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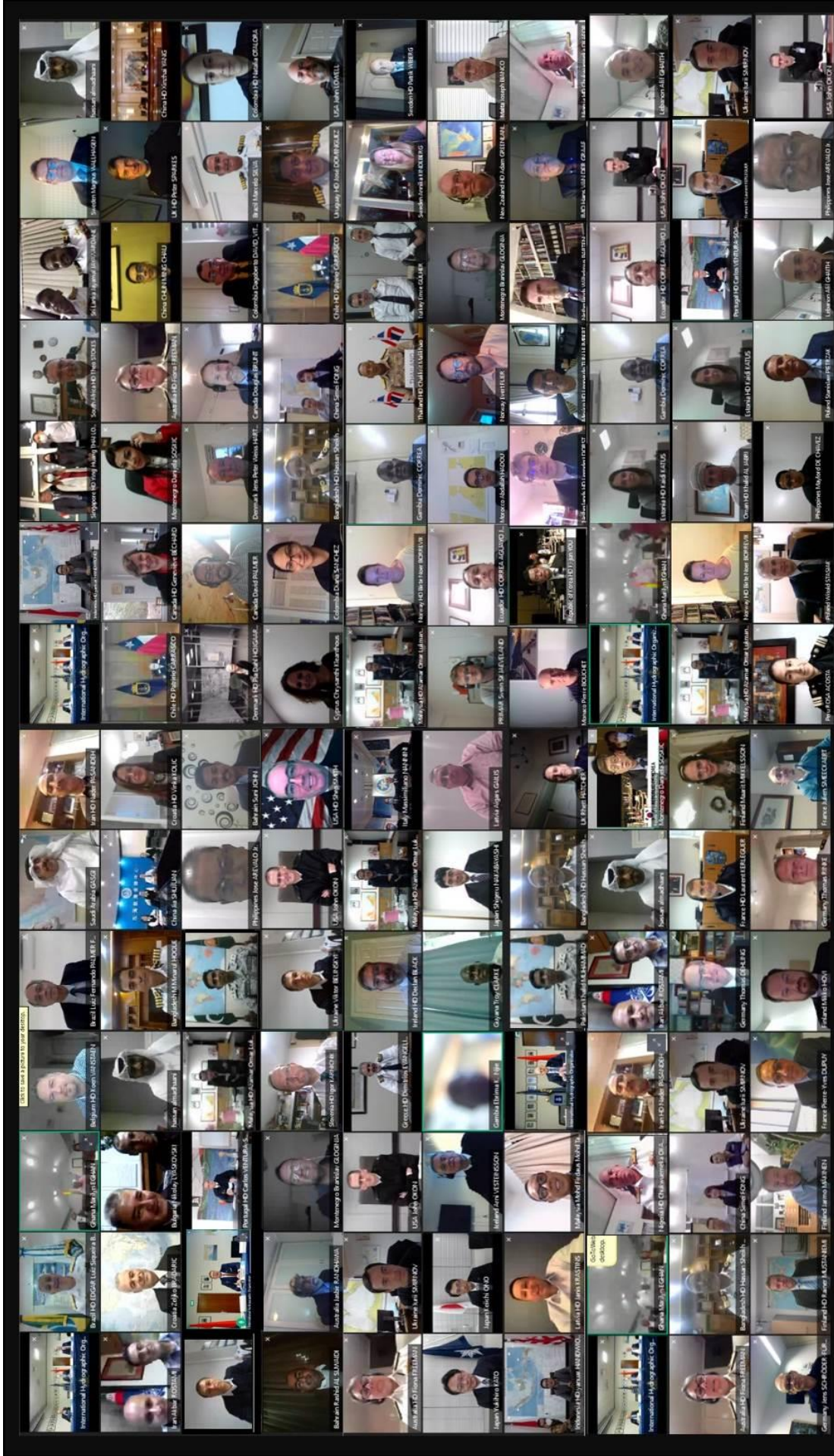
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IHO 2nd Session of the Assembly (A-2) 16th ~ 18th November 2020

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GENERAL INFORMATION

GENERAL DESCRIPTION OF THE SECOND SESSION OF THE ASSEMBLY OF THE INTERNATIONAL HYDROGRAPHIC ORGANIZATION

The 2nd session of the Assembly of the International Hydrographic Organization was due to be held at the Rainier III Auditorium in Monaco from Tuesday 21 April to Friday 24 April 2020.

At the beginning of March 2020, the Secretariat had to regrettably inform the Member States, on instructions announced by the Government of Monaco with regards to the conduct of conferences and events in the Principality, that public events should be cancelled or postponed. As a consequence, it was agreed by correspondence to postpone the 2nd session of the Assembly to November 2020 using a condensed format to undertake some non-movable compelling decisions, including the election of the IHO Director in the interim.

This latter process started at the beginning of May 2020, used the first online voting system in the history of the IHO and resulted, one month later, in the election of Rear Admiral Luigi Sinapi (Italy) as new IHO Director for the period 2020 – 2026, replacing Rear Admiral Mustafa Iptes (Turkey) on 1 September 2020.

In the interim, the global effects of the COVID-19 pandemic, such as limitations of administrative services and travel constraints, resulted in the cancellation of a face-to-face event in Monaco. As an alternative to the originally approved scenario, the Secretary-General, in liaison with the Council Chair and the Monaco Government, proposed the conduct of the forthcoming Assembly session as a *remote event*.

In application of the experiences gained and drawing on the guidance and best-practice examples developed by other international organizations, the remote event format was a sequential combination of Assembly Circular Letters (all listed in Annex A and available at the link: <https://iho.int/en/circular-letters-documents>) and virtual Assembly sessions, which allowed delegations to ask questions and put context to their formal written comments.

Fifteen Assembly Decisions were made in advance by correspondence before the designated Assembly Chair, Captain Marc van der Donck (Netherlands) provided his welcome address to the participants via the video teleconference platform on 16 November 2020. The audience was honored by the video speech of His Serene Highness Prince Albert II of Monaco who formally opened the Assembly.

The 2nd Assembly reached a quorum with 65 Member States registered and active online at the beginning of the event. The first session had 239 participants, from 71 Member States and 22 liaising organizations accredited as observers. Before commencing the first session, the Member States confirmed the designation of Ms Pia Dahl Højgaard (Denmark) as Assembly Vice-Chair.

The 2nd Assembly, structured as 3 daily sessions of 3 hours each, examined 17 proposals and several reports tabled by Member States, by subordinate organs and by the Secretary-General. The Assembly agreed on 52 decisions, including the approval of the Work Programme and Budget of the Organization for the next three-year period by consensus, using the silence procedure.

The unusual hybrid 2nd Session of the Assembly format demonstrated evidence of IHO's ability to remain agile and decisive under extraordinary conditions and to make smart use of digital technology. However, it was agreed that this nature of arrangement was not constituting a template for future Assemblies, since the benefit of in-person meetings and direct communication were recognized by all participants.

General Information

The Assembly unanimously adopted a Resolution expressing the IHO's appreciation to His Serene Highness Prince Albert II of Monaco and his Government for the support provided for this important event and the IHO in general.

The Assembly agreed in principle to host its third session from 25 to 29 April 2023 in Monaco, subject to confirmation in due course by the Secretary-General, in liaison with the Government of His Serene Highness the Prince of Monaco.

LIST OF PARTICIPANTS LISTE DES PARTICIPANTS

DELEGATES FROM MEMBER STATES DELEGUES DES ETATS MEMBRES

For the **Heads of Delegations** see in bold / *En gras les Chefs de délégation*

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Valentín ALEJANDRO SANZ RODRIGUEZ	Head of delegation / <i>Chef de délégation</i>
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IHO Directors / Directeurs de l'OHI

Abri KAMPFER

Luigi SINAPI

IHO Assistant Directors / Assistants aux Directeurs de l'OHI

Yong BAEK

Yves GUILLAM

Leonel MANTEIGAS

David WYATT

Members of Staff / Membres du personnel

Isabelle BELMONTE

Perrine BRIEDA

Lorène CHAVAGNAS

Caroline FONTANILI

Isabelle ROSSI

Sarah JONES COUTURE

Jeff WOOTTON

AGENDA

Item	Time (CET / UTC+1)	Date / Description	Document
		Thursday 12 November	
	12:30 – 13:30	Technical testing of communication infrastructure (GoToWebinar system)	
	13:30-14:45	Finance Committee Meeting	
FC-1	13:30-13:35	<i>Opening of the meeting</i>	
FC-2		<i>Adoption of the Agenda</i>	
FC-3	13:35-13:50	<i>The Financial report for the term 2017 – 2019</i>	A2_2020_F_01_EN A2_2020_F_02_EN
FC-4	13:50-14:00	<i>Implementation of the budget for 2020</i>	C4-05.1A
FC-5	14:00-14:15	<i>The 3 years' budget 2021 – 2023</i>	A2_2020_G_03_EN Proposal 1.7
FC-6	14:15-14:25	<i>The annual budget for 2021 to be proposed to the Council for approval</i>	C4-05.3A
FC-7	14:25-14:35	<i>Election of the Chair and Vice-Chair for the term 2020 - 2023</i>	FCCL02/2020
FC-8	14:35-14:45	<i>Report to Assembly – Closure of the meeting</i>	A2_2020_F_02_EN (tbd)
	14:45-15:00	Break	

General Information

Item	Time (CET / UTC+1)	Date / Description	Document
		Thursday 12 November	
	15:00-15:30	Heads of delegation meeting	
		<i>SG welcomes Member States, introduces the Assembly Chair and explains the format and procedures of the Assembly session as a remote event</i>	ACL 26/2020
		<i>Designation of the Vice-Chair of the Assembly</i>	ACL 27/2020
		<i>General overview of the Agenda</i>	ACL 29/2020 Rev1
		<i>Records of the Session, circulation of documents, role of Rapporteurs</i>	ACL 30/2020
		<i>Any other business</i>	ACL 31/2021 A2_2020_G01_EN
		<i>Group photo</i>	

Item	Time (CET / UTC+1)	Date / Description	Document
		Monday 16 November	
	12:45-13:15	Communication testing	
	13:15-16:30	Assembly Session No. 1	
1	13:15-13:35	Opening remarks	
		<i>Welcome address by the Chair of the Assembly</i>	
		<i>Assembly Opening Address by HSH Prince Albert II of Monaco</i>	Recorded video
		<i>Address by the Secretary-General</i>	
		<i>Adoption of the Agenda</i>	A2_2020_G01_EN
2	13:35-13:45	<i>Assembly Chair (AC) briefs participants on the list of ex post facto Assembly decisions in view of the List of Proposals to A-2</i>	List of Proposals to A-2 ACL30/2020 Annex B A2_2020_G_10_EN

General Information

Item	Time (CET / UTC+1)	Date / Description	Document
3	13:45-14:15	<i>Council Chair presents Council report</i>	A2_2020_G_05_EN
	14:15-14:45	<i>AC refers to the Red Book and calls for additional comments</i>	A2_2020_G_02_EN
	14:45-15:00	Break	
4	15:00-15:30	<i>REVISED STRATEGIC PLAN update: Council Chair supported by Chair SPRWG briefs the audience</i>	A2 - Proposal 1.8 Decision A2/12 - ACL27/2020
	15:30-15:45	<i>AC refers to the Red Book and calls for additional comments</i>	A2_2020_G_02_EN
5	15:45-16:15	<i>S-23: Secretary-General briefs on his report on the informal consultation process for the future of the publication</i>	A2 - Proposal 1.9
	16:15-16:30	<i>AC refers to the Red Book and calls for additional comments – End of Session 1</i>	A2_2020_G_02_EN
	16:30-16:35	<i>Group photo</i>	

Tuesday 17 November			
	13:00-13:15	Communication testing	
	13:15-16:30	Assembly Session No. 2	
6	13:15-13:30	<i>Update on HSSC: HSSC Chair briefs the audience on the outcome of the recent HSSC meeting in October 2020</i>	A2_2020_G_05.A_EN
	13:30-13:45	<i>AC calls for comments</i>	
7	13:45-14:30	<i>S-100 Implementation Strategy - PRO 2.1, PRO 2.2 and PRO 2.3: AC refers to the three Proposals and related Red Book comments</i>	A2 - Proposals 2.1, 2.2 and 2.3 A2_2020_G_02_EN
	14:30-14:45	<i>AC calls the Secretariat and others for additional comments</i>	A2 - Proposals 2.1, 2.2 and 2.3
	14:45-15:00	Break	

General Information

8	15:00-15:30	<i>Update on IRCC: IRCC Chair briefs the audience on the outcome of the recent IRCC meeting in October 2020</i>	A2_2020_G_05.B_EN
9	15:30-16:00	<i>S-100 Implementation Strategy consolidation</i>	A2 - Proposals 2.1, 2.2 and 2.3
10	16:00-16:30	<i>PRO 3.3: AC calls for comments and refers to PRO 3.3 and related Red Book comments – End of Session 2</i>	A2 - Proposal 3.3 A2_2020_G_02_EN

Wednesday 18 November			
	12:45-13:15	Communication testing	
	13:15-16:30	Assembly Session No. 3	
11	13:15-13:45	<i>IHO Secretariat briefs the audience on significant issues and updates raised by the RHC and HCA reports and refers to the application process of the IHO Resolution 2/1997 as amended by A-2</i>	A2_2020_G_06_EN A2 - Proposal 3.1
	13:45-14:30	AC calls for comments	A2_2020_G_06_EN A2 - Proposal 3.1
12	14:30-15:00	<i>Finance Committee report: Secretary-General as Finance Committee Secretary comments on the outcomes of the Finance Committee Meeting.</i>	A2_2020_G_03_EN_Rev1 A2_2020_F_01_EN A2_2020_F_02_EN A2_2020_F_03_EN
	15:00-15:15	Break	
13	15:15-15:30	<i>Secretary-General presents the IHO Work Programme and Budget 2021-2023</i>	A2 - Proposal 1.7
	15:30-15:45	<i>AC calls for comments on the IHO Work Programme and Budget 2021-2023</i>	A2 - Proposal 1.7
14	15:45-15:50	<i>AC proposes</i> - a resolution expressing gratitude to the Host country, - adoption of the Seating Order of A-2 to be applied for A-3	A2_2020_G_08_EN_Rev1

General Information

15	15:50-16:20	<i>AC review the List of Actions</i>	
16	16:20-16:30	<i>Date of the 3rd Assembly Session 2023 – Closure of the Assembly</i>	

OFFICERS OF THE 2nd SESSION OF THE IHO ASSEMBLY

Chair of the Assembly Captain Marc van der Donck (Netherlands)

Vice-Chair of the Assembly Ms Pia Dahl Højgaard (Denmark)

RAPPORTEURS TO THE 2nd SESSION OF THE IHO ASSEMBLY

Date	Rapporteur
16 November. - 1 st Part	Jeff Wootton (IHO)
16 November. - 2 nd Part	David Wyatt (IHO)
17 November - 1 st part	Jeff Wootton (IHO)
17 November - 2 nd part	David Wyatt (IHO)
18 November - 1 st part	Jeff Wootton (IHO)
18 November - 2 nd part	Jeff Wootton (IHO)

OPENING ADDRESSES

OPENING AND WELCOME ADDRESSES

1. The Chair of the Assembly, Captain Marc van der Donck
 2. His Serene Highness Prince Albert II of Monaco
 3. The Secretary-General of the IHO, Dr. Matthias Jonas
-

WELCOME ADDRESS BY THE CHAIR OF THE ASSEMBLY

Captain Marc van der Donck
(Netherlands)

Dear Hydrographers, dear colleagues and dear friends,
Good morning, Good afternoon and Good evening.

Welcome to the 2nd IHO Assembly.

In August 2017 I was in New York attending the UN-GGIM, and more specifically the UN-GGIM MGIWG. Robert Ward our previous Secretary-General had been pushing us to get involved with the UN-GGIM so that the initiative's and activities of the MGIWG and the IHO remained joined up.

It proved to be interesting to see the UN at work and to be able to roam the building as a Hydrographic tourist.

It was also an enjoyable time with John Nyberg of NOAA hosting the small IHO-crowd. Amongst others we visited KATZ's Deli for the ultimate pastrami sandwich and MC' Sorleys Old Ale house for its famous home brews (and happy hour).

It was there in Greenwich Village that Secretary-General Mathias Jonas surprised me by asking if I would be available as a candidate for chairing the 2nd IHO Assembly. As I'm not a hydrographer by trade, I felt honored and proud by his request. I answered I would be ready if needed.

Today, I still feel honored and proud. I hope I will honour the trust you put into me for chairing the 2nd IHO Assembly. After all I'll chair the 2nd IHO Assembly on behalf of you, the Member States.

Needless to say that the 2nd IHO Assembly has turned out differently than I anticipated when the Secretary-General and I talked about it in New York. Unfortunately, COVID-19 is among us. So, the 2nd IHO Assembly is now a combination of this remote event and a series of proposals already agreed upon through Assembly Circular Letters. It' is a novum not earlier foreseen in our General Regulation and in our Rules and Procedures, but made fit to circumstances, an example being my own confirmation as Chair by Assembly Circular Letter 30.

So here we are. All in a different time zone, all in a different stage of our biorhythm. Here in Monaco we are just after lunch. Those who have been in Monaco know that this be a serious issue with the after lunch dip.

Be that as it may, we still have considerable work to do. One could say the most important or hardest bits are kept till last.

We are going to decide on the Revised Strategic Plan. Its Goals and Targets are going to guide our work for the next 5 years. It is now more SMART than the previous plan with emphasis on how we are going to measure our success and on what the role of the Council is with regards to the calculation of performance indicators.

We are going to decide on the S-100 roadmap for the S-100 implementation decade. When I put it a bit more dramatically, we are going to decide how the IHO can remain relevant in the coming decade. Also here we are going to determine the role of the Council in maintaining the roadmap.

We are going to decide on work plan and budget. Again we going are to look at the role of the Council. Are more tools needed for the Council?

We are going to decide on a proposal by the Secretary-General on the future of S23. This is the direct result of the 1st IHO Assembly in which we tasked the Secretary-General to facilitate

an informal consultation process amongst interested Member States. Last Thursday at the Head of Delegations meeting, the Secretary-General explained the technical mechanics of the 2nd IHO Assembly. I just want to add that besides procedures, it is also the spirit in which we conduct our Assemblies that is a key factor for success. I have always found that we respected each other's opinion and professionalism. And I have always enjoyed our good will to reach a collective conclusion keeping the end users of our data and products in mind. So, let's maintain this cooperative spirit also during this different but still important Assembly.

Lastly, one other key factor for the success of the IHO, is the unwavering support by the Principality of Monaco. It gives me therefore great pleasure to introduce HSH Prince Albert II who will give his opening address to our Assembly by video message.

**OPENING ADDRESS BY
HIS SERENE HIGHNESS PRINCE ALBERT II OF MONACO**

Ladies and Gentlemen,
Counsellors and Ministers of the Government,
Excellencies, Secretaries-General, Chair of the Assembly,
Distinguished Delegates,
Ladies and Gentlemen,
Dear Friends,

Due to have taken place in April in the Principality of Monaco, this second IHO's General Assembly which brings us together today - via videoconference or recorded video messages - is of particular importance. This General Assembly is held at a time when we need to join forces and work more closely together than ever before with regard to the challenges all countries are facing today. I regret the format of this meeting has to be via video-conference but am happy to welcome you, even from a distance. Obviously, we would have all preferred to be physically present, but health obligations have forced us to make adjustments.

As we all know, nearly 70% of our planet is covered by ocean. As such, the world is ever increasingly looking to this major portion of the planet for its resources but also, fortunately, for its prosperity and its protection. This is the reason why "Blue growth" and "Blue economy" are now part of the common vernacular. To achieve the possibility of merging those two concepts in a sensible and sustainable way requires cooperation at local, national, regional and international levels. Indeed, seas and oceans know no boundaries as one flows into another and each one is affected by the other. This is the reason why agreed principles drafted with international consensus are required to balance national and regional interests.

The age of internationalism which advocates greater political or economic cooperation among Nations and people, is based on a framework of international Treaties and international Institutions to apply and further develop collective intentions. In contrast to the impression that one may garner from the daily news, such international cooperation has continuously grown in all fields – not least in the maritime domain. The achievements accomplished by the International Hydrographic Organisation are a sign of the role and necessity of this lasting notion of multilateralism for technical consultations.

The IHO was founded in this spirit almost 100 years ago, but it is just as relevant today as it was at the time of My great-great-grandfather Prince Albert I, who invited the International Hydrographic Bureau – predecessor of the International Hydrographic Organisation – to set up its headquarters here in Monaco in 1921, where it has remained ever since. In the beginning, the IHO's work focused on safety at sea. Thanks to this coordinated approach, navigational publications such as nautical charts and sailing directions use standardised cartographic symbols and expressions to display information identically wherever they originate from. This work and its developments over the years have successfully evolved into the digital era.

In fact, while people often think of hydrography as a static discipline, with experts just making nautical charts, it is actually much more than that. As the oceans are changing because of weather, currents and also natural events or alterations that affect the planet, such as seafloor spreading through volcanic activity, hydrographic information is constantly evolving. As such, surveying and mapping the sea is a never-ending task. There is still a lot of work to be done to increase the coverage, standardisation and sharing of hydrographic data. It is true that IHO is primarily an organisation focused on technical aspects. But this is only one side of it. In

order to do hydrographic work, qualified people are needed. IHO is hugely engaged with Member States helping to build capacity and train people from their country so they have the knowledge and skills to carry out these tasks.

Over the years, hundreds of students have learned the principles of sea surveys and cartography thanks to IHO standardised courses. This coordinated approach has helped to create a global network of alumni with the capacity to carry out and carry on this important work within their countries. The GEBCO alumni's team, which won the Shell Ocean Discovery X-Prize last year, is a wonderful acknowledgement of the very high quality of the training offered through IHO and also the brilliant dedication of these young professionals. They represent our collective hope for the next generation who will face great challenges in terms of population growth, parallel to which there is a compelling need for a more sustainable use of natural resources. This will require improved collaboration as well as progress in technology. Fortunately, I am happy to say that IHO is uniquely organised to support both of these requirements in the area of hydrography.

In order to use marine resources, whilst also preserving the marine environment, accurate information is essential. It is by capitalising on oceanic parameters that it will be possible for instance to develop efficient marine renewable energy, improve productivity for fisheries and aquaculture, and the list goes on. The marine environment is constantly changing, whether due to variations in the climate, extreme environmental events, human activities, or simply the natural flow of tides and currents. The development of a sustainable Blue Economy, the preservation of the marine environment, the prevention of maritime hazards and climate change are all driving the need for up-to-date marine data to support decision making. All activities which relate to the oceans will be impacted and will need to adjust if the marine environment continues to change as trends seem to indicate.

As such, hydrographic data, created according to international standards, enables countries to monitor alterations or modifications in order to adapt their activities. It is highly important to bear in mind that the sea is a great unifier of people. Not only does it link people who share the same resources, it also links their past and their future. Preserving this link requires showing respect and acting responsibly towards the sea to which we all owe so much. The IHO is the essential Organisation for the maintenance of our collective aspirations in the field. This is the reason why it is with great pleasure that I declare the second session of the Assembly open.

I encourage the Assembly to conduct its work in the same constructive and friendly tradition initiated by the «Hydrographic Club» and to continue its contribution to the sustainable management of the oceans, seas and navigable waters.

Thank you.

**ADDRESS BY THE SECRETARY-GENERAL
OF THE INTERNATIONAL HYDROGRAPHIC ORGANIZATION**
Dr Mathias Jonas

Excellencies,
Chair of the Assembly,
Distinguished Delegates
Ladies and Gentlemen,

I would like to begin by quoting part of Article V of the IHO Convention: *“The Assembly is the principal organ and shall have all the powers of the Organization ...”*. This phrasing leaves no doubt that sessions of the Assembly are the most important events of the IHO, at which Member States can express their views and make decisions. These decisions should be based on a common understanding which therefore requires us to explain, to reach a certain level of consensus, and then to enact the decisions in an appropriate manner.

However, in addition to the formalities, the Assembly gives us the opportunity to reflect on what has been achieved over the past three years, to agree on the current state and to use it as a basis for future initiatives. The Assembly is committed to two principles: democracy through the rules of the Convention and diplomacy through the way it is conducted. It is a perfect example of these two pillars of multilateralism in action; multilateralism being the principle on which the Convention of the IHO is based.

The IHO was founded on the notions of collaboration and mutual respect, understanding and support. It focuses on technical solutions in a politically complicated world. The Assembly is not just an instrument that produces good solutions when operated correctly; it also provides a forum at which people can work together on behalf of their nations. This cooperation thrives on lively and direct exchanges. We see this when addressing agenda items, in the ritualised procedures, but also in the encounters before, during and in parallel to the official discussions. We all know how important this informal aspect is.

Sadly, these exchanges are not possible in this Assembly session. This is unfortunate as they would have given us - beside all the agenda topics and issues - the opportunity to review the nearly one-hundred-year history of the organisation. I am grateful to His Serene Highness for highlighting this history in his opening speech. However, complaining about the current situation does not help, we must adapt to the circumstances and make the best of it.

In addition to the formal process of working through the agenda, this Assembly session, as I see it, has three important functions: First, to show that, even under difficult circumstances, we can continue moving forwards on initiatives we have identified as essential. Second, to strengthen the cohesion of hydrographic services around the world, and third, to demonstrate our firm conviction that hydrography can contribute to addressing future global maritime challenges. The fact is, hydrographic action is not restricted to accurate surveys and charting; we can and should contribute to global discussions on the ocean, we will get noticed much better if we speak with a collective voice, we will make a difference if we act collectively towards a common goal. The IHO shall be our platform of choice for these endeavours.

Under my leadership, the Secretariat will do everything possible to maintain the IHO operations during these difficult times.

But, to be frank, this is not enough. To make our renewed strategic aspirations a reality we need your ideas and resources, whether these be financial or human; we need your strategic foresight, we need your engagement in all the committees, working groups and project teams and, most important, we need your strong will for international cooperation on all aspects of hydrography.

**PROPOSALS SUBMITTED
TO THE 2nd SESSION OF THE IHO ASSEMBLY**

**PROPOSALS SUBMITTED FOR CONSIDERATION BY
THE 2nd SESSION OF THE IHO ASSEMBLY**

PROPOSAL No.	OBJECT OF THE PROPOSAL	SUBMITTED BY	WORK PROGRAMME
1.1	Interpretation of some articles in Basic Documents of the IHO	IHO Council	1
1.2	Revision of Articles 14, 15, 20 and 25 of the General Regulations of the IHO	IHO Council	1
1.3	Revision of Clause (c) of Article 16 of the General Regulations of the IHO – Hydrographic Interest	IHO Council	1
1.4	Revision of Clause (c) of Article 16 of the General Regulations of the IHO – Hydrographic Interest (Bis) – [Original title: Reconsideration of the definition of what constitutes “an interest in hydrographic matters” or “hydrographic interests”]	Uruguay	1
1.5	Consideration on the Definition of Hydrographic Interests (Ter)	India	1
1.6	Revision of Rule 12 of the Rules of Procedure of the IHO Council and consequence on Rules 8 and 11 - Timing of Election of the Chair and Vice-Chair	IHO Council	1
1.7	3-year Work Programme and Budget 2021-2023	IHO Council	1
1.8	Revised Strategic Plan	IHO Council	1
1.9	Report on the informal consultation process for the future of S-23	Secretary-General	1
1.10	Establishing an IHO strategy and resolution for gender-inclusive language	Canada & Japan	1
2.1	S-100 Implementation Strategy	IHO Council	2
2.2	Conducting a Risk Assessment on the “Dual Fuel” Mode of ECDIS for S-57 ENC and S-101 ENC, Providing More Specific Guidance on its Implementation	China	2
2.3	Revision of IHO Resolutions following the Introduction of S-100	Republic of Korea	2
2.4	Establishing a joint IHO-Singapore Innovation and Technology Laboratory	Singapore & United States of America	2
3.1	Revision of the IHO Resolution 2/1997 - Establishment of Regional Hydrographic Commissions (RHC)	IHO Council	3
3.2	Revision of the IHO Resolution 1/2005 - IHO Response to Disasters	IHO Council	3
3.3	Establishing an IHO e-Learning Center	Republic of Korea	3

PROPOSAL N°	OBJECT OF THE PROPOSAL	SUBMITTED BY	REFERENCE
1.1	Interpretation of some articles in Basic Documents of the IHO	IHO Council	1

- References** : A. Convention on the IHO.
 B. General Regulations of the IHO.
 C. Rules of Procedures of the IHO Council.
 D. 3rd Meeting of the Council – Summary Report.

PROPOSAL

After having considered Article VI (g)(ii) of the Convention on the IHO and Rule 8(i) of the Rules of Procedure of the Council in common, the Assembly is invited:

- **to approve the interpretation that the Council has the authority to request and consider proposals submitted by Member States or the Secretary-General.**

Noting the endorsement of the Council, the Assembly is invited:

- **to confirm that the Council is entitled to propose amendments to the General Regulations of the IHO for Member States' approval.**

EXPLANATORY NOTE

1. At the 1st meeting of the Council (C-1) in October 2017, the United Kingdom introduced a possible conflict between the Convention on the IHO and the Council Rules of Procedure, noting that Article VI of the Convention does not *specifically* state that it is a function of the Council to review, consider, or take any other action on proposals presented by Member States or the Secretary-General.

2. At the 2nd meeting of the Council (C-2) in October 2018, the United States of America provided a thorough legal analysis of the arguments (Doc. C2-7.4INF refers). The Council subsequently agreed that there was indeed no conflict regarding the Rule of Procedure 8(i) of the Council and the Article VI (g)(vii) of the Convention on the IHO. This interpretation was supported by the United Kingdom.

3. The Council agreed to seek the formal approval of the Assembly on this interpretation (Reference D, Decision C3/17).

4. At the 3rd meeting of the Council, while considering proposed amendments to the General Regulations of the IHO, the Council agreed (Reference D, Decision C3/07) that the functions of the Assembly are “...to decide on any proposal put to it by any Member State, the Council or the Secretary-General...” (Art. V.e.(viii) of the Convention of the IHO), such as amendments to the General Regulations for instance, as these General Regulations are not part of the Convention itself (Art. XI of the Convention). However, the Council noted that “*Decisions taken on...including amendments to the General Regulations...shall be taken by a 2/3 majority of Member States present and voting.*” (Art. IX.d of the IHO Convention).

5. Confirmation of this interpretation is requested from the Assembly, prior to the consideration of PRO-1.2 related to Article 20 (Medical Fitness of Candidates for Election of Secretary-General and Directors) and PRO-1.3 related to Article 16 (Hydrographic Interests) of the General Regulations of the IHO.

LIST OF MEMBER STATES' COMMENTS

BRAZIL

Brazil supports this proposal.

CANADA

Canada endorsed the interpretation approved by the IHO Council.

DENMARK

Denmark supports this proposal.

FINLAND

Finland supports the proposal.

JAPAN

Japan supports this proposal.

NETHERLANDS

The Netherlands supports both elements of this Proposal.

NORWAY

Norway supports this proposal

SWEDEN

Sweden supports this proposal

UNITED KINGDOM

The UK supports Council's interpretation on the matter and fully supports the amendments to the General Regulations.

UNITED STATES OF AMERICA

The U.S. supports the proposal. This interpretation empowers the Council to streamline basic decision-making of the IHO. This will greatly enhance the Council's effectiveness and ability to respond to operational, practical, and general considerations in a timely manner.

PROPOSAL N°	OBJECT OF THE PROPOSAL	SUBMITTED BY	REFERENCE
1.2	Revision of Articles 14, 15, 20 and 25 of the General Regulations of the IHO	IHO Council	1

- References** : A. General Regulations of the IHO.
- B. M-3, IHO Resolution 9/1967 as amended – *Procedure for election of a Secretary-General or Director by correspondence*.
- C. IHO Publication M-7 edition 8.0.0 – *Staff Regulations*.
- D. 3rd Meeting of the Council – Summary Report.

PROPOSAL

Noting the endorsement by the Council, the Assembly is invited:

- to approve the proposed revision of Articles 14, 15, 20 and 25 of the General Regulations of the IHO as presented in Annex A (red-line version) and B (clean version).

EXPLANATORY NOTE

- Article 14 of the General Regulations sets the date on which a Secretary-General elected at an ordinary session of the Assembly shall assume duties. There is no similar provision for the Directors. Similarly, the provisions related to incapacitation in Article 15 apply only to the Secretary-General, although this article is under the heading “Secretary-General and Directors”.
- It is proposed to amend Articles 14 and 15 of the General Regulations in order to extend to the Directors the provisions currently applicable only to the Secretary-General and to move Article 14 under the heading “Secretary-General and Directors”.
- Under the terms of Regulation 5.4 of the Staff Regulations (Reference E), all Members of the IHO Secretariat seeking appointment, except the Secretary-General and Directors, are required to provide a medical certificate indicating that the candidate ... *is free from any defect or disease likely to interfere with the proper discharge of their duties*.
- Article 20 of the General Regulations sets out the information that must be provided as part of the nomination process for the position of Secretary-General and of Directors. It is proposed to include an additional requirement that requires candidates to provide, as part of their nomination, certification by a duly qualified medical practitioner that they are medically fit in the same way as is required of other prospective Members of Staff.
- The provisions applicable if the post of Secretary-General falls vacant during the period between two ordinary sessions of the Assembly are now available in the IHO Resolution 9/1967 as amended. These provisions give the evidence that the process for electing a new Secretary-General by correspondence when the post falls vacant more than one year before the next ordinary session of the Assembly may take up to six months. Noting the importance of the role of the Secretary-General as head of the Secretariat, it appears necessary to ensure the continuity of the function. Therefore, it is proposed to further amend Article 25 (c) of the General Regulations in order to include a provision similar to the provision applicable when the post falls vacant one year or less before the next ordinary session of the Assembly so that one of the Directors be appointed as Acting Secretary-General until a new Secretary-General elected by correspondence takes up the appointment.

6. The initial intention to apply gender-neutrality language in these proposed amendments was not retained by the Council at this stage.
7. The proposed amendments, as provided in Annexes A and B, have been endorsed by the Council (Reference D, Decision C3/08).

Red-line version

Proposed amendments to Articles 14, 15, 20 and 25 of the General Regulations

Proposed changes shown in red / ~~red~~

Secretary-General and Directors

ARTICLE 14

A Secretary-General or a Director elected at an ordinary session of the Assembly shall assume his/her duties on the following 1 September. The duties of his/her predecessor shall terminate on 31 August.

Secretary-General and Directors

ARTICLE 15

A Secretary-General or a Director who has been incapacitated for duty for six consecutive months, or otherwise for an aggregate of twelve months, during his/her term of office shall automatically cease to be Secretary-General or Director.

ARTICLE 20

(a) Each nomination shall indicate whether it is for the post of Secretary-General or Director or for both posts, and shall include a statement detailing the candidate's qualifications. The following specific information should be provided:

- nominating Member State;
- name;
- nationality;
- date of birth;
- titles and decorations;
- education (periods including specialized or special qualifications);
- languages (speaking and reading capacity);
- all service and experience relevant to the nomination and which provide an indication of the extent to which the candidate is qualified to serve as Secretary-General or Director;
- candidate's Position, which should include, but is not limited to, the candidate's vision of the importance of hydrography and cartography, of the role of the IHO and of the objectives and approach envisaged to best advance the priorities of the Organization as established by the Member States; and
- such additional information as may be relevant;

(b) Each nomination shall be signed by the candidate and by a representative of the nominating Member State.

(c) Each nomination shall include a medical certificate issued by a duly qualified medical practitioner stating that the candidate is free from any defect or disease likely to interfere with the proper discharge of their duties. In the event that such a certificate cannot be provided the nomination will not be accepted.

ARTICLE 25

Notwithstanding Article 17, if the post of the Secretary-General or of any Director falls vacant during the period between two ordinary sessions of the Assembly the following provisions shall apply.

- (a) If the post of Secretary-General falls vacant one year or less before the opening day of the next ordinary session of the Assembly the Council shall appoint one of the Directors as Acting Secretary-General until the 31 August following the next ordinary session of the Assembly.
- (b) If any post of Director falls vacant one year or less before the opening day of the next ordinary session of the Assembly, including where such a post falls vacant due to the operation of Article 25 (a) above, no replacement shall be appointed before the next ordinary session of the Assembly.
- (c) If the post of Secretary-General falls vacant more than one year before the opening day of the next ordinary session of the Assembly, the Council shall appoint one of the Directors as Acting Secretary-General until a new Secretary-General elect takes up his/her duties. ~~a~~A new Secretary-General shall be elected by correspondence in accordance with the principles set forth in Articles 17 to 23. In such a case the Chair of the Council, with the support of the Secretariat, shall conduct the election by postal ballot, immediately notify Member States of the result and invite the Secretary-General to take up his/her duties.
- (d) If any post of Director falls vacant more than one year before the opening day of the next ordinary session of the Assembly a new Director shall be elected by correspondence in accordance with the principles set forth in Articles 17 to 23. In such a case the Secretary-General shall conduct the election by postal ballot, immediately notify Member States of the result and invite the Director to take up his/her duties.
- (e) The term of office of any Secretary-General or Director elected in accordance with Articles 25 (c) or (d) above shall end at the same time as would have his/her predecessor's.

Clean version

Proposed amendments to Articles 14, 15, 20 and 25 of the General RegulationsSecretary-General and Directors

ARTICLE 14

A Secretary-General or a Director elected at an ordinary session of the Assembly shall assume his/her duties on the following 1 September. The duties of his/her predecessor shall terminate on 31 August.

ARTICLE 15

A Secretary-General or a Director who has been incapacitated for duty for six consecutive months, or otherwise for an aggregate of twelve months, during his/her term of office shall automatically cease to be Secretary-General or Director.

ARTICLE 20

- (a) Each nomination shall indicate whether it is for the post of Secretary-General or Director or for both posts, and shall include a statement detailing the candidate's qualifications. The following specific information should be provided:
- nominating Member State;
 - name;
 - nationality;
 - date of birth;
 - titles and decorations;
 - education (periods including specialized or special qualifications);
 - languages (speaking and reading capacity);
 - all service and experience relevant to the nomination and which provide an indication of the extent to which the candidate is qualified to serve as Secretary-General or Director;
 - candidate's Position, which should include, but is not limited to, the candidate's vision of the importance of hydrography and cartography, of the role of the IHO and of the objectives and approach envisaged to best advance the priorities of the Organization as established by the Member States; and
 - such additional information as may be relevant;
- (b) Each nomination shall be signed by the candidate and by a representative of the nominating Member State.
- (c) Each nomination shall include a medical certificate issued by a duly qualified medical practitioner stating that the candidate is free from any defect or disease likely to interfere with the proper discharge of their duties. In the event that such a certificate cannot be provided the nomination will not be accepted.

ARTICLE 25

Notwithstanding Article 17, if the post of the Secretary-General or of any Director falls vacant during the period between two ordinary sessions of the Assembly the following provisions shall apply.

- (a) If the post of Secretary-General falls vacant one year or less before the opening day of the next ordinary session of the Assembly the Council shall appoint one of the Directors as Acting Secretary-General until the 31 August following the next ordinary session of the Assembly.
- (b) If any post of Director falls vacant one year or less before the opening day of the next ordinary session of the Assembly, including where such a post falls vacant due to the operation of Article 25 (a) above, no replacement shall be appointed before the next ordinary session of the Assembly.
- (c) If the post of Secretary-General falls vacant more than one year before the opening day of the next ordinary session of the Assembly, the Council shall appoint one of the Directors as Acting Secretary-General until a new Secretary-General elect takes up his/her duties. A new Secretary-General shall be elected by correspondence in accordance with the principles set forth in Articles 17 to 23. In such a case the Chair of the Council, with the support of the Secretariat, shall conduct the election by postal ballot, immediately notify Member States of the result and invite the Secretary-General to take up his/her duties.
- (d) If any post of Director falls vacant more than one year before the opening day of the next ordinary session of the Assembly a new Director shall be elected by correspondence in accordance with the principles set forth in Articles 17 to 23. In such a case the Secretary-General shall conduct the election by postal ballot, immediately notify Member States of the result and invite the Director to take up his/her duties.
- (e) The term of office of any Secretary-General or Director elected in accordance with Articles 25 (c) or (d) above shall end at the same time as would have his/her predecessor's.

LIST OF MEMBER STATES' COMMENTS

BRAZIL

Brazil supports this proposal

CANADA

Canada endorses the proposed revisions as endorsed by the IHO Council.

DENMARK

Denmark supports this proposal

FINLAND

Finland supports the proposal.

JAPAN

Japan endorses this proposal, with one suggestion for the article 25. Japan would suggest that one of two Directors, who has elected first, should be appointed as Acting Secretary-General for the vacancy of the post.

NETHERLANDS

The Netherlands supports this Proposal.

NORWAY

Norway supports this proposal

SWEDEN

Sweden supports this proposal

UNITED KINGDOM

The UK fully supports the amendments to Articles 14, 15 and 25 but has reservations with the suitability of certain words in Article 20. The terminology (particularly 'defect' and 'disease') is somewhat archaic but that aside, this particular term would likely infringe the Disability Discrimination Act were the Convention subject to UK law, as there is no provision to make reasonable adjustment(s), in the event someone has a disability. Substituting 'defect or disease' for 'condition' may make it more palatable but it still remains somewhat discriminatory in nature.

SECRETARY-GENERAL`S RESPONSE OF MEMBER STATES COMMENTS

In order to address Japan`s proposal

that one of two Directors, who has elected first, should be appointed as Acting Secretary-General for the vacancy of the post.

As a result of the variation of terms of six or three years of service for Directors under the revised convention, the ascertainment of the Director "who was elected first" is not unambiguous.

In order to address United Kingdom`s comment

on the discriminatory attitude of the wording;

The Secretariat proposes a revised wording for ARTICLE 20, Clause (c):

Each nomination shall include a medical certificate issued by a duly qualified medical practitioner stating that the candidate presents no apparent symptom likely to interfere with the proper discharge of their duties. In the event that such a certificate cannot be provided the nomination will not be accepted.

PROPOSAL N°	OBJECT OF THE PROPOSAL	SUBMITTED BY	REFERENCE
1.3	Revision of Clause (c) of Article 16 of the General Regulations of the IHO – Hydrographic Interest	IHO Council	1

- References** : A. Convention on the IHO.
 B. General Regulations of the IHO.
 C. IHC-17 – “Report of the IHO SPWG 2005-2006” (Paragraph 6 in Doc.[CONF.17/DOC.1](#) on the definition of Hydrographic Interests).
 D. 2nd and 3rd Meeting of the Council – Summary Reports.

PROPOSAL

Noting the endorsement by the Council, the Assembly is invited:

- to approve the proposed revision of Article 16 of the General Regulations of the IHO as presented in Annex A (red-line version) and B (clean version).

Noting the report of the Strategic Planning Working Group given at the 17th International Hydrographic Conference (IHC-17, 2007), the Assembly is invited:

- to provide guidance on the objectives, ways, priorities on the work to be conducted by the Council on the definition of hydrographic interests, if deemed appropriate.

EXPLANATORY NOTE

1. The establishment of the Council is covered in Article VI of the Convention on the IHO. It is further described in Article 16 of the General Regulations.

2. In describing the composition of the Council, clause (a) of Article VI of the Convention on the IHO states:

One fourth of, but not less than thirty, Member states shall take seats on the Council, the first two thirds of whom shall take up their seats on a regional basis and the remaining one third on the basis of hydrographic interests, which shall be defined in the General Regulations.

3. Clause (c) of Article 16 of the General Regulations then states, among other things:

*The remaining one-third of the Council seats shall be held by Member States that have the greatest interest in hydrographic matters and have not been selected under the procedure described in sub-paragraph (b) above. The definition of what constitutes an interest in hydrographic matters **shall be reconsidered at the latest at the second Assembly meeting**. Meanwhile, the scale by which an interest in hydrographic matters is measured shall be national flag tonnage. ...*

4. At its 3rd meeting, the Council agreed, as a first step, to change the General Regulations to remove any requirement for matters to be determined by A-2 and that hydrographic interests remains defined by tonnage. (Reference D, Decision C3/10). The subsequent amended Clause (c) of Article 16 of the General Regulations is provided in Annexes A and B.

5. At the 3rd meeting of the IHO Council, it was also reminded (Reference D, Decision C3/11) that there was no linkage between Council membership (defined in General Regulations) and Assembly voting and dues assessment (Art IX (b) and XIV (a) of the IHO Convention refer).

6. Noting the mixed opinions on the value of the reconsideration of the definition of Hydrographic Interests shared at the 3rd meeting of the IHO Council (Reference D, Decision C3/11), the Assembly is invited to provide guidance to the Council on the matter, if appropriate (Reference D, Action C2/08).

Red-line version**Clause (c) of Article 16 of the General Regulations**

The remaining one-third of Council seats shall be held by Member States that have the greatest interest in hydrographic matters and have not been selected under the procedure described in subparagraph (b) above. ~~The definition of what constitutes an interest in hydrographic matters shall be reconsidered at the latest at the second Assembly meeting.~~ Meanwhile, The scale by which an interest in hydrographic matters is measured shall be national flag tonnage. The table of national flag tonnages is derived in accordance with the procedures set forth in Articles 5 and 6 of the Financial Regulations. The Secretary-General shall determine which Member States will hold this one third of Council seats by identifying them in descending order of their national flag tonnages, referring to the table of current national flag tonnages produced in accordance with Article 6 (a) of the Financial Regulations, and by having ascertained the willingness of each of them to hold a seat on the Council.

Clean version

Clause (c) of Article 16 of the General Regulations

The remaining one-third of Council seats shall be held by Member States that have the greatest interest in hydrographic matters and have not been selected under the procedure described in subparagraph (b) above. The scale by which an interest in hydrographic matters is measured shall be national flag tonnage. The table of national flag tonnages is derived in accordance with the procedures set forth in Articles 5 and 6 of the Financial Regulations. The Secretary-General shall determine which Member States will hold this one third of Council seats by identifying them in descending order of their national flag tonnages, referring to the table of current national flag tonnages produced in accordance with Article 6 (a) of the Financial Regulations, and by having ascertained the willingness of each of them to hold a seat on the Council.

LIST OF MEMBER STATES' COMMENTS

CANADA

Notwithstanding its comments regarding PRO 1.4 and PRO 1.5, Canada concurs with this proposal.

CHILE

We would support keeping actual criteria.

DENMARK

Denmark supports the proposed revision of Article 16 of the General Regulations of the IHO as presented in Annex A

FINLAND

Finland supports the proposal.

FRANCE

Revision of Clause (c) of Article 16 of the General Regulations of the IHO - Hydrographic interests

See comments on proposals N° 1.4 and 1.5.

Article 16 of the IHO's General Regulations will have to be revised in line with potential new guidelines to be agreed at the second IHO Assembly, and in particular the follow-up to proposals 1.4 and 1.5 made by Uruguay and India respectively.

GERMANY

Germany supports this proposal.

There are many other possible factors to be considered applicable to measure Hydrographic Interest, but it seems to be extremely difficult if not impossible to elaborate an overarching and completely fair formula for that. Taking into account that the tonnage is linked to the financial contributions to the IHO, the proposal provides the best practicable solution.

ITALY

Italy generally supports a revision of the definition of "Hydrographic Interest". A structured analysis should be conducted by the Council appropriately, appointed by the Assembly. A dedicated working group by correspondence could be created with the aim to provide the MSs with a comprehensive analysis of the present criteria and proposals to be presented at A-3.

NETHERLANDS

The Netherlands supports the proposed revision of Article 16 of the General Regulations of the IHO as presented in Annex A (red-line version) and B (clean version).

NORWAY

Norway agrees to revise the clause of article 16 of the GR as proposed. Norway realizes that the present definition of hydrographic interest is not optimal. Even though Norway will probably drop out of the top 10 on the tonnage list by the next cycle, we assess that a thorough process to come up with a revised definition of hydrographic interest will be challenging and time consuming. Norway would like to reiterate its statement made during C-3 that IHO MS not being a Council member, can attend Council meetings as observers and that their comments and proposals are taken into account as shown during earlier Council meetings. Norway proposes to not pursue the discussion about a revised definition of hydrographic interest any further and in particular does not support to assign additional resources to the development of alternative definitions.

SWEDEN

Sweden supports the proposal from the IHO Council to retain the existing definition of Hydrographic Interests and to amend Clause (c) of Article 16 of General Regulations accordingly.

UNITED KINGDOM

The UK notes the significant interest by some IHO Member States to improve the definition of 'Hydrographic Interest' away from measurement by national flag state tonnage to a more effective measuring mechanism. Proposals 1.4 and 1.5 both have merits with their proposed systems of measurements and calculations for the definition of 'Hydrographic Interest'.

The UK believes that Council should be tasked to establish a Working Group to fully assess the proposals and to prepare a draft submission and recommendations to A-3.

SECRETARY-GENERAL`S RESPONSE OF MEMBER STATES COMMENTS

Proposal 1.3 aims to remove a specific task from the General Regulations since this document is not considered as the proper document nor the right mechanism to address the Assembly with this item. Since the sentence itself points specifically to the second Assembly, editorial action is required in any case. The proposed removal of this sentence, however, does not preclude the Assembly to consider the subject of the definition of hydrographic interest if Member States wish so (PRO 1.4 and PRO 1.5 refer).

The Secretary-General takes note on the wide range of views expressed by Member States of the appropriateness to revive the discussion about the definition of hydrographic interest undertaken by Strategic Planning Working Group from 2005 to 2006 and recommends to study Chapter 6 /Annex K of the report of the Working Group as well as the related Council document C1-6.3 (both annexed to this document for ease of reading) in preparation of the discussion at the Assembly.

The Secretary-General recommends the installation of an informal Working Group formed by the interested Member States for the draft and submission of a joint proposal to the Council.

The Secretary-General t wishes to highlight that the regular acquisition of information as required for calculation methods such as those proposed by Uruguay and India will place a significant additional administrative burden on all Member States and the Secretariat.

**Annexes addressed by the Secretary-General's comments
in response to Member States comments on PRO 1.3**

Chapter 6 of the report of the Strategic Planning Working Group to the International Hydrographic Conference 2007

6. DEFINITION OF HYDROGRAPHIC INTEREST

The amendments to the IHO Convention state that Member States shall take one third of the seats on Council on the basis of hydrographic interest, and that the definition of hydrographic interest, and hence the Council composition, should be set out in the General Regulations.

To focus the debate on the definitions, the SPWG addressed the following questions:

- a. what is the purpose of defining “hydrographic interest”?
- b. what are the basic elements of hydrographic interests?
- c. how can statistical analysis of possible criteria inform the debate?

In examining the purpose of defining the term “hydrographic interest”, consideration was given to whether it was to be the basis for monetary contributions to IHO, or a seat on Council, or both of these, or for additional purposes not yet defined. The principle agreed by the SPWG was that the concept of “hydrographic interests” is only to be used for the selection of Council members.

In clarifying the importance of the criteria which may be used to identify “hydrographic interest” it was agreed that the criteria must be:

- relevant to the intended purpose;
- measurable and unambiguous;
- applicable to all Member States;
- mutually compatible if multiple criteria are to be used in combination;
- revisited/recalculated at regular intervals (eg at each Assembly).

The list of parameters considered by the SPWG is provided at Annex K. Many models were examined, which contained different definitions of the criteria, used singly or in combination, and different combinations of the criteria.

A clear statistical analysis was produced by Finland, which demonstrated the impact of various criteria and combinations of criteria, on potential Council membership and illustrated the degree to which Council composition might be affected by the use of different criteria.

The analysis is available on the IHO website. It concluded that Tonnage was as effective a criterion as any other and much the simplest to operate.

After many days of debate, over several meetings, the SPWG concluded that the single criterion to be used for defining hydrographic interest for Council membership should, in the first instance, be Tonnage. This confirms the proposal put to the 3rd EIHC and its decision N° 4. When the new structure is implemented, experience will be gained and the subject may be revisited. Each Assembly after the creation of the first Council could review all the possible definitions to see if a better one emerged. At the latest, this should be done at the second Assembly, in accordance with Article 17 (c) of the amended General Regulations.

Annex K of the report of the Strategic Planning Working Group to the International Hydrographic Conference 2007

CRITERIA FOR DEFINITION OF HYDROGRAPHIC INTERESTS

Parameter	Debated Issues
Tonnage	<ul style="list-style-type: none"> • does the list vary too slowly? • is there a link with hydrographic capability?
Continental shelf and/or EEZ	<ul style="list-style-type: none"> • has it been defined? • has it been approved by the UN?, • does it cover remote areas or only mainland areas?
Number of charts:	<ul style="list-style-type: none"> • national charts only? • in territorial waters only? • covering other areas like continental shelf? • if continental shelf, does this mean defined and approved by UN? • if outside national waters, only charts produced under a bilateral agreement? • based on a uniform (i.e. generic) scale? or charts actually produced? • charts produced for purposes other than SOLAS/ UNCLOS? • types of charts <ul style="list-style-type: none"> - International Charts - national paper charts - ENCs - RNCs
Hydrographic Surveying	<ul style="list-style-type: none"> • Number of surveying ships • Ships owned by HO only? By the State? By industries? What about international contractors? • Number of surveying platforms rather than ships (i.e. including LIDAR etc)? • Number of surveying hydrographic systems <ul style="list-style-type: none"> - multi beam echo-sounders - single beam echo-sounders - side scan sonars - Lidar systems - Others • Scale of investments into surveying • Types of areas surveyed • in national waters only? • areas beyond national waters? Open sea? • joint survey programs (e.g. under bilateral or multilateral agreements) • complexity of water (e.g. shallow versus deep water, according to S44 definitions?) • Size of areas surveyed • Percentage of total of national responsible area? • Area surveyed last year? Average last 3 years? Other?

Parameter	Debated Issues
Length of coastline	<ul style="list-style-type: none"> • mainland only? • including islands? • remote areas? • complexity of coastline?
IHO commitment	<ul style="list-style-type: none"> • participation in committees, working groups, boards and RHCs • implementation of and support to IHO instruments, e.g. RENCs
Involvement in Capacity Building	<ul style="list-style-type: none"> • participation in Developing Projects • annual financial contribution to developing countries
Size of merchant fleet	<ul style="list-style-type: none"> • under national flag only • under foreign flag
Volume/value of seaborne trade	<ul style="list-style-type: none"> • Imports/exports • through territorial waters • through international waters/straits

Council document C1-6.3

Consideration of the definition of Hydrographic Interests

Submitted by:	Secretary-General
Executive Summary:	This paper invites the Council to incorporate in its work programme the consideration of the use of the terms <i>hydrographic interests</i> and <i>interest in hydrographic matters</i> in relation to the composition of the Council, in order to report to the second session of the Assembly in 2020

Background

1. The IHO, through a Strategic Planning Working Group, undertook an extensive review of the Organization from 1997 to 2007. As a result, in 2005 the 3rd Extraordinary International Hydrographic Conference (EIHC-3) agreed a range of amendments to the Convention on the IHO, and in 2007 the 17th International Hydrographic Conference (IHC-17) adopted the supporting Basic Documents, and several organizational and administrative changes.

2. The amendments and changes included the establishment of a Council. The establishment of the Council is covered in Article VI of the Convention on the IHO. It is further described in Article 16 of the General Regulations.

3. In describing the composition of the Council, clause (a) of Article VI of the Convention on the IHO states:

One fourth of, but not less than thirty, Member states shall take seats on the Council, the first two thirds of whom shall take up their seats on a regional basis and the remaining one third on the basis of hydrographic interests, which shall be defined in the General Regulations.

4. Clause (c) of Article 16 of the General Regulations then states, among other things:

The remaining one-third of the Council seats shall be held by Member States that have the greatest interest in hydrographic matters and have not been selected under the procedure described in sub-paragraph (b) above. The definition of what constitutes an interest in hydrographic matters shall be reconsidered at the latest at the second Assembly meeting. Meanwhile, the scale by which an interest in hydrographic matters is measured shall be national flag tonnage. ...

Discussion

5. The SPWG spent a significant amount of time in considering how to measure "hydrographic interest" as reported in document CONF.17/DOC.1. The size of the area of national waters, the size of the Exclusive Economic Zones, the length of national coastlines, the portfolio of nautical charts and several other possible measures were all considered. All were rejected on the basis that there were no indisputable, authoritative reference values that could be used.

6. In the absence of other options, the SPWG proposed to rely on the long-established IHO formula for calculating the national flag tonnage from which the number of financial shares and votes allocated to Member states are calculated.

7. In proposing to use flag tonnage as the measure to determine *hydrographic interests* or *interest in hydrographic matters*, the SPWG kept the option open to identify other measures in the future. For this reason, a requirement for the second session of the Assembly to reconsider what constitutes *an interest in hydrographic matters* was included in the proposed clause (c) of

Article 16 of the General Regulations that was subsequently agreed by the Member States at IHC-17.

Proposal

8. The Council has now been established. It is the primary organ that reports to and advises the Assembly and the Member States. The roles of the Council are set out in Article VI of the Convention on the IHO. As stated in sub clause (g)(v), this includes:

Prepare, with the support of the Secretary-General, proposals concerning the overall strategy and the work programme adopted by the Assembly

9. It therefore follows that the Council, as part of its strategic overview role, is best placed to consider whether alternatives exist as a suitable measure of *hydrographic interests* or *interest in hydrographic matters* and whether or how any changes might be made to existing arrangements in the Organization.

Action Required of the Council

10. The Council is invited to:

- a. **agree** that the Council include in its work programme the consideration of the definition and use of the terms *hydrographic interests* and *interest in hydrographic matters* in relation to the composition of the Council, with a view to reporting to the second session of the Assembly in 2020; and to
- b. **take any other actions** that may be appropriate.

PROPOSAL N°	OBJECT OF THE PROPOSAL	SUBMITTED BY	REFERENCE
1.4	Revision of Clause (c) of Article 16 of the General Regulations of the IHO – Hydrographic Interest (Bis) – [Original title: <i>Reconsideration of the definition of what constitutes “an interest in hydrographic matters” or “hydrographic interests”</i>]	Uruguay	1

Supported by: Argentina and Brazil

References : A. Convention on the IHO, Art. V.
B. General Regulations of the IHO, Art. 16 (c).

PROPOSAL

The Assembly is invited:

- to reconsider the definition of what constitutes an “interest in hydrographic matters” or “hydrographic interests”, amend Articles 8 and 16 of the General Regulations according to Annex A and add Annex B to the General Regulations with the referenced measurement.
- in the case the Assembly cannot approve the previous proposal, to consider the alternative proposal and amend Article 16 of the General Regulations to reconsider the definition of what constitutes an “interest in hydrographic matters” or “hydrographic interests” at the latest at the third session of the Assembly. Subsequently, noting the report of the ISPWG given at IHC-17, the Assembly is invited to provide guidance to the Council on the objectives and ways to undertake this task and to acknowledge that this task should get high priority to make sure that A-3 will be ready to finalize it.
- to take any further action as appropriate.

EXPLANATORY NOTE

Uruguay presents a proposal for reconsideration of the definition of what constitutes "an interest in hydrographic matters" or "hydrographic interests" to be appreciated by the Assembly. Uruguay presents here amendments to the IHO General Regulations (Annex A) and subsequent measurement for the definition of "hydrographic interests" (Annex B).

Related Documents:

- 1/ Convention on the IHO, Article V
- 2/ General Regulations of the IHO, Article 16 (c)
- 3/ 3rd EIHC Report of Proceedings
- 4/ Report of the IHO Strategic Planning Working Group (ISPWG) 2005-2006 (CONF.17/DOC.1)
- 5/ XVII IHC Report of Proceedings Vol 1
- 6/ Decisions of the 1st Session of the IHO Assembly
- 7/ Consideration of the definition of *Hydrographic Interests* (Doc. C1-6.3)
- 8/ Summary Report of C-1
- 9/ Action C1/47 and Decision C1/48
- 10/ Summary Report of C-2
- 11/ Decision C2/08 (former C1/47)

- 12/ Submission of Proposals to the Assembly (ACL N° 3, of 06 May 2019)
- 13/ Summary Report of C-3
- 14/ Decision C3/11 and Action C3/12

Background

1. There were long discussions during the 3rd Extraordinary International Hydrographic Conference about the definition of “hydrographic interests” and many Member States stressed out the fact that using national flag tonnage as the only criterion for this definition has only observed the aspect of the demand for hydrography or the benefits derived from hydrographic surveying activities, but not the activities themselves and, therefore, it does not define properly “hydrographic interests” or “interest in hydrographic matters”. For this reason, the IHO General Regulations in its Article 16 (c) considers the possibility to review the definition of “hydrographic interests” at the latest at the second Assembly meeting.
2. The IHO Assembly at its 1st Session did not discuss the definition of “hydrographic interests” nor tasked the Council or the Secretary-General about it, leaving the discussion of this issue to A-2.
3. According to the IHO Convention, “The Assembly shall be composed of all Member States” and the Assembly shall be to “Decide on any proposals put to it by any Member State”. The Assembly Circular Letter N° 3/2019 was issued for the submission of proposals by Member State to A-2 until 15 December 2019.
4. Argentina, Brazil and Uruguay have been discussing a proposal for the definition of “hydrographic interests” to be submitted to A-2, since April 2019. The proposal, which draft is attached to this document, considers national flag tonnage and national seaborne trade to define the “DEMAND” for hydrography from the maritime community and includes parameters related to the “OFFER” of hydrography by Hydrographic Offices, using nautical chart production, safety information and surveying capabilities.
5. In the last meeting of Council (C-3), several Member States supported the view that hydrographic interests was an important matter that merited further consideration by the Assembly and asked Uruguay and other Member States to submit a proposals to the Assembly at A-2 so decisions could be made on the way forward and guidance provided to the Council. The Council acknowledged the thorough proposal by Uruguay and invited Uruguay and other supporting countries to make a proposal to A-2 on this basis for further consideration by the Assembly (Action C3/12).

Analysis and Discussion

6. The discussion of the "definition of what constitutes an interest in hydrographic matters" is strategic for the Organization, since it will define the composition of one-third of IHO Council.
7. The "definition of what constitutes an interest in hydrographic matters" is clearly related to hydrography and does not specify navigation or economy, even though navigation and economy have always been part of "interest in hydrographic matters" or "hydrography interests". Therefore, these expressions must be treated appropriately.
8. The tonnage criterion has been used as a starting point.
9. The idea of tonnage being used as the only criterion was not capable of reflecting the technical capacity of the Hydrographic Offices' activities.
10. The criterion of tonnage does not properly reflect the objectives, the principal aim, the mission and the vision of the Organization.

11. The IHO Strategic Plan Working Group (ISPWG) recognized that when the new structure is implemented, experience would be gained and the subject could be revisited. And that “Each Assembly after the creation of the first Council could review all the possible definitions to see if a better one emerged”. The ISPWG listed some parameters and the issues that were discussed over two plenary meetings, besides other tasks.
12. A fair criterion should consider the “DEMAND” for hydrography from the maritime community but also the “OFFER” of hydrography by the Hydrographic Offices.
13. The attached Draft Proposal from Uruguay, prepared by Argentina, Brazil and Uruguay, presents a new criterion for the definition of “hydrographic interests” that can be easily and regularly measured with information obtained from the United Nations, IMO and IHO.
14. Uruguay is open to discuss its proposal for the definition of “hydrographic interests” with other Member States leading to a better solution.
15. The Council agreed that it was not in a position to propose any formal or cohesive view to the 2nd Session of the Assembly on this matter.
16. This issue matters to all Member States, the ones that would compose the Council on the basis of “hydrographic interests” or on a regional basis and the ones that would not compose the Council.

Annex A to PRO 1.4

Proposed amendments to the clause (b) of Article 8 and the clause (c) of Article 16
of the General Regulations

GENERAL REGULATIONS OF THE INTERNATIONAL HYDROGRAPHIC ORGANIZATION

...

Regional Hydrographic Commissions

ARTICLE 8

- (b) RHCs recognized by the Assembly are listed in the Annex A to these General Regulations.

Selection of Members of the Council

ARTICLE 16

- (c) The remaining one-third of Council seats shall be held by Member States that have the greatest interest in hydrographic matters and have not been selected under the procedure described in sub-paragraph (b) above. ~~The definition of what constitutes an interest in hydrographic matters shall be reconsidered at the latest at the second Assembly meeting. Meanwhile, the scale by which an interest in hydrographic matters is measured shall be national flag tonnage. The table of national flag tonnages is derived in accordance with the procedures set forth in Articles 5 and 6 of the Financial Regulations.~~ The Secretary-General shall determine which Member States will hold this one third of Council seats by identifying them in descending order of their ~~measurement of the definition of hydrographic interests described in the Annex B to these General Regulations~~ ~~national flag tonnages, referring to the table of current national flag tonnages produced in accordance with Article 6 (a) of the Financial Regulations~~, and by having ascertained the willingness of each of them to hold a seat on the Council.

Annex B to PRO 1.4**Measurement for the Definition of what constitutes "an interest in hydrographic matters" or "hydrographic interests"**

The proposal considers national flag tonnage and national seaborne trade to define the "DEMAND" for hydrography from the maritime community and includes parameters related to the "OFFER" of hydrography by Hydrographic Offices, using nautical chart production, safety information and surveying capabilities.

Measurement of the "DEMAND" for Hydrography

The "DEMAND" for Hydrography part of the definition of "hydrographic interests" will use as parameters the national flag tonnage and the volume of shipborne trade of a Member State. The table of national flag tonnages is derived in accordance with the procedures set forth in Articles 5 and 6 of the Financial Regulations. The volume of seaborne trade in millions of US dollars can be obtained from United Nations Conference on Trade and Development statistics (UNCTDstat - <https://unctadstat.unctad.org/EN/> > COUNTRY PROFILES > MARITIME PROFILE) as Merchandise Trade and it is updated twice a year (Statistics@unctad.org).

For the "DEMAND" for Hydrography two ratios are defined, as follows:

- The "Tonnage ratio" will be equal to the national flag tonnage of a Member State divided by the greatest national flag tonnage among Member States.
- The "Trade ratio" will be equal to the volume of seaborne trade of a Member State divided by the largest volume of seaborne trade among Member States.

So, the measurement of the "DEMAND" for Hydrography will be the sum of the "Tonnage ratio" with the "Trade ratio".

Measurement of the "OFFER" of Hydrography

The "OFFER" of Hydrography part of the definition of "hydrographic interests" will use as parameters the total area covered by ENC's Usage Bands 2, 3, 4 and 5 issued by a Member State and the values for the Capacity Building Phases of Development of Hydrographic Surveying and Nautical Charting Capability (Phases 1, 2 and 3) assessments of a Member State.

The total area in km² covered by ENC's (or sum of the areas of the ENC's) Usage Bands 2, 3, 4 and 5 issued by a Member State can easily be calculated by IHO or by each Member State. The ENC's in IHO Charting Region M (Antarctic waters) are not considered. The ENC coverage of Usage Bands 2, 3, 4 and 5 for each Member State can be reached through shape file (SHP) with all ENC cells' shapes obtained from IHO WEND database or from RENCs.

The values for the Capacity Building Phases 1, 2 and 3 assessments of a Member State are already defined by IHO and obtained with the RHCs. The Capacity Building Phase 1 seeks the collection and circulation of nautical information, necessary to maintain existing charts and publications up to date. The Capacity Building Phase 2 seeks the creation of a surveying capability to conduct coastal projects and offshore projects. The Capacity Building Phase 3 seeks the production of paper charts, ENC's and publications independently. The Capacity Building Phases of Development Stages' Assessments according to IHO Capacity Building Strategy (www.iho.int/mtg_docs/CB/IHO_CB_Strategy_EN.pdf) are provided by the Capacity Building Coordinators that should follow CBSC Procedure 11 (Assessment of Capacity Building Phase Stages of Coastal States) and should updated it in every CBSC meeting.

The assessments and corresponding values for each Capacity Building Phase (1, 2 and 3) are listed below:

Value	Assessment
1	The country is aware of its national obligations but does not have the means to do it
2	The country has the ability to fulfil national obligations
3	The country fulfils its national obligations through a third party
4	The country fulfils its national obligations in a sustainable manner

For the “OFFER” of Hydrography two ratios are defined, as follows:

- The “ENC ratio” will be equal to the total area covered by ENC’s of a Member State divided by the largest total area covered by ENC’s among Member States.
- The “Capacity Building ratio” will be equal to the products between the assessment values for the Capacity Building Phases 1, 2 and 3 of a Member State divided by 64. It is divided by 64 to normalize this expression, since the maximum value for each assessment is 4 (4 plus 4 plus 4 is equal to 64).

So, the measurement of the “OFFER” of Hydrography will be the sum of the “ENC ratio” with the “Capacity Building ratio”.

Measurement of the definition of “Hydrographic Interests”

Therefore, the measurement of the definition of “hydrographic interests” will be the sum of the measurement of the “DEMAND” for Hydrography with the measurement of the “OFFER” of Hydrography, in other words the sum of the “Tonnage ratio” with the “Trade ratio” with the “ENC ratio” with the “Capacity Building ratio”.

Finally, the remaining one-third of Council seats shall be held by Member States that have the higher values for the measurement of the definition of “hydrographic interests”.

LIST OF MEMBER STATES' COMMENTS

ARGENTINA

ARGENTINA fully supports the proposal made by URUGUAY, with the full conviction that the concept presently in force of hydrographic interest is extremely biased towards the merely nautical or commercial aspect which, in the philosophy of this proposal is a constitutive part of the «DEMAND» of hydrography, and does not consider the efforts of the countries in the «OFFER» of hydrography, which is not limited only to national flag vessels, but also to all international maritime traffic in the waters in which each State has the obligation to provide the public service of nautical safety.

Thus, if a State that does not have a high national fleet tonnage, it does not necessarily have a low «hydrographic interest», since it will also serve the needs of other flags' vessels operating in its jurisdiction.

That is why ARGENTINA considers that it is appropriate to include the concepts of «DEMAND» and «OFFER» in hydrography and that, although the concept of tonnage must be considered, other factors defining the hydrographic effort in relation to the service provided and its benefits must also be considered.

ARGENTINA is aware that many other measuring factors could be used for the «DEMAND» and mainly the hydrographic «OFFER», which is ultimately the main reason for the existence of the Hydrographic Services and, therefore the IHO.

All the factors presented here are easily measurable by international bodies or through official and reliable information. Member States are therefore encouraged to analyze and approve this proposal, or eventually to propose other factors to make the «hydrographic interest» measurement more accurate.

CANADA

Canada believes that the proposed methodology has some merit but further analysis is required to establish the impact of the new approach on the composition of the Council and any other consequences. As a result, Canada favours no change to Article 16 (beyond the change in PRO 1.3) at this time.

Notes:

1. Canada would like to thank Uruguay for the time and effort in analyzing this complex topic.
2. The analysis does raise some interesting points. For example, the alignment of a hydrographic interest based solely on the criterion of tonnage with the overall objects, mission, and vision of the organization. The nature of this relationship may need further discussion.
3. The methodology explained in Annex B does have some distinct advantages. The data required for the measurement of the “demand” is objective, transparent, and easy to collect. Similarly, the calculations of ENC areas for the “supply” are straightforward. The “assessment” is slightly more subjective.
4. It is suggested that a exercise be undertaken to apply this methodology to all MS and compare the outcome to the current hydrographic interest and assess the impact on the composition of the Council.

CHILE

We would support keeping actual criteria.

FRANCE

Revision of Clause (c) of Article 16 of the General Regulations of the IHO – Hydrographic Interest (Bis) – [Original title: Reconsideration of the definition of what constitutes “an interest in hydrographic matters” or “hydrographic interests”] - Uruguay

France supports Uruguay's proposal to reconsider the definition of what constitutes "an interest in hydrographic matters" or "hydrographic interests".

This proposal is a continuation of the current definition using the criterion of tonnage, supplemented by the volume of maritime trade of the Member States in order to provide a refined assessment of the "demand" for hydrographic services. The consideration of the "offer" in hydrographic services through published ENCs as well as the stages of development of hydrographic capacity (as assessed through CBSC procedure 11) rightly complement the measurement of "demand" to provide a finer and more accurate measure of "hydrographic interests". ».

The proposed calculation method appears sufficiently simple and is based on quantified and easily accessible elements, which might allow an operational and unambiguous implementation of this new definition.

This proposal, which would constitute a significant improvement in comparison with the current definition based solely on fleet tonnage, could possibly be improved by taking into account the contribution of Member States to capacity building, along the lines of item 7 "Capacity building" of proposal 1.5 submitted by India, through a simplified assessment of this contribution.

ITALY

Italy generally supports a revision of definition of “Hydrographic Interest”.

JAPAN

Japan considers not to spend too much time for discussing the definition of the election of the Council members themselves, as the important thing is how to facilitate and stimulate discussion in the Council. Japan believes that we should focus on creating structure to facilitate decision-making, such as encouraging participation of the Member States as observers in the Council.

NORWAY

Norway recognizes the proposal as a serious attempt to improve the current definition of hydrographic interest but does not support it for further consideration. Since flag tonnage defines IHO member state annual contribution, flag tonnage is not only a measurement for the demand of hydrography but also a measurement for the amount of the respective fiscal support of international cooperation in hydrography by means of the functioning of the IHO. Norway refers to our comments made to proposal 1.3

SPAIN

Spain supports this proposal.

There is an error in the "Measurement of the OFFER of Hydrography" section: Where it says (4 plus 4 plus 4 equals 64) it should read (4 times 4 times 4 equals 64)

SWEDEN

Sweden would like to thank Uruguay, Argentina and Brazil for the proposal on the definition of Hydrographic Interests. However, Sweden is of the opinion that the proposal is too complex and would lead to prolonged debate without any prospects of reaching consensus. Sweden therefore supports the proposal PRO-1.3 from the IHO Council, to retain the existing definition of Hydrographic Interests.

UNITED KINGDOM

The UK notes the significant interest by some IHO Member States to improve the definition of 'Hydrographic Interest' away from measurement by national flag state tonnage to a more effective measuring mechanism. Proposals 1.4 and 1.5 both have merits with their proposed systems of measurements and calculations for the definition of 'Hydrographic Interest'.

The UK believes that Council should be tasked to establish a Working Group to fully assess the proposals and to prepare a draft submission and recommendations to A-3.

UNITED STATES OF AMERICA

The U.S. believes improvements in the definition of Hydrographic Interest, as applied to Council membership would be beneficial. Both proposals have merit and have not yet been reconciled. We acknowledge resolving this definition will take some effort, but the long term balance of Council representation will improve IHO operations into the foreseeable future. We are willing to participate should the MS feel progress can be made to resolve the challenge.

PROPOSAL N°	OBJECT OF THE PROPOSAL	SUBMITTED BY	REFERENCE
1.5	Consideration on the Definition of Hydrographic Interests (Ter)	India	1

- References** : A. Convention on the IHO, Art. V.
 B. General Regulations of the IHO, Art. 16 (c).
 C. PRO 1.3 and PRO 1.4 to A-2.

PROPOSAL

The Assembly is invited:

- to consider an alternative proposal on the definition of *Hydrographic Interests*
- to take any further action as appropriate.

EXPLANATORY NOTE

The Secretary-General proposed to the Council amendments to the IHO General Regulations about the definition of Hydrographic Interests that have direct effect on the composition of the Council. As a consequence, PRO 1.3 and 1.4 (Reference C) are now submitted to the Assembly for consideration by the Member States.

India presents here an alternative proposal for the definition of *Hydrographic Interests* (Annex A).

Related Documents:

- 1) Convention on the IHO, Article V
- 2) General Regulations of the IHO, Article 16 (c)
- 3) 3rd EIHC Report of Proceedings
- 4) Report of the IHO Strategic Planning Working Group (ISPWG) 2005-2006 (CONF.17/DOC.1)
- 5) XVII IHC Report of Proceedings Vol 1
- 6) Decisions of the 1st Session of the IHO Assembly
- 7) Consideration of the definition of *Hydrographic Interests* (Doc. C1-6.3)
- 8) Summary Report of C-1
- 9) Action C1/47 and Decision C1/48
- 10) Summary Report of C-2
- 11) Decision C2/08 (former C1/47)
- 12) Submission of Proposals to the Assembly (ACL N° 3, of 06 May 2019)
- 13) Draft Proposal to A-2 submitted by the Secretary-General to C-3 (Doc. C3-03.4A)

Background

1. There were long discussions during the Extraordinary International Hydrographic Conference about the definition of Hydrographic Interests and many Member States brought out that using national flag tonnage as the only criterion for this definition has only observed the aspect of the demand for hydrography or the benefits derived from hydrographic surveying activities, but not the activities themselves and, therefore, it does not define properly hydrographic interests or interest in hydrographic matters. For this reason, the IHO General Regulations in its Article 16 (c) considers the possibility to review the definition of Hydrographic Interests “at the latest at the second session of the Assembly”.

2. The IHO Assembly at its 1st Session did not discuss the definition of Hydrographic Interests nor tasked the Council or the Secretary-General about it, leaving the discussion of this issue to A-2.

3. According to the IHO Convention, “The Assembly shall be composed of all Member States” and the Assembly shall be to “Decide on any proposals put to it by any Member State”. The issue was deliberated during C3 and Member States were asked to submit proposal to the assembly at A-2 by 06 Dec 19.

4. India has now prepared a proposal for the definition of Hydrographic Interests to be submitted to A-2, and a draft is attached to this document, considering following aspects of a member state:-

- (a) *Availability of National Hydrographic Service*
- (b) *Surveying Assets*
- (c) *Maritime Safety*
- (d) *Capacity Building*
- (e) *Ensuring Safe Navigation at Sea*

5. India is open to discuss its proposal for the definition of Hydrographic Interests with other Member States leading to a better solution. Other Member States that compose or do not make part of the Council may propose to A-2 other possibilities for the definition of Hydrographic Interests and help to improve the actual definition.

Annex A to PRO 1.5**Proposal on the measurement of the definition of *Hydrographic Interests*.
Submitted by India****Related Documents:**

- (a) Article 16(c) of General Regulation of IHO
- (b) C1/47 and C1/48 agenda item 6.3 council consideration of the definition of the term "Hydrographic interest"
- (c) C2/08
- (d) C3/ Report

1. During the Council meeting C1,C2 and C3 it was decided to raise the issue regarding definition of hydrographic interest at A-2 in accordance with Clause (c) of Article 16 of the General Regulation.

2. Clause (c) of Article 16 of General Regulation states "The remaining one third of Council seats shall be held by Member States that have the greatest interest in hydrographic matters and have not been selected under the procedure described in sub paragraph (b) of Article 16.

Hydrographic Interest

3. Member States seeking membership of the Council based on Clause 'C' of Article 16 of General Regulations would need to apply to the Council in accordance with the proforma based on the merit of each state. The IHO Council shall elect the Members State. In pursuance of above, a draft definition of what constitutes "Hydrographic interest" has been prepared for consideration at Assembly during A-2 and is appended below.

- (a) *Availability of National Hydrographic Service*
- (b) *Surveying Assets*
- (c) *Maritime Safety*
- (d) *Capacity Building.*
- (e) *Ensuring Safe Navigation at Sea*

4. Availability of National Hydrographic Service

Regulation 9 of SOLAS Chapter V specifies very clearly the hydrographic services which have to be provided by Contracting Governments. The provision of these hydrographic services is, in effect, an obligation for the Contracting Governments under an International Treaty Law. Under the provision, a Member State which has established a dedicated mechanism for providing mandatory hydrographic services along with authority and via a Hydrographic Office would be deemed to have contributed having hydrographic interests. Therefore it is proposed to allocate weightage for following:-

- (a) Availability of a dedicated Hydrographic Services
- (b) Designation of a National Authority for providing Hydrographic Services
- (c) Establishment of a dedicated Hydrographic Office
- (d) Establishment of a Hydrographic Surveying Organisation for undertaking National Surveys

5. Surveying Assets

The ability of a Member State to operate and maintain seagoing vessels is another important aspect. Surveys of larger offshore areas within national waters require larger and properly equipped vessels and systems, as well as a staff of qualified hydrographic surveyors. Generally it is necessary to have, or to have access to, vessels that are capable of operating for long periods in the national offshore areas, and in shallow coastal waters.

The capability of a Member State to undertake hydrographic surveys largely depends upon the sea going survey platforms and their equipment fit. It would be vital to recognize the availability of survey ships as it has a direct bearing on the hydrographic interest of the nation. It is proposed to recognize this asset as follows:-

- (a) Number of survey ships held with the member state which fly the flag of the nation and is manned wholly or partially by their nationals. In order to award points their gross tonnage would be taken into account

Up to 500 T

500 T-1500 T

1500 T – 3000 T

Greater than 3000 T

6. Maritime Safety

Regulation 4 of SOLAS Chapter V places an obligation on Contracting Governments to ensure that appropriate navigational warnings are issued. Availability of a dedicated MSI organization and processing of MSI data to NAVAREA coordinators to enable early warning to mariners is an important activity towards promoting maritime safety and constitutes hydrographic interest of a member state. It is therefore proposed to recognize the efforts of a member state who contributes towards maritime safety by providing inputs **for promulgation of NAVAREA**. Considerable expenditure is also incurred in maintaining manpower, assets and transmission of messages via satellite and terrestrial services.

7. Capacity Building.

Since 1998, the Annual Resolution on the Oceans and the Law of the Sea adopted by the UN General Assembly has encouraged the development of hydrographic and charting capabilities. Resolution A/RES/70/235 adopted in December 2015 includes the following provisions:

15. Encourages intensified efforts to build capacity for developing countries, in particular for the least developed countries and small island developing States, as well as coastal African States, to improve aids to navigation, hydrographic services and the production of nautical charts, including electronic charts, as well as the mobilization of resources and building of capacity with support from international financial institutions and the donor community.

In keeping with the above resolutions it would be most appropriate to include the contributions of a member state towards capacity building in the region as hydrographic interest. Training of personnel for the region in hydrography and cartography is inherent part of any capacity building exercise and needs to be included for the assessment of hydrographic interest. In addition due cognizance has to be given to the efforts of a member state for carrying out hydrographic surveys and producing charts and ENC's for a state where such capability does not exist. Therefore, following is proposed:-

- (a) Contribution towards Hydrographic and Cartographic training in past 03 years :-
- (i) Number of international trainees trained in CAT (A) course.
 - (ii) Number of international Trainees trained in CAT(B) course.
 - (iii) Number of international trainees trained in Cartographic course.

- (b) Number of hydrographic surveys undertaken for other states in the region.
- (c) Number of Chart/ENC produced for other state in the region.
- (d) Number of Hydrographic/Training Institute established in other state in the region.

8. **Ensuring Safe Navigation at Sea**

In November 1998, the Fifty-third session of the United Nations General Assembly approved Resolution A/RES/53/32 under Agenda item 38 (a) "Oceans and the Law of the Sea" which includes the following article:

Article 21 of Assembly Resolution A/RES/53/32

The General Assembly invites States to cooperate in carrying out hydrographic surveys and providing nautical services for the purpose of ensuring safe navigation as well as to ensure the greatest uniformity in charts and nautical publications and to coordinate their activities so that hydrographic and nautical information is made available on a worldwide scale"

Towards promoting safety of navigation at sea a member state's contribution in terms of undertaking hydrographic surveys, producing charts and ENCs based on collected data and making them available to mariners worldwide would constitute contribution towards hydrographic interest. In this regard it is proposed to consider the number of charts/ENC which are based on data either completely or wholly of member state which have been sold worldwide as hydrographic interest. Accordingly, following points are proposed to be allocated for charts, ENCs and NTM produced/promulgated in past three years:-

Number of chart and ENCs based on HO's surveys sold worldwide:-

- (i) For 10 National / INT Series Chart
- (ii) For 05 ENCs
- (iii) For 50 N to M for charts produced by member state.

9. **Measurement of the definition of Hydrographic Interests**

Therefore, the measurement of the definition of *Hydrographic Interests* will be the sum of the total of points accrued by a member state for following contributions:-

- (a) *Availability of National Hydrographic Service*
- (b) *Surveying Assets*
- (c) *Maritime Safety*
- (d) *Capacity Building*
- (e) *Ensuring Safe Navigation at Sea*

Finally, the remaining one-third of Council seats shall be held by Member States that have the higher values for the measurement of the definition of *Hydrographic Interests*. The proforma for calculation for weight age for *Hydrographic Interests* is placed at enclosure.

CALCULATION OF WEIGHTAGE FOR HYDROGRAPHIC INTEREST

1. **Hydrographic Services.** 20% weightage

(i)	Availability of a dedicated Hydrographic Services -	05 %
(ii)	Designation of a National Authority for providing Hydrographic Services –	05 %
(iii)	Establishment of a dedicated Hydrographic Office –	05 %
(iv)	Establishment of a Hydrographic Surveying Organisation For undertaking National Surveys –	05 %

2. **Surveying Assets.** 20% weightage
 - Upto 500 T - 2%
 - 500 T-1500 T - 3%
 - 1500 T – 3000 T - 5%
 - Greater than 3000 T - 10%

3. **Maritime Safety** 10% weightage
Inputs for promulgation of NAVAREA –10%

4. **Capacity Building.** 25% weightage
 - (a) Contribution towards Hydrographic and Cartographic training in past 03 years. **10% weightage**
 - (i) Number of international trainees trained in CAT (A) course - **04 %**.
 - (ii) Number of international Trainees trained in CAT(B) course –**04%**.
 - (iii) Number of international trainees trained in Cartographiccourse- **02%**.
 - (b) Number of hydrographic surveys undertaken for other states in the region- **08%**
 - (c) Number of Chart/ENC produced for other state in the region. **04%**
 - (d) Number of Hydrographic/Training Institute established in other state in the region – **03 %**

5. **Ensuring Safe Navigation at Sea.** 25% weightage
 Number of chart and ENCs based on HOs surveys sold world wide :-
 - (i) For 10 National / INT Series Chart- **10%**
 - (ii) For 05 ENCs- - **10 %**
 - (iii) N to M for charts produced by member state –**5%**.

LIST OF MEMBER STATES' COMMENTS

ARGENTINA

ARGENTINA welcomes the proposal of «hydrographic interest» submitted by INDIA. Such proposal is consistent with the philosophy of hydrographic «DEMAND» and «OFFER» of Proposal 1.4, although it does not express it in those terms, materializing the «DEMAND» in terms of cartographic sales and enabling the other factors to be assigned to the hydrographic «OFFER».

Although many of the values apparently can be obtained based on a YES/NO option (example item 1. HYDROGRAPHIC SERVICES, or 3. NAUTICAL SAFETY), the others (2. 4. and 5.) are presented as proportions in which the denominators are not defined, that is why it is not easy to test their implementation.

It definitely brings new perspectives that could help in generating an improved (though more complex) definition of «hydrographic interest».

CANADA

Notes:

1. CA would like to thank India, as well, for examining the topic of hydrographic interest and presenting its original ideas.
2. As with the previous proposal, CA would like to see more analysis of the proposed methodology to understand its impacts.
3. A side-by-side comparison of the outcomes two approaches would be useful.

CHILE

We would support keeping actual criteria.

FRANCE

While pursuing an objective similar to the Uruguayan proposal (PRO 1.4) for a more accurate definition of "hydrographic interests", the Indian proposal appears, however, more complex to implement, with some criteria that are more complex to quantify.

The inclusion of the contribution of Member States to capacity building (item 7 of the proposal) would provide a further refinement to the assessment of interest in hydrographic issues. Subject to a sufficiently simple and objective method of calculation, this approach could be used to complement proposal 1.4.

ITALY

Italy generally supports a revision of definition of "Hydrographic Interest".

JAPAN

Japan considers not to spend too much time discussing the definition of the election of the Council members themselves, as the important thing is how to facilitate and stimulate discussion in the Council. Japan believes that we should focus on creating structure to facilitate decision-making, such as encouraging participation of the Member States as observers in the Council

NORWAY

Norway recognizes the proposal as a serious attempt to improve the current definition of hydrographic interest but does not support it for further consideration. Norway refers to our comments made at proposal 1.4 and 1.3.

SPAIN

Proposal too complex, especially in the evaluation of the weight of each concept that is part of the Hydrographic Interest. Such a detailed distribution of weights in each concept would introduce a lot of controversy among Member States. Spain is committed to a simpler solution.

SWEDEN

Sweden would like to thank India for the proposal on the definition of Hydrographic Interests. However, Sweden is of the opinion that the proposal is too complex and would lead to prolonged debate without any prospects of reaching consensus. Sweden therefor supports the proposal PRO-1.3 from the IHO Council, to retain the existing definition of Hydrographic Interests.

UNITED KINGDOM

The UK notes the significant interest by some IHO Member States to improve the definition of 'Hydrographic Interest' away from measurement by national flag state tonnage to a more effective measuring mechanism. Proposals 1.4 and 1.5 both have merits with their proposed systems of measurements and calculations for the definition of 'Hydrographic Interest'.

The UK believes that Council should be tasked to establish a Working Group to fully assess the proposals and to prepare a draft submission and recommendations to A-3.

UNITED STATES OF AMERICA

The U.S. believes improvements in the definition of Hydrographic Interest, as applied to Council membership would be beneficial. Both proposals have merit and have not yet been reconciled. We acknowledge resolving this definition will take some effort, but the long term balance of Council representation will improve IHO operations into the foreseeable future. We are willing to participate should the MS feel progress can be made to resolve the challenge.

PROPOSAL N°	OBJECT OF THE PROPOSAL	SUBMITTED BY	REFERENCE
1.6	Revision of Rule 12 of the Rules of Procedure of the IHO Council and consequence on Rules 8 and 11 - Timing of Election of the Chair and Vice-Chair	IHO Council	1

- References:**
- A. Convention on the IHO.
 - B. Rules of Procedure of the IHO Council
 - C. 3rd Meeting of the Council – Summary Report.

PROPOSAL

Noting the endorsement by the Council, the Assembly is invited:

- to approve the proposed revision of Articles 8, 11 and 12 of the Rules of Procedure of the IHO Council as presented in Annex A (red-line version) and B (clean version).

EXPLANATORY NOTE

1. The 1st Session of the IHO Assembly acknowledged that it was preferable that the Chair and Vice-Chair of the Council were appointed in advance of the first meeting of the Council after the Assembly, in order that appropriate preparatory discussions could take place between the Chair, the Vice-Chair and the Secretary-General.
2. The Assembly went on, through Decision A1/20, to instruct ... *the Council to consider whether Rule 12 of the Rules of Procedure for the Council requires permanent amendment and to make proposals accordingly and if required for consideration by the Assembly at its next session (A-2).*
3. It is preferable that the Chair and the Vice-Chair of the Council are appointed in advance of the first meeting of the Council during the inter-sessional period between Assembly sessions. This will enable the Chair and Vice-Chair to be prepared appropriately for both the first meeting under their leadership and the programmed work envisaged for the Council in the inter-sessional period.
4. Early appointment of the Chair and Vice-Chair could be achieved either by holding an election immediately after the Council has been installed by the Assembly, or by postal ballot voting shortly thereafter. Both options were considered by the 1st session of the Assembly. It was decided that a postal ballot for voting was preferable for several reasons, including the need to provide time for those Member States represented on the Council to consider whether and whom to nominate for the positions of Chair and Vice-Chair. Similarly, Member States represented on the Council will require time to consider their vote once nomination of candidates have been published.
5. It is therefore proposed that Rule 12 of the Rules of Procedure of the Council be amended to enable a postal ballot to take place straight after the Council has been installed by the Assembly. The postal ballot would follow the same procedure agreed by the 1st session of the Council for the election of the current Chair and Vice-Chair positions. The submission of votes from at least two thirds of the members of the Council would be required for an election to be valid.
6. A proposed revised text for Rule 12 of the Rules of Procedure of the Council is set out in Annex A (red-line version) and Annex B (clean version).

7. As a consequence of these amendments to Rule 12, it is proposed to delete paragraph (b) in Rule 8 (b) of the Rules of Procedure of the Council (provisional agenda) and to renumber the other agenda items in Rule 8 accordingly.

8. Noting that the IHO Convention, in its Article VI (g) (i) states that “*The functions of the Council shall be to elect its Chair and Vice-Chair, each of whom shall hold office until the end of the next ordinary session of the Assembly*”, the Council proposes that the Secretary-General of the IHO acts as interim Council Chair in the transition time between the end of the session of the Assembly and the election of the new office bearers (about 10 weeks). This proposal is reflected in proposed amendments to Rule 11 of the Rules of Procedure of the Council, and with the addition of a sentence in Article (b) of Rule 12, as amended.

9. The proposed revised Articles 8, 11 and 12 of the Rules of Procedure of the IHO Council were endorsed at the 3rd meeting of the IHO Council (Reference C, Decision C3/06).

Red-line version

Proposed Revised Rules 8, 11 and 12 of the Rules of Procedure of the Council

Proposed changes shown in red / red.

RULE 8

The provisional agenda of meetings of the Council shall include:

(a) adoption of the Agenda;

~~(b) election of the Chair and Vice-Chair, when necessary in accordance with Rule 12 of these Rules of Procedure;~~

(b) any item the inclusion of which has been requested by the Assembly;

....

RULE 11

The Chair and Vice-Chair shall be elected by the Members for a period of **about** three years, **until the end of the next ordinary session of the Assembly.**

RULE 12

(a) Members shall elect the Chair and Vice-Chair ~~during their first meeting~~ by **correspondence as soon as is practicable** after each ordinary session of the Assembly.

~~(b) The Secretary-General shall chair the opening of that first meeting until election of the Chair. The Secretary-General shall be responsible for conducting the election and act as interim Chair of the Council during the election process. The election shall be held by secret postal ballot. Under normal circumstances, the following timetable shall apply:~~

(A = last day of the ordinary session of the Assembly)

A + five weeks **Nominations for the positions of Chair and Vice-Chair of the Council closed**

A + ten weeks **Voting closed**

(c) The candidates receiving the largest number of votes for each position shall be elected with the minimum number of votes cast being at least two-third of the Members.

~~(d) At meetings where the Chair and Vice-Chair are to be elected those elections shall respectively be the second and third items on the agenda. In the event of a tie for the position of Chair, a second round run-off will take place by postal ballot between those nominees with the highest equal number of votes. The following timetable shall apply:~~

~~(A = last day of the ordinary session of the Assembly)~~

~~A + fifteen weeks Voting closed~~

~~(e) In the event of a tie for the position of Vice-Chair, a second round run-off will take place by postal ballot between those nominees with the highest equal number of votes. The following timetable shall apply:~~

~~(A = last day of the ordinary session of the Assembly)~~

~~A + fifteen weeks Voting closed~~

~~(f) or in In the case of a vacancy arising in the position of Vice-Chair during the inter-sessional period, an election shall take place during the next meeting of the Council. The nominations for the position shall be closed ten weeks before the opening day of the meeting of the Council and the Secretary-General shall submit the list of nominees to the Members together with the supporting documents for the meeting at least two months prior to the opening day of the meeting.~~

Clean version

Proposed Revised Rules 8, 11 and 12 of the Rules of Procedure of the Council

RULE 8

The provisional agenda of meetings of the Council shall include:

- (a) adoption of the Agenda;
- (b) any item the inclusion of which has been requested by the Assembly;

....

RULE 11

The Chair and Vice-Chair shall be elected by the Members for a period of about three years, until the end of the next ordinary session of the Assembly.

RULE 12

- (a) Members shall elect the Chair and Vice-Chair by correspondence as soon as is practicable after each ordinary session of the Assembly.
- (b) The Secretary-General shall be responsible for conducting the election and act as interim Chair of the Council during the election process. The election shall be held by secret postal ballot. Under normal circumstances, the following timetable shall apply:

(A = last day of the ordinary session of the Assembly)

A + five weeks	Nominations for the positions of Chair and Vice-Chair of the Council closed
A + ten weeks	Voting closed

- (c) The candidates receiving the largest number of votes for each position shall be elected with the minimum number of votes being at least two-third of the Members.
- (d) In the event of a tie for the position of Chair, a second round run-off will take place by postal ballot between those nominees with the highest equal number of votes. The following timetable shall apply:

(A = last day of the ordinary session of the Assembly)

A + fifteen weeks	Voting closed
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- (e) In the event of a tie for the position of Vice-Chair, a second round run-off will take place by postal ballot between those nominees with the highest equal number of votes. The following timetable shall apply:

(A = last day of the ordinary session of the Assembly)

A + fifteen weeks Voting closed

- (f) In the case of a vacancy arising in the position of Vice-Chair during the inter-sessional period, an election shall take place during the next meeting of the Council. The nominations for the position shall be closed ten weeks before the opening day of the meeting of the Council and the Secretary-General shall submit the list of nominees to the Members together with the supporting documents for the meeting at least two months prior to the opening day of the meeting.

LIST OF MEMBER STATES' COMMENTS

BRAZIL

Brazil supports this proposal

CANADA

Canada supports the proposed revisions to the Rules of Procedure for the IHO Council (Articles 8, 11, and 12) as endorsed by the Council.

DENMARK

Denmark supports this proposal.

FRANCE

Rule 12 could be supplemented in this way in order to emphasize the importance of electing the Chairman and Vice-Chairman of the Council before the first meeting of the Council:

Proposed wording for consideration by the Member States:

« REGLE 12

- (d) Members shall elect the Chair and Vice-Chair ~~during their first meeting~~ by correspondence as soon as is practicable after each ordinary session of the Assembly.

Drafting proposal submitted by France (addition in blue & bold):

« RULE 12

- (a) Members shall elect the Chair and Vice-Chair ~~during their first meeting~~ by correspondence as soon as is practicable after each ordinary session of the Assembly, **and before the first meeting of the Council newly established by the Assembly**".

JAPAN

Japan generally supports this proposal, with two suggestions of the amendments.

- Although actions in the case of a vacancy arising in the position of Vice-Chair are stated in the proposed Rule12 (f), those for the Chair are not stated.
- The Rule 8(b) does not need to be deleted as the Vice-Chair may be elected in the meeting of the Council according to the proposed Rule12 (f).

NETHERLANDS

The Netherlands supports this Proposal.

NORWAY

Norway supports this proposal

SPAIN

Item (e) of the Annexes is repeated

SWEDEN

Sweden supports this proposal.

UNITED KINGDOM

The UK fully supports the proposed revision of Articles 8, 11 and 12 of the Rules of Procedure of the IHO Council.

UNITED STATES OF AMERICA

The U.S. supports this change. Establishing leadership positions prior to the meeting will enhance the preparations and allow the Council to function efficiently.

SECRETARY-GENERAL`S RESPONSE TO MEMBER STATES COMMENTS

In order to address Japan´s comments the Secretary-General proposes to retain RULE 8, Clause (b) with a minor amendment:

(e) election of the Chair and Vice-Chair, when necessary in accordance with RULE 12 (f) of these Rules of Procedure;

and, consequently, amend RULE 12, Clause (f) as follows:

(f) In the case of a vacancy arising in the position of the **Chair or** Vice-Chair during the inter-sessional period, an election shall take place during the next meeting of the Council. The nominations for the position shall be closed ten weeks before the opening day of the meeting of the Council and the Secretary-General shall submit the list of nominees to the Council Members together with the supporting documents for the meeting at least two months prior to the opening day of the meeting.

PROPOSAL N°	OBJECT OF THE PROPOSAL	SUBMITTED BY	REFERENCE
1.7	3-year Work Programme and Budget 2021-2023	IHO Council	1

- References:**
- A. IHO Convention
 - B. General Regulations
 - C. Proceedings of the first Session of the Assembly
 - D. IHO Strategic Plan 2017
 - E. 3rd Meeting of the Council – Summary Report
 - F. IHO Resolution 12/2002 as amended – *Planning Cycle*
 - G. PRO 1.6 Revised Strategic Plan

- Annexes:**
- A. 3-year Work Programme 2021 – 2023
 - B. 3-year Budget 2021 – 2023

PROPOSAL

Noting the endorsement by the Council, the Assembly is invited:

- to approve the 3-year work programme based on the Strategic Plan in force.
- to approve the 3-year budget estimates.
- to approve the option of a consecutive annual increase of 1% of the Member States contribution share from 2021 to 2023 subject to the annual approval by C-4, C-5 and C-6 as part of the approval process of the annual budget.

EXPLANATORY NOTE

1. As part of the IHO Planning Cycle for Assembly years (Reference F), the IHO Convention (Reference A, Article VI) mandates the Council to prepare a proposal for the 3-year IHO work programme and budget estimates for Assembly adoption.
2. The Council, assisted by the Secretary-General (Reference B), drafted a proposal of a 3-year work programme 2021 – 2023 (Annex A). This proposal is based on the priorities of existing IHO Strategic Plan (Reference D) as adopted at the first Session of the Assembly (Decision A1/02 refers), and was endorsed by the Council (Reference E, Decision C3/43).
3. If at the second Session of the Assembly, the proposed Revised Strategic Plan (Reference G) is adopted, it is expected that the Assembly will task the Council to adapt the Work Programme 2021 – 2023 (Annex A) at its fourth meeting in October 2020 accordingly.
4. The Council endorsed the budget estimates including recommendations regarding pragmatic allocations as prepared by the Secretary-General (Reference E, Decision C3/45).

5. The Council took note of the explanations of the Secretary-General in view of the large and unexpected increase in health insurance costs, other costs of living in Monaco, the increased request to fund special projects and capacity building measures and the resulting effects for the budget allocations.

6. In order to manage these budgetary challenges and balanced by evidence of efficient saving measures taken by the Secretary-General, the Council endorsed the principle for proposing a general annual increase of the Member States contribution share from 2021 to 2023. A 1% increase would result in an increase of approximately 40 € per share. The cumulative effect for the IHO Budget would be approximately 35.000 € per year, which would effectively conclude with an overall increase of approximately 105.000 € in 2023 to balance the budgetary efforts. The option of a consecutive increase of 1% per each year from 2021 to 2023 subject to annual Council approval is therefore proposed for Assembly approval but subject to the annual approval of Council Members at C-4, C-5 and C-6 as part of the approval process of the annual budget. It will then be up to the Council to decide on the implementation of the increase after evaluation of the Secretary-General's budget proposal for the upcoming year.

LIST OF MEMBER STATES' COMMENTS

ARGENTINA

Regarding the three-year budget presented, ARGENTINA is concerned about the impact of the proposed abrupt and progressive reduction of the Capacity Building Fund (125K/ 85K/65K) on the CBSC activities.

More specifically, how will this reduction affect the achievement of objectives 1.3 and 3.1 presented in the Strategic Plan of Proposal 1.8, and in item 6 of Annex A of Proposal 2.1) Capacity Building of the Hydrographic Services. Transition in ENC production in S-101 and S-1xx services).

In accordance with item 6 of this proposal, the possibility of implementing an increase higher than 1% suggested by the Council would be, in our opinion, an acceptable alternative in order to avoid the decrease of the Capacity Building Fund and to enable the achievement of the aforementioned objectives, which we consider fundamental for the next three years.

BRAZIL

Brazil supports this proposal

CANADA

Canada generally supports the endorsement by the Council, however, it will take more time to thoroughly review the Work Programme and Budget and bring any subsequent comments to the Assembly.

CHILE

We do not support the initiative to increase by 1% the annual contribution. We are of the idea that operational cost should be lowered by adopting actions as for example;

- a) Why to consider attending annual ATCM if there is no reciprocity. Secretary-General did not agree to invite this organization as an Observer to the IHO Assembly, why to attend their meetings? (TASK 1.1.2)
- b) What's the IHO benefit in attending GEO annual meetings? (TASK 1.1.5)
- c) Why the attendance of the Hydrographic Services & Standards Committee Chair is paid by the IHO to attend the Council meetings? (TASK 2.1.3)
- d) Why the attendance of the IRCC Chair is paid by the IHO to attend the Council meetings? (TASK 3.1.2)
- e) Is it necessary that a Director attends each and all RHCs meetings and occasionally accompanied by an Assistant Director?
- f) Support of 10.000 euros annually is anticipated for reviewing and updating S-5 and S-8 publications Why this support is not being considered for other publications as well?
- g) Payments made by MSs with recognized courses to IHO are not reflected in the budget. Is there any special reason for this?

h) Contribution by Monaco Government to the GEBCO Programme is not reflected in the budget. Is there any special reason for this? Or is no longer provided?

FINLAND

Finland supports the proposal.

Finland support the proposed IHO Work Programme and Budget for 2021-2023 and agree that Assembly mandate Council to increase value of IHO share annually by 1% from 2021 to 2023, if necessary.

ITALY

IT agrees on the 3-year Work Programme.

On the Budget 2021-2023, as possible result of the Action C3/45 and desirable enlargement of the IHO MS, thanks to the "CONVENTION on the IHO as amended by the PROTOCOL dated 14 April 2005 that entered into force on 8 November 2016", IT suggests to devote any surplus of budget coming from the general increase of x% per year of MS' contribution share from 2021 until 2023 and from the join of new MS, to increase the following two Budget Chapters:

- Special Project Fund
- Capacity Building.

JAPAN

On the Income side, Japan expects that the financial contribution to the IHO will be increased by increasing number of Member States.

On the Expenditure side, Japan understands the increasing personnel expense mainly caused by a significant increase in staff health insurance costs is unavoidable, however, Japan expects IHO to make continuous efforts for saving expenses by improving work efficiency and so on.

NETHERLANDS

The Netherlands support all three elements of this Proposal.

NORWAY

Norway approves the 3-year work program based on the Strategic Plan in force. Norway approves the 3-year budget estimates. Norway approves the option of a consecutive annual increase of 1% of the Member States contribution share from 2021 to 2023 subject to the annual approval by C-4, C-5 and C-6 as part of the approval process of the annual budget

SWEDEN

Sweden supports this proposal.

UNITED KINGDOM

The UK supports the endorsement of the 3-year work programme and 3-year budget estimates but has reservations about the Council's ability to complete all elements under work programme 3.3 in light of the decreasing budget allocation to Capacity Building. Any increase in Member States contributions should be allocated for specific purposes e.g. Capacity Building.

UNITED STATES OF AMERICA

The U.S. supports the work program and commends the IHO Secretariat for thorough program preparation. The U.S. looks forward to further alignment of the work programme, performance measures, and communications with the Strategic Plan.

SECRETARY-GENERAL'S RESPONSE TO MEMBER STATES COMMENTS

In order to address Chile's comments the Secretary-General provides the following clarification:

- a) *Why to consider attending annual ATCM if there is no reciprocity. Secretary-General did not agree to invite this organization as an Observer to the IHO Assembly, why to attend their meetings? (TASK 1.1.2)*

The specific resources for travel costs as provided under the respective column of the three-years work programme can indeed be misinterpreted since they suggest regular participation on all events listed. Attendance of Secretariat's staff at events outside Monaco enjoy a special focus in the Secretariat's operations in terms of their consumption of time, personnel and budget resources. The Secretary-General considers direct participation very carefully and always in view of the needs derived from the strategic work plan and the concrete tasks at hand. The annual list of IHO Secretariat Travel (Annex C of the Annual Report) indicates that the Secretariat did not participate in all meetings listed in the Work Programme. This is in particular true for those listed by Chile. The exemption was the annual Meeting of ATCM 2019 in Prague, Czech Republic. The annual meeting of the Hydrographic Commission of Antarctica was purposely planned back to back with this Conference since the IHO was invited to give a seminar on the status of hydrographic activities in Antarctic waters. Thanks to the contributions of the National Hydrographers of Chile and United Kingdom this Seminar was regarded as very informative by the Conference participants and helped to renew liaison with various research and commercial bodies acting in the region.

- b) *What's the IHO benefit in attending GEO annual meetings? (TASK 1.1.5)*

GEO is coordinating efforts to build a Global Earth Observation System of Systems (GEOSS) in order to exploit the growing potential of Earth observations to support decision making in an increasingly complex and environmentally stressed world. In that respect, it is considered that maintaining relationships with the Group on Earth Observation (GEO) could be beneficial for global IHO activities in particular for GEBCO and MSDI. However, the attendance by the Secretariat or representation of the IHO by a Member State at the GEO meetings has always been decided on a case by case basis, considering the relevance of GEO's agenda. There was no attendance from the Secretariat to GEO annual meetings in 2018 and 2019. So far no attendance is planned for 2020.

- c) *Why the attendance of the Hydrographic Services & Standards Committee Chair is paid by the IHO to attend the Council meetings? (TASK 2.1.3)*

The potential coverage of costs for the participation of the Hydrographic Services & Standards Committee and IRCC Chairs is made as preservation for a situation that one of those Chairs might not be part of the respective Member State's delegation of the Council. So far this has not been the case and no payment has been made. The potential of reimbursement of travel costs was regarded as minor compensation of the enormous in kind contribution of the respective Member State made through appointment of the Chairs for continued involvement in IHO issues during their tenure as Chair in parallel to their domestic duties.

- d) *Why the attendance of the IRCC Chair is paid by the IHO to attend the Council meetings? (TASK 3.1.2)*

See comments for c) above.

Is it necessary that a Director attends each and all RHCs meetings and occasionally accompanied by an Assistant Director?

It is the view of the Secretary-General that personal attendance at RHC meetings is well received by the various Commissions and Member States since it supports numerous aspects of IHO's strategic work plan and helps to keep the Members and Associate Members of the Commissions well informed about the ongoing activities in all three IHO Work Programmes.

Participation of an accompanying Assistant Director happened in selected cases only to serve in additional functions (e.g. Secretary for HCA), to help for Council preparations (ARHC 8) or to facilitate back to back Capacity Building Workshops in particular for the RHC meetings which have high level of participation (e.g. EAHC, MACHC, SWPHC).

- e) *Support of 10.000 euros annually is anticipated for reviewing and updating S-5 and S-8 publications. Why is this support not being considered for other publications as well?*

The Standards of Competence for Surveyors and Cartographers (S-5 and S-8) are jointly maintained with experts nominated by FIG and ICA. Since both Organizations cannot provide in kind contribution for genuine IHO Standards, coverage of travel expenses for the Chairs of the affected working groups is the established practice.

- f) *Payments made by MSs with recognized courses to IHO are not reflected in the budget. Is there any special reason for this?*

National education and training institutions accredited for the conduct of recognized courses on the basis of S-5 and S-8 are obliged to pay a fee to maintain the functioning of the International Board Standards of Competence for Surveyors and Cartographers (IBSC) to allow the board members to conduct on-site visits to ensure the quality of the program. The IHO Secretariat manages the account on behalf of the three parent organizations but has no authority about the earning and spending which solely lies with the IBSC. This account is therefore not considered as part of the IHO budget.

- g) *Contribution by Monaco Government to the GEBCO Programme is not reflected in the budget. Is there any special reason for this? Or is no longer provided?*

The contribution by Monaco Government to the GEBCO Programme is reflected in Chapter V of the 3-Years Budget under Allocation to Funds – GEBCO Fund = 8.200 Euro. It should be noted that this voluntary contribution of the Monaco Government is not guaranteed and is subject to annual confirmation by the benefactor.

PROPOSAL N°	OBJECT OF THE PROPOSAL	SUBMITTED BY	REFERENCE
1.8	Revised Strategic Plan	IHO Council	1

- References:**
- A. Proceedings of the 1st Session of the Assembly
 - B. IHO Strategic Plan 2017
 - C. 3rd Meeting of the Council – Summary Report
 - D. Report and Proposals from the Strategic Plan Review Working Group (SPRWG) (C3-06.1A)
 - E. 3-year Work Programme 2021 – 2023
 - F. IHO Resolution 12/2002 as amended – *Planning Cycle*
- Annexes:**
- A. Revised Strategic Plan Rev2.2 cor2 version 17 October 2019
 - B. Amended Terms of Reference (ToR) and Rules of Procedures (RoPs) for the SPRWG (red-line version)
 - C. Amended Terms of Reference (ToR) and Rules of Procedures (RoPs) for the SPRWG (clean version)

PROPOSAL

Noting the endorsement by the Council, the Assembly is invited:

- **To approve the Revised Strategic Plan.**
- **To task the Secretary-General to align the 2021 and 3-year IHO Work Programme 2021-2023 with the Revised Strategic Plan while keeping the current structure of the Work Programme to facilitate the operational work and implementation by the Secretariat.**
- **To approve the amended ToRs and RoPs of the SPRWG.**
- **To confirm that “the effective implementation of the Revised Strategic Plan” is the main subject to be addressed by the Council within the upcoming intersessional period towards A-3.**

EXPLANATORY NOTE

1. At its 1st Session, the Assembly tasked the Council to conduct a comprehensive review of the Strategic Plan and to provide a draft revised Plan, as appropriate, in time for the consideration of the 2nd ordinary Session of the Assembly (decision A1/03).

2. Consequently, the IHO Council established a Strategic Plan Review Working Group (SPRWG) at its first meeting in October 2017. Twenty three Member States and the Secretary-General of IHO are members of the SPRWG. In its report to the Council, the SPRWG recommended to prepare a revised strategic plan, with a simpler structure and a limited number of measurable targets.

3. At its second meeting in October 2018, the Council tasked the SPRWG to develop the Strategic Plan 2021-2026 on the basis of three overarching goals endorsed by the Council. A drafting team met in Monaco at the end of January 2019, and prepared an initial list of targets and performance indicators under the three overarching goals. The drafting team also

reviewed the general structure of the strategic plan and proposed to the SPRWG some orientations on the content along with the list of targets, and indicators.

4. A final Report and draft Strategic Plan was submitted to the Council in July 2019, endorsed at its third meeting in October 2019 and is put forward to the 2nd Session of the Assembly for approval in accordance with the IHO Planning Cycle for the Strategic Plan (Reference F).

5. The Revised Strategic Plan comprises four sections:

- I. Preamble: introduction to the IHO, its vision, mission, and objects. The wording is drawn from the Convention on the IHO.
- II. Challenges: overview of the strategic context within which the IHO and Member States operate now and will operate in the near future and how this may impact activities.
- III. Goals, Targets for 2026 and Strategic Performance Indicators.
- IV. Implementation Framework: briefly outlines how the plan is enacted and how progress with respect to the plan is reviewed and monitored.

In accordance with the direction of the Council, effort was made to make the Revised Strategic Plan as concise as possible.

6. An important consideration is how the IHO Work Programme (and therefore budget) is linked to the Revised Strategic Plan. The Council agreed to propose to the Assembly to task the Secretary-General to align the 2021 and 3-year IHO Work Programme 2021 – 2023 with the Revised Strategic Plan, while keeping the current structure of the Work Programme to facilitate the operational work and implementation by the Secretariat.

7. In order to develop methods for calculation of the Strategic Performance Indicators as outlined in the endorsed revision of the Strategic Plan after A-2, the Council amended the ToRs and RoPs of the SPRWG and endorsed them for submission to the Assembly for final approval.

8. In view of the overarching importance of the Revised Strategic Plan to achieve the goals and targets of the Organization within the period between 2021 and 2026, the Council agreed to seek the endorsement of the Assembly for interpreting “the effective implementation of the Revised Strategic Plan”, by keeping in mind to apply the principles of ISO 9001 as the main theme of the Council activities for the upcoming intersessional period towards the third Assembly.

International Hydrographic Organization (IHO)

Strategic Plan

for 2021-2026

Draft – 20 July 2019

Amended 17 October 2019

The sea, the great unifier, is man's only hope. Now as never before, the old phrase has a literal meaning: we are all in the same boat.

Jacques-Yves Cousteau, *National Geographic*, 1981

I. PREAMBLE

Hydrography is the branch of applied science which deals with the measurement and description of the physical features of oceans, seas, coastal areas, lakes and rivers, as well as with the prediction of their change over time.

The International Hydrographic Organization (IHO), which was established in 1921 and now has 93 Member States (MS), is an inter-governmental consultative and technical organization. It primarily supports the safety of navigation and the protection of the marine environment, and coordinates on a worldwide basis the setting of hydrographic standards. It also facilitates capacity building of national hydrographic services. It provides a forum at an international level for the improvement of hydrographic services through the discussion and resolution of hydrographic issues and it assists member governments to deliver these services through their national hydrographic offices.

Purpose

The purpose of the IHO Strategic Plan is to identify specific strategic goals and targets that will direct the IHO's Work Programme in a way that will foster the IHO vision, mission, and objects.

Vision

The vision of the IHO is to be the authoritative worldwide hydrographic body which actively engages all coastal and interested States to advance maritime safety and efficiency and which supports the protection and sustainable use of the marine environment.

Mission

The mission of the IHO is to create a global environment in which States provide adequate, standardized and timely hydrographic data, products and services and ensure their widest possible use.

Object

The Organization has a consultative and technical nature. It is the object of the Organization:

- a. To promote the use of hydrography for the safety of navigation and all other marine purposes and to raise global awareness of the importance of hydrography;
- b. To improve global coverage, availability and quality of hydrographic data, information, products and services and to facilitate access to such data, information, products and services;
- c. To improve global hydrographic capability, capacity, training, science and techniques;
- d. To establish and enhance the development of international standards for hydrographic data, information, products, services and techniques and to achieve the greatest possible uniformity in the use of these standards;
- e. To give authoritative and timely guidance on all hydrographic matters to States and international organizations;
- f. To facilitate coordination of hydrographic activities among the Member States; and
- g. To enhance cooperation on hydrographic activities among States on a regional basis.

II. CHALLENGES

Hydrographic offices (HO) everywhere are facing significant and rapidly developing challenges. Some challenges impact the mission of the IHO and shape the context to be taken into account by the Organization for building its strategy to fulfil its vision.

Growing needs, for increasingly diversified customers

There is an enlarged global demand for hydrographic data either through the evolution of requirements of navigation, or for the management of the marine environment.

For navigation, safety challenges are marked by the development of harbours in many countries, and of new routes of navigation. Moreover, the core role of shipping in globalization puts pressure on its efficiency, which through digitisation and automation generates needs for new, reliable services supporting the safety and efficiency of navigation. All categories of navigators, from merchant mariners to leisure boaters, are eager to access the new services enabled by digital technology. In the same time, complexity of technologies available to mariners raises new concern regarding their appropriation.

An increasing need for marine data is strived by the development of a sustainable Blue Economy, the concern for the preservation of the marine environment, and the prevention or mitigation of consequences of marine disasters or climate change. A wide range of related data is now crucial in supporting important decisions. These data, and associated skills, are very similar to those used for supporting navigation.

Progress in technology

The pace of technological innovations, from sensors to digital services, is increasing, bolstering the need for continuous adaptation of training and standards, thus requiring strong effort from HO in investment and training. This is particularly significant for the automation of sensors carrying devices, and for new processing techniques from the field of artificial intelligence, which make it possible to handle 'big data' and augment the capacity of human teams.

Data, transforming the hydrographic ecosystem

While the demand for hydrographic data is increasing, the assets or resources available to many hydrographic offices have not increased at a similar rate. However, the accessibility to technology and the interest in citizen science (or crowd-sourced data) has given opportunities to many actors to collect valuable data. This information can be used for many purposes, including for improved navigation. These tools and techniques being used are often considered to be outside traditional hydrographic methods, and this calls for the IHO and HOs to redefine their relationships with these new sources of hydrographic data.

More generally, the crucial role of data and information in our societies entails important consequences on public policy (e.g. open data), the need for data assurance, including cyber security, all along the value chain, and on the involvement of the private sector, which are likely to have an impact on how investments in hydrography are sustained, and how standards are developed.

Increasing attention to the Ocean

The role of the Ocean in our society and in the global Earth system is increasingly understood and recognized, leading to global or regional initiatives, such as the Agenda 2030 Sustainable Development Goal 14¹ of the United-Nations and the subsequent decision of the UN Decade

¹ "Conserve and sustainably use the oceans, seas and marine resources for sustainable development"

2021-2030 of Ocean Sciences, the negotiation on marine biological biodiversity of areas beyond national jurisdiction, or the Nippon Foundation-GEBCO Seabed 2030 project. These initiatives guide ocean sciences and frame the resources devoted to the knowledge and description of the Ocean.

III. GOALS, TARGETS FOR 2026 & STRATEGIC PERFORMANCE INDICATORS

To face these challenges, the IHO Strategic Plan for 2021-2026 is structured through three overarching goals, focusing the exercise of its mission during this period.

Under the three goals, the Organization has identified targets to be reached by 2026. The progresses towards these targets are measured by strategic performance indicators (SPI). The following tables summarize for each overarching goal the associated targets. Related object items of the IHO (Convention) are given for reference purpose. The SPI are listed in the Annexes.

Goal 1: Evolving the hydrographic support for safety and efficiency of maritime navigation, undergoing profound transformation

<i>Targets</i>	<i>Relation with IHO Object</i>
1.1 Deliver standards for hydrographic data and specifications of hydrographic products; support their regular production; and coordinate regional and global services for their provision.	a, d, e
1.2 Develop standards, specifications and guidelines in the areas of data assurance, including cyber security and data quality assessment.	b
1.3 Use capacity building and training to develop and increase the ability of Member States to support safety and efficiency of maritime navigation.	c

Goal 2: Increasing the use of hydrographic data for the benefit of society

<i>Targets</i>	<i>Relation with IHO Object</i>
2.1 Build a portal to support and promote regional and international cooperation in marine spatial data infrastructures (MSDI).	b, g
2.2 Promote new tools and methods to accelerate and increase coverage, consistency, quality of surveys in poorly surveyed areas.	b, d
2.3 Apply UN shared guiding principles for geospatial information management in order to ensure interoperability and extended use of hydrographic data in combination with other marine-related data.	d, g

Goal 3: Participating actively in international initiatives related to the knowledge and the sustainable use of the Ocean

Targets	Relation with IHO Object
3.1 Collaborate with other bodies who deliver capacity building and training to improve effectiveness of capacity building activities and programmes	c
3.2 Improve knowledge of the world's seafloors	b, f
3.3 Implement a comprehensive IHO digital communication strategy in order to enhance its visibility and accessibility to its work	a, b, e

IV. IMPLEMENTATION FRAMEWORK

To deliver on the designated Targets and achieve the three Goals, the IHO Secretariat and the two IHO Committees – the Hydrographic Services and Standards Committee (Hydrographic Services & Standards Committee) and the Inter-Regional Coordination Committee (IRCC) – will deliver and pursue the respective Work programmes, using the following means:

- Standardization;
- Coordination & Cooperation;
- Capacity Building; and
- Communication.

The advancement of the IHO Strategic Plan is only possible through the participation of MS at the working group and committee levels, and by the support and directions provided by the IHO Secretariat, all supported by the IHO Budget, funded by the Member States.

The Strategic Plan is not a comprehensive description of the activity of IHO, which is fully described in its Work Programme.

Work Programme

The triennial IHO Work Programme covers the period starting on 1 January of the year following the ordinary session of the Assembly and ending on 31 December of the year of the next ordinary session.

The triennial IHO Work Programme is divided into following three programmes:

- Corporate Affairs under the responsibility of the Secretary-General,
- Hydrographic Services and Standards under the responsibility of the relevant Committee (Hydrographic Services & Standards Committee), The Hydrographic Services & Standards Committee programme includes the activities to be conducted by its subordinate bodies as well as by inter-organizational bodies that report to the Hydrographic Services & Standards Committee.
- Inter-Regional Coordination and Support under the responsibility of the Inter Regional Coordination Committee (IRCC). The IRCC programme includes the activities to be conducted by its subordinate bodies as well as by the Regional Hydrographic Commissions and by inter-organizational bodies that report to the IRCC.

Review cycles

The review cycles for the Strategic Plan, the Work Programme and the Budget are set out in IHO Resolution 12/2002 as amended. The triennial IHO Work Programme is reviewed annually by the Council in liaison with the Chairs of the Hydrographic Services & Standards Committee and the IRCC.

Progress monitoring

The success in achieving of the Strategic Goals and Targets is measured by Strategic Performance Indicators (SPIs).

The Council determines the method for calculating the performance indicators.

Taking into account the object of the Organization and the overarching goals and targets, the success of Work Programme will also be measured by indicators which show the progress of the various elements of the Work programming that contribute to these objects, goals and targets.

Annexes of Annex A to PRO 1.8**Strategic performance indicators**

Targets	SPI (measure for success)	Comments
Goal 1: Evolving the hydrographic support for safety and efficiency of maritime navigation, undergoing profound transformation		
1.1 Deliver standards for hydrographic data and specifications of hydrographic products; support their regular production; and coordinate regional and global services for their provision.	<p>1.1.1 Percentage of Member States having operationalized production and distribution of hydrographic data products and services based on IHO Universal Hydrographic Data Model (S-100), under an implementation framework of coordination and agreed timelines (2026: 100%).</p> <p>1.1.2 Number of hydrographic data products and services based on Universal Hydrographic Data Model that cater for the new requirements: autonomous shipping, reduction of emission.</p>	1.1.1 Percentage of MS currently (2019) providing digital products
1.2 Develop standards, specifications and guidelines in the areas of data assurance, including cyber security and data quality assessment.	<p>1.2.1 Percentage of hydrographic data products and services based on S-100 model that are covered by IHO standards, specifications and guidelines on cyber security (2026: 100%).</p> <p>1.2.2 Percentage of navigationally significant areas (e.g. charted traffic separation schemes, anchorages, channels) for which the adequacy of the hydrographic knowledge is assessed through the use of appropriate quality indicators (2026:100%).</p>	1.2.2 Calculation method to be consistent with C55 calculation
1.3 Use capacity building and training to develop and increase the ability of Member States to support safety and efficiency of maritime navigation.	1.3.1 Ability and capability of Member States to meet the requirements and delivery phases of the S100 implementation plan (2026: 50%).	

Goal 2: Increasing the use of hydrographic data for the benefit of society		
2.1 Build a portal to support and promote regional and international cooperation in marine spatial data infrastructures (MSDI).	2.1.1 Number of hits downloading data/information from the portal.	2.1.1 Monitoring will be based on the increase of the value of the indicator and assessment of its significance
2.2 Promote new tools and methods to accelerate and increase coverage, consistency, quality of surveys in poorly surveyed areas.	2.2.1 Percentage of adequately surveyed area per coastal state. 2.2.2 Number of new applications of the new version of Standards for Hydrographic Surveys (S-44)	2.2.1 See C-55 2.2.2 Success of new edition of S-44 assessed from its applications to new fields
2.3 Apply UN shared guiding principles for geospatial information management in order to ensure interoperability and extended use of hydrographic data in combination with other marine-related data.	2.3.1 Number of HOs reporting success applying the principles in their national contexts (2026: 70%).	

Targets	SPI (measure for success)	Comments
Goal 3: Participating actively in international initiatives related to the knowledge and the sustainable use of the Ocean		
3.1 Collaborate with other bodies who deliver capacity building and training to improve effectiveness of capacity building activities and programmes	3.1.1 Percentage of Coastal States that are capable to provide marine safety information (MSI) according to the joint IMO/IHO/WMO manual on MSI (2026 90%).	
3.2 Improve knowledge of the world's seafloors	3.2.1 Amount of data received per year by the IHO Data Centre for Digital Bathymetry (DCDB). 3.2.2 Number of contributors to DCDB who are not hydrographic offices. 3.2.3 Percentage of total sea area-that is Seabed 2030 compliant for ingestion into the GEBCO dataset and services	3.2.1 & 3.2.2 Monitoring will be based on the increase of the value of the indicators, and assessment of its significance 3.2.3 Measured annually and reported through regional hydrographic commission to IRCC and the regional Seabed 2030 coordination centers
3.3 Implement a comprehensive IHO digital communication strategy in order to enhance its visibility and accessibility to its work	3.3.1 Number of visits, likes, re-postings, etc. associated to the IHO social media sites. 3.3.2 Volume downloaded from the IHO website and Geographical Information System (GIS).	See above

STRATEGIC PLAN REVIEW WORKING GROUP (SPRWG)**Terms of Reference and Rules of Procedure****(red-line version)**

Reference: IHO CL 20/2018 – Adoption of the ToRs and RoPs of the SPRWG and Membership

Preamble

The IHO Council, as directed by the 1st session of the IHO Assembly (Reference A, Decision A1/03), discussed how to conduct a comprehensive review of the Strategic Plan in order to provide a draft revised Plan in time for the consideration of the 2nd session of the Assembly in 2020. ~~The Council, at its 3rd meeting, proposed to continue the SPRWG in order to support the Council in finalizing the methods of calculation of strategic performance indicators (SPIs). This document will provide the SPRWG guidelines and direction to progress the work and for members' participation.~~

1. Terms of Reference

- ~~1.1. Conduct a comprehensive review of the Strategic Plan in two successive phases: scoping and drafting. Propose precise methods for calculation of the values of the SPIs, and eventual adjustment of their definition according to the Assembly's guidance, in liaison with Secretary-General, HSSC and IRCC.~~
- ~~1.2. In the scoping phase (T0⁴ + 6 months):~~
- ~~1.2.1 review and restate the current and future strategic context in which the IHO operates;~~
 - ~~1.2.2 propose the definition of success for the IHO in 2026;~~
 - ~~1.2.3 identify the deficiencies in terms of content, shape and interrelation to the implementation instruments in the existing Plan;~~
 - ~~1.2.4 consider appropriate goals, ways and means that could address any identified deficiencies;~~
 - ~~1.2.5 establish the management plan and timetable for developing and drafting any proposed revisions to the existing Plan;~~
 - ~~1.2.6 submit a proposal at C-2 for the draft framework of the revised strategic plan.~~
- ~~1.3. In the drafting phase (T0 + 18 months):~~
- ~~1.3.1 define the criteria for measuring success and propose priorities for the IHO;~~
 - ~~1.3.2 consider the interrelation to other management elements such as budget, work plan and performance indicators (Ref. d/);~~
 - ~~1.3.3 prepare the draft revised plan in accordance with the management plan and the timetable;~~

~~1.3.4—prepare the supporting documents for submission to A-2.~~

~~1.—T0 is the effective date of the establishment of the Working Group.~~

~~1.4.~~ 1.2 Provide a draft final report at ~~C-3~~ C-4 (-two months) for ~~endorsement and recommendations to be submitted to A-2~~ approval or endorsement and recommendations to be submitted to the Member States.

~~1.5.~~ 1.3 These Terms of Reference can be amended in accordance with Article 6 of the General Regulations.

2. Rules of Procedure

2.1 The Working Group is open to all Member States. It shall be composed of representatives of Member States. The Chairs of the HSSC, IRCC, FC, or their nominated representatives, should participate in the work of the Working Group. ~~The Secretary-General of the IHO is member of the WG.~~

2.2 ~~Canada, as decided at C-1, shall act as Secretary to the Working Group.~~ The Secretary shall prepare the reports required for submission to each meeting of the Council and to sessions of the Assembly as directed by the Council.

2.3 The Chair and Vice-Chair shall be a representative of a Member State having a seat at the Council. The Chair, ~~and~~ Vice-Chair ~~and Secretary~~ shall be nominated ~~at the end of the 1st meeting of when~~ the new Council is appointed and the nominations shall be determined by ~~correspondence~~ vote of the Council Members ~~present and voting. As decided at C-1, France will serve as the Chair, and Japan the Vice-Chair.~~ If the Chair is unable to carry out the duties of the office, the Vice-Chair shall act as the Chair with the same powers and duties.

2.4 The Working Group should normally work by correspondence, but if decided by the Working Group, meetings can be scheduled in conjunction with any IHO meetings. The Chair or any member of the Working Group, with the agreement of the simple majority of all members of the Working Group, can call extraordinary meetings. In case of meetings, all intending participants shall inform the Chair and Secretary ideally at least one month in advance of their intention to attend meetings of the Working Group.

2.5 Decisions shall generally be made by consensus. If votes are required on issues or to endorse proposals presented to the Working Group, decisions shall be taken by a simple majority of Working Group Members present and voting. When dealing with matters by correspondence, a simple majority of all responding Working Group Members shall be required.

2.6 The draft record of meetings shall be distributed by the Secretary within ten working days of the end of meetings and participants' comments should be returned within ten working days of the date of dispatch. Final minutes of meetings should be distributed to all IHO Member States and posted on the IHO website within thirty days after a meeting.

2.7 The working language of the Working Group shall be English.

2.8 Recommendations of the Working Group shall be submitted to the Council for endorsement, ~~then for approval by Member States by IHO CL.~~

2.9 The Working Group will be disbanded after ~~A-2~~ C-4.

2.10 These Rules of Procedure can be amended in accordance with Article 6 of the General Regulations.

STRATEGIC PLAN REVIEW WORKING GROUP (SPRWG)**Terms of Reference and Rules of Procedure****(clean version)**

Reference: IHO CL 20/2018 – Adoption of the ToRs and RoPs of the SPRWG and Membership

Preamble

The IHO Council, as directed by the 1st session of the IHO Assembly (Reference A, Decision A1/03), discussed how to conduct a comprehensive review of the Strategic Plan in order to provide a draft revised Plan in time for the consideration of the 2nd session of the Assembly in 2020. The Council, at its 3rd meeting, proposed to continue the SPRWG in order to support the Council in finalizing the methods of calculation of strategic performance indicators (SPIs).

1. Terms of Reference

1.1 Propose precise methods for calculation of the values of the SPIs, and eventual adjustment of their definition according to the Assembly's guidance, in liaison with Secretary-General, Hydrographic Services & Standards Committee and IRCC.

1.2 Provide a draft final report at C-4 (-two months) for approval or endorsement and recommendations to be submitted to the Member States.

1.3 These Terms of Reference can be amended in accordance with Article 6 of the General Regulations.

2. Rules of Procedure

2.1 The Working Group is open to all Member States. It shall be composed of representatives of Member States. The Chairs of the HSSC, IRCC, FC, or their nominated representatives, should participate in the work of the Working Group. The Secretary-General of the IHO is member of the WG.

2.2 The Secretary shall prepare the reports required for submission to each meeting of the Council and to sessions of the Assembly as directed by the Council.

2.3 The Chair and Vice-Chair shall be a representative of a Member State having a seat at the Council. The Chair, Vice-Chair and Secretary shall be nominated when the new Council is appointed and the nominations shall be determined by correspondence vote of the Council Members. If the Chair is unable to carry out the duties of the office, the Vice-Chair shall act as the Chair with the same powers and duties.

2.4 The Working Group should normally work by correspondence, but if decided by the Working Group, meetings can be scheduled in conjunction with any IHO meetings. The Chair or any member of the Working Group, with the agreement of the simple majority of all members of the Working Group, can call extraordinary meetings. In case of meetings, all intending participants shall inform the Chair and Secretary ideally at least one month in advance of their intention to attend meetings of the Working Group.

2.5 Decisions shall generally be made by consensus. If votes are required on issues or to endorse proposals presented to the Working Group, decisions shall be taken by a simple majority of Working Group Members present and voting. When dealing with matters by

correspondence, a simple majority of all responding Working Group Members shall be required.

2.6 The draft record of meetings shall be distributed by the Secretary within ten working days of the end of meetings and participants' comments should be returned within ten working days of the date of dispatch. Final minutes of meetings should be distributed to all IHO Member States and posted on the IHO website within thirty days after a meeting.

2.7 The working language of the Working Group shall be English.

2.8 Recommendations of the Working Group shall be submitted to the Council for endorsement, then for approval by Member States by IHO CL.

2.9 The Working Group will be disbanded after C-4.

2.10 These Rules of Procedure can be amended in accordance with Article 6 of the General Regulations.

LIST OF MEMBER STATES' COMMENTS

ARGENTINA

The Strategic Plan presented by the Council is clear, concise and has clear objectives and goals. In turn, the Strategic Performance Indicators are generally simple and easily calculable.

We do not see the consistency between SPI 1.1.1, which requires that 100% of the MS must have operationalized products and services S-100 by 2026 and 1.3.1, which requires a 50% capacity of MS to meet the requirements and implementation stages of the S-100 implementation plan.

On another hand, the use of capacity building and training to achieve targets 1.3 and 3.1 is made difficult by the fact that the CBF will be reduced so dramatically over the next 3 years.

BRAZIL

Brazil supports this proposal.

Brazil would like to emphasize that SPIs should follow ISO 9001 Key Performance Indicators principles and, therefore, always be measurable

CANADA

Canada supports the recommendations of the Council to the Assembly with respect to the Revised Strategic Plan.

Notes:

1. Suggest removing "STRATEGIC PERFORMANCE INDICATORS" from the heading of Section III of the draft Strategic Plan document. It is noted later in that section that the SPIs are listed in the Annex of the document.
2. Is it correct to assume that some of the SPIs listed in the Annex may change slightly subject to the proposed further work of the SPRWG?
3. Canada wishes to acknowledge and thank Mr. Bruno Frachon (FR) for his diligence, hard work, and leadership of the SPRWG.

DENMARK

Denmark acknowledge the work of the SPRWG to develop the new Strategic Plan for 2021-2026.

The strategic plan will be an important tool to enable IHO and the MS to priorities their efforts in a forward looking perspective.

FINLAND

Finland supports the proposal.

FRANCE

France questions the formulation of the Strategic Performance Indicator (SPI) 2.1.1 «Number of hits downloading data/information from the portal" which might suggest that Target 2.1 aims to develop a data access portal, whereas it refers to the building of a "portal to support and promote regional and international cooperation in marine spatial data infrastructures (MSDI)". The portal should be limited to a promotional function in MSDI, with access to data/information being provided in a privileged manner through a distributed architecture based on national maritime spatial data infrastructures, such as the EMODNET portal.

ITALY

Italy actively participated in the drafting of the RSP and fully supports the structure and content.

JAPAN

Japan continues to support this proposal.

NETHERLANDS

The Netherlands support all four elements of this Proposal.

NORWAY

Norway (member of Council and SPRWG) approves the revised strategic plan and approves the amended ToRs and RoPs for the SPRWG.

SWEDEN

Sweden supports this proposal.

UNITED KINGDOM

The UK fully supports the revised strategic plan proposal. In support of the IHO Secretariat, the UK has volunteered its assistance to help align Work Plan 2021-2023 to the Strategic Plan.

UNITED STATES OF AMERICA

The U.S. commends the leadership of France, Japan, and Canada and the work of the SPRWG team in developing revisions to the IHO Strategic Plan. The resulting Council-endorsed plan is concise, action-oriented, and inclusive of the stakeholder interests. The plan orients the IHO with global, regional, national and local needs as we begin the important decade of the 2020s.

PROPOSAL N°	OBJECT OF THE PROPOSAL	SUBMITTED BY	REFERENCE
1.9	Report on the informal consultation process for the future of S-23	Secretary-General	1

- References:**
- A. Proceedings of the first Session of the Assembly
 - B. FINAL REPORT OF S-23 WORKING GROUP TO MEMBER STATES
February 2012 – *revised June 2012*
 - C. S-23 WG - Terms of Reference

- Annex:**
- A. Concept on the Future of S-23 - Modernization of Standardization of Limits of Oceans and Seas

PROPOSAL

- Noting the considerations made in the course of the informal consultation process regarding the future of S-23, noting the consent of the participants and observers on the need for the provision of digital coordinates for limits of oceans and seas, informing that no consensus on the revision of S-23 was reached, the Assembly is invited to take note of the implementation of the process and its results, and subsequently:
- PRO 1.9.1- to agree on the provision of digital coordinates for limits of oceans and seas to meet requirements of contemporary geographic information systems.
- PRO 1.9.2 – to task the appropriate IHO subordinate technical body
 - to develop a dataset named “Polygonal demarcations of global sea areas” to designate geographic sea areas by a system of unique numerical identifiers only, and
 - to profile or adapt appropriate IHO S-100-based standards through a new S-130 dataset, to facilitate the digital provision of the “Polygonal demarcations of global sea areas”.
- PRO 1.9.3 – to consider, if and when necessary, the development of basic guidelines for the allocation and display of attributes of sea areas to be applied to Geographic Information Systems.
- PRO 1.9.4 – to note that S-23 is kept publicly available as part of existing IHO publications to demonstrate the evolutionary process from the analogue to the digital provision of limits of oceans and seas.
- PRO 1.9.5 – to task the Secretary-General, as part of the process resulting from PRO 1.9.2, to consider subsequent amendments to the relevant IHO Resolutions 32/1919 as amended and 13/1919 as amended, for endorsement by the Council, if and when appropriate.
- PRO 1.9.6 - to instruct the Secretary-General to take any other actions considered necessary.

EXPLANATORY NOTE

1. At its first Session, the Assembly tasked the Secretary-General to facilitate an informal consultation process regarding the future of S-23 among interested Member States, including determining mutually agreed modalities of work, and to report the result of the consultations to the Assembly at the next ordinary session (Decision A1/04).
2. Over summer 2017 the following Member States indicated interest to participate in this process in writing or phoning:
 - Democratic People’s Republic of Korea,
 - Republic of Korea,
 - Japan,
 - China, Italy, Portugal, Oman, Russian Federation, UK, USA.
3. Since the first session of the Assembly, informal conversations were held with China, Italy, Portugal and Russian Federation.
4. The Secretary-General chaired two informal consultative meetings with attendance of Democratic People’s Republic of Korea, Republic of Korea and Japan. USA and UK participated as observers.
5. At first, the participants jointly reviewed the options proposed by the S-23WG between 2009 and 2012 (Reference B) as potential approaches for a renewed revision process. In a second step, the Secretary-General requested proposals for new options beyond those made by the S-23WG for such renewed approach. Both exercises did not result in new suggestions how to revise S-23 successfully.
6. In the absence of a consensual approach for the revision of S-23, the Secretary-General presented a concept for the modernization of standardization of the limits of the oceans and seas by means of a digital dataset designating the geographic sea areas by a system of unique numerical identifiers only. The rationale of this approach is annexed to this report.

Annex A to PRO 1.9

Future of S-23 – Modernization of Standardization of Limits of Oceans and Seas**Historical background**

1. The attempts to update the 3rd Edition of S-23 date back to the Seventies of the previous century. The significant changes of the tentative draft 4th Edition compared to the 3rd Edition were:
 - Improved structure and indexing of the content
 - Improved chartlets
 - Incorporation of the Southern Ocean
 - Change of title and preface towards: “Names and Limits of the Oceans and Seas”
2. The tentative draft 4th Edition was submitted for approval for the first time by Circular Letter No. 6/1986 but did not receive the required amount of affirmative votes. There was a variety of reasons for low support – not limited to the naming problem in question.
3. A final tentative draft was submitted to Member States approval by Circular Letter 30/2002 for approval of Member States. This draft did not include pages 7-16 and 7-17 which present the sea area between the Asian Coast and the Islands of Japan. As a result of significant interventions made by Japan with Member States, the voting of the 4th Edition was interrupted “to study the details of the subject”.
4. Based on discussions at the XVII IHO Conference, Circular Letter 86 / 2007 proposed to publish S-23 4th Edition in two volumes:
 - the first of which would contain all the data agreed upon and could be published immediately,
 - the second one containing the disputed portion to be withheld until an agreement will be reached.
5. CL 86/2007 also presented Japan’s proposal to remain on the naming of the 3rd Edition but included general annotations on the naming problem/issue corrigenda in case of future agreement. In 2009, the IHO Directing Committee had acquired approval for the establishment of the S-23 WG, which met the first time June 2009 under chairmanship of the IHO-President. The S-23 WG got Terms of Reference and Rules of Procedures aiming to present a report not later than June 2011.
6. S-23 WG identified three areas of concern:
 - Whether the Malacca and Singapore Straits should be located in the Indian Ocean or the South China Sea and Eastern Archipelagic Seas;
 - Proposals by China for changes in names and limits in the South China Sea, East China Sea and Yellow Sea.
 - The naming of the sea area between the Korean Peninsula and the Japanese Archipelago;
7. In its final report the S-23 WG dated June 2012 reported consensus for:
 - Malacca and Singapore Straits to be accepted as a single, continuous waterway, forming a separate administrative division in S-23; and
 - The Chinese proposals to be accepted for inclusion in S-23.
8. No Consensus was reported for:
 - The inclusion of the “Important Notice” in the preface of S-23.
 - On the issue of naming the sea area between the Korean peninsula and the Japanese archipelago.

9. This situation has not changed since though the intentions expressed in the IHO Resolution 32/1919 as amended in 1977 remains fully valid:

It is resolved that in view of the increasing use being made by cartographers, national institutions and commercial agencies of S-23 "Limits of Oceans and Seas", the IHB shall undertake a revision of this publication in order to update its content.

10. At its first Session, the Assembly tasked the Secretary-General to facilitate an informal consultation process regarding the future of S-23 among interested Member States, including determining mutually agreed modalities of work, and to report the result of the consultations to the Assembly at the next ordinary session (Decision A1/04).

Need for modernization

11. As the preface of the 3rd Edition of S-23 suggests, this global collection of limits is published for the convenience of hydrographic offices when compiling their nautical charts and publications. However, the role and consequently the products and services which Hydrographic Offices are providing nowadays have tremendously changed since the updating processes started in the seventies. Therefore, the purpose of a standardized global collection of limits is not solely designated to nautical cartography anymore - modern geoinformation services operated by hydrographic offices, governmental bodies and international organizations of associated domains (for example, in weather and oceanography) need this basic information. This purpose is not appropriately maintained anymore by S-23 since its last publication in 1953, because not only the topography of the seas and oceans in terms of the geographic limits but the scope and the way this information is applied and provided have changed significantly in the digital era.
12. The provision of geographic information is without question one of the most popular digital services – accessible and used by nearly everybody who uses web technology. But S-23 in its current form is not suitable for this. The need for modernization of provision of geographic limits of the global seabed is therefore to revise some of the limits defined by the standard, but also to promulgate the included area information in digital geographic coordinates. In short: this global collection of limits needs an update through modernization of the information carrier to get ready for digital dissemination!
13. The principal means to make S-23 content fit for this purpose is the transformation information contained in a database of attributed area feature objects with global coverage. The resulting dataset should be based on modern digital technology and facilitate the following aims:
- Compatibility with the S-100 Universal Hydrographic Data Model, and its underpinning Geospatial Information Registry, for the purpose of the IMO's e-Navigation concept.
 - Provision for the variety of Geospatial Information Systems (GIS) being utilized by the IHO Secretariat, national Hydrographic Office services, including Marine Spatial Data Infrastructures (MSDI); and the respective national reporting obligations within the framework of UNCLOS.
 - Higher resolution of the standardized limits of the oceans and seas by means of vectorized chain-node topology.
 - Greater flexibility offered to users and systems for geographical names
 - Customization of displayed information about the limits according to regional and national priorities; and end user requirements.
 - Expansion of attributes assigned to the limits on demand.
 - Preparedness for the application of future voice command functionality of GIS applications; application of artificial intelligence; and "deep learning" on marine geoinformation.
 - Support of machine-to-machine communication for the facilitation of autonomous shipping.

14. As a generic approach, each marine area limit included in this dataset shall be designated by a unique and unambiguous numerical feature object identifier, noting that it is a digital evolution of the analogue S-23 in its first step. The most modern approach for such provision of information about the limits of oceans and seas is the marine application of the URI (Uniform Resource Identifier) paradigm. This approach is well suited to the S-100 framework. It offers unambiguous identification of marine areas through a unique numeric identifier system.

Side conditions

15. Modern geoinformation systems can handle locations, boundaries and regions completely by numerical identifiers without any naming. Machine to Machine communication is fully maintained anyway but even full local orientation of human readers can be supported through visual means depicting the area in various orientations, projections and scales. Symbology can fully substitute any naming which is never a precise designation as numeric values for geographic positions do represent.
16. However, there is an undeniable political resonance of the ongoing debate about the S-23 update and modernization attempts which have to be considered as part of a proposed solution for modernization.

Proposed solution

17. As a follow-up to the Informal Consultation Process regarding the future of S-23, IHO develops a dataset named “Polygonal demarcations of global sea areas” based on numerical feature object identifier or, alternatively, the Uniform Resource Identifier (URI) approach to designate the geographic sea area by a unique numerical identifier only. No names will be applied. The geographic structure of the dataset takes orientation on the 3rd Edition of S-23, paying due regard to the factors as contained in para 1.1 of the Terms of Reference of the S-23WG (Reference C). The polygonal vertices of the dataset will however deviate from S-23 Edition 3 in terms of improved accuracy to meet modern GIS needs.
18. The dataset of “Polygonal demarcations of global sea areas” will be granted by a name of the range of the S-1xx Standards. It is proposed to designate it as S-130.
19. IHO will, if and when necessary, consider the development of basic guidelines for the allocation and display of attributes of sea areas to be applied to Geographic Information Systems.

Conclusion

20. The 3rd Edition of S-23 “Limits of the Oceans and Seas” is not suitable for use in a digital environment. A transformation into a digital dataset named “Polygonal demarcations of global sea areas” would facilitate the joint standardization and service activities of IHO and other adjacent domains to support the e-Navigation concept of the IMO. The affected standards of IHO and IMO that currently refer to S-23 can be adapted to the new dataset solution with comparably low effort.
21. S-23 is kept publicly available as part of the existing IHO publications to demonstrate the evolutionary process from the analogue to the digital provision of limits of oceans and seas.

LIST OF MEMBER STATES' COMMENTS

CANADA

Canada supports all of the recommendations put forth by the Secretary-General as positive and rational steps forward.

FRANCE

France notes that no consensus has been reached on the revision of S-23, and recalls* its wish to have an updated version of this technical publication on the limits of the seas and oceans.

* See XVIIIth International Hydrographic Conference, Proceedings / Volume 1, p. 128.

France thus supports PRO 1.9.1 aimed at providing the digital coordinates of the limits of the oceans and seas, thus meeting the requirements of modern geographical information systems, both to meet the internal needs of Hydrographic Offices and more generally for the benefit of all.

Such a provision will thus fill the gap left by the fact that S-23 has not been updated for almost 70 years, a gap filled by various initiatives (such as marineregions.org), which has adversely affected the Organization's visibility.

France will support the development of a dataset entitled "Polygonal demarcation of Global Sea Areas" to designate geographical sea areas through a system of unique numerical identifiers (first paragraph of PRO 1.9.2).

The new S-130 dataset (2nd paragraph of PRO 1.9.2) should be established in the most pragmatic way possible in relation to the objectives pursued in order not to further delay the provision of the "Polygonal demarcation of Global Sea Areas".

The basic guidelines for the allocation and display of sea area attributes to be applied to geographic information systems (PRO 1.9.3) should be developed in a consensual and pragmatic manner, based on technical considerations.

ITALY

Italy generally considers the opportunity of modernization of the provision of geographic limits to the global seabed.

JAPAN

Japan appreciates the Secretary-General's efforts to advance the Informal Consultation Process for the Future of S-23. Japan understands the intention of the Secretary-General's proposal to provide digital coordinates for limits of oceans and seas in order to make hydrographic contents fit for purpose in light of modern digitalized information needs.

On such basic understanding, we are prepared to work cooperatively and constructively with the IHO Secretariat and Member States and focus our work on IHO's core objectives and technical missions in the digital era.

NORWAY

Norway supports the proposal in general and would like to highlight the appropriateness of establishing a digital technical solution of polygonal demarcations of global sea areas.

SWEDEN

Sweden supports this proposal.

THE REPUBLIC OF KOREA

The Republic of Korea supports, in principle, the proposals submitted by the Secretary-General, which are the outcome of the informal consultation process for the future of S-23 drawn up under the stewardship of the Secretary-General. The Republic of Korea also notes that S-23 is outdated that it is no longer suitable to serve as a valid standard for modern hydrography both in terms of substance and form, as elaborated within Annex A of the report. The dataset proposed by the Secretary-General, S-130, will likely foster the provision of standardized coordinates of the limits of oceans and seas in a digital format. This new IHO standard will be much more effective in meeting user requirements in the increasingly digitalized geospatial information environment of the 21st century. Such an IHO standard is anticipated to ensure that hydrographic information is universally accessible and compatible with other global geospatial data.

UNITED STATES OF AMERICA

The U.S. supports the proposal and the development of the dataset of “Polygonal demarcations of global sea areas.” Updating and establishing common locations, boundaries and regions that can be utilized within modern navigation and Geographic Information Systems will benefit the global community. We look forward to assisting on this effort should Member States reach consensus on the way forward.

PROPOSAL N°	OBJECT OF THE PROPOSAL	SUBMITTED BY	REFERENCE
1.10	Establishing an IHO strategy and resolution for gender-inclusive language	Canada & Japan	1

References : A. Action C3/09

B. UN Gender-inclusive Language. (English: <https://www.un.org/en/gender-inclusive-language/>; Français: <https://www.un.org/fr/gender-inclusive-language/>; Español : <https://www.un.org/es/gender-inclusive-language/>)

C. UN Sustainable Development Goal 5 – Gender Equality (<https://www.un.org/sustainabledevelopment/gender-equality/>)

PROPOSAL:

The Assembly is invited :

- a. To endorse a new IHO Resolution regarding gender-inclusive language; and,
- b. To task the Council to develop a strategy towards implementing the Resolution, that is, ensuring all IHO documentation and communications are consistent with the UN Guidelines on Gender-inclusive Language and to monitor the IHO's progress towards this goal.

EXPLANATORY NOTE

1. During a discussion at the 3rd IHO Council meeting on amendments to an Article of the General Regulations, it was noted that IHO documentation lacks a consistency in the application of “gender-neutral” language. [This proposal will forthwith adopt the UN term, “gender-inclusive language”.] Given the soon-to-be 100-year existence of the organization and the great number of documents in the IHO collection, this is not a surprise, but neither should this be considered to cast a poor light on the Organization given the sizable evolution of social norms over that period. In fact, a preliminary analysis of the English version of Basic Documents and the IHO Resolution (Annex B), finds relatively few cases of gender-specific pronouns and possessives i.e. ‘he’ ‘him’, ‘his’.

2. However, as the IHO enters its second century, it is time for the Organization to set a path to ensure, starting with its language, that gender equity is promoted and supported. It is a small step that the IHO can take to support the UN Sustainable Development Goal 5: Gender Equality (Ref C). The UN states the following (Ref. B.):

Using gender-inclusive language means speaking and writing in a way that does not discriminate against a particular sex, social gender or gender identity, and does not perpetuate gender stereotypes.

Given the key role of language in shaping cultural and social attitudes, using gender-inclusive language is a powerful way to promote gender equality and eradicate gender bias.

3. This proposal is comprised of two elements:
 - a. A Resolution that will state clearly the IHO's commitment to ensuring that gender-inclusive language is used in all its documentation and communication. Any document or communication issued or updated after the 2nd Meeting of the IHO Assembly must follow the UN gender-inclusive guidelines. A draft resolution to this effect is proposed in Annex A.
 - b. A strategy or plan, developed and monitored by the IHO Council (perhaps via a Council working group) to monitor the implementation of the Resolution.

Further notes:

-In recognition of the administrative load that would fall on the IHO Secretariat to simply update the current documents to the UN guidelines, it is recommended that the updating of the gender references take place in conjunction with other edits and revisions, as proposed by committees, sub-committees, working groups, and other organs of the IHO.

-This proposal and the Resolution, in no way change the current approval process, except if the change is purely to update the gender language. It is proposed that the Assembly delegate approval to the Council for these cases.

-The analysis summarized in Annex B was preliminary. Further investigation should be undertaken to ensure that all instances of less-inclusive gender language are identified.

-The UN Guidelines are available in each of the official languages of the IHO (plus others).

Annex A to PRO 1.10

GENDER-INCLUSIVE LANGUAGE TO BE USED IN IHO DOCUMENTS AND COMMUNICATIONS	x/2020	IHO A-2	
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1. Given that language plays an important role in shaping cultural and social attitudes, it is resolved that the Secretariat of the IHO and the organs of the IHO must ensure that the language used in IHO documents and communications issued or amended after the 2nd Meeting of the IHO Assembly will be gender inclusive as per the UN Guidelines on Gender-inclusive Language (<https://www.un.org/en/gender-inclusive-language/>).
2. Documents produced prior to the approval of this resolution will be updated at the earliest possible opportunity and, preferably, in conjunction with other content editing or revision.
3. The approval of documents amended solely to address gender language issues is delegated to the IHO Council by the IHO Assembly.
4. Documents amended for any other reason will follow the approval process that is appropriate for that particular document.

Annex B to PRO 1.10Instances in the IHO Basic Documents and in the Resolutions of the IHO (English version) of less-inclusive gender language (using examples from UN Guidelines).

	his/her	he/she or he	him/her or him
Convention	n/a	n/a	n/a
General Regulations	Art. 14 Art. 14 (<i>his or her</i>) Art. 15 Art. 25c Art. 25d Art. 25e	Art. 11 (x3) Art. 12	n/a
Financial Regulations	Art. 19a	Art. 19c	n/a
ROP Assembly	Rule 16 Rule 25	Rule 17 (x2)	Rule 17 Rule 19
ROP Council	Rule 13 Rule 19	Rule 14 (x2)	Rule 14 Rule 15
ROP Financial Committee	Rule 15 Rule 19	Rule 11 (x2)	Rule 11 Rule 12
Resolutions of the IHO	6/2009 5(a)	2/2004 (<i>he</i>)	

LIST OF MEMBER STATES' COMMENTS

BRAZIL

Brazil congratulates Canada and Japan for submitting this proposal, supports a new IHO Resolution regarding gender-inclusive language and would like to present some suggestions to the proposed IHO Resolution as showed below.

Observation: In red to remove and in blue to add.

GENDER-INCLUSIVE LANGUAGE TO BE USED IN IHO DOCUMENTS AND COMMUNICATIONS	x/2020	IHO A-2	
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1) Given that language plays an important role in shaping cultural and social attitudes, it is resolved that **the Secretariat of the all IHO and the organs of the IHO** must ensure that the language used in IHO documents and communications issued or amended **after the 2nd Meeting Session of the IHO Assembly** will be gender inclusive **as per the UN Guidelines on Gender-inclusive Language (<https://www.un.org/en/gender-inclusive-language/>)**.

2) Documents produced prior to the approval of this resolution will be updated at the earliest possible opportunity and, preferably, in conjunction with other content editing or revision.

3) The approval of documents amended solely to address gender language issues is delegated to the IHO Council by the IHO Assembly.

4) Documents amended for any other reason will follow the approval process that is appropriate for that particular document.

Brazil suggests the following requests for decision of the Assembly, instead of the second element of this proposal:

- to task Hydrographic Services & Standards Committee and IRCC to include the revision of Publications under its remit in its Work Plan, adopting the UN Guidelines on Gender-inclusive Language.

- to task the Council to conduct a comprehensive review of the IHO Basic Documents, adopting the UN Guidelines on Gender-inclusive Language, and to provide draft revised IHO Basic Documents for the consideration of the Assembly at the next ordinary session (A-3).

- to task the Secretary-General to draft revised IHO Resolutions 2/2004 and 6/2009 as amended and to submit it to the forth meeting of the Council (C-4).

- to task the Council to monitor the IHO's progress towards the implementation of the UN Guidelines on Gender-inclusive Language to all IHO documentation and communications and report to the Assembly at the next ordinary session (A-3).

CANADA

Canada supports this proposal.

CHILE

We support proposal in a) but we do not support text in letter b) of the Proposal, as this new activity which is not associated to the mission nor the objectives of the IHO will generate a new workload for the development and monitoring of what might be developed.

DENMARK

Denmark supports this proposal

FINLAND

Finland is in favor of the proposal.

FRANCE

France supports the general objective of gender-neutral IHO documentation and communication.

As the French language does not have a gender-neutral grammar, the extent of the task of updating existing documentation in accordance with the United Nations guidelines on inclusive language should not be overlooked.

In accordance with the United Nations Guidelines on Inclusive Language (<https://www.un.org/fr/gender-inclusive-language/guidelines.shtml>, Point 2.4), the typographical strategies of using slashes, parentheses, or the middle point to combine the use of the feminine and masculine, complicating the reading and understanding of texts, should be avoided.

GERMANY

Germany supports this proposal.

ITALY

Italy supports the proposal as a sign of non-discrimination against a particular sex, social gender or gender identity, and to promote gender equality and eradicate gender bias.

Italy also supports the proposed draft Resolution annexed to PRO 1.10, in order to underline the IHO's commitment to ensuring that gender- inclusive language is used in all its documentation and communication.

JAPAN

Japan expects that the Assembly approves this proposal.

NETHERLANDS

The Netherlands support both elements of this Proposal.

NORWAY

Norway supports the proposal

SWEDEN

Sweden supports the proposal

UNITED KINGDOM

The UK fully supports the Proposal for a new IHO Resolution regarding gender-inclusive language and to task Council to develop an implementation strategy.

UNITED STATES OF AMERICA

The U.S. commends the delegations from Canada and Japan for making their joint proposal to establish an IHO Strategy and Resolution for Gender-inclusive language. The U.S. endorses the IHO resolution that requires gender-neutral language in IHO documentation and communication. The U.S. is prepared to assist the Council with efforts to develop an implementation strategy.

SECRETARY-GENERAL`S RESPONSE TO MEMBER STATES COMMENTS

The Secretary-General seeks for advice how bilingual countries such as Canada deal with this transition to Gender-inclusive language in French language. On this basis the Secretary-General would be in the position to monitor the implementation of the Resolution for those documents listed in Annex B of PRO 1.10.

PROPOSAL N°	OBJECT OF THE PROPOSAL	SUBMITTED BY	REFERENCE
2.1	S-100 Implementation Strategy	IHO Council	2

Reference: A. 3rd Meeting of the Council – Summary Report.

Annex: A. S-100 Roadmap for the S-100 Implementation Decade (C3-03.6A Rev1)

PROPOSAL

The Council having considered the progress of the technical standardization of the S-100 Framework, the interrelation to IMO’s e-navigation programme and the needs to assist Member States for readiness and capacity to commence the production and the integrated provision services of S-101 ENC and other S-100 based products, the Assembly is invited:

- to approve the “S-100 roadmap for the S-100 Implementation Decade” endorsed by the Council as presented in Annex A.
- to task the Council to maintain the S-100 roadmap and resulting activities in liaison with external bodies on an annual basis as a key priority of the Council activities.

EXPLANATORY NOTE

1. At the 3rd meeting of the Council meeting (C-3) in October 2019, the Secretary-General introduced the discussion of the S-100 Implementation Strategy, indicating the topic was amongst the most important to be discussed by the Council and carried a mix of responses by Member States due to the improved technology versus the anxiety of implementation timelines.

2. The presented document (Annex A) sets out the strategic fields of engagement to develop an accepted roadmap for the S-100 Implementation Decade. The main drivers to develop S-100 are increasing digitalization in the shipping industry - for classic and autonomous navigation – and the benefits of “smart hydrography”.

3. The implementation of S-100 based data services will not only improve safety of navigation and shipping in ports, but provide a cyber-secure, easily maintained software foundation that will support creative industry policy. S-100 based services should be considered an important driver for autonomous shipping capability.

4. S-101 ENC will become the premium product of hydrographic offices. The future provision of such S-101 datasets is regarded as vital for the future success of the IHO.

5. It is understood that S-101 ENC provision and other S-100 based data services require production and dissemination harmonization over time. Likewise, S-101 and S-10x capacity building, fostered through RHCs, is critical to implementation success.

6. The Council agreed that substantial data coverage is necessary for successful adoption by customers, especially within the shipping industry. It was also noted that there should be a technical and standardized compatibility between S-101 and S-57 during the transition phase for the implementation period to allow for S-57-only ECDIS to meet carriage requirements and remain operational. To start with substantial coverage, S-101 ENC could be produced by converting S-57 datasets before native production of ENCs in the cartographically enriched S-101 format.

7. The IHO will coordinate with IMO and industry stakeholders concerning the transition to the S-101 ENC production, coverage and use in end user applications. Since the so called “S-mode” for ECDIS is scheduled to be implemented by IMO on new ECDIS from January

2024 onwards this would create a window of opportunity for the S-101 ENC processing capability. The “dual fuel” model of parallel provision of S-57 ENCs and S-101 ENCs after this date for a significant duration would be instrumental for the transition period.

8. The Council endorsed the draft roadmap for the provision of S-100 based services (Decision and Action C3/13), as a first step, noted the important IMO target of January 2024 for the implementation of the S-mode and tasked the Secretary-General to start engaging with IMO.

9. The inclusion of a detailed plan of action and milestones, along with a strategic narrative, appears indispensable for road map communication. The Council / HSSC / IRCC Chairs / Secretary-General supported by subject matter experts as appropriate are tasked to maintain this roadmap as an incremental document (including narrative and timelines) on an annual basis taking into account comments already made at C-3 (engagement plan, production plan, capacity building) and to be made at A-2.

10. The Council tasked the chairs of HSSC/IRCC and the Secretary-General to align the IHO Work Programmes 1, 2 and 3 for 2021 with this roadmap (Reference A, Action C3/14).

11. The Council also tasked the Council Chair to report at A-2 on the IHO progress towards the provision of S-100 based services and to propose to the Assembly to task the Council to maintain the S-100 roadmap on an annual basis as a key priority of the Council activities. (Reference A, Action C3/16).

Annex A to PRO 2.1**Roadmap for the S-100 Implementation Decade (2020 – 2030)****Version 1.0 Rev 1****Introduction**

The 2nd Meeting of the IHO Council tasked the chairs of the Council, HSSC, IRCC Chairs and the Secretary-General to draft an implementation strategy/roadmap for a transition plan aiming to the regular and harmonized production and dissemination of S-100 based products for further discussion at A-2 and for the preparation of the 2021-2023 IHO Work Programme (Ref. A: Action C2/31).

In addition the Secretary-General was tasked to start engaging with the IMO to update on the current status of the S-100 framework and potential future impact on IMO instruments (Ref. A: Action C2/32).

As a result of their deliberations the noted group of offices bearers identified the following strategic fields of engagements to develop an accepted roadmap for the now called *S-100 Implementation Decade*:

1. Operational infrastructure
2. Technical standardization
3. Coordinated implementation of services
4. Synchronization with IMO
5. Collaboration with industry
6. Capacity Building of Hydrographic Offices
7. Development of Global Distribution Capability

These seven topics have to be considered in detail to enable Member States of IHO, IMO and all other affected stakeholders including industry partners, to adjust their legal and technical arrangements to contribute to the establishment of S-100 based products services. This submission proposes a basic timeline and actions to be taken in concert with IHO liaison partners affected.

Analysis and Discussion**1. Operational infrastructure**

Operational infrastructure such as registry and tools to compose product specifications will be ready for the ongoing maintenance of S-1xx product specifications **by 2020 (IHO SEC – HSSC)**.

2. Technical standardization

Two main fields in S-100 based products specifications:

S-101 ENC:

- According to the Hydrographic Services & Standards Committee road map, the S-101 PS will be **technically ready for regular production of S-101 ENCs by end of 2022**. (Hydrographic Services & Standards Committee)
- It can be expected that S-101 ENCs and S-57 ENCs can be produced through export from commercially-developed upgraded database-driven ENC production systems at that date. (Industry in collaboration with Hydrographic Services & Standards Committee)
- Note that since S-101 contains features and attributes not available in S-57, fully-featured S-101 ENCs cannot be created through a simple conversion process of

S-57 ENCs. However, S-101 ENCs created by conversion will meet all conditions to maintain full safety of navigation on the same level as S-57 ENCs do.

Additional S-1xx Product Specifications:

- Standardization within the S-100 hydrographic domain should put special focus on the following products.

S-101	Electronic Navigational Chart (ENC)
S-102	Bathymetric Surface
S-104	Water Level Information for Surface Navigation
S-111	Surface Currents
S-122	Marine Protected Areas
S-123	Radio Services
S-124	Navigational warnings
S-129	Under Keel Clearance Management

- Additional standardization projects beyond those already registered under the hydrographic domain are not currently planned, but should be expected during the upcoming decade if a compelling need will be demonstrated by stakeholders. (Hydrographic Services & Standards Committee and IRCC)

3. Coordinated implementation of services

S-101 ENC:

- S-101 ENC coverage will grow faster than S-57 ENC in its early days since the relevant concept model (objects featured with geometry and attributes are linked to specific presentation rules given by S-52, encoding remains ISO-IEC8211) is identical and distribution concepts for ENCs via RENCs and national services are in place.
- For the ignition phase conversion of S-57 ENCs to S-101 ENCs can help to reach significant coverage, knowing that there will be limitations of those converted cells in some cartographic details in comparison to the full range of S-101 ENCs native features.
- In order to maintain ECDIS devices already installed on SOLAS vessels which are technically not ready nor required to be upgraded to S-101 ENC process capability and to be in line with the applicable IMO regulations pertaining to existing navigation equipment, identical coverage has to be provided for S-57 ENCs and S-101 ENCs for a transition period until the end of the decade. The IHO will assess the progress of the transition 18 months before the conclusion in collaboration with IMO and industry stakeholders. If the results indicate that there will be widespread and substantial residual dependence on S-57 ENCs, limited provisions will be made to extend the period to ensure an orderly transition.
- As a consequence, new ECDIS systems to be brought into the market at the time then S-101 ENC coverage starts (2024) have to be capable to process both formats: S-57 ENCs and S-101 ENCs in parallel.
- This “dual fuel” model is instrumental for the transition period. From the user’s perspective, presentation of cartographic features to meet the IMO mandated content (ENC = official nautical chart) should be seamless and presented under the identical presentation regime. The latter is facilitated through compliance of S-101 ENC presentation with S-52 portrayal standards.

- In order to accomplish this phase of transition on the data production and data distribution side:
 - o It is proposed to seek commitment from as many as possible IHO MS to start **regular native production of S-101 ENCs in 2023 and regular availability gradually growing in the course of 2024** in parallel to regular S-57 production.
 - o RENCs and VARs must be capable to feed the market with the S-101 ENCs – including encryption aspects and be ready for a mixed distribution arrangement to support the “dual fuel” model.

Additional S-1xx Product Specifications:

- It is anticipated that these additional services will be offered at a variety of timeframes globally, so that coverage will be discontinuous. It is not anticipated that these services will be mandated by IMO, but will be available at the option of users through compatible systems.
- However, these datasets are anticipated by shipping industry for specific applications in national waters and specific regions.
- The navigation equipment industry stands ready to make use of these products as soon as regular provision of such datasets is provided for areas of substantial size and importance.
- There is no need for industry to wait for the final implementation of a S-101 ENC enabled ECDIS. Additional S-1xx products can be used in existing systems with upgrades to software for those clients who wish to use them.
- IHO via IRCC will create and maintain a global catalogue of services and planned services on a regular basis and encourage them to start service provision via RENCs or individual arrangements. (IHO SEC)
- Some services may only be of attraction for customers where regional cover has been established. Coordination of regional approaches via the respective RHC is desired. (IRCC)

4. Synchronization with IMO

S-101 ENC:

- Having defined a target date for regular provision of S-101 ENC with significant coverage by 2024, IHO can now approach IMO instruments: (IHO SEC)
 - o Amend IMO’s ECDIS Performance Standards with a reference that S-101 ENCs are equivalent to the composition of S-57 ENCs and S-52 Presentation rules (minor amendment).
 - o Suggest to IMO to synchronize this amendment with IMO’s amended Performance Standards for the presentation of navigation-related information on ship borne navigational displays coming into force on **1 January 2024 for new equipment**.
 - o Assure IMO that the concurrent provision of S-57 ENCs and S-101 ENCS will remain through the transition period.
 - o Advise IMO that S-57 ENCs and S-101 ENCs both fulfil the requirements for ENC as defined in IMO ECDIS mandation and are both suitable for use during the transition period.
 - o Advise IMO that S-101 ENCs (in contrast to S-57 ENCs) are cyber secure, improve the clarity of portrayal, and open the door for the implementation of the e-navigation service concept (S-100 is the adopted data model for e-navigation).

Additional S-1xx Product Specifications:

- So far there is no need for synchronisation with IMO since the content of these datasets are not mandated requirements and can be used by mandated navigation devices as long as they do not disturb their regulated core functionality.

5. Collaboration with industry (IHO SEC)*S-101 ENC:*

- Nautical cartography software industry has to confirm that S-101 ENC production systems and validation tools will be ready **by end of 2022** and training can be provided.
- ECDIS industry has to be made aware of the start date of S-101 ENC provision service **in 2024** to be prepared to read S-101 ENC (including encryption) and maintain consistent performance (Display, Alarms, update etc.) in new ECDIS equipment from 1 January 2024.
- Industry should understand that the timeline is deliberately arranged to coincide with the application of the amended IMO PS on navigational displays.
- IEC has to be contacted to adapt IEC61174 for S-101 ENC based tests.
- Type approval houses have to be informed accordingly to adapt their test arrangements and to meet the target date of end of 2023 for re-approval – noting that they will be subject to such activity due to the amended IMO PS on navigational displays anyway.

Additional S-1xx Product Specifications:

- ECDIS and other GIS industry has to be made aware that provision of such datasets starts according to individual commitment of MS or regions. IHO will play a coordinating role, through the RHCs by encouraging MS to set up such services on one hand and informing ECDIS and other GIS industry about the progression. (IRCC)
- These provisions will be patchy and remain so but are not bound to the final advent of S-100 compliant ECDIS or other equipment under carriage requirement regulations such as Radar or INS.

6. Capacity Building for Hydrographic Offices

- The CBSC of the IRCC should develop and execute a line of effort to assess the needs and assist hydrographic offices with the transition of ENC production to S-101. CBSC should also consider activities to raise awareness on the benefits for producer nations.
- The IBSC should consider the advent of these new services in the review cycle of S-5A/B and S-8A/B Standards.
- As new services are matured for S-1xx services (besides S-101), and relevant production and quality systems are developed, those producer nations with technology and expertise are encouraged to share these within the framework of IHO Capacity Building strategy, the respective RHC or bilaterally to support the growth of these services.

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7. Development of Global Distribution Capability

- The WEND working group of the IRCC has begun development of principles that will guide the coordinated provision of S-1xx services globally. These principles should be adopted by A2.
- The application of these principles envisions a new generation of global service delivery networks, analogous to the current RENC arrangements, which will enable convenient global availability of authoritative services. These networks will need to consider:
 - o The wider variability of perishability of these services, and the necessity for very low latency for dynamic services.
 - o The need to manage the availability of S-101 and S-57 ENC's simultaneously, in combination with other interoperable S-100 compliant data services belonging to the hydrographic or alternative domains.

LIST OF MEMBER STATES' COMMENTS

ARGENTINA

Once again, there is a need, in accordance with item 6 of this proposal, to seek ways to increase the CBF in order to meet the training needs of the Member States so that they can meet in a timely manner the proposed timetable for the S-100 implementation strategy.

BRAZIL

Brazil supports this proposal in order to ensure the engagement of stakeholders.

CANADA

Canada supports this proposal as endorsed by the Council.

Notes:

1. Within the context of Section 3 *Coordinated implementation of services*, CA believes that RHCs have a major role to play in the coordinated roll-out of S-100 products and services. If there is agreement regarding the role of the RHCs, it is suggested that a statement to that effect be added to this section.

Suggested text: RHCs should consider taking a coordinated approach to the roll-out of S-100 products and services to ensure that there continuous coverage within their region. This is particularly critical for the introduction of S-101 ENC.

DENMARK

Denmark supports this proposal.

FINLAND

Finland supports the proposal.

FRANCE

France recalls its comments made at the 3rd Council meeting (item 3.6A of C3) and calls for a transitional period during which the double availability of ENCs in S-57 and S-101 formats must be ensured, as short as possible, in order to limit the burden on producer services.

For clarification, France wishes to ensure that with the S-101 switch, there will no longer be a SENC service, which will allow producers and RENCs to take responsibility for the integrity of the ENC up to the final customer.

ITALY

Italy supports the proposal, underlining the importance of establishing a solid cooperation with all the Stakeholders involved in the Implementation Strategy. This will allow a smooth, phased and coordinated transition to S-100 and its Product Specifications, first of all from S57 ENC's to S-101 ENC's.

NETHERLANDS

The Netherlands support both elements of this Proposal.

NORWAY

Norway approves the "S-100 roadmap for the S-100 Implementation Decade" endorsed by the Council as presented in Annex A of PRO 2.1.

SWEDEN

Sweden supports this proposal.

UNITED KINGDOM

The principles of S-100 strategy are supported but the technical challenges of implementation for hydrographic offices, industry and vendors should not be underestimated. The UK would be grateful for reassurance of testing of "Dual Fuel" system standards.

UNITED STATES OF AMERICA

The U.S. supports the proposal and looks forward to establishing the 2020's as an "implementation decade" for progressing the S-100 framework. The success of this effort will depend on broad capacity building and technology development.

The U.S. supports tasking the Council to maintain the roadmap with annual updates, with the Chairs of the Council, IRCC, HSSC and the IHO SG. The proposal ensures all aspects of the roadmap will be managed at the IHO's highest levels and in line with the strategic objectives of the organization. The approach offered by the Council tackles the important but ambitious goals of realizing the S-100 hydrographic model that will underpin the future relevance and value of the IHO in a new digital age.

SECRETARY-GENERAL`S RESPONSE TO MEMBER STATES COMMENTS

The Secretary-General is pleased to share the following observations:

To address Argentina´s comments regarding the desired

increase the CBF in order to meet the training needs of the Member States:

The portion of the IHO Budget designated to Capacity Building is not of an amount and never has been to cover costs of training. The allocated resources are limited to cover costs for visits to undertake technical assessments of existing capacity and resulting needs of prospective or new IHO Member States as well as to fund the participation of IHO Member States and Non-Member States on regional workshops. Once costs of training courses have been covered with IHO money in previous years this has been paid from the surplus generated with savings from other IHO Budget allocations.

To address comments on the “Dual Fuel” arrangements:

The operation of an ECDIS in a multi fuel environment is not a completely new challenge. Throughout the full first decade of the 2000nds many ECDIS maintained the mixed presentation of a combination of S-57 ENC, Raster Charts (ARCS) and private vector charts in various formats.

To report the newest developments on S-100 implementation issues:

At its 7th Session in January 2020 the IMO Sub-Committee NCSR considered the report from IHO (NCSR 7/22/5) presenting a status of IHO's ECDIS-related standards and a roadmap for the introduction of the next generation of S-101 Electronic navigational charts (ENC); explaining the resulting implications for existing and new ECDIS installations; and proposing consideration of amendments to resolution MSC.232(82) on Revised Performance Standards for Electronic Chart Display and Information Systems (ECDIS) to include references to the S-100 framework and the Product Specification S-101 based on, with regard to ECDIS equipment installed on or after 1 January 2024. The Sub-Committee acknowledged the ongoing efforts of IHO to develop and test S-100 based data product specifications, as well as the proposed introduction of IHO's S-101 ENCs as a transfer standard for official charts in ECDIS. NCSR 7 agreed that the amendments to resolution MSC.232(82) should be considered at the 8th session of NCSR in 2021 under the existing output on the Committee's post-biennial agenda on "Revision of ECDIS Guidance for good practice (MSC.1/Circ.1503/Rev.1)" and, in this respect will invite MSC at its next session (MSC 102) to expand this output to include consideration of amendments to resolution MSC.232(82). MSC 102 will take place at London Headquarters from 13th – 22nd May 2020.

PROPOSAL N°	OBJECT OF THE PROPOSAL	SUBMITTED BY	REFERENCE
2.2	Conducting a Risk Assessment on the “Dual Fuel” Mode of ECDIS for S-57 ENC’s and S-101 ENC’s, Providing More Specific Guidance on its Implementation	China	2

Reference: Roadmap for the S-100 Implementation Decade (2020–2030)

PROPOSAL

According to the plan of IHO, the “dual fuel” mode of ECDIS for S-57 ENC’s and S-101 ENC’s will last about 7 years (2024-2030). China proposes the IHO to collaborate with relevant organizations to conduct a detailed risk assessment on the said “dual fuel” mode of ECDIS, and to provide more specific guidance for all affected parties with a view to assisting them in completing the transition phase successfully.

EXPLANATORY NOTE

1. With the continuous development of S-101 ENC’s, the transition from S-57 ENC’s to S-101 ENC’s has been put on the agenda. Hydrographic Offices (HOs), ENC users, ECDIS type approval agencies, Regional ENC Coordinating Centres (RENCs), Value-Added Resellers (VARs), ENC distribution agents and the Maritime Safety Authorities (MSA) of MSs are paying close attention to such transition.

2. According to the “Roadmap for the S-100 Implementation Decade (2020 – 2030)” of the IHO, the “dual fuel” mode of EDCIS for S-57 ENC’s and S-101 ENC’s will last about 7 years (2024-2030). Also, the roadmap provides general guidance on how to carry out the transition work for the HOs, ENC users, ECDIS type approval agencies, RENCS and VARs, ENC distribution agents and MSAs, etc.

3. As far as we are aware, most of the relevant parties are looking forward to the coming of the S-101 ENC’s era. However, there are still certain aspects of the “dual fuel” mode that are unclear and these uncertainties are needed to be addressed, such as:

- HOs need to produce both S-57 ENC’s and S-101 ENC’s during the “dual fuel” mode period and this will significantly increase their workload. They are very concerned about whether ENC production system industries have sufficient technical means to enhance their system to minimize the impact;
- ENC users are very concerned about the differences in the installation, portrayal and the use of S-57 ENC’s and S-101 ENC’s, whether there any unknown incompatibilities in S-57 ENC’s and S-101 ENC’s co-existing in one ECDIS, what are the additional requirements for the ENC user’s knowledge in operating the ECDIS in “dual fuel” mode; and
- ECDIS type approval agencies and MSAs will very concerned about the impact of the dual fuel mode on ECDIS type approval requirement and the implementation of the Port State Control/Flag State Control (PSC/FSC).

There are some other similar concerns and uncertainties for which the affected parties may wish to seek the guidance of the IHO and relevant organizations/experts.

4. In this regards, China proposes IHO to collaborate with relevant organizations to conduct a detailed risk assessment on the “dual fuel” mode for S-57 ENC’s and S-101 ENC’s, and to provide more specific guidance for all the affected parties with a view to assisting them in completing the transition work successfully.

LIST OF MEMBER STATES' COMMENTS

CANADA

Notes:

1. Canada agrees that the IHO should continue its S-100 development work with all stakeholders to ensure a smooth and viable transition to S-101 ENCs.
2. Continuous evaluations of new developments is required to identify potential issues (or risks).
3. The IHO Innovation and Technology Laboratory proposed by Singapore could be an important resource for testing and evaluating new developments, both individually and within the system environment.

DENMARK

Denmark supports this proposal.

ITALY

Italy considers CHINA's proposal useful for a smooth and fluid transition from S-57 ENCs to S-101 ENCs, in line with the S-100 Implementation Decade.

NORWAY

Many HO's understandably worry about S-100 implementation and the implications of the parallel provision of S-57 and S-101 ENC as well as additional S-100 based data service provision. Any activity that can shed more clarity on S-100 implementation timelines, the synchronization with IMO's ECDIS Performance Standards and ECDIS carriage requirements should be embraced. Strong liaison with effected partners including but not limited to IEC and CIRM as well as thorough testing before regular provision of services should be established. Therefore Norway is supportive of this proposal and hopes that the proposed Joint IHO-Singapore Innovation and Technology Lab can pave the way here.

UNITED KINGDOM

The UK supports the principle of the Proposal but would like more clarity on how the IHO proposes to conduct the risk assessment, however, the UK stands ready to assist with implementation of the "Dual Fuel" mode and would wish to assist with the development of risk mitigation strategies. Furthermore, the UK believes that industry should be engaged as early as possible to ensure the standards and requirements for display equipment are met.

UNITED STATES OF AMERICA

The U.S. shares China's concern about putting the burden of transition from S-57 to S-101 ENC's onto the user by requiring "dual fuel" ECDIS. The "dual fuel" requirement would introduce additional complexities such as type approval, data display and how ENC overlaps would be managed between S-57 and S-101 data. The U.S. would like the IHO to consider other approaches to "dual fuel" such as data conversion (S-57 → S-101 and S-101 → S-57) so that a seamless suite of ENC's will be available in both formats during the transition period.

PROPOSAL N°	OBJECT OF THE PROPOSAL	SUBMITTED BY	REFERENCE
2.3	Revision of IHO Resolutions following the Introduction of S-100	Republic of Korea	2

References:

- A. S-100 Master Plan
- B. Roadmap for the S-100 Implementation Decade (2020 – 2030)
- C. IHO Publication M-3 2nd Edition – *Resolutions of the IHO*

PROPOSAL:

In order to facilitate the development of S-100 series and implement the Roadmap for the S-100 Implementation Decade (2020 – 2030), it is proposed to revise IHO Resolutions 1/1987, 4/2002, and 1/2007 by adding phrases on S-100 and 1/1997 and 1/2018 by taking into account S-100.

EXPLANATORY NOTE:

1. The IHO is developing S-100 series and the infrastructure to support the development of data standards required not only for next-generation ENC's but also in hydrographic, maritime and GIS fields. The IHO Council designed the Roadmap for the S-100 Implementation Decade (2020 – 2030) to facilitate new hydrographic data standards such as S-101 ENC's and S-102 Bathymetric Surface to navigation environment.

2. Below are activities being carried out by relevant organizations:

- a) S-101 ENC's Ed. 1.0.0 was published in 2018 and the Operational Ed. 2.0.0 is scheduled to be released in 2022;
- b) Transition to or production of S-101 ENC's are being prepared;
- c) There has been cooperation among industry partners to promulgate S-100 ECDIS;
- d) Worldwide distribution system of S-100 data is under consideration by IHO subordinate bodies;
- e) Revision to the Resolution MSC.232(82) – *Revised Performance Standards for Electronic Chart Display and Information Systems (ECDIS)* is expected; and
- f) IEC 61174:2015 (International Standard for testing ECDIS) will be revised.

3. Furthermore S-100 was adopted as a data standard for the development of e-Navigation maritime service and it is already in use. Despite the fact that S-100 was designated as an official standard for hydrographic data transfer, the IHO Publication M-3 2nd Edition – *Resolutions of the IHO* only contains contents on S-57 so it is required to revise M-3 appropriately. Since both S-57 and S-100 will be in use during the transition period, adding phrases on S-100 where only S-57 is stated would be considered efficient. Having reviewed M-3, the ROK would like to propose revising the Resolutions 1/1987, 4/2002, 1/2007, 1/1997 and 1/2018 as in Annexes A to D.

ACTIONS REQUIRED OF THE ASSEMBLY:

4. The Assembly is invited to:

- a) approve the proposed revisions to the Resolutions 1/1987, 4/2002, and 1/2007; and
- b) revise the Resolutions 1/1997 and 1/2018 by taking into account S-100.

Annex A to PRO 2.3

IHO TRANSFER STANDARD FOR DIGITAL HYDROGRAPHIC DATA	1/1987 as amended	IHO A-1	A3.7
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1. It is resolved that the IHO Transfer Standard described in S-57 and S-100 shall be adopted by the IHO for the exchange of digital hydrographic and cartographic data.

2. It is further resolved that the IHO Secretariat, through the HSSC (Hydrographic Services and Standards Committee), keep the contents of the Standards under review in response to changing requirements and practical experience. Changes to S-57 are coordinated on behalf of the Hydrographic Services & Standards Committee by an ENC Standards Maintenance Working Group (ENCWG), changes to S-100 are coordinated on behalf of the Hydrographic Services & Standards Committee by the S-100 Working Group (S-100WG), and changes to S-100 series are coordinated on behalf of the HSSC/IRCC by their subordinate working groups. National Hydrographic Offices which wish to propose changes to the Standard should address their comments to the IHO Secretariat. Other users of the Standard, for example equipment manufacturers, should be advised to address their comments to their national Hydrographic Office.

Annex B to PRO 2.3

ENC/SENC DISTRIBUTION OPTION	4/2002 as amended	43/2003	A3.11
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It is resolved that SENC distribution can be accepted as an option, in addition to direct ENC distribution, providing that the following principles be adhered to:

- a) According to the Roadmap for the S-100 Implementation Decade (2020 – 2030), the HO should ensure that the IHO data (ENC) is always available to any user in the S-57 or S-101 ENC format.
- b) As an option Hydrographic Offices may allow the distribution of their HO data (ENC) in a SENC format.
- c) Distributors who are to supply the SENC service must operate under the regulations of the issuing authority. The onshore ENC to SENC conversion must be performed using type approved software.
- d) The SENC update mechanism should not be inferior to the ENC - ECDIS update mechanism.
- e) The distributor of SENC data should maintain a registry of its users.
- f) The copyright of the ENC data should be maintained.

Annex C to PRO 2.3

IHO DATA PROTECTION SCHEME	1/2007 as amended	IHO A-1	A3.12
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1 It is resolved that the IHO Data Protection Scheme, as described in Publication S-63, is the IHO recommended security scheme for S-57 ENC's and the Encryption and Data Protection, as described in S-100, is the IHO recommended security scheme for S-101 ENC's including S-100 series data.

2 It is further resolved that the IHO Secretariat will act as Scheme Administrator for S-63 and S-100 series hydrographic data.

Annex D to PRO 2.3

<p>PRINCIPLES OF THE WORLDWIDE ELECTRONIC NAVIGATIONAL CHART DATABASE (WEND) & ITS ANNEX (Guidance for Establishment of ENC Production Boundaries)</p>	<p>1/1997 as amended</p>	<p>IHC 18 & 40/2014³ & 36 Rev1/2017⁴</p>	<p>K2.19</p>
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* This resolution is currently undergoing revision by the Worldwide ENC Database Working Group so it is proposed to revise it taking into account S-100 series.

<p>ELIMINATION OF OVERLAPPING ENC DATA IN AREAS OF DEMONSTRABLE RISK TO THE SAFETY OF NAVIGATION</p>	<p>1/2018</p>	<p>19/2018</p>	
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* This resolution is currently undergoing revision by the Worldwide ENC Database Working Group so it is proposed to revise it taking into account S-100 series.

LIST OF MEMBER STATES' COMMENTS

BRAZIL

Brazil congratulates Republic of Korea for submitting this proposal.

Brazil supports the undergoing revision of IHO Resolutions 1/1997 and 1/2018 by WENDWG, considering S-100 series, agrees with the revisions of IHO Resolutions 1/1987, 4/2002 and 1/2007 and would like to suggest some modifications as showed below.

Observation: In green ROK proposal, in red to remove and in blue to add.

IHO TRANSFER STANDARD FOR DIGITAL HYDROGRAPHIC DATA	1/1987 as amended	IHO A-21	A3.7
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1 It is resolved that the IHO Transfer Standard described in S-57 and S-100 shall be adopted by the IHO for the exchange of digital hydrographic and cartographic data.

2 It is further resolved that the IHO Secretariat, through the HSSC (Hydrographic Services and Standards Committee), keep the contents of the Standard under review in response to changing requirements and practical experience. Changes to S-57 (the Standard) are coordinated on behalf of the HSSC by thean ENC Standards Maintenance Working Group (ENCWG), changes to S-100 are coordinated on behalf of the HSSC by the S-100 Working Group (S-100WG), and changes to S-100 series are coordinated on behalf of the HSSC/IRCC by their subordinate Sub-committees/ Working Groups. National Hydrographic Offices which wish to propose changes to the Standard should address their comments to the IHO Secretariat. Other users of the Standard, for example equipment manufacturers, should be advised to address their comments to their national Hydrographic Office.

ENC/SENC DISTRIBUTION OPTION	4/2002 as amended	43/2003 IHO A-2	A3.11
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It is resolved that SENC distribution can be accepted as an option, in addition to direct ENC distribution, providing that the following principles be adhered to:

- a) According to the Roadmap for the S-100 Implementation Decade (2020 –2030), The HO should ensure that the IHO data (ENC) is always available to any user in the S-57 or S-101 ENC format.
- b) As an option Hydrographic Offices may allow the distribution of their HO data (ENC) in a SENC format.
- c) Distributors who are to supply the SENC service must operate under the regulations of the issuing authority. The onshore ENC to SENC conversion must be performed using type approved software.
- d) The SENC update mechanism should not be inferior to the ENC - ECDIS update mechanism.
- e) The distributor of SENC data should maintain a registry of its users.
- f) The copyright of the ENC data should be maintained.

CANADA

Canada support the proposal by the Republic of Korea to revise the IHO Resolutions 1/1989, 4/2002, and 1/2007. It is suggested that decisions related to Resolutions 1/1997 and 1/2018 be deferred until the WENDWG has completed its work.

FRANCE

The proposed revision of Resolution 4/2002 should take into account the discontinuation of the SENC service with the phase-out of ENC's in the S-53 format at the end of the transition period and the switch to ENC's exclusively in the S-101 format.

ITALY

Italy agrees that an IHO Resolutions revision process should start in order to assure consistency and to facilitate the development of the S-100 series and to implement the Roadmap for the S-100 Implementation Decade (2020 – 2030).

JAPAN

Japan supports this proposal, with a suggestion of the following editorial amendment.
The phrase "in S-100" in 1/2007 as amended should be replaced with "in Publication S-100" to harmonize with the previous sentence.

NETHERLANDS

The Netherlands supports the revision of IHO Resolutions 1/1987, 4/2002 and 1/2007, with the understanding that the proposed text for Resolution 4/2002 as amended should read "the S-57 and/or S-101 ENC data format" (paragraph a). Regarding the IHO Resolutions 1/1997 and 1/2018, the Netherlands supports that the WENDWG takes into account S-100 in all its work items, and the Assembly does not need to do additional revisions at this time.

NORWAY

Norway supports this proposal.

UNITED KINGDOM

The UK fully supports the revision of IHO Resolutions to ensure consistency.

SECRETARY-GENERAL`S RESPONSE TO MEMBER STATES COMMENTS

For the suggested revision of Resolutions 1/1987 the Secretary-General proposes to use the correct terminology of the stressed IHO Standards. The first paragraph of Resolution 1/1987 should then read as follows:

It is resolved that the IHO S-57 Transfer Standard for Hydrographic Data including the S-57 based Product Specifications and the IHO S-100 Universal Hydrographic Data Model including the S-100 based Product Specifications shall be adopted by the IHO for the exchange of digital hydrographic and cartographic data.

PROPOSAL N°	OBJECT OF THE PROPOSAL	SUBMITTED BY	REFERENCE
2.4	Establishing a joint IHO-Singapore Innovation and Technology Laboratory	Singapore & United States of America	2

Supported by: Brazil, Canada, Denmark, France, Germany, Indonesia, Italy, Malaysia, Netherlands, Norway, Portugal, South Africa, Spain, United Kingdom and Uruguay.

PROPOSAL

Noting the endorsement by the Council, the Assembly is invited:

- to approve the proposal to establish an IHO innovation and technology laboratory in Singapore to coordinate and testbed initiatives.

EXPLANATORY NOTE

1. At the 3rd Council Meeting, Singapore introduced its proposal to set up, host and finance an IHO innovation and technology laboratory. The proposed laboratory would facilitate research or investigative projects and/or test-bedding in the field on behalf of Member States, IHO bodies or other stakeholders; create knowledge for standard-setting; and promote a multidisciplinary, collaborative environment under the guidance of a governing board chaired by the IHO Secretary-General or his representative and including representatives of Member States. The cost of the required workspace and human resources, estimated at US\$ 163,000 per annum, would be borne entirely by Singapore.

2. The Council acknowledging that it could fill a gap in long-term planning and innovation, which is often difficult for national hydrographic offices overwhelmed by immediate demands. The Council directed Singapore to provide more details of the proposed governance structure for the new laboratory, expressing concerns about its relationship with Hydrographic Services & Standards Committee and the regional ENC coordinating centres (RENCs), and the potential involvement of academia and the private sector.

3. The Secretary-General noted that the laboratory might be placed in a new governance structure, called the "IHO Technology and Innovation Network" or similar, with two other subsidiary bodies with an unconventional status, namely the Data Centre for Digital Bathymetry (DCDB), and the IHO Geospatial Information Registry, which both were governed by a Memorandum of Understanding. IHO's role would be to coordinate the work of the laboratory with that of other IHO bodies, for instance through the Chair of Hydrographic Services & Standards Committee.

4. The laboratory would provide an opportunity to direct the work of the private sector towards the strategic goals of IHO, potentially under the guidance of a Governing Body comprising an IHO Director, chairs of the Hydrographic Services & Standards Committee and IRCC and nominated members.

5. The Council recognized the need to accelerate innovation in our fields of endeavour and supported the principles for the establishment of an IHO Innovation & Technology Lab noting that innovation & technology should therefore also be reflected in the proposed Revised Strategic Plan.

6. With guidance provided by the Council, Singapore with the assistance from volunteer drafters from the Council is submitting the proposal, including terms of reference, a draft implementation plan and on governance for the Assembly's consideration and approval.

Annex to PRO 2.4**For Discussion and Approval****PROPOSAL TO ESTABLISH A JOINT IHO-SINGAPORE INNOVATION AND TECHNOLOGY LABORATORY**

Submitted by: Singapore and the United States of America.

Supported by: Brazil, Canada, Denmark, France, Germany, Indonesia, Italy, Malaysia, Netherlands, Norway, Portugal, South Africa, Spain, United Kingdom and Uruguay.

RATIONALE FOR AN IHO INNOVATION AND TECHNOLOGY LABORATORY

1. There is a critical need to coordinate international efforts to develop and harness emerging hydrographic-related technologies that support safe maritime navigation and protection of the marine environment. As the world stands at an interesting crossroad of technological exploration and exploitation, the IHO as a technical standardisation body is confronted with the challenge to harness the rapidly evolving technologies. These, in turn, will drive the ever accelerating transformation processes on the roles and services of Member States hydrographic offices. It is timely that the IHO examines ways for a faster transition of knowledge into the standardization process and – in turn - accelerated application of the resulting new standards to enable extended use of hydrographic products and services. This strategy of closer linkage of the standardization process with emerging technical solutions is seen as a more efficient way to deliver extended benefits on hydrographic aspects to users and society in navigational and non-navigational areas.

2. Presently, most of the investigative work involving proposals on new standards or specification for products and services of the IHO rests on the goodwill of IHO Member States and/or industry stakeholders. This arrangement is increasingly under pressure as IHO Member States and stakeholders are faced with increasing constraints in terms of manpower and funding support. We need to find a more sustainable solution of consolidating our efforts and optimizing our collective resources. At the same time, consideration should be given on how we can contribute towards addressing the growing concern on global climate change and sustainable development.

3. The lab will focus on 4 critical questions facing the IHO community:

- a. How do we identify and keep pace with rapidly-evolving technologies that will impact on the hydrographic community?
- b. How can we develop these technologies into products and services that will meet and support the present and future needs of users and society?
- c. How can we contribute to and effectively support the United Nations Decade of Ocean Science and Sustainable Development Goal 14 – Conserve and sustainably use the oceans and sea and marine resources for sustainable development? and
- d. How can we support IHO initiatives such as the use of crowdsourced bathymetry for charting purposes in areas where information is scarce or outdated?

4. Establishing an “IHO Innovation and Technology Laboratory” (IHO Lab) would be a good way to take advantage of this limited window of opportunity to move forward in finding the answers to some of these questions.

OBJECTIVE AND SCOPE

5. The mission of IHO is to create a global environment in which Member States provide adequate and timely hydrographic data, products and services to ensure the widest possible use.
6. The IHO Vision is to be the authoritative worldwide hydrographic body which actively engages all coastal and interested States to advance maritime safety and efficiency and which supports the protection and sustainable use of the marine environment.
7. Towards achieving this end, the proposed IHO Lab would have the following objectives:
 - a. Facilitate the conduct of innovative or investigative projects in the laboratory and/or test bedding in the field proposed by IHO Member State(s), IHO organs, or other stakeholders.
 - b. Enable knowledge creation and foster collaboration to evaluate specifications of global standard setting within the scope of IHO standardization activities at the request of e.g. IHO Member State(s) in order to explore their faster transition, application and development of technologies enhancing safety at sea; and
 - c. Foster a multidisciplinary and collaborative environment for investigators such as technical experts, scientists, engineers and user communities to interact learn and promote new solutions and technologies, including collaboration and cooperation with other international organizations research and development bodies active in the maritime domain under the guidance of a Governing Board.

RATIONALE FOR THE LABORATORY TO BE BRANDED UNDER THE IHO FLAG

8. The IHO represents the global hydrographic community, including stakeholders from the industry, institutions of higher learning, scientists and user communities as:
 - a. The IHO Lab would fill the gap by moving from a local perspective to a more coordinated international approach, particularly on technical issues. This proposal offers the opportunity for Hydrographic Offices, Regional ENC Coordinating Centres (RENCs) and industry stakeholders to be in an environment to consolidate and collaborate on respective efforts. The results of the effort would then be shared freely to further enhance global navigational safety as the IHO Lab is not a business incubator. The IHO Lab will not hold or claim intellectual property rights and all intellectual property that may be generated would be in the public domain;
 - b. An IHO Lab would create a space where the interrelated issues relevant to specifications, data producers, equipment manufacturers, and end users can be addressed in a comprehensive manner;
 - c. The Lab would promise to be more appealing to potential International Funding Organizations, including other interested parties either with commercial or research interests to provide funding and in-kind support. This initiative would be viewed to have greater impact and benefit to a larger IHO community and societies rather than an individual member State or region;
 - d. It would ensure better continuity and sustainability for longer term projects such as the next- generation ENCs and use of distributed ledger technology (DLT) to augment hydrographic and cartographic processes. This is in order to keep pace with the rapidly evolving technologies and data standards; and
 - e. It would provide consolidation of resources and efforts to accelerate testing and better utilisation of limited funds, which can be channelled to other useful projects.

IHO LAB STRUCTURE AND COMPOSITION

9. In order to provide leadership and set direction for the IHO Lab, it will be managed by a General Manager and overseen by a Governing Board. The Governing Board will be composed of the IHO Director in-charge of the IHO Work Programme II, the Chair of the Hydrographic Services and Standards Committee (HSSC), the Chair of the Inter-Regional Coordination Committee (IRCC) and up to three (3) representatives with administrative and/or technical expertise nominated by the host country Singapore. Chairmanship of the Governing Board should be for two years and rotate between the IHO office bearers and the host Country.
10. The Governing Board will endorse the host country’s proposal for the post of the Lab General Manager. The General Manager maintains an annual Lab Work Plan based on mutual consent to be endorsed by the Governing Board.
11. The Chair of the Governing Board assisted by the General Manager reports to the IHO Council annually on the Lab Work Plan, activities and outcomes.
12. The IHO Council advises the Lab on themes and projects regarded as supportive to the IHO Work Programme.
13. Singapore would provide the administrative support to the Governing Board.
14. The proposed Governing Board Structure and the Terms of Reference are shown in the **Appendices 1 and 2**, respectively.

POTENTIAL INNOVATION AND TECHNOLOGY PROJECTS

R&D Areas	Potential Projects	Potential Partners
S100 Products and Specifications	Test bedding in the Singapore and Malacca Straits the following S-100 products: S-101 – Electronic Navigational Chart (ENC) S-102 – Bathymetric Surface S-104 – Water Level Information for Surface Navigation S-111 – Surface Currents S-122 – Marine Protected Areas S-123 – Marine Radio Services S-124 – Navigational Warnings S-129 – Under Kiel Clearance Management	<ul style="list-style-type: none"> • Indonesia • Malaysia • Singapore • Rep of Korea Other IHO member states <ul style="list-style-type: none"> • RENCs • Industry Stakeholders e.g. OEMs and others tbd
	Use of distributed ledger technology (DLT) to augment hydrographic and cartographic processes. This is in order to keep pace with the rapidly evolving technologies and data standards.	<ul style="list-style-type: none"> • IHO Member State(s) • Industry Stakeholders *others tbd
	Test bedding a dual fuel hybrid ECDIS with capabilities of displaying S57 & S101 in support of IHO’s roll out implementation plan for the S-100 products and services.*	IHO Member State(s) <ul style="list-style-type: none"> • Industry Stakeholders *others tbd

	*to work closely with the IMO and other certification authorities to ensure compliance with safety standards.	
Smart ENCs	<ul style="list-style-type: none"> • Development of next generation of “Smart ENCs”, we could explore how machine-readable data could be used in promoting E-Navigation and testing of autonomous shipping in a high vessel density traffic area. • Test bedding of integrated ENC and topographic details that could be used for positioning. This would complement the global navigation satellite positioning systems which would be under the purview of the HSSC. 	<ul style="list-style-type: none"> • IHO Member State(s) • IMO • IALA • UN-GGIM WG on MGI and OGC *others tbd
Marine Spatial Database Infrastructure (MSDI)	<ul style="list-style-type: none"> • Explore the use of artificial intelligence (AI) to assist in ensuring and improving processing of hydrographic data to ascertain, for example, survey quality and intervals between the conduct of hydrographic surveys. • Monitor and support the United Nations Sustainable Development Goal 14 - Conserve and sustainably use the oceans and sea and marine resources for sustainable development. 	<ul style="list-style-type: none"> • IHO Member State(s) and MSDI WG. • Industry stakeholders Others tbd
Autonomous Shipping	Autonomous Shipping Readiness- with a potential project on testing and refining hydrographic services to support IMO Maritime Autonomous Surface Ships (MASS) implementation.	<ul style="list-style-type: none"> • IHO Member State(s). • IMO, IALA and other international bodies

RISKS ANALYSIS

15. Financial risk is generally low as the IHO Lab will be funded by the government of Singapore.

16. Funding of each project would be usually for a short fixed period either through financial or in-kind contributions.

INDUSTRY PARTNERS

17. The IHO maintains close relationships with Original Equipment Manufacturers (OEMs) and it is important to continue maintaining and enhancing it going forward as they are in the forefront of the technological changes and have access to shipboard navigational systems.

18. There is also a need to consider further cultivating closer cooperation with other industry partners such as the Classification Societies as they are responsible for type approval of navigational equipment required by the International Maritime Organisation (IMO).

TIMELINES AND EXPECTED KEY OUTCOMES

Timeline

19. The IHO Lab is proposed to operate with a 2 x 5-years life span with a mid-term review in 2023. At the end of the 1st 5-years in 2025, the Hydrographic Services & Standards Committee would review the status of the IHO Lab and recommend to the 4th IHO Assembly in 2026 whether to continue the IHO Lab initiative.

Expected Key Outcomes

20. Better coordinated effort to facilitate the conduct of innovative or investigative projects in the laboratory and/or test bedding across the hydrographic community.

21. Sharing of knowledge creation and foster collaboration to evaluate specifications of global standard-setting to enable faster transition to new technologies enhancing safety at sea.

22. Achieving higher recognition from International Organisations such as World Bank for funding of projects.

23. Further enhancing the international standing of the IHO for our contributions towards safety of navigation and the protection of the marine environment, including the support for the United Nations Sustainable Development Goal 14, using our comprehensive global marine database.

TEN-YEAR BUDGET

24. There will be no additional expenditure required from the IHO. The government of Singapore would be providing the workspace and manpower costs estimated at US\$163,000 annually for a period of 10 years to host the IHO Lab and its operations. However, a mid-term review to evaluate the effectiveness of the IHO Lab would be undertaken.

PROMOTIONAL AND IMPLEMENTATION PLAN

25. The government of Singapore would like to offer and stand ready to host IHO Lab for the following reasons:

a. The Straits of Malacca and Singapore is one of the world's busiest Straits used for International Navigation with an advanced Vessel Traffic System that can handle more than 10,000 vessels;

b. Easy access in terms of excellent communications infrastructure for telecommunications and transportation;

c. With the recently established Living Lab for E-Navigation in Singapore, there is opportunity to facilitate system integration between ship and shore and vice versa through e.g. the sharing and use of common data standards and information such as the S-100 products and specifications; and

d. About 600 shipping lines based in Singapore and they could be sought to participate in potential projects. This number excludes Ship Management Companies, Classification Societies and OEMs from the marine industry.

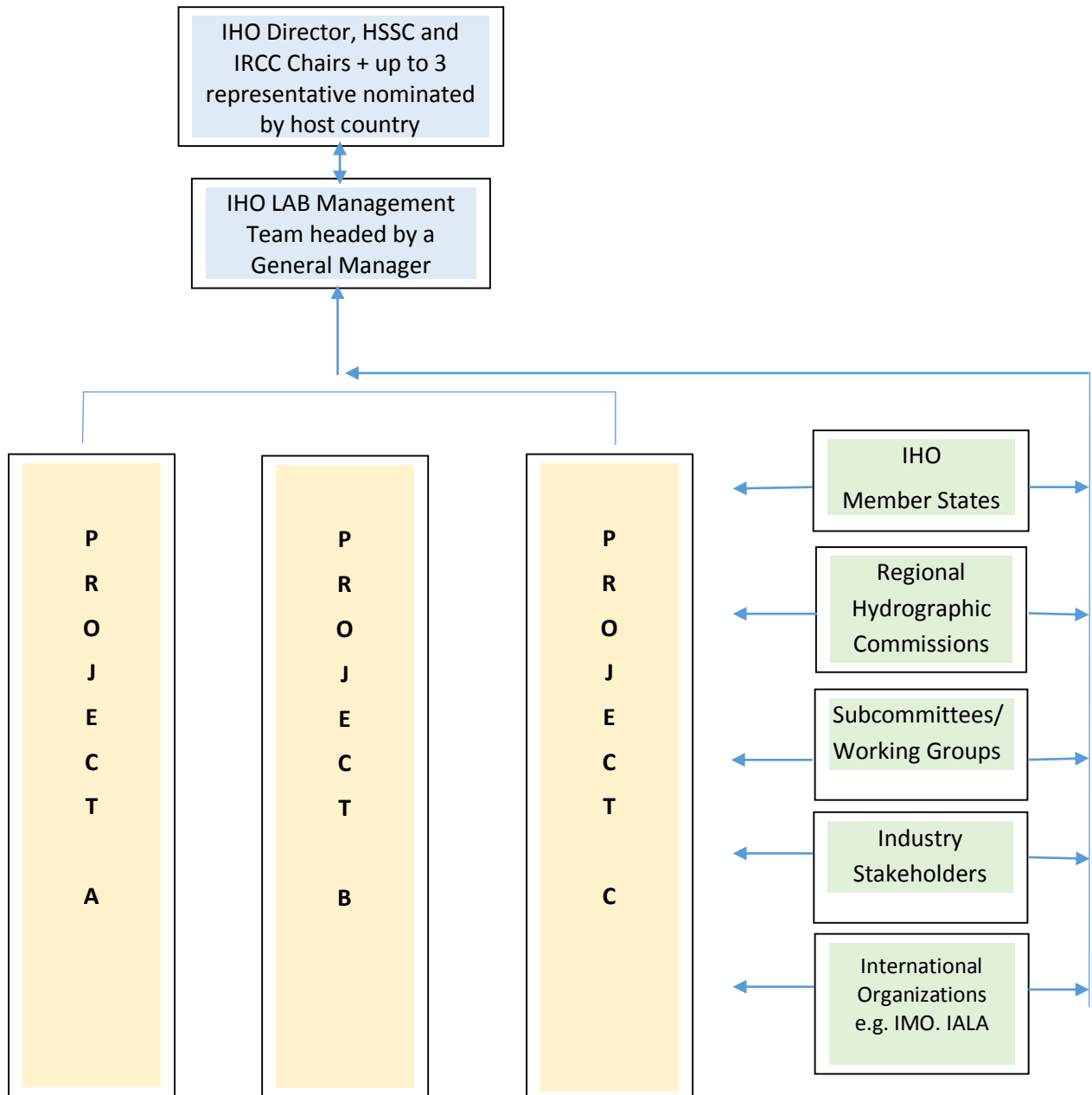
26. The proposed IHO Lab would be fully funded by the government of Singapore and there would be no cost implication on the IHO. To kick off the IHO Lab, the government of Singapore would also be willing to consider contributing seed money for collaborative joint research and development or investigative work. For a start, it is also proposed that the IHO Lab operates for a term of 10 years and review be made at mid-term and before the end of the term.

27. Member State(s) or stakeholder(s) are welcomed to jointly conduct or jointly fund the projects, subject to the approval by the Governing Board. The framework for the operational component of the processes related to the proposal needs to be further worked out.

APPENDIX 1 to ANNEX PRO 2.4

GOVERNANCE STRUCTURE

Proposed Governance Board Structure



APPENDIX 2 to ANNEX to PRO 2.4

**TERMS OF REFERENCE FOR GOVERNING BOARD AND MANAGEMENT TEAM OF
THE IHO INNOVATION AND TECHNOLOGY LABORATORY**

IHO Director and Chairs of HSSC and IRCC:

- a. Setting strategic directions of the IHO Lab;
- b. Endorsing IHO Lab” annual work plans, budgets, projects and initiatives;
- c. Overseeing IHO Lab’s innovation and technology project(s) milestones, progress and outcomes; and
- d. Submitting Annual Report and Recommendations to the IHO Council.

General Manager, IHO Lab

- a. Reviewing the proposed work plans;
- b. Monitoring IHO Lab’s project activities, progress and outputs; and
- c. Managing the technical reviews of IHO Lab’s projects and new proposals.
- d. Proposing and executing IHO Lab’s work plans;
- e. Managing IHO Lab’s operations and project activities;
- f. Driving IHO Lab’s to deliver outcomes;
- g. Attending Hydrographic Services & Standards Committee and IRCC meetings to update on the IHO Lab’s project activities, progress and outputs; and
- h. Where appropriate, to attend RHC meetings to share activities and knowledge with IHO Member States.

LIST OF MEMBER STATES' COMMENTS

CANADA

Canada supports this proposal and would like to thank Singapore for its generous offer.

FINLAND

Finland is in favor of the proposal.

FRANCE

No comment, France's support to this creation has already been identified.

ITALY

Italy fully supports the proposal: the Laboratory would efficiently help the transition to a full implementation of the S-100 Universal Data Model and its descending Product Specifications.

JAPAN

Japan supports this proposal. Japan evaluates the fixed duration of 10 years for the laboratory operation and no IHO financial resource spent for its operation.

NETHERLANDS

The Netherlands supports this proposal.

SPAIN

Spain supports this proposal.

UNITED KINGDOM

The UK supports the proposed establishment of an IHO innovation and technology laboratory in Singapore.

UNITED STATES OF AMERICA

The U.S. is pleased to co-sponsor the establishment of a joint IHO-Singapore innovation and technology laboratory. We appreciate the Government of Singapore's generous offer to fund the office. The laboratory's objectives to advancing hydrographic technologies, products and services for navigation, sustainable ocean development, and other IHO priorities aligns well with the future maritime transportation needs. The proposed structure supports partnerships with existing technology centers, academic institutions, governments, and private interests engaged in hydrographic/maritime transportation issues. We anticipate some more work to be done regarding IHO brand management and believe that the joint IHO-Singapore innovation and technology laboratory is an ideal initiative to begin with.

PROPOSAL N°	OBJECT OF THE PROPOSAL	SUBMITTED BY	REFERENCE
3.1	Revision of the IHO Resolution 2/1997 - <i>Establishment of Regional Hydrographic Commissions (RHC)</i>	IHO Council	3

References : A. IHO Publication M-3 – *Resolutions of the IHO*, 2nd Edition - 2010, Updated to August 2018, including current Resolution:

TITLE	Reference	Last amendment (CL or IHC/A)	1 st Edition Reference
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ESTABLISHMENT OF REGIONAL HYDROGRAPHIC COMMISSIONS (RHC)	2/1997 as amended	69/2010	T1.3
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- B. IHO CL 08/2019 dated 23 January – Adoption of Revision to IHO Resolution 2/1997 as amended.
- C. 3rd Meeting of the Council – Summary Report.

PROPOSAL

The proposed revised IHO Resolution 2/1997 as amended introduces substantive changes since the last amendments adopted by Reference B. They update the framework under which the IHO and the RHCs cooperate and align the relationship between the IHO and the RHCs with Article 8 of the IHO General Regulations. They also better reflect the cooperation between the IHO and the RHCs, clarify the mechanism for coordinating and reporting and the roles and responsibilities of the RHC Chairs.

Noting the endorsement by the Council, the Assembly is invited:

- to approve the proposed revision as presented in Annex A (red-line version) and B (clean version).

EXPLANATORY NOTE

1. IRCC was tasked by the Assembly at its 1st Session (Decision A1/05/(o) refers) to include a revision of IHO Resolution 2/1997 as amended (*Establishment of Regional Hydrographic Commissions - RHC*) in its Work Plan and report to the Council.
2. After a first round of amendments adopted by Member States in Reference B, more substantive amendments were prepared by IRCC that were subsequently endorsed by the Council at its 3rd meeting in October 2019 (Reference C, Decision C3/23).

Red-line version

TITLE	Reference	Last amendment (CL or IHC/A)	1 st Edition Reference
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ESTABLISHMENT OF REGIONAL HYDROGRAPHIC COMMISSIONS (RHC)	2/1997 as amended	IHO A-2	T1.3
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GENERAL

1 The mission of the IHO is to create a global environment in which States provide adequate and timely hydrographic data, products and services and ensure their widest possible use. To accomplish this mission, Member States are to pursue, on an intergovernmental basis, their cooperation on hydrographic activities on a regional basis.

2 IHO Member States have established regional coordination as an essential factor to support enhancements in the exchange of information and foster training and technical assistance between all nations. To effectively implement this, Regional Hydrographic Commissions (RHCs) are recognized by the Assembly as the primary organs to bring together coastal States within a region to progress the work of the IHO and extract the highest societal value of Member States' effort for the benefit of the nation, region and wider global marine geospatial community.

3 The IHO has established an Inter-Regional Coordination Committee (IRCC) with the aim to establish, coordinate and enhance cooperation in hydrographic activities amongst States on a regional basis, and between regions, especially on matters associated with Capacity Building; the World-Wide Navigational Warning Service; General Bathymetry and Ocean Mapping; Marine Spatial Data Infrastructures; Education and Training and the implementation of the WEND suitable for the need of international shipping. The IRCC is the IHO Committee tasked to coordinate and engage directly with RHCs on regional activities.

ESTABLISHMENT OF REGIONAL HYDROGRAPHIC COMMISSIONS

4 It is resolved that the IHO Secretariat and the relevant IHO subordinate bodies shall encourage IHO Member States having common regional interests in data collecting or nautical charting to form RHCs to cooperate in the undertaking of surveys and other projects. Recognized by the Assembly, the RHCs shall complement the work of the Organization, establish common regional approaches, and balance regional issues with global geospatial needs.

5 RHCs should provide, in pursuance of the resolutions and recommendations of the IHO, regional coordination with regard to nautical information, hydrographic surveys, production of nautical charts and documents, training, technical cooperation, hydrographic capacity building (CB) projects and marine spatial data infrastructure (MSDI) projects, related to the work of the IHO. They (RHCs), led by IHO Member States, should enable the exchange of information and consultation among the hydrographic services of all regional coastal States concerned in the region. Geographically adjacent RHCs should liaise with each other to coordinate the provision of hydrographic services. Cooperation among all RHCs, including among those not adjacent, is encouraged. RHCs should be aware of the technical maturity

level and fiscal challenges that may influence state involvement. The processes and management of the RHC meetings should be designed to accommodate the broad participation of nations within the region.

6 RHCs should assess regularly the status of nautical information, navigational warnings, hydrographic surveying, nautical charting, hydrographic capacity and requirements within their region and provide reports to the work of the relevant IHO subordinate bodies and inputs to relevant IHO publications.

7 RHCs should be properly constituted, follow standard processes where possible, and have activities in line with the objectives of the IHO as described in Article II of the Convention on the IHO, and Article 8 of the IHO General Regulations. Regional activities should align with and support the intent and objectives of the approved IHO Work Programme. RHCs should take into account the actions, recommendations and outcomes of the IRCC.

8 Geographical areas of the RHCs will normally coincide with INT chart regions, modified as appropriate to meet regional requirements and special circumstances. There are special provisions for Region M (Antarctica) because of its special status.

9 The working languages used by the RHCs should be agreed upon by their members and designated to ensure the best communication between participants. The reports and IHO documents relating to RHC activities shall be in at least one of the official languages of the IHO. For correspondence with the IHO Secretariat, one of the official languages shall be used.

10 The IHO Secretariat shall be invited to attend the meetings of RHCs as Permanent Observer. (former paragraph 6)

MEMBERSHIP

11 RHC membership may include full Members and Associate Members willing to contribute to the ~~safety of navigation objectives of the IHO~~ in the fields of hydrography, nautical charting, nautical information or navigational warnings, marine spatial data infrastructure (MSDI) and related fields in the region concerned. The roles of full members, associated members and observers should be defined by each RHC, in line with the IHO General Regulations. The invitation procedures for membership should be established by each RHC, following approaches that are open, inclusive and supportive of a regional coordination role. (former paragraph 4)

12 Full membership is reserved for IHO Member States within the region who sign the statutes of the RHC. Associate membership is available to other IHO Member States or ~~States of the region other nations~~ who are non-IHO members and being signatories of the statutes of the RHC. ~~Other States and~~ International Organizations, Non-Governmental Organizations, Industry and Academia stakeholders, active in the region concerned may be invited by the RHC to participate as Observer or Subject Matter Expert. ~~The invitation procedures should be established by each RHC.~~ (Note: former paragraph 4)

LEADERSHIP

13 Leadership of the RHC should be documented within the Commission Statutes, and establish the position of Chair, Vice-Chair, and Secretary, with associated selection process, and term of duties. Duties of the Commission Leadership are encouraged to be in line with this Resolution and the IRCC document titled *Roles and Responsibilities of Regional Hydrographic Commission Chairs*.

14 The Chair of the RHC will provide the secretariat support for the RHC meetings and the intersessional coordination within the region. The IRCC shall maintain a list of responsibilities of the Chairs to enable the work of the RHCs in the IRCC document titled *Roles and Responsibilities of Regional Hydrographic Commission Chairs*.

PROVISION OF HYDROGRAPHIC SERVICES

15 RHCs are recognized by the IHO to coordinate the breadth of regional activities needed to fulfill the provisioning of hydrographic services for international treaty or other regulatory requirements, and general marine geospatial information needs. RHCs will identify and assess INT Charts and ENC coverage within the region, highlighting those areas of significant navigational risk to the producer nations, and work to resolve the issues in a timely manner. As new marine geospatial products and services are developed within the S-100 Universal Hydrographic Data Model, RHCs should engage with data owners, product and service providers, and other stakeholders as appropriate to ensure a coordinated and cohesive regional approach is considered.

CAPACITY BUILDING

16 Where CB is required ~~in a region~~, RHCs are recommended to establish an internal body to deal with CB matters. All RHCs are encouraged to appoint a CB Coordinator to ensure that regional capacity building activities are aligned and coordinated in accordance with the IHO CB Strategy and with CB procedures and practices developed by the Capacity Building Sub-Committee (CBSC). Such appointment should be reflected in the RHC Statutes to define the role of the CB Coordinator ~~and to designate a focal point to ensure continuity in the CB process~~. This part-time allocation to assist RHCs should come primarily and ideally from Hydrographic Offices (HOs) within the region. If that is not possible then the RHC might agree to request support from another RHC or an HO that might wish to take that responsibility. (note: former paragraph 2 bis)

17 ~~These regional contact points, the responsibilities of which should be given directly and in detail by the RHC concerned, shall have the support of the RHCs; The CB Coordinators should be nominated having in mind the importance of continuity; should be in regular contact with the corresponding RHC Chair~~man~~ as well as with the CBSC Chair~~man~~, the IHO Secretariat and the relevant NAVAREA Coordinators. Ideally CB Coordinator should be a CBSC member with access to RHC meetings. However, RHCs may nominate a CBSC member different from the CB Coordinator. In the absence of any other viable alternative and despite its limited human resources availability a request of support could be requested to the IHB~~ (note: previously paragraph 2 bis)

OTHER RHC ACTIVITIES

18 RHCs are also encouraged to establish other committees and working groups, as appropriate, to pursue regional priorities including those that align with IHO global strategic objectives. These include efforts to establish regional charting schemes, elimination of ENC overlaps and gaps, marine spatial data projects, among others. The procedures for establishing such groups, their leadership and duration should be determined internally as RHCs see fit.

REPORTING

19 Chairs of RHCs shall report to the IHO Assembly on RHC activities, the findings of the assessments made in accordance with paragraph 6 hydrographic capacity and requirements within their region, future plans and the agreed key targets that support RHC tasks detailed in the IHO Work Programme. The Chairs of RHCs shall also submit reports to the IRCC meetings and an annual report to the IHO Secretariat indicating progress made against the agreed key targets in the IHO Work Programme for general dissemination. Between sessions of the IHO Assembly, reports of studies or other activities, which may be considered of general interest to all IHO Member States, shall be sent by Chairs of RHCs to the IHO Secretariat for general dissemination.

20 The following structure is recommended for National Reports made to these RHCs that wish to receive such reports. These reports are intended to streamline information to be considered by the RHC Conferences and to be used by the IHO Secretariat to update the Country Information System (CIS):

Structure for National Reports to Regional Hydrographic Commissions

Executive summary

1. Hydrographic Office / Service: General, including updates for the IHO Yearbook e.g. reorganization.

Note: use the available template for updates to the Yearbook or the online system.

Use separate sections if more than one national HO works within region for a single Member State.
2. Surveys: Coverage of new surveys.
 New technologies and /or equipment
 New ships
~~Problems encountered~~ Crowdsourced and satellite-derived bathymetry - national policy
 Challenges and achievements
3. New charts & updates: ENC coverage, gaps and overlaps
 ENC distribution method
 RNCs
 INT charts
 National paper charts
 Other charts, e.g. for pleasure craft
~~Problems encountered~~ Challenges and achievements
4. New publications & updates: New Publications
 Updated publications

Means of delivery, e.g. paper, digital

~~Problems encountered~~Challenges and achievements

5. MSI:

Existing infrastructure for MSI dissemination

Statistics on work of the National Coordinator

New infrastructure in accordance with GMDSS Master Plan

~~Problems encountered~~Challenges and achievements

Note: use the WWNWS template for this section

6. C-55:

Latest update ~~(Tables)~~

Note: use the available template to update C-55 or the online system.

7. Capacity Building:

Offer of and/or demand for Capacity Building

Training received, needed, offered

Status of national, bilateral, multilateral or regional development projects with hydrographic component (In progress, planned, under evaluation or study)

Definition of proposals and requests to the IHO CBSC

8. Oceanographic activities:

General

GEBCO/IBC's activities, GEBCO Seabed 2030 activities

Tide gauge network

New equipment

~~Problems encountered~~Challenges and achievements

9. Spatial data infrastructures:

Status of MSDI

Relationship with the NSDI

Involvement in regional or global MSDI efforts

National implementation of the Shared Data Principles – including any national data policy and impact on marine data.

MSDI national portal

Best practices and lessons learned

Challenges and achievements

10. Innovation:

Use of new technologies

Risk assessment

Policy matters

11. Other activities:

Participation in IHO meetings
Meteorological data collection
Geospatial studies
Preparation for responses to disasters
Environmental protection
~~Astronomical observations~~Engagement with the
Maritime Administration
Aids to Navigation matters
Magnetic and gravity surveys
~~MSDI Progress~~
International engagements
Etc.

12. Conclusions:

21 The IHO Secretariat will keep templates for the National Reports and its presentations to RHC meetings. The templates will be in a format compatible with the IHO databases.

Clean version

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 ENC distribution method
 RNCs
 INT charts
 National paper charts
 Other charts, e.g. for pleasure craft
 Challenges and achievements

4. New publications & updates: New Publications
 Updated publications
 Means of delivery, e.g. paper, digital
 Challenges and achievements

5. MSI: Existing infrastructure for MSI dissemination
 Statistics on work of the National Coordinator
 New infrastructure in accordance with GMDSS Master Plan
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7. Capacity Building: Offer of and/or demand for Capacity Building
 Training received, needed, offered
 Status of national, bilateral, multilateral or regional development projects with hydrographic component (In progress, planned, under evaluation or study)
 Definition of proposals and requests to the IHO CBSC
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 GEBCO/IBC's activities, GEBCO Seabed 2030 activities
 Tide gauge network
 New equipment
 Challenges and achievements
9. Spatial data infrastructures: Status of MSDI
 Relationship with the NSDI
 Involvement in regional or global MSDI efforts
 National implementation of the Shared Data Principles – including any national data policy and impact on marine data.
 MSDI national portal
 Best practices and lessons learned
 Challenges and achievements
10. Innovation: Use of new technologies
 Risk assessment
 Policy matters
11. Other activities: Participation in IHO meetings
 Meteorological data collection
 Geospatial studies
 Preparation for responses to disasters
 Environmental protection
 Engagement with the Maritime Administration
 Aids to Navigation matters
 Magnetic and gravity surveys
 International engagements
 Etc.

12. Conclusions:

21 The IHO Secretariat will keep templates for the National Reports and its presentations to RHC meetings. The templates will be in a format compatible with the IHO databases.

LIST OF MEMBER STATES' COMMENTS

ARGENTINA

Item 12 of the proposed amendment to Resolution 2/1997 eliminates the possibility that other active States in the region (non IHO members) could be invited to attend as Observers to the Regional Hydrographic Commissions. This is not in accordance with Article 8(g) of the General Regulations.

While we understand that this amendment is intended to encourage non-Member States to join the IHO, in the particular case of the SWAtHC, this amendment would directly affect BOLIVIA's status as observer in that commission.

BRAZIL

Brazil supports this proposal

CANADA

Canada endorses the proposed revisions as endorsed by the IHO Council

CHILE

We would appreciate to receive the text "ROLES AND RESPONSIBILITIES OF REGIONAL HYDROGRAPHIC COMMISSION CHAIRS", a document that it seems it has not circulated.

DENMARK

Denmark supports this proposal.

FINLAND

Finland supports the proposal.

JAPAN

Japan supports the proposal both as a Member State and a Chair of the EAHC

NETHERLANDS

The Netherlands supports this proposal.

NORWAY

Norway supports this proposal.

SWEDEN

Sweden supports this proposal.

UNITED KINGDOM

The UK fully supports this Proposal.

UNITED STATES OF AMERICA

The U.S. supports the Proposal to modernize and harmonize, the relationships between the IHO and the Regional Hydrographic Commissions. The changes articulate the relationship, establishing minimum management criteria expectations, and define national involvement levels that are consistent across the globe.

SECRETARY-GENERAL`S RESPONSE TO MEMBER STATES COMMENTS

In response to Chile’s request for an IRCC document titled “ROLES AND RESPONSIBILITIES OF REGIONAL HYDROGRAPHIC COMMISSION CHAIRS” the Secretary-General wishes to clarify that this document is to be drafted in result of the approval of Proposal 3.1.

PROPOSAL N°	OBJECT OF THE PROPOSAL	SUBMITTED BY	REFERENCE
3.2	Revision of the IHO Resolution 1/2005 - <i>IHO Response to Disasters</i>	IHO Council	3

References : A. IHO Publication M-3 - *Repertory of IHO Resolutions*, 2nd Edition - 2010, Updated to August 2018, including current Resolution:

TITLE	Reference	Last amendment (CL or IHC/A)	1 st Edition Reference
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IHO RESPONSE TO DISASTERS	1/2005 as amended	IHO A-1	K4.5
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B. 3rd Meeting of the Council – Summary Report.

PROPOSAL

The proposed revised IHO Resolution 1/2005 as amended introduces an improved framework under which the IHO and the RHCs can respond to disasters with sensible measures in a timely manner, within the scope of work of both the IHO and the RHCs.

Noting the endorsement by the Council, the Assembly is invited:

- to approve the proposed revision as presented in Annex A (red-line version) and B (clean version).

EXPLANATORY NOTE

1. IRCC was tasked by the Assembly at its 1st Session (Decision A1/19 refers) to review and redraft IHO Resolution 1/2005 – *IHO Response to Disasters* as amended to make it less prescriptive, particularly in key elements for contingency plans, and to avoid procedures going beyond the roles and/or scopes of RHCs and the IHO.

2. In March 2015, the United Nations 3rd World Conference on Disaster Risk Reduction (WCDRR-3) was held in Sendai in Japan and the Conference adopted "the Sendai Framework for Disaster Risk Reduction 2015-2030". The framework invites relevant international organizations to consider and implement the key activities for understanding disaster risk, strengthening disaster risk governance and enhancing disaster preparedness for effective response

3. The proposed revised text of the IHO Resolution 1/2005 as amended is consistent with the outcome of the WCDRR-3 and aims to help hydrographic offices to ensure effective disaster preparedness and response.

4. A revised text was prepared by IRCC which was subsequently endorsed by the Council at its 3rd meeting in October 2019 (Reference B, Decision C3/28).

Red-line version

TITLE	Reference	Last amendment (CL or IHC/A)	1 st Edition Reference
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IHO RESPONSE TO DISASTERS	1/2005 as amended	IHO A-2	K4.5
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1 Introduction

~~The 2004 and 2011 Indian Ocean and Japan tsunamis~~In recent years, huge earthquakes, tsunamis, hurricanes and other natural disasters occurred all over the world and not only severely affected local communities through the widespread loss of life and the extensive destruction of most facilities, but also severely affected safety of navigation through the destruction of port facilities and the creation of new navigational obstacles. A huge number of refugees were created and immediately suffered from shortages of food, water and fuel. In such circumstances support by sea transport was vital and depended on the immediate restoration of appropriate hydrographic and charting services.

~~Hydrographic Offices should therefore plan to respond immediately after the occurrence of such severe disasters within their area of responsibility, which may vary from Member State to Member State.~~

It should be noted that “the Sendai Framework for Disaster Risk Reduction 2015-2030” was adopted at the 3rd UN World Conference on Disaster Risk Reduction (WCDRR3), where international organizations are expected to implement activities to understand and manage disaster risks.

Various data and information obtained from hydrographic and charting activities are beneficial for sharing information right after a disaster, the development of restoration plans for damaged coastal areas and for strategies for disaster risk reduction. It would be important to provide hydrographic information effectively in the process from the occurrence of the disaster to the recovery.

The International Hydrographic Organization (IHO), its Member States and the Regional Hydrographic Commissions (RHCs) should ensure ~~that appropriate procedures and guidelines are in place~~adequate preparedness so as to enable an immediate and appropriate response to any future disaster affecting coastal areas of the world.

~~These procedures should provide guidance to be followed at the national, regional and international levels within the over-arching structure of the IHO.~~

Such procedures and guidelines should aim to:

- ~~–ensure the immediate assessment of damage and its effect on the safety of navigation of national and international shipping;~~
- ~~–immediately inform mariners and other interested parties of relevant damage and any dangers, particularly with respect to navigational hazards;~~
- ~~–re-establish the basic key maritime transportation routes, and~~
- ~~–ensure that charts and other hydrographic information of affected areas are updated as soon as possible.~~

~~The procedures and guidelines should identify the type of actions required and the likely support from Hydrographic Offices needed to recover from the damage~~

~~Appropriate global or regional actions can be co-ordinated through the IHO Secretariat, in liaison with the relevant Regional Hydrographic Commissions, IHO Member States, other Coastal States and relevant International Organizations, as appropriate to the circumstances, based on the general framework described in section 2 below.~~

~~It is also very important for Coastal States to collect relevant coastal and bathymetric data in their areas of responsibility and to make this available to the appropriate organizations to support the establishment and improvement of tsunami early warning systems, protection of coastal areas and relevant simulation studies. In particular, Coastal States should cooperate and support the IOC Tsunami Warning Programme (www.ioc-tsunami.org) in setting up sea-level and tide gauges networks, procedures and systems for the exchange and transmission of near real time sea level data. One to five minute transmission of sea level data, properly sampled (~1 min rather than 15 min or 1 h) is recommended for specific gauges likely to provide early warnings of tsunamis and storm surges. Any necessary regional cooperation for the collection of data can be coordinated through the Regional Hydrographic Commission with other States in the Region and regional bodies of other International Organizations as appropriate, such as the IOC.~~

2 Procedures and Guidelines

Hydrographic Offices should therefore be part of the National Plan developed beforehand to respond immediately after the occurrence of such severe disasters and participate in and cooperate in the development and implementation of the restoration plans for the damaged coastal areas and the strategies for disaster risk reduction within their area of responsibility, which may vary from Member State to Member State. As such following activities can be identified with the overarching framework of the Convention on the IHO and General Regulations of the IHO.

2 Activities

a) By coastal States:

~~All coastal States should have~~are encouraged to develop contingency plans developed in advance in order to be prepared in case a disaster occurs. ~~After the occurrence of a disaster affecting coastal areas under its jurisdiction, each State should promulgate Maritime Safety Information~~The specific roles and conduct a preliminary survey to confirm the principal transportation routes, according to the extent of the damage.

~~In response to the reconstruction of ports, each State should undertake hydrographic surveys so as to keep the charts updated. These actions should be coordinated with neighbouring States, Regional tasks of the Hydrographic Commissions and others as appropriate.~~

~~It is important that each~~Offices within these coastal State provides both a senior point of contact and a working point of contact for communication and coordination purposes; this could include the Director of the Hydrographic Service or Maritime Safety Agency or other appropriate persons with the appropriate authority and who are familiar with maritime proceduresStates depend on the individual national governance structures.

Contingency plans ~~should~~may contain the following key elements as appropriate:

- i) Immediately upon the occurrence of a disaster, including tsunami, promulgate appropriate navigational warnings and necessary information and advice to shipping through existing channels (e.g. NAVTEX, SafetyNET, etc...) using appropriate ways, such as graphical information on maps. In addition and following further monitoring and assessment, promulgate updated warnings, information and advice in accordance with the development of the event.
- ii) Co-operate with the NAVAREA Co-ordinator and other national co-ordinators so that warnings, information and advice can be made available to mariners beyond the area of national jurisdiction as soon as is practicable.
- iii) Assess the extent of damage to the coastal area particularly to ports, harbours, straits, approaches, and other restricted areas.
- iv) Assess, in co-operation with other national agencies, for example, lighthouse and port authorities, the extent of damage to navigational aids.
- v) Prioritize actions and allocate resources in order to identify requirements and undertake preliminary re-surveys starting with the most critical areas for navigation, aiming at ensuring the passage of support and supplies through maritime channels and ports, and the marking of new dangers where necessary.
- vi) Assess the specific effects on shipping of the existence of obstacles and any changes to the seafloor that can hinder navigation, taking full account of the effects of drifting obstacles which may also hinder preliminary survey results.

~~vii) Inform the Chair of the Regional Hydrographic Commission and the IHO Secretariat of the situation, providing details of the damage, actions taken and indicating what support, if any, is needed.~~

- vii) viii) Take the following action to assess and define new hydrographic or cartographic requirements, including:
 1. Conducting hydrographic surveys in harbours and approaches as soon as practicable wherever the depth is likely to have changed due to geomorphic change, obstacles, or accumulation of sediment. Surveys should be progressed incrementally in support of progress in reconstruction of port facilities.
 2. Checking and confirming relevant benchmarks. Re-defining chart datum, if necessary.
 3. Providing nautical information as soon as practicable. Providing chart correction information or new editions of charts incrementally according to priorities and available resources. Indicating newly surveyed areas in chart correction information or on new editions of charts in order to highlight areas of more reliable information in areas where significant changes of depth have taken place.
 4. ~~ix) Provide follow-up reports~~Noting that, in case of earthquake, the ground level may continue to change for many years due to post-seismic crustal deformation, which may accumulate and affect charted depths significantly.

Also, actions to be taken in ordinary period may contain the following key elements as appropriate:

- 1) Prepare equipment and information and conduct exercises to implement the contingency plan effectively.
- 2) Share information about disaster response with the Chair of the Regional Hydrographic CommissionRHC and the IHO Secretariat at appropriate. This includes support requests for the immediate disaster response as well as the recovery response, for instance enabling entry survey or subsequent updating of nautical charts.

It is also very important for coastal States to collect relevant coastal and bathymetric data in their areas of responsibility and to make this available to the appropriate organizations to support the establishment and improvement of tsunami early warning systems, protection of coastal areas and relevant simulation studies. In particular, coastal States should cooperate and support the IOC Tsunami Warning Programme (www.ioc-tsunami.org) in setting up sea-level and tide gauges networks, procedures and systems for the exchange and transmission of near real time sea-level data². One to five minute transmission of sea-level data, properly sampled (~1 min rather than 15 min or 1 h) is recommended for specific gauges likely to provide early warnings of tsunamis and storm surges. Any necessary regional cooperation for the collection of data can be coordinated through the Regional Hydrographic Commission with other States in the Region and regional bodies of other International Organizations as appropriate, such as the IOC.

b) By Regional Hydrographic Commissions:

~~The Chair of the Regional Hydrographic Commission will be responsible for co-ordinating the actions needed within the Region. In order to achieve this, the Commissions (RHC) should develop a 'include disaster' action plan, aimed at supporting States in the area to assess the hydrographic damage, provide support preparedness and co-ordinate actions and efforts. These plans will be focused on the following:~~

~~i) Communicating, by the quickest means available, with the focal points of the States in the Region, in order to make an initial evaluation of the extent of the damage.~~

~~ii) Deciding whether a Regional technical task team needs to visit States in the area to support the evaluation of the damage and support needed.~~

~~iii) Deciding, based on the information collected, whether an Extraordinary Meeting of the RHC is needed, in order to discuss in detail the problems, evaluate the damage and respond to requests for support.~~

~~iv) Deciding if the Chair needs to take a co-ordinating role in assessing damage, providing support and broadcasting information to mariners.~~

~~v) Informing the IHO Secretariat on the situation, the actions taken and the need, if any, for external support.~~

~~vi) Monitoring the progress of the actions agreed in the area, keeping Member States in the Region and IHO Secretariat informed accordingly.~~

- ~~i) viii) Including this issue as a permanent response into Agenda item on RHC meetings in order to monitor the readiness of the Commission to respond to disasters and conducting regular table top exercises to evaluate the procedures as appropriate.~~
- ~~ii) The Chair of a RHC may act as a broker for hydrographic demand (from the affected countries) and supply (by countries offering assets).~~
- ~~iii) RHC should consider the implementation of capacity building for disaster preparedness and response as appropriate.~~

² See also "Manual on Sea Level: Measurement and Interpretation Volume IV"
https://www.psmsl.org/train_and_info/training/manuals/

c) By the IHO Secretariat:

- i) The IHO Secretariat ~~will co-ordinate the~~ should promote actions ~~required of Member States by member states and Regional Hydrographic Commissions in order to assess damage and will co-operate with other International Organizations~~RHCs above as appropriate to ~~co-ordinate any external support required.~~

The IHO Secretariat ~~will undertake the following tasks:~~i) ~~Communicate with the Chairs of the Regional Hydrographic Commissions and, where necessary, directly with Member States in the region(s) affected, in order to collect information relating to the scale of the damage, actions taken, the support needed and the desirability of a regional meeting.~~

~~ii) Participate as appropriate in meetings organized by the RHC or Member States, to determine problems and the actions required to remedy the situation~~

~~ii) iii) Co-operate with other International Organizations, informing them of matters affecting the safety of navigation, the needs of Member States, and actions taken and seeking where appropriate, support from these Organizations~~should promote sharing best practices regarding disaster preparedness and response provided by member states for ~~the repair of the damage.~~world resilience.

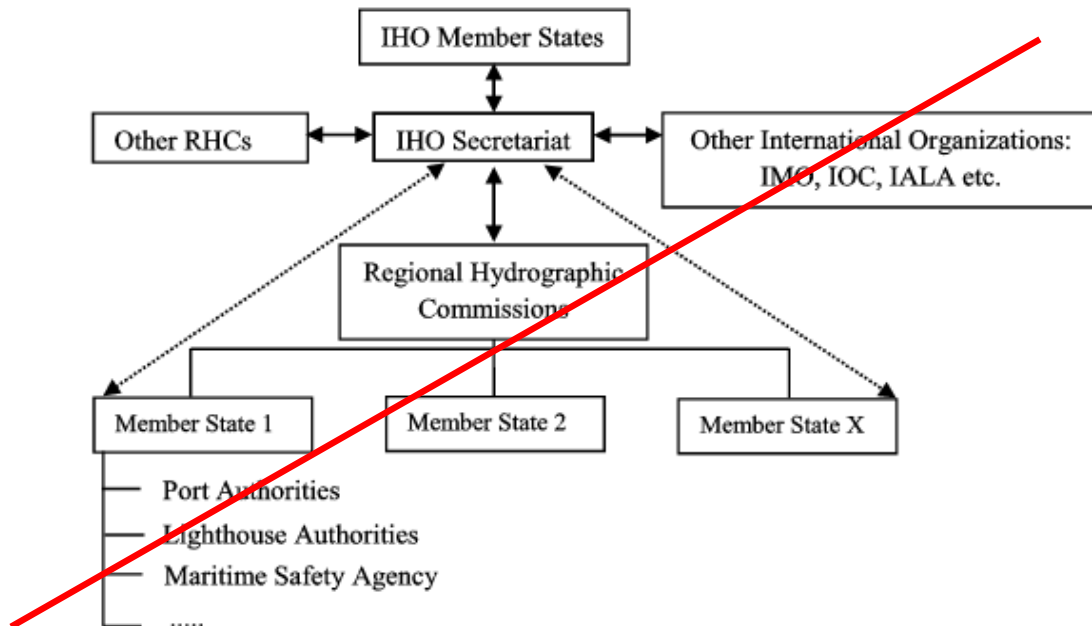
~~iv) Invite other International Organizations to participate in Regional Meetings, in order to contribute to the discussions and to the required actions.~~

~~v) Monitor developments and inform Member States on all issues associated with the damage, actions taken and support needed.~~

~~vi) Investigate the willingness of Member States to provide support and co-ordinate the appropriate actions with the affected States in close co-operation with the Chair of the RHC.~~

~~vii) Participate in discussions at RHC meetings to monitor requirements, develop responses to possible disasters and test the procedures and readiness to respond by tabletop exercises.~~

3 IHO Disaster Reaction Organization



3 Diplomatic clearance

Effective disaster response predicated on diplomatic clearance to actually deploy the offered hydrographic assets in theatre. It is the responsibility of affected coastal States to institute procedures to progress 'hydrographic' requests timely through their Nations Diplomatic channels. As it is the national responsibility of the Member States offering such support, to use those channels. The IHO Secretariat and Chairs of the RHCs have no means to absorb these national responsibilities.

Clean version

TITLE	Reference	Last amendment (CL or IHC/A)	1 st Edition Reference
IHO RESPONSE TO DISASTERS	1/2005 as amended	IHO A-2	K4.5

1 Introduction

In recent years, huge earthquakes, tsunamis, hurricanes and other natural disasters occurred all over the world and not only severely affected local communities through the widespread loss of life and the extensive destruction of most facilities, but also severely affected safety of navigation through the destruction of port facilities and the creation of new navigational obstacles. A huge number of refugees were created and immediately suffered from shortages of food, water and fuel. In such circumstances support by sea transport was vital and depended on the immediate restoration of appropriate hydrographic and charting services.

It should be noted that "the Sendai Framework for Disaster Risk Reduction 2015-2030" was adopted at the 3rd UN World Conference on Disaster Risk Reduction (WCDRR3), where international organizations are expected to implement activities to understand and manage disaster risks.

Various data and information obtained from hydrographic and charting activities are beneficial for sharing information right after a disaster, the development of restoration plans for damaged coastal areas and for strategies for disaster risk reduction. It would be important to provide hydrographic information effectively in the process from the occurrence of the disaster to the recovery.

The International Hydrographic Organization (IHO), its Member States and the Regional Hydrographic Commissions (RHCs) should ensure adequate preparedness so as to enable an immediate and appropriate response to any future disaster affecting coastal areas of the world.

Hydrographic Offices should therefore be part of the National Plan developed beforehand to respond immediately after the occurrence of such severe disasters and participate in and cooperate in the development and implementation of the restoration plans for the damaged coastal areas and the strategies for disaster risk reduction within their area of responsibility, which may vary from Member State to Member State. As such following activities can be identified with the overarching framework of the Convention on the IHO and General Regulations of the IHO.

2 Activities

a) By coastal States:

All coastal States are encouraged to develop contingency plans in advance in order to be prepared in case a disaster occurs. The specific roles and tasks of the Hydrographic Offices within these coastal States depend on the individual national governance structures.

Contingency plans may contain the following key elements as appropriate:

- i) Immediately upon the occurrence of a disaster, including tsunami, promulgate appropriate navigational warnings and necessary information and advice to shipping through existing channels (e.g. NAVTEX, SafetyNET, etc.) using appropriate ways, such as graphical information on maps. In addition, and following further monitoring and assessment, promulgate updated warnings, information and advice in accordance with the development of the event.

- ii) Cooperate with the NAVAREA Coordinator and other national coordinators so that warnings, information and advice can be made available to mariners beyond the area of national jurisdiction as soon as is practicable.
- iii) Assess the extent of damage to the coastal area particularly to ports, harbours, straits, approaches, and other restricted areas.
- iv) Assess, in cooperation with other national agencies, for example, lighthouse and port authorities, the extent of damage to navigational aids.
- v) Prioritize actions and allocate resources in order to identify requirements and undertake preliminary re-surveys starting with the most critical areas for navigation, aiming at ensuring the passage of support and supplies through maritime channels and ports, and the marking of new dangers where necessary.
- vi) Assess the specific effects on shipping of the existence of obstacles and any changes to the seafloor that can hinder navigation, taking full account of the effects of drifting obstacles which may also hinder preliminary survey results.
- vii) Take the following action to assess and define new hydrographic or cartographic requirements, including:
 1. Conducting hydrographic surveys in harbors and approaches as soon as practicable wherever the depth is likely to have changed due to geomorphic change, obstacles, or accumulation of sediment. Surveys should be progressed incrementally in support of progress in reconstruction of port facilities.
 2. Checking and confirming relevant benchmarks. Re-defining chart datum, if necessary.
 3. Providing nautical information as soon as practicable. Providing chart correction information or new editions of charts incrementally according to priorities and available resources. Indicating newly surveyed areas in chart correction information or on new editions of charts in order to highlight areas of more reliable information in areas where significant changes of depth have taken place.
 4. Noting that, in case of earthquake, the ground level may continue to change for many years due to post-seismic crustal deformation, which may accumulate and affect charted depths significantly.

Also, actions to be taken in ordinary period may contain the following key elements as appropriate:

- 1) Prepare equipment and information and conduct exercises to implement the contingency plan effectively.
- 2) Share information about disaster response with the Chair of the RHC and the IHO Secretariat at appropriate. This includes support requests for the immediate disaster response as well as the recovery response, for instance enabling entry survey or subsequent updating of nautical charts.

It is also very important for coastal States to collect relevant coastal and bathymetric data in their areas of responsibility and to make this available to the appropriate organizations to support the establishment and improvement of tsunami early warning systems, protection of coastal areas and relevant simulation studies. In particular, coastal States should cooperate and support the IOC Tsunami Warning Programme (www.ioc-tsunami.org) in setting up sea-level and tide gauges networks, procedures and systems for the exchange and transmission of near real time sea-level data³. One to five minute transmission of sea-level data, properly sampled (~1 min rather than 15 min or 1 h) is recommended for specific gauges likely to provide early warnings of tsunamis and storm surges. Any necessary regional cooperation for the collection of data can be coordinated through the Regional Hydrographic Commission with other States in the Region and regional

³ See also “Manual on Sea Level: Measurement and Interpretation Volume IV”

https://www.psmsl.org/train_and_info/training/manuals/

bodies of other International Organizations as appropriate, such as the IOC.

b) By Regional Hydrographic Commissions:

- i) Regional Hydrographic Commissions (RHC) should include disaster preparedness and response into Agenda item on RHC meetings as appropriate.
- ii) The Chair of a RHC may act as a broker for hydrographic demand (from the affected countries) and supply (by countries offering assets).
- iii) RHC should consider the implementation of capacity building for disaster preparedness and response as appropriate.

c) By the IHO Secretariat:

- i) The IHO Secretariat should promote actions by Member States and RHCs above as appropriate.
- ii) The IHO Secretariat should promote sharing best practices regarding disaster preparedness and response provided by Member States for the world resilience.

3 Diplomatic clearance

Effective disaster response predicates on diplomatic clearance to actually deploy the offered hydrographic assets in theatre. It is the responsibility of affected coastal States to institute procedures to progress 'hydrographic' requests timely through their Nations' Diplomatic channels. As it is the national responsibility of the Member States offering such support, to use those channels. The IHO Secretariat and Chairs of the RHCs have no means to absorb these national responsibilities.

LIST OF MEMBER STATES' COMMENTS

BRAZIL

Brazil supports this proposal

CANADA

Canada supports this proposal as endorsed by the IHO Council.

FRANCE

IHO resolution 1/2005 deals with IHO's response to natural disasters: "earthquakes, tsunamis, hurricanes and other natural disasters" as mentioned in the introduction to the resolution.

It would be interesting to obtain the views of the Member States on the appropriateness of extending the framework of the Resolution to human-caused disasters for which a response from the IHO might be necessary, for example in response to air or maritime transport accidents.

In this respect, the International Civil Defence Organization (ICDO) proposes a categorization of the various disasters that could be usefully cited in the resolution (<http://icdo.org/fr/catastropes.html>).

JAPAN

Japan thoroughly supports the proposal. Japan would like to express our appreciation for the great support and help from Australia and other Member States since A-1.

Thanks to their cooperation, the IHO Resolution 1/2005 could cover the necessary requirements.

NETHERLANDS

The Netherlands supports this proposal.

NORWAY

Norway supports this proposal.

SWEDEN

Sweden supports this proposal.

UNITED KINGDOM

The UK fully supports this Proposal.

UNITED STATES OF AMERICA

The U.S. recognizes and thanks Japan for their work in revising Resolution 1/2005 – IHO Response to Disasters, and supports this revision.

PROPOSAL N°	OBJECT OF THE PROPOSAL	SUBMITTED BY	REFERENCE
3.3	Establishing an IHO e-Learning Center	Republic of Korea	3

References:

- A. Article II(c) of the IHO Convention as amended: “To improve global hydrographic capability, capacity, training, science and techniques;”
- B. Decision no. 16 of A-1: “PRO-2: The Assembly directed the IRCC to take into account e-learning in the IHO Capacity Building Strategy and to consider using e-learning in its Capacity Building activities.”

PROPOSAL:

PRO 2 – *Development of IHO e-Learning Capacity* was discussed at the 1st Session of the IHO Assembly. However considering that the absence of detailed implementation plan is not progressing the concept of e-Learning, the following are proposed:

- a) to establish an IHO e-Learning Center to serve as a common platform among the Member States; and
- b) to develop an e-Learning guideline to implement e-Learning programmes.

EXPLANATORY NOTE:

1. Faced with rapid technological changes including the introduction of S-100 standards, unannounced hydrographic survey and Marine Spatial Data Infrastructure (MSDI), the IHO should strive to satisfy the needs of the IHO community through continued capacity building activities.
2. PRO 2 – *Development of IHO e-Learning Capacity* was discussed at the 1st Session of the IHO Assembly (A-1) and as a consequence decision no. 16 was made as the following: “PRO-2: The Assembly directed the IRCC to take into account e-learning in the IHO Capacity Building Strategy and to consider using e-learning in its Capacity Building activities.” However there has been no progress on the implementation of the Assembly decision.
3. The IHO Secretariat and the IRCC are aware of the need for e-Learning but there are financial limitations in creating and maintaining an e-Learning platform.
4. Since there is no e-Learning guideline, Member States implement their own training programmes, lacking systematic development of contents and limiting the use of existing contents. The examples are the Maritime Safety Information run by France, Spanish Hydrographic School, and Basic Online Hydrographic Survey and Nautical Cartography courses run by the ROK.
5. In this regard, based on experience from hosting the Training, Research and Development Centre (TRDC), East Asia Hydrographic Commission since 2013 and running offline training programmes and having developed and run the e-Learning infrastructure and programmes, the ROK proposes the following two items for e-Learning implementation:
 - a) It is required to establish an IHO e-Learning center in the form of a portal to implement e-Learning more effectively and systematically and enable co-use of contents developed by Member States and industry partners. To facilitate this, the ROK would like to contribute to the IHO community by hosting the center utilizing its web hosting service and Learning Management System (LMS) platform developed by the Korea Hydrographic and Oceanographic Agency (KHOA) between 2018 and 2019.

- b) It is required to develop an e-Learning guideline which includes the development and management of e-Learning contents and running of e-learning programmes and external communications, etc. to enhance the use of e-Learning and implement it systematically.

ACTIONS REQUIRED OF THE ASSEMBLY:

- 6. The Assembly is invited to **approve**:
 - a) the establishment of an IHO e-Learning center; and
 - b) the development of an e-Learning guideline.

LIST OF MEMBER STATES' COMMENTS

ARGENTINA

ARGENTINA welcomes and appreciates the offer of the REPUBLIC OF KOREA to use its resources and expertise for the implementation of an IHO e-Learning Center.

The production of e-Learning guidelines could be entrusted to the CBSC, with the help of Member States wishing to collaborate, as well as academia and industry. In this way, the impact of the CBF decrease could be sought by trying to reduce the unmet demand for training.

BRAZIL

Brazil supports the proposal and congratulates ROK for this proposal considering that will bring a new dimension for the delivery of capacity building activities.

CANADA

Notes:

1. CA thanks the ROK for its proposal to establish an IHO e-learning center and to develop corresponding e-learning guidelines.
2. The offer host the center is most appreciated.
3. With regards to the developing of e-learning guidelines, which group or organization would take on this task? Related, what foreseen as the role of the CBSC/IRCC in this work?

FINLAND

In general, Finland is in favor of the idea of the IHO e-Learning Center and is ready to support the proposal if IHO can allocate required resources for the Service.

FRANCE

France supports this proposal, which is in line with the French proposal for the development of IHO's e-learning capacity submitted to the first session of the IHO Assembly (PRO 2).

The creation of an IHO online training centre, which would thus rely on the web hosting service and the LMS (Learning Management System) platform of the Korean Hydrographic and Oceanographic Agency, would multiply the effects of the different training initiatives of the Member States, while avoiding the sometimes redundant development of training modules within the different regional hydrographic commissions. The gains thus obtained would make it possible to focus more on the beneficiary countries and to offer a harmonized training offer, while highlighting the role of the IHO in the field of training.

The online training module on maritime safety information, developed by France as part of the capacity building programme for EAtHC, would naturally find its place in this future online training centre, thus

increasing its visibility to reach the maximum number of beneficiaries.

France thanks the Republic of Korea for this proposal and its investment in hydrographic capacity building.

ITALY

Italy supports the initiative, as the e-Learning infrastructure at KHOA could represent a useful tool to promote the diffusion of Hydrography world-wide, in line with the IHO Capacity Building Strategy. In drafting the guideline, with reference to the guideline amongst others, the following two aspects need to be taken into careful consideration:

1. The establishment of clear and simple procedures to access the e-Learning center;
2. E-Learning contents and programs.

JAPAN

Japan understands the importance of e-learning. However, Japan sees that its operation period, resources of cost, administration method of the data server and network securities etc. are still remain uncertain, and that this proposal needs review and discussion under an adequate subordinate body of the IHO before consideration in the Assembly.

NORWAY

Norway welcomes and supports this important and generous proposal by South-Korea.

SPAIN

Spain agrees with the proposal

UNITED KINGDOM

The UK fully supports both the establishment of an IHO e-Learning Centre and the development of e-Learning Guidelines and would like to be fully engaged in the development of these initiatives. The views and recommendations of IBSC should also be taken into account.

UNITED STATES OF AMERICA

The U.S. thanks Republic of Korea for their initiative and agrees that there is potential for e-learning to support capacity building in the broadly-dispersed hydrographic community. It should be discussed in the context of IBSC and CBSC, and better integrated into IHO structures.

WORK PROGRAMME UPDATE

REPORT OF THE IHO COUNCIL

(version 1.0, dated 16 January 2020)

1. Chair: Rear Admiral Shepard M. Smith, United States of America
Vice-Chair: Admiral (Ret.) Luiz Fernando PALMER Fonseca Brazil

2. Membership (*IHO Member States having a seat at the Council*):

Australia, Brazil, Canada, China, Colombia, Cyprus, Denmark, Finland, France, Germany, Greece, India, Indonesia, Iran (Islamic Republic of), Italy, Japan, Korea (Rep. of), Malaysia, Netherlands, Norway, Pakistan, Russian Federation, Singapore, South Africa, Spain, Sweden, Turkey, United Kingdom, United States of America, Uruguay.

3. Meetings:

1 st meeting (C-1)	IHO Secretariat, Monaco	17 – 19 October 2017
2 nd meeting (C-2)	London, United Kingdom	9 – 11 October 2018
3 rd meeting (C-3)	IHO Secretariat, Monaco	15 – 17 October 2019

Foreword from the Chair

It is my honor to report to Assembly 2 (A-2) on the activities of the first triennium of IHO Council. This inaugural Council focused on three main goals. First, to develop an identity and culture for the Council and institute processes to promote our effectiveness. Second, to position ourselves within the existing structures of the IHO, the Secretariat, the IRCC, and the Hydrographic Services & Standards Committee. Third, to develop proposals for the strategic direction of the IHO for the consideration of the Assembly. I am proud of our accomplishments in these areas, and of the development of an operational regime of a strong Council that will be of service to the IHO for years to come.

Council Culture and Processes

The intent of the Council is to accelerate the pace of decisions and to maintain a clear strategic direction for the IHO. To maintain the ability to work effectively, the Council has deliberately kept the size of the Council meetings small, limited to two participants from each Council Member State and one participant from Observer States. The agenda is arranged carefully to introduce more difficult issues early in the meeting, with time to take issues off line and return to the Council later in the meeting with a solution. There are very few prepared statements, and discussions are fluid, with a high degree of participation.

The Council does not have the authority to stand up formal working groups unless authorized by Assembly. Instead, Council members regularly volunteered to work on an issue in small groups focused on a narrow proposal. These groups were recognized by the Council and proposals were made in the names of the members of the group. It worked well, and allowed the work of the council to continue between meetings.

Council Relation to other IHO Bodies

At the first Assembly, it became clear that it was important to have a Council chair identified in advance of the first meeting, and I was elected by circular letter using a one-time process approved by Assembly 1 (A-1). Council developed a proposal to order [see PRO 1.6] to make this important procedure permanent for future Councils.

At Council 1 (C-1), the members made decisions that clarified the role of the Council with respect to other IHO subsidiary bodies:

- IRCC and Hydrographic Services & Standards Committee would retain their authority to make operational and routine proposals to IHO Member States through Circular Letters distributed via the Secretariat. Only proposals with strategic impact would be routed through Council for endorsement first before submission to Member States for approval.
- Despite some ambiguity in IHO governing documents, the Council agreed to recognize proposals made by Member States and the Secretary-General in advance or during a Council session. Council requests Assembly's concurrence with this interpretation [see PRO 1.1].

Proposals on the strategic direction of the IHO

Strategic Plan

Assembly-1 tasked the Council with consideration of an update to the IHO Strategic Plan,⁴ and C-1 accordingly stood up a Strategic Plan Review Working Group with a two phase terms of reference. In the first year, the SPRWG would consider the necessity of an update to the Strategic Plan and to make a proposal to the Council on the length, structure and outline of a proposed new plan. In the second year, the group would draft the plan using the guidance approved by the Council. The resulting proposed Strategic Plan is delivered for consideration of the Assembly [see PRO 1.8]. Accordingly, if approved, the Council proposes the next Council take as its main theme until Assembly 3 (A-3) "*the effective implementation of the Revised Strategic Plan*" keeping in mind to apply the principles of ISO 9001 for." (see Annex 3/55b)

S-100 Services

In addition, C-2 recognized that several Member States were in the process of developing services based on newly-approved S-100 based standards, and that more were expected soon. Recognizing the risk of rolling out services in an uncoordinated manner, C-2 envisioned a roadmap for the IHO for the provision of these services in order to coordinate among Member States, with the IMO, and within national jurisdictions. C-2 commissioned the Secretary-General, the Council Chair, and the Chairs of the IRCC and Hydrographic Services & Standards Committee to draft such a roadmap for consideration at C-3. In the course of discussions, this drafting group recognized that the roadmap was going to evolve over the decade of implementation in response to negotiations with IMO and the actual pace of MS adoption of services, and that the plan should therefore be considered a living document. Council will propose to A-2 that this roadmap be annually maintained by the Council, with input from the other IHO bodies and from the Secretary-General. The Council welcomes any guidance or input on the scope or content of this roadmap from MS, expressed through Assembly or directly to Council. Please reference C-3/16⁵ and see PRO 2.1.

In formulating the Roadmap for Provision of S-100 Services, the Council recognized that there could be value in the development of core principles to organize these services. These principles would serve to guide the provision of the next generation of services in a manner similar to the way the WEND principles guided the transition to first-generation S-57 ENCs. Accordingly, the Council requested through IRCC that the WEND draft these principles for the consideration first of IRCC, then the Council, and finally to Member States. In addition, the WEND was requested to draft amendments to their Terms of Reference to expand their

⁴ A-1 Decision 3 A-1 PRO-4: "*The Assembly tasked the Council to conduct a comprehensive review of the Strategic Plan and to provide a draft revised Plan, as appropriate, in time for the consideration of the 2nd ordinary session of the Assembly (A-2). The Council is empowered to establish a working group for this discrete purpose.*"

⁵ C-3/16 "*Council Chair to propose the Assembly to task the Council to maintain the S100 roadmap on an annual basis as a key priority of the Council activities. which is related to C-3/13 "Council/HSSC/IRCC Chairs/SecGen supported by subject matter experts as appropriate to maintain this roadmap as an incremental version-controlled document (including narrative and timelines) on an annual basis taking into account comments made at C-3 (engagement plan, production plan, capacity building) and A-2"*

mandate to include S-100 based services. This ongoing work may be considered for endorsement as soon as C-4 in October 2020. Please reference C-3/35.⁶

Financial

As Council Chair, I contributed to the annual meeting of the officers of the Finance Committee, and the SG reports annually to the Council on the financial health of the IHO. In the past few years, the finances of the IHO have been profoundly affected by increases in the cost of the core operations of the Secretariat, and in particular the rising costs of health care for current IHO employees and our retirees. At C-3, the Secretary-General reviewed the history of costs of IHO core functions and the annual dues paid by Member States. In short, the trend of the increase in cost of core operations at the IHO has been matched in recent years by the addition of additional dues-paying Member States. C-3 recognized that the additional revenue from adding additional Member States will be matched with additional costs, and that the rate of addition of new Member States will likely diminish in the years ahead. Consequently, there is a high likelihood that the IHO will be unable to maintain the current part of the budget to support standards development and administration of the capacity building program, which would substantially reduce the impact of the IHO overall. The Council requested that the Secretary-General prepares a proposed budget for Assembly consideration which would give the Council and SG the option of a modest increase in dues if it is deemed necessary. This same procedure has been used frequently in past years, and the history is that the option of a dues increase has been exercised only very rarely. Please see C-3/45, refer to details explained in PRO 1.7 (option of a consecutive increase of 1% per each year from 2021 to 2023 subject to annual Council approval) that is supported by the Council and the forthcoming report of the Finance Committee to A-2.

Overview of Council Proposals to A-2

Pro Number	Object of the Proposal
1.1	Interpretation of some articles in the Basic Documents of the IHO
1.2	Revision of Articles 14, 15, 20 and 25 of the General Regulations of the IHO
1.3	Revision of Clause (c) of Article 16 of the General Regulations of the IHO – Hydrographic Interest
1.6	Revision of Rule 12 of the Rules of Procedure of the IHO Council and consequence on Rules 8 and 11 - Timing of Election of the Chair and Vice-Chair
1.7	3-year Work Programme and Budget 2021-2023
1.8	Revised Strategic Plan
2.1	S-100 Implementation Strategy
3.1	Revision of the IHO Resolution 2/1997 - Establishment of Regional Hydrographic Commissions (RHC)
3.2	Revision of the IHO Resolution 1/2005 - IHO Response to Disasters

Meeting venue

Council members experimented with the idea of convening the mid-session Council meeting (ie, C-2) in a venue other than Monaco to encourage and support greater regional diversity and awareness of hydrographic issues globally. However, logistical and financial considerations indicate it may be more practical and less costly to convene simply Council meetings in Monaco to keep costs low.

⁶ C-3/35 "Council Chair to include a progress report on the transition for WEND to WENS in his report to A-2."

Conclusion

The Council faced initial questions of defining its role and added value to the workings of the IHO as a whole. By the C-3, members generally concluded the Council is demonstrating great value by providing a frequent (annual) venue for hydrographic offices to convene and discuss the current and prospective work of the IHO and hydrography in general in a comprehensive, practical and frank manner. Members were able to consider in detail all three IHO work programs and the synergy of efforts, where in terms of national office operations, regional coordination, and in light of developing technical specifications and standards. Members raised fundamental questions of directions of the organization, performance measurement and accountability, capacity building at all levels, and importantly, external partnerships. The Council provided a venue for hydrographic offices to deliberate and mature proposals to be presented to the Assembly in a way that we believe facilitates the decision-making role of the membership at the triennial Assembly meetings. In these regards, as Chair, I feel the Council has demonstrated considerable value to the organization enhancing its vitality and ability to deliver the promises of hydrography in a new era of maritime development and growth.

On a personal note, I would like to thank the members of Council 1-3 for their hard work, their collegial spirit, and their impressive strategic thinking. I would like to invite the Assembly to join me in thanking the participants and the Member States they represent.

Recommendations and call for directions

The Council recommends the Assembly

- a) to adopt the listed nine proposals;
- b) to convene Council meetings regularly at the IHO Secretariat;
- c) to adopt as the main theme until Assembly 3 (A-3) “*the effective implementation of the Revised Strategic Plan*” keeping in mind to apply the principles of ISO 9001 for”.

and seeks Assembly input, guidance and directions as Assembly deems appropriate.

The following annexes are included in VOL. 2 of the Proceedings

Annex 1 [Summary Report Council-1 \(C-1\)](#)

Annex 2 [Summary Report Council-2 \(C-2\)](#)

Annex 3 [Summary Report Council-3 \(C-3\)](#)

REPORT OF THE HYDROGRAPHIC SERVICES & STANDARDS COMMITTEE
(HSSC)

Outcome of the 12th HSSC meeting in October 2020

1. Chair: Mr Magnus WALLHAGEN (Sweden)
Vice-Chair: Vacant

2. Membership:

See [HSSC Membership List](#).

3. Meetings:

HSSC-12 VTC 19-22 October 2020

Introduction

1. This document provides some highlights on the IHO Work Programme 2, especially the achievements and developments since the last report to the Council in 2019 as well as the main outcome of the 12th meeting of the Hydrographic Services and Standards Committee (HSSC-12) held in a virtual format on 20 and 21 October 2020. HSSC-12 was attended by 109 registered participants from 34 Member States and 5 Observing Organizations.

Updates impacting the S-100 Implementation Strategy (A-2 / PRO 2.1 refers)

Activities of the Working Groups and Project Teams

2. New documents which are essential in the development of the S-100 Implementation Road Map are under development. This includes in particular the “Interoperability Specification” for S-100 based navigation systems (S-98). Ed. 1.0.0 of S-98 is planned to be submitted for endorsement in 2021. A proposed incremental approach for additional Product Specifications (currently excluded) was approved.
3. An amendment to the S-100 Implementation Road Map based on the list of products planned to be covered by S-98 needs to be considered (Action HSSC12/11).
4. To ensure alignment of the operational version of S-101, Hydrographic Services & Standards Committee agreed to delay the publication of S-100 Edition 5.0.0 until 2022 and HSSC WGs were tasked to consider aligning all product specifications, with an initial priority list (S-101, S-102, S-104, S-111, S-122, S-123, S-124, S-129), to Edition 5.0.0 by 2023. Hydrographic Services & Standards Committee also noted the progress made on the development of S-100 Test Data Set and allocated S-164 number for the S-100 equivalent of S-64 - *IHO Test Data Sets for ECDIS*.

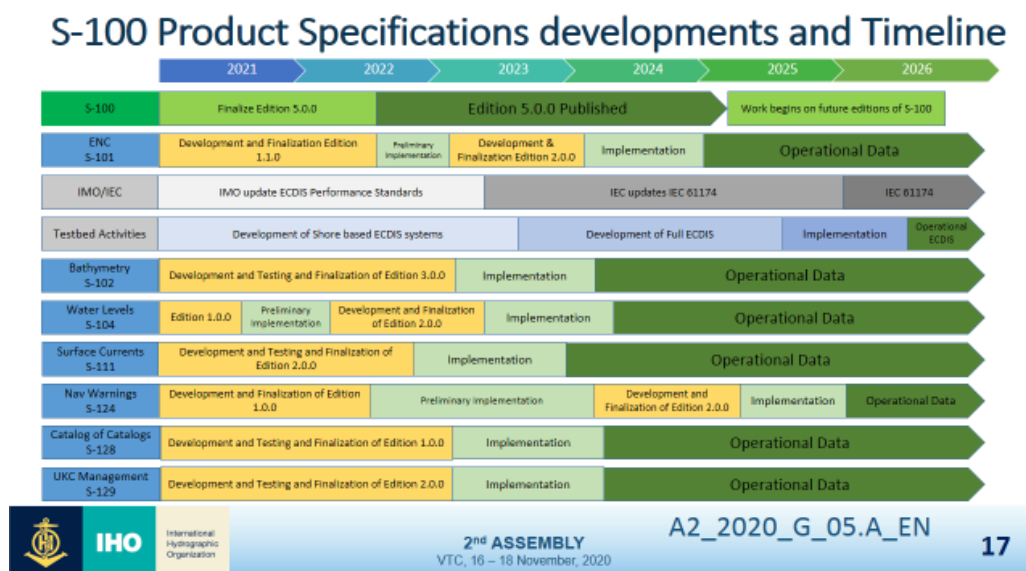
Dual-Fuel Concept (A-2 / PRO 2.2 refers)

5. The Dual-Fuel Concept, needed for the transition from S-57 ENCs to S-101, was discussed and the basic principles (*Essential Principles of Operation*) were agreed.
6. The S-100WG/S-101PT is tasked to liaise with Stakeholders to prepare a governance document that formalizes the guiding principles of Dual-Fuel Concept for incorporation into the S-100 Implementation Road Map.

M-3, IHO Resolutions (A-2 / PRO 2.3 refers)

7. There was general agreement that the revision of some IHO Resolutions is an important driver for the effective implementation of S-100. Thus when the operational implementation of S-100 becomes mature enough, it is recommended that proposed amendments to the Resolutions eventually complemented by other new Resolutions (such as WEND100) will be submitted to the Council for endorsement as appropriate, and for subsequent approval by Member States.
8. It is noted that the product specifications and publications covering the provision of nautical information under the remit of the NIPWG will need to be aligned with the latest version of S-100. This will require some significant effort. The S-131 Product Specification - *Marine Harbour Infrastructure* - is currently under development in close liaison with the International Harbour Master Association and with the International PortCDM Council.

Timelines



Report on the Future of the Paper Nautical Chart

9. The recommendations from the final report on the “Future of the Paper Nautical Chart”, August 2020, were endorsed. It was agreed to add a work item in the programme of work of the NCWG to develop ways to enable or enhance HOs’ ability to produce paper charts or raster chart images directly from S-101.

Achievements and Highlights

10. The guidance on producing and maintaining High Density ENC (HD ENC), Ed.1.0.0, January 2020, is now available as Annex A to S-65.
11. Investigations for the possible development of a new Edition of S-63 - *IHO Data Protection Scheme* - compliant with IMO cyber security measures and IEC 63154 ED1 are in progress.
12. The Hydrographic Services & Standards Committee approved the completion of the task by the DQWG on the conditional visualization of quality of bathymetric data and commended the WG for the publication of S-67 Ed.1.0.0 *Mariners’ Guide to Accuracy of Depth Information in ENCs*.

Hydrographic Services & Standards Committee Report

13. The Hydrographic Services & Standards Committee paid tribute to the memory of Dr Kurt Hess (US), an active Member of the TWCWG, who passed away in June 2020. The target dates for the publication of the S-104 – *Water Level Information* – were also approved.
14. The Hydrographic Services & Standards Committee commended the Hydrographic Survey Project Team (HSPT) for the excellent work done to achieve the publication of Edition 6.0.0 of S-44, IHO Standards for Hydrographic Survey and approved the establishment of a new Working Group, the Hydrographic Surveys Working Group.

Conclusion

15. The Hydrographic Services & Standards Committee thanks the Member States for their active and continuous support and involvement in the activities of the Working Groups and Project Teams.

Recommendations and call for directions

The Assembly is invited:

- **To note** the Updated Hydrographic Services & Standards Committee Report.
- With reference made to A2 / PRO 2.1, **to approve** the Hydrographic Services & Standards Committee proposal to add 3 annexes to the S-100 Implementation Strategy, related to the IHO Work Programme 1, 2 and 3, to be updated annually and reported to the Council.
- **To task** HSSC [and IRCC] to implement the recommendations on the Future of the Paper Nautical Chart as appropriate.
- With reference made to A2 / PRO 2.2, **to task** the Hydrographic Services & Standards Committee to prepare a synoptic Dual Fuel Concept summary report on the various options offered to HOs for considering the development of their production of S-101 ENC's (Report to be made by HSSC at C-5, 2021).
- With reference made to A2 / PRO 2.3, **to approve** the proposed Hydrographic Services & Standards Committee way forward that when the operational implementation of the S-100 concept becomes mature enough, proposed amendments to the Resolutions, eventually complemented by other new Resolutions (such as a result of WEND100), will be discussed and submitted to relevant IHO organs for subsequent approval by MS.

REPORT OF THE INTER-REGIONAL COORDINATION COMMITTEE (IRCC)

Outcome of the recent IRCC meeting in October 2020

1. Chair: Mr Thomas DEHLING (Germany)
Vice-Chair: Mr John Nyberg (USA)

2. Membership:
See Annex A

3. Meetings:
IRCC12 VTC 6-7 October 2020

Introduction

This document reports on the progress of the ongoing implementation of the Work Programme 3, especially the developments since the last report to the Council in 2019. Due to CoVID-19 IRCC-12 has been conducted before A-2.

The twelfth meeting of the Inter-Regional Coordination Committee (IRCC12) was postponed from June 2020 and was held online, from 6 to 7 October 2020. The IRCC reviewed the reports and activities of its subordinate bodies and the RHCs and considered the need for enhancing regional coordination and cooperation. IRCC also considered the outcomes of the 3rd meeting of the IHO Council (C-3), acknowledged the accomplishments and challenges of the Capacity Building programme and the IBSC, examined the developments on Crowdsourced Bathymetry and ocean mapping activities, and considered issues related to the Worldwide ENC Database (WEND), especially the development of WEND-100 principles.

Difficulties and challenges yet to be addressed

Due to CoVID-19, IRCC and most of the subordinate bodies and RHCs had to conduct their work and especially meetings using online means. That made it very difficult to execute all relevant issues and they had to concentrate on the most important topics. Virtual meetings were shorter compared to regular meetings and worked quite well. A good preparation and provision of documents well in advance are crucial for the success. The bodies profited from the fact that most of the participants know each other quite well. A positive effect was a higher number of participants and more frequent meetings in several sub-committees. Beside that extraordinary situation, there is no significant change to the difficulties and challenges reported to C-3.

Conclusion

Regional Hydrographic Commissions (RHCs)

1. The input from RHCs is provided in a separate report assembled and presented by the IHO Secretariat. To avoid duplication, reference is made to that report.

Capacity Building

2. The 18th Meeting of the IHO Capacity Building Sub-Committee (CBSC18) took place in June 2020 as an online event. The CBSC updated and adjusted the 2020 CB Work Programme (CBWP) and approved the 2021 CBWP considering the priorities identified by the Sub-Committee with respect to the IHO CB Strategy, the available resources and potential additional resources. The COVID 19 pandemic had a significant impact in the CB activities. Several projects could not be executed in 2020, most of them had to be postponed, others will have or had to be changed to more digital learning methods.

3. The surplus estimated for the end of 2020 will therefore urgently be needed to execute the 2021 WP. In relation with the 2021 WP the accepted submissions would need funds of about 1,520,000 € and the Work Programme allocates about 1,260,000 €.
4. The funds to the CB Program are based on the one hand on the direct input from the IHO fund, but on the other hand on a significant and generous financial contribution from RoK and Japan. For the 2020 CBWP, the Republic of Korea (RoK) contributed with more the 320.000 Euros with almost all funds earmarked to sponsor students from IHO Member States for the Category "A" Hydrographic Survey Program at USM, the Training for Trainers (TFT) project and a Category "B" Hydrographic Survey Program held at KHOA, Busan, RoK. Japan continues to provide its important contribution through the Nippon Foundation (NF) by funding CB training projects. The NF has provided a financial contribution to the IHO to completely fund the NF-IHO GEOMAC Project. The NF is substantially funding other projects outside the direct context of the IHO CB. Several MS provide direct contribution or support for IHO CB activities. This can be a.o. the provision of facilities, trainers, other personnel, advice, etc. The CB programme depends on these contributions.
5. Measuring the effectiveness and efficiency of CB has been challenging in the past. A system to measure the improvements of MS in their capacity is under development, based on a regional estimation by the CB Coordinators. However, to implement the system is an ongoing item and needs some refinement work (ACTION C3/25). This system is oriented by the expected effects of CB support, not on the achievement of the CB activities.
6. IRCC noted the significant effort from CB Coordinators to assess the needs in the region, to identify national and regional projects in contributing to the CBWP and coordinating the support for countries in need.

E-Learning

7. As a positive effect of the postponement of A-2, the Proposal 3.3 to A-2 of an IHO e-Learning Center proposed by Republic of Korea (RoK) has been refined and further possible steps have been developed by RoK and CBSC before A-2. According to ACL19, it was advised to discuss the PRO 3.3 and following amendments during the Capacity Building Sub-Committee meeting, to then submit it for consideration to the Assembly.
8. The importance of E-Learning, especially in this COVID pandemic situation is evident. CBSC especially worked on the way of implementation of such a center into the IHO work. It was decided to establish an e-Learning Project Team (PT) with members from CBSC, IBSC, other IRCC subordinate bodies, IHO Secretariat and interested Member States to work together with KHOA "in the development of the structure and framework of an IHO e-Learning Center". The Project Team proposed, if PRO 3.3 will be approved at A-2, that the establishment of the IHO e-Learning Center should be under CBSC, setting up a Steering Committee and a Secretariat for efficient implementation. The initial requirements were established and it was agreed to consider the practical exercise aspects when developing the e-Learning guideline and curriculum as required by the nature of hydrography. The PT will thus continue to work with RoK to establish the Center by A-3. Meanwhile, Member States who have experience in developing and providing e-Learning contents are invited to actively share the resources and experience.
9. It has to be highlighted that the definition of e-Learning is meant in its widest sense and different kinds of training contents could be included in this definition, which will allow the inclusion of several training materials available to the Member States.

10. IRCC endorsed the establishment of an IHO e-Learning Center and the related decisions of CBSC18 regarding PRO-3.3. (see Annex B and recommendations). It also supported the e-Learning Project Team in establishing the IHO e-Learning Center and developing an e-Learning guideline in cooperation with RoK. It invited Member States who have experience in developing and providing e-Learning contents to share their resources and experiences to the e-Learning PT.

IHO Education Requirements

11. In 2020, the IBSC issued the Guidelines for the Implementation of the Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (Ed 2.1.1, March 2020) and the Frequently Asked Questions (FAQ) (Edition 1.0.0, March 2020). IRCC acknowledged the work done by the Board in the delivery of the documents.
12. At the IBSC43 meeting fifteen submissions were reviewed, 1 was recognized, 5 recognized with conditions and 9 not recognized. In October-November 2019 the Board also held a workshop meeting in Singapore to review some inter-sessional submissions, the annual reports and work on the standards companion documents.
13. The main problem encountered remains with the quality of submissions, which implies an increased work for the institutions, but also for the Board. For each program submitted there would be normally more than one review.
14. The Board received letters from several institutions regarding their necessary modified teaching strategy to deal with the impact of COVID-19. In summary, it can be stated that the institutions adapted very quickly and well, developing and implementing remote learning strategies for the theoretical classes and delayed the delivering of the practical classes for the end of the respective lockdowns with the necessary safety measures implemented.

Empowering Women in Hydrography

15. The Canadian Hydrographic Office presented this item, stating the need to overcome the large imbalance in the participation of women in maritime related domains such as Hydrography. Many maritime related organizations recently have started this change with symposiums, programs and activities. Organizations are encouraged in removing barriers for women, increasing the representation of women at higher echelons, as subject matter-experts and in policy-making process taking advantage of having gender-diverse teams at all levels.
16. Under the UN decade of the Ocean Canada generously offers a special grant and contribution fund that could go up to 68000 euros/year during three years, to which IHO could apply. The fund finances up to 75% of the project costs. It will be important to have also the collaboration of other member states, not only to reach the necessary 25%, but to increase the dimension of the project. As an example, NOAA is providing in-kind support. A workshop is scheduled for May 2021 to present and discuss proposals.
17. IRCC supports the adoption of this new work item of Empowering Women in Hydrography (EWH) and thanks Canada for its generous offer. The Assembly is invited to approve an action for the Secretariat to negotiate and sign a Cooperation agreement with Directory of Fisheries and Oceans Canada for funding.
18. Subject to Assembly approval and confirmation by the Council, IRCC will task the CBSC to work out the EWH project plan in further detail, including coverage of relevant parts to be funded, to propose project management arrangements and define suitable key performance indicators.

19. IRCC recommends MS to consider participating in the Empowering Women in Hydrography project.

MSDI and UN-GGIM

20. Dr Mathias Jonas, IHO Secretary-General, represented the IHO at the last United Nations Committee of Experts on Global Geospatial Information Management (UNGIM) remote session. IHO made a substantial contribution through the Working Group on Marine Geospatial Information and the meeting took note of the ongoing efforts of the Working Group to implement the Integrated Geospatial Information Framework (IGIF) within the marine domain. MS are invited to actively participate in the UN-GGIM Marine WG and to liaise with their respective member in UN-GGIM. The notice that IHO is about to establish an Innovation and Technology Laboratory in Singapore was very well received as well.
21. IRCC encouraged the GEBCO GC to liaise with Seabed 2030 Project Team and with the RHC CSB/Seabed 2030 Coordinators, in order to establish a common methodology and provide regional analysis prior to RHC meetings.
22. IRCC encouraged all Member States to make existing seabed mapping data available for use by Seabed 2030 in the GEBCO Grid.

Ocean Mapping /Crowd Sourced Bathymetry (CSB)

23. IRCC encouraged Member States to support the CSB initiative with positive actions, such as requiring all research vessels to collect bathymetric data for later uploading, when on passage or when it does not interfere with other research activities.
24. IRCC encourages RHCs to support the modification of the current “RHC Seabed 2030 Coordinator” to a joint “RHC CSB/Seabed 2030 Coordinator” and provide the identification of the Coordinators
25. IRCC endorsed the e-publication of B-12 (Guidance on Crowdsourced Bathymetry) and its use as an example for other IHO publications.

WEND-100

26. Council instructed the IRCC to task the WENDWG (C2/30 refers) to investigate the applicability of the WEND-like Principles to the production and dissemination of S-101 ENC's and the first generation of S-100 based products. The IRCC has completed this task and the WENDWG established a drafting group to re-write the WEND principles to include the full suite of navigation services to be offered through the S-100 suite of product specifications. The WENDWG presented a progress report and a first draft edition of the Worldwide Electronic Navigation Services (WEND-100) to IRCC12.
27. The Principles will be followed by an implementation guide that provides specific details regarding S-100 specifications beyond S-101. The principles encourage data availability anywhere in the world, distribution along with data protection and also addresses the avoidance of service duplication, coordinated data management, quality management, and assistance and training. The principles also noted the capacity Building.
28. IRCC commended the work and highlighted that the draft was a result of some compromises made, in particular on the issues of addressing overlapping ENC's, which is a particular concern under the S-100 framework. IRCC endorsed the draft as version 1.0 and the path forward of the new WEND-100 Principles.

29. The Assembly is invited to discuss the impact of these new WEND100 Principles on the S-100 Implementation Strategy.

Elections of Chair and Vice-Chair

30. IRCC Chair Parry Oei stepped down after six years of chairmanship. He matured and enhanced the work of the IRCC significantly during that period. The IRCC elected unanimously Mr Thomas DEHLING (Germany), the former Vice-Chair as new IRCC Chair and Mr John Nyberg (USA) as new IRCC Vice-Chair.

Recommendations and call for directions

The Assembly is invited to:

- a. note the report of the IRCC;
- b. support A-2 Pro 3.3. from ROK and respective recommendations from CBSC/IRCC;
- c. acknowledge the significant effort from CB Coordinators to assess the needs in the region, to invite Member States to identify national and regional projects that may contribute to the CBWP and to coordinate the support for countries in need;
- d. approve an action for the Secretariat to negotiate and sign a Cooperation agreement with Directory of Fisheries and Oceans Canada for funding of the Empowering Women in Hydrography initiative;
- e. recommend MS to consider to participate in the Empowering Women in Hydrography project;
- f. discuss the impact of the new WEND100 Principles on the S-100 Implementation Strategy;
- g. take any other action considered appropriate.

Annex A - IRCC Membership

Annex B - CBSC Position on Assembly 2 Proposal 3.3

Annex C - WEND-100 Principles

Annex D - Path forward of the new WEND-100 Principles

All Regional Hydrographic Commissions and the Hydrographic Commission on Antarctica have delivered reports and the IHO Secretariat briefed the audience on significant issues and updates raised by the RHC and HCA reports and referred to the application process of the IHO Resolution 2/1997 as amended by A-2 under Agenda item 11.

All RHC & HCA reports are included in VOL. 2 of the Proceedings

**Inter-Regional Coordination Committee (IRCC)
Membership**

IRCC Chair and Vice Chair

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CBSC position on Assembly 2 Proposal 3.3

1. CBSC recognizes the importance and very high potential of distant learning or e-learning for the improvement and extension of Capacity Building activities in hydrography.
2. CBSC specifies e-learning in this proposal as all forms of learning, where electronic or digital media are being used for presentation and distribution of learning material and/or to support communication in learning.
3. CBSC is aware that the CoVID-19 pandemic and its consequences puts much more pressure on the development of e-learning means.
4. CBSC sees that e-learning development is extremely limited with the current capabilities of the IHO CB Fund.
5. CBSC therefore welcomes the initiative and generous offer from Republic of Korea to establish and support an IHO-E-Learning Center, to provide the infrastructure and to cooperate with IHO, its Member States and industry.

CBSC suggests to further develop the structure and framework of an IHO E-Learning-Center together with ROK and IBSC by setting up a Project Team and to report to IRCC12, so this can be taken to A-2, where the inputs from the CBSC are expected as in ACL-19.

PRINCIPLES OF THE WEND FOR S-1XX PRODUCTS (WEND-100)

(WEND-100, version 1)

1. Introduction

1.1. The purpose of WEND-100 is to ensure a world-wide consistent level of high-quality, updated official 'nautical and hydrographic S-100 based products (S-1XX products)⁷ through integrated⁸ dissemination services that support current and future hydrographic carriage requirements of Safety of Life at Sea (SOLAS) Chapter V (SOLAS/V) and other requirements of the International Maritime Organization (IMO), in particular the Performance Standards for Electronic Chart Display and Information Systems (ECDIS). In addition, the same integrated services should be available for mariners not subject to carriage requirement and the provisions of ECDIS, and to all other users supporting maritime activities.

1.2. SOLAS/V regulation 9 requires contracting Governments to "arrange for the collection and compilation of hydrographic data and the publication, dissemination and keeping up to date of all nautical information for safe navigation". For this purpose, and taking into account the implementation of maritime services in the context of e-navigation, the International Hydrographic Organization (IHO) and partners have developed the S-100 Universal Hydrographic Data Model and S-100 products specifications to be used for digital nautical and hydrographic S-1XX products that can functionally replace their analog and digital predecessors. The dissemination services encompass reliable, integrated and secure delivery of these S-1XX products (including their updates) to the end-user as part of "publication, dissemination and keeping up to date of all nautical information".

2. Applicability

2.1. The WEND-100 principles are aimed at those S-1XX products that are under the purview of the IHO, for instance those to be provided as part of the maritime services in the context of e-Navigation of the IMO e-Navigation Strategy⁹ including support to route monitoring and voyage planning. This does not, however, preclude other S-100 based products to align with these principles, for instance those under purview of the WMO.

2.2. The framework for the WEND-100 principles is provided by this resolution. Subject to the characteristics and maturity¹⁰ of the S-1XX products, specifications a transitional approach is used to apply those WEND-100 principles to S-1XX products.

- a) The full extent of the WEND-100 principles applies to the production and the dissemination of S-101 ENC's. Until the full retirement of the earlier S-57 ENC's, the existing WEND principles will continue to apply for S57-ENC's¹¹ and these WEND-100 principles will apply for S-101 ENC's¹².
- b) Incrementally the full extent or specific sets of the WEND-100 Principles will apply to the other S-1XX products.

⁷ These S-100 dependent products will be referred to in these principles by the designation "S-1XX products" or "S-100 based products".

⁸ Integrated dissemination services are a variety of end-user services where each service is selling all its 'nautical and hydrographic S-100 based products', regardless of source, to the end user within a single service proposition embracing format, data protection scheme and updating mechanism, packaged in discrete exchange sets per S-1XX product.

⁹ This specifically concerns:

- a Nautical Chart Service: Service 11 of the MS;
- a Nautical Publication Service: Service 12 of the MS.

¹⁰ The intended development of the S-1XX products is referenced in the "Roadmap for the S-100 Implementation Decade".

¹¹ IHO Resolution 1/1997 as amended- Principles of the Worldwide Electronic Navigational chart Database (WEND) & its Annex (Guidance for establishment of ENC Production boundaries).

¹² Until retirement of their S57 ENC's, Member States S-101 coverage should mirror their S-57 coverage in order to avoid 'cross overlapping'.

2.3. Complementary 'Guidelines on the implementation of the WEND-100 Principles' will detail further the applicability of WEND-100 principles for S-1XX products other than S-101 ENC's, and will facilitate the provision of appropriate S-1XX products coverage within a suitable timeframe. As such the 'Guidelines on the implementation of the WEND-100 Principles' are iterative in nature in order to accommodate the transitional approach.

2.4. The 'Guidelines on the implementation of the WEND-100 Principles' are subject to an approval process with proposals by IRCC for consideration by the Council and following decision by the Assembly. This way Members States control the implementation of S-1XX products over time as IMO and other overarching regulations or guidelines evolve¹³.

3. S-1XX product availability

3.1. Member States will strive to ensure that mariners anywhere in the world can obtain up-to-date S-1XX products for all shipping routes and ports around the world.

3.2. Member States will strive to ensure that their S-1XX products are available to end users through integrated, secure and internationally coordinated dissemination services. Additionally, States retain the right to establish complementary S-1XX dissemination arrangements within national jurisdiction and according to national legislation.

3.3. Member States are encouraged to build on the existing RENC structure in order to share common experience, reduce expenditure, and to ensure the greatest possible standardization, consistency, reliability and availability of S-1XX products.

3.4. Dissemination services should ensure that S-1XX products bear the stamp or seal of approval of the issuing authority.

3.5. Member States should ensure the use of the IHO Data Protection Scheme (S-100 Part 15)¹⁴ for distribution to mariners, to secure data integrity, to safeguard national copyright in data, to protect the mariner from falsified products, and to ensure traceability.

3.6. When an encryption or authentication mechanism is employed to protect data, a failure of contractual obligations by the user should not result in a complete termination of the service. This is to assure that the safety of the vessel at sea is not compromised.

3.7. Noting that accessibility of S-1XX products is also valuable as part of a national or regional Marine Spatial Data Infrastructure (MSDI), the dissemination of these products may be coordinated through the same mechanisms as those established to meet the WEND-100 dissemination services.

4. Rights and Responsibilities

4.1. SOLAS/V, Regulation 9, requires contracting Governments to ensure that "all nautical information" is available in a suitable manner in order to satisfy the needs of safe navigation. With IMO mandatory carriage requirement for ECDIS, there is a consequential requirement to ensure that S-1XX products, as defined by the IHO, are available in a form suitable for use in ECDIS, in current form and as subsequently updated.

4.2. It is expected that Members States will have mature arrangements in place for the issue of S-1XX products and their subsequent updating for waters of national jurisdiction in order to support current and future IMO requirements.

4.3. To meet these IMO (coverage) requirements, Member States will strive to either:

- a) provide the necessary S-1XX product coverage or;
- b) agree with other States¹⁵ to provide the necessary coverage on their behalf.

¹³ One of these being the UN-GGIM principles on an Integrated Geospatial Information Framework (IGIF) and how these apply to safe navigation and other use cases.

¹⁴ Where alternative solutions are more appropriate for certain use cases not related to carriage requirements of SOLAS chapter V, they should deliver at least the same level of protection as S-100 Part 15.

¹⁵ In line with SOLAS/V Regulation 2.

4.4. Member States responsible for producing S-1XX products are also responsible for the validation of content, conformance to standards and consistency. Member States are encouraged to consider using the existing RENC structure to assist.

4.5. Member States should recognize their potential exposure to legal liability within these arrangements.

4.6. Member State responsible for producing an S-1XX product are also responsible for providing metadata that is consistent with IHO standards and practices.

4.7. Within the framework and timelines of the WWNWS Members States should disseminate in the form of Marine Safety Information, the new information they use to update the S-1XX products for which they are responsible¹⁶.

4.8. In producing and disseminating S-1XX products, Member States are to take due account of the rights of the owners of source data and previously issued products, honoring any use restrictions or copyrights.

5. Coordination of S-1XX products and dissemination services

5.1. A Member State is normally the S-1XX products producing country for waters within its national jurisdiction.

5.2. When the limits of waters of national jurisdiction have not been established, or when it is more convenient to establish boundaries other than waters of national jurisdiction, countries¹⁷ may define the boundaries for production of S-1XX products within a bi/multilateral technical arrangement. These limits would be for convenience only and shall not be construed as having any significance or status regarding political or other jurisdictional boundaries.

5.3. In waters of national jurisdiction for which there are no provisions in place for production or dissemination of S-1XX products, the coastal Member State may designate these functions to another provider State. S-1XX products produced and/or disseminated under such arrangements should be offered for transfer to the coastal Member State in the event that the coastal Member State subsequently develops the capacity for these functions. Such transfer should respect the rights of Member States and providing State (see also paragraph 4.3 and 4.8).

5.4. In order to ensure unambiguous safety of navigation, concurrent (“overlapping”) S-1XX products should be avoided, particularly where official, nationally provided products are available¹⁸. A unique producing authority should exist in any given area for each S-1XX product when used together with (future) ECDIS¹⁹, though the same unique authority need not provide all S-1XX products.

5.5. Member States will address coverage of S-1XX products on a regional basis through Regional Hydrographic Commissions (RHCs), and the WENDWG will monitor the overall coverage on a global basis, reporting to IRCC²⁰.

5.6. The applicable RHC may facilitate arrangements for production and dissemination of S-1XX products. RHCs should engage with data owners, product and service providers, and other stakeholders as appropriate to ensure that a coordinated and cohesive regional approach is considered²¹. Also, the existing RENC structure may facilitate co-operation between individual Member States and support RHC’s to achieve appropriate S-1XX product coverage.

¹⁶ In line with SOLAS/V Regulation 4.

¹⁷ These could be Members States and non-Member States.

¹⁸ The mechanism of IHO resolution 1/2018 on the elimination of overlapping ENC data in areas of demonstrable risk to the safety of navigation can be extended to resolve conflicting S-1XX data products.

¹⁹ The IMO determines how ‘nautical and hydrographic S-100 based products’ will be adopted as part of the ECDIS product specification, including the guidelines on voyage planning.

²⁰ Level of success of coverage is determined by Strategic and Work plan performance indicators.

²¹ In line with article 15 of IHO resolution 2/1997 as amended on the Establishment of RHCs.

6. Maintenance and Improvement of product and dissemination Services

6.1. Member States are encouraged to work together on data capture, data quality, and data management. To the extent possible, data should be widely shared to support continual updates and improvements of S-1XX products.

6.2. Technically and economically effective solutions for updating S-1XX products are to be established conforming to the relevant IHO and IMO publications. The updating of the various S-1XX products should adopt current dissemination technology and be at least as frequent as previous dissemination mechanisms.

7. Quality Management

7.1. S-1XX product producers and/or dissemination service providers should consider a documented Quality Management System to ensure high quality of work. When implemented, this should be certified by a relevant body as conforming to a suitable recognized standard, typically this will be ISO 9001.

8. Mutual Assistance and Training

8.1. Member States are requested to participate in S-1XX capacity building efforts developed nationally, regionally, and through the IHO, by providing subject matter experts, venues, training materials, and open-source applications. Member States are encouraged to coordinate these capacity building activities within the framework of the IHO Capacity Building Sub-Committee (CBSC). The S-1XX producing Member States are also encouraged to collaborate on production support activities/capacity building via the existing RENC structure.

WEND-100 Path Forward

- 1) Submit to Council 4 for progress review
- 2) WENDWG will have a WG 11 meeting (2021) between C4 and IRCC 13 for final WG review
 WENDWG 11 will begin work on implementation guide
- 3) Final WEND-100 will be presented to IRCC 13, then Council 5
- 4) Final WEND-100 will be sent to Member States for approval via CL

ENDORSEMENT OF THE SELECTION PROCESS FOR THE COUNCIL

Submitted by the Secretary-General

Background

1. In accordance with the basic documents of the IHO that entered into force on 8 November 2016, a new Council must be established before the end of each ordinary session of the IHO Assembly. The new Council commences its work after the end of the session of the Assembly. The members of the new Council shall hold office until the end of the next ordinary session of the Assembly for three years.
2. In accordance with Article VI (a) of the IHO Convention as amended, 30 Member States shall take seats in the Council as long as the number of Member States is not greater than 120.
3. The procedure for determining the composition of the Council are set out in Article 16 of the General Regulations. This article requires in particular that:
 - (d) *Before the end of the ordinary session the Secretary-General shall submit the full list of Council members to the Assembly.*
 - (e) *The Assembly shall review and endorse the selection process to ensure that these principles have been correctly followed.*

Selection process

4. A first set of 20 seats shall be allocated on a regional basis. In accordance with the principles of the guidance agreed through Decision 6 of the 5th Extraordinary International Hydrographic Conference, IHO Circular Letter (CL) 33/2019 dated 30 June invited Member States which were full members of more than one Regional Hydrographic Commission (RHC) to indicate in which RHC they wished to be counted for the purpose of enabling the Secretary-General to determine the number of seats on the Council allocated to each RHC. The allocation was reported in IHO CL 52/2019 dated 23 October 2019 which invited the Chairs of RHCs to provide the identity of the State(s) that will occupy the seat(s) allocated to their RHC.
5. In accordance with sub-paragraph (b) (vi) of Article 16 of the General Regulations, the Secretary-General ensured that the outcome was not affected by any new States becoming members of the IHO up to 3 months before the beginning of the 2nd session of the Assembly, that is before 21 January 2020.
6. Table 1 provides the resultant distribution of the 20 seats on the Council allocated to the RHCs and those States that are eligible to be selected to occupy those seats. RHCs are to communicate to the Secretary-General the identity of the State(s) selected to occupy the seat(s) allocated to each RHC.

Table 1 Council Seats Allocated to the RHCs

Regional Hydrographic Commission (RHC)	Member States (MS) eligible to occupy one of the 20 Council seat(s) allocated to the RHCs (MS that are Members of more than one RHC shown in bold) (MS whose rights are suspended shown in strike through)	Number of MS to be counted in the calculation of the number of seats on a proportional basis	Number of Council seats allocated to the RHC
MBSHC	Algeria, Bulgaria, Croatia, Cyprus, France , Georgia, Greece, Italy, Malta, Monaco, Montenegro, Romania, Serbia , Slovenia, Spain , Syrian Arab Republic , Tunisia, Turkey, Ukraine.	17	3
MACHC	Brazil , Cuba, Dominican Republic, Guatemala, Guyana, Jamaica, Mexico, Netherlands , Suriname, Trinidad and Tobago, Venezuela.	11	2
EAHC	Brunei Darussalam, China, Democratic People's Republic of Korea, Indonesia , Japan, Malaysia, Philippines, Republic of Korea, Singapore, Thailand	10	2
RSAHC	Bahrain, Iran (Islamic Rep. of), Kuwait, Oman, Pakistan , Qatar, Saudi Arabia , United Arab Emirates	8	2
SWPHC	Australia, Fiji, New Zealand, Papua New Guinea, Samoa, Solomon Is., Tonga, USA , Vanuatu	8	1
NIOHC	Bangladesh, Egypt , India, Myanmar, Sri Lanka	5	1
SAIHC	Mauritius, Mozambique, Seychelles, South Africa, United Kingdom	5	1
EAtHC	Cameroon, Morocco , Nigeria, Portugal	4	1
NSHC	Belgium, Germany , Iceland , Ireland	4	1
BSHC	Estonia, Latvia, Poland, Sweden	4	1
SEPRHC	Chile, Colombia , Ecuador, Peru	4	1
ARHC	Denmark , Norway , Russian Federation	3	1
SWAtHC	Argentina, Uruguay	2	1
NHC	Finland	1	1
USCHC	Canada	1	1
	Total for Council Distribution	87	20

Notes:

1. Democratic Republic of the Congo, Ghana and Viet Nam are not listed as they are not Members of RHCs 3
2. Serbia, Syrian Arab Republic and Vanuatu are listed but not counted as they are suspended. 3

Grand total 93

Selection process for the Council

7. The remaining 10 seats on the IHO Council are to be allocated to Member States that have not already been selected to occupy a seat allocated on a regional basis. These 10 seats will be allocated based on hydrographic interests, which under the current regulation is defined as national flag tonnage. In accordance with Article 6 (a) of the Financial Regulation, the Secretary-General refers to the table of tonnages that had entered into force on 1 January 2018 (Annex A to ACL 08/219 refers) and will approach each Member State on the list which has not already been selected to occupy a seat by the RHCs, in turn and in order of highest tonnage, inviting the State to declare if it wishes to take up one of the 10 seats. The process continues until all 10 seats are filled.
8. The full allocation process of Council seats will be finalized under agenda item 10 of A-2 (doc. A2_2020_G_01_EN) when the document A2_2020_G_07_EN will be produced and approved.

FINANCE

IHO FINANCE REPORT 2017-2019 (as approved)**Submitted by the Secretary-General****INTRODUCTION****Preparation of the Report**

1. This report on the administration of the finances of the IHO for the period 1 January 2017 to 31 December 2019 has been prepared by the IHO Secretariat for examination by the Finance Committee (FC) and subsequent recommendation for approval by the Assembly in accordance with Article 10(b) of the IHO General Regulations.

Audit of the accounts

2. The IHO's accounts for 2017 have been audited by Cabinet Morel, and by PriceWaterhouse Cooper for 2018. The annual reports of the auditor for 2017 and 2018 have been included in the Annual Report, Part 2 – Finance. Both were subsequently approved by Member States. The auditing of the IHO's accounts as annexed to this report is in the process at the time of the provision of this report.

Currency - Banks

3. The Euro was introduced on 1 January 2002 as the currency to be used for the accounting purposes of the Organization in accordance with Article 2(a) of the IHO Financial Regulations in force at that time. The Secretariat has made use of the services of CMB, SMC and CIC in Monaco for its financial and banking requirements.

Annual Financial Statements

4. Financial statements made in 2017, 2018 and 2019 have been forwarded annually to Members of the Finance Committee for comment. Upon review and any necessary action, these comments have been included in Part 2 of the Annual Report, for subsequent approval by the Council.

IHO Secretariat Monthly Finance Monitoring

5. A monthly financial reporting statement is prepared which provides detailed information on the budgetary statement of Incomes and Expenditure as well as information on financial holdings. This statement is examined by the Secretary-General and Directors (previously the Directing Committee) in order to monitor the financial situation of the Organization, monitor progress of the budget and take any necessary action as and if needed.

Finance Committee Officers' meetings

6. The Chairman and Vice-Chairman of the Finance Committee met with the Directing Committee and the Council Chair once per year to review the financial status of the Organization and the progress of the budget. Reports of these Finance Committee Officers Meetings were circulated to Member States after every meeting and formed the basis for later decisions approved by Member States.

INCOME 2017-2019 (see Table 1)**Contributions**

7. The three-year budget estimates (2017-2019) were prepared for the 1st session of the Assembly based on a number of shares calculated at the time from the tonnage reported by Member States in accordance with the Articles 4, 5 and 6(a) and 6(b) of the IHO Financial Regulations in force at the time.

Number of shares

8. During the three-year period there were several changes in the number of shares due to changes in the tonnage figures reported by Member States in accordance with Article 6(d) of the IHO Financial Regulations that were in force at the time.

9. The 779 shares calculated in 2017 progressed to 816 in 2018, 817.5 in 2019. Seychelles. with 3 shares, Bulgaria with 3 shares joined in 2018, Guyana with 3 shares, Solomon Islands with 3 shares, Ghana with 2 shares and Samoa with 2 shares joined in 2019.

Value of a share

10. The share value has remained unchanged since 2016 at 4,024.32 Euros.

Suspension of rights and benefits

11. In 2018 Syria, and in 2019 Vanuatu, had their rights suspended for failing to pay their annual financial contribution in accordance with Article XV of the version of the Convention on the IHO in force at the time.

Payments of contributions

12. Payments of contributions were generally satisfactory throughout the period. The status of contribution payments was provided in Part 2 of each Annual Report. For the period 2017-2019, 65% of the contributions were paid by the end of May each year, while the final amount received at the end of the years varied between 89% (in 2017) and 94% (in 2018) with an average over the five year period of 90%.

13. A cause for concern is the increasing difficulty for some Member States to forward their subscriptions because of international sanctions against the transfer of funds and the consequent refusal of banks to handle the transactions. On several occasions the Secretariat assisted in finding acceptable ways to ensure that some payments were able to be made.

Interest on bank accounts

14. The total interest earned on bank deposits in the period 2017-2019 was 279,986 Euros.

GEBCO Grant

15. Throughout the three-year period, the Government of the Principality of Monaco generously continued its annual contribution towards the running of the GEBCO project, amounting to 24,900 euros in total.

Internal Tax

16. All IHO employees paid an Internal Tax, which was 10% of their gross salary.

Extraordinary income

17. Extraordinary income of 126,155 Euros resulted mainly from an administration fee associated with certain donations to the Capacity Building Fund (25,440 Euros), and the payment of contributions in arrears (100,715 Euros) by some Member States.

Summary of income

18. The total estimated income for the period 2017-2019 was 10,421,246 Euros, whereas the actual total income received during the period was 10,571,285 Euros. The increase was mainly due to the increased number of shares described earlier, and to a better return on investments than estimated.

EXPENDITURE 2017-2019 (see Table 2)**Chapter I – Personnel costs****Salaries**

19. IHO salaries increased in accordance with the cost of living index, promulgated by the Government of Monaco, and represented by the value of the index point, which went from 7.97186 Euros in January 2017 to 8.2573 Euros in December 2019. This was an overall increase of approximately 3.42 % over the three-year period, or an average 1.14% per year. Salary promotions were made in accordance with the Staff Regulations and the salary tables in force.

Medical expenses

20. The Secretariat's collective medical insurance provider, GAN Insurance, has cancelled the contract as of 31 December 2018, because it was not profitable for the provider for the two consecutive years 2017 and 2018. With the clear intention to re-establish a lasting insurance shield, the Secretariat negotiated with different insurance companies of solid reputation on a follow-up contract which guarantees comparable conditions to the previous arrangements. These negotiations have been successful for reimbursement claims for the active staff members and retirees and a new contract with CIGNA took effect in June 2019.

Summary

21. Total expenditure in Chapter I was 10,101,998 Euros compared to an approved expenditure of 10,239,900 Euros.

22. The expenditure in Chapter I represents 74% of the total operating costs.

Chapter II – Current operating costs**Maintenance**

23. The cost of maintenance contracts for the premises and the IT equipment remained stable throughout the three-year period. Following negotiations with service providers, savings were achieved in both IT and building maintenance.

Post, telephone and telefax

24. Expenditure for all the communication costs of the Secretariat remained steady throughout the three-year period. This can mainly be attributed to the increased use of the IHO web site by Member States to download various documents and the use of e-mails and other electronic means by the Secretariat to send Circular Letters and other documents.

Contract support

25. During the three-year period 52,620 Euros were paid in contract support.

Travel (technical assistance and long-distance travel)

26. Savings were achieved in expenditure on travel in 2018 and 2019.

Chapter III – Capital Expenditure

27. A total of 102,906 Euros was expended in the period for the purchase of office equipment, furniture and publications.

Summary: Total operating costs

28. The total operating costs during the three-year period was 9,100,398 Euros. This was 1.5% less than the approved budget of 9,238,300 Euros.

Funds

29. GEBCO Fund. Based on a proposal of the Nippon Foundation and the GEBCO Guiding Committee, the IHO and the IOC as parent organizations of GEBCO agreed on a joint project named SEABED 2030 aiming to increase the detail of global knowledge of the seabed topography of the seas and oceans. Within the framework of the project, the IHO Secretariat accepted to administer the project fund as donated by the Nippon Foundation.

I. H. Assembly Fund

30. At the end of 2016 the Conference fund had a balance of 373,661 Euros. The three-year budget allocated the addition of 60K Euros over the period. A total of 141,575 Euros was spent in the planning and execution of the 2017 1st session of the Assembly. At the end of 2019, 292,086 Euros is available in the Assembly Fund for the planning and execution of the subsequent IHO Assemblies.

Relocation of Directors and Assistant Directors Fund

31. The Relocation of Directors and Assistant Directors Fund covers all the obligations for the relocation of the Directors and Assistant Directors (furniture, tickets, et cetera) and their dependents when they join or leave the Secretariat.

32. The three-year budget made provision for a total of 15,000 Euros to be allocated to the fund. A total of 56,997 Euros was expended during the period and at the end of 2019, 241,113 Euros are available in the fund.

Capacity Building Fund

33. The Capacity Building Fund was established at the end of 2004 to meet the Capacity Building Program requirements of the Organization. During the three-year period the Fund has received 482,000 Euros from the budget, 291,000 Euros from the audited budget surplus and 2,056,534 Euros in donations from the Republic of Korea and the Nippon Foundation. During the period 2017-2019, 2,801,464 Euros were spent on authorised activities in the Capacity Building programme. At the end of 2019, 386,838.69 Euros are available in the Capacity Building Fund.

IHO Internal Retirement Fund (IRF)

34. The Internal Retirement Fund (IRF) supports the IHO's long-established independent retirement plan (pension scheme) for a number of the longer serving and retired members of the Secretariat staff. The pensions of ten retired members and one current member of staff are covered by the IRF. The IRF is purposely maintained in low-risk investment accounts.

35. The estimated liability on the IRF is calculated and adjusted every year using an actuarial assessment. It is dependent on several factors that are exceedingly difficult to predict including the estimate of long-term interest rates, and the longevity of the pensioners in the relatively small cohort of beneficiaries of the pension scheme.

36. An ongoing allocation to the IRF of 70,000 Euros per year was included in the proposed budget for the triennial period 2018 - 2020.

37. The value of the IRF on 31 December 2019 is 3,386,152 Euros.

Special Projects Fund.

38. The Special Projects Fund was established in 2012 to cover various special projects, such as the maintenance or drafting of standards, the editing or updating of complex publications, translations, and particular requirements identified by the Committees and other bodies of the Organization. This fund supports in particular the development of the new generation of S-100 based standards. Some expenses made for the celebration of the IHO centenary were covered from this Fund too.

IBSC Fund

39. The IBSC Fund was established in 2010 to support the work of the International Board on Standards of Competence (IBSC) operated jointly by the IHO, the Fédération Internationale des Géomètres (FIG), and the International Cartographic Association (ICA). The Board maintains the Standards of Competence for Hydrographic Surveyors and Nautical Cartographers, as well as reviewing and granting recognition to suitable courses upon application. At the request of the FIG Secretariat which had administered the Fund on behalf of the Board since its establishment, the IHO as secretary of the IBSC, took over the role of treasurer of the Fund in 2015.

Operating Cash Reserve

40. An operating cash reserve has been established to ensure the financial stability of the Organization and to avoid any cash liquidity difficulties. In accordance with Article 17 of the IHO Financial Regulations the amount that the IHO shall have at its disposal, on 31 December of each year, shall not be less than three-twelfths of the total annual operating budget of the Organization. At the end of 2019 the operating cash reserve should be not less than 813,625 Euros

Emergency Reserve Fund

41. In accordance with Article 18 of the IHO Financial Regulations, the IHO shall have an emergency reserve fund, the amount of which shall be not less than one-twelfth of the total annual operating budget of the Organization, that is exclusively designated to enable the Organization to meet extraordinary expenditures. At the end of 2019 the emergency reserve fund was valued at 271,208 Euros and this amount is held in reserve by the IHO.

Summary of expenditure

42. The total expenditure, including the total operating cost and the actual expenditure in the operational funds, was 10,101,998 Euros over the three-year period. This is less (1.34%) than the total approved budget of 10,239,900 Euros for the period.

CONCLUSIONS

43. The Secretariat has striven to constrain costs such that, total income has exceeded total expenditures throughout the three-year budget period. This has provided monies which have variously been applied to increase the various Funds of the Organization, to increase the operating cash reserve and to support newly arising liabilities placed on the IRF.

44. The details of income, expenditures, net effect on capital, liabilities and the IRF are presented in the tables attached in the VOL 2 of the Proceedings..

Table of Tonnages, and Numbers of Shares and Votes (as approved)
For the period 1 January 2021 to 31 December 2023

Tableau des tonnages et nombre de parts et voix (tel qu'approuvé)
Pour la période 1 January 2021 au 31 Décembre 2023

Member States <i>Etats Membres</i>	Tonnages	Shares - Parts			Votes - Voix		
		Fix.	Sup.	Tot.	Fix.	Sup.	Tot.
ALGERIA - ALGERIE	766 367	2	4	6	2	2	4
ARGENTINA - ARGENTINE	1 139 968	2	5	7	2	2	4
AUSTRALIA - AUSTRALIE	1 684 678	2	6	8	2	2	4
BAHREIN - BAHREIN	410 488	2	2	4	2	1	3
BANGLADESH	1 189 381	2	5	7	2	2	4
BELGIUM - BELGIQUE	6 473 271	2	12	14	2	3	5
BRAZIL - BRESIL	3 735 793	2	9	11	2	3	5
BRUNEI DARUSSALAM	582 237	2	3	5	2	2	4
BULGARIA - BULGARIE	139 624	2	1	3	2	1	3
CAMEROON - CAMEROUN*	251 000	2	2	4	2	1	3
CANADA	3 096 746	2	8	10	2	3	5
CHILE - CHILI	1 046 040	2	4	6	2	2	4
CHINA - CHINE	97 570 000	2	25	27	2	4	6
COLOMBIA - COLOMBIE	119 100	2	1	3	2	1	3
CROATIA - CROATIE	1 228 300	2	5	7	2	2	4
CUBA	70 430	2	0	2	2	0	2
CYPRUS - CHYPRE	24 391 273	2	23	25	2	4	6
DENMARK - DANEMARK	20 952 071	2	21	23	2	4	6
DOMINICAN REPUBLIC - REP DOMINICAINE*	10 000	2	0	2	2	0	2
D.P.R. OF KOREA - REP. POP. DEM. DE COREE*	531 471	2	3	5	2	2	4
ECUADOR - EQUATEUR	671 753	2	3	5	2	2	4
EGYPT - EGYPT*	1 073 000	2	5	7	2	2	4
ESTONIA - ESTONIE	501 518	2	3	5	2	2	4
FIJI - FIDJI*	99 000	2	0	2	2	0	2
FINLAND - FINLANDE	1 877 355	2	6	8	2	2	4
FRANCE	6 673 466	2	13	15	2	3	5
GEORGIA - GEORGIE	123 420	2	1	3	2	1	3
GERMANY - ALLEMAGNE	8 112 621	2	14	16	2	4	6
GHANA	60 349	2	0	2	2	0	2
GREECE - GRECE	39 949 462	2	25	27	2	4	6
GUATEMALA	5 571	2	0	2	2	0	2
GUYANA*	207 000	2	1	3	2	1	3
ICELAND - ISLANDE	167 511	2	1	3	2	1	3
INDIA - INDE	13 078 616	2	17	19	2	4	6
INDONESIA - INDONESIE	45 194 835	2	25	27	2	4	6

Table of Tonnages, Shares and Votes

IRAN (ISLAMIC REPUBLIC OF - <i>REP. ISLAMIQUE D'</i>)	12 500 000	2	17	19	2	4	6
IRELAND - <i>IRLANDE</i>	313 440	2	2	4	2	1	3
ITALY - <i>ITALIE</i>	14 812 739	2	18	20	2	4	6
JAMAICA - <i>JAMAIQUE</i>	152 992	2	1	3	2	1	3
JAPAN - <i>JAPON</i>	28 302 915	2	24	26	2	4	6
KUWAIT - <i>KOWEIT</i>	2 886 000	2	8	10	2	3	5
LATVIA - <i>LETONIE</i>	254 133	2	2	4	2	1	3
MALAYSIA - <i>MALAISIE</i>	7 394 162	2	13	15	2	3	5
MALTA - <i>MALTE</i>	77 231 000	2	25	27	2	4	6
MAURITIUS - <i>MAURICE</i>	164 349	2	1	3	2	1	3
MEXICO - <i>MEXIQUE</i>	4 161 025	2	10	12	2	3	5
MONACO	1 228	0	0	0	2	0	2
MONTENEGRO	141 890	2	1	3	2	1	3
MOROCCO - <i>MAROC</i>	540 558	2	3	5	2	2	4
MOZAMBIQUE	45 581	2	0	2	2	0	2
MYANMAR	530 252	2	3	5	2	2	4
NETHERLANDS - <i>PAYS-BAS</i>	7 976 548	2	14	16	2	3	5
NEW ZEALAND - <i>NOUVELLE ZELANDE</i>	280 713	2	2	4	2	1	3
NIGERIA	2 920 219	2	8	10	2	3	5
NORWAY - <i>NORVEGE</i>	20 160 334	2	21	23	2	4	6
OMAN SULTANATE - <i>SULTANAT D'OMAN</i>	85 330	2	0	2	2	0	2
PAKISTAN	534 263	2	3	5	2	2	4
PAPUA NEW GUINEA - <i>PAPOUASIE NOUVELLE GUINEE</i>	203 520	2	1	3	2	1	3
PERU - <i>PEROU</i>	621 523	2	3	5	2	2	4
PHILIPPINES	6 054 460	2	12	14	2	3	5
POLAND - <i>POLOGNE</i>	121 022	2	1	3	2	1	3
PORTUGAL	15 512 864	2	19	21	2	4	6
QATAR - <i>QUATAR</i>	1 112 830	2	5	7	2	2	4
REPUBLIC OF KOREA - <i>REPUBLIQUE DE COREE</i>	42 189 086	2	25	27	2	4	6
ROMANIA - <i>ROUMANIE</i>	131 855	2	1	3	2	1	3
RUSSIAN FEDERATION - <i>FEDERATION DE RUSSIE</i>	9 969 641	2	15	17	2	4	6
SAMOA	3 000	2	0	2	2	0	2
SAUDI ARABIA - <i>ARABIE SAOUDITE</i>	7 512 183	2	13	15	2	3	5
SEYCHELLES - <i>SEYCHELLES*</i>	195 000	2	1	3	2	1	3
SINGAPORE - <i>SINGAPOUR</i>	91 047 748	2	25	27	2	4	6
SLOVENIA - <i>SLOVENIE</i>	3 434	2	0	2	2	0	2
SOLOMON ISLANDS - <i>ILES SOLOMON</i>	122 240	2	1	3	2	1	3

Table of Tonnages, Shares and Votes

SOUTH AFRICA - <i>AFRIQUE DU SUD</i>	457 298	2	3	5	2	1	3
SPAIN - <i>ESPAGNE</i>	2 322 286	2	7	9	2	3	5
SRI LANKA	280 306	2	2	4	2	1	3
SURINAME	4 344	2	0	2	2	0	2
SWEDEN - <i>SUEDE</i>	2 956 221	2	8	10	2	3	5
THAILAND - <i>THAILANDE</i>	3 846 758	2	9	11	2	3	5
TONGA	5 379	2	0	2	2	0	2
TRINIDAD & TOBAGO - <i>TRINITE ET TOBAGO*</i>	55 000	2	0	2	2	0	2
TUNISIA - <i>TUNISIE</i>	372 242	2	2	4	2	1	3
TURKEY - <i>TURQUIE</i>	6 611 305	2	12	14	2	3	5
UKRAINE	985 673	2	4	6	2	2	4
UNITED ARAB EMIRATES - <i>EMIRATS ARABES UNIS</i>	651 832	2	3	5	2	2	4
UNITED KINGDOM - <i>ROYAUME UNI</i>	44 876 668	2	25	27	2	4	6
UNITED STATES OF AMERICA - <i>ETATS UNIS D'AMERIQUE</i>	24 885 595	2	23	25	2	4	6
URUGUAY	296 717	2	2	4	2	1	3
VENEZUELA	1 834 000	2	6	8	2	2	4
VIETNAM	4 492 000	2	10	12	2	3	5
TOTAL (Member States / <i>Etats membres</i>)	734 307 416	176	667	843	178	182	360
<i>Suspended Member States / Etats Membres privés de leurs droits</i>							
DEM. REP OF THE CONGO - <i>REP. DEM. DU CONGO</i>	114 000	0	0	0	0	0	0
SERBIA - <i>SERBIE</i>	0	0	0	0	0	0	0
SYRIA - <i>SYRIE</i>	498 145	0	0	0	0	0	0
VANUATU	2 003 000	0	0	0	0	0	0
TOTAL (Member States / <i>Etats membres</i>)	736 922 561	0	0	0	0	0	0

**REPORT OF THE FINANCE COMMITTEE TO THE 2nd IHO ASSEMBLY
16 – 18 November 2020**

References:

- a. A2_2020_F_01_EN – Finance Report 2017-2019
- b. A2_2020_F_02_EN – Finance Report 2019
- c. PRO-1.7 3-Year Work Programme and Budget 2021 -2023
- d. C4-05.3A Proposed IHO Budget for 2021

Introduction

1. The Finance Committee met on Thursday 12 November 2020 from 13:30 to 14:45 under the vice chairmanship of Mr Andrew Millard (UK) to determine its recommendations on the financial statements, budget estimates and reports on administrative matters that had been prepared by the Secretary-General for presentation to the Assembly.

2. The following Member States were represented:

Australia, Brazil, Cameroon, Canada, China, Chile, Colombia, Cyprus, Finland, France, Germany, Italy, Japan, Latvia, Malta, Mauritius, Mexico, Monaco, Netherlands, Norway, Peru, Poland, Portugal, Republic of Korea, Saudi Arabia, South Africa, Sri Lanka, Thailand, Tunisia, Ukraine, United Kingdom, United States of America.

Observations and Recommendations

3. Secretary-General Dr Mathias Jonas in his role as Finance Committee Secretary presented the Financial Statements for 2017-2019 (Reference a and b). He explained that substantial savings were achieved in travel, partly because of the Secretariat's commitment to do so, and thanks to the increased local participation of Member States representing IHO's position at activities and meetings which would otherwise require extensive travel of Secretariat's staff.

4. Republic of Korea commented that they would like to see the allocation of the surplus, expected in 2020, to the Capacity Building Fund and to the Special Projects Fund.

5. Noting that the annual accounts for 2017 to 2019 had been endorsed by the Council and approved by correspondence in accordance with Resolution 02/2018, the Committee agreed to recommend that the Assembly approves the financial report for the three-year intersessional period 2017-2019.

Implementation of the budget for 2020

6. Secretary-General informed about the current financial situation and the impact of the Covid pandemic. So far there is no measurable effect of the pandemic on the receipt of contributions, which are in line with previous years. But important savings were achieved in operational expenses and travel expenditure, as effectively, all travel stopped in March 2020.

The 3 years' budget 2021 – 2023

7. Secretary-General in his role as Secretary of the Council introduced Assembly proposal PRO 1.7 for the three-year-intersessional period 2021-2023 (Reference c).

8. Secretary-General explained the Council proposal of the option for a consecutive increase of Member States fees in 2021, 2022 and 2023 by 1% subject to the advance approval of the

Council. Comments in support of the annual increase were received from USA and Norway. Latvia commented that a higher one off increase would be more practical than a yearly increase. Chile was not in support of the increase because of the pandemic situation.

9. As a result, the Committee agreed to recommend that the Assembly adopts the proposed budget for 2021-2023 as submitted in Assembly Proposal 1.7 and approve the option of the consecutive increase of Member States fees subject to the advance approval of the Council.

[Post scriptum from the Secretary-General: The share value increase of 1% will not be possible for 2021 since budget acquisition for the forthcoming year has already closed in numerous Member States]

The annual budget for 2021

10. Secretary-General in his role as Secretary of the Council introduced his proposal for the annual budget submitted to the forthcoming Council (Reference d). He explained his intention to propose to the Council to invest the anticipated increased income into the retirement fund, and in the provision for bad debts induced by economic effects of the pandemic to Member States.

11. The Finance Committee took note of the proposed Budget for 2021 and indicated support for the investment proposals of the anticipated increased income.

Action required of the Assembly

12. The Assembly is invited to:

- a) approve the financial report for the three-year intersessional period 2017-2019;
- b) take note of the actual and assumed impact of the COVID pandemic and preventive measures proposed by the Secretary-General;
- c) approve the option for a consecutive increase of Member Ship fees in 2021, 2022 and 2023 subject to the advance approval of the Council;
- d) adopt the proposed budget for 2021-2023 as submitted in Assembly Proposal 1.7;
- e) take note of the election of Ms Isabelle Rosabrunetto (Monaco) as Chair of the Finance Committee and Mr Andrew Millard (United Kingdom) as Vice Chair of the Finance Committee for the Assembly intermediate period commencing after A-2 (2020) until the end of A-3 (2023).

LIST OF THE IHO 2nd ASSEMBLY DECISIONS

DECISIONS OF THE 2nd SESSION OF THE IHO ASSEMBLY

Decision No.	Description
1	The Assembly, following a special voting procedure depicted in ACL 20/2020 and reported in ACL 25/2020, elected Rear Admiral Luigi SINAPI (Italy) to a post of Director for a term of office of six years starting on 1 September 2020.
2	The Assembly, following the approved voting procedure by correspondence as reported in ACL 19/2020, approved the interpretation that the Council has the authority to request and consider proposals submitted by Member States or the Secretary-General and confirmed that the Council is entitled to propose amendments to the General Regulations of the IHO for Member States' approval.
3	The Assembly, following the approved voting procedure by correspondence as reported in ACL 19/2020, approved the final proposal compiled by the Secretary-General on the revision of Articles 14, 15, 20 and 25 of the General Regulations of the IHO (ACL 26/2020 refers).
4	The Assembly, following the approved voting procedure by correspondence as reported in ACL 19/2020, approved the final proposal compiled by the Secretary-General on the revision of Clause (c) of Article 16 of the General Regulations of the IHO – Hydrographic Interest (ACL 26/2020 refers).
5	The Assembly, following the approved voting procedure by correspondence as reported in ACL 19/2020, approved Table of Tonnages, Shares, Contribution and Votes (2021-2023) (Assembly Document – A2_2020_G_03_EN - Table of Tonnages, Shares, Contribution and Votes (2021-2023)).
6	The Assembly, following the approved voting procedure by correspondence as reported in ACL 19/2020, approved Revision of Rule 12 of the Rules of Procedure of the IHO Council and consequence on Rules 8 and 11 - Timing of Election of the Chair and Vice-Chair.
7	<p>The Assembly, following the approved voting procedure by correspondence as reported in ACL 19/2020, approved the establishment of an IHO strategy and resolution for gender-inclusive language.</p> <p>The Assembly tasked the Secretary-General to:</p> <ul style="list-style-type: none"> - to conduct a comprehensive review of the IHO Basic Documents and Resolutions, adopting the UN Guidelines on Gender-inclusive Language, and to provide draft revisions of IHO Publications M-1 and M-3 for the consideration of the Assembly at the next ordinary session (A-3). - to monitor the IHO's progress towards the implementation of the UN Guidelines on Gender-inclusive Language to all IHO documentation and communications and report to the Assembly at the next ordinary session (A-3).

8	<p>The Assembly, following the approved voting procedure by correspondence as reported in ACL 19/2020, approved the establishment of the joint IHO-Singapore Innovation and Technology Laboratory in Singapore to coordinate and testbed initiatives under the proposed composition, governance structure and terms of reference for the governing board and the management team.</p> <p>The Assembly tasked</p> <ul style="list-style-type: none"> - the Secretariat as well as the Chairs of HSSC and IRCC to represent the IHO on the governing board and report regularly to the Council; - the Council to advise the governing board of the laboratory on other themes and projects regarded as supportive to the IHO Work Programme.
9	<p>The Assembly, following the approved voting procedure by correspondence as reported in ACL 19/2020, approved the Revision of the IHO Resolution 2/1997 – Establishment of Regional Hydrographic Commissions (RHC) (Assembly Document A2_2020_PRO3-1_EN_Res_21997_cc_v1).</p>
10	<p>The Assembly, following the approved voting procedure by correspondence as reported in ACL 19/2020, approved Revision of the IHO Resolution 1/2005 - IHO Response to Disasters (Assembly Document A2_2020_PRO3-2_EN_Res_12005_cc_v1).</p>
11	<p>The Assembly, following the approved voting procedure by correspondence as reported in ACL 19/2020, confirmed the option to convene Council meetings regularly at the IHO Secretariat until the Council decides otherwise.</p>
12	<p>The Assembly, following the approved voting procedure by correspondence as reported in ACL 19/2020, confirmed the adoption of the effective implementation of the Revised Strategic Plan keeping in mind to apply the principles of ISO 9001 as the main theme of supervision and control of the Council until Assembly 3 (A-3).</p>
13	<p>The Assembly reviewed and endorsed the selection process for the Council as proposed in IHO CL 52/2019 Rev1 and approved the composition of the Council set out in Annex A of IHO ACL 28/2020 for the period 2020-2023 (until the 3rd Session of the Assembly).</p>
14	<p>The Assembly tasked the new Council to consider the best way forward with proposals A-2 PRO-1.4 and A-2 PRO-1.5 on the definition of hydrographic interest and report to A-3 in 2023 and empowered the Council to establish a working group for this specific purpose.</p>
15	<p>The Assembly approved to move the thematic session on the celebrations of the one hundred years of IHO's existence to the activities planned for the World Hydrographic Day on 21 June 2021.</p>
16	<p>The Assembly adopted the Agenda of the Assembly Session events without amendment.</p>
17	<p>The Assembly noted the list of ex post facto decisions in view of the List of Proposals to A-2.</p>
18	<p>The Assembly endorsed the Council Chair's report.</p>

19	The Assembly approved the revised Strategic Plan.
20	The Assembly tasked the Council to monitor closely the appropriateness and applicability of the proposed Strategic Performance Indicators and amend them if deemed necessary.
21	The Assembly tasked the Council to disband the SPRWG.
22	The Assembly tasked the Secretary-General to align the 2021 and 3-year IHO Work Programme 2021-2023 with the Revised Strategic Plan while keeping the current structure of the Work Programme to facilitate the operational work and implementation by the Secretariat.
23	The Assembly took note of Secretary-General's report on the informal consultation process for the future of S-23 (A2/PRO 1.9).
24	The Assembly approved the proposal for the future of S-23 (A2/PRO 1.9) made as a package.
25	The Assembly tasked the Secretary-General with the implementation of the proposal A2/PRO 1.9.
26	The Assembly approved the Update Report of the HSSC as part of the approval process of the Council Chair report.
27	The Assembly endorsed the HSSC recommendations on the Future of the Paper Nautical Chart.
28	The Assembly tasked the HSSC to implement the recommendations on the Future of the Paper Nautical Chart as appropriate.
29	The Assembly endorsed the S-100 Implementation Roadmap for the S-100 Implementation Decade.
30	The Assembly tasked the Council to maintain and update the S-100 Roadmap and resulting activities in liaison with external bodies on an annual basis as a key priority of the Council activities.
31	The Assembly endorsed to add three annexes to the S-100 Implementation Strategy related to the IHO Work Programmes 1, 2 and 3, to be updated annually and reported to the Council.
32	Considering the ROK proposal, A2/PRO 2.3, the Assembly approved the proposed HSSC way forward that: When the operational implementation of the S-100 concept becomes mature enough, proposed amendments to the Resolutions, eventually complemented by other new Resolutions (such as a result of WEND100), will be discussed and submitted to relevant IHO organs for subsequent approval by Member States.
33	The Assembly tasked the HSSC to prepare a synoptic Dual-Fuel Concept summary report on the various options offered to HOs for considering the development of their production of S-101 ENC's to address the valid concerns raised by China in A2/PRO 2.2 to be reported by HSSC to Council 5, 2021.

34	The Assembly approved the update report of the IRCC as part of the approval process of the Council Chair Report.
35	The Assembly approved the adoption of a new work item of Empowering Women in Hydrography (EWH) to the Work Programme of the CBSC.
36	The Assembly recommended the Member States to consider participation in the EWH project proposed by Canada.
37	The Assembly acknowledged the significant effort from CB Coordinators.
38	The Assembly endorsed the draft WEND100 Principles presented at IRCC12 and the proposed path forward in their subsequent development, as a consequence of the expanding range of hydrographic data products addressed in the S-100 Implementation Strategy.
39	The Assembly tasked the IHO Secretariat to secure funding to support EWH projects through negotiation of suitable cooperation agreements with interested Member States and/or partnering organizations.
40	The Assembly noted the development of the S-100 based Product Specifications by other organizations.
41	The Assembly noted the impact of decisions of other organizations on the S-100 roadmap for the S-100 Implementation Decade.
42	The Assembly endorsed the activities to install an IHO e-Learning Center based on A-2 Pro 3.3 and the related recommendations of the IRCC/CBSC.
43	The Assembly noted the report on significant issues and updates raised by the RHC and HCA reports.
44	The Assembly noted the efforts of RHCs and HCA to improve cooperation, capacity building activities, data sharing and harmonization.
45	The Assembly approved the financial report for the three-year intersessional period 2017 – 2019.
46	The Assembly noted of the actual and assumed impact of the COVID-19 pandemic and preventive measures proposed by the Secretary-General.
47	The Assembly noted of the election of Ms Isabelle Rosabrunetto (Monaco) as Chair of the Finance Committee and Mr Andrew Millard (United Kingdom) as Vice-Chair of the Finance Committee for the Assembly intermediate period commencing after A-2 (2020) until the end of A-3 (2023).
48	The Assembly approved the three-year IHO Work Programme and Budget estimates 2021-2023.
49	The Assembly endorsed the alignment of Work Programme to the Strategic Plan (introduction of column G&T, deletion of column SD and deletion of Annex A).

50	The Assembly approved the option of a consecutive annual increase of 1% of the Member States contribution share from 2022 to 2023 subject to the annual approval by C-5 and C-6 as part of the approval process of the annual budget (A2 PRO 1.7).
51	<p>The Assembly approved the draft Resolution expressing gratitude and appreciation to the Government of Monaco:</p> <p>“The Assembly:</p> <p>Recognizing the continued close association and significant support of His Serene Highness Prince ALBERT II and the Government of the Principality of Monaco in hosting the International Hydrographic Organization,</p> <p>Appreciating the kind generosity of His Serene Highness and the Government of the Principality of Monaco in providing premises for the Organization,</p> <p>Further appreciating the Opening Address delivered by video by His Serene Highness Prince ALBERT II at the 2nd Session of the IHO Assembly,</p> <p>Expresses its profound gratitude to His Serene Highness Prince ALBERT II and the Government of the Principality of Monaco for their graciousness and kind hospitality extended to the Organization, and</p> <p>Requests the delegation of the Principality of Monaco to convey to His Serene Highness and the Government of the Principality of Monaco the sincere sentiments of the Assembly expressed above.”</p>
52	The Assembly adopted the seating order originally agreed for the 2 nd Assembly Session now for the 3 rd Assembly Session.

SUMMARY RECORDS

2nd SESSION OF THE IHO ASSEMBLYSummary record of Day 1 – Monday, 16 November 2020

1. Opening Remarks

13:15-13:35	Opening remarks	
	<i>Welcome address by the Chair of the Assembly</i>	
	<i>Assembly Opening Address by HSH Prince Albert II of Monaco</i>	Recorded video
	<i>Address by the Secretary-General</i>	
	<i>Adoption of the Agenda</i>	A2_2020_G01_EN

The Assembly Chair, Captain M.C.J. van der Donck (Netherlands), delivered his opening address to the 2nd Session of the IHO Assembly. He highlighted the challenges of holding such an important event during these difficult COVID times. The 2nd IHO Assembly is now a combination of a series of altogether three Virtual Assembly Session Events and a series of fifteen Assembly decisions made by correspondence. This arrangement marks a novum not foreseen by the Assembly Rules of Procedures in place. He observed that important issues were kept for the remote Session of the 2nd IHO Assembly, most notably the Revised Strategic Plan, the Report on the informal consultation process for the future of S-23, the S-100 roadmap for the S-100 implementation decade and the 3-year Work Programme and Budget. He concluded that besides the technical mechanics, it is also the spirit in which Assemblies are conducted that is a key factor for success. He invited the delegates to maintain this cooperative spirit also during this different but still important Assembly.

His Serene Highness Prince Albert II of Monaco addressed the Assembly by video message and declared open the 2nd Session of the IHO Assembly.

The IHO Secretary-General, Dr Mathias Jonas, delivered his opening address to the Assembly. He thanked His Serene Highness for opening the 2nd Session of the Assembly and congratulated Captain van der Donck on his election as the Assembly Chair as confirmed in advance by Circular Letter. The Secretary-General then formally passed the chairing of the Assembly to Captain van der Donck.

The Assembly Chair stressed to all that, as a rule of procedure for this Assembly, comments from the floor by Member States should only be made if they are additional to those included in the Red Book. The Assembly then adopted the Agenda without comment.

The Assembly Chair announced that there were 65 Member States in attendance, and therefore a quorum had been achieved.

The Assembly Chair concluded with the following Assembly decision and closed the agenda item.

Decision:

- **The Assembly adopted the Agenda of the Assembly Session events without amendment (A2/16).**

2. Assembly Chair briefing

13:35-13:45	<i>Assembly Chair (AC) briefs participants on the list of ex post facto Assembly decisions in view of the List of Proposals to A-2</i>	List of Proposals to A-2 ACL30/2020 Annex B A2_2020_G_10_EN
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The Assembly Chair requested the Secretary-General to brief the Assembly on the list of ex post facto Assembly decisions in view of the List of Proposals to A-2.

The Secretary-General presented the list of Assembly Decisions, including the related Assembly Proposals that had already been voted on and approved by Assembly Circular Letter correspondence. He then presented the remaining Assembly Proposals, and their alignment to the corresponding items in the Agenda.

NORWAY: Asked for clarification on Decision No. 14 concerning the definition of Hydrographic Interest: Does the Council have the option to establish a WG or are they instructed to establish a WG? The Secretary-General, supported by the IHO Council Chair, responded that the Council has the option to establish a WG – it is not a mandatory requirement. The Assembly Chair added that retaining the status quo of the definition of Hydrographic Interest could also be a potential outcome.

MALTA: Thanked Uruguay and India for their proposals to the Council on the revised definition of Hydrographic Interest. Malta recommended that no changes are made to the definition of what constitutes Hydrographic Interest. The Assembly Chair responded that the Malta intervention is a clear reminder that no consensus had been reached in the course of the related Council deliberations.

BRAZIL: Thanked the comments from Malta and Norway. BRA welcomed the adoption of Decision 14, which acknowledged the strategic role of the Council in deciding on the definition of Hydrographic Interest. A Working Group of the Council should be established to discuss the issue further in the light of the innovative potential solutions put forward by India and Uruguay.

The Assembly Chair concluded with the following Assembly decision and closed the agenda item.

Decision:

- **The Assembly noted the list of ex post facto decisions in view of the List of Proposals to A-2 (A2/17).**

3. Council Report

13:45-14:15	<i>Council Chair presents Council report</i>	A2_2020_G_05_EN
14:15-14:45	<i>AC refers to the Red Book and calls for additional comments</i>	A2_2020_G_02_EN

The Council Chair, Rear Admiral Shepard Smith, presented the report of the operation of the Council on the first inter Assembly period from 2017 to 2020. He reminded the Assembly of the membership criteria for the Council, its purpose and goals, and the revised process (now adopted) for the election of the Council Chair.

The Council Chair highlighted, in light of the previous Agenda item discussion, that the Council can only establish Working Groups as authorized by the Assembly. He also highlighted that the Committees (HSSC and IRCC) are mandated to directly approach Member States on routine and technical issues, however strategic issues should be submitted for consideration by the Council. The Council Chair also highlighted the approval of A-2 PRO 1.1 (Decision A2/2).

The Council Chair acknowledged the work of the Strategic Plan Review Working Group (SPRWG) on the review of the IHO Strategic Plan, which will be further covered under Agenda Item 4 (A-2 PRO 1.8). He highlighted the importance of the implementation of S-100 framework in cooperation with Member States, IMO and Industry through the S-100 Roadmap (Agenda Items 7 and 9), and recommended that the Roadmap should be endorsed as submitted. He also highlighted the work of the Worldwide ENC Database Working Group (WENDWG) on the development of the draft WEND100 principles.

The Council Chair highlighted that under current budgetary constraints there is a high likelihood that the IHO will not be able to continue to support Standards development and implementation as planned. As such, he recommended a modest increase in MS shares (A-2 PRO 1.7) to cover special projects and capacity building efforts.

The Council Chair reminded that the next triennial Council, to be chaired by Dr Geneviève Béchard (Canada) will focus on the effective implementation of the revised Strategic Plan, keeping in mind the principles of ISO 9001 (Decision A2/12). In conclusion, the Council Chair thanked his fellow members of the Council Executive and all the members of the Council for their contributions, and noted that the next two years are critical in regard to S-100 Roadmap implementation and evolutionary application of the new Strategic Performance Indicators (SPI) of the revised Strategic Plan. In his view, the Council needs to be strategic as to how they use their time. He expressed his confidence in the incoming Chair to achieve this.

Then Assembly Chair opened the floor for comments.

JAPAN: Agreed with the well-running way that the Council operates. Emphasized that the importance of the Council should be how actively the Council Member discuss, not be the definition of Hydrographic Interest itself, which is the basis of a third of the Council Membership so far.

The Assembly Chair thanked and expressed appreciation to the Council Chair for his leadership of the Council and noted that the Council as a new IHO organ has proved its worth in overseeing the operations of the IHO over the full inter Assembly period.

The Assembly Chair concluded with the following Assembly decision and closed the agenda item.

Decision:

- **The Assembly endorsed the Council Chair's report (A2/18).**

4. Revised Strategic Plan

15:00-15:30	<i>REVISED STRATEGIC PLAN update: Council Chair supported by Chair SPRWG briefs the audience</i>	A2 - Proposal 1.8 Decision A2/12 - ACL27/2020
15:30-15:45	<i>AC refers to the Red Book and calls for additional comments</i>	A2_2020_G_02_EN

The Assembly Chair provided a brief introduction to the report of the SPRWG, recalling that the Council had been tasked to undertake a comprehensive review of the Strategic Plan (Decision A1/03).

The SPRWG Chair, Ingénieur général de l'armement Bruno Frachon, provided a brief presentation of the outcomes of the review of the IHO Strategic Plan. He commenced with the background covering the establishment of the SPRWG and the membership; he described the working methods of the SPRWG and the phases of their report to the Council on the progress against the tasks. He highlighted the 21 contributions received during the correspondence group scoping phase, which included strategic assumptions; shortfalls of the current Strategic Plan and most desired improvements; the definition of the success of the IHO Strategy; and stakeholders, marine data, the pace of technology changes and consequences, and communication. He noted that the SPRWG had proposed a framework setting out the challenges, some overarching goals and targets to be achieved by 2026. The SPRWG was tasked by the C-2 to develop the Strategic Plan framework based on three smart goals in liaison with HSCC and IRCC.

He noted that at C-3, the Council had endorsed the general structure presented and discussed improvement of the definition of the targets and one target had been added. Proposals for strategic performance indicators had been tabled and amendments made to the revised draft Strategic Plan. The draft had then been approved for submission to the 2nd Assembly. In June 2020 there had been a review of the Strategic Performance Indicators and possible metrics. He thanked USA for developing a brochure on the Strategic Plan to support its outreach.

The SPRWG Chair provided his views on the resultant outputs of the Working Group activities. He highlighted that the new Strategic Plan consisted of three Goals and nine Targets and noted that the Strategic Performance Indicators and metrics were a tool for monitoring the achievement of the Targets of the Strategic Plan and they could be adapted during the lifespan of the Strategic Plan (2021-2026). He suggested that the monitoring role could be undertaken by the Council with the assistance of the other permanent bodies of IHO and proposed that the noted brochure could be adapted for social media provision.

The Council Chair briefed on the actions requested of A-2, noting that the SPRWG had completed its tasks as articulated in its ToRs. He noted that the strategic planning process at the IHO had been made more complex as it had to reconcile the various strategic planning cultures of Member States. He drew attention to the recommended actions of the strategic planning exercise and to the fact that the proposed Strategic Performance Indicators had been referred to the Council (C-4) for test implementation and further refinement.

The Assembly Chair opened the floor for comments in addition to the Red Book.

The Assembly Chair noted, that in the absence of any additional comments, the decisions requested of the Assembly were approved. He highlighted the request that the Secretary-General should align the 3-year Work Programme 2021-23 with the revised Strategic Plan.

The Secretary-General provided details on the method of applying the new revised Strategic Plan and explained that the action was already in place to align with the IHO Work Programme 2021-2023 accordingly.

The SPRWG Chair thanked the efforts and work of the members of the SPRWG, in particular the Vice-Chair and the Secretary.

The Assembly Chair concluded with the following Assembly decisions and closed the agenda item.

Decisions:

- **The Assembly approved the revised Strategic Plan (A2/19).**
- **The Assembly tasked the Council to monitor closely the appropriateness and applicability of the proposed Strategic Performance Indicators and amend them if deemed necessary. (A2/20)**
- **The Assembly tasked the Council to disband the SPRWG (A2/21).**
- **The Assembly tasked the Secretary-General to align the 2021 and 3-year IHO Work Programme 2021-2023 with the Revised Strategic Plan while keeping the current structure of the Work Programme to facilitate the operational work and implementation by the Secretariat. (A2/22)**

5. Report on the informal consultation process for the future of S-23

15:45-16:15	<i>S-23: Secretary-General briefs on his report on the informal consultation process for the future of the publication</i>	A2 - Proposal 1.9
16:15-16:30	<i>AC refers to the Red Book and calls for additional comments – End of Session 1</i>	A2_2020_G_02_EN

The Assembly Chair introduced the item by referring to Decision A1/04 which tasked the Secretary-General to facilitate an informal consultation process regarding the future of S-23 among interested Member States, including determining mutually agreed modalities of work, and to report the result of the consultations to the Assembly at the next ordinary session (Decision A1/04).

The Secretary-General provided brief explanatory background notes and additional comments on the work undertaken during the informal consultation process. He highlighted the Member States that had indicated an interest and those with whom talks had been held. He described the steps taken during the talks and the request for new proposals and options to resolve the challenges with the current edition of S-23. He noted that no new proposals had been provided. He presented his proposals for the modernization of standardization of the limits of the oceans and seas. The core of the proposal was to make S-23 content fit for digital dissemination through the transformation of information contained in a database of attributed area feature objects with global coverage. The resulting dataset, to be known as S-130, should be based on modern digital technology and facilitate the following aims: higher resolution of the standardized limits of the oceans and seas by means of vectorized chain-node topology; greater flexibility offered to users and systems for geographical areas; customisation of displayed information about the limits according to regional and national priorities; and end user requirements; preparedness for the application of future voice command functionality of GIS applications; application of artificial intelligence, and “deep learning” on marine geo-

information; support of machine-to-machine communication for the facilitation of autonomous shipping.

The Secretary-General highlighted his conclusions from the consultation process and the actions he proposed for consideration by the Member States. He noted that a transformation of S-23 limits of ocean and sea areas into a digital dataset named “Polygonal demarcations of global seas areas” would facilitate the joint standardization and service activities of IHO and other adjacent domains to support the e-Navigation concept of IMO. The affected standards of IHO and IMO that currently referred to S-23 could be adapted to the new dataset solution with comparably low effort. S-23 would be kept publicly available as part of the existing IHO publications to demonstrate the evolutionary process from the analogue to the digital provision of limits of oceans and seas.

The Secretary-General invited the Assembly to consider the following package proposal:

- a. take note of the implementation of the consultation process and its results;
- b. to agree on the provision of digital coordinates for limits of oceans and seas to meet requirements of contemporary geographic information systems.
- c. to task the appropriate IHO subordinate technical body
 - to develop a dataset named “Polygonal demarcations of global sea areas” to designate geographic sea areas by a system of unique numerical identifiers only, and
 - to profile or adapt appropriate IHO S-100-based standards through a new S-130 dataset, to facilitate the digital provision of the “Polygonal demarcations of global sea areas”.
- d. to consider, if and when necessary, the development of basic guidelines for the allocation and display of attributes of sea areas to be applied to Geographic Information Systems.
- e. to note that S-23 is kept publicly available as part of existing IHO publications to demonstrate the evolutionary process from the analogue to the digital provision of limits of oceans and seas.
- f. to task the Secretary-General, as part of the process resulting from sub-task c) above, to consider subsequent amendments to the relevant IHO Resolutions 32/1919 as amended and 13/1919 as amended, for endorsement by the Council, if and when appropriate.
- g. to instruct the Secretary-General to take any other actions considered necessary.

The Assembly Chair noted the general support highlighted in the comments received in the Red Book and invited any additional comments from the Member States, in particular those who were actively involved in the consultation process and present.

CHINA: Stated that the nature of IHO is consultative and technical and shall not include the activity to solve the names and limits of the Oceans and Seas which is highly politically sensitive. China did not recommend the revision of S-23 or the development of a specific dataset called S-130. The fact that a lot of resources have been spent but fruitless told that S-23 is highly political. The continuation of this discussion or further attempts to revise S-23 are not recommended. Together with the other members, China has always been committed to support IHO deal with hydrographic technology, protect IHO’s technicality and specialization not be violated by political issues.

IRAN: Favoured the revision of S-23 into a format supported by GIS and other digital environments; however noted that polygonal demarcation of sea areas handled through S-100-based standards in order to support the concept of e-navigation might lead to confusion among sea farers and increase the potential risk of maritime accidents if that involved omitting the historical names of seas and oceans as set out in S-23 Edition 3. He suggested that numerical features proposed by polygonal demarcation should be stipulated in the chart

together with the name mentioned in S-23 or in the form of a legend or appendix with the title “demarcation marks”.

NEW ZEALAND: Fully supported this proposal. They supported, the provision of digital coordinates of the geographic limits of the oceans and seas to meet the requirements of modern geographical information systems. NZL believes this to be a well-considered, balanced proposal that will provide a dataset that is fit for purpose to meet the current and future requirements of Hydrographic Offices. The proposal will assist IHO to move forward on this long-standing issue and will work for the benefit of all.

REPUBLIC OF KOREA: Supported, in principle, the proposals submitted by the Secretary-General which were the outcome of the informal consultation process on the future of S-23. A new IHO standard S-130 would be more effective in meeting user requirements in the increasingly digitalised geospatial information environment of the 21st century. Such an IHO standard was anticipated to ensure that hydrographic information was universally accessible and compatible with global geospatial data. ROK finally encouraged the Member States to move forward on this proposal.

The USA: Fully supported the development of the data set known as “Polygonal demarcations of global sea areas”. Updating and establishing common locations, boundaries and regions that could be utilised within both modern navigation systems and the broader geographic information systems would benefit the entire global geospatial community.

JAPAN: Expressed appreciation and support for the tremendous efforts of the Secretary-General with respect to the package of proposals produced.

The Assembly Chair concluded with the following Assembly decisions:

Decisions:

- **The Assembly took note of Secretary-General’s report on the informal consultation process for the future of S-23 (A2/PRO 1.9) (A2/23),**
- **The Assembly approved the proposal for the future of S-23 (A2/PRO 1.9) made as a package (A2/24),**
- **The Assembly tasked the Secretary-General with the implementation of the proposal A2/PRO 1.9 (A2/25).**

In closing of the Agenda item addressing Proposal 1.9, the Assembly Chair made the following statement:

“This proposal aims to make S-23 limits of ocean and sea areas fit for purpose based on modern digital technology. While developing a dataset to designate geographic sea areas by a system of unique numerical identifiers only, S-23 is kept publicly available as it is, as part of existing IHO publications to demonstrate the evolutionary process from analogue to the digital provision of limits of oceans and seas.

The IHO is a technical and consultative organization. I therefore inform you that the final approval of this Proposal as a whole, which deals with limits of sea areas only, will bring a positive closure to the debate on naming issues that has persisted for far too long within the IHO.”

Summary record of Day 2 – Tuesday, 17 November 2020**6. Hydrographic Standards & Services Committee (HSSC) Report**

13:15-13:30	<i>Update on HSSC: HSSC Chair briefs the audience on the outcome of the recent HSSC meeting in October 2020</i>	A2_2020_G_05.A_EN
13:30-13:45	<i>AC calls for comments</i>	

The Assembly Chair requested the Hydrographic Services & Standards Committee Chair, Mr Magnus Wallhagen (Sweden), to deliver the Hydrographic Services & Standards Committee Report. The Hydrographic Services & Standards Committee Chair stated that his report would provide updated information on activities since the original report was submitted, which included the outcome of the recent HSSC12 detailing on the focus on survey activities and accuracy of depth information; the report on the future of the paper nautical chart; and progression on S-100 Product Specifications development and timeline. A further item – HSSC contribution to S-100 Implementation Strategy – would be discussed under Agenda Item 7.

The Hydrographic Services & Standards Committee Chair reported the adoption of Edition 6.0.0 of IHO Publication S-44 *Standards for Hydrographic Surveys*, which is seen as an important publication for all forms of governmental and commercial hydrographic survey activities. He further reported the establishment of a new Hydrographic Surveys Working Group (HSWG) that, along with the responsibility of maintaining S-44, will have the scope to investigate future survey standards expansion to encompass new fields and technologies.

The Hydrographic Services & Standards Committee Chair reported the adoption of Edition 1.0.0 of IHO Publication S-67 *Mariners' Guide on Accuracy of Depth Information in Electronic Navigational Charts (ENC)*, which provides comprehensive guidance for mariners in understanding the underlying data quality in ENCs, seen as crucial for safe navigation with an ECDIS.

The Hydrographic Services & Standards Committee Chair reported the analysis and outcome of a comprehensive survey in regard to the future of the paper nautical chart as conducted among Member States. The intent of the survey was to develop an overview of issues regarding paper nautical charts in the current and future marine environment, and develop a set of combined and consistent recommendations for development of a way forward under the existing IHO standardization framework. The key recommendations are:

- Guidance for Hydrographic Offices to produce paper nautical charts or raster chart images directly from S 101;
- Maintenance of S-4, Chart Content specifications, and INT1 remains an ongoing activity;
- Focus on ENC schemes and less on INT chart coverage; and
- No separate specification for simplified or back up paper charts.

The Hydrographic Services & Standards Committee Chair acknowledged the work and assistance of the IHO Secretariat, Working Group and Project Team Chairs and all members of the Hydrographic Services & Standards Committee and thanked all for their ongoing dedication to the task.

The Assembly Chair opened the floor for comments from Member States.

In the absence of additional comments, the Assembly Chair concluded with the following Assembly decisions and closed the agenda item.

Decisions:

- **The Assembly approved the Update Report of the Hydrographic Services & Standards Committee as part of the approval process of the Council Chair report (A2/26).**
- **The Assembly endorsed the Hydrographic Services & Standards Committee recommendations on the Future of the Paper Nautical Chart (A2/27).**
- **The Assembly tasked the Hydrographic Services & Standards Committee to implement the recommendations on the Future of the Paper Nautical Chart as appropriate (A2/28).**

7. S-100 Implementation Strategy

13:45-14:30	<i>S-100 Implementation Strategy - PRO 2.1, PRO 2.2 and PRO 2.3: AC refers to the three Proposals and related Red Book comments</i>	A2 - Proposals 2.1, 2.2 and 2.3 A2_2020_G_02_EN
14:30-14:45	<i>AC calls the Secretariat and others for additional comments</i>	A2 - Proposals 2.1, 2.2 and 2.3

The Assembly Chair invited the Council Chair to introduce this Agenda item. The Council Chair provided brief background information on the S-100 Implementation Strategy and the importance of S-100 Services and the S-100 Roadmap as the key element of the Implementation Strategy. He stated that the main drivers for developing S-100 are the increasing digitalization in the shipping industry; the advent of autonomous shipping; efficiency wins to gain particularly in ports; and that S-100 based data services will provide a cyber-secure, easily maintained software foundation that will support creative industry policy. He reported that C-2, recognising that Member States have begun to develop next-generation navigation services built on newly-approved S-100 based standards, commissioned the development of the S-100 implementation Roadmap, which was endorsed at C-3. It is envisioned that the roadmap will provide a path to guide IHO activities; guide Member States marine data producing authorities and RHCs in the development of national and regional services; and demonstrate the seriousness of the intent for coordination with IMO and national Port State Control authorities.

The Council Chair noted that the scope of the roadmap included a number, which may be expanded over time, of S-100 based Product Specifications for inclusion in ECDIS beyond the S-101 ENC. He reported the key provisions of the roadmap, which include the creation of a new set of coordination principles (WEND100); coordination with IMO to transition from S-57 to S-101 ENCs and recognize additional services; coordination with industry for production of S-100 based services; capacity building for data producers; and development of a global distribution capability.

The Council Chair listed specific considerations for the transition from S-57 to S-101 ENCs. There is a requirement for substantial S-101 data coverage for successful adoption by customers within the shipping industry that may be achieved initially through the conversion of S-57 ENC to S-101 ENC before full “organic” production of S-101 ENC to utilise the complete S-101 capability. Transitional support will also be needed to provide S-57 ENCs for use within legacy S-57-only ECDIS, for which S-57 ENCs may be produced from organic S-101 ENCs. The S-100 Roadmap will help IHO and Member States to coordinate with IMO and industry stakeholders to develop a “dual-fuel” concept which may include parallel provision of S-57 and S-101 services by Producing Authorities and/or distribution agencies; and/or deployment of ECDIS that are both S-57 and S-100 capable.

The Council Chair proposed that because of the dynamic nature of the roadmap, which is expected to require annual updates, the Council is best placed to maintain the document; however the Hydrographic Services & Standards Committee, the IRCC and the IHO Secretariat all have important roles to play and should all work both to implement and propose updates to the roadmap to be revisited by the Council annually.

The Council Chair then presented A-2 PRO 2.1 for consideration of the Assembly.

The Assembly Chair opened the floor for comments additional to the Red Book.

JAPAN: Thanked the Council Chair for the presentation. Japan was very happy to receive the draft Implementation Strategy, however raised concern that there has been a year lost because of the COVID-19 pandemic. The Council Chair responded that the transition period dates had not been included in his presentation, in anticipation that these would be discussed by the Council and would likely be amended. The proposal is to accept the Implementation Strategy as it stands.

The USA: Agrees with the minor language changes within the proposal and looks forward to progressing with the implementation.

COLOMBIA: Raised some concern over the impacts on the capacity of marine data producing authorities in regard to implementing S-100.

FRANCE: Supported the adoption of the proposal, especially taking into account cyber-security arguments and the introduction of additional services for the mariner. In particular, France assumes that the delivery of SENC which represents a security breach in the S-57 delivery, will not be an option in the S-101 delivery.

The Council Chair thanked France for its comments and seized the opportunity to congratulate SHOM on their 300th anniversary.

CANADA: Highlighted the need to prepare to transition to machine-to-machine data to support autonomous shipping. CAN considers from this perspective that the implementation of this plan is essential, from both a capacity-building and technical perspective.

UNITED KINGDOM: Welcomes the proposal and acknowledges the concern raised by Japan. Also acknowledged the significant challenges ahead as mentioned by Colombia and others, and is looking forward to supporting and working with partners, as required.

CHINA: Stated that it is very important that the dual-fuel capability is workable and performs seamlessly for the mariner.

NORWAY: Acknowledged the comments regarding capacity building as the Chair of the CBSC, and noted the limited funds to contribute to the capacity building effort. Was pleased to hear the offers of additional support from United Kingdom and others.

INDIA: Suggested that a “sanitised” version of the strategy could be developed to assist marine data producing authorities with addressing the impact of S-100 implementation. The Secretary-General responded that the comments of IND were welcome and looks forward to working with the Council in addressing all concerns raised by the Member States. The Assembly Chair stated that these concerns would be taken up in the C-4 meeting later in the week.

JAPAN: Supported India’s comments, stating that such communication is very important in moving forward with S-100 implementation.

The Assembly Chair then addressed the actions requested of the Assembly. No further comments were received from the participants; therefore, the proposals were approved. The Council Chair then invited the Hydrographic Services & Standards Committee Chair to report on the proposed implementation timeline.

The Hydrographic Services & Standards Committee Chair described the current status of the S-100 Product Specifications development timeline. He reported that the anticipated publication of the operational version of S-101 is not expected until early in 2024, which is later than first envisaged. He stated, however, that Producing Authorities should begin preparing for the production of S-101 ENC's at their earliest opportunity. This will be reliant on a relatively stable draft of the S-101 Product Specification and the capability of manufacturers of production software and database management software to provide tools to support this effort. He then displayed a version of the timeline which included the implementation of additional S-100 products and services.

The Hydrographic Services & Standards Committee Chair explained the concept of the S-98 Interoperability Specification – the “IHO Navigational Package”, and the proposed two stage approach to implementation, namely *Navigational Route Monitoring Mode* and *Navigational Route Planning Mode*.

The Hydrographic Services & Standards Committee Chair presented additional Hydrographic Services & Standards Committee proposals for A-2 PRO 2.1 for consideration of the Assembly, aiming to provide three annexes to the S-100 Implementation Strategy to interface to Work Programme 1, 2 and 3, to be updated annually and reported to the Council.

The Hydrographic Services & Standards Committee Chair then presented anticipated execution of the proposals A-2 PRO 2.2 and A-2 PRO 2.3 for consideration of the Assembly.

On proposal A-2 PRO 2.2, the Hydrographic Services & Standards Committee Chair provided a brief explanation of the “dual-fuel” ECDIS concept. He explained that the concept will impact on marine data producing authorities in respect to the production, maintenance and distribution of ENC's. In addition, the dual-fuel concept will affect the coordination of regional ENC schemes and collaboration with the RENC's; and the distribution and interaction with other international bodies such as the IMO, IEC, and CIRM.

The Hydrographic Services & Standards Committee Chair suggested the following principles in support of the dual-fuel concept:

- Unambiguous and standardised import and parallel use of both S-57 ENC and S-101 ENC supporting enhanced user functionality.
- ECDIS behaviour should not be any less “safe” regardless of whether S-57 or S-101 ENC is in use.
- User experience should never be negatively impacted by amending use of any other S-100 compliant data product such as S-102 (Bathy), S-104 (Water Level), S-111 (Surface Currents).

On proposal A-2 PRO 2.3 the Hydrographic Services & Standards Committee chair confirmed that the revision of some IHO Resolutions is an important driver for the effective implementation of the S-100 concept. He argued in favour of amending the Resolutions, eventually complemented by other new Resolutions (such as a result of WEND100), when the operational implementation of the S-100 concept becomes mature enough.

The Assembly Chair opened the floor to Member States for comments additional to the Red Book.

BRAZIL (bullet 4 of the requested Actions): Shares China's concerns as included in the Red Book over the implementation of dual-fuel ECDIS and requests that a full investigation is conducted on this.

The **USA** (bullet 4): Requested that the Hydrographic Services & Standards Committee conducts a full investigation as to the options of having parallel provision of S-57 and S-101 datasets or dual-fuel. The Hydrographic Services & Standards Committee Chair responded that the Hydrographic Services & Standards Committee will investigate this, as it is acknowledged that there are many ways that this issue could be resolved. He stated that this would be a task of the S-100WG.

REPUBLIC OF KOREA (bullet 5): ROK thanked the Hydrographic Services & Standards Committee Chair in respect to the report on PRO 2.3. Regarding the Hydrographic Services & Standards Committee way forward which proposes to amend the Resolutions when the operational implementation of the S-100 concept becomes mature enough, ROK stressed the importance of swift revision of the related Resolutions, considering the possibility of delay in producing S-101 ENC's from 2024 according to the previous S-100 Roadmap schedule. ROK would like to see the revision as soon as possible. The Hydrographic Services & Standards Committee Chair welcomed the comments of ROK and acknowledged the contribution of ROK to the Hydrographic Services & Standards Committee. He confirmed that impact of any possible delay will be evaluated, with input from the IRCC as required, and subsequently provided.

The Assembly Chair concluded with the following Assembly decisions and closed the agenda item.

Decisions:

- The Assembly endorsed the S-100 Implementation Roadmap for the S-100 Implementation Decade (A2/29).
- The Assembly tasked the Council to maintain and update the S-100 Roadmap and resulting activities in liaison with external bodies on an annual basis as a key priority of the Council activities (A2/30).
- The Assembly endorsed to add three annexes to the S-100 Implementation Strategy related to the IHO Work Programmes 1, 2 and 3, to be updated annually and reported to the Council (A2/31).
- Considering the ROK proposal, A2/PRO 2.3, the Assembly approved the proposed Hydrographic Services & Standards Committee way forward that: When the operational implementation of the S-100 concept becomes mature enough, proposed amendments to the Resolutions, eventually complemented by other new Resolutions (such as a result of WEND100), will be discussed and submitted to relevant IHO organs for subsequent approval by Member States (A2/32).
- The Assembly tasked the Hydrographic Services & Standards Committee to prepare a synoptic Dual-Fuel Concept summary report on the various options offered to HOs for considering the development of their production of S-101 ENC's to address the valid concerns raised by China in A2/PRO 2.2 to be reported by Hydrographic Services & Standards Committee to Council 5, 2021 (A2/33).

8. Inter-Regional Coordination Committee (IRCC) Report

15:00-15:30	<i>Update on IRCC: IRCC Chair briefs the audience on the outcome of the recent IRCC meeting in October 2020</i>	A2_2020_G_05.B_EN
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The IRCC Chair, Thomas Dehling (Germany) provided an update on IRCC activities reflecting the outcomes of the recent IRCC12 meeting and progress since the preparation of its report (A2_2020_G_05.B_EN). He provided updated details on capacity building activities, in particular he noted the impacts of the current pandemic, and that allocated funds had not been spent as many activities had taken place as online remote events or been postponed. He recommended that the surplus from the 2020 budget would be transferred into the 2021 capacity building funds. He further highlighted that additional funding beyond the anticipated surplus was required to cover all planned activities for the 2021 Capacity Building Work Plan as the majority of the ROK and NF funds were already allocated. He described the development of a new system to measure the improvements of Member States in their hydrographic capacity, based on estimations by the Regional Capacity Building Coordinators.

The IRCC Chair highlighted the impacts of e-Learning and its importance in the current environment, he noted the IRCC fully supported the establishment of the e-Learning Center and that it should be overseen by the CBSC via a Steering Committee. He noted that the IRCC, subject to the A-2 approval, endorsed the establishment of a Project Team under the CBSC to draft future structures and operational procedures to be submitted as a mature concept to A-3.

The IRCC Chair addressed the IHO Educational Requirements, in particular the FIG/IHO/ICA International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers. He noted that 15 submissions for certification had been received, of which one had been recognised, five recognised with conditions and nine had been rejected; he noted that the quality of the documentation submitted remains an issue, which is increasing the workload on the Board.

The IRCC Chair introduced the *Empowering Women in Hydrography (EWH)* project to overcome the large imbalance in the participation of women in maritime related domains. The IRCC12 supported the adoption of the new work item of EWH to the Work Plan of the CBSC. The IRCC invited A-2 to task the Secretariat to secure funding through allocation of IHO budget resources available and negotiation of suitable cooperation agreements with interested Member States and/or partnering organizations in support of projects under this work item. He noted, that on directions by the Council, the IRCC will task the CBSC to develop the EWH project plan in further detail; he also highlighted that the IRCC recommended Member States to consider participation in the EWH project proposed by Canada.

The IRCC Chair encouraged Member States to support Crowdsourced Bathymetry (CSB) initiative with positive actions such as to motivate research vessels to collect bathymetric data when on passage. He noted that the IRCC had encouraged RHCs to redefine the role of the current Seabed 2030 Coordinators to become joint CSB/Seabed 2030 Coordinators and to identify appropriate individuals to undertake this role for each RHC.

The IRCC Chair noted that Member States were invited to actively participate in the UN-GGIM Marine WG and to liaise with their respective member in UN-GGIM. He observed that the IRCC had encouraged the GEBCO Guiding Committee to liaise with Seabed 2030 Project Team and with the respective RHC CSB/Seabed 2030 Coordinators, to establish a common methodology and provide regional analysis. He highlighted that the IRCC had encouraged all Member States to make existing seabed mapping data available for use by Seabed 2030 in the GEBCO Grid. The focal point for ingestion of those data should be the IHO DCDB.

The IRCC Chair reported that the WENDWG was investigating the applicability of the WEND-like Principles to production and dissemination of S-101 ENC's and of other S-100 based products. He noted that the WENDWG had established a drafting group to develop WEND-like principles to include the full suite of navigation services. He reported that the WENDWG had presented a progress report and a first draft edition of the Worldwide Electronic Navigation Services (WEND100) to the IRCC12 and that the IRCC had agreed to build on existing principles and assist their application by an implementation guide.

The Assembly Chair opened the floor to Member States for comments in addition to the Red Book.

NORWAY noted that the Seabed 2030 initiative would help to fill the gaps in knowledge about the global seafloor that made it difficult to predict the effects of climate change on currents and sea levels, and would thus contribute directly to the achievement of the United Nations Sustainable Development Goals. The first joint RHC CSB/Seabed 2030 Coordinator had already been appointed at the Meso American and Caribbean Sea Hydrographic Commission.

The Assembly Chair concluded with the following Assembly decisions and closed the agenda item.

Decisions:

- **The Assembly approved the update report of the IRCC as part of the approval process of the Council Chair Report (A2/34).**
- **The Assembly approved the adoption of a new work item of Empowering Women in Hydrography (EWH) to the Work Programme of the CBSC (A2/35).**
- **The Assembly recommended the Member States to consider participation in the EWH project proposed by Canada (A2/36).**
- **The Assembly acknowledged the significant effort from CB Coordinators (A2/37).**
- **The Assembly endorsed the draft WEND100 Principles presented at IRCC12 and the proposed path forward in their subsequent development, as a consequence of the expanding range of hydrographic data products addressed in the S-100 Implementation Strategy (A2/38).**
- **The Assembly tasked the IHO Secretariat to secure funding to support EWH projects through negotiation of suitable cooperation agreements with interested Member States and/or partnering organizations (A2/39).**

9. S-100 Implementation Strategy Consolidation

15:30-16:00	<i>S-100 Implementation Strategy consolidation</i>	A2 - Proposals 2.1, 2.2 and 2.3
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The Assembly Chair introduced the background to the wider impacts of the S-100 Implementation Strategy, noting the impacts on partner organizations.

IHO Director Technology, Abri Kampfer, provided a presentation on the wider implications of the S-100 Implementation Strategy with regard to collaborating organizations. He highlighted the list of S-100 based Product Specifications, and noted those which were under development or published. He emphasized that IMO had stipulated that S-100 was the baseline framework to support e-Navigation Services. He noted the engagement with IMO and the proposal made to NCSR 7 in January 2020 regarding the introduction of the next generation of S-101 ENC's and the implications for existing and new ECDIS installations. He reported that the amendment to MSC.232(82) Revised Performance Standards for Electronic Chart Display and Information

Systems (ECDIS) was included in the next biannual NCSR Work Plan, however at the recent MSC 102 meeting, although the task was agreed, it would be delayed until the 2022-2023 biennium. He highlighted the resultant potential impact on S-100 Product Specification development and their timelines. He noted the need for Member States to participate in the Working Groups of the IMO and IEC to progress the work through their processes, in addition to participation in the IHO Working Groups. He noted that S-100 based Product Specifications are not reliant solely on S-101 and can be used on a number of other platforms as aids to navigation and other non-navigation uses.

The Assembly Chair opened the floor to Member States for comments.

FRANCE: Asked whether the development and production of S-101 should be delayed as a result of the IMO delay. Director Technology acknowledged the indicative deadline for marine data producing authorities to begin producing S-101 ENC's, namely early 2024, was well in advance of the entry into force of the updated IMO/IEC performance standards, expected in early 2026. ENC's had many applications, for instance in portable pilot units, and it would be necessary to accumulate data to convince original equipment manufacturers of their usefulness and commercial viability.

IMO: Indicated that NCSR 8 would encourage IMO Member States and partner organizations to undertake intersessional work to submit mature drafts to NCSR 9 and subsequently MSC, so that the new standards might enter into force as soon as 2024.

The Assembly Chair concluded with the following Assembly decisions and closed the agenda item.

Decisions:

- **The Assembly noted the development of the S-100 based Product Specifications by other organizations (A2/40).**
- **The Assembly noted the impact of decisions of other organizations on the S-100 roadmap for the S-100 Implementation Decade (A2/41).**

10. Establishment of an IHO E-Learning Center

16:00-16:30	<i>PRO 3.3: AC calls for comments and refers to PRO 3.3 and related Red Book comments –</i> End of Session 2	A2 - Proposal 3.3 A2_2020_G_02_EN
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The Assembly Chair recalled the generous offer by ROK to establish and host an IHO e-Learning Center – an offer that was more pertinent than ever in the light of the current pandemic. In response to concerns over governance expressed by Member States, the IRCC had proposed that its CBSC should create a Steering Committee to oversee the activities of the Center, and had established a Project Team to develop structures and operational procedures for approval by A-3.

The Assembly Chair opened the floor to Member States for comments in addition to the Red Book.

JAPAN: Asked for clarification of the impact on the IHO budget on the establishment of the e-Learning Center. Republic of Korea noted that there was broad support for A2 PRO 3.3 and indicated that ROK wanted to secure the budget for the next two years for the establishment activity. It was noted that the initial setting up costs for 2021 and 2022 would be met by the government of ROK; however ROK hoped that any further operating costs from 2023 onwards would be covered by the IHO budget and ROK is open for discussion of this issue if necessary.

IFHS: Fully support the initiative of the ROK to establish an e-Learning Center. Considering the challenges faced by the Hydrographic community, addressed by this Assembly, and the current sanitary situation, e-Learning stands as a true game changer to sustain hydrographic concepts and good practices as well as providing significant leverage to capacity building and development. Besides, such an e-Learning infrastructure, if implemented in a fully pedagogic approach, could contribute to a wider recognition of the hydrographic expertise in the scope of personal accreditation schemes, particularly the international one that the IFHS aims at submitting to the IBSC in 2021.

UNITED KINGDOM: Welcomed the proposed e-Learning Centre and expressed the hope that the lessons learned from the enforced switch to online learning during the current pandemic would be put into practice in a wide range of innovative online and blended learning models.

The Assembly Chair invited the Assembly to endorse the recommendations in A-2 PRO 3.3.

The Assembly Chair concluded with the following Assembly decision and closed the agenda item.

Decision:

- **The Assembly endorsed the activities to install an IHO e-Learning Center based on A-2 PRO 3.3 and the related recommendations of the IRCC/CBSC (A2/42).**

Summary record of Day 3 – Wednesday - 18 November 2020

11. Regional Hydrographic Commissions and Hydrographic Commission of Antarctica

13:15-13:45	<i>IHO Secretariat briefs the audience on significant issues and updates raised by the RHC and HCA reports and refers to the application process of the IHO Resolution 2/1997 as amended by A-2</i>	A2_2020_G_06_EN A2 - Proposal 3.1
13:45-14:30	AC calls for comments	A2_2020_G_06_EN A2 - Proposal 3.1

The Assembly Chair invited Luigi Sinapi, Director Coordination, to introduce the Agenda item.

The Director Coordination introduced the Summary Report of the Regional Hydrographic Commissions and the Hydrographic Commission of Antarctica, stating that the report would be structured in three parts – part one being the achievements, challenges faced/difficulties encountered and lessons learned by the RHCs and the HCA; part two highlighting the recent updates to Resolution 2/1997 as amended by A-2; and part three the actions requested of A-2. He informed the Assembly that reports had been received from each of the 15 RHCs and from the HCA, some of which were further updated as a result of the recent IRCC12 meeting, at which the main achievements and outcomes from the activities of the RHCs and the HCA were discussed. He reported that IRCC12 recognised the impact that the current pandemic has had on the activities of the RHCs and the HCA, however it was pleasing to note that, despite this, improvements had been achieved in the areas of capacity building, harmonisation and sharing of data.

The Director Coordination described the achievements of the RHCs and the HCA in the following areas:

- New technologies: Sharing of information and experiences regarding autonomous survey vehicles and Satellite Derived Bathymetry (SDB);
- MSDI initiatives: Website portals continue to be improved, making key datasets such as bathymetry, shoreline and maritime boundaries more accessible for non-navigation use in areas such as regional risk assessment for maritime accidents, management of marine protected areas and disaster response. Adoption of UN-GGIM Shared Guiding Principles is in progress, and national bathymetric data contributions to the IHO DCDB and to the Seabed2030 Regional Data Assembly Centers are generally increasing, thanks to the establishment of regional coordinators;
- Overlaps: Significant reduction in ENC overlaps has been achieved in some Regions; as a result of the significant efforts on ENC harmonisation and the quality of training provided for the impacted Member States;
- Cooperation: There has been substantial cooperation between RHCs Member States, Regional Organizations and Stakeholders to share information and projects. Of significance is the improved liaison between the HCA Secretariat and COMNAP, IAATO, SCAR and the Executive Secretary of the Antarctic Treaty;
- Regional and IHO activities: There has been a high level of industry participation at the regional level. It has been noted, since A-1 that there has been a much improved exchange of information and awareness of the activities and research campaigns between HCA Members. Member States also continue to contribute extensively to the activities of the IHO through their active participation in IHO Working Groups;
- Capacity Building: The attendance at and participation in Capacity Building activities sponsored by the IHO continues to improve from year to year;

- Membership: The enlargement of the membership of the Hydrographic Commissions is considered beneficial. Actions have been taken in some regions to increase regional membership, and to facilitate the recruitment of new IHO Member States.
- Standards of competence for hydrographic surveyors and nautical cartographers: It is considered important to establish a common set of criteria, with respect to an individual recognition scheme, for the standards of competence for hydrographic surveyors and nautical cartographers at the regional level, which can be applied subsequently at the international level.

The Director Coordination then reported on the challenges faced and/or difficulties encountered within the RHCs and the HCA outside the impact of the current pandemic. These included:

- The vastness and remoteness of the operating environment for some Regions;
- The high cost of survey activities with what is, in many instances, a reducing budget;
- The inability of some Member States to participate at regional conferences and Working Group meetings, which has resulted in non-submission of National reports;
- The reluctance of some Nations to make CSB data available; and
- Difficulties that have been encountered in the coordination of INT Chart schemes and ENC coverage, which has resulted in some discrepancies between new ENCs and existing INT Charts; and inconsistencies in nautical information provided by different producers.

In relation to the impact of the current COVID-19 pandemic, Director Coordination reported that there has been, and will likely continue to be, reduced capacity building activities available to Member States in some Regions. He particularly highlighted training in the familiarisation and implementation of S-100 and S-100 based products. Director Coordination also reported that the role and collaboration of RHCs and the IHO with the Nippon Foundation-GEBCO Seabed 2030 Project, as well as the contribution of the Seabed 2030 Project to the UN Decade of Ocean Science for Sustainable Development (UN Decade) societal goals, are not well understood in some regions. Concerted outreach efforts at the regional and international level are needed to ensure these linkages are made.

In regard to lessons learned, Director Coordination reported that:

- The value of increased collaboration across RHCs (especially adjacent RHCs) and regional partnerships for capacity building training, the Seabed 2030 Project, MSDIWG and others is well recognised. Concerted efforts are required to identify the specific activities of common interest and sustain those connections. Where the RHCs are adjacent and some States are members of both, a merger between RHCs may strengthen regional activities and engagement.
- The benefits of IHO membership is widely recognised. Some associate Members have reported progress with regards to in-Country processes towards gaining IHO membership.
- The awareness and subsequent provision of survey data to INT Chart producer Nations, as well as ENC production coordination, remains critical. In some Regions the implementation of new S-100 based Product Specifications, for instance S-102, is being progressed.
- As a result of recent disasters, some regions are enhancing their disaster response framework to facilitate communication and liaison between the regional States to improve the response times to disasters. In the past year, new disaster response frameworks have been established at the regional level.

The Director Coordination provided a brief overview of the intersessional processes for the review and updating of Resolution 2/1997. He then detailed the substantive changes that have been made to Resolution 2/1997 as proposed to and adopted by A-2 (A-2 PRO 3.1 and

Decision A2/09). These changes have updated the framework under which the IHO and the RHCs cooperate; aligned the relationship between the IHO and the RHCs with Article 8 of the IHO General Regulations; better reflect the cooperation between the IHO and the RHCs; and clarify the RHCs mechanism for coordinating and reporting, and on the roles and responsibilities of the RHC Chairs. Director Coordination reported that the process of the application of Resolution 2/1997, as amended, is in progress. Meanwhile, national reports are being updated in accordance with the new structure annexed to Resolution 2/1997, as amended by A-2, and the IRCC is considering further amendment to the structure to include Crowd Sourced Bathymetry activities. It is considered important that the application process is monitored by the Council and the IRCC.

The Assembly Chair commended Director Coordination on his report and opened the floor to Member States for comments.

JAPAN: On behalf of EAHC informed two cases which might be helpful for other RHCs: the first one was that Brunei-Darussalam successfully hosted an Capacity Building seminar with help of Republic of Korea and India in spite of that Brunei-Darussalam is quite a new Member State; the other one was that EAHC hosted MSI Capacity Building seminar with cooperation of SWPHC across RHC boundary while the RHC boundaries are only for convenience.

LEBANON (Observer): Thanked Director Coordination for his report and highlighted his experience of successful cooperation within their region that included significant support from Hydrographic Office of Italy.

NORWAY: Noted that the revision of Resolution 2/1997 has been a long process, and wished to convey its thanks to John Lowell (USA) for his significant contribution.

COLOMBIA: Reported that it has achieved the conclusion of the International Bathymetric Chart of the Caribbean Sea and the Gulf of Mexico (IBCCA) project (started in 1986) thanks to the assistance of IHO Capacity Building.

The Assembly Chair concluded with the following Assembly decisions and closed the agenda item.

Decisions:

- **The Assembly noted the report on significant issues and updates raised by the RHC and HCA reports (A2/43).**
- **The Assembly noted the efforts of RHCs and HCA to improve cooperation, capacity building activities, data sharing and harmonization (A2/44).**

12. Finance Committee Report

14:30-15:00	<i>Finance Committee report: Secretary-General as Finance Committee Secretary comments on the outcomes of the Finance Committee Meeting.</i>	A2_2020_G_03_EN _Rev1 A2_2020_F_01_EN A2_2020_F_02_EN A2_2020_F_03_EN
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The Assembly Chair invited the Secretary-General to introduce this Agenda item.

The Secretary-General reported that the Finance Committee had met during the week prior to A-2; and reported on the Agenda items that were discussed at the meeting. He stated that he was not intending to repeat his detailed report to the Finance Committee as already done at the meeting of 12 November 2020. He observed that the budget for 2021 will be discussed at the 4th Council meeting for approval.

The Secretary-General then presented the recommendations of the Finance Committee for consideration of the Assembly.

The Secretary-General informed that the Finance Committee has carefully considered all the aspects of the proposed financial report and budget. He noted that the 3rd and 4th recommendations included in the Finance Committee Meeting Report would be addressed under Agenda Item 13.

The Assembly Chair opened the floor to Member States for comments on the remaining recommendations of the Finance Committee. No additional comments were forthcoming.

The Assembly Chair concluded with the following Assembly decisions and closed the agenda item.

Decisions:

- **The Assembly approved the financial report for the three-year intersessional period 2017 - 2019 (A2/45).**
- **The Assembly noted of the actual and assumed impact of the COVID-19 pandemic and preventive measures proposed by the Secretary-General (A2/46).**
- **The Assembly noted of the election of Ms Isabelle Rosabrunetto (Monaco) as Chair of the Finance Committee and Mr Andrew Millard (United Kingdom) as Vice-Chair of the Finance Committee for the Assembly intermediate period commencing after A-2 (2020) until the end of A-3 (2023) (A2/47).**

13. IHO Work Programme and Budget

15:15-15:30	<i>Secretary-General presents the IHO Work Programme and Budget 2021-2023</i>	A2 - Proposal 1.7
15:30-15:45	<i>AC calls for comments on the IHO Work Programme and Budget 2021-2023</i>	A2 - Proposal 1.7

The Assembly Chair invited the Secretary-General to introduce this Agenda item. The Secretary-General provided some explanatory notes as background information on the IHO Work Programme and the Budget Estimate 2021-2023. He highlighted that for the first time the Council was required to prepare a proposal for the 3-year IHO Work Programme and Budget estimates for adoption by the Assembly. He also highlighted the additional column that has been added to the Work Programme named G&T (Goals and Targets) to align the 3-year IHO Work Programme to the new Strategic Plan 2021-2026. The Secretary-General highlighted the large and unexpected increase in health insurance costs; other costs of living in Monaco; the increased request to fund special projects and capacity building measures; and the resulting effects of the current budget allocations. He suggested the inclusion covering the option of a general annual increase of the Member States contribution share by 1% from 2021 to 2023 to be decided by the Council. He highlighted that this option is being proposed to provide more flexibility in these uncertain times and does not necessarily mean that Council will adopt such increases.

The Assembly Chair opened the floor to Member States for comments against each of the proposed actions in addition to the comments in the Red Book. For the proposed action on the 1% share increase, the Assembly Chair re-iterated the Secretary-General's remarks that this is just an option, and Council will have to take all matters into consideration before exercising this option.

CHILI: Does not support the proposed action on the 1% share increase. CHILI stated that this proposal does not take into account the economic circumstances of individual Member States.

BRAZIL: Thanked the Secretary-General for his enlightening presentation. Congratulated the IHO Secretariat's commitment to maximise cost savings. Agrees with the proposal of the Secretary-General, and recommended that any surplus should go to the Special Project or Capacity Building Fund.

The **USA** shares the concern of raising the Member States contributions without a purpose. However, the USA has confidence in the Council to consider objectively any increase and carry out an appropriate consultative process.

MALTA asked for Member States that are members of the Council based on declared national tonnage of shipping, what will be the impact of the redefining of hydrographic interest against an increase in Member States' contributions for those Council members? The Secretary-General responded that though both, Council membership and calculation of Member States contributions are based on national tonnage figures, there is no formal interdependency. The mechanism to calculate Member States contributions is anchored in the IHO Convention (Article XIV a) refers) whereas the definition of that constitutes hydrographic interest is defined in the General Regulations (Article 16 c) refers). Consequently, if the definition of that constitutes hydrographic interest in the General Regulations would change, the basis of the calculation of Member States contributions as written in the IHO Convention remains as is.

DENMARK: Supported the proposal, noting in particular the difficulties being encountered at the present time.

The Assembly Chair concluded with the following Assembly decisions.

Decisions:

- **The Assembly approved the three-year IHO Work Programme and Budget estimates 2021-2023 (A2 PRO 1.7) (A2/48).**
- **The Assembly endorsed the alignment of Work Programme to the Strategic Plan (introduction of column G&T, deletion of column SD and deletion of Annex A) (A2/49).**
- **The Assembly approved the option of a consecutive annual increase of 1% of the Member States contribution share from 2022 to 2023 subject to the annual approval by C-5 and C-6 as part of the approval process of the annual budget (A2 PRO 1.7) (A2/50).**

The Assembly Chair invited the Secretary-General to provide an update on the activities under Work Programme 1 (Corporate Affairs).

The Secretary-General highlighted the UN Sustainable Development Goals (SDG), in particular Goal 14, for which it is considered that the IHO can contribute. He further highlighted the UN Decade of Ocean Science for sustainable development (2021-2030). For this initiative, he stated that the IHO has an established long standing cooperation with UNESCO-IOC including the joint activities under GEBCO, the Seabed 2030 Project and Sub-Committee of

Underwater Feature Names (SCUFN) and their relevance to Goal 2 and Goal 3 of the new IHO Strategy.

In relation to information management, the Secretary-General highlighted the overhaul of the IHO Data Centre for Digital Bathymetry (DCDB) web portal, data management tools and interface for Big Data ingestion, and acknowledged the operations of the DCDB by NOAA (USA). He highlighted the advances in the IHO Geospatial Information (GI) Registry and stated that this is the only Registry of its type in active use. He further highlighted the introduction of the online voting system for IHO Circular Letters.

In respect to public relations and outreach, the Secretary-General highlighted the new IHO corporate design and branding; the updated website, with a new website for the International Hydrographic Review to be established soon. He also highlighted social media outreach through IHO YouTube and other social media outlets such as Facebook, LinkedIn and Twitter, which is considered to have been very successful in reaching a multitude of people outside the traditional sphere of hydrography.

The Secretary-General reported on plans for the centenary celebrations of the IHO on 21 June 2021; and publication of the Prestige Book.

The Assembly Chair closed the agenda item.

14. Host country resolution

15:45-15:50	<p><i>AC proposes</i></p> <ul style="list-style-type: none"> - <i>a resolution expressing gratitude to the Host country,</i> - <i>adoption of the Seating Order of A-2 to be applied for A-3</i> 	A2_2020_G_08_EN_Rev1
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The Assembly Chair presented the standing Resolution to be presented to the Government of Monaco in appreciation for hosting the Assembly and providing the premises for the Organization.

The Assembly Chair stated that, in the hope that A-3 would be conducted in Plenary, the seating order for the Member States at A-3 would be as decided for A-2 – commencing at the letter “Q” (French alphabet applies).

The Assembly Chair concluded with the following Assembly decisions and closed the agenda item.

Decisions:

- **The Assembly approved the draft Resolution expressing gratitude and appreciation to the Government of Monaco (A2/51).**

“The Assembly:

***Recognizing* the continued close association and significant support of His Serene Highness Prince ALBERT II and the Government of the Principality of Monaco in hosting the International Hydrographic Organization,**

***Appreciating* the kind generosity of His Serene Highness and the Government of the Principality of Monaco in providing premises for the Organization,**

Further appreciating the Opening Address delivered by video by His Serene Highness Prince ALBERT II at the 2nd Session of the IHO Assembly,

Expresses its profound gratitude to His Serene Highness Prince ALBERT II and the Government of the Principality of Monaco for their graciousness and kind hospitality extended to the Organization, and

Requests the delegation of the Principality of Monaco to convey to His Serene Highness and the Government of the Principality of Monaco the sincere sentiments of the Assembly expressed above.”

- The Assembly adopted the seating order originally agreed for the 2nd Assembly Session now for the 3rd Assembly Session (A2/52).

15. Review of Actions and Decisions

15	15:50-16:20	<i>AC review the List of Actions</i>
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The Assembly Chair presented the draft list of Decisions of A-2.

16. Closure of A-2

16	16:20-16:30	<i>Date of the 3rd Assembly Session 2023 – Closure of the Assembly</i>
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The Assembly Chair announced the prospective date of A-3 as 25-29 April 2023.

The Assembly Chair made his closing remarks. He expressed his gratitude that the combination of the virtual sessions and the advance approval of decisions by means of Circular Letters effectively led to a successful conduct of the Assembly. He thanked to Member States for their willingness and discipline to make the remote event work and the Secretariat for the technical support. However, he expressed regret that the social and professional interaction between participants that is normal for an Assembly could not occur under these extraordinary conditions and hybrid format under which this Assembly had been conducted.

DENMARK: Was grateful to be elected Vice-Chair of the Assembly, and thankful that her services had not been required. Thanked the Assembly Chair for his conduct of A-2.

The Secretary-General thanked the Assembly Chair and all those working behind the scenes. He noted in particular the decisions of the Assembly regarding the adoption of the Revised Strategic Plan and the S-100 Implementation Strategy as key outcomes. He then presented a gift to the Assembly Chair in recognition of his outstanding efforts as Chair of the 2nd Session of the IHO Assembly.

BANGLADESH: Thanked the IHO for all its assistance in his 37 years of service, and announced that he is retiring.

The Assembly Chair then thanked all participants for their attendance and contributions, and formally closed the 2nd Session of the IHO Assembly.

**LIST OF THE 2ND ASSEMBLY
CIRCULAR LETTERS
2019 - 2020**

List of Assembly Circular Letters

Title	ACL N°
Announcement and general arrangements	ACL01
Call for nomination of candidates for the position of IHO Director	ACL02
Nomination of Rear Admiral Shepard M. Smith by the USA for the position of IHO Director	ACL02bis1
Nomination of Captain (Ret) Alberto Pedrassani Costa Neves by Brazil for the position of IHO Director	ACL02bis2
Nomination of Rear Admiral Luigi Sinapi by Italy for the position of IHO Director	ACL02bis3
Submission of proposals to the assembly	ACL03
Invited Observers	ACL04
Ships' visits and receptions	ACL05
IHO Member States'exhibition	ACL06
Invited Observers - Submission of Final Lists for approval	ACL07/Rev1
Preparation of the Table of Tonnages	ACL08
Selection of Chair of the 2 nd Session of the IHO Assembly	ACL09
IHO Member States'Exhibition	ACL10
Approval of the List of Invited Observers	ACL11
Proposals for Consideration by the 2 nd Session of the IHO Assembly	ACL12
Selection of Chair of the 2 nd Session of the IHO Assembly	ACL13
Hydrographic Industry Exhibition	ACL14
Distribution of the Assembly Documents	ACL15
Distribution of the second tranche of Assembly Documents	ACL16
Proposed Scenario on the postponement of the 2 nd Session of the IHO Assembly and Associated Activities resulting from exceptional circumstances due to COVID-19	ACL17
Final list of the candidates for the position of IHO Director	ACL18
Approval of the proposed scenario on the postponement of the 2 nd Session of the IHO Assembly and associated activities	ACL19
Election for the position of IHO Director	ACL20
Call for approval of the first tranche of proposals originally for consideration by the 2 nd Session of the Assembly	ACL21
Call for approval of the second tranche of proposals originally for consideration by the 2 nd Sssion of the Assembly	ACL22
Announcement and General Arrangements	ACL23 Rev1
Presentation of the results of election for the position of IHO Director and repetition of the election in case of a tie	ACL24
Result of the election for the position of IHO Director	ACL25
Approval of the first tranche of proposals originally for consideration by the 2nd Session of the Assembly	ACL26
Approval of the second tranche of proposals originally for consideration by the 2nd Session of the Assembly	ACL27

List of Assembly Circular Letters

Formation of the IHO Council for the period 2020 – 2023 and call for nominations for the positions of Chair and Vice-Chair of the IHO Council	<u>ACL28</u>
Alternative conduct of the 2nd Session of the IHO Assembly and 4th meeting of the Council as remote events	<u>ACL29 Rev1</u>
Approval of the alternative conduct of the 2nd Session of the IHO Assembly and 4th meeting of the Council as remote events	<u>ACL30</u>
2nd Session of the Assembly as a remote event - Logistic arrangements	<u>ACL31</u>

All the circular letters are included in VOL. 2 of the Proceedings