NHC65 B4

National Report of Iceland

This report gives an overview of the work of the Hydrographic and Maritime Safety Department (HMSD) of the Icelandic Coast Guard (ICG) for the period from NHC64 in April 2021 to NHC65 in April 2022.

1. Hydrographic Office / Service

The Hydrographic Office in Iceland is a department within the ICG. The Hydrographic and Maritime Safety Department (HMSD) carries out the tasks the Icelandic Coast Guard is responsible for according to Icelandic law i.e. hydrographic surveying and nautical charting in the waters around Iceland. Current number of staff at the Icelandic HO is eight people.

2. Surveys

In 2021 surveying continued north of the Westfjords and in Ísafjarðardjúp. The 2021 survey season started on May 10 when survey vessel BALDUR left Reykjavík heading north. BALDUR returned to Reykjavík on October 6th. Weather was favourable the whole survey season. If sea state north of the Westfjords was critical for surveying, which happened a few times, the sheltered fjords of Ísafjarðardjúp offered optimal conditions.

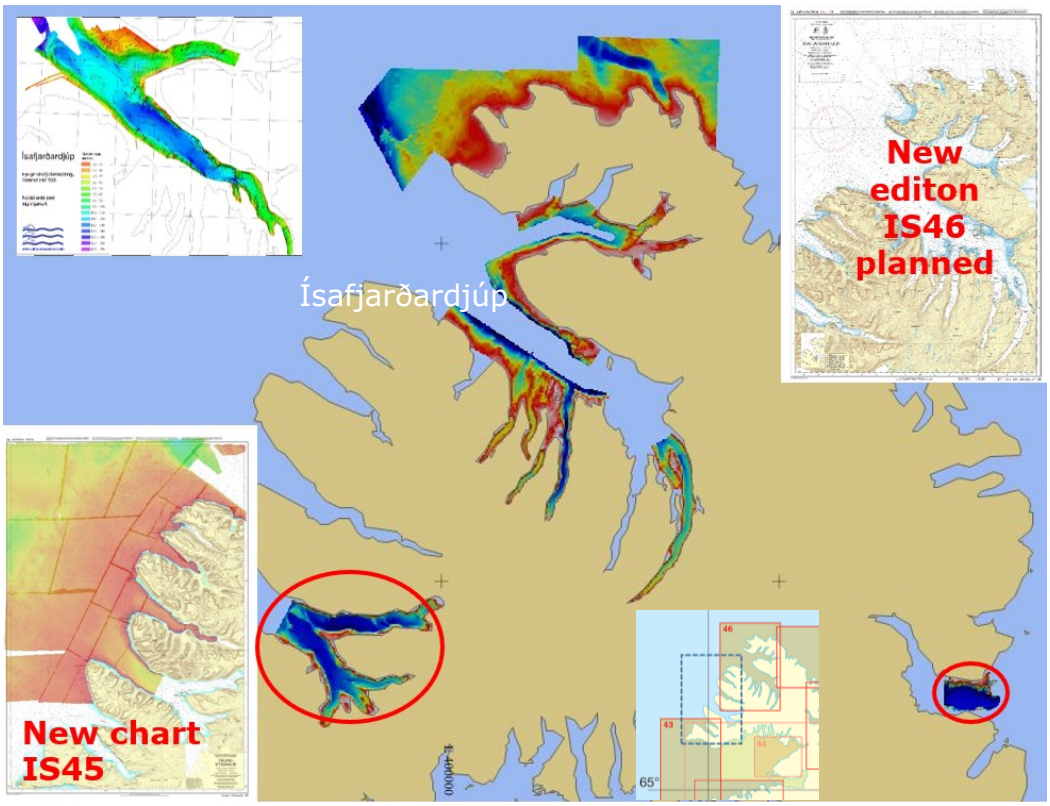


Fig. 1 Surveyed areas in the Westfjords in 2020 and 2021. Additions to planned surveys circled in red. The new chart, IS45 Bjargtangar – Stigahlíð fills a gap in the 1:100.000 Coastal chart series on the NW coast.

Fig. 2 BALDUR north of the Westfjords. Hornbjarg (534 m) in the background.

The northernmost part of the Westfjords, is remote, uninhabited, and lacking all modern infrastructure making conventional tidal corrections troublesome. Therefore, ICG-HMSD decided to use GNSS RTK positioning for surveying and height models for vertical correction of sea level in the area.

The lesson learned by initiating surveying using GNSS RTK positioning, and height models is that vertical height models, either on land or at sea in Iceland, need to be re-established for optimal outcome. The ICG intends to join forces with the responsible counterparts; the National Land Survey of Iceland (NLSI) and the Icelandic Road and Coastal Administration (IRCA) to improve vertical height models for Iceland.

As mentioned in NHC64 IS national report survey-focus shifted from Breiðafjörður to Ísafjarðardjúp and northern parts of the West fjords. Before heading further north, the start of the 2020 survey season saw the surveying the narrow approach to Reykhólar, a small but locally significant port in the easternmost part of Breiðafjörður.

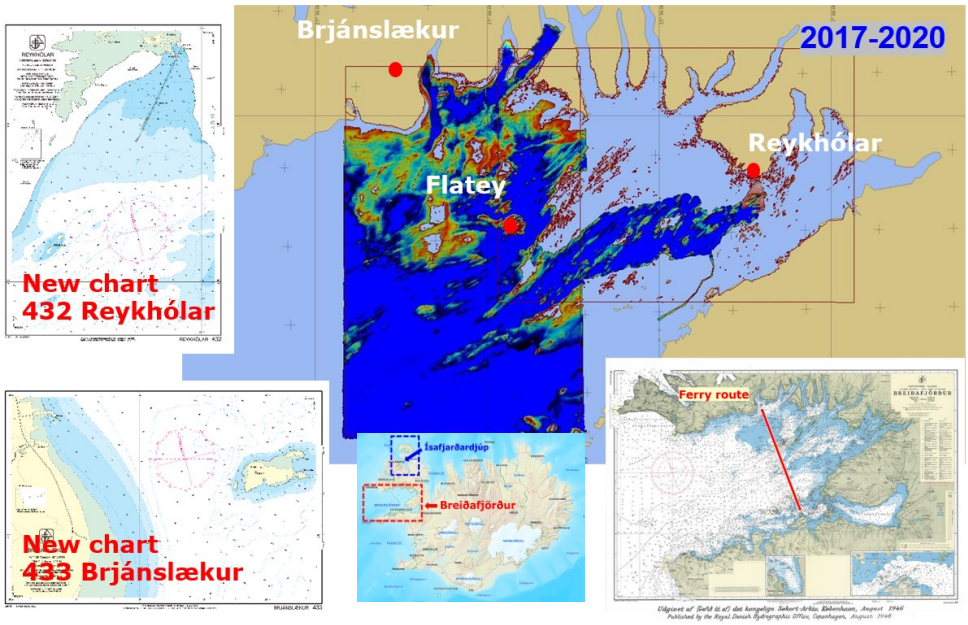


Fig. 3 The coverage of 2017-2019 surveys and the 2020 survey of the approach to Reykhólar in Breiðafjörður.

In addition to scheduled survey activities contract work was carried out for the port authorities in Reykjavík in relation to works in progress, dredging and key extensions. The data gathered over the years, through this contract work and regular surveys, makes it now possible to visualize the sea floor of Kollafjörður as a whole.

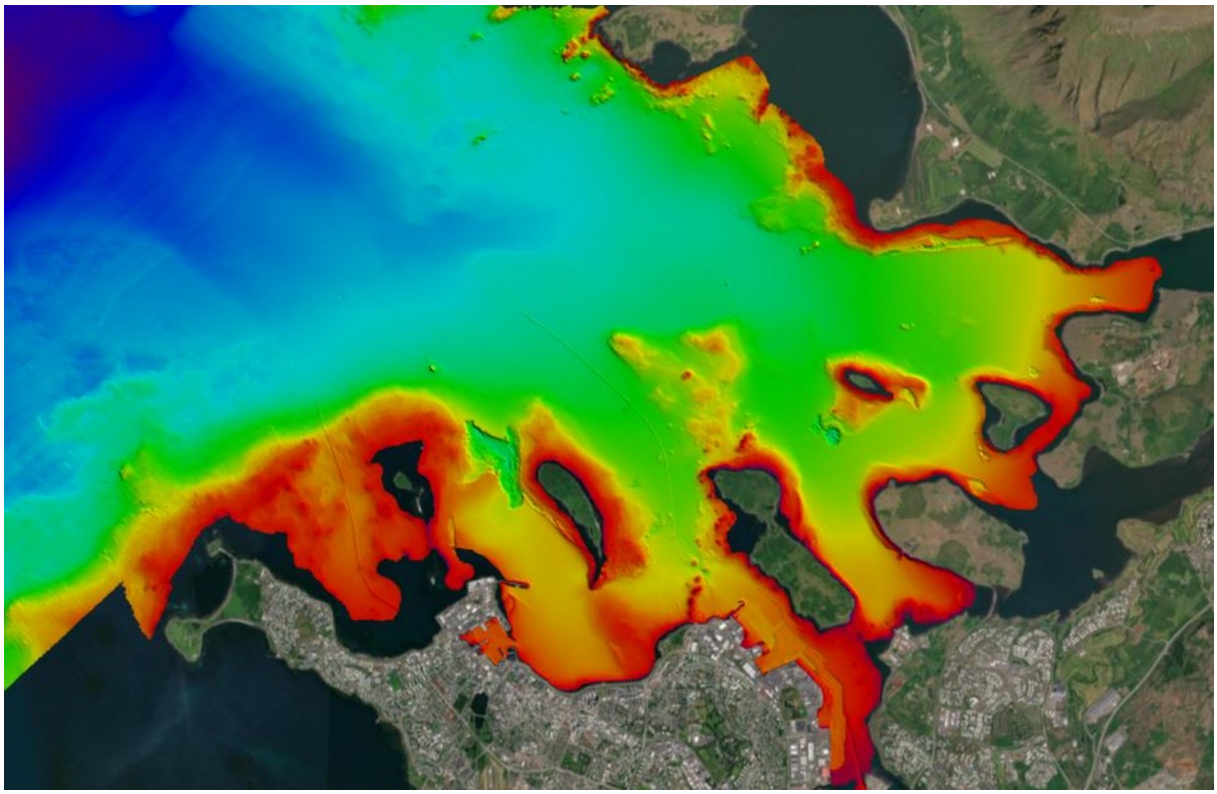


Fig. 4 Reykjavík is on the south side of the fjord Kollafjörður. Multibeam surveys cover all the fjord.

3. New charts & updates

ENCs

International Centre for ENCs (IC-ENC) distributes Icelandic ENCs. In 2021, two new cells have been issued, 17 new editions made and 14 updates. In 2022 so far 10 new editions have been made and 2 updates. Iceland produces and maintains 73 ENC cells.

National paper charts

Two new charts and ten new editions have been published from May 2021 to March 2022. The following tables list this.

New charts

National No.	Title	Scale	Pub. month
432	Reykhólar	1:10.000	05/2021
433	Brjánslækur	1:10.000	05/2021

New editions

National No.	Title	Scale	Pub. month
530	Akureyri (INT 1118)	1:10.000	05/2021
714	Norðfjörður	1:10.000	05/2021
417	Ísafjörður	1:10.000	06/2021
518	Skagaströnd	1:10.000	06/2021
712	Seyðisfjörður	1:10.000	06/2021
418	Súðavík	1:10.000	07/2021
810	Höfn í Hornafirði	1:10.000	07/2021
362	Reykjavík - INT 1113	1:10000	01/2022
715	Eskifjörður	1:10000	01/2022
716	Reyðarfjörður	1:10000	01/2022
717	Fáskrúðsfjörður	1:10000	01/2022
416	Bolungarvík	1:10000	03/2022
422	Ólafsvík	1:10000	03/2022

Planned new harbour plans

Some 10 harbour plans of small ports in Iceland haven't been updated for a very long time. Once published these harbour plans mark a milestone for publication of Icelandic harbour plans. Nearly all active ports will by then have been covered. The following table list these harbour plans.

National No.	Title	Scale	Planned
322	Arnarstapi	1:10.000	Q4 2022
517	Blönduós	1:10.000	Q4 2022
513	Drangsnes	1:10.000	Q4 2022
525	Hrísey	1:10.000	Q4 2022
526	Árskógssandur	1:10.000	Q4 2022
527	Hauganes	1:10.000	Q4 2022
531	Grenivík	1:10.000	Q4 2022
536	Kópasker	1:10.000	Q4 2022
612	Bakkafjörður	1:10.000	Q4 2022
710	Borgarfjörður eystri	1:10.000	Q4 2022

In addition to this new edition of all coastal charts scale 1:100.000 is planned for 2022 (Q3-Q4).

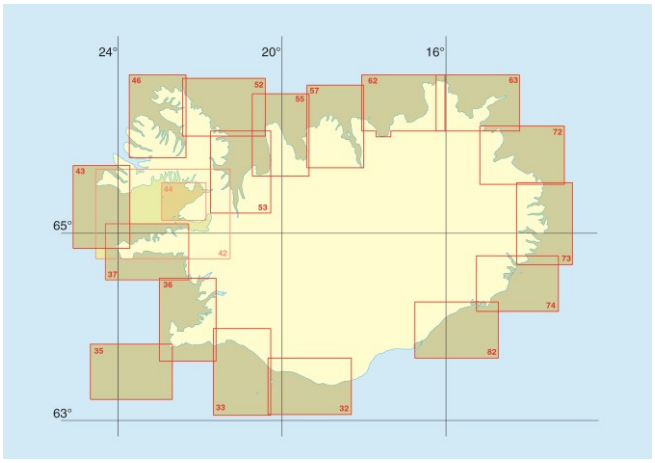


Fig. 5 New editions of the 17 coastal charts is planned in 2022.

4. New publications & updates

The annual publications, *Tide Tables 2022,* and *Tide Almanac 2022* were published in November 2021.

The pdf-only publication, *List of Lights* and *Catalogue of charts* are updated on a regular basis. Both are available at *www.lhg.is*. The List of Lights is published on behalf of the Road and Coastal Administration.

Three issues of *Notices to Mariners* were published in 2021, 29 NMs in total. Three issues of NMs have been published so far in 2022, total of 26 NMs. In connection with NMs 1/2021 a new format ~~of~~ for the *Cumulative list of Notices to Marines for Icelandic Charts* was launched. The document list charts in numerical order and the headings of NMs that apply to current edition.

2

Kort nr./ Chart No.	Titill/Title	Mælikv./ Scale 1:	Útg. m/á Ed. M/Y	Nr. tilk./ NM No.	Efni tilkynningar	Subject of NM
10 INT 112	Ísland – Grænland	500.000	12/2011	2020: 23(T)	(T) A-land. Seley. Radarsvari óvirkur.	(T) E-Coast. Seley. Racon out of order.
15	Island - efnahagslögsaga	2.000.000	12/2011	2020: 23(T)	(T) A-land. Seley. Radarsvari óvirkur.	(T) E-Coast. Seley. Racon out of order.
21 INT 1010	Ísland	1.000.000	03/2008	2008: 5 2008: 23 2008: 25 2008: 30 2009: 11 2012: 8 2012: 9 2020: 23(T)	Dýpi. Leiðrétting. Kort nr. 21, 31, 51 og 61. Ísland. Suðurströnd. Neðansjávarstrengur. V-land. Breiðafjörður. Dýpi. Ísland. Suðurströnd. Neðansjávarstrengur. NA-land. Þistilfjörður. Æsmundarstaðaey. Radarsvari lagður niður. SV-land. Faxaflói. Þormóðsskersviti. Radarsvari lagður niður. SV-land. Faxaflói. Gróttuviti. Radarsvari settur upp. (T) A-land. Seley. Radarsvari óvirkur.	Depths. Correction. Charts No. 21, 31, 51 and 61. Iceland. S-Coast. Submarine cable. W-Coast. Breiðafjörður. Depth. Iceland. S-Coast. Submarine cable. NE-Coast. Þistilfjörður. Æsmundarstaðaey. Racon discontinued. SW-Coast. Faxaflói. Þormóðsskersviti. Racon discontinued. SW-Coast. Faxaflói. Grótta. Racon established. (T) E-Coast. Seley. Racon out of order.
31 INT 1103	Dyrhólaey - Snæfellsnes	300.000	01/2020	2020: 5	S-land. Eyjasund. Ólduduft.	S-Coast. Eyjasund. Wave rider buoy.
32	Alviðruhamrar - Vestmannaeyjar	100.000	05/2017	2019: 1 2019: 14 2020: 5	S-land. Eyjasund. Ólduduft. S-land. Dyrhólaey. Viti, sjónmál. S-land. Eyjasund. Ólduduft.	S-Coast. Eyjasund. Wave rider buoys. S-Coast. Dyrhólaey. Light, range. S-Coast. Eyjasund. Wave rider buoy.
33	Selvogur - Vestmannaeyjar	100.000	10/2015			
35	Fuglasker	100.000	05/2008			
36 INT 1112	Selvogur - Hjörsey	100.000	10/2016	2017: 1 2017: 12 2017: 35 2019: 6 2021: 1 2021: 8	SV-land. Faxaflói. Borgarfjörður. Dýpi. V-land. Hvalfjörður. Sæstrengir. SV-land. Kollafjörður. Akkerislægi. SV-land. Reykjavík. Viti lagður niður. SV-land. Flók. SV-land. Kollafjörður. Vatnsleiðsla færð.	SW-Coast. Faxaflói. Borgarfjörður. Depth. SW-Coast. Hvalfjörður. Submarine cables. SW-Coast. Kollafjörður. Anchor berths. SW-Coast. Reykjavík. Delete light. SW-Coast. Wrecks SW-Coast. Kollafjörður. Pipeline. Amend.
37	Hjörsey - Stykkishólmur	100.000	01/2020			
				2014: 27	V-land. Arnarfjörður. Sæstrengur.	NW-Coast. Arnarfjörður. Submarine cable.

Fig. 6 The Cumulative list of Notices to Mariners in new formatfor Icelandic Charts. The document lists charts in numerical order and lists headings of NMs that apply to current chart edition.

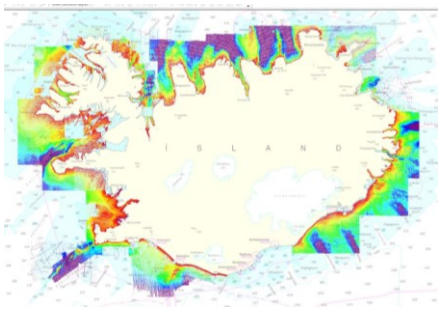
List of Lights: https://www.lhg.is/media/sjomaelingar_islands/Vitaskra_2020_vefutg.pdf
Catalogue of charts: https://www.lhg.is/media/sjomaelingar_islands/Kortaskra-des21.pdf
For Icelandic NMs visit https://www.lhg.is/starfsemi/sjomaelingasvid/tts/nyjustu-tts/
Cumulative list of NMS for Icelandic Charts: https://www.lhg.is/starfsemi/sjomaelingasvid/tts/uppsafnadar-tilkynningar/

5. MSI

The Icelandic Coast Guard runs a VTS. MSI service is an integrated part of that operation. The ICG VTS services Iceland and Greenland. NAVTEX messages in 2021 were in total 12.038 (11.748 in 2020) for Iceland and 5656 (5.063 in 2020) for Greenland. The figures include storm and ice warnings.

6. C-55

Last update made in November 2016. Long overdue update is planned Q2-Q3 2022. Work on the update has started. The screen captures below show multibeam survey coverage (left) and combined multibeam and single beam coverage (right). Considerable time has been invested in the updating of the file-based data management system in connection with work on incorporating CARIS Bathy DataBASE (BDB) into the Data management and Chart Production Processes.



7. Capacity Building

Two members of staff received CARS BDB Server Training in June 2021. All members of staff followed the IC-ENC Introduction to S-100 Training in December 2021. In January 2022 the Nautical Cartographers received a 5-day training in using CARIS S-57 Composer 4.1 to produce ENCs. In February 2022 one member of the Hydrographic surveying team attended a 5-day online CARIS HIPS training.

In February 2022 the HO staff had half day introductory course on QGIS (Open Source Geographic Information System) by the Program Director of Spatial Data Infrastructure and Data sharing at the National Land Survey of Iceland.

A Bilateral Arrangement between Iceland and the Faeroes was signed on December 21st, 2021. The Bi-Lat between Iceland and Denmark will be updated in 2022 to reflect changes in relations between the Faeroes and Denmark regarding hydrography and nautical charting.

8. Oceanographic activities

The project of surveying the EEZ of Iceland, outside coastal waters, which the *Marine & Freshwater Research Institute* (MFRI) leads, and ICG takes part in, continues. The focus of ICG-HMSD lies approx. within the circular extent of the 200 m depth contour, which is somewhat larger than the area of the Territorial Waters. Red line on the image on the right below shows the TW (12 NM) and the extent of ICG-HMSD modern hydrographic surveys in red and blue.

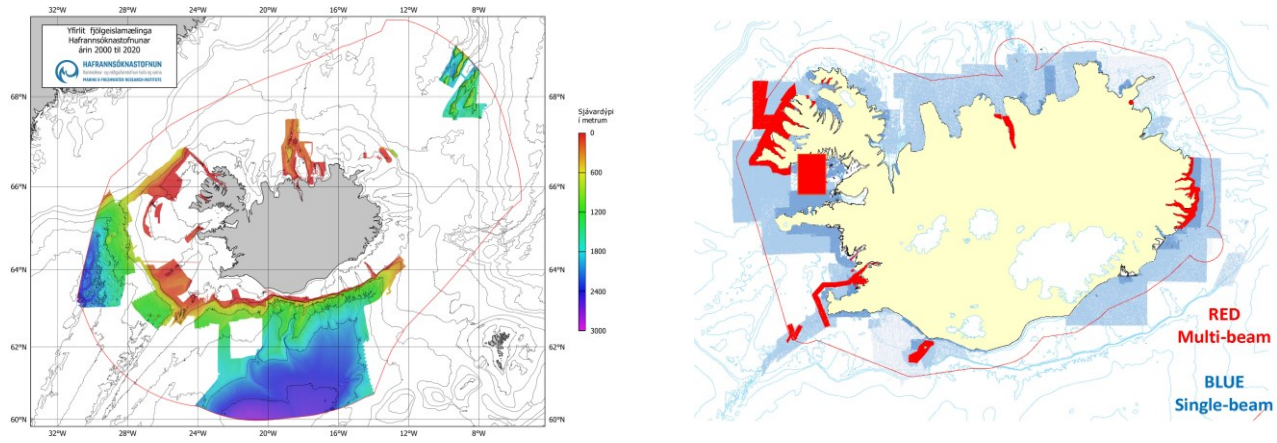


Fig.7 Status of surveying the EEZ of Iceland 2020. The image on left shows data from MFRI. Image on right shows costal surveying by the ICG.

The MFRI data is available for download at https://www.hafogvatn.is/en/research/seabed-mapping

9. Spatial data infrastructures

The ICG-HMSD has been more of an observer than a player for the past 5 to 10 years when it comes to MSDI. The department hasn't had capacity to put any effort in MSDI matters. Representatives of ICG-HMSD have in the past however taken part, on and off, in the work of the ARHCs ARMSDIWG and the BS-NSMSDIWG.

The ICG-HMSD has good relations with the NLSI which is responsible for SDI in Iceland since 2011 when the Icelandic Parliament passed the Digital Spatial Data Infrastructure Act. Marine Spatial Planning and

SDI/MSDI awareness and interest is gradually growing on ministry, organizational and municipality level in Iceland.

Current plan of ICG-HMSD looks 3-5 years ahead from now with the intention to determine how the department can best serve its MSDI related commitments.

10. Innovation

Print on Demand (PoD)
Conventional offset printing of Icelandic charts was terminated as of June 1st2021. A Print on Demand (PoD) service was launched at the same time. All Icelandic paper charts affected by NMs are now available updated to the latest NMs. Preparations for a full PoD service for overseas chart agents that have previously offered Icelandic charts and have established PoD services were finished towards the end of 2021. Fully functional PoD for Icelandic charts was launched, with agents´printing and the first two charts agents abroad signed PoD contracts, in March 2022.

CARIS BDB
Work on incorporating *CARIS Bathy DataBASE* (BDB) into the Data management and Chart Production Processes will continue as planned and extend well into 2022.

At a conference held by, LÍSA - an organization for spatial information in Iceland, in November 2021, the ICG-HMSD introduced a 3-5 year plan of setting up fully functional database to serve the needs of the department and allowing public access to depth data for the benefit of society.

11. Other activities.

IHO RHCs, WGs and other work

Representatives of ICG-HMSD participated in the following VTCs of IHO bodies:

- NHC64 in April 2021 and NSHC34 in April 2021
- BS-NSMSDIWG9 in September 2021
- IRCC13 in June 2021
- ARHC11 in November 2021
- The Baltic Sea and North Sea as a S-100 testbed workshop. (FMSDI) in March 2022

Iceland hosted and chaired NSHC35 in April 2022. The first in-person meeting in two years and which coincidentally was held shortly after the 60th anniversary of the NSHC (established on 10 January 1962).

Representatives of ICG-HMSD participated in the following held by IC-ENC:

- IC-ENC TC21_1 in May 2021 and IC-ENC TC21_2 in October 2021
- IC-ENC SC22 meeting in November 2021
- IC-ENC TC22_1 in February 2022.
- IC-ENC TC22_2 in March 2022 and IC-ENC TC22_3 in April 2022

Maritime Administration in Iceland

The tasks and obligations of Maritime Administration in Iceland is divided between two government agencies. The *Icelandic Road and Coastal Administration* (IRCA) and *Icelandic Transport Authority* (ICETRA).

IRCA http://www.vegagerdin.is/

ICETRA https://www.samgongustofa.is/

IRCA takes care of all harbour infrastructure development and lighthouse operations and is responsible for surveying of ports. POCs at ICG and IRCA exchange information and data on a regular basis.

ICETRA is responsible for the administration and supervision of aviation, maritime and road traffic safety and the safety and supervision of transport infrastructure and navigation systems. POCs at ICG and ICETRA exchange information and data as and when needed.

12. Conclusions:

This report highlights activities of the Hydrographic and Maritime Safety Department of the Icelandic Coast Guard for the period from April 2021 through April 2022.