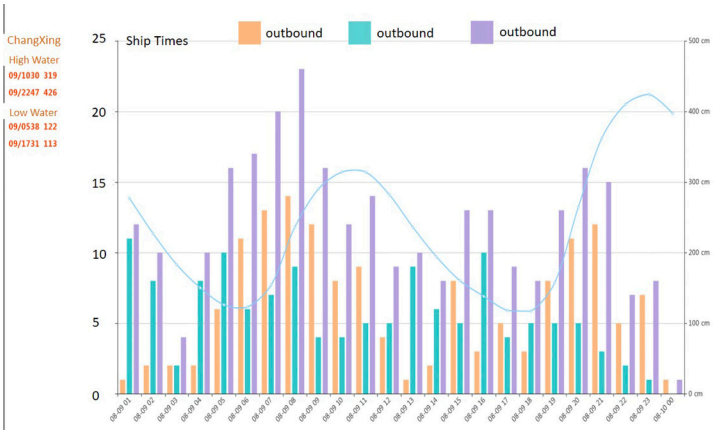

Fig 5 Ship flow in the South Channel with tides

trajectory zone of the inner port is relatively convergence, while the trajectory zone of the ship track is wide due to the wider waters of the outer port.

Characteristics of Traffic Flow

The tide type of Shanghai harbour is irregular half day tide, the traffic flow is obviously "*moving with the tide*". As a result, the traffic flow in Shanghai section of the Yangtze River has obvious peak and flat peak hours, as shown in Figures 4 to 6.

The emergence and persistence of peak hours lead to high traffic density and long duration, increasing the possibility that ships are affected by the ship-ship effect and the bank effect, and increasing the possibility of collision or rub, which brings potential safety hazards to the navigation safety of Shanghai Port.

Shanghai Port Development Plan

The Outline for the Construction of a Powerful Country in Transportation proposes to accelerate the development of new formats and new models and deepen the integrated development of transportation and tourism in 2019 [9]. Combined with Shanghai development plan, the radiation capacity of the sea and air hub will be further enhanced, the functions of international container hubs will be optimized, the economic development of cruise ships and yachts will be supported, the construction of cruise home port-the Wusongkou International Cruise Terminals, the supporting facilities of cruise terminal and the service standards of cruise terminal will be improved in the future [10]. It is expected that by 2031, Shanghai port will become a world shipping center with the ability to allocate global shipping resources, just like London.

The complex meteorological and hydrological conditions, navigational conditions and navigational status of Shanghai Port have already brought tremendous pressure on the supervision and service of Shanghai VTS. The construction of the container hub, the development of the cruise economy, and the development of new business models require Shanghai port have higher management and service capabilities in intelligent ship monitoring, navigation safety assurance, and emergency handling.

ANALYSIS ON THE CURRENT SITUATION OF SHANGHAI VTS

Current Situation of Shanghai VTS

Shanghai VTS consists of Wusong VTS sub-centre and Yangshan VTS sub-centre. Wusong VTS sub-center was operated in 1994 and upgraded in 2004, using the German ATLAS system. Yangshan VTS sub-center was built in 2004 using the HITT system of the Netherlands. Before the upgradation, the two sub-centers operating independently, and both had functions in information collection, information processing, information evaluation, information and navigation assistance services, transportation organization, and joint operations [11,12]. By 2019, the original system has been running for more than 15 years. After a long time of operation, the reliability has been decreased.

The system availability was 84.06% in 2018 and 98.4% in 2019. The annual average availability of the two sub-centers could't meets the 99.9% design requirements in 2018.

Limitations of the original VTS

The original VTS systems were built 15 years ago. Its infrastructure, processing models, calculation methods, system functions, and equipment performance were based on the technical conditions at that time. User requirements were also formulated based on the navigation requirements of that time. After years of development, the original system has certain limitations in the following areas:

- Equipment facilities are aging. After years of continuous operating, the equipment of the original system is seriously aging, the key equipment fails frequently, the reliability has been reduced, and the system is at risk of paralysis. The management subsystem does not have a hot data backup function and there is a risk of data loss.
- The system capacity is insufficient. The original systems capacity of Wusong VTS Center is only 3500 targets. The radar station of Yangshan VTS only can tracking 500 targets and the system capacity is only 3000 targets. In recent years, the traffic flow of Shanghai port has continued increasing; causing the number of targets overflowed and affected the function of VTS.
- Difficult system sharing and disaster recovery defects. The original systems (Wusong VTS and Yangshan VTS) use different operating system and integrated devices, which independent and incompatible with each other. The data format could not be open sourced, and the sources could not be shared, resulting in disaster recovery defects.
- The function of the database is not perfect,

and it cannot connect with other maritime business platforms. The original system adopts an independent database. On the one hand, it relies on manual maintenance so it has a large workload. On the other hand, it is unable to cooperate with other maritime business platforms and automatically match relevant information of maritime management, which limits the role of VTS system in maritime management.

- The original system cannot be expanded. The continuous changing in navigation characteristics of Shanghai Port, and Shanghai planning for the development of sea and air hub capabilities have put forward new requirements for management and service capabilities of VTS in the future. The original system cannot be expanded, and it could not meet the current demand for use, nor could it adapt to future needs for management and service capabilities.

VTS UPGRADE

Upgrade Purpose

Based on the functions of the existing VTS system, this upgrade will further enhance the Shanghai VTS by increasing the system functions, improving the performance of the equipment, optimizing the equipment layout, improving the management mode, and strengthening the collaboration with relevant business entities, improving the traffic service capacity of Shanghai VTS, so as to meet the new demand for management and service capacity in the future, and to provide more efficient navigation safety service for Shanghai port.

Upgrade Content

In 2020, the Shanghai Maritime Safety Administration will complete the upgrade and reconstruction of Shanghai VTS. The new VTS system uses the Dutch SAAB operating system and the construction scale is "*20 stations and 2 sub-centres*" (20 radar stations, Wusong and Yangshan two VTS sub-centres). The waters of the Shanghai section of the Yangtze River, the Yangtze River estuary Ships Route system (including eastward extension), and Yangshan Deep Water Port (including Jinshan Port) will be full covered and system performance has been improved effectively.

- System capacity has been increased, the functions and performance have been improved. The new system can handle 20000 targets at the same time, greatly improving the processing capacity and response speed of the system. The new system is equipped with DF direction finding system, CCTV video surveillance and other subsystems, which can process 20,000 targets at the same time. The system's processing capacity and response speed are greatly improved. The MIS system realizes the automation of a large number of complex data statistics, including regional and crossline vessel flow statistics, refined anchorage statistics, and classification statistics.
- Effectively improvement in reliability and support capacity. Unified the operating system and system equipment of the two sub-centres to achieve data sharing and mutual disaster recovery. The hardware equipment was configured with a certain redundancy, which greatly improved the support capacity of system operation.
- Data interconnection and interoperability, The level of intelligence and synergy has been improved. The new system realizes the interconnection with various maritime systems and the efficient flow of data through the organic cooperation between VTS, VHF, MIS and other subsystems. Access to ship reporting data, pilot schedule, and deep-water channel schedule, which provide an important basis for scientific and efficient transportation organization. The access of surveying vessels, violated vessels, and key tracking vessels has made it possible for VTS to change from focusing on the navigation safety of ships to performing comprehensive maritime administrative management, which highlighting the functions of information centre and command centre, achieved the transformation from "one centre" to "three centres". Set differentiated permissions according to user needs, serve internal users and external users such as pilot stations, port administration, shipping companies, and shipping agency agents, and strengthen the collaboration between other users and VTS.
- Office informatization and data acquisition automation are realized. Through the design of information interconnection and MIS database modules, the new system realized the electronic operation of duty, work attendance and business process, and ensures the good traceability. While ensuring the efficiency of VTS work, the discipline of the staff on duty, the objectivity of the internal assessment and management of the department has been improved.
- Achieve seamless connection with adjacent VTS. The new system accesses signals from radar stations in adjacent waters. It's a useful practice for the efficient maritime supervision system in the Yangtze River Delta for information exchange, supervision interaction, and resource sharing, and greatly promoted the integration of VTS in the Yangtze River Delta.
- Humanized design, healthier and friendlier working environment. Due to the particularity and personalized demand of VTS duty work, the use of new equipment and new technologies such as the lifting duty desk, multi-dimensional adjustable seats, centralized computer host management, one-button multi-control under KVM technology, wireless bluetooth headset and so on has improved the working environment of Shanghai VTS in a qualitative way.

THE FUTURE OF VTS

Since its birth, VTS has been in a state of continuous development and evolution. According to the system characteristics and application purpose, the future development of VTS will have several characteristics:

- The evolution of the VTS definition and legal frameworks. The first is the evolution of the definition of VTS. At present, the relevant documents of IMO and IALA both define the purpose and technical means of VTS as the definition of VTS [13-15]. With the development of communication technology, computer technology and artificial intelligence technology, the technology content of the VTS system will continue increasing, the system will be more intelligent, and the monitoring methods will also be multi-dimensional. The improvement of VTS functions and performance will also promote the expansion of VTS usage. Therefore, In the future, the scope of its services, functions and other aspects will be further expanded, such as personnel search and rescue, water security, etc. The second is the evolution of the legal framework. The SOLAS convention provides that VTS shall be compulsory only in the territorial waters of coastal states [16]. With the development of radar and communications technology, the advantages of VTS in terms of supervision and services will be fully utilized in waters such as important waterways, channels or straits recognized by IMO, even if these waters are overseas. At the same time, laws and regulations on VTS in various countries in the world will also evolve with the changes in the content and application of VTS.
- VTS management and operation will be more efficient. On the one hand, in the revision of the VTS Guidelines in 2019, the most influential content was the deletion of the definitions of

Fig 6 Huangpu River during peak hours

"*information services*", "transportation organization services", and "navigation services". Instead, the way of achieving VTS goals are explained by enumerating the ways. The concept of "the three services" is confusing and difficult to understand. It has troubled VTS practitioners for many years, and it is difficult to distinguish for the bridge team. At the same time, the "*results-oriented principle of VTS instructions*" is deleted. Under the condition that the principle of "overall responsibility of the captain for the operation of the ship (including the responsibility for navigation safety)" remains unchanged, VTS operator will be more decisive, direct and efficient in providing advice and instructions to the ship, which is beneficial to the navigation management activities such as emergency avoidance. On the other hand, the management of VTS will realize regional coordination and three-dimensional. The existing VTS in China is basically in an independent operation state, and only some regions have realized synergies in some business areas. The effective coordination and cooperation between adjacent VTS are conducive to information exchange, supervision interaction and resource sharing and the construction of maritime supervision system, as well as the improvement of comprehensive maritime security and maritime emergency rescue. Besides, VTS operating philosophy will continue changing. At present, the operating philosophy of VTS in various countries is mainly service-oriented. The concept of VTM has been emerged. What "M" of "VTM" refers to is whether the conventional VTS management, MIS system, or management activities based on MIS system, which needs further discussion in the future. With the support of the MIS system's data and information, services will shift to "VTS-M service + management" model.

- Application technology is more intelligent and has more personalized settings. First of all, as a modern information integration system, VTS is constantly updated with technological progress. With the development of 5G technologies, blockchain, big data, artificial intelligence and other technological revolutions, as well as advances in areas such as unmanned ships and e-navigation, the development of VTS in intelligence and interconnection can be expected. Secondly, VTS system customization will become the mainstream. As an important support for smart ports, VTS will be indispensable in the future to customize VTS system, information display, automatic warning and other functions according to navigation characteristics of different waters. Thirdly, strengthen the development and application of MIS system. As an important part of the VTS system, MIS is an important component that emerges and develops with the development of VTS. Modern VTS is not only a service centre, but also a data and information centre. In the context of the development of big data applications, A full-featured and stable-performing system is required to organize, store,

calculate, statistics, and analyse data in order to excavate that can improve the efficiency of VTS operation and management. At the same time, the advancement of science and technology not only brings convenience, but also brings some challenges, such as network security.

▶ Personnel eligibility requirements will be further increased. On the one hand, although the "absolute responsibility" of the captain has no impact with the deletion of "*three major services*" and "*results-oriented principle*", unclear, unprofessional or even incorrect suggestions or instructions will inevitably bring risks and troubles to the ship and bridge team. On the other hand, although the development of new technology, new equipment and new functions can assist the work of the VTS operator to some extent and reduce work intensity, it cannot completely replace human judgment. To adapt to these new changes, more new knowledge and new skills are needed, which undoubtedly puts forward higher requirements for personnel capacity building. As the importance of VTS in port operation becomes more and more prominent, the requirements of VTS practitioners are inevitably higher and higher.

CONCLUSION

The development and evolution of VTS aims to provide better services and security for ports, shipping industry, and maritime environment protection. The effective operation of Shanghai VTS will contribute to navigation efficiency and safety of Shanghai Port.

With the development of information technology and the improvement of the intelligence level of VTS, VTS system will become an important chain of smart port and smart transportation. Massive VTS data will play a more important role in the future comprehensive traffic management and planning, and the position of VTS information center will be more stable.

VTS is a tool for navigation safety assessment and risk management. The purpose of its operation and management is to identify risk sources and deal with risks more effectively. The development of VTS equipment, system functions, duty management, system construction, and VTS culture are revolves around risk assessment and control. How to find the source of risk more effectively, evaluate it in combination with other navigational elements, and formulate specific and targeted countermeasures based on the evaluation results will be an eternal topic in the development and evolution of VTS.

Whether it is current VTS or the future VTS+M, as an important component in ship transportation, different eras have given it different connotations, and also put forward different requirements. Keeping pace with the times is the inevitable trend of VTS, it has a long way to go.

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DÉLIBERATIONS SUR LES FUTURS DÉVELOPPEMENTS EN VTS SUR LA BASE DE L'AMÉLIORATION DU VTS DE SHANGHAI

Depuis 2010 le port de Shanghai est, très souvent, le plus grand port du monde en termes de trafic de conteneurs. Afin d'assurer un fonctionnement sûr et efficace du port, l'administration de sécurité maritime chinoise a commencé à le gérer en 1994 et le VTS de Shanghai va être amélioré en 2020 pour s'équiper de « *20 stations et 2 subdivisions* ». Ce sera le VTS le plus grand et le plus intelligent en termes de taille de radar, de couverture, de nombre d'opérateurs, de débit de trafic et d'utilisation des nouvelles technologies. Il continuera de fournir au port des services de sécurité de la navigation efficaces et de grande qualité. Sur la base de ce contexte cet article discute de l'avenir de la définition, des normes de fonctionnement et de l'évolution du futur VTS.

DELIBERACIONES SOBRE EL FUTURO DESARROLLO DEL VTS A PARTIR DE LA ACTUALIZACIÓN DEL VTS DE SHANGHAI

Desde 2010, el Puerto de Shanghai ha sido el puerto que ha manejado la mayor cantidad de contenedores del mundo durante muchos años. Para garantizar la operación segura y eficiente del puerto, la Administración de Seguridad Marítima de China (MSA) comenzó a operar el VTS de Shanghai en 1994, que se actualizará a «20 estaciones y 2 subcentros» en 2020. Será uno de los centros VTS más grandes e inteligentes del mundo en términos de escala de estación de radar, cobertura acuática, cantidad de operadores, flujo de tráfico de buques y aplicación de nuevas tecnologías, y continuará brindando servicios de seguridad de navegación eficientes y de alta calidad para el Puerto de Shanghai. Basado en los antecedentes, objetivos y contenido específico de la actualización del VTS de Shanghai, este artículo analiza las perspectivas de la definición, el rendimiento funcional y la evolución del futuro VTS.

A MULTILINGUAL WORLD THE IALA SPANISH SUPPORT TEAMS

The IALA World-Wide Academy (WWA) aims to facilitate and deliver an increased number of IALA model courses and other publications in the Spanish language.

An Accredited Training Organisation often has the ability to translate the course materials but many IALA publications, which are the backbone of the IALA model courses, are in English. In order to speed-up and better coordinate the translations into Spanish, the WWA who are, due to the nature of their work, are very active with the Spanish speaking countries, devised a system for this. Liaising between Spanish speaking countries an agreement has been reached with Argentina, Colombia, Cuba, Chile, Spain, Venezuela and Uruguay to implement a programme for translations in order to balance the work between countries. This system allows a country to decline a translation request when they do not have the resources to deliver at the moment of the request.

A clear example of this in practice was the delivery of the Seminar on the use of the IALA Risk Management Toolbox in Spanish, through simultaneous translation in Colombia in November 2019. This complemented the provision of several Level 1 AtoN Manager and Level 2 AtoN Technician courses in the Spanish language which have been delivered by Spain and Argentina. Puertos del Estado from Spain and Geocuba from Cuba have also translated IALA publications, Colombia is active in translating IALA Bulletin articles and Chile supported with translation during a technical needs assessment mission in Guatemala.

It was agreed to prioritise publications for translation commencing with normative recommendations under a Standard. A peer review system will ensure the quality and it is considered to involve Spanish non-member countries where the WWA is active in this review system. This may support the WWA Capacity Building Programme and raise the awareness of non-members on the importance of compliance with IALA Standards as learning will inevitably take place as the documents are read in the Spanish language. A next step is a database of Spanish speaking IALA experts/ lecturers to assist in the facilitation of the delivery of Spanish courses and seminars world-wide.

Coordination of the group is now ensured by Jaime Álvarez, a new IALA staff member.

UN MUNDO MULTILINGÜE LOS EQUIPOS DE APOYO EN IDIOMA ESPAÑOL DE LA AISM

La Academia Mundial de la AISM (WWA) tiene como objetivo facilitar y ofrecer una mayor cantidad de cursos modelo de la AISM y otras publicaciones en idioma español.
Una Organización de Capacitación Acreditada a menudo tiene la capacidad de traducir los materiales del curso, pero hay muchas publicaciones de la AISM, que son la columna vertebral de los cursos modelo, están en idioma inglés. Para acelerar y coordinar mejor las traducciones al español, la WWA que, debido a la naturaleza de su trabajo, es muy activa con los países de habla hispana, ideó un sistema para ello. Se ha logrado un acuerdo de enlace entre países de habla hispana, como Argentina, Colombia, Cuba, Chile, España, Venezuela y Uruguay, para implementar un programa de traducción con el fin de equilibrar el trabajo entre estos países. Este sistema permite que un país rechace una solicitud de traducción cuando no tiene los recursos para proporcionarla en el momento de recibir la solicitud.
Un claro ejemplo de esto en la práctica fue la provisión del Seminario sobre el uso de la Caja de Herramientas de Gestión de los Riesgos de la AISM en español, a través de la traducción simultánea en Colombia en noviembre de 2019. Esto complementó la provisión de varios cursos de Nivel 1 de Gestores de AtoN y de Nivel 2 de Técnicos AtoN en idioma español que han sido impartidos por España y Argentina. Puertos del Estado de España y Geocuba de Cuba también han traducido las publicaciones de la AISM, Colombia está activa en la traducción de artículos del Boletín de la AISM y Chile apoyó con la traducción durante una misión de evaluación de necesidades técnicas en Guatemala.
Se acordó priorizar las publicaciones para la traducción comenzando con recomendaciones normativas bajo un Estándar. Un sistema de revisión por pares asegurará la calidad y se considera involucrar a países no miembros de habla hispana donde la WWA está activa en este sistema de revisión. Esto puede apoyar el Programa de Creación de Capacidades de la WWA y aumentar la conciencia de los no miembros acerca de la importancia del cumplimiento de los Estándares de la AISM ya que el aprendizaje inevitablemente tendrá lugar a medida que los documentos se puedan leer en idioma español. El siguiente paso es crear una base de datos de expertos / conferencistas de habla hispana de la AISM para ayudar a facilitar la provisión de cursos y seminarios de español en todo el mundo.
Se asigna la coordinación del grupo a Jaime Álvarez, nuevo integrante del equipo de IALA.

UN MONDE MULTILINGUE LES ÉQUIPES DE SOUTIEN POUR L'ESPAGNOL

L'Académie mondiale de l'AISM (WWA) tend à faciliter et fournir un nombre croissant de modèle de cours et d'autres publications de l'AISM en langue espagnole.
Une organisation de formation accréditée a souvent la possibilité de traduire les supports de cours mais beaucoup de publications de l'AISM, qui forment la base des modèles de cours, sont en anglais. Pour accélérer et mieux coordonner les traductions en espagnol l'Académie s'appuie sur une équipe de traduction, formée des pays hispanisants suivants : l'Argentine, la Colombie, Cuba, le Chili, l'Espagne, le Venezuela et l'Uruguay. Cette équipe est maintenant coordonnée par Jaime Álvarez, un nouveau membre du Secrétariat de l'AISM.

WOMEN IN MARITIME AFRICA

IALA and its Academy are working actively to support the UN Sustainable Development Goal 5, "Achieve Gender Equality and Empower all Women and Girls".

IALA, IMO and the International Hydrographic Organization (IHO) work jointly in the area of capacity building under the United Nations "Delivery as One". An example of IALA and IMO cooperation is in the delivery of SDG 5, "Achieve Gender Equality and Empower all Women and Girls". WWA has cooperated with IMO in the gender specific fellowship programme.

The Gender Specific Fellowship programme is a pragmatic programme, based on promoting the training of women in all maritime related disciplines, and on easing their access to national and regional maritime training academies around the world. Over the last few years IMO's gender programme has supported the participation of women in IALA courses.

IMO and the WWA encourage Maritime Authorities to consider this gender programme when selecting people to attend IALA courses.

NISRINE IOUZZI: KINGDOM OF MOROCCO

Mrs. Nisrine Iouzzi is the Head of the Planification et Financement Division in the Direction des Ports et du Domaine Public Maritime, Ministère de l'Equipement, du Transport, de la Logistique et de l'Eau in the Kingdom of Morocco. This very elegant and stylish lady shows in her work a clear international vision. She has been the driving force to re-establish the IALA National Membership of the Kingdom of Morocco by convincing the Minister of the importance for the Safety of Navigation. Her diplomatic skills were materialised immediately after as the Kingdom of Morocco was elected Council member by the IALA General Assembly. Nisrine Iouzzi is an IALA WWA Alumni and participated in the Level 1 AtoN Manager Course in 2016 in France. Realising the importance of this course she conducted the process to set up an accredited training organisation for the delivery of Level 1 AtoN Manager Training in French language. Two courses took place since then and these have been of great importance in terms of capacity building in Africa. Among nationals the following countries attended this course: Benin, Cameroon, Comoros, Congo, Côte d'Ivoire, Democratic Republic of Congo, and Togo.
In addition to these great achievements Nisrine Iouzzi was also in charge of the organisation of the IALA Pre-Diplomatic Conference in 2018, which was preceded by an IALA WWA Awareness Seminar.

MRS SALAMATOU TEBIE, BORN SIDI MAMADOU: REPUBLIC OF TOGO

Mrs Salamatou TEBIE, born SIDI MAMADOU, is the Chef de la Division Transport Maritime in the Direction des Affaires Maritimes, Direction Générale des Transports, Ministère des Infrastructures et des Transports of the Republic of Togo. When meeting with this impressive lady you will feel the real African spirit as she is always dressed in colourful African fabrics. Jacques Manchard conducted a technical needs assessment mission to Togo in 2017 and since then both of them worked together successfully to implement the recommendations.
Salamatou TEBIE is an IALA WWA Alumni and participated in the Level 1 AtoN Manager course in 2016 in France. Returning to her home country she put in practice many things learned during this training. With the support of the French Embassy in Togo she managed to establish a national Maritime Safety Information Coordinator. She set up a National Committee of AtoN with all stakeholders. In order to categorise and meet the availability objectives for short-range AtoN set by IALA, she set up a system for AtoN monitoring and inspections during day and night-time, based on a new National AtoN Register.
Presently she is working on the approval of the following:

- Decree on improving AtoN delivery service in the waters of Togo;
- Decree on AtoN creation, modification and deletion decisions;
- Draft Convention on delegation on delivery of AtoN between National Competent Authority and Lomé Port Authority.

Implementation of the above is the key for Togo to be removed from the WWA list of States in Need, which will enhance Togo's International Maritime Profile and make it a more attractive destination for international shipping.

LES FEMMES EN AFRIQUE MARITIME

L'AISM, l'OMI et l'Organisation Hydrographique Internationale (OHI) travaillent conjointement dans le domaine du renforcement des capacités dans le cadre du programme «*Unis dans l'action*» des Nations Unies. Un exemple de coopération entre l'AISM et l'OMI est la réalisation de l'objectif de développement durable n°5, «*Réaliser l'égalité des sexes et rendre autonomes toutes les femmes et les filles*». L'Académie a coopéré avec l'OMI dans le cadre du programme d'attributions de bourses d'études selon le sexe.

Le programme de bourses spécifiques sur l'égalité des genres est un programme pragmatique, basé sur la promotion de la formation des femmes dans toutes les disciplines liées à la mer, et sur la facilitation de leur accès aux académies nationales et régionales de formation maritime à travers le monde. Au cours des dernières années, le programme de l'OMI sur le genre a soutenu la participation des femmes aux sessions de formation organisées par l'AISM.

L'OMI et l'Académie Mondiale de l'AISM encouragent les autorités maritimes à prendre en compte ce programme sur l'égalité des sexes lors de la sélection des personnes devant assister aux sessions de formation de l'AISM.

NISRINE IOUZZI : ROYAUME DU MAROC

Nisrine IOUZZI est chef de la division Planification et Financement à la Direction des Ports et du Domaine Public Maritime du Ministère de l'Équipement, du Transport, de la Logistique et de l'Eau du Royaume du Maroc. Cette dame très élégante et distinguée, fait montre dans son travail d'une claire vision internationale. Elle a été l'élément moteur du retour du Royaume du Maroc au sein de l'AISM en tant que membre national, en convainquant le ministre de son importance pour la sécurité de la navigation. Ses compétences en matière de diplomatie ont été démontrées immédiatement après lorsque le Royaume du Maroc a été élu à l'Assemblée générale de l'AISM en tant que membre du Conseil de l'AISM.

A la suite de sa participation à la session 2016 de gestionnaire des aides à la navigation de niveau 1 en France, Mme Nisrine IOUZZI a obtenu le diplôme de l'Académie Mondiale de l'AISM. Consciente de l'importance de cette formation, elle a conduit le processus de mise en place d'un organisme de formation accrédité pour dispenser la formation de gestionnaire des aides à la navigation de niveau 1 en langue française. Deux sessions ont eu lieu depuis lors et elles ont été d'une grande importance en termes de renforcement des capacités en Afrique. En complément des marocains, des ressortissants des pays suivants ont suivi ce cours : République du Bénin, République du Cameroun, Union des Comores, République du Congo, République de Côte d'Ivoire, République Démocratique du Congo, et République du Togo.

Outre ces grandes réalisations, Nisrine IOUZZI a également été en charge de l'organisation de la Conférence diplomatique préparatoire de l'AISM en 2018, qui a été précédée d'un Séminaire de sensibilisation de l'Académie Mondiale de l'AISM.

SALAMATOU TEBIE, NÉE SIDI MAMADOU : RÉPUBLIQUE DU TOGO

Salamatou TEBIE, née SIDI MAMADOU, est chef de la division Transport Maritime à la Direction des Affaires Maritimes de la Direction Générale des Transports, au Ministère des Infrastructures et des Transports de la République du Togo. En rencontrant cette impressionnante personne, vous ressentirez le véritable esprit africain car elle est toujours habillée avec des étoffes africaines de couleurs vives. Jacques Manchard a effectué une mission d'évaluation des besoins techniques au Togo en 2017 et depuis lors, tous deux ont collaboré avec succès à la mise en œuvre des recommandations.

Salamatou TEBIE a obtenu le diplôme de l'Académie Mondiale de l'AISM à la suite de sa participation à la formation de gestionnaire des aides à la navigation de niveau 1 en 2016 en France. De retour dans son pays d'origine, elle a mis en pratique de nombreux concepts appris au cours de cette formation. Avec le soutien de l'ambassade de France au Togo, elle a réussi à mettre en place un coordinateur national de l'information maritime. Elle a créé un comité national des aides à la navigation réunissant toutes les parties prenantes. Afin d'atteindre les objectifs de catégorisation et de disponibilité des aides à la navigation à courte portée fixés par l'AISM, elle a mis en place un système de surveillance et d'inspection des aides à la navigation de jour et de nuit, basé sur un nouveau registre national des aides à la navigation.

Actuellement, elle travaille à l'approbation des documents suivants :

- Décret sur l'amélioration du service de fourniture des services d'aides à la navigation dans les eaux du Togo ;
- Décret sur les décisions de création, modification et suppression des aides à la navigation ;
- Projet de convention sur la délégation fourniture des services d'aides à la navigation entre l'autorité nationale compétente et l'autorité portuaire de Lomé.

La mise en œuvre de ce qui précède est la clé pour que le Togo
soit retiré de la liste des États côtiers étant dans le besoin établie par l'Académie Mondiale de l'AISM, ce qui améliorera le profil maritime international du Togo et en fera une destination plus attrayante pour la navigation internationale.

MUJERES EN EL ÁFRICA MARÍTIMA

La AISM y su Academia Mundial (WWA) están trabajando activamente para apoyar el Objetivo 5 de Desarrollo Sostenible de las Naciones Unidas, "*Lograr la igualdad de género y empoderar a todas las mujeres y niñas*".

La AISM, la OMI y la Organización Hidrográfica Internacional (OHI) trabajan conjuntamente en el área de creación de capacidades en el marco de las Naciones Unidas "Entrega como Uno". Un ejemplo de cooperación entre la AISM y la OMI es la provisión del SDG 5, «Lograr la igualdad de género y empoderar a todas las mujeres y niñas». La WWA ha cooperado con la OMI en el programa específico de becas de género.

El programa específico de becas de género es un programa pragmático, basado en la promoción de la capacitación de las mujeres en todas las disciplinas relacionadas con el mar y en facilitar su acceso a las academias nacionales y regionales de capacitación marítima en todo el mundo. En los últimos años, el programa de género de la OMI ha apoyado la participación de mujeres en los cursos de AISM.

La OMI y la WWA alientan a las Autoridades Marítimas a considerar este programa de género al seleccionar personas para que asistan a los cursos de la AISM.

NISRINE IOUZZI: REINO DE MARRUECOS

La Sra. Nisrine Iouzzi es la Jefa de la División de Planificación y Financiación en la Dirección de Puertos y del Dominio Público Marítimo, Ministerio de Equipamiento, Transporte, Logística y Agua en el Reino de Marruecos. Esta dama muy elegante y con estilo muestra en su trabajo una clara visión internacional. Ella ha sido la fuerza impulsora para restablecer la Membresía Nacional de AISM del Reino de Marruecos al convencer al Ministro de la importancia para la Seguridad de la Navegación. Sus habilidades diplomáticas se materializaron inmediatamente después de que el Reino de Marruecos fuera elegido miembro del Consejo por la Asamblea General de AISM.

Nisrine Iouzzi es una ex alumna de la WWA y participó en el Curso de Gestores de Nivel 1 de AtoN en 2016 en Francia. Al darse cuenta de la importancia de este curso, llevó a cabo el proceso para establecer una organización de capacitación acreditada para la entrega de capacitación de gerentes de nivel 1 de AtoN en idioma francés. Desde entonces se llevaron a cabo dos cursos y estos han sido de gran importancia en términos de desarrollo de capacidades en África. Además del personal nacional, los siguientes países asistieron a este curso: Benin, Camerún, Comoras, Congo, Costa de Marfil, República Democrática del Congo y Togo.

Además de estos grandes logros, Nisrine Iouzzi también estuvo a cargo de la organización de la Conferencia Pre-Diplomática de la AISM en 2018, que fue precedida por un Seminario de Concientización de la WWA de la AISM.

SRA. SALAMATOU TEBIE, NACIDA SIDI MAMADOU: REPÚBLICA DE TOGO

La Sra. Salamatou TEBIE, nacida SIDI MAMADOU, es la Jefa de la División de Transporte Marítimo en la Dirección de Asuntos Marítimos, Dirección General de Transporte, Ministerio de Infraestructura y Transporte de la República de Togo. Al reunirse con esta impresionante dama, sentirá el verdadero espíritu africano, ya que siempre está vestida con coloridas telas africanas. Jacques Manchard realizó una misión de evaluación de necesidades técnicas a Togo en 2017 y desde entonces ambos trabajaron juntos con éxito para implementar las recomendaciones.

Salamatou TEBIE es una ex alumna de la Academia Mundial de la WWA y participó en el Curso de Gestores de Nivel 1 de AtoN en 2016 en Francia. Al regresar a su país de origen, puso en práctica muchas cosas aprendidas durante esta capacitación. Con el apoyo de la Embajada de Francia en Togo, logró establecer un Coordinador Nacional de Información de Seguridad Marítima. Ella creó un Comité Nacional de AtoN con todas las partes interesadas. Para clasificar y cumplir los objetivos de disponibilidad para las AtoN de corto alcance establecidos por la AISM, creó un sistema para el monitoreo e inspecciones de las AtoN durante el día y la noche, basado en un nuevo Registro Nacional de AtoN.

Actualmente está trabajando en la aprobación de lo siguiente:
- Decreto sobre la mejora del servicio de provisión de AtoN en aguas de Togo;
- Decreto sobre decisiones de creación, modificación y eliminación de las AtoN;
- Proyecto de convención sobre la delegación de la provisión de AtoN entre la Autoridad Nacional Competente y la Autoridad Portuaria de Lomé.

La implementación de lo anterior es la clave para que Togo sea eliminado de la lista de la WWA de Estados Necesitados, lo que mejorará el Perfil Marítimo Internacional de Togo y lo convertirá en un destino más atractivo para la navegación internacional.

ROKEM

RACON AND RADAR

Racon, standing for radar beacon, is an electronic device which can respond to the navigation radar interrogation by returning a signal containing a Morse code on the same or a similar frequency as the radar. As a result, a Morse code with dash-dot-space is shown on the screen of navigation radars.

Racon was put into operation in the 1950s and is widely used as a long or short range navigation aid to show landfall, inconspicuous coastline, new danger, turning point, etc. Nowadays, even though more and more AIS are installed, Racon is still one of the very famous AtoN products for mariners. The main reasons are:

- When GPS does not work, AIS will not work either;
- Racon is linked to the ship's navigation radar only, with the ship itself as the center of the system - Racon is displayed on the radar screen in a natural way, and directly gives the data relative to the ship as the center. Position fixing is easy for the mariner.

From the end of the 20th Century, new technologies were introduced to navigation radars and new solid-state radars came on the market in the early 21st Century. Compared to traditional magnetron radars, solid-state radars have the following advantages:

1. Solid-state radars do not use magnetron, so a solid-state Racon needs minimum maintenance while a traditional radar needs to change magnetron around every 6,000 hrs.

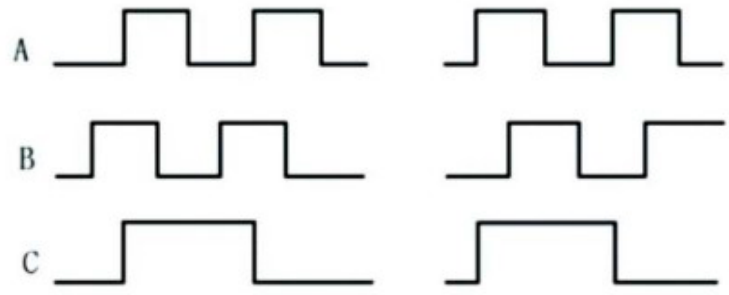


Table 1, magnetron radar pulse

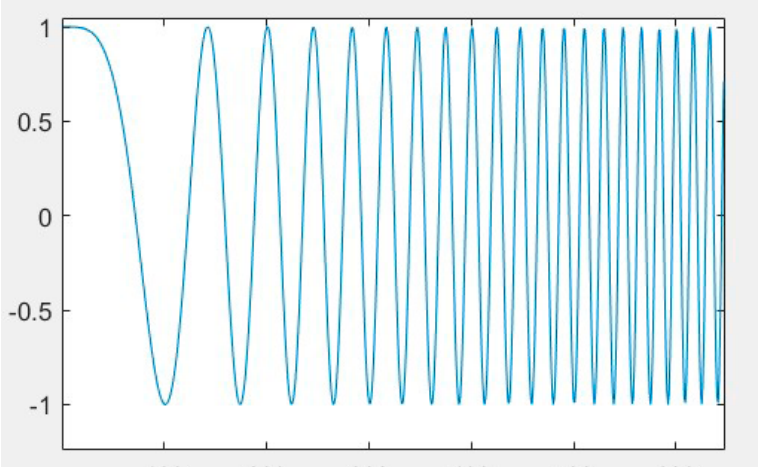


Table 2, solid state radar pulse

2. Solid-state radars are able to detect small objects.
3. Solid-state radars have much lower peak power - around 200W while magnetron radar can have a peak around 20kW or even higher.
4. Solid-state radars have much lower electromagnetic radiation, which is much safer for the mariner and the environment.

Solid-state navigation radars usually have lower peak power even after several steps of amplification. In order to have long range detection, solid-state radars emit long pulse signals. However, long pulse signals usually result in poor a resolution. To solve the problem, pulse compression is applied to solid state-radars. With this technology, solid state-radars achieve long range detection while maintaining high resolutions and lower peak power as well.
However, the traditional racons can't be triggered by new solid-state radars, or traditional racon's signal can't be accepted by solid state radar. Magnetron radar has a fixed frequency pulse (or gate pulse) as shown in table 1, while solid state radar usually has a linear FM signal (LFM).

Traditional racons respond to radars on the same fixed frequency pulse as magnetron radars. These gate pulses can be lost after pulse compression by solid-state radars. So traditional racon's signals can't be accepted by solid state radars, although they are triggered by solid state radars interrogation.

IMO faced this dilemma in the later part of 20th century already: IMO fully realized that solid-state radars have many advantages compared to traditional magnetron radars; however, they could not eliminate Racon due to its importance to mariners in the past decades! Finally, in December 2004, IMO MSC79 approved Resolution MSC.192(79) on radar performance, which had removed the requirement for 3GHz (S-band) radars to trigger Racons, while X-band radars still need to support Racons. The amazing point however is that almost all ships installed X-band radars!

Racon has remained a stumbling block to new solid-state radars for more than the last 10 years. In order to meet the IMO requirement, solid-state radar producers tried to install an option to trigger traditional Racons. This not only increases the costs of new solid-state radars but also makes solid-state radars much more complicated! All these make new solid-state radars difficult to promote .
The good news is that - Pharos and Tideland have launched their new Racon, which can work together with solid-state radars. Also, Rokem developed a new SS Racon which can also coordinate with solid-state radars. This means that the barrier for navigation solid-state radar has finally been cleared!

CORILLA MARINE CELEBRATES OVER 10 YEARS OF ISO9001

Since its formation over a decade ago, Corilla Marine has been committed to upholding high standards in the navigational buoy sector, leading the way in relation to manufacturing quality – including ISO9001 accreditation.

As part of its dedication to continuous improvement of standards and processes throughout the business, Corilla Marine – part of the Corilla Plastics Group - is proud to announce the renewal of its ISO9001:2015 Quality Management Systems certification.

"The ISO9001:2015 certification is testament to Corilla Marine's commitment to providing products and services that underpin customer and regulatory requirements. Holding the accreditation for over 10 years is something we are extremely proud of as a business – helping us drive processes, efficiencies and continuous improvement.

"Most importantly, from a customer perspective, the accreditation highlights the quality of the roto-moulded plastic buoys we design and manufacture – instilling confidence that we supply industry leading and robust solutions," said Mark Jenkins, Corilla Plastics Group Quality & Technical Manager.

Corilla Marine is also working towards ISO14001 Environmental Management for the first time, testament to the business' sustainability objectives and strong corporate governance.

The ISO14001 certification will be underpinned by a Waste and Resources Action Programme (WRAP) project where Corilla is engaged with Resilience Sustainability Solutions, Green Edge Applications and Cardiff University to conduct research exploring the potential of recycled plastic in roto-moulding.

As one of the world's first manufacturers of plastic roto-moulded navigation buoys, Corilla Marine has driven innovation and quality, supplying a diverse of plastic buoys that have been deployed around the world. Corilla Marine remains committed to promoting industry best practice and development by upholding itself to industry leading accreditations. Find out more about Corilla Marine at www.corillamarine.com.

90TH ANNIVERSARY OF LINDLEY GROUP

The Lindley group of companies celebrates its 90th anniversary in April 2020.

Its origin dates back to 1930, when Ahlers Lindley, Lda. was established in Lisbon (Portugal) by Rudolf Ahlers and Antonio Lindley with a capital of £400, as English paper importers and distributors, principally from Charles Morgan and Wiggins Teape Ltd . During the two decades that followed, the company grew successfully, despite the death of Ahlers in 1933.

The first diversification of the business came during that period with the acquisition of Tuella Tin Mines Lda., located in the North of Portugal. Several other mining interests were developed in the pre-war years in support of the allied war effort, by supplying raw materials from neutral Portugal, particularly tin and wolfram.

After the second World War, trading activity was diversified to include machinery, metals, and chemical raw materials. It was in 1956 that Ahlers Lindley started supplying harbour equipment. Two steam cranes were supplied to the Portuguese Naval Base, Arsenal do Alfeite, manufactured by Thomas Smith and Sons Ltd., one of which still exists.

During the 1960's the mines were closed or sold off, and business concentrated on importing high quality paper (Conqueror and Idem carbonless copy paper), machinery and metals (Conveyancer forklift trucks, Jones cranes, Symons cone crushers, International Nickel, Stone Manganese Marine propellers, British Aluminium…), and chemical raw materials and plastics (Union Carbide, Albright Wilson, BIP...).

In 1966, the second generation of Lindley's took over management from Lindley's widow, and a period of rapid expansion followed, which resulted in the building and purchase of premises in Cacém and Porto. Finally, in 1981 the Group purchased the current headquarters, Edifício Mical, in Cascais. This was a large engineering works manufacturing mining and crushing plant, belonging to Mical, Mecanica Industrial de Cascais, Lda, established in 1951, which the group purchased pushing the total number of employees at more than 200.

In response to the recession of the early 1980's the group was reorganised and divided into several companies which allowed specialisation in their respective markets and share ownership by their managers. By the 1990's the group structure was as follows:

- Almovi: Mechanical handling equipment and hydraulic platforms.
- Almec: Industrial compressed air and sandblasting equipment.
- Alchema: Industrial chemicals and plastics.
- Florestal: Forestry and wood processing equipment.
- Alma: Platform and scaffolding hire.
- Lindley: Floating equipment for marinas and harbours.

This period, with the entry of the third Lindley generation into the business, saw growth. Firstly, in the mechanical handling area through Almovi, with the distribution of major brands such as Grove and Demag cranes, Simon platforms and Marine Travelift. Secondly, through Lindley, with its own brands in marinas and marine aids to navigation. This led to the sale of the remaining commercial subsidiaries.

From 2000 onwards consolidation took place, largely in the marine business area. Almovi strengthened its position as a supplier of harbour and industrial handling equipment and expanded its maintenance and service facilities; Lindley developed its own designs and products for marinas and aids to navigation; Mical manufactured for both companies.

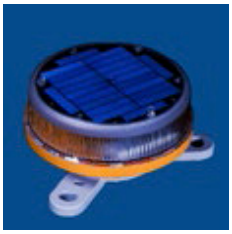
The first steps in foreign trade took place after the establishment in 2004 of Almarin SL, in Barcelona, for the distribution of marine aids to navigation in Spain.

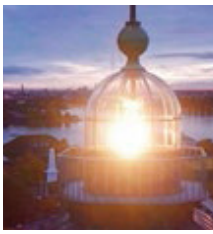
In 2011, as the financial crisis hit southern Europe, Almarin and Lindley started operations in South America. Almarin won a contract for the supply and installation of navigation buoys for the Colombian Navy to mark the main harbours on the Colombian coast. Lindley, after supplying its first marina contracts in Brazil, and taking on further significant contracts, established a subsidiary in Rio de Janeiro in 2015, Lindley BR. This culminated with a major contract to reorganise, supply and install the Marina da Gloria in Rio for the Olympic Games in 2016.

At the same time Lindley group invested in Salt Technologies, a start-up specialised in marine structure calculations and high-resolution digital content. Salt subsequently developed "Nephos", the most advanced online platform for calculating jack-up offshore structures available on the market today.

Currently the Lindley group ownership is shared by the Lindley, Arriaga, Vasconcelos Dias, Simões and San Vicente families, and is supported by a team of over 50 professionals, amongst them industry leading experts.

Thanks to this team and the credibility of 90 years of experience, the Grupo Lindley companies continue invest in innovation and renovation whilst maintaining the values of trust and integrity to achieve the mission of providing customers with the most reliable solutions for their projects.





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