


6th Meeting of the Arctic Regional Hydrographic Commission (ARHC) – Iqaluit, Nunavut, Canada 2016

6th Meeting of the Arctic Regional Hydrographic Commission (ARHC)

3 and 6 October 2016



Agenda #	<p style="text-align: center;">Agenda Topic [Documentation]</p> <p style="text-align: center;">ARHC6 Documents can be found at: http://www.iho.int/mtg_docs/rhc/ArHC/ArHC6/ArHC6Docs.htm</p>	Comments	Actions Taken/Assigned
1. 0830	<p>Introductions and Welcome [ARHC6-01 List of Participants]</p> <p style="text-align: right;">Chair: D.Hains </p>	<p>-Welcome and introductions from the Chair</p> <p>-It was established that a quorum for this meeting exists.</p> <p>-Spencer Dewar (Indigenous and Northern Affairs Canada (INAC)) addressed ARHC6</p> <p>-Thanked participants for having the meeting in Iqaluit.</p> <p>-Gave membership an overview Nunavut.</p> <p>- Apologies received from Russian Federation, as well as written inputs.</p>	
2. 0840	<p>Approval of the Agenda [ARHC6-02 Agenda]</p> <p style="text-align: right;">Chair: D.Hains </p>	<p>-Norway requested to show a movie on S-102 pilot project.</p> <p>-No other new agenda items.</p>	



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3. 0850	Review of Past ARHC Actions  D. Brunt [ARHC6-03 ARHC 5 List of Actions]	-ARHC5 List of Actions to be updated based on ARHC6 discussions.	-All Actions from ARHC5 and Extraordinary ARHC conference DONE or CLOSED
4. 0905	IHB Report  R.Ward / Y.Guillam, [ARHC6-04_IHB_Report_final]	-Protocol of Amendments to come into effect November 8 th 2016. -The tentative dates for the 1 st IHO Council are 17-19 October 2017. -IHB asked ARHC MSs to consider appropriate actions to adopt a consistent approach with HCA in: - establishing a recognized and interoperable GIS-based repository that will enable existing data coverage to be identified - conducting risk assessment analysis using AIS data against existing ENC and INT chart coverage -RHCs are reminded to submit their respective reports and status of work plan updates to IRCC by deadlines. DECISION ARHC6-01 ARHC will have an extraordinary meeting on the margins of the 1 st	ACTION ARHC6 Action-01: MS are requested/reminded to prepare for the 1 st Assembly of the IHO (April 2017). ACTION ARHC6 Action-02: MS asked to review entries to IHO C-55, P-5 (Yearbook), and ECDIS back-up, at least annually. ACTION ARHC6-Action-03: Provide updates to S-11 Part B for INT Region N through the INTtoGIS tool, as required. ACTION ARHC6-04: Report to the IHB on the status and description of the ENC schemes in Region N. ACTION ARHC6-05: MS that are



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		IHO Assembly.	<p>members of more than one RHC are reminded to respond to IHO CL 46/2016 before November 30th.</p> <p>ACTION ARHC-06 ARHC Chair (DK) to plan with the IHB an ARHC extraordinary meeting in the margins of the 1st Session of the IHO Assembly.</p>



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5. 0945	<p>Outcomes of IRCC8</p> <p style="text-align: right;">R.Ward / Y.Guillam, </p> <p>[ARHC6-05 IRCC8-Report] [ARHC6-05 IRCC8-Report-AnnexB-List_of_Actions-Updated]</p>	<p>-Well attended and productive.</p> <p>-RHCs are reminded of reporting requirements to IRCC, in particular, status of work programme.</p> <p>-AIO issue resolved: AIOs not to be issued unless permission given by the charting authority.</p> <p>[-Related, IHB suggested ARHC6 participants read the INTERTANKO submission to HSSC8 (HSSC8-05.3D) regarding T&P Notices for ENCs.]</p>	



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1015	Health Break		



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6. 1030	<p>National Reports</p> <p>A. Canada  [ARHC6-6A Canada National Report] [ARHC6-03Ai CAF presentation ARHC Iqaluit]</p> <p>B. Denmark  [ARHC6-06B-National_Report_Denmark]</p> <p>C. Norway  [ARHC6_6C National Report Norway] [ARHC6_6C presentation National report Norway]</p> <p>D. Russian Federation  E. United States of America  [ARHC6-06E_US Report 2016 - FINAL]</p> <p>F. Finland  [ARHC6_6F_National_Report_of_Finland]</p> <p>G. Iceland  [ARHC6-06G_National Report of Iceland]</p>	<p>-10 mins each</p> <p>-IHB thanked Finland for its involvement as Chair of the Nautical Cartography (NCWG) and the Data Quality Working Group (DQWG). [-Related, IHB reminded ARHC6 participants that the new Data Quality model is available on the DQWG Web page (under <i>Miscellaneous/Divers</i>).]</p>	<p>ACTION ARHC6-07 CA to provide ARHC6 participants with link or copy of September 2016 Sea Technology article on Continuous Vertical Datum. [Will be available with ARHC6 documents as: <i>ARHC6-24A INF1 CA Paper on Continuous Vertical Datum</i>]</p> <p>ACTION ARHC6-08 NO requested to provide English translation of the executive summary of their Socio-Economic study to ARHC.</p>



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7. 1200	Group Photo	-Special thanks to John Lowell for prevailing under harsh conditions.	
1215	Lunch		
8. 1315	<p>Associate Member Investiture</p> <p style="text-align: right;">Chair: D.Hains </p> <p>[ARHC6-08_Application_Associate_Member_FIN]</p> <p>[ARHC6-08A_Application_Associate_Member_ICEL]</p>	<p>-ARHC members unanimously approved (including RU by correspondence) the applications for associate membership from Finland and Iceland.</p> <p>-Annex 2 of the ARHC statues will be updated and signed at the earliest possible convenience.</p> <p>DECISION ARHC6-02 Finland and Iceland granted Associate Member status for ARHC.</p> <p>-On ARHC6 Day Two, Finland and Iceland formally signed Annex 2 of the Statutes, officially becoming ARHC associate members.</p>	



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9. 1330	<p>Approval of the Rules and Procedures for ARHC Selection to the Council Chair: D.Hains </p> <p>[ARHC6-09A Ltr to Denis Hains 8.5.16] [ARHC6-09B RULES FOR SELECTION OF MEMBER STATES FROM THE ARHC ver04]</p>	<p>-USA letter of Declaration</p> <p>-Confirmation of RU as the ARHC Council representative, as discussed at Abu Dhabi.</p> <p>-Discussion of the CA proposal to have ARHC Council representation based on a rotation.</p> <p>-Rules for the Council selection will be an Annex to the revised Statues.</p> <p>-Council selection process should be agreed upon at this meeting.</p> <p>-CA, DK, and NO passed on their option to represent the ARHC, therefore, the rotation for IHO Council representation from the ARHC begins with the Russian Federation in 2017.</p> <p>-RU confirmed by correspondence that I will accept being the ARHC representative to the IHO Council. A formal letter to the ARHC chair will follow.</p> <p>-The proposed procedures were accepted (with amendments).</p> <p>DECISION ARHC6-03 <i>The Rules for Selection to the IHO Council</i>, will become Annex 5 of the ARHC statutes.</p>	<p>ACTION ARHC6-09 CA to provide edited version of Annex 5 for final approval of the Members by October 6th.</p> <p>ACTION ARHC6-10 Past c/ARHC (CA), and in liaison with c/ARHC to inform Secretariat/IHB that the Russian Federation will be the ARHC representative to the IHO Council.</p>



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10. 1430	<p>Signature of the Updated ARHC Statutes :</p>  <p>[ARHC6-10 Statutes of the ARHC - Updated to October 3 2016 ver01 -clean] [ARHC6-10 Statutes of the ARHC - Updated to October 3 2016 ver01 -red line]</p>	<p>-The updated statutes will include a section on the Council selection process.</p> <p>-MS are asked to review these proposed amendments.</p> <p>-The revised statutes were discussed.</p> <p>-All participants were asked to review the proposed revisions of the statutes, including Annex 5.</p> <p>-This should be done in the context of the amended Convention, which comes into effect on November 8, 2016.</p> <p>-Notwithstanding any significant changes, the goal is to have the statutes signed off electronically by November 30, 2016.</p>	<p>ACTION ARHC6-11 MSs to review statutes and return to the ARHC Chair by November 15, 2016.</p> <p>ACTION ARHC6-11.1 c/ARHC to forward statutes to MS for signature by November 30, 2016.</p>
1500	Health Break		
11. 1515	<p>Strategic Planning Working Group Report</p> <p style="text-align: right;">Norway </p>	-This working group was officially dismantled at ARHC5.	



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12. 1530	<p>Operational and Technical Working Group Report United States of America </p> <p>[ARHC6-12A_OTWG report Sept 28 FINAL]</p>	<p>-New Chair for OTWG.</p> <p>-ARHC tasking to OTWG.</p> <p>-US (NOAA) announced that Mike Gonsalves was stepping down as chair of the OTWG (to assume other duties), but offered to Sam Greenway to take over the chairmanship.</p> <p>-All members accepted this offer.</p> <p>-CA, DK, and NO acknowledged and thanked Mike Gonsalves for his contributions and leadership as Chair.</p> <p>-The risk-based methodology tool is to be updated with the latest data available from all MSs, in particularly for southwest Greenland and the Russian Federation.</p> <p>-It was agreed that the output of the tool should be kept for internal ARHC use only, for the time being.</p> <p>-OTWG tasking suggestions included: ASVs, impact of hydrographic activities on marine mammals, analysing the voyage of the Crystal Serenity vis-à-vis the output from the tool, and the other items listed in the OTWG task list in the report.</p>	<p>ACTION ARHC6-12 c/OTWG to provide ARHC7 with a discussion paper on autonomous vehicles.</p> <p>ACTION ARHC6-13 c/OTWG to validate OTWG membership list and update, as necessary.</p> <p>ACTION ARHC6-14 c/OTWG to review ARHC tasking list and other suggestions to determine priorities.</p>



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<p>13. 1545</p>	<p>Arctic Voyage Planning Guide Working Group Status Report Denmark </p>	<p>-The AVPG WG was closed at ARHC4. -The draft paper from US and Denmark about a Arctic MSDI will also include some considerations about the Arctic Voyage Planning Guide.</p>	
<p>14. 1600</p>	<p>Arctic International Charting Coordination Working Group Report Norway  [<i>ARHC6-14A_AICCWG report</i>] [<i>ARHC6-14A_Presentation-AICCWG Status</i>] [<i>ARHC6-14B_Arctic_Nautical_Charting_Plan</i>] United States of America  [<i>ARHC6-14B_INF1_USArcticNauticalChartingPlan2016 Revision</i>] United States of America </p>	<p>-AICCWG Chair asked ARHC6 for direction: -Are ARHC members interested in contributing to the INT program in Region N. -NO is currently the only MS with INT charts in Region N. -CA, DK, and US indicated that they are not considering producing INT charts. -IHB reminded ARHC that ENC coordination is also a component of the INT program. -For most MSS, trans-boundary ENCs issues are dealt with on a bi-lateral basis. -It was suggested that INT program may have a role once S-100 products become available. -IHB reminded ARHC that its representative to WENDWG is CA.</p>	<p>ACTION ARHC6-15 c/AICCWG to report back to ARHC7 on the re-scoping of the WG to include Arctic nautical charting issues.</p>



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		<p>-The direction of the AICCWG was raised again at the end of Day 2, under new business.</p> <p>-A re-naming or re-tasking was discussed further.</p> <p>-If there is no interest in INT charting in the Arctic, perhaps, the group should be disbanded.</p> <p>-It was suggested that, perhaps, the group could be re-scoped to include all Arctic nautical charting issues (e.g. an Arctic Nautical Charting Working Group) and not just INT and ENC coordination.</p> <p>-IHB pointed out that if the ARHC has any issues relating to data quality, they should contact the DQWG as soon as possible as it may be standing down in the near future.</p> <p>DECISION ARHC6-04: Add Arctic Nautical Charting to the mandate of the AICCWG.</p> <p>-As the scope of the work of this group changes, MS may want to re-consider who their reps are on this group.</p>	



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15. 1615	<p>Arctic - Marine Spatial Data Infrastructure</p> <p style="text-align: center;">United States of America </p> <p style="text-align: center;">Denmark </p> <p>[ARHC6_15Ai_USA_ARMSDIWG_Proposal] [ARHC6-15Aij_DRAFT_ToR_ARMSDIWG] [ARHC6-15Aiii_DRAFT_WorkPlanARMSDIWG] [ARHC6_15Aiv_USA_ArcticSDI_Contact_Proposal] [ARHC6_15Av_USA_NGA_Portal_Proposal] [ARHC6-15B_IHO MSDIWG Report]</p>	<p>-DK presented the MSDIWG report.</p> <p>-Highlighted the work of the Baltic Sea – North Sea MSDIWG.</p> <p>-It was suggested to member to visit the BS-NS MSDIWG website, as it is a good resource.</p> <p>-US and CA invited to participate in the next BS-NS MSDIWG meeting.</p> <p>-US proposed the establishment of the ARMSDI Working Group.</p> <p>-All MSs supported this proposal.</p> <p>-All MSs supported the selection of Sebastien Carisio as ARMSDIWG Chair.</p> <p>-ARMSDIWG ToR approved.</p> <p>-Arctic SDI is group parallel to the Arctic Council.</p> <p>-NGA invited ARHC6 participants to visit their Arctic portal: https://nga.maps.arcgis.com/home/index.html</p> <p>-2m DEM now available for Alaska and an 8m draft of the rest of the Arctic is also available.</p>	<p>ACTION ARHC6-16 CA to as Chris Hemmingway (MSDIWG) to adapt NO video on “What is hydrography?” to “What is MSDI?”.</p> <p>ACTION ARHC6-16.1 NO to provide contact information to CA.</p> <p>ACTION ARHC6-17 ASMSDIWG Chair to draft a consolidated work plan (using IHO template), to be reviewed at the ARHC extraordinary meeting.</p> <p>ACTION ARHC6-18 All MSs to contact their Arctic SDI national representative to promote awareness of the marine component of the SDI and the work of the IHO.</p> <p>ACTION ARHC6-19 All ARHC Members, Associate Members and Observers invited to include in their national</p>



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		<p>-ARHC6 recognizes the importance of traditional knowledge (TK) and the need to incorporate it in SDIs.</p> <p>-ARHC6 participants to search for opportunities to capture TK (e.g. engagement with communities) and to give it a geo-spatial reference.</p> <p>-One of the challenges with TK may be to keep it updated.</p>	reports at ARHC7 their progress in capturing traditional knowledge.
1700	Close of Day 1		
	[Start of Day 2]	<p>-US thanked the hosts for coordinating ARHC6 with Ocean Innovation 2016.</p> <p>-US noted that it was interesting and relevant to ARHC and that it will include its experiences/results from community engagement (e.g. Alaska) in its next national report.</p> <p>-It was suggested that other nations consider adding a ‘traditional knowledge’ element to their reports, as well.</p>	



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16. 0830	<p>Progress of WEND Working Group</p> <p style="text-align: right;">IHB </p> <p>[ARHC6-16_Presentation_WENDWG]</p>	<p>-IHB Rep. (As WENDWG Sec.) presented on the activities of the WENDWG.</p> <p>-ARHC requires a rep to the WENDWG. NO agreed to consider taking that role.</p> <p>-It was noted that after the 1st Assembly all working groups will have to elect (or re-elect) their Chairs and Vice-Chairs.</p> <p>-Laurent Tardif is the current USCHC rep to WENDWG.</p> <p>-There is a new page on the WENDWG web page that will serve a repository for relevant items. These include:</p> <p>--US-CA Case Study in the resolution of ENC coverage issues.</p> <p>--Risk Assessment Methodologies.</p> <p>--ENC Dataflow Producers, i.e. RENC distributions.</p> <p>--ENC Coverage for Cruise Ships in the Mediterranean Sea.</p>	<p>ACTION ARHC6-20 ARHC to select a new rep for WEND WG.</p> <p>ACTION ARHC6- 21 c/ARHC to recommend to IRCC that the IRCC decision regarding MIOs be reported to the 1st IHO Assembly.</p>



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17. 0845	<p>Outreach-Arctic Council/PAME/ARHC Report Canada </p> <p>[ARHC6-17A_IHO Application as Observer at Arctic Council]</p> <p>[ARHC6-17B Bulletin_Arctic Council secretariat]</p> <p>[ARHC6-17C Letter to Renée Sauvé, Chair of PAME Working Group re Update of the Activities of the ARHC]</p> <p>[ARHC6-17D PAME II-2016 final RoDs]</p>	<p>-All members were reminded of the pending IHO application to the Arctic Council (AC) for Observer status.</p> <p>-It was recognized that the AC has a long list of organizations also wanting to be granted observer status.</p> <p>-There has been IHO-AC contact and AC suggested that if there was any new documents, references, demonstrations of engagement in the region, etc., that these examples be brought forward the AC.</p> <p>-ARMSDIWG considered an excellent vehicle for outreach.</p>	<p>ACTION ARHC6-22 ARHC6 participants to contact their national AC reps regarding the IHO's application.</p> <p>ACTION ARHC6-23 c/ARHC To provide feedback to PAME before their next meeting (February 2017).</p> <p>ACTION ARHC6-24 c/ARHC to determine best way to continue engagement at AC (that is, with which group(s) and establish points of contact.</p> <p>ACTION ARHC6-25 c/ARMSDIWG to prepare a white paper on Arctic MSDI for the next AC meeting.</p> <p>ACTION ARHC6-26 NO to follow-up with its AC rep regarding the possible existence of AIS database maintained by NO for AC.</p>



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18. 0900	Outreach- Cruise Liners Industry Association (CLIA) 	This item will be included in Item # 22.	
19. 0930	Outreach- IHO-EU Network Working Group Status Report Denmark  [ARHC6-19A_EU-IHO-Network statusreport Denmark]	-Participants invited to visit the Coastal Mapping site on the EMODnet central portal. http://www.emodnet.eu/coastal-mapping -Should ARHC have a common bathy database? -c/ARMSDIWG agreed to see what exists and may be possible.	ACTION ARHC6-27 c/ARMSDIWG to investigate the idea of a pan-Arctic bathy database.



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20. 0945	Outreach – IMO 	-No specific report. -Polar Code -Equipment Requirement and Data Submission -The subject of the IMO Polar Code was introduced by the IHB. -It was recommended that participants review the Nautical Cartography Working Group (NCWG) paper on the Polar Code (find at: http://www.iho.int/mtg_docs/com_wg/NCWG/NCWG2/Polar%20Code.pdf)	



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21. 1000	Provision of Nautical Information. Norway  [ARHC6-21 Provision of Nautical Information Norway]	-Norway will make a presentation regarding its developments in the provision of nautical information. -NO is in the process of digitizing all of their nautical publication under a “book to app” project that will move them from a “Pull” to “Pull” type of publication. -Demonstrations of the service are available. This service is run by the NO HO. -Denmark is updating its delivery of nautical information by providing the key information to commercial partners who then could potentially make the desired apps. -IHB reminded members that the Nautical Information Provision Working Group (NIPWG) is working on a S-100-based standards for nautical publications.	
1015	Health Break		
22. 1030	Crowd-sourced Bathymetry Information OPEN – TARGETED – CONTROLLED	- Cruise Liners Industry Association (CLIA). (Hains)	ACTION ARHC6-28 CA to draft a short document on navigational risks in the



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	<p style="text-align: right;">Canada </p> <p>[ARHC6-22B 2016 ASD in Arctic - ARHC]</p>	<p>-Alternative approaches to data collection in the Arctic. (Schlagintweit)</p> <p>-There has been contact with CLIA by IHB, US, and CA.</p> <p>-They are interested and there has been discussion about the IHO perhaps making a presentation at one of CLIA's upcoming meetings.</p> <p>-NO and DK mentioned that they have made contact with the Association of Arctic Expedition Cruise Operators (AECO).</p> <p>-DK noted some of the challenges getting [multi beam] survey equipment on cruise ships, not the least of which is creating the expectation that the data collected will appear on nautical chart products.</p> <p>-More than just multi beam data should be considered.</p> <p>-All participants agreed that engagement with these types of groups should continue.</p> <p>-HOs need to invest in processes that will automate the flow of data from crowd-sourced</p>	<p>Arctic.</p>



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Agenda #	<p style="text-align: center;">Agenda Topic [Documentation]</p> <p style="text-align: center;">ARHC6 Documents can be found at: http://www.iho.int/mtg_docs/rhc/ArHC/ArHC6/ArHC6Docs.htm</p>	Comments	Actions Taken/Assigned
		<p>data to databases, as much as possible.</p> <p>-This was noted as one of the lines of investigation for the CSBWG.</p> <p>-There was discussion regarding the assessment of risk in the Arctic by insurance companies.</p> <p>-CA volunteered to draft a short document on navigational risk in the Arctic with the support of a presentation previously produced by DK.</p> <p>-This would be presented to an insurance forum/meeting at some future date.</p>	



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23. 1115	Remote Sensing and Satellite-Derived Bathymetry (SDB)  Canada [ARHC6-23A Remote_Sensing & SDB_20160927]	<p>-An overview of SDB and change detection applications in CA.</p> <p>-Several pilot project areas (e.g. Mackenzie River).</p> <p>-There will be even more and more imagery available (e.g. from small satellites) and the access/delivery will likely change to a service provision.</p> <p>-A proposal on SDB has been submitted to 1st Assembly.</p> <p>-The question of liability was raised in cases where information (in this case, imagery) is available/known, but the HO does not act upon it.</p> <p>-US noted that some MS may have access to imagery libraries via agreements with NGA.</p>	



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1200	Lunch [ARHC6-23 PRIMAR S-102 Project] [ARHC6-23 Los-Farsund]	-NO made presentation and showed a short movie about PRIMAR's S-102 Pilot project. -The goals of the project are to test the production of S-102 data, test and identify distribution solutions for S-102, test the implementation of S-102 in ECDIS/ECS, get feedback from manufacturers and end users, and provide feedback to the relevant IHO working groups. -The project team consisted of the HO, Navy, ECDIS manufacturers, pilots, and others.	
24. 1315	Information Papers		
25. 1345	Other Business A. Echo Sounder Potential Impacts on Marine Species <div style="text-align: right;">Canada </div> [ARHC6-25A Effects of Noise on Marine Mammals]	A-CA presented a one-page fact sheet on the topic of the potential impacts of echo sounders on marine mammal species. -Participants were asked if they had any similar research. -DK reported that they have no known issues or problems associated with hydrographic survey	



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	<p>B. UNCLOS update</p> <p>C. Arctic International Chart Coordination (AICC) Working Group (see Agenda Item 14).</p>	<p>activity.</p> <p>-However, it was acknowledged that all HOs should have this kind of evidence prepared and available in case the question gets raised.</p> <p>-CA invited the HOs present to use its presentation, if they choose.</p> <p>-ARHC6 participants were invited to review and add to this presentation.</p> <p>-US brought to the attention of ARHC6 that there is new research taking place on noise in the oceans (e.g. passive acoustics) at UNH and this research could be complementary to this presentation and the US may include the results of this work in its National Report next ARHC conference.</p> <p>B-CA reported that has completed its last UNCLOS survey.</p> <p>-It was agreed that UNCLOS reporting would not be included in the ARHC meetings, as it was condition of the formation of the group that issues of potentially political sensitivity would</p>	



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		not be discussed at this forum.	
26. 1415	Review of Actions D. Brunt 		
27. 1445	Transition of Chair Date and Venue for ARHC7 	<p>-DK accepted Chair of ARHC from the end of this conference to the end of ARHC7.</p> <p>-DK thanked CA for its work as Chair.</p> <p>-Greenland is being considered for the location of ARHC7.</p> <p>-The dates are to be determined, though the end August/beginning of September 2017 is a possible timeframe.</p>	
28. 1500	Close of Meeting Chair: D.Hains 	-The Chair thanked all of the participants at ARHC6 and closed the meeting – on time!	



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