



Second Session of the IHO Assembly (A-2)

16 – 18 November 2020

Hybrid Event

Final Summary Records

Day one – Monday, 16 November 2020

1. Opening Remarks

13:15-13:35	<i>Opening remarks</i>	
	<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.

Intervention: NOR: 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.

Intervention: MLT: Thanked Uruguay and India for their proposals to the Council on the revised definition of Hydrographic Interest. MLT recommended that no changes are made to the definition of what constitutes Hydrographic Interest. The Assembly Chair responded that the MLT intervention is a clear reminder that no consensus had been reached in the course of the related Council deliberations.

Intervention: BRA: 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.

Intervention: JPN: 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	S-23: <i>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.

Intervention – CHN: 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.

Intervention – IRN: 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".

Intervention – NZL: 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.

Intervention – ROK: 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.

Intervention – 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.

Intervention – JPN: 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."

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 HSSC Chair, Mr Magnus Wallhagen (Sweden), to deliver the HSSC Report. The HSSC 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 HSSC 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 HSSC 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 HSSC 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 HSSC Chair acknowledged the work and assistance of the IHO Secretariat, Working Group and Project Team Chairs and all members of the HSSC 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 HSSC as part of the approval process of the Council Chair report (A2/26).
- The Assembly endorsed the HSSC recommendations on the Future of the Paper Nautical Chart (A2/27).
- The Assembly tasked the HSSC 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 HSSC, 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.

Intervention: JPN: Thanked the Council Chair for the presentation. JPN 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.

Intervention: USA: Agrees with the minor language changes within the proposal, and looks forward to progressing with the implementation.

Intervention: COL: Raised some concern over the impacts on the capacity of marine data producing authorities in regard to implementing S-100.

Intervention: FRA: 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 FRA for its comments and seized the opportunity to congratulate SHOM on their 300th anniversary.

Intervention: CAN: 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.

Intervention: GBR: Welcomes the proposal and acknowledges the concern raised by JPN. Also acknowledged the significant challenges ahead as mentioned by COL and others, and is looking forward to supporting and working with partners, as required.

Intervention: CHN: Stated that it is very important that the dual-fuel capability is workable and performs seamlessly for the mariner.

Intervention: NOR: 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 GBR and others.

Intervention: IND: 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.

Intervention: JPN: Supported IND 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 HSSC Chair to report on the proposed implementation timeline.

The HSSC 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 ENCs 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 HSSC 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 HSSC Chair presented additional HSSC 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 HSSC 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 HSSC 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 ENCs. In addition, the dual-fuel concept will affect the coordination of regional ENC schemes and collaboration with the RENCs; and the distribution and interaction with other international bodies such as the IMO, IEC, and CIRM.

The HSSC 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 HSSC 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.

Intervention: BRA (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.

Intervention: USA (bullet 4): Requested that the HSSC conducts a full investigation as to the options of having parallel provision of S-57 and S-101 datasets or dual-fuel. The HSSC Chair responded that the HSSC 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.

Intervention: ROK (bullet 5): ROK thanked the HSSC Chair in respect to the report on PRO 2.3. Regarding the HSSC 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 ENCs from 2024 according to the previous S-100 Roadmap schedule. ROK would like to see the revision as soon as possible. The HSSC Chair welcomed the comments of ROK and acknowledged the contribution of ROK to the HSSC. 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 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 (A2/32).
- 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 ENCs to address the valid concerns raised by China in A2/PRO 2.2 to be reported by HSSC 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 Seabed2030 Coordinators to become joint CSB/Seabed2030 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 Seabed2030 Project Team and with the respective RHC CSB/Seabed2030 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 Seabed2030 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 ENCs 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.

Intervention: NOR: Noted that the Seabed2030 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/Seabed2030 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 ENCs 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.

Intervention: FRA: 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 ENCs, namely early 2024, was well in advance of the entry into force of the updated IMO/IEC performance standards, expected in early 2026. ENCs 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.

Intervention: 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 – End of Session 2</i>	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.

Intervention: JPN: Asked for clarification of the impact on the IHO budget on the establishment of the e-Learning Center. ROK 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.

Intervention: 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.

Intervention: GBR: 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).

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 Seabed2030 Project, as well as the contribution of the Seabed2030 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 Seabed2030 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.

Intervention: JPN: 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 ROK and IDN 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.

Intervention: LBN (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.

Intervention: NOR: 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.

Intervention: COL: 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.

Intervention: CHL: Does not support the proposed action on the 1% share increase. CHL stated that this proposal does not take into account the economic circumstances of individual Member States.

Intervention: BRA: 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.

Intervention: USA: 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.

Intervention: MLT: 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.

Intervention: DNK: 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 Seabed2030 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, confirmed by the signature of the revised Host Nation Agreement between the Government of His Serene Highness and the Organization,

Further appreciating the provision of the Auditorium Rainier III in Monaco for the 1st Session of the Assembly and its associated Exhibitions,

Further appreciating the provision of the Port Facilities of Monaco for the ships that called during the 1st Session of the 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

15:50-16:20	<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 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.

Intervention: DNK: 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.

Intervention: BGD: 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.
