



MACHC-Carta 10/2019

23 de Septiembre, 2019

A Todos los Estados Miembros de la MACHC, Miembros Asociados, y Observadores

Asunto: Agenda Revisada para la 20ª Conferencia de la MACHC
Lista Actualizada de Acciones de la MACHC para su Revisión
Acta Actualizada de la MACHC19

Estimados Colegas,

1. Agenda de la MACHC 20, Rev1:

Adjunto es una agenda revisada basada en los comentarios recibidos de los Estados Miembros a CL08. **Los principales cambios a tener en cuenta son que la reunion del Grupo de Trabajo de Cartografía Integrada (MICC) como la del Grupo de Trabajo de Infraestructura de Datos Espaciales Marinos (MMSDI) serán ahora el martes 3 de diciembre por la tarde, y que la Plenaria de la MACHC comenzará el miércoles 4 de diciembre.**

2. Actualizaciones de la Lista de Acciones de la MACHC:

Como recordarán en el 19 ° MACHC en Cartagena, Colombia, la Acción 19.1.5 solicitó al Presidente que: *“Revise todas las acciones recientes de la OHI, el IRCC y el HSSC en el contexto de la lista actual de la MACHC y determine cómo consolidarlas, racionalizarlas y tomar medidas al respecto”*

Como parte de esta revisión, el Presidente de Grupo encontró una serie de acciones duplicadas o similares, así como acciones combinadas con decisiones o actividades que pertenecen a los planes de trabajo de los Grupos de Trabajo de la MACHC. Consolidamos acciones repetitivas siempre que sea posible. Distinguimos las decisiones de la MACHC19 de las acciones. Las acciones continuas consolidadas se encuentran al final de la lista en la Tabla 3. Se incluye al principio una lista de las acciones IRCC11 más recientes para la MACHC para facilitar la referencia. La lista de acciones adjunta incluye, cuando corresponda, todos estos cambios propuestos con texto explicativo, Proponemos eliminar todas las acciones "Completadas" antes de la MACHC19, lo que acortará considerablemente la lista de acciones para su revisión en la MACHC20.

Solicitamos a los Estados miembros que proporcionen actualizaciones sobre las acciones pendientes restantes antes del 18 de octubre del 2019. Esto dará tiempo para incorporar sus comentarios y finalizar la lista para distribuir una versión "limpia" antes de la MACHC20.

3. Acta Actualizada de la MACHC19:

También, para su referencia, se adjunta una copia actualizada del acta final de la MACHC19. Incluye los comentarios recibidos y distingue mejor entre "Decisiones" y "Acciones" dentro del texto.

Por favor déjenme saber si tienen más preguntas o inquietudes. ¡Espero verlos a todos en Santo Domingo!

Sinceramente,



Kathryn L. Ries

Sub-Directora, Oficina de Levantamientos Hidrográficos Costeros, U.S. NOAA

Presidenta, Comisión Hidrográfica Meso Americana y del Mar Caribe

MACHC.Chair@noaa.gov

Adjuntos:

- Agenda de la MACHC20, Rev1
- Lista de Acciones Actualizadas de la MACHC
- Acta Actualizada de la MACHC19



**ORGANIZACION HIDROGRAFICA INTERNACIONAL
COMISION HIDROGRAFICA MESO AMERICANA Y DEL MAR CARIBE
20ª REUNIÓN DE LA COMISIÓN HIDROGRÁFICA DEL MAR MESOAMERICANO Y DEL CARIBE**

(MACHC 20)

**Santo Domingo, República Dominicana
2 de diciembre - 6 de diciembre de 2019**

AGENDA PROVISIONAL

HORA	ACTIVIDADES PRE-MACHC Domingo, 1 Diciembre 2019	RESPONSABLE
06:00-24:00	Recepción de los participantes de la MACHC por parte del personal del Servicio Hidrográfico. La Armada de la República Dominicana proporcionará transporte desde el aeropuerto hasta el hotel Crowne Plaza.	SHARD

HORA	ACTIVIDADES PRE-MACHC Lunes, 2 de Diciembre 2019 Salon Caribe	RESPONSABLE
	SEMINARIO DE GOBERNANZA HIDROGRÁFICA	OHI/UK
08:00-08:15	Información de seguridad a cargo de la Seguridad a cargo del hotel Crowne Plaza.	Crowne Plaza Security
08:15-08:30	Información sobre la Zona Colonial por un miembro del Ministerio de Turismo cerca del hotel Crowne Plaza.	Ministro de Turismo
08:30-17:30	Seminario MACHC sobre Gobernanza Hidrográfica (agenda próximamente)	OHI/UK

TIME	PRE-MACHC ACTIVITIES Tuesday, 03 December 2019 Salon Caribe	RESPONSIBLE
08:15-09:00	Registración MACHC 20ª	Anfitrión
08:30-12:00	SEMINARIO DE GOBERNANZA HIDROGRÁFICA <i>Continuado</i> (Introducción a Capacitación MSDI)	OHI/UK
12:00-13:00	Almuerzo	Todos
	REUNIONES DE GRUPO DE TRABAJO PRE-PLENARIO (reuniones de nivel de trabajo para revisar el progreso anual y preparar informes resumidos con cualquier recomendación o problema resultante para consideración en el Plenario de la MACHC)	Presidentes y Miembros
13:00— 15:00	Reunión del Grupo de Trabajo de Cartografía Integrada (MICC): Agenda del presidente del MICC	Suriname

15:00— 17:00	Reunión de la Infraestructura de Datos Espaciales Marinos (MMSDI) - Agenda del Presidente del MSDI	E.E.U.U.
-----------------	--	----------

08:30-09:00	<p style="text-align: center;">Día Uno de la MACHC 20 Miércoles, 4 de Diciembre, 2019</p> <p style="text-align: center;">APERTURA FORMAL DE LA MACHC</p> <p style="text-align: center;">Salon Caribe Discursos de Apertura <i>(Vestimenta de Negocios y Uniforme Blanco de Marina)</i></p>	Presidente, OHI Secretaría, Anfitrión
09:00-10:00	<p>1. Asuntos de Administración / organización de la MACHC</p> <p>1.1 Introducciones - Participantes serán invitados a presentarse 15 minutos</p> <p>1.2 Aprobación de la Agenda Doc: MACHC20-01.2 Agenda - El presidente invita a los participantes a comentar sobre la agenda y el calendario en caso de que sea necesario realizar actualizaciones. - Agenda es aprobada. 10 minutos</p> <p>1.3 Lista de documentos/Disposiciones Administrativas Docs: MACHC20-01.3A Lista de Documentos MACHC20-01.3B Lista de Participantes - Lista de Documentos en la página web de la IHO/MACHC-20 - Lista de Documentos es actualizado según sea necesario - Orientación logística e información según sea necesario. 15 minutos</p> <p>1.4. Asuntos derivados de acta de reunión de la MACHC 19 Doc: MACHC20-01.4 Minutos de la MACHC 19 10 minutos</p> <p>1.5. Revisión de la lista de acciones de la MACHC 19 Doc: MACHC20-01.5 Lista de Acción de la MACHC 19 20 minutos</p> <p>Fotografía Oficial de la Sesión</p>	<p>Todos/Presidente</p> <p>Presidente</p> <p>Presidente</p> <p>Anfitrión</p> <p>Presidente</p> <p>Presidente</p> <p>Todos</p>

10:00-10:30	Descanso	
10:30-11:30	<p>2. Desarrollos de la MACHC, organismos de la OHI, aspectos de Política</p> <p>2.1 Informe de la Secretaría de la OHI Doc: MACHC20-02.1 Informe de la Secretaría de la OHI - La Secretaría de la OHI brinda una sesión informativa sobre los asuntos actuales de la OHI. 10 minutos</p> <p>2.1.1 Informe de IRCC Doc: MACHC20-02.1.1 10 minutos</p> <p>2.1.2 Informe de HSSC Doc: MACHC20-02.1.2 10 minutos</p> <p>2.1.3 Bienvenida a Guyana como miembro nuevo de la OHI Firma de los Estatutos de la MACHC 10 Minutos</p> <p>2.2 Informe del Consejo. Doc: MACHC20-02.2 Informe del Consejo 10 minutos</p> <p>2.3 Informe de MSI/WWNWS Doc: MACHC20-02.3 Informe del WWNWS 10 minutos</p> <p>Observación General El Presidente invita a los representantes de los organismos / grupos de trabajo de la OHI a presentar los desarrollos clave (políticas), decisiones, acciones o implicaciones que afectan a la región de la MACHC.</p>	<p>Presidente</p> <p>OHI</p> <p>Presidente</p> <p>Brazil</p> <p>Presidente/ Guyana</p> <p>Presidente, Consejo</p> <p>Presidente, WWNWS</p>
11:30-12:00	<p>2.4 Hidrografía en América Latina: Tendencias y Perspectivas Doc: MACHC20-02.4 10 minutos</p> <p>2.5 Un Sistema de Información Hidroespacial, la Próxima Frontera para Oficinas Hidrográficas Doc: MACHC20-02.5 10 minutos</p>	<p>HYPACK</p> <p>ESRI</p>
12:00-13:30	Almuerzo	

13:30-14:00	<p>3. Informes Nacionales</p> <p>Instrucciones y guías para los grupos de trabajo de Informe Nacional</p> <p style="text-align: center;">Observación General</p> <p>Los Miembros de los Estados se dividirán en tres grupos paralelos de aproximadamente 10 cada uno con un Presidente con el objetivo de:</p> <ol style="list-style-type: none"> 1) Proveer una oportunidad para una mayor discusión y interacción sobre el contenido de los informes nacionales. 2) Sintetizar los resultados de la discusión en recomendaciones prioritarias para el plan de desarrollo de capacidades de la MACHC 2021-23 a ser considerado por el plenario <p>Las presentaciones no pretenden replicar el contenido del Informe Nacional, sino más bien presentar asuntos clave. Se les pide a los países que usen la Plantilla PPT de Informes Nacionales para resumir lo siguiente:</p> <ol style="list-style-type: none"> a. Los tres logros principales b. Los tres principales desafíos c. Los tres planes principales que afectan a la región (cartas náuticas, levantamientos hidrográficos, capacitación, otros) d. Dos recomendaciones para el plenario de desarrollo de capacidades <p>Las recomendaciones deben tener en cuenta los siguientes criterios: el mayor impacto regional colectivo; mayor retorno de la inversión; mayor oportunidad para aprovechar otros socios / recursos</p> <p>El Presidente solicita a los Miembros y Miembros Asociados que no lean verbalmente el informe nacional escrito en sí.</p>	<p>Presidente</p> <p>Miembros de Países y Miembros Asociados de Países</p> <p>Cada grupo de trabajo tendrá un Presidente para guiarlos a través de este proceso.</p> <p><i>(se invita a los observadores, representantes de la industria y organizaciones regionales a participar en el grupo de trabajo de su elección)</i></p>
14:00-15:30	Los grupos de trabajo escuchan las presentaciones del Informe Nacional (10 minutos, incluyendo preguntas y respuestas), utilizando la plantilla PPT proporcionada.	Todos
15:30-16:00	Descanso	
16:00-17:30	<p>Grupos de trabajo / presentaciones del Informe Nacional continúan;</p> <p>Los grupos de trabajo se comprometen individualmente para resumir y desarrollar las recomendaciones principales de consenso final para consideración plenaria.</p> <p style="text-align: center;">Observación General</p> <p>Los presidentes de grupos de trabajo tendrán un proceso específico para guiar a su grupo hacia este resultado.</p>	Todos
19:00	Cóctel de bienvenida	Anfitrión

HORA	DIA DOS DE LA MACHC 20 Jueves, 5 de Diciembre, 2019 Salon Caribe	RESPONSABLE
	Vestimenta Informal de Negocios (Uniforme Blanco Marino de manga corta / guayabera de manga corta / similar)	
	Grupo de trabajo concluyen	
8:30-10:00	Los presidentes de los grupos de trabajo informan al Plenario las recomendaciones finales y los mensajes claves de sus grupos y participan en preguntas y respuestas.	Presidente/Todos
	Revisar y priorizar los resultados del día anterior a través de "encuestas en vivo"	Presidente/Todos
10:00-10:30	Descanso	
10:30-11:45	<p><u>3.1 Actividades industriales para apoyar a los países de la región</u></p> <p>3.1.1 Levantamiento Hidrográfico Satelital de Pequeñas Islas Remotas y Estados en Desarrollo Doc: MACHC20-03.1.1 10 minutos</p> <p>3.1.2 Aumentar la conciencia hidrográfica utilizando USV Doc: MACHC20-03.1.2 10 minutos</p> <p>3.1.3 Transparencia en aguas poco profundas SDB: niveles de mecanismos de garantía de calidad y nuevas capacidades de software SDB Doc: MACHC20-03.1.3 10 minutos</p> <p>3.1.4 Producción S-101 con el software Teledyne CARIS Doc: MACHC20-03.1.4 10 minutos</p> <p>3.1.5 Tecnologías de la CII: Solución de Transmisión de Datos y Certificación S-5 / S-8 B de la OHI Doc: MACHC20-03.1.5 10 minutos</p>	<p>TCarta</p> <p>iXblue</p> <p>EOMAP</p> <p>Teledyne</p> <p>IIC</p>
11:45-12:00	<p><u>4. Informes de los Estados y Organizaciones Observadores</u></p> <p>4.1 Asociación Internacional de Ayudas Marinas a las Autoridades de Navegación y Faro Doc: MACHC20-04.1 10 minutos</p>	Gerente de Desarrollo de Capacidades y Recursos
12:00-13:30	Almuerzo	
13:30-14:00	<u>4. Informes de las Organizaciones de Observación - continuación...</u>	

	<p>4.2 Subcomisión de la COI para el Caribe y las Regiones Adyacentes Doc: MACHC20-04.2 10 minutos</p> <p>4.3 Organización Marítima Internacional Doc: MACHC20-04.4 10 minutos</p>	<p>Secretario</p> <p>Asesor Marítimo Regional</p>
14:00-15:30	<p>5. Creación de Capacidad Regional: Influenciando Asociaciones de Creación de Capacidad</p> <p>5.1 Informe CBC <i>Los presidentes de los comités solicitaron presentar un breve resumen de la reunión CBC de la OHI y los logros anuales.</i> Doc: MACHC20-05.1 10 minutos</p> <p>5.2 Informe de COCATRAM en sus Proyectos Regionales / Prioridades de Capacitación Doc: MACHC20-05.2 10 minutos</p> <p>5.3 Iniciativas de Creación de Capacidad de la OHI / IALA: Creación de capacidad marítima y marina en el Caribe para la resiliencia climática y el desarrollo sostenible Doc: MACHC20-05.3 10 minutos</p> <p>5.4 Proyectos de Mapeo Regional del Banco Mundial y Banco Interamericano de Desarrollo Doc: MACHC20-05.4 10 minutos</p> <p>5.5 Prioridades vecinas de RHC CB: SEPRHC y SWAtHC Doc: MACHC20-05.5a and 05.5b 20 minutos (cada uno 10 minutos)</p> <p>Resumen de la sesión y cualquier implicación para el Plan de Desarrollo de Capacidad de la MACHC</p>	<p>Presidente, Coordinador de Desarrollo de Capacidades</p> <p>Secretario General</p> <p>OHI/IALA</p> <p>Director del Proyecto</p> <p>Colombia/SEPRHC Brazil/SWAtHC</p> <p>Coordinador de Desarrollo de Capacidades</p>
15:30-16:00	Descanso	
16:00-17:30	<p><u>7. Respuesta de la MACHC a desastres (resolución OHI 1/2005)</u></p>	<p>Presidente</p>

	<p>Doc: MACHC20.07.1 Marco de respuesta a desastres de la MACHC 10 minutos</p> <p>7.2 Respuesta a los impactos del Huracán Dorian en Las Bahamas. Doc: MACHC20-07.2 10 minutos</p> <p>7.3 Respuesta a los impactos del Huracán Dorian en Las Bahamas. Doc: MACHC20-07.3 10 minutos</p> <p>7.4 Levantamientos Hidrográficas modernos como Herramienta de Mitigación de Desastres Doc: MACHC20-07.4 10 minutos</p> <p>7.5 Agencia de Manejo de Emergencias por Desastres del Caribe Doc: MACHC20-07.5 10 minutos</p> <p>7.6 Sistema de Alerta de Tsunamis y otros Peligros Costeros para el Caribe y Regiones Adyacentes (ICG / Caribe EWS) Doc: MACHC20-07.6 10 minutos</p>	<p>UK</p> <p>NTH</p> <p>Fugro</p> <p>Regional Coordinator</p> <p>Director</p>
	<p><i>Possible evento nocturno a determinarse</i></p>	

HORA	DIA TRES DE LA MACHC 20 Viernes, 6 de Diciembre, 2019 Salon Caribe	RESPONSABLE
	Vestimenta Informal de Negocios (Uniforme Blanco Marino de manga corta / guayabera de manga corta / similar)	
8:30-10:00	<p>6. Levantamientos y Riesgos</p> <p>6.1 Evaluación Económica de Riesgos en la Navegación Marítima en la Región del Gran Caribe Doc: MACHC20-06.1 10 minutos</p> <p>6.2 Estadísticas de accidentes y análisis de datos AIS para el Caribe Doc: MACHC20-06.2 10 minutos</p> <p>6.3 GEBCO/IBCCA Doc: MACHC20-06.3 10 minutos</p> <p>6.4 GEBCO/Seabed 2030 y contribuciones de la MACHC Doc: MACHC20-06.4 10 minutos</p> <p><i>Otras presentaciones (a ser determinado)</i></p>	<p>Universidad de las Indias Occidentales</p> <p>Universidad de las Indias Occidentales</p> <p>Mexico/ Colombia</p> <p>Jefe, Océanos Atlántico / Índico Centro de Datos Regionales</p>
10:00-10:30	Descanso	
10:30-12:00	<p>8.1 MMSDI WG Informe <i>Los presidentes solicitaron presentar un breve resumen de los logros anuales, resultado de la reunión previa a la Plenaria y resaltar cualquier recomendación / problema que deba ser considerado o aprobado por la Plenaria</i> Doc: MACHC20-08.1 10 minutos</p> <p>8.2 Actualización de UN-GGIM (Manejo de Información Geoespacial Marino) Doc: MACHC20-08.2 10 minutos</p> <p>8.3 Atlas Marino del Caribe 10 minutos</p>	<p>MMSDI Presidente</p> <p>GGIM Presidente</p> <p>Director</p>

	<p>8.4 MapAction: Conjuntos de Datos de Navegación para Respuesta a Desastres Doc: MACHC20-08.4 10 minutes</p> <p>8.5 Necesidad de una Infraestructura de Datos Espaciales Marinos a través de Mesoamérica y el mar Caribe Doc: MACHC20-08.5 10 minutes</p> <p>Resumen de la sesión y cualquier implicación para el MMSDI WP</p>	<p>Coordinador Regional</p> <p>University of the West Indies</p> <p>MMSDI Presidente</p>
12:00-13:30	Descanso	
13:30-15:00	<p>9. Cartas Náuticas y Publicaciones</p> <p>9.1 MICC Informe Doc: MACHC20-09.1 MICC Informe – El presidente de MICC presenta el informe de MICC <i>Se le solicita al Presidente que presente un breve resumen de los logros anuales, el resultado de la reunión previa a la Plenaria y resalte cualquier recomendación / problema que deba ser considerado o aprobado por la Plenaria</i> 10 minutos</p> <p>9.2 Ejemplos de otros esquemas RHC ENC Doc: MACHC20-09.2 20 minutes (10 minutes each)</p> <p>9.3 Propuesta del esquema de ENC para la MACHC Doc: MACHC20-09.3 10 minutes</p> <p>9.4 Futuro de la carta náutica de papel: resultados de levantamientos hidrográficos de la OHI Doc: MACHC20-09.4 10 minutes</p> <p>9.5 ENCs de alta definición para navegación de precisión Doc: MACHC20-09.5 10 minutes</p> <p>Resumen de la sesión y cualquier implicación para el plan de trabajo del MICC</p>	<p>MICC Presidente</p> <p>Brazil/SWatHC Colombia/SEPRHC</p> <p>Colombia</p> <p>OHI</p> <p>Representante de Industria</p> <p>MICC Presidente</p>
15:00-15:30	Descanso	
15:30-17:00	10. Actividades de cierre	Todos

	<p>10.1 Cualquier otro negocio - El presidente invita a los participantes a presentar cualquier otro asunto. Preparativos para la Asamblea de la OHI</p> <ul style="list-style-type: none"> • Documento informativo sobre la propuesta de la Asamblea de la OHI para redefinir el Interés Hidrográfico. • Representantes de MACHC ante el Consejo de la OHI <p>10.3 Revisión de acciones y decisiones - Presidente revisa acciones y decisiones.</p> <p>10.4 Lecciones aprendidas identificadas - El presidente invita a los participantes a proveer asuntos (de procedimiento) que se tengan en cuenta para futuras reuniones</p> <p>10.5 Próxima reunión - El presidente invita a los participantes de ser anfitrión para la próxima o próximas reuniones de la MACHC</p> <p>10.6 Cierre de la reunión</p>	
20:00-23:00	Cena de compañerismo en honor a nuestros países vecinos. (Club Naval de Oficiales)	SHARD

HORA	Sábado 7 de Diciembre, 2019	RESPONSABLE
10:00-11:00 (sujeto a cambio)	Transporte de los participantes al Aeropuerto Internacional de las Américas por miembros del Servicio Hidrográfico Naval de la República Dominicana.	SHARD



INTERNATIONAL HYDROGRAPHIC ORGANIZATION
MESO AMERICAN & CARIBBEAN SEA HYDROGRAPHIC COMMISSION



**19th Meso American & Caribbean Sea Hydrographic
Commission Meeting**
26 November- 1 December 2018
Cartagena de Indias, Colombia
List of Actions

List of MACHC19 Decisions: (separated from MACHC19 Actions below and now integrated into the MACHC19 Minutes):

MACHC 19 Decisions			
No.	Reference	Decision	Comments
1	19.1.2	The modified Agenda and Timetable of the 19 th MACHC were approved.	
2	19.1.4	The minutes of the 18 th MACHC Conference were approved.	
3	19.5.1	The 2019 CB Work programme and proposed priority activities for 2020 were approved by the Plenary.	
4	19.7	The Draft Disaster Response Plan Framework, developed during the pre-Seminar for consideration by the MACHC Plenary, was approved.	
5	19.8.7	The MEIP Report was approved including the proposal to change the MEIP name to be more reflective of the larger MSDI.	
6	19.8.7	The plenary agreed to the establishment of the new MMSDI WG.	
7	19.9	MICC Report was approved, including the change of Chair from the U.S. to Suriname.	

List of IRCC Actions for RHCs:

Legend
White: open
Light Grey: continuous
Light Green: completed or closed

Reference	Action	Responsible party	Due date	Status
IRCC 11/1	RHC Chairs to confirm/update the representatives to the IHR Editorial Board.	MACHC Chair	30 Aug 2019	Completed. (Chris Thorne UK is rep)
IRCC 11/8	RHC Chair to request MSI National Coordinators to review the contents of the relevant Annexes of the GMDSS Master Plan – to ensure consistency for their national entries.	MACHC Chair; CB Coordinator (invite countries to come to meeting with this information complete)	30 July 2019	Open—Moved to continuous action list.
IRCC 11/12 (MACHC 17.6.5)	RHC Chairs to consider the tasks listed as duties for the Regional Seabed Coordinator/Mechanism (doc. IRCC11-0713) and to include Seabed 2030 in RHC work plans and reports to IRCC.	MACHC Chair	IRCC 12	Completed.
IRCC 11/13	RHC Chairs to provide reports to A-2 to the IHO Secretariat in accordance with the Action C2/53.	MACHC Chair	15 Nov 2019	Open.
IRCC 11/15	IRCC Members to provide feedback on the draft Strategic Plan and on the implementation of the IRCC work programme to the SPRWG Chair.	MACHC Member States	24 June 2019	Completed. Via CL 7.
IRCC 11/16	RHC Chairs to invite Members to make comments and suggestions to the secretary of the S-100 services roadmap drafting group (Council Chair, RDML Smith, shep.smith@noaa.gov).	MACHC Chair	24 June 2019	Completed. Via CL 7.

Table 1: NEW ACTION ITEMS FROM THE 19th MACHC

No	Reference	Action	Responsible party	Due date	Status
List of actions 19th MACHC meeting					
19.4.1a	Reports from Observing Organizations	Countries reach out to the National Tsunami Warning contacts provide bathymetric data to support improved land-sea inundation models.	MACHC Member States	ASAP	Open. Moved to continuous action list.
19.1.5	Consolidate Actions	Review all the recent IHO, IRCC and HSSC actions in the context of the current MACHC list and determine how to consolidate, streamline, and take action on them.	Incoming Chair	ASAP	Open. (to be completed by MACHC 20)
19.2.3a	IRCC	Chair to circulate the amended Resolution 2/1997, including comments provided already by MACHC members states, for further input immediately after the meeting with a view to providing comments back to the IRCC by the end of the year.	MACHC Chair	ASAP	Completed. Sent to IRCC Chair December 20, 2018.
19.5	Capacity Building	Members to send capacity building and other requirements officially to the Chair to channel to others/committees who might help;	MACHC Member States	ASAP	Open. Moved to the continuous action list.
19.5a	Capacity Building	Develop a calendar of upcoming CBC training activities sponsored by other Member States, Committees, regional and other partners, such as FOCAHIMECA, COCATRAM, National training opportunities, IMarEST, etc.	CBC Chair	ASAP	Open—in progress.
19.5b	Capacity Building	Belize to request a cost estimate from the companies that provided the survey equipment from the Gulf of Honduras Project to see if repairs are viable.	Belize	ASAP	Open.
19.5c	Capacity Building	Create a working group for the "certification of hydrographers".	Mexico to lead with interested Member States, industry and HSOA/LA Chapter support	ASAP	Open.
19.6.4	Seabed 2030	Facilitate an introduction for Vicki Ferrini/Seabed 2030 RDC Coordinator to the Mexican hosted IBCCA to coordinate analysis of regional data gaps and catalyse contributions.	Mexico	ASAP	Open-Completed.

No	Reference	Action	Responsible party	Due date	Status
19.6.4a	Seabed 2030	Encourage IBCCA chart contribution completion.	Colombia	ASAP	Open—in progress.
19.7	Response to Disasters	Circulate the plenary-approved Disaster Response framework for further comment, elaboration and then finalize for implementation.	Incoming Chair	ASAP	Open. Completed. Distributed via CL 6.
19.8.1	SDI/MSDI	Countries not participating directly in the UN-GGIM WG on Marine Geospatial Information are encouraged to contact their national representatives to the UN to make them aware of the importance of this initiative (contact John Nyberg for further information) and its benefits.	MACHC Member States	ASAP	Open. Moved to continuous action list.
19.8.7	MSDI	The MEIP Report and the proposal to change the name and status to the Marine Spatial Data Working Group were approved. The first sentence has been moved to “List of Decisions” (Decision 5) in the first part of this document. The new MSDI draft TORs will be circulated to Members for further input with a view to finalize them - by April 2019.	MSDI Chair	31 Mar 2019	Open. Completed.
19.8.7a	MSDI	A Workplan is to be produced in early 2019 and will include short term activities, such as response to “low-hanging fruit” use cases, i.e. Economic Assessment of Risks in Maritime Navigation across the Greater Caribbean Region Project; the Tri-National MPA network (RedGolfo) and Disaster Management.	MSDI Chair	ASAP	Open.
19.9	MICC	MICC Report was approved, including the change of Chair from U.S. to Suriname. The first sentence has been moved to “List of Decisions” (Decision 6) in the first part of this document. The new MICC Work Plan should address the issue of a regional ENC scheme.	MICC Chair	ASAP	Open.
19.2.1	IHO Assembly 2	Identify potential MACHC Member States Proposals to IHO Assembly 2 (must be completed four months before the Assembly; thus the MACHC due date is 21 December 2019; or last week of November).	MACHC Chair	ASAP	Open—in progress.

No	Reference	Action	Responsible party	Due date	Status
19.10.4	Lessons Identified	Chair to shorten the duration of the MACHC meeting and consider restructuring of the agenda based on plenary feedback.	MACHC Chair	MACHC 20	Open—in progress.

DRAFT

Table 2: STATUS OF PREVIOUS OPEN ACTIONS

No	Subject mater	Action	Responsible party	Due date	Status after 19 th MACHC
List of actions 18th MACHC meeting					
18.2.3	IRCC	That the president carries out the corresponding actions to the IRCC which are listed attached to this table.	MACHC Chair	ASAP	Completed. Superseded by new action 19.1.5.
18.3.1	National Reports	Belize will send the report of the state of the hydrographic equipment that was delivered to them within the framework of the project of the Gulf of Honduras to know the possibility of reusing the equipment as spare parts for other countries.	Belize	ASAP	Completed.
18.6.1	Capacity Building	Countries that have received training are invited to send feedback to MACHC CBC on the impact of hydrographic capabilities.	MACHC Member States	ASAP	Open. Moved to continuous action list.
18.6.2	Capacity Building Opportunities	Invitation to comment on creation of group work for the "certification of hydrographers"	MACHC Member States	ASAP	Completed. Superseded by new action 19.5.c.
18.8.1	MEIP	Task the MEIP Coordinator to investigate potential connections with the UN-GGIM Disaster Response Framework in order to create a GIS environment to support the work of the MACHC Chair in support of the affected coastal States in the region.	MEIP Coordinator	ASAP	Completed. UN-GGIM Working Group on Marine Geospatial Information and Services for Disasters is in transition and unable to assist at this time.
18.10.1	Response to disasters	Request Coastal States in the region to provide contact details in case of emergencies and instruct on the preparation	MACHC Member States	ASAP	Completed. Subsumed by Action 19.7.

No	Subject mater	Action	Responsible party	Due date	Status after 19 th MACHC
		of the contingency plan in accordance with IHO Resolution 1/2005.			
18.10.2	Response to disasters	Chair to report the discussions on response to disasters to IRCC10.	MACHC Chair	IRCC10	Closed.
18.11.3	Closing activities	Chair to work with the Secretariat to find a suitable solution for the agenda and the duration of the meeting and report to the members by CL.	MACHC Chair	ASAP	Open- Completed Subsumed by Action 19.10.4

No	Subject mater	Action	Responsible party	Due date	Status at the start of 18 th MACHC
List of open actions 17th MACHC meeting					
17.2.1.1	IHO Secretariat (MSI)	Members States to review the MSI Status Matrix (on the MACHC Initiative website) and report to the Chair WWNWS of any obstacles and challenges.	MACHC Member States	MACHC 20	Moved to Continuous Actions.
17.5.1	Risk Assessment	Suriname to present on their risk-assessment project at MACHC meeting in 2017.	Suriname	MACHC 18	Completed.
17.5.2.1	Risk Assessment	Member states are encouraged to take part actively in a User Support Group for the PhD work on “Risk Assessment in Maritime Navigation for the Greater Caribbean Region (GCR)” by Ms. Dawn Seepersad of the UWI.	MACHC Member States as coordinated by Chair RA group	ASAP	Open Completed. Superseded by Action 19.8.7a
17.5.2.2	Risk Assessment	User Support Group is to develop a ‘road map’ on how to effectively support the PhD work on “Risk Assessment in Maritime Navigation for the Greater Caribbean Region (GCR)”.	MACHC Member States as coordinated by Chair RA group	ASAP	Open Completed. Superseded by Action 19.8.7a

No	Subject mater	Action	Responsible party	Due date	Status at the start of 18 th MACHC
17.5.2.3	Risk Assessment	Invite Ms. Dawn Seepersad to provide an update on her Risk Assessment project for the GCR. (see also action 17.5.2.1).	MACHC Chair	Annually until project completion.	Moved to Continuous Action.
List of open actions 16th MACHC meeting					
16.1.6	Statutes	Member States to consider how to provide dual versions in Spanish and English of MACHC documents, for instance as a voluntary service by a Member State.	MACHC Member States	MACHC 18	Completed. MS doing this on a voluntary basis as they are able.
16.2.1.3	Capacity Building	Honduras, Guatemala and/or Belize to give an (annual) feedback at the MACHC Conference on the Gulf of Honduras project.	Honduras, Guatemala, Belize	MACHC 20	Completed. Guatemala does not control the equipment; Honduras is actively using it; new action 19.5b for Belize from 19 th meeting.
16.10.4.1	FOCAHIMECA	Mexico to make their FOCAHIMECA program available to the CB Coordinator (Chair and Vice Chair) with the aim to harmonies time schedules and/or CB-activities between programs.	Mexico	As required for the 2017 MACHC CB plan	Completed. Superseded by Action 19.5a.
List of open actions 15th MACHC meeting					
15.5.1.2	IHO	Haiti will send the Instrument of Accession to the IHO.	Haiti	ASAP	Open, Not deposited yet. Expect after elections in 2017.
15.6.2.6	National Report	ESRI will try to make its data available to Haiti.	ESRI	MACHC 20	Completed.
15.6.3.4	MSI	Invite the Caribbean Disaster Emergency Management Agency (CDEMA) to attend the MACHC meetings.	MACHC Chair	MACHC 20	Open. Contact established. No attendance at

No	Subject mater	Action	Responsible party	Due date	Status at the start of 18 th MACHC
					17 th , 18 th and 19 th MACHC meetings.
15.8.1.3	OECS	OECS to work together with the MACHC to develop common areas of collaboration (e.g. donor ship for MACHC projects).	OECS	MACHC 20	Open , awaits initiating activity.

DRAFT

Table 3: CONTINUOUS ACTION ITEMS

No	Subject mater	Action	Responsible party	Due date	Status
List of continuous actions 19th MACHC meeting					
19.4.1a	Reports from Observing Organizations	Countries reach out to the National Tsunami Warning contacts provide bathymetric data to support improved land-sea inundation models.	MACHC Member States	Annually	Continuous.
19.5	Capacity Building	Members to send capacity building and other requirements officially to the Chair to channel to others/committees who might help;	MACHC Member States	ASAP	Continuous.
19.8.1	SDI/MSDI (15.5.1.4)	Countries not participating directly in the UN-GGIM WG on Marine Geospatial Information are encouraged to contact their national representatives to the UN to make them aware of the importance of this initiative (contact John Nyberg for further information) and its benefits.	MACHC Member States	Annually	Continuous.
List of continuous actions 18th MACHC meeting					
18.6.1	Capacity Building	Countries that have received training are invited to send feedback to MACHC CBC on the impact of hydrographic capabilities.	MACHC Member States	ASAP	Continuous.
List of continuous actions 17th MACHC meeting					
17.2.1.1	IHO Secretariat (MSI)	Members States to review the MSI Status Matrix (on the MACHC Initiative website) and report to the Chair WWNWS of any obstacles and challenges.	MACHC Member States	MACHC 20	Continuous.
17.2.1.4	IHO Secretariat (IRRC 8/32)	Member States review entries related to IHO C-55, (Status of Hydrographic Surveying and Nautical Charting Worldwide, P-5 (yearbook) and ECDIS backup up arrangements (iaw. IHO CL	MACHC Member States	Annually	Continuous.

No	Subject mater	Action	Responsible party	Due date	Status
		61/15) and report annually to IHO secretariat, including reports of “no change”. https://www.iho.int/iho_pubs/CB/C-55/c55.pdf			
	IRCC 11/8	RHC Chair to request National Coordinators to review the contents of the relevant Annexes of the GMDSS Master Plan – to ensure consistency for their national entries.	MACHC Chair	Annually	Continuous.
17.2.2.2	IRCC 8/7	Raise awareness of the impact of e-navigation on the provision of MSI in the respective regions and to highlight the use of the Joint Manual on MSI to ensure correct terminology and formats are used in MSI messages.	MACHC Chair	Annually	Continuous. By way of agenda setting.
17.2.2.3	IRCC 8/8	Encourage closer engagement of the National MSI Coordinators of Member States with the relevant NAVAREA Coordinator (7b). Delegates to update their contact information in the NAVAREA IV list.	MACHC Chair		Continuous. By way of agenda setting.
17.2.2.4	IRCC 8/31	Be attentive to opportunities to raise awareness on the role of hydrography and the importance of improving mankind’s knowledge of the seas and oceans in support of the sustainable development goals, disaster risk reduction and the integrity of the oceans.	MACHC Chair in coordination with Member States		Continuous. (examples: UN-GGIM; Seabed 2030; UN Decade of Ocean Science)
17.5.2.3	Risk Assessment	Invite Ms. Dawn Seepersad to provide an update on her Risk Assessment project for the GCR. (see also action 17.5.2.1).	MACHC Chair	Annually till project completion.	Continuous.
17.6.4	DTM	Members States to consider making ENC bathymetric and contour information available for the IBCCA project via GEBCO (DCDB).	MACHC Member States		Continuous.
17.6.5	DTM	Members States are encouraged to participate actively in the GEBCO’s Seabed 2030 project by providing bathymetric data to the IHO DCDB to support mapping ocean areas at high resolution	MACHC Member States		Continuous.

No	Subject mater	Action	Responsible party	Due date	Status
		and by providing shallow water bathymetric data from ENC's to the IHO DCDB.			
17.7.1.1	MICC	Encourage MACHC ENC Online participation. This is assumed to be included in Action 17.2.1.4	MACHC Chair		Continuous.- Completed. To be addressed as part of MICC Workplan
List of continuous actions 16th MACHC meeting					
16.2.2.5	Capacity Building	Encourage National Hydrographers to invest in English language training to increase the chances of their candidates being selected to Cat A and Cat B training courses delivered in English.	MACHC Member States	As required	Completed , no longer extant as IRRC7 action 17. Maintain as MACHC action under CB.
16.2.2.11	IHO Secretariat	MACHC Chair Invites Member States to consider providing representatives of the IHO at the international meetings listed in Annex A to paper IRRC8-08B on "Relations with other International Organizations and IHO Stakeholders".	MACHC Member States	Annually at MACHC meetings	Continuous, Completed. No new List exists. This was listed as "Cancelled" in IRCC 11 Documents
16.5.1	Risk Assessment	Chair, supported by UKHO as chair of the Risk Assessment Group, to organize a follow-on meeting on Risk Assessment during MACHC conferences. With the aim to exchange information, learn and apply.	MACHC Chair, UKHO and MACHC Member States	Annually at MACHC meetings	Continuous Completed. Subsumed by Action 17.5.2.1.
16.10.4.2	FOCAHIMECA	If additional funding is sought from CB-funds, Mexico to make bids through the established CB mechanism's.	Mexico	As required	Continuous.

No	Subject mater	Action	Responsible party	Due date	Status
List of continuous actions 15th MACHC meeting					
15.5.1.4	UN	Delegates to encourage their Hydrographic Offices and to engage with other counterparts to participate in the Global Geospatial Information Management (UN-GGIM) meetings, in particulate the WG on Marine Geospatial Information (MGI).	MACHC Member States	As required	Continuous , but unilateral activity Completed. Subsumed by Continuous Action 19.8.1.
15.5.3	HSSC	Encouragement of the Spanish speaking countries to participate in the HSSC WG and the HDWG meetings.	MACHC Member States	As required	Continuous , unilateral activity.
15.6.2.2	National Report	States to make full use of sea-riding opportunities to gain experience and share knowledge.	MACHC Member States	As required	Continuous , bilateral activity.
15.6.2.7	National Report	Member states are urged to assist Haiti in setting up their hydrographic office and other hydrographic activities.	MACHC Member States	As required	Continuous , bilateral activity.
15.6.3.2	MSI	Delegates to update their contact information in the NAVAREA IV list.	MACHC Member States	As required	Continuous , unilateral activity. Completed. Integrated with Action 17.2.2.3.



MINUTES
19th CONFERENCE OF THE MESO AMERICAN AND CARIBBEAN
SEA HYDROGRAPHIC COMMISSION (MACHC 19)
Cartagena, Colombia.
26 November – 01 December 2018

Agenda:

1. [MACHC Administration/organizational issues.](#)
 - 1.1 Introductions
 - 1.2 Approval of Agenda
 - 1.3 List of documents/Administrative Arrangements
 - 1.4 Matters arising from Minutes of MACHC 18 Meeting
 - 1.5 MACHC 18 Action list review
 - 5.6 Update from Spain on its regional projects
2. [MACHC Developments IHO bodies / Policy aspects](#)
 - 2.1 IHO Secretariat Report
 - 2.2 Council Report
 - 2.3 IRCC10 Report
 - 2.4 HSSC10 Report
 - 2.5 MSI/WWNWS9 Report
 - 2.6 A Tsunami and other Coastal Hazards
3. [National Reports from Members and Associate Members](#)
4. [Reports from Observing States and Organizations](#)
 - 4.1 Reports from Observing Organizations
 - 4.1 B Update of COCATRAM on its Regional Projects
5. [Regional Capacity Building \(CB\)](#)
 - 5.1 CBC Report
 - 5.2 Update of FOCAHIMECA
 - 5.3 Update of UK on its Regional Projects
 - 5.4 Update of Brazil on its Regional Projects
 - 5.5 Update of France on its Regional Projects
 - 5.7 Fugro Academy and their IHO Cat B Hydrographic Course
 - 5.8 Update of IOCARIBE on its Regional Projects
 - 5.9 Latin America Chapter of the Hydrographic Society of the America: For the Growth of Hydrography in the Region
 - 5.10 Competency Standards for Hydrographers and Nautical Cartographers

5.11 Capacity Developments e-learning Training in Hydrographic Governance

6. [Survey and Risk](#)

- 6.1 Risk assessment regional project
- 6.2 Accident statistic and analysis of AIS data for the Caribbean
- 6.3 GEBCO/IBCCA
- 6.4 GEBCO/Seabed 2030
- 6.5 Evolution of Hydroacoustic Hydrographic Surveys, from the vessel to the office
- 6.6 The New Fugro RAMMS Bathymetric Multibeam Lidar System
- 6.7 Satellite Derived Bathymetry Work in the Caribbean: Applications for machine learning and process automation
- 6.8 Remote Environmental Monitoring Systems

7. [MACHC Response to Disasters \(IHO resolution 1/2005\)](#)

Report from the Workshop on Dealing with Maritime Disasters

- 7.1 Caribbean Disaster Emergency Management Agency

8. [SDI/Marine Spatial Data Infrastructure](#)

- 8.1 GGIM (Global Marine Geospatial Information Management)
- 8.2 Tri-National initiative for Marine Science and Conservation in the Gulf of México and Western Caribbean
- 8.3 Caribbean Marine Atlas
- 8.4 Evolving into a Hydrosatial Agency
- 8.5 Data Management Training
- 8.6 Hydrographic Data as a Service
- 8.7 MEIP Report

9. [Nautical Charts and Publications](#)

- 9.1 MICC report
- 9.2 Live Data Streaming and the Use of Mobile Technology for Navigation

10. [Closing Activities](#)

- 10.1 Election (vice) Chair MACHC
- 10.2 AOB
- 10.3 Review actions and decisions
- 10.4 Lessons identified
- 10.5 Next meeting
- 10.6 Close of meeting



MINUTES
18TH MACHC CONFERENCE
29 NOVEMBER- 02 DECEMBER 2017

The formal opening of the 19th Conference of the Meso American and the Caribbean Sea Hydrographic Commission (MACHC) took place on Wednesday 28th November 2018. The formal opening was preceded by two days of seminars on raising awareness of hydrography. On Monday 26th and Tuesday 27th November 2018, the Seminar focused on Hydrographic governance and dealing with maritime disasters.

An opening military ceremony took place where the Commander of the National Navy of Colombia Admiral Ernesto Duran Gonzalez welcomed all the attendees, emphasizing the importance of hydrography.



Rear Admiral Enrique Flores Morado (Deputy General Director of Oceanography, Hydrography and Meteorology from Mexican Navy; and Chairman of the MACHC) welcomed all the MACHC participants to the conference and to the city of Cartagena, Colombia, likewise expressed his gratitude to all the hosts for the warm welcome.

Rear Admiral Mustafa Iptes, Director of the International Hydrographic Organization, welcomed all participants to the conference and he thanked Colombia for its hospitality.

Photo Session



1. MACHC Administration/organizational issues

1.1 Introductions

On Wednesday, 28th November 2018, the plenary meeting started. The chair invited to all participants to introduce themselves.

1.2 Approval of Agenda and timetable

The Chair informed the participants that at the request of the hosts (Colombia) modifications were made to the agenda so that the plenary session ended on Friday and not on Saturday as originally scheduled, in order that the participants have the opportunity to enjoy the city on Saturday. The agenda and timetable were approved.

No.	Reference	Decision
1	19.1.2	The modified Agenda and Timetable of the 19th MACHC were approved.

Captain Marc Van der Donck pointed out that it would have been appropriate to inform the participants with more advance notice about the changes to the agenda, since many travel from far away and have pending issues in their corresponding jobs.

See related document, [MACHC 19-01.2 \(REV 2\) Agenda and Timetable](#).

1.3 List of documents/Administrative Arrangements

All documents and presentations of this meeting will be made available on the MACHC section of IHO website after this meeting at:

Minutes 19th MACHC Conference – version: xx December 2018

https://www.iho.int/mtg_docs/rhc/MACHC/MACHC19/MACHC19_Docs.htm

The Chair asked all to check their names and e-mail addresses on the attendants' list..
The Chair noted the quorum for a formal MACHC Conference was achieved, which means that the meeting has decision-making status.

The Chair reminded the participants that audio recordings of the conference were being made and asked if there were objections to this. There were none. The audio recordings will be deleted after the minutes of the MACHC 19 conference are finalized.

See related documents, MACHC19-01.3A List of Documents and [MACHC19-01.3B](#) List of Participants (Invited and present).

1.4 Matters arising from Minutes of MACHC 18 Meeting

The final draft version of the MACHC 18 meeting minutes was sent out on May 8th, 2017. The comments received were addressed ; therefore, the minutes of the MACHC 18 conference were approved.

No.	Reference	Decision
2	19.1.4	It was decided to approve the minutes of the 18 th MACHC Conference

Decision:

To approve the minutes of the 18th MACHC Conference
See related document, [MACHC19-01.4](#) Minute of MACHC 18.

1.5 MACHC 18 Action list review

The list of the actions items was shown on the screen. To save processing time at the Commission meeting, the Chair showed the status of the actions of MACHC 18 and asked the States to review it. Those issues were discussed.

The plenary discussion determined which actions were completed and should be removed from the list. They are highlighted in green in the attached Action List Annex.

No	Action
19.1.5	Review all the recent IHO, IRCC and HSSC actions in the context of the current MACHC list and determine how to consolidate, streamline, and take action on them.

See related documents, [MACHC19-01.5](#) Status of Action List from MACHC 18, which served as input to the discussions at the conference.

5.6 Update of Spain on its Regional Projects

Spain through its Navy Hydrographic Institute presented a report as an observer country, affirming its commitment to Navigation Safety and for Capacity Buildings in the MACHC region.[MACHC19-05.6](#)

2. MACHC Developments IHO bodies/Policy aspects

2.6 IHO Secretariat Report

Mr. Mustafa Iptes gave a summary report of matters of interest related to the work of the IHO Secretariat. He explained about operations of the Organization under the IHO Convention since the last MACHC Conference (MACHC 18), in 2017, when the secretariat proposed to discuss how reporting items of relevance shall be synchronized with the Council Chair report to the Assembly, which is largely based on the annual IRCC chair report put forward to the Council.

He also mentioned the Status of the Memberships of the IHO, highlighting that one of the main changes resulting from the entry into force of the revised IHO Convention is that, for States wishing to join the IHO that are already Member States of the United Nations, there is no requirement to seek approval of existing Member States of the IHO. In 2017 Malta, Vanuatu, Seychelles and in 2018 Bulgaria acceded to the IHO Convention and became the 86th, 87th, 88th and 89th Member States of the IHO, respectively. On 1 January 2018, the Dominican Republic, suspended since 1983, was re-instated as a Member State. Unfortunately, there are still three Member States remaining suspended: the Democratic Republic of the Congo, Serbia and, regrettably, Syria was recently suspended from Member States rights, being in arrears in its contributions now for two consecutive years.

Director Mustafa Iptes encouraged MACHC to engage with The Bahamas and Dominica (coastal States in the Region that are not Associate Members) and Bermuda (Region A) to raise awareness on the importance and value of hydrography.

He indicated the second IHO Assembly is scheduled to take place from 21 to 24 April 2020. The announcement and draft agenda of the Assembly-2 will be issued in April 2019. The IHO Work Programme and budget for the next 3 year (2021-2023) will be prepared for approval of the Assembly.

No	Action
19.2.1	Identify potential MACHC Member States Proposals to IHO Assembly 2 (must be completed four months before the Assembly; thus the MACHC due date is 21 December 2019; or last week of November)

Director Mustafa Iptes explained the INT Chart and ENC Production Coordination - Region L, recommending MACHC to consider the results of the WENDWG8 meeting held in March 2018, providing regional CATZOC practices to the DQWG; and the maintenance of ENC Schemes when the INTogIS Phase II is commissioned.

He mentioned IHO Capacity Building Strategy lays particular emphasis on the fundamental capability for all coastal States to provide maritime safety information (MSI) service in support of their international obligations.

He said that the level of activity of the IHO Capacity Building (CB) Programme decreased in 2017. Expenditure in the IHO 2017 CB Work Programme (625 952 Euros) was 18% smaller than the

budget for the previous year, the Secretariat is continuing its campaign to find additional donor States and funding organizations.

Director Mustafa mentioned that MACHC States benefited from the following activities under the IHO CB Work Programme (CBWP): Technical Visit to Guatemala, Seminar on Raising Awareness of Hydrography (Cartagena, Colombia) and MBES Processing (Cartagena, Colombia). Additionally, Colombia (Mr Harold ROJAS MACIAS) and Jamaica (Mr Omar O'Neil GREY) were selected to attend the Hydrographic Survey Program, Category "B" (Busan, Republic of Korea). Participants in the region also attended activities in the SEPRHC and SWAtHC as approved by the CBSC.

About Crowdsourced Bathymetry, he invited MACHC members to identify further potential sources of bathymetric measurements and survey data providers to facilitate further completion of the DCDB data holdings.

In relation to GEBCO support through Seabed 2030 the Secretariat invited MACHC Members to consider the future invitation of Seabed 2030 project representatives to MACHC meetings to discuss options for strengthening cooperation and support.

About IHO GIS and Databases, Director Mustafa Iptes highlighted that work has continued on the development of the IHO GIS, which is composed of two main parts:

- a country information database, and
- a regional information database.

The country information database has been progressively upgraded to include additional administrative information and facilitate the maintenance of the IHO Yearbook (IHO Publication P-5) and related lists posted on the IHO website. Countries in the MACHC Region are invited to review their entry in the Yearbook on an annual basis and provide the IHO Secretariat with the appropriate updates or report no change. He also mentioned that the IHO Secretariat is developing an online form to allow Member States to input data to the Yearbook and to C-55. A CL will be issued to provide instructions on its use.

Finally, he provided information about ongoing activities in preparation for the World Hydrography Day, International Hydrographic Review and IHO Centenary Celebrations (IHO-100).

See related document, [MACHC19-02.1](#)

2.7 Council Report

Rear Admiral Shepard M. Smith presented a report of Council-2, which was held in London from 9 to 11, October with the participation of 28 Council Members and 10 MS Observers (MACHC participants: Brazil, Colombia, France, the Netherlands, UK and USA). He highlighted that the report of the SPRWG Chair and subsequent discussions were important elements of the Council

2 meeting. The Council needed to come out of the C-2 with sufficient guidance to the SPRWG so that it could progress its task on behalf of the Council, as requested by Assembly-1.

He reported that after a fruitful discussion, C-2 decided to aim at a more concise Strategic Plan, similar to the one recently approved by IALA, and adopted 3 SMART Goals to guide the drafting effort. The ultimate plan is intended to be fairly short- on the order of 3 pages or so and very high level.

Admiral Smith mentioned that a Working Plan was adopted with an associated timeline. The SPRWG will meet in late January to begin drafting the plan. The IRCC and HSSC Chairs will be invited to weigh in on performance measures and targets, and the Secretary-General of the IHO was added to the membership of the SPRWG. The document will be reviewed again over the summer in connection with the IRCC and HSSC meetings. See C2-6.1.

He also reported that a proposed draft revised plan will be submitted to Council-3 in July/August. C-3 will deliberate and, if accepted, the plan will be finalized for consideration at Assembly-2. For that, the plan will need to be submitted in December 2019, in advance of A-2 in April 2020. States from the MACHC region on the SPRWG include: Brazil, the Netherlands, UK and USA .

About the Development and Future Provision of S-100 Products, Admiral Smith informed that the Council, HSSC, IRCC Chairs and Secretary-General will draft an implementation strategy 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. He mentioned that IRCC will instruct and provide guidance to the WENDWG in order to investigate the applicability of the WEND-like Principles to the production and dissemination of S-101 ENCs and the first generation of S-100 based products and to report back to C-3.

Regarding Crowdsourced Bathymetry (CSB), he informed that the Council endorsed the proposed Edition 1.0.0 of IHO Publication B-12 - *IHO Guidelines on Crowdsourced Bathymetry*, - with the inclusion of the caveat agreed at C-2 (*"This document provides technical guidelines only that in no way supersede or override national or international laws and regulations"*) - but acknowledged that further work was needed for depicting the data flow (sensor, coastal States information, DCDB) before these guidelines can come into force with full effect. IRCC will instruct and provide guidance to the CSBWG to further develop a more detailed paragraph on the data flow in preparation for Ed. 2.0.0. of B-12.

About SEABED 2030 he commented that this topic will be addressed later in more detail in the agenda, by Dr.Vicki Ferrini.

He also mentioned the major changes being implemented for IHO communications, a new logo, revamping of website, IHO Centenary, use of Social Media and World Hydrography Day 2019: "Hydrographic information driving marine Knowledge".

Admiral Smith indicated that MACHC Member States shall contribute to the drafting process of strategic plan, highlighting that a meeting of the SPRWG is scheduled for January 30-31 at the IHO Secretariat Office , and a draft revision shall be submitted to Council-3, in July. If approved at C-3, it will go to the Assembly for decision.

He also mentioned the importance of a better understanding of the Seabed 2030 project and how, as a RHC, MACHC can contribute to the project. He highlighted that this will be discussed in the context of the SB 2030 portion of the agenda in light of the presentation of Dr. Ferrini.

Finally he commented on the tight timeline in preparation to Assembly-2. Robust preparations, deliberations, and reports and recommendations from IRCC, HSSC, and Council will be the key to a timely preparation for Assembly 2.

See related document, [MACHC19-02.2](#)

IRCC10 Report

John Nyberg presented report on the IRCC10 meeting. The content of the IRCC report included General Information and MACHC representation, Working Groups and Sub Committee highlights, IHO Resolution 2/1997 as Amended and IRCC Recommendations and Request to RHCs.

John Lowell then provided a more in-depth presentation on the proposed changes to IHO Resolution 2/1997, which updates how RHCs operate. The discussion led to a new action 19.2.3a to provide MACHC input to the IRCC Chair on this resolution before the end of 2018.

No	Action
19.2.3a	Chair to circulate the amended Resolution 2/1997, including comments provided already by MACHC members states, for further input immediately after the meeting with a view to providing comments back to the IRCC by the end of the year

See related document, [MACHC19-02.3](#)

2.8 HSSC10 Report

John Nyberg presented a report on the HSSC10 meeting. The content of the HSSC report included: Revision Process of IHO Resolution 2/2007, Amendments to the HSSC ToRs and RoPs, HSSC key priorities of the IHO Work Programme 2 for 2019 – 2020, Requesting use of the IHO Fund for Special Projects, Top 3 work items of the HSSC WGs.

See related document, [MACHC19-02.4](#)

2.9 MSI/WWNWS9 Report

Peter Doherty and Chris Janus presented a report on the MSI/WWNWS9, explaining what the IMO/IHO World-Wide Navigational Warning Service (WWNWS) is and how it is integrated.

He also spoke about Inmarsat-C Coverage Shift, NAVAREA, NAVAREA COORDINATOR, NATIONAL COORDINATOR, IHO Capacity Buildings, Maritime Safety Information Training, Maritime Safety Information Capacity Building Course Outcomes, MSI Support 2018-MACHC, National Coordinators in NAVAREA IV and XII.

See related document, [MACHC19-02.5](#)

At the end of this part of the agenda, it was noted that there are many requests for action from RHCs from the IHO, the Council, and the IRCC. A new action 19.1.5 was created for the Incoming Chair to review all of these in the context of the current MACHC list and determine how to consolidate, streamline, and take action on them.

4.1A The Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (CARIBE/EWS)

Ms. Christa Von Hillebrandt-Andrade gave a presentation about the Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (CARIBE/EWS). She presented Tsunami history in our region, and how the system is integrated., She also mentioned that NOAA Pacific Tsunami Warning Center (Hawaii) is the CARIBE EWS (and PTWS) Tsunami Service Provider, CARIBE EWS needs sea level data, just like MACHC, Tsunami Evacuation Maps and UNESCO IOC Tsunami Ready Recognition. The CARIBE EWS is interested in partnering with the MACHC/CBC to do joint training on the use and maintenance of tide gauges and sea level data for charting and hazard warning improvements.

She also made a request to the plenary that resulted in a new action 19.4.1a:

No	Action
19.4.1a	Countries reach out to the National Tsunami Warning contacts provide bathymetric data to support improved land-sea inundation models.

See related document, [MACHC19-04.1A](#)

3 National Reports from Members and Associate Members

The following (Associate) Member States provided the Commission with a briefing on their national report: Antigua and Barbuda, Belize, Brazil, Colombia, Costa Rica, Cuba, Dominican Republic, El Salvador, France, Grenada, Guatemala, Guyana, Honduras, Jamaica, Mexico, Netherlands, Panama (Maritime Authority), Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, United Kingdom, United States of America and Venezuela.

See related documents, [MACHC 18-03 A to AB](#).

4 Reports from Observing States and Organizations

4.1 B Update of COCATRAM on its Regional Projects

Mr. Otto G. Noack Sierra presented an update of COCATRAM on its Regional Projects; he explained what is COCATRAM, the Permanent Networks, its projects and strategy.

See related documents, [MACHC19-04.1B](#)

4.1 C National Report of Montserrat

Montserrat sent its National Report.

See related documents, [MACHC19-04.1C](#)

5 [Regional Capacity Building \(CB\)](#)

5.1 CBC Report

Ms. Lucy Fieldhouse presented the MACHC CBC Meeting Report which includes The Capacity Building activities that have (or will) be completed since the last MACHC meeting held in Cuba 2017. With reference to the 2019 CB Work programme, she presented opportunities that are available, and proposed priority activities for 2020 which were approved by the Plenary.

No.	Reference	Decision
3	19.5.1	The 2019 CB Work programme and proposed priority activities for 2020 were approved by the Plenary.

Mexico provided an update on their FOCAHIMECA Project and highlighted that they would like to receive information on the previous participants, and Reports on Technical visits conducted post MACHC. The meeting noted the continuing challenges of coordinating MACHC CB activity with multiple regional projects and programmes and determining priority CB requirements. Hydrography School of the Spanish Navy provided a brief overview of the courses that can be offered for the region. The resulting plenary discussion produced the following new actions:

No	Action
19.5	Members to send capacity building and other requirements officially to the Chair to channel to others/committees who might help;
19.5a	Develop a calendar of upcoming CBC training activities sponsored by other Member States, Committees, regional and other partners, such as FOCAHIMECA, COCATRAM, National training opportunities, IMAREST, etc.
19.5b	Belize to request a cost estimate from the companies that provided the survey equipment from the Gulf of Honduras Project to see if repairs are viable
19.5c	Create a working group for the "certification of hydrographers".
19.6.4	Facilitate an introduction for Vicki Ferrini/Seabed 2030 RDC Coordinator to the Mexican hosted IBCCA to coordinate analysis of regional data gaps and catalyse contributions.

See related documents, [MACHC19-05.1](#)

5.2 Update of FOCAHIMECA

Esther Montalvo Tavera from AMEXID (Agencia Mexicana de Cooperación Internacional para el Desarrollo) presented and update of FOCAHIMECA Project. She highlighted the excellent coordination between Mexican Navy and AMEXID, their achievements and future projects.

See related documents, [MACHC19-05.2](#)

5.3 Update of UK on its Regional Projects

The agenda item was not discussed.

5.4 Update of Brazil on its Regional Projects

Ricardo Ramos Freire gave a presentation about Brazil's Regional Projects, in which he provided information on the hydrography courses that Brazil has offered as capacity building in the Caribbean, South America and Africa.

See related documents, [MACHC19-05.4](#)

5.5 Update of France on its Regional Projects

The agenda item was not discussed.

5.7 Fugro Academy and their IHO Cat B Hydrographic Course

Mr. Don Ventura gave a presentation about Fugro Academy and their IHO Cat B Hydrographic Course. He spoke of Fugro's Hydrographic Surveyor Training Programme, Installations, Personnel, equipment, Entry requirements, Programming of basis subjects, Calendar of essential subjects and complete project of the final field.

See related documents, [MACHC19-05.7](#)

5.8 Update of IOCARIBE on its Regional Projects

TF. Alex F. Cáceres R. gave an update on IOCARIBE (Intergovernmental Oceanographic Commission- Sub-Commission for the Caribbean) on its Regional Projects, he explained what is the COI, how it works and what are its main projects. There is common interest between IOCARIBE and the MACHC in mapping the ocean floor in the region (through IBCCA), disaster response multi-hazard warning systems and capacity building.

See related documents, [MACHC19-05.8](#)

5.9 Latin America Chapter of the Hydrographic Society of the America: For the Growth of Hydrography in the Region.

The agenda item was not discussed in the Plenary, but a side meeting was organized and took place on Saturday (December, 1st) morning.

5.10 Competency Standards for Hydrographers and Nautical Cartographers.

Mr. Alberto Costa Neves presented the topic: “Competency Standards for Hydrographers and Nautical Cartographers”.

The discussion resulted in a new action 19.5c for Mexico to: Create a working group for the certification of hydrographers, along with interested Members States and other partners

See related documents, [MACHC19-05.10](#)

5.11 Capacity Developments e-learning Training in Hydrographic Governance

Mr. Don Ventura presented IMarEST Support for Hydrography, explaining the following topics: what is IMarEST, how it supports capacity building, raising awareness of hydrography and new certification program launched.

See related documents, [MACHC19-05.11](#)

6 [Survey and Risk](#)

6.1 Risk assessment regional project

Ms. Shivani Dawn Seepersad from Department of Geomatics Engineering and Land Management -The University of the West Indies, gave a presentation about Economic Assessment of Risks in Maritime Navigation across the Greater Caribbean Region (GCR) , including a brief history of the Maritime Accidents across the GRC, Significance of the study, Aim and Objectives. She also explained strategies for risk assessment were developed by maritime departments like IALA (IWRAP), Land Information New Zealand (LINZ), Canadian Hydrographic Service, Arctic Region Hydrographic Commission, National Oceanic and Atmospheric Administration, likewise preliminary results, methodologies being formulated, conclusions and ongoing research.

In order to expand her research project region wide, it requires access to chart data layers (bathymetry, coastline, maritime boundaries and others) in a GIS format on a web-based MSDI. This makes it a good candidate for a MSDI regional pilot project or use case.

See related documents, [MACHC19-06.1](#)

6.2 Accident statistic and analysis of AIS data for the Caribbean

Ms. Amrika Maharaj, a PhD Candidate from the University of the West Indies, gave a presentation about Global Statistical Analysis of Historical Marine Incidents, focused on solutions to reduce the risk of maritime disasters by developing a strategy that considers the likelihood of an incident in relation to vessel traffic flow and navigation information available to the mariner.

She highlighted that this can be achieved by an examination and assessment of vessel accidents globally to identify the key contributing factors or the significant parameters that creates a maritime disaster.

See related documents, [MACHC19-06.2](#)

6.3 GEBCO/IBCCA

The agenda item was not discussed.

6.4 GEBCO/Seabed 2030

Dr. Vicki Ferrini Head of Seabed 2030 Atlantic/Indian Oceans Regional Data Center and Chair of GEBCO Sub-Committee on Regional Under Sea Mapping through video conference explained the global initiative to cooperatively work towards creating a high resolution complete map of the world's ocean floor by 2030. She is looking forward to engaging more with the MACHC Members and the IBCCA to increase contributions to both efforts.

Colombia stated its willingness to do additional surveys to help fill gaps for Seabed 2030. But this can't be done alone, a regional gap analysis is needed to help the MACHC prioritize what gaps need to be filled, what we can do together, what other partnerships are needed.

The discussion resulted in the following actions:

No	Action
19.6.4	Facilitate an introduction for Vicki Ferrini/Seabed 2030 RDC Coordinator to the Mexican hosted IBCCA to coordinate analysis of regional data gaps and catalyse contributions.
19.6.4a	Encourage IBCCA chart contribution completion

Colombia also stated its interest in re-invigorating IBCCA chart contributions and completion, reflected in action 19.6.4.

See related documents, [MACHC19-06.4](#)

6.5 Evolution of Hydroacoustic Hydrographic Surveys, from the vessel to the office

Msc Leonardo Figueroa from KONGSBERG gave a presentation about evolution of Kongsberg in Hydroacoustic Hydrographic Surveys, explaining how data collection has evolved throughout time, from the first echo sounder to the use of unmanned vehicles to survey the ocean floor.

See related documents, [MACHC19-06.5](#)

6.6 The New Fugro RAMMS Bathymetric Multibeam Lidar System

Mr. Don Ventura presented The New Fugro RAMMS (Rapid Airborne Multibeam Mapping System) Bathymetric Multibeam Lidar System; he explained that RAMMS improves upon conventional technology with enhanced depth penetration and at higher point density resulting in better quality maps at an equal or lower cost.

He mentioned that the RAMMS technology has been deployed by Fugro for over two years, including on commercial projects, demonstrating its capability and reliable performance.

It should be stressed at the outset that the operating paradigm of RAMMS is completely different to that for contemporary ALB systems – RAMMS functions much more like a multibeam echosounder than a rapid pulse ‘spot’ system. It is unique on the market.

He said RAMMS was born out of the need to improve upon current day methods. RAMMS provides the best aspects of both deep and topo-bathy systems in one system, which is designed to meet international hydrographic survey standards for both accuracy and resolution (target detection). i.e., IHO Order 1b and 1a in specific utilizations.

See related documents, [MACHC19-06.6](#)

6.7 Satellite Derived Bathymetry Work in the Caribbean: Applications for machine learning and process automation

Mr. Kyle Goodrich President and Founder of TCarta explained what is the Project Trident, its processes and advantages. He also presented some examples of the work they have done; he also mentioned that Project Trident provides ultra-low cost option to meet the specifications of the Seabed 2030 initiative.

See related documents, [MACHC19-06.7](#)

6.8 Remote Environmental Monitoring Systems

Mr. Julio Leal from AXYS Technology Inc. presented “Remote Environmental Monitoring Systems”, speaking about different systems such as buoys, anchors, Typical Environmental Monitoring Sensors, oceanographic sensors, terrestrial systems, telemetry, data management, AXYS- APS, monitoring and visualization system, applications and oceanographic AXYS buoys.

See related documents, [MACHC19-06.8](#)

7. [MACHC Response to Disasters \(IHO resolution 1/2005\)](#)

Report from the Workshop on Dealing with Maritime Disasters

Alberto Costa Neves presented the Draft Disaster Response Plan that was developed during the pre-Seminar for consideration by the MACHC Plenary.

No.	Reference	Decision
4	19.7	The Draft Disaster Response Plan Framework, developed during the pre-Seminar for consideration by the MACHC Plenary, was approved.

The Plenary approved this framework and asked the Chair to take the following action 19.7:

No	Action
19.7	Circulate the plenary-approved Disaster Response framework for further comment, elaboration and then finalize for implementation.

7.1 Caribbean Disaster Emergency Management Agency

The Caribbean Disaster Emergency Management Agency(CDEMA) was invited and strongly encouraged to attend, as established in Action 15.6.3.4 of MACHC-15 Action List, but could not attend MACHC 17th,18th or 19th meetings.

8. [SDI/Marine Spatial Data Infrastructure](#)

8.1 GGIM (Global Marine Geospatial Information Management)

John Nyberg from GGIM (Global Marine Geospatial Information Management) explained that GGIM objective is to provide a high level forum to encourage enhanced global cooperation to address issues related to the availability and application of marine geospatial information – including inland water bodies and waterways, coastal zones, seas and oceans . He also spoke about Work Plan highlights which are: Recognize Capacity Development Initiatives which may Benefit from WG Activities, Liaise with Relevant Organizations including IHO and GGIM Regional Entities, Recognize and endorse established standards for geospatial information in marine and inland waters, Produce Communications Plan and Produce Use Case Report – due in 2020 (which could have a regional focus).

Mr. Nyberg made a request to the Plenary which is reflected in action 19.8.1:

No	Action
19.8.1	Countries not participating directly in the UN-GGIM Marine Geospatial WG are encouraged to contact their national representatives to the UN to make them aware of the importance of this initiative (contact John Nyberg for further information) and its benefits

See related documents, [MACHC19-08.1](#)

8.2 Tri-National initiative for Marine Science and Conservation in the Gulf of México and Western Caribbean

Mr. Fernando Bretos Trelles, CubaMar Director, spoke about the Tri-National initiative for Marine Science and Conservation in the Gulf of México and Western Caribbean and he explained how it is integrated. One of its highest priority activities is a Marine Protected Area Network being established between Cuba, Mexico and USA called REDGolfo. MPA networks are important for the regional marine tourism economy and protecting the resources it depends on. They would like to have a digital marine atlas to support the management of this network.

Such an atlas requires data layers from charts including bathymetry, seafloor bottom characteristics, maritime routes and others. He asked if the MACHC would consider making such data layers available via a MSDI, which could then be accessed to support development of such

an atlas (perhaps building on the work of the Caribbean Marine Atlas). This request demonstrates another regional demand for non-navigation uses of the authoritative charting data from the MACHC and is another potential pilot MSDI project.

See related documents, [MACHC19-08.2](#)

8.3 Caribbean Marine Atlas

Ms. Carolina Garcia Valencia from Marine and Coastal Research Institute – INVEMAR explained that since 2013, Caribbean Marine Atlas Phase 2 (CMA2) has been working on the operationalization of spatial data information by creating an online digital platform to support Integrated Coastal Zone Management – ICZM and Ecosystem-based Management - EbM for the major Caribbean ecosystems – Caribbean Large Marine Ecosystems. There has been interaction between the CMA and the MICC in an effort to try and incorporate ENC On-line into their system. They are also interested in partnering with the MACHC MSDI efforts.

See related documents, [MACHC19-08.3](#)

8.4 Evolving into a Hydrospatial Agency

Mr. Rafael Ponce spoke about Evolving into a Hydrospatial Agency. He said that Transformation in this Digital Era is happening at a fast pace, exponentially, you have the opportunity to drive it, to integrate into it. In order to get better, we have to think about being better. Having a Vision of a better Organization will give you the course to follow to become a true Hydrospatial Agency. Allowing you to Innovate, work together and prepare to support new standards, new needs, new responsibilities and new challenges.

This vision is not only possible, it is essential, and in some ways, it's will also inevitable occur, and you are going to be participating in this and making it happen. You will be able to create your Digital Twin, and address all those challenges with the right technology.

He also mentioned that as a concept, it called “The Science of Where”, which provides with a framework and a process for creating and applying geographic knowledge, the foundation of your work. It allows to collect data and analyze it and understand it, work in collaborative ways, and then put it into action. This is the power of GIS and the power of geography driven to make better maritime products and decision aids. The ArcGIS platform enables organizations to drive a digital transformation and evolve into Web GIS, interconnecting systems, enabling collaboration, reducing production times and becoming more efficient.

See related documents, [MACHC19-08.4](#)

8.5 Data Management Training

John Pepper OceanWise Director, gave a presentation about Data Management Training, he explained what is the data and why it is important. He also mentioned the Wider Use of Hydrographic Data and the OceanWise Courses, Workshops and Assistance.

See related documents, [MACHC19-08.5](#)

8.6 Hydrographic Data as a Service

Mr. Juan Carballini from Teledyne Caris presented “Hydrographic Data as a Service”. He spoke about problems that they are trying to resolve with this (The survey to bridge turn-around time, Efficiency and complexity of meeting, the needs of multiple stakeholders, Operational preparedness for e-Navigation and autonomous shipping, Data integrity and security). He also explained the approaches that are required for success in the marketplace (Service orientated, Cloud based, Bathymetry focused then charts, Latest open geospatial approaches, Latest computing techniques). He spoke about the High level concept, pilot project technical approach- Caris, project deliverables, timeline and S102 creation and upload process.

See related documents, [MACHC19-08.6](#)

8.7 MEIP Report

Mr. James Rogers- MACHC MEIP WG Coordinator gave the MEIP report. He thanked Alberto Costa Neves for presenting the MEIP Report in the absence of the Coordinator at MACHC18 Meeting. He mentioned that MACHC Member States were encouraged to contribute ENC data to the Open Viewer if they haven't already done so. Brazil, Colombia, Cuba, Mexico, the Netherlands, Suriname, United States, and Venezuela currently contribute data to the Open Viewer.

He spoke about MEIP future options, including the possibility of demonstrating the value of MSDI through regional use cases such as:

(Risk Assessment (Dawn Seepersad); Caribbean MPA Network (Gonzalo Cid/Fernando Bretos), Disaster Management (Rafael Ponce);

The intent would be to create a proof of concept with a smaller sub-regional project of the MACHC, exploring collaboration with the Caribbean Marine Atlas organization.

Other suggested actions were to invite additional Member States to contribute ENC data to the Open Viewer; Invite Members States to contribute other MSDI layers to the Open Viewer; Coordinate with other MSDI Regional Hydrographic Commission Groups to determine capabilities and best practices that may improve the MACHC MEIP efforts; Create a MEIP Rest Service to make Open Viewer data available for MSDI GIS Analysis; Potential for coordination with the NGA OGC Concept Development Study which kicked off in October of 2018; The MACHC website could provide a place for storing Disaster POC's and links to websites.

Mr. Rogers mentioned specific proposed changes for the MACHC 19 MEIP: Given the expanding interest in MSDI information within the MACHC region it was determined that the MEIP WG should shift to a MSDI WG to recognize this expanded role; During the MEIP WG meeting there was consensus by the group to make this change to support a MSDI focus; It was decided to change the MEIP name to be more reflective of the larger MSDI mission.

The creation of, and the name for a new MACHC MSDI WG was proposed and approved by the plenary.

No.	Reference	Decision
5	19.8.7	The MEIP Report was approved including the proposal to change the MEIP name to be more reflective of the larger MSDI.
6	19.8.7	The plenary agreed to the establishment of the new MMSDI WG.

With the shift to a MACHC MSDI WG, the group will have a Chair and Vice Chair as opposed to a Coordinator and Deputy Coordinator; The UKHO has agreed to provide an individual to serve as the Vice Chair for the new MACHC MSDI WG; The US will continue to serve as the Chair for the MACHC MSDI WG. The other Members include: Colombia, Mexico, Netherlands, Brazil and the Caribbean Marine Atlas. During the MEIP WG Meeting it was proposed that a new MSDI WG TOR be composed by a drafting group this week at the MACHC; The group composed of France, the UK and the US created a draft document will be made available for review by the full MACHC.

Finally, he mentioned Recommendations after WG Meeting on 28 NOV 2018: The MEIP WG recommends that the MACHC approve the shift to a MACHC MSDI WG to better reflect the larger focus and respond to the regional demand for chart data layers to support non-navigation purposes. This brings the MACHC into line with the larger IHO MSDI efforts. The MEIP WG recommends that the MACHC:

- a) support the establishment of a new TOR to set in place the organizational structure and objectives of the new MACHC MSDI WG;
- b) MACHC MSDI WG liaise with the IHO MSDI WG to establish the proper governance, standards, and policy;
- c) doing an inventory of existing MSDI data from the MACHC region;
- d) establishing a list of layers that are of interest for a potential MSDI for those non-navigation users of the data, beginning with the Navigation Risk Assessment Project and Redgolfo Project;
- e) exploration of potential MSDI projects or partnerships in the MACHC region in the areas of Disaster Management, Marine Protected Areas, and Risk Assessment.

The Plenary endorsed this Report, agreed with its recommendations and created the following two actions:

No	Action
19.8.7	The new MSDI draft TORs will be circulated to Members for further input with a view to finalize them - by April 2019.
19.8.7a	A Workplan is to be produced in early 2019 and will include short term activities, such as response to "low-hanging fruit" use cases, i.e. Maritime Accident Risk Assessment Project, the Tri-National MPA network (RedGolfo) and Disaster Management

See related documents, [MACHC19-08.7](#)

9. [Nautical Charts and Publications](#)

9.1 MICC report

Mr. John Nyberg presented MICC Report. He explained new MICC Leadership, Membership and Work Schedule, MICC updates, ENC Progress, ENC Online, Work Plan and WEND Update. The MICC also updated its terms of reference to reflect the new IHO structure and to bring it in line with S-11. The MICC report and proposal for Suriname to take over as the new Chair was approved by the Plenary, and it was noted that the 2019 workplan should address the need for a regional ENC scheme and this is reflected in action 19.9.

No	Action
19.9	The new MICC Work Plan should address the issue of a regional ENC scheme.

Christy Warmoen, representing the new Suriname Chair, recognized John Nyberg's leadership of the MICC since 2012 and the accomplishments achieved, including:

- Acquisition and analysis of AIS data to plot ship traffic and identify ports that require large scale ENC coverage.
- Creation of the ENC on-line tool useful tool for numerous applications, including MSDI
- Introduced the efforts of MACHC to the UN-GGIM Marine Geospatial Data Working Group
- Progressed ENC coverage for major Ports as the MICC's efforts to eliminate gaps
 - In 2013 the MACHC had 583 ENCs ---
 - Today the MACHC is covered by 914 ENCs
- Eliminated numerous ENC "overlap" and resolved numerous gaps
- Established the position of INT Chart Coordinator

The Plenary agreed with this impressive assessment through their applause for Mr Nyberg.

No.	Reference	Decision
7	19.9	MICC Report was approved, including the change of Chair from the U.S. to Suriname

See related documents, [MACHC19-09.1](#)

9.2 Live Data Streaming and the Use of Mobile Technology for Navigation

Mr. Derick R. Peyton from IIC TECHNOLOGIES spoke about Streaming ENC (and other data) Data from a Cloud Based Open Sourced Database. He explained that Nautilus Cloud is a cloud based infrastructure for Marine Data Solutions and Services for Government Organizations, Commercial Industry and Consumers.

He also explained that NaAVIC is a free and downloadable mobile app and it represents a new approach to an ECS, in which the electronic chart data does not physically exist within the onboard computer.

The data for this particular form of ECS goes well beyond the traditional ENC content and consists of an output from a database consolidating many different data products currently available in the marine domain.

NaAVIC attempts to thrust the sailing experience several steps further by enabling all members of expeditions to engage in the voyage and share that voyage to fellow “marine friends”.

See related documents, [MACHC19-09.2](#)

10. Closing Activities

10.1 Election (vice) Chair MACHC

Chair of MACHC said that based on article 5 subparagraphs b and c of the MACHC statutes, having this presidency fulfilled the established management time and in order to give continuity to the affairs of the Commission, a vote is put to the United States represented by Mrs. Kathryn Ries, current Vice President, to assume the chair in the period 2019-2020. He asked all to raise their hand if they agree and the United States was unanimously elected Chair of MACHC.

Likewise, he said that Circular Letter 17 of the MACHC, dated October 31 of 2018, requested Member States to propose candidates to assume the Vice Chair of the Commission, having received the proposal of the United Kingdom, by letter 103-18 / NH of November 8 of 2018, indicating Admiral Garcez of Brazil to Vice Chair of the MACHC in the period 2019-2020. He asked all to raise their hand if they agree. Brazil was unanimously elected Vice Chair of MACHC.

10.2 AOB

The UK recommended that the MACHC begin to think about potential proposals for the IHO Assembly-2, both to highlight regional accomplishments and to bring attention to priority initiatives. These will need to be available for review and approval at the 20th MACHC in order to be submitted in accordance with IHO deadlines.

No	Action
19.2.1	Identify potential MACHC Member States Proposals to IHO Assembly 2 (must be completed four months before the Assembly; thus the MACHC due date is 21 December 2019; or last week of November)

10.3 Review actions and decisions

All of the actions agreed to in Plenary are reflected above in the relevant sections of the agenda above and in the attached Action List Annex.

10.4 Lessons identified

The Chair then welcomed feedback on the structure of the meeting and how it could be improved. There was a general consensus that the meeting has become too much like a conference, without sufficient time to interact (questions, answers, feedback) and better capitalize on all the information and experience represented by the delegates in the meeting.

More time could be given after National Reports for questions and answers. National reports could be also broken out in parallel subgroups and have industry or observer organization presentations interspersed in them to encourage more interaction.

No	Action
19.10.4	Chair to shorten the duration of the MACHC meeting and consider restructuring of the agenda based on plenary feedback

The pre-Seminar is useful, and there was one proposal for it to have a MSDI focus next year. However, the 2-day Seminar does constrain the MACHC time. One possibility is to start it on Sunday, allowing the MACHC to have three full days of plenary and half day for committee meetings and be finished by Friday without being compressed. Another suggestion is to not have a half day reserved for Committee/WG meetings under the assumption that they should be doing their work intersessionally and come to the MACHC prepared to report out.

Another suggestion was to better match the capacity building requests with those who might be able to help (countries or organizations who provide training for example)—a simple calendar of opportunities would be a good start. It could be used to focus the intersessional CBC work and help prioritize CB activities. The national reports have a wealth of information in them and could be mined for information related to CB requests and training opportunities.

It was also noted that these are not unusual challenges for any Commission and that this one is exceptionally energetic and well organized. These suggestions will be taken into consideration by the new Chair group as they work with the Dominican Republic to organize MACHC-20.

10.5 Next meeting

MACHC Chair said: I want to inform you that this chair received the kind proposals of Brazil and the Dominican Republic to host the 20th Meeting of the MACHC, which I deeply appreciate on behalf of all the states that make up this commission, however, having analyzed the two proposals with the Vice Chair we believe that it is most appropriate that the next venue is the Dominican Republic, since the tradition is fulfilled that the meeting will be held one year on the continent and the next one in an island territory of the Region. He asked all to raise their hand if they agree. Dominican Republic was unanimously elected to host the 20th Meeting of the MACHC.

10.6 Close of meeting

[MACHC Chair Closing Remarks:](#) Dear friends and colleagues, I want to tell you that I am very proud and satisfied of our region, I sincerely believe that we are legitimately committed to promoting hydrographic development to guarantee safety to navigation in all the states that make up this commission, I am also aware that much remains to be done. However, I believe that if we all make an effort to cooperate with each other, the objectives will be fulfilled. I express my sincere thanks to Mrs. Kathryn Ries and her team, because without your support the success of this meeting would not have been possible, and to Rear Admiral Mustafa Iptes and Alberto Costa Neves for their professionalism and commitment. I make a special recognition of professionalism, effort and warmth human of our host Colombia who did an excellent job to make us feel at home. To member states, associate members, observers and industry thanks for making the effort to be present and give greater prominence to this event.

Mexico ends its term as president of the MACHC, personally it was an honor to have presided over this commission made up of people really committed to hydrography, and although we left the presidency we will continue to see each other in meetings and events that have to do with what we are all passionate about, the sea.

Thank you so much!!

DRAFT