

**International Hydrographic
 Organization**



**United States - Canada Hydrographic
 Commission**



International Hydrographic Organization (IHO)
United States-Canada Hydrographic Commission (USCHC)
Meeting

16 May 2016

The Westin Nova Scotian

1181 Hollis Street, Halifax, NS B3H 2P6, Canada Phone: (1)(902) 421-1000

Maritime Room

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| 1. 0830 | Introductions and Welcome Glang/Hains <i>[USCHC38-01 List of Participants]</i> | Mr. Denis Hains opened the meeting. He welcomed Admiral Glang, IHB Director Iptes, and the rest of the participants. Admiral Glang expressed his appreciation to CHS for hosting. Director Iptes also thanked CA for hosting and mentioned that he was delighted to attend. He stressed the importance of RHCs and thanked US and Canada on behalf of the IHO, for their significant contributors to technical committees of the IHO. Mr. Hains also paid a brief tribute to Mr. Ross Douglas, a former Dominion Hydrographer, who passed way just prior to the Conference. | n/a |

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| 2. 0840 | Approval of the Agenda Glang/Hains [USCHC39-02 Agenda] | n/a | n/a |
| 3. 0850 | Organizational and Personnel Update/National Reports A- Canada (10 min.) Hains [USCHC39-03A Canada National Report] B – United States (15min.) Glang [USCHC39-3B US National Report] | <p><i>Presentations will be available on the USCHC39 website.</i></p> <p>Canada</p> <ul style="list-style-type: none"> -World class Tanker Safety System project continues to be a priority for CHS. -Phase 1 nearly complete, with 20 of 25 new charts in Pacific region now released. -Print on Demand (POD) modernization is continuing. This will allow for more dynamic (and less static) production process. -CHS is to become more data centric, with a focus on geospatial data services and on data management. More private sector collaboration is foreseen. -Satellite-Derived Bathymetry (SDB), Crowd-sourced bathymetry (CSB) and Marine Spatial Data Infrastructure (MSDI) are three key areas for priority for CHS LCdr Sandy Shearer presented on behalf of the Royal Canadian Navy (RCN) and the Canadian Armed Forces (CAF). -The functions of the RCN Hydrographic Services Offices (HSOs) were highlighted. -Arctic sovereignty to become one of the highest priorities for Canadian Navy. -In 2018 ice strengthened ships come on line. -Getting new data and producing charts for the Arctic very important as the Arctic is the most dangerous region for Maritime Ops. <p>United States</p> <p>Hydrographic Offices/Services</p> <ul style="list-style-type: none"> -The National Report provides specific information pertaining to individual products and services of primary interest to the United States and Canada Hydrographic Commission (USCHC). -U.S. domestic and international hydrographic services are primarily conducted by three | |

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| | | <p>government agencies: The National Oceanic and Atmospheric Administration’s (NOAA) Office of Coast Survey (OCS), the National Geospatial-Intelligence Agency (NGA) Maritime Safety Office, and the Naval Meteorology and Oceanography Command (CNMOC, U.S. Navy). A fourth agency, the U.S. Army Corps of Engineers, is responsible for hydrographic surveys in designated U.S. federal waterways and inland rivers, and produces U.S. inland ENC’s (IENCs).</p> <p>-The US has an open data policy and manages information as an asset.</p> <p>Surveys</p> <p>-NOAA’s survey priorities and plans were presented.</p> <p>-The US Navy survey capacities were described.</p> <p>New Charts and Updates</p> <p>-NOAA continues to offer US ENC’s free of charge in GIS-friendly formats.</p> <p>-Adding to its existing distribution network, NOAA became a member of IC-ENC and established a regional IC-ENC office.</p> <p>-NOAA is half-way its multi-year project to complete and maintain its ENC suite as its premiere product, meaning that NOAA ENC’s will offer the same scale coverage and content as RNCs.</p> <p>-It is now working on the Great Lakes ENC’s part of the project.</p> <p>-One challenge that arose was that the actual AIS traffic analysis did not line up with the charted tracks. In addition, it was noted that translating recommended tracks from polyconic charts to ENC’s required remedial actions.</p> <p>-All paper charts are now available for download as print-on-demand (POD).</p> <p>-A description of NGA’s DNC program was provided along with the description of the Canadian Department of Defence (DND) role as co-producer/maintainer of Canadian DNC libraries.</p> <p>New Publications and Updates</p> <p>-The <i>US Coast Pilot</i> series is now updated weekly.</p> <p>-NGA <i>Sailing Directions</i> and <i>List for Lights Radio Aids and Fog Signals</i> can be viewed and downloaded.</p> <p>Maritime Safety Information</p> <p>-NGA is the coordinator for NAVAREA IV and VII.</p> <p>C-55 Updates</p> | <p>USCHC39-01: CHS invited to join Dutch Harbour survey work.</p> |

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| | | <p>-US provided its latest updates to C-55 Capacity Building</p> <p>-US is an active member of the IHO Capacity Building Sub-Committee (CBSC)</p> <p>-There are two CAT A Hydrographic programs in the US.</p> <p>-NOAA (Capt. Andrew Armstrong NOAA (ret.) serves as a member on the International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers.</p> <p>-NOAA, with the UKHO, hosted a Chart Adequacy Evaluation Workshop in July 2015 with 15 participants from 13 nations. Another workshop was scheduled for July 2016.</p> <p>Oceanographic activities</p> <p>-US participates in GEBCO and distributes the International Bathymetric Chart of the Arctic Ocean (IBCAO).</p> <p>-NOAA providing technical and financial support for the IHO-initiated project to develop a global database for crowd-sourced bathymetry hosted by the IHO Data Centre for Digital Bathymetry (DCDB).</p> <p>Other</p> <p>-IHO DCBD continues to welcome bathymetric data from Member States.</p> <p>-NGA representative on the IHO MSDIWG is currently updating C-17 (Spatial Data Infrastructures “The Marine Dimension” Guidance for Hydrographic Offices), and has represented this WG at the OGC meeting of the Maritime ad-hoc group.</p> <p>General Discussion</p> <p>-In Canada, there is a need (and desire) government-private sector partnerships.</p> <p>- USN will present a paper on Wednesday at CHC2016 on “lessons learned” and other experiences with AUV’s.</p> <p>-For a further exchange of experiences with ASVs, CA is invited to contact Sam Greenway.</p> <p>-A key challenge of acquiring and using “data of opportunity” (e.g. from ships or other platforms of opportunity) is assessing and insuring that it is of acceptable quality.</p> <p>-RDML Glang pointed out that not only is there a requirement for good equipment on these</p> | |

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| | | <p>vessels of opportunity, there is a training issue that needs to be addressed to ensure that the technicians have, as least, the basic hydrographic capacity to keep the equipment functioning well/correctly/proficiently.</p> <p>-In this context, more trained hydrographers are required, for example, on Navy and Coast Guard ships collecting hydrographic data.</p> <p>-Kian noted in the context of UNCLOS and ECS efforts, Canada has trained people.</p> <p>-MS should continue to explore opportunities to enhance communications between USCHC and MACHC, e.g. attending Hydrographic and related conferences in other countries.</p> | |
| 4. 0920 | <p>Review of Past Actions Brunt/Justi A- USCHC38 <i>[USCHC39-04A USCHC Action review]</i> B- IRCC7 <i>[USCHC39-04B IRCC Action review]</i></p> | <p>-Note action USCHC37-6, <i>CA to provide US with CA strategy for Satellite Derived Bathymetry</i>, is not completed.</p> <p>-Emphasis to maintain the US-Canada MOA and create the USCHC statutes.</p> <p>-More partnerships envisioned. (\$, common projects, personnel exchange).</p> <p>-There was a special discussion on GGIM and the importance of raising awareness of maritime side.</p> <p>-Imperative to continuously bring to the attention of Spatial Data Infrastructure (SDI) group of OGC, the importance of maritime and marine data standards.</p> <p>-OGC invited Kian to attend Arctic SDI. Kian said they need to look at MSDI.</p> <p>-Can the USCHC leverage the work of the other RHCs to advance their MSDIs?</p> | Sam Debow to follow-up |

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| 5. 0945 | Proposal for USCHC Statutes Brunt/Justi <i>[USCHC39-05 USCHC Statutes - draft]</i> | -New draft statutes presented to co-chairs for review. -The IHB appreciates effort to standardize draft. -The IHB Invites US and Canada to indicate which co-chair will be the USCHC representative prior to each IRCC meeting. | USCHC39-02: Co-chairs to review and comment on draft Statutes. USCHC39-03: Co-chairs to inform IRCC of the USCHC representative prior to each meeting. |
| 6. 0950 | IRCC and IHO Reporting Coordination -USCHC Reporting Calendar Justi/Brunt <i>[USCHC39-06 USCHC Reporting calendar]</i> | The reporting timeline was presented and input requested to Doug and Jonathan over the course of the day. | |
| 1000 | Break | | |
| 7. | Charting | | |

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| 7A. 1015 | INT Programme Review -IHO perspective (10min.) Iptes -US perspective (10min.) Nyberg -CA perspective (10min.) Hains -Discussion (10min.) <i>[USCHC39-07A - 1 INT Chart Coordinators Workshop - Report]</i> <i>[USCHC39-07A-2 Regions A and B Assessment]</i> | <ul style="list-style-type: none"> - An on-line demo of the IHO INT catalogue was given. [It can be found by following the link at S-11 entry on the IHO document download page.] -The intent of this discussion was to get the perspective of the meeting attendees regarding this programme. -From this discussion, USCHC should consider a way forward. -Director Iptes presented an introduction of INT Programme: -IHO has an INT chart system (40-50 years). And the regulations and guidance like S-4 and S11 regarding INT Chart activities. - Region A is US-Canada. Region N also includes some USCHC waters, but the two countries do not have INT charts in that region. -INT programme now under consideration of IRCC. Last year, IRCC7 discussed the issue. Some issues and actions discussed. Circulated CL 64 and 89 regarding INT. -If the IHO maintains the INT programme, it should be regulated. -Some MS have more developed ENC's and the future for those HO's is based on ENC, not INT. But some other regions still produce INT Charts (schemes, plans, etc...). This issue heavily discussed at INT Chart and ENC coordinators (April 2016) in Monaco. -Most RHCs (particularly those with developing countries) will continue to produce and modify INT charts for the next 10-20 years based on user demands. -60% ships do not have ECIDIS requirement (based on tonnage). INT chart carriage requirements will continue for those vessels. -For the time being, the USCHC will likely remain less active compared to other RHCs, but the IHO community, in general, will remain invested in the INT programme for some time to come. -Next IRCC will discuss this activity- charting and data gathering. | |
| | | <ul style="list-style-type: none"> -US Echoed the comments of the Director. -For US, resources need to compete on different tasks (ENC, for example vs. INT). -Primarily, the resources will focus on ENC's. -However, in Region B, US is working on INT in the region. | |

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| | | <p>-Probably for USCHC, INT not as important.</p> <p>-France wants to offer an INT chart in Region A. Other nations may also have an interest in INT in region.</p> <p>-The French proposal may not fit into USCHC scheme (scale).</p> <p>-US asked how do you consider charts that may only be available in ENC's. How do you reconcile that with INT strategy?</p> <p>-IHB responded that it will relay this issue to Yves.</p> <p>-Canada echoes the US comments: For CHS, INT not a priority and it only makes a very modest contribution to the programme.</p> <p>-John Lowell will carry the USCHC position to IRCC.</p> <p>-UKHO provided its input:</p> <p>-The INT chart programme was primarily designed for small scale charts to avoid duplication of effort.</p> <p>-Printer-producer concept introduced.</p> <p>-Over time, nations have made progress and called their charts, INT charts.</p> <p>-Other nations have IPR.</p> <p>-Direction is needed from IHB on what should happen.</p> <p>- In 1994 everyone was asked to enter bilateral arrangements with others. But this has never been clarified.</p> <p>-There will likely be a demand for INT going forward</p> <p>-IHB noted that the INT programme can create some [particularly political] problems and there are some ongoing issues.</p> <p>-USCHC contribution appreciated.</p> | <p>USCHC39-04: USCHC to contact France regarding the addition of an INT chart to Region A.</p> |

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| | | <p>-It was noted that CA has some large-scale charts (specifically, the port of Halifax listed as INT charts. They are S-4 compliant.</p> <p>-Lowell agrees with original purpose for very small scale. Why did Halifax create such a chart at such a large scale?</p> <p>- Admiral Glang made the following observations:</p> <p>-It would be helpful to hear from the user and how they use INT charts, and their overall usefulness.</p> <p>-What is the future of paper charts? That is a relevant question.</p> <p>- INT is a subset of the paper chart discussion.</p> <p>-For US DOD, the faster it gets rid of paper, the better. But, NGA does have responsibilities to produce paper products around the world.</p> <p>-Further, for most HOs, there is a responsibility to different users who use paper (non-SOLAS, recreational, etc.)</p> <p>-HOs need to wrestle with this: What is their role as a government agency? –Data management, quality, printing, etc.? What is the focus?</p> <p>-USCHC INT Chart Coordinator (Nyberg) Invited discussion of role of INT Chart coordinator for INT Region A.</p> <p>-There is an obligation that each RHC has an INT Chart Coordinator.</p> <p>-It was suggested and agreed that the Chart Advisory Committee (CAC) takes the role of monitoring chart coordination.</p> <p>-Subsequently, USCHC directed CAC to:</p> <p>-Circulate the CAC TOR to the members for their review.</p> <p>-Consider convening a meeting [virtual] before USCHC40</p> <p>-Follow-up on the exchange of CATZOC data</p> <p>- Monitor and assess developments related to the INT Programme and report to USCHC.</p> | <p>USCHC39-05: CA to consider US suggestion that CA becomes the INT Chart coordinator for Region A.</p> <p>USCHC39-06: Formalize INT Chart Coordination role in the USCHC statutes.</p> <p>USCHC39-07 (DECISION): CAC will oversee regional chart coordination.</p> <p>USCHC39-08: CAC to act on USCHC directions.</p> |

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| 7B. 1055 | CATZOC Attribution of Canadian waters in US ENC's | -NOAA will be proposing an action to share CATZOC data (M_QUAL) for certain border areas so the US and Canadian ENC's are consistent in regard to the CATZOC assessment in their respective waters. -Currently the OCS plan is to show all bathymetric data in Canadian waters charted on US ENC's as "UNASSESSED" -US POC: Sean Legeer. -Particularly troublesome area in Puget sound for example. -Bay of Fundy, Great Lakes, Puget Sound, Dixon situations also have to be addressed. -US will gladly share any CATZOC data with CA. -Data for CHS is managed at the regional level. | USCHC39-09: CA Regional offices to provide Sean Legeer with contact information. |
| 7C. 1110 | IC-ENC /US Engagement Nyberg <i>[USCHC39-7C US engagement with IC-ENC]</i> | -OCS update on its progress joining IC-ENC. -Examples of the process are: three days turn-around for ENC updates; and, one week for new editions. -Glang: There is a cultural change to the vision. Bringing some of the international culture and injecting that into our cartographic community. -There is a need to understand from the user community. -Training was important for OCS in selecting IC-ENC vs. Primar. After the training, folks come back and say "now I understand why" -Canada is planning on having discussions on joining a RENC. Discussion should take place within Canada in very near future. | |

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| 7D. 1125 | Future of the Paper Chart Nyberg/Prince/All | <p>-CHS started to do some work internally. Not ready to share internationally.</p> <p>-Dave P perspective: Canada looking at this issue. Conducted study. Talked with many users. Perspective very different from total dependency on paper to ready to do away with paper. Paper needed for training, planning. Nearly everyone saw need for paper charts into the near future.</p> <p>-Issues such as printing, look and feel, distribution, specs revision, are all things that need to be addressed.</p> <p>-CHS reviewing recommendations.</p> <p>-A review in terms of IHO context is required, as well.</p> <p>-CHS will continue producing paper charts for the foreseeable future. Paper chart- regulations require for many users, however, regulations are under review.</p> <p>-Lowell: Why do HO's continue to looking at the past? Can you look to do things differently, derive benefits, and still meet requirements? Focus on paper is one thing. However, USCG looking at approving ECS (electronic chart systems) for non-SOLAS vessels. Paper not required. The largest type of request within the US DoD community is for mobile apps and 85% of the USN is non-paper. Would the rest of the marine community be that much different? Perhaps, "What is the future of the paper chart? ", is not the right question.</p> <p>-Discussion of who are the main drivers for paper charts in each country.</p> <p>-CHS will face issues of copyright and licensing. Licensing distinguishes between navigation and non-navigation usages. The debate in CA over whether or not public data should be freely accessible continues, but there will likely not be any change in this policy for years to come.</p> | |
| | | <p>-IHB noted that this is HSSC agenda item as well.</p> <p>- Correspondence working group on future of paper charts to report to HSSC in November.</p> <p>-Here the discussion was about requirements of national HO's, and priorities.</p> <p>-More developed member state to focus more and more on electronic charts.</p> | |

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| | | <p>-It was noted that the IHO brought the issue to the IMO 2 years ago. IMO said paper will be required. Options on delivery exist but requirements will remain.</p> <p>-The paper chart is here for a long time; however, there may be options on delivery and production improvements/efficiencies. For example, the paper chart becomes a by-product of the ENC, as long as this can be easily done.</p> | |
| 8. 1140 | <p>Technical Presentation: “Building a decision tree to obtain a complete and coherent coastal chart coverage for ENC’s” Klemm <i>[USCHC39-08 Decision Tree for ENC Coverage]</i></p> | <p>-This paper discussed a methodology for “creating a charting scheme based on traffic, environment and shoreline” for the purpose of determining “the largest practical scale for the best coverage.</p> <p>-Arctic Alaska was the study area, but the authors concluded that this GIS-based approach could be applied and adapted to other geographic areas.</p> <p>-Other conclusion were: Decisions regarding the scale bands should be made before going forward; and, Consideration should be given to the S-101 usages, as well.</p> | |
| 1200 | Lunch | Conversation / Group photo | |
| 9. 1300 | <p>Extra-Commission Briefs A- IHO (10min.) Iptes <i>[USCHC39-09A IHB Report to USCHC39]</i></p> | <p>IHO: -IHB highlighted recent activities in capacity building, education, e-navigation, MSDI, S100, and the expansion of IHO membership: -Malta (already applied), Liberia, and Panama are among the potential new members. -Large scale capacity building funds in process of being raised by IHB for Caribbean and Western Pacific, and western Africa.</p> | <p>USCHC39-10: CA invited to submit an obituary for Ross Douglas to the IHR.</p> |

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| | <p><i>[USCHC39-09Ai Protocol of Amendments summary]</i></p> <p><i>[USCHC39-09Aii Preparation for A1 timelines]</i></p> <p><i>[USCHC39-09Aiii RHC_IHO Council Representaton]</i></p> <p>B- WENDWG brief (10min.) Nyberg/Tardif <i>[USCHC39-09B WENDWG presentation to USCHC39]</i></p> <p>C- UKHO (10 min.) Thorne <i>[USCHC39-09C UK National Report Presentation Ver 1 0]</i> and <i>[USCHC39-09C UK National Report to USCHC 2016]</i></p> | <p>- A maritime funding conference to be held in DC (tentative Oct 18).</p> <p>- A meeting being planned in mid-August to introduce IHB CBSC projects to WB.</p> <p>-Member States and RHCs were reminded that International Hydrographic Conference Circular Letters (CCLs) are being issued and the contents should be reviewed and the deadlines and/or requests, respected.</p> <p>-The IHB is now entertaining ideas for World Hydrography Day 2017.</p> <p>-Members are invited to remain active in the International Hydrographic Review</p> <p>-Member States and RHCs were reminded to maintain and submit their Work Programme and Strategic Plan (WPI and SPIs) indicators, when required.</p> <p>-IHB invited CA to nominate a CA representative to the IHO Crowd-Sourced Bathymetry Working Group.</p> <p>UKHO:</p> <p>-UKHO plans to move print on demand (POD) this year with advances in print technology. They will retain no inventory.</p> <p>-It was noted that Bermuda falls in Region A (overseas territory of the UK).</p> <p>-Project Neptune highlights: A 5-year effort to collect bathymetry in the UK territories. The total project is for 30 million euros with 5.6 million in year one for proof of concept. There is an interested to coordinate with NAVOCEANO to avoid duplication of effort.</p> <p>-UKHO bursary course has been renewed for 2017.</p> <p>-Discussion of how UKHO is taking more of a customer approach. Most feedback through the UKHO distribution agents. Folks can still call UKHO.</p> <p>-UKHO port approach guides (PAGs) planned in region A- discussing with Canada. None for</p> | <p>USCHC39-11: US to provide UKHO POC at NAVOCEANO for Project Neptune.</p> |

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| | <p>D- GEBCO/IBCAO update (10min.) Armstrong</p> <p>E– France (activities in Region A) – for information <i>[USCHC39-09E France Self-Assessment]</i></p> <p>F– IBSC Update Armstrong <i>[USCHC39-09F IBSC Update]</i></p> | <p>Canada, yet.</p> <p>GEBCO/IBCAO: -New round of data to be incorporated into IBCAO. -Will review the newly available data. -US and Canada asked provide IBCAO with new data as it becomes available. -Denis Hains pushing to get cruise data everywhere, in particular the North-West Passage. - He wants to reach out to cruise lines to advocate adding the multi-beam capabilities to cruise and non-hydro vessels.</p> <p>IBSC: -Andy Armstrong provided an update. -Progress on 5a and 5b; The may both be in effect in October of this year, pending outcome of discussions at IRCC. -USCHC Member States invited to consider and endorse these changes. -It was noted that Memorial University (St. John’s, Newfoundland) now has a certified Category B (Hydrography) programme. As well, the Association of Canadian Land Surveyors (ACLS) certification model (CAT A & B) has been recognized by IBSC. -Some discussion of how to measure success of building capacity. It was suggested that this is a possible topic for IRCC. -Dr. Armstrong brought to the meeting’s attendees the concern of workload on the IBSC</p> | <p>USCHC39-12: US and CA invited to contribute ENC Band 1&2 data to GEBCO/IBCAO as it becomes available.</p> |

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| | | evaluators and their ability to keep up with the increasing demands for review/certification services. In some way, this must be addressed to ensure there is not a bottleneck in the process. | |
| 10. 1345 | Marine Spatial Data Infrastructure A – CA (10min.) Fadaie B – US (10min.) Lowell C – IHO MSDIWG brief (10min.) Fadaie -Discussion (15min.) | -Does USCHC want/need to appoint a USCHC rep to MSDIWG (See IRCC7/48)? -ARHC has a MSDI WG. -However, it was noted that both CA and US are already active with the MSDIWG. -Kian stated that an open data platform for CA is to be opened June. While it is land SDI only, it includes data from approximately 20 Canadian government departments and agencies. -Technology and platform, 2 of 4 key pillars are in Canada. -Canada has commissioned 3 pilot studies to show application of platform for demonstrating interoperability (e.g. Bay Fundy, Dixon Entrance, and the Beaufort Sea. - Now, many stakeholders are interested in this and want to develop marine cadastre. -Marine Protected Areas (MPAs) is an interest area of MSDI in Fisheries and Oceans Canada. -Prototype of two areas and now adding Beaufort Sea. Need compliance with ISO 101105 (?). The majority of time is spent getting data accessible. -The “3A” approach: - data is authoritative, accurate (of known quality), and accessible. -This means the data can be integrated. -Charts meet MSDI- bathymetry is base layer. Government of Canada recognizes this. -John L. introduced Arctic SDI as case study. -He has met with USGS regarding MSDI. -MS to continue advocating linking hydrography to the UN Post 2015 agenda and GGIM and its role in sustainable development and disaster risk reduction. -Canada invited to join ENC online that is going on in MACHC. Bands 1, 2, 3 are being contributed. | USCHC39-13: Ensure MSDI is on the ARHC meeting agenda. |

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| | | MSDI WG (Kian): - CL 56/2015 (the MSDI questionnaire) will be a discussion on MSDI at IRCC. -New draft of C-17 have been sent for comment. -Importance of MSDI as an important theme for the next conference. -There is a need to further develop the governance piece of MSDI. -John L. gave a brief presentation on nga.maps.arcgis.com | USCHC39-14: US and CA to provide MSDI WG with their practices and illustrative examples related to C-17. |
| | | Glang: What can US and Canada do to cooperate on this- three pilot areas? -A charter and work plans would provide structure. -The could then be extended to other groups, particularly, ARHC and Arctic SDI. -Suggested that reaching out to Arctic SDI further would be beneficial. | USCHC39-15: US and CA to consider a joint MSDI pilot (e.g. Beaufort Sea). |
| 1430 | Break | | |

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| 11. 1445 | Controlled Crowd- and Open-Source Bathymetry A. IHO CSBWG update (from vice- Chair) Klemm <i>[USCHC39-11A CSBWG Update]</i> B. CHS Centre of Expertise Schlagintweit <i>[USCHC39-11B Data Access Centre of Expertise]</i> | See report -CSBWG- mainly focused on collection of bathymetry at sea, not remote sensing. -Admiral Glang suggested that AIS data be evaluated as a potential source. CHS PPT: CHS to move toward more data management model. -Funding and staffing increase to create this virtual team of CHS offices (regional and HQ). -There has been some funding of survey equipment, also. -Significant interest in backscatter and reflectance- what more can these contribute. -Canada wants to have an active role in determining standards for the CSBWG work that Klemm talked about. -Issues of mutual interest and opportunities (e.g. ASV development) should be discussed further. -Dr. Armstrong asked if there will be any academic participation in the emerging center. -D Hains replied, yes. His is promoting greater participation with academia is trying to develop an academic network that can be beneficial for all the organizations involved. | USCHC39-16: CA to appoint a rep to the CSBWG. |

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| 12. 1500 | Technical Presentation: “Sensor-Derived Policy and Localized Chart Updates at NOAA’s Marine Chart Division” Barber <i>[USCHC39-12 Sensor-Derived Policy and Localized Chart Updates at NOAAs Marine Chart Division]</i> <i>[USCHC39-INF-D NOAA Nautical Chart Manual Update for SDB]</i> <i>[USCHC39-INF-E NOAA SDB Pilot Study]</i> | -Prof. Shachak Pe’eri participated in this discussion. | |
| 13. | Informational and Other Items | | |

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| 13A. 1530 | Confirmation of USCHC Representative to the Capacity Building Sub-Committee. Hains | -CA proposed that Capt. Brian Connon represent USCHC at CBSC. -All parties were in favour of this. | USCHC39-17 (DECISION): Capt. Connon to represent USCHC at CBSC. |
| 13B. 1545 | US-Canada Joint ECS Project Armstrong <i>[USCHC39-13B US-Canada 2016 Cooperative ECS Mapping in the Arctic]</i> | Wrap up data acquisition for both nations during this trip. Data collected will be shared with GEBCO. | |
| 13C. 1600 | LIDAR and Joint Airborne Lidar Bathymetry Technical Center of Expertise Aslaksen/Macon | -NOAA and USACE will offer a background on its LIDAR activities and discuss its positions. -US hopes to gain a better understanding of Canada’s interests and directions. -US will invite Canada to participate directly in the 17th Annual JALBTCX Airborne Coastal Mapping and Charting Workshop, 19-21 July 2016, at the Silver Spring Civic Center in Silver Spring, MD. (more information: http://shoals.sam.usace.army.mil/Tech_Workshops.aspx) | USCHC39-18 USACE to share presentation with USCHC39 participants. |
| 13D. | New Canadian Ocean Mapping Network Hains | -There is a new initiative to establish a network in the area of ocean mapping. -Tentatively referred to as the Canadian Ocean Mapping Research and Education Network. -Key players coming forward and expressing interest include, the Marine Institute of Memorial University, Centre interdisciplinaire de développement en cartographie des oceans (CIDO), Nova Scotia Community College, Laval University, University of New Brunswick (UNB), and Insitut des sciences de al mer de Rimouski (ISMER). -CA will continue to brief USCHC as more information becomes available. | |

| Agenda # | Agenda Topic [Documentation] | Comments | Action |
|-------------|---|--|--------|
| 13E. | Other | Possible Webinar subjects for the intercessional period: -A demonstration of the CHS National Planning and Prioritization Tool -A Webinar on the management of AIS data. | |
| 14. 1630 | Review of USCHC39 Actions Brunt/Justi | | |
| 15. 1645 | Next Meeting and Closing of USCHC39 Glang/Hains | USCHC40 will be held in conjunction with US Hydro 2017 that will take place 20-23 March 2017 in Galveston, TX, USA. | |
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