

23rd BSHC Conference National Report of Germany

August 2018

Executive Summary

The present report outlines and summarizes the activities carried out since the 22nd BSHC Conference by the Federal Maritime and Hydrographic Agency (BSH). The report concentrates on the Baltic Sea.

Issues of special interest have been:

- Replacing the survey, wreck search and research vessel ATAIR. The new vessel will be equipped with a hybrid engine using mainly LNG (Liquid Natural Gas);
- Investigation of the regular use of communication satellites to broadcast the GNSS corrections to the survey vessels in a higher precision and in real-time;
- Automatic derived contour lines and soundings from a nautical high resolution DTM.

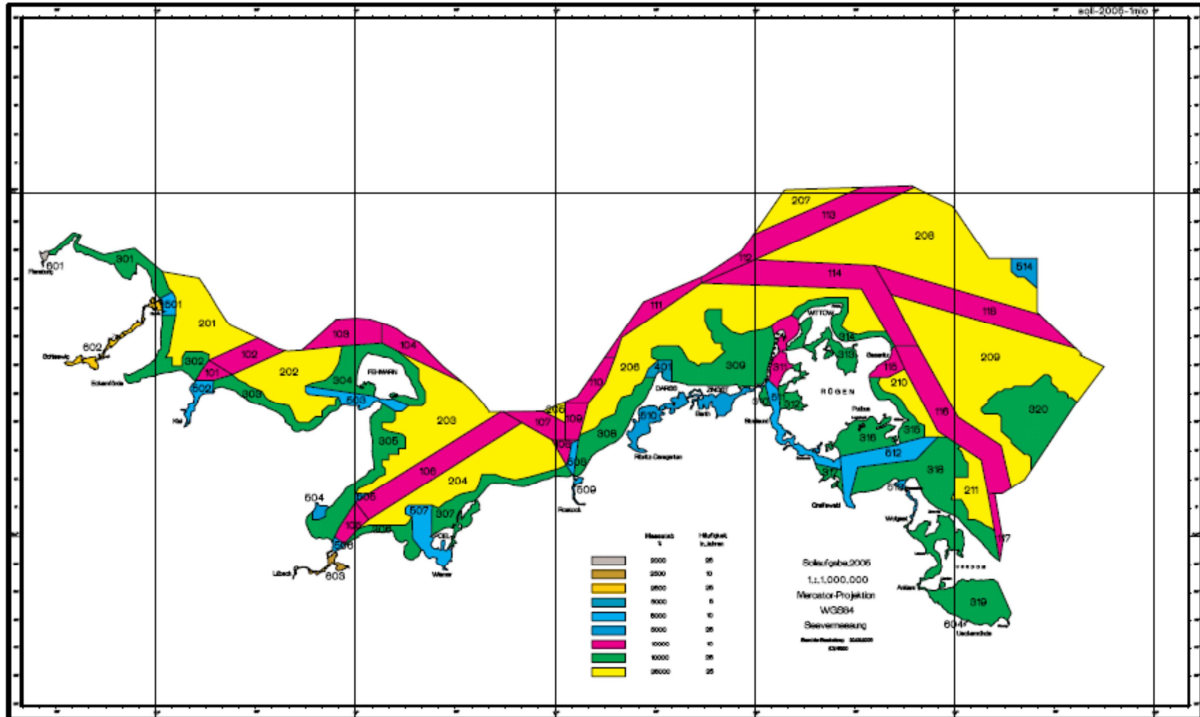
1. Hydrographic Office

The Bundesamt für Seeschifffahrt und Hydrographie (BSH, Federal Maritime and Hydrographic Agency of Germany) is an agency within the remit of the Federal Ministry of Transport, Building and Urban Development and has headquarters in Hamburg and Rostock. It encompasses responsibilities in hydrography, oceanography and shipping. The department "Nautical Hydrography" covers the obligations as the national Hydrographic Office and is mainly situated in Rostock. Alongside the BSH the national Waterways and Shipping Administration (WSV) belonging to the same Ministry manages and maintains the federal maritime waterways.

2. Surveys

Coverage of new surveys

The BSH conducts hydrographic surveys on a general schedule, which is being updated on a yearly basis and amended if necessary. The survey area is subdivided into different slices of similar quality demands. The quality aspects include the re-survey rate as well as survey standards.

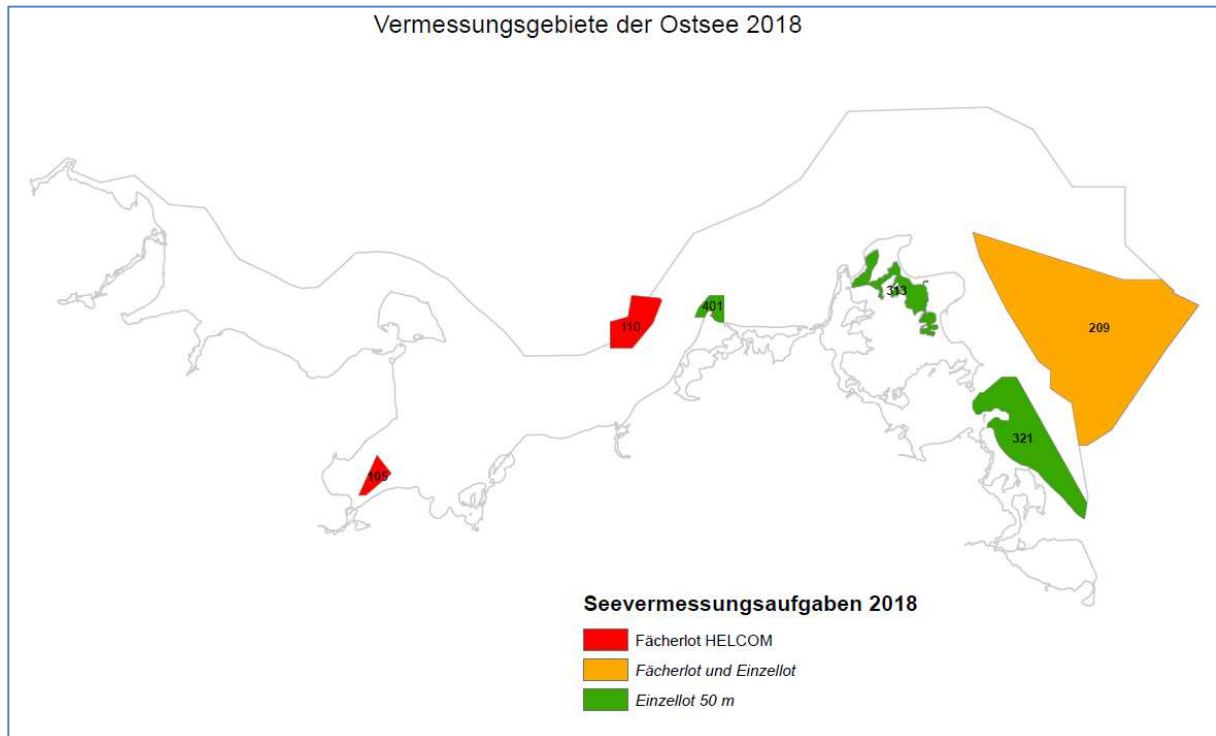


<general survey scheme for the German part of the Baltic Sea>

The hydrographic surveys are being executed by vessels from the Hydrographic Office. Due to the relatively high mobility of the seafloor and high morphological energy in combination with dense traffic and many obstructions and wrecks, the area is being resurveyed quite often. The resurvey rate ranges from 5 to 25 years. In 2018 Germany continues to resurvey the main routes according to the latest S 44 Standard for the second time using multi beam.

The detailed survey plan for 2018 is provided in a graphical format on the next page. For further details reference is made to the HELCOM Resurvey Site:

<http://helcomresurvey.sjofartsverket.se/HELCOMRESURVEYSITE/>



Surveys in 2018:

105	Ansteuerung Kiel 1	planned
110	Kadetrinne	in process
321	vor Usedom	finished
313	Jasmunder Bodden	finished
401	Darsser Ort	finished
209	Oderbank	in process

Wreck search

BSH investigated 10 wrecks in 2017 in the Baltic Sea, six of them were new found obstructions or wrecks, the others were reinvestigated on a regular schedule. The reinvestigation is necessary due to possible changes caused by currents or other effects. The frequency of the reinvestigation is depending besides other aspects mainly on the likeliness and the impact of changes.

New technologies and /or equipment

The regular use of communication satellites to broadcast the GNSS corrections to the survey vessels in a higher precision and in real-time were investigated in 2017 and 2018. In collaboration with the BKG (Federal Agency of Cartography and Geodesy) a VSAT-communication-system is installed on the survey, wreck search and research vessel DENEK. The investigations were very successful. The BSH is planning to equip all vessels with a VSAT-communication system.

The use of up to date ortho photos for the survey planning in the vicinity of the coastline and in the Wadden Sea is currently under investigation. The ortho photo will be generated by aerial photos from a camera on an unmanned aerial vehicle (UAV).

New ships

The survey, wreck search and research vessel ATAIR is going to be replaced by a new one in 2020. This new vessel will be equipped with modern hydrographic equipment and a hybrid engine using mainly LNG (Liquid Natural Gas).



Problems encountered

No new problems were encountered since the last report.

3. New charts & updates

Charts (paper as well as ENC) covering the German waters are produced and updated by BSH.

ENCs

The German waters have been covered with 174 ENCs in various navigational bands. All the ENCs are updated on a weekly basis.

ENC Distribution method

All the German produced ENCs and updates (ERs) are distributed through a network of IC-ENC authorized distributors.

INT charts

48 German published INT charts (for the North Sea, the Baltic Sea and Antarctic Waters) have been updated. For the Baltic Sea, BSH is the producer of 28 INT charts.

National paper charts for domestic waters

For national shipping BSH has developed a scheme of DIN A1 sized papercharts and published the first DIN A1 chart for the Baltic Sea (2018/6, chartnumber 2610). The new chart series takes into account the IHO S4 Standard und uses the INT1 symbologie. . Additionally 4 SOLAS compliant Small Craft Charts Series and a general planning chart are issued for the German part of the Baltic Sea.

National paper charts for foreign waters

Germany is the producer of INT 120 (DE 98) covering the whole Baltic and 3 INT charts for Antarctic waters

Withdrawal of paper charts for foreign waters

None for the Baltic Sea.

Other charts, e.g. for pleasure craft

Routeing guide for the Baltic Sea INT 1200 (DE 2911) and for German Bight INT 1410 (DE 2910).

For Polish waters, 3 Small Craft Charts Series are produced in co-operation with the Polish Hydrographic Office (HOPN).

Updates for small craft charts via internet

Problems encountered

None

4. New publications & updates:

New Publications

BSH developed a new online chart catalogue and chart server. This catalogue informs about the range of nautical products available and their properties. The data of the catalogue are available for download as xml-files from the web page.

The catalogue is available at: <http://linchart60.bsh.de/chartserver/index.html>

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BSH Produktkatalog

zur Kartenansicht

Berichtigt am 2018-07-13 mit NFS 2018-28

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Papierseekarten (108) Charts	ENCs (174)	Seebücher(28) Nautical Publications	Sonst. Druckschriften (50) Diverse Publications	Klein- und Sportschifffahrt (11) Small-Craft-Charts	TKS
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Krt.Nr./ No	INT-Nr./ INT-No	Format	Seegeb./ Sea Area	Titel/ Title	Ausgabe/Ber.datum Edition/Corr. Date	ISBN	Preis/ Price
1	INT 1	A4	#	INT 1	2015	978-3-86907-547-4	11,00 €
2	INT 1456		Nordsee	Mündungen der Jade und Weser	2018, VI, 2018-06-08	978-3-86907-587-4	30,00 €
4	INT 1457		Nordsee	Die Weser von Robbennordsteert bis Bremerhaven und Nordenham	2016, XII, 2016-12-09	978-3-86907-746-4	30,00 €
5	INT 1458		Nordsee	Die Weser von Nordenham bis Farge	2018, I, 2018-01-19	978-3-86907-852-2	30,00 €




Karte:	5
Titel:	Die Weser von Nordenham bis Farge
Ausgabe/Berichtigungsdat.:	2018, I. - 2018-01-19
Maßstab:	1:
Format:	
Innenrandmaß:	757,7 x 760,9 mm
ISBN:	978-3-86907-852-2
Preis:	30,00 €
PlanPläne:	Die Weser von Nordenham bis Farge (Teil 1) (1: 25000) Die Weser von Nordenham bis Farge (Teil 2) (1: 25000) A Häfen von Brake (1: 10000) B Häfen von Eßleben (1: 10000) C1 Die Hunte von Hunteböck bis Oldenburg (1: 50000) C2 Die Hunte von Hunteböck bis Oldenburg (1: 50000) D Häfen von Oldenburg (1: 20000) E Hunte-mündung (1: 10000)
N°E°	8.2.53.11667 8.23833333 53.11666 8.23833333 53.1375 8.33333 53.1375 8.33333 53.15 8.45333 53.15 8.45333 53.18167 8.54167 53.18167 8.54167 53.5 8.43333 53.5 8.43333 53.5 35567 8.36667 53.35567 8.36667 53.35567 8.36667 53.20333 8.32.53.20333 8.32.53.16667 8.2.53.16667 8.2.53.11667

6	INT 1459		Nordsee	Die Weser von Farge bis Bremen	2011, VII, 2015-05-15	978-3-86907-197-4	30,00 €
7	INT 1460		Nordsee	Die Jade, innerer Teil	2018, III, 2018-03-29	978-3-86907-670-6	30,00 €
26	INT 1360		Ostsee	Flensburger Förde	2018, I, 2018-01-26	978-3-86907-849-2	30,00 €
30	INT 1353		Ostsee	Kieler Bucht	2016, III, 2016-03-11	978-3-86907-696-2	30,00 €
31	INT 1357		Ostsee	Gewässer um Fehmarn, Heiligenhafen bis Dahmeshöved	2014, VI, 2015-10-30	978-3-86907-580-4	30,00 €
32	INT 1359		Ostsee	Falshöft bis Holtenu	2018, I, 2018-01-19	978-3-86907-541-6	30,00 €
33	INT 1364		Ostsee	Ansteuerung der Kieler Förde	2016, IX, 2016-09-02	978-3-86907-738-9	30,00 €
34	INT 1365		Ostsee	Häfen von Kiel	2018, II, 2018-02-09	978-3-86907-797-6	30,00 €
35			Ostsee	Neustädter Bucht	2014, IX, 2014-09-14	978-3-86907-506-6	30,00 €
36	INT 1352		Ostsee	Travemünde bis Gedser Odde	2016, IX, 2016-09-02	978-3-86907-735-8	30,00 €
37	INT 1356		Ostsee	Dahmeshöved bis Wismar	2014, X, 2015-08-14	978-3-86907-623-8	30,00 €
40	INT 1201		Ostsee	Sund, Hanöbukten bis Pommersche Bucht	2017, I, 2017-01-13	978-3-86907-749-5	30,00 €
41			Ostsee	Die Schlei von Schleimünde bis Schleswig	2015, X, 2015-10-16	978-3-86907-666-5	30,00 €
42	INT 1366		Nordsee	Nord - Ostsee - Kanal	2017, XII, 2017-12-08	978-3-86907-799-3	30,00 €
43	INT 1358		Ostsee	Gabelsflach bis Fehmarnsund	2016, VI, 2016-06-10	978-3-86907-719-8	30,00 €
44	INT 1452		Nordsee	Elbmündung	2018, VI, 2018-06-15	978-3-86907-884-3	30,00 €
46	INT 1453		Nordsee	Die Elbe von der Oste bis Brunsbüttel und Krautsand	2017, II, 2017-02-10	978-3-86907-573-2	30,00 €

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The catalogue includes a map service to search for the relevant publications at a specific coordinate.

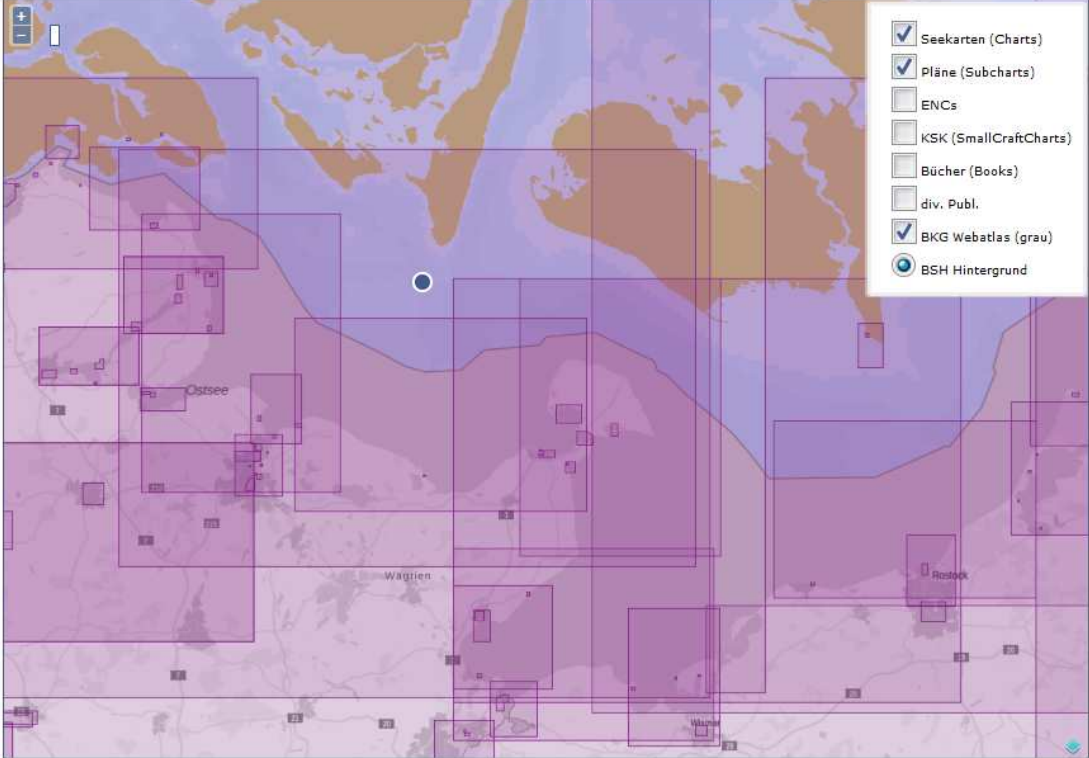


BSH
BUNDESAMT FÜR
SEESCHIFFFAHRT
UND
HYDROGRAPHIE

BSH Produktkatalog

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zur Listenansicht




Seekarten (Charts)
 Pläne (Subcharts)
 ENCs
 KSK (SmallCraftCharts)
 Bücher (Books)
 div. Publ.
 BKG Webatlas (grau)
 BSH Hintergrund

PRODUKTSUCHE MIT KOORDINATENEINGABE

Y / Nord / North	X / Rechts / East
0.00000000	0.00000000
0° 0.0000'	0° 0.0000'
0° 0' 0.00"	0° 0' 0.00"

Verfügbare Produkte an dieser Position



GeoSeaPortal
Das Geodatenportal des BSH

Suche:

Kategorie	Nr.	Titel
Seekarte	30	Kieler Bucht
Seekarte	54	Beltsee
Seekarte	2911	Mariners' Routing Guide Baltic Sea
Seekarte	98	Ostsee
KSK	3002	Planungskarte für die Klein- und Sportschiffahrt Ostsee (Teil 1 und Teil 2)
KSK	3004	Kieler Förde, rund Fehmarn, Lübecker Bucht
KSK	3008	Planungskarte für die Klein- und Sportschiffahrt Nordsee
Index in KSK	3005	Travemünde bis Stralsund
Index in KSK	3004	Flensburg bis Rostock
Index in KSK	3003	Fredericia bis Lübeck
Bl. 5 in KSK	3004	Marstal bis Fehmarnbelt
ENC	DE416030	Fehmarn Belt
ENC	DE216000	Baltic Sea, German Part
ENC	DE316001	Waters north of Kiel
ENC	DE110000	Baltic Sea
Handbuch	20005	Seeschiffahrtsstraßen-Ordnung 2017
Handbuch	5001	Handbuch Revierfunkdienst 2017
Handbuch	2010	Winterbetonung der deutschen Küstengewässer 2017

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Updated Publications (July 2018)

20001	Handbuch für Brücke und Kartenhaus	2018
20005	Seeschiffahrtsstraßen-Ordnung mit den Bekanntmachungen der Generaldirektion Wasserstraßen und Schifffahrt	2017
20031	Ostsee-Handbuch, südwestlicher Teil Flensburg bis Kolobrzeg und Flensburg bis Sandhammaren	2017
20032	Naturverhältnisse Ostsee Teil B zu den Handbüchern für die Ostsee und das Kattegat	2008
5001	Handbuch Revierfunkdienst Teil D zum Ostsee-Handbuch, südöstliche Teil (Nr. 20031)	2017
4001	Leuchtuerverzeichnis, südwestliche Ostsee	2018
2010	Winterbetonung der deutschen Küstengewässer	2017
2011	VTS Guide Germany	2016
2115	Gezeitentafeln Europäische Gewässer Europäische Gewässer	2018
2119	Nachrichten für Seefahrer Einzelbezug (analog/digital)	
2119.1	Nachrichten für Seefahrer Monatsbezug (analog/digital)	
2119.2	Jahrgangs CD Digitale Nachrichten für Seefahrer 2016 oder 2017	
2175	Nautisches Jahrbuch Ephemeriden und Tafeln	2018
5000	Handbuch Nautischer Funkdienst International Aeronautical and Maritime Search and Rescue Manual (IAMSAR Manual), Volume III - Mobile Facilities IMO Verkaufsnummer II962E	2016
2155	Funkdienst für die Klein- und Sportschifffahrt	2018
2165	Suche und Rettung	2017
2452	Seekarten und Bücher Katalog	2018

Superseded and updated publication

None

Supplements

None

Means of delivery, e.g. paper, digital

Nautical Publications will be delivered as paper copies. Selected Publications are digital and are only available on the Internet.

Charts will be delivered as paper copies and ENC. GeoTiffs are available for all charts. Alternative digital formats and products such as pdf or shape files will be produced on request.

Problems encountered

None

5. MSI

Existing infrastructure for transmission

Incoming hydrographic data is immediately assessed for vital information. Urgent updates are issued as chart-updating Notices to Mariners (NtMs) or Navigational Warnings (Radio Navigational Warnings - NAUTISCHE WARNNACHRICHTEN, NWN).

The NtMs are issued weekly by the BSH. The NtMs provide information on important navigational measures, incidents, and changes concerning the German navigable waterways and the German EEZ.

NWN are issued by the VTS centres for their areas of responsibility, and by the 24-h maritime warning service in Emden for the entire German warning area, and are broadcasted as radio messages. In special cases, the maritime warning service also informs on dangers outside its area of responsibility (e. g. dangerous wrecks in the main shipping lanes).

Navigational warnings in English language relating to the area of responsibility of the Federal Republic of Germany are broadcasted on 518 kHz (international NAVTEX service) by the Swedish coastal radio station Gislövshammar Radio, identification character J, for the Baltic Sea, and by the Pinneberg radio station of the German Meteorological Service (DWD), identification character S, for the North Sea.

A national NAVTEX service in German language is broadcast on 490 kHz by the Pinneberg radio station (identification character L) for the entire navigational warnings area of the North and Baltic Seas.

New infrastructure in accordance with GMDSS Master Plan

None

Problems encountered

None

6. C-55

Excerpt of C-55 for Germany in INT Region E updated August 2017.

Status of surveys

A1	A2	B1	B2	C1	C2	Comment
100	0	0	0	0	0	A regular re-survey scheme is in place, taking into account the rapid changes of the sea floor topography. For more details for the Baltic Sea see http://helcomresurvey.sjofartsverket.se/HELCOMRESURVEYSITE/

Status of nautical charting

Offshore passage/Small			Landfall Coastal passage/Medium			Approaches Ports/Large			Comment
A	B	C	A	B	C	A	B	C	
100	0	100	100	0	100	100	0	100	

7. Capacity Building

BSH is providing the chair of the Capacity Building Subcommittee since 2011 and the CB-Coordinator for the BSHC. A Cat A course in Hydrography is offered in english language at the Harbour City University (HCU) in Hamburg.

8. Oceanographic activities

The BSH operates several services such as daily water level forecasts, storm surge warnings, ice reports, ice charts and charts of the sea-surface-temperature. It surveys and evaluates the physical and chemical conditions of the North and Baltic Sea.

9. Other activities

The BSH is responsible for spatial planning and is the building permit authority within the German EEZ. It has several administrative tasks in the shipping sector and is certified for type testing and approval. It is as well certifying body for the construction and operation of offshore wind energy farms in the German EEZ.

9.1 Participation in IHO Working Groups

BSH is actively involved in the work done by

- HSSC,
- IRCC,
- CBSC,
- NCWG - NAUTICAL CARTOGRAPHY WORKING GROUP,
- NIPWG - NAUTICAL INFORMATION PROVISION WORKING GROUP,
- MSDIWG,
- S-100 WORKING GROUP,
- TWCWG - TIDES, WATER LEVEL AND CURRENTS WORKING GROUP
- HSPT – HSSC Project Team on Standards for Hydrographic Surveys.

Within BSHC:

Baltic Sea Bathymetric Database Working Group (BSBDWG),
Baltic Sea International Charting Coordination Working Group (BSICCWG),
Baltic Sea Marine Spatial Data Infrastructure Working Group (BSMSDIWG),
Chart Datum Working Group (CDWG),
Resurvey Monitoring Working Group (MWG).

9.2 Other international activities

BSH is also participating in IMO Committees, namely NCSR as well as IOC.

BSH contributes to the HPD User Group Meetings.

Germany (BSH and BKG, Federal Agency for Cartography and Geodesy) is taking part in the FAMOS project, especially in relation to the vertical reference. In this framework, Germany conducts gravity measurement to improve the quality of the quasi geoid.

9.3 Automatic derived contour lines and soundings from a nautical high resolution DTM

The BSH work on the automatisisation for a database-supported nautical surface of the German North- and Baltic Sea as well as for the German estuaries. This nautical surface is the essential condition for the upcoming BSH Service to provides bathymetric ENC (Additional Bathymetric Layer ABL) for the German Pilots and VTS.

The requirement to produce contour lines and selected soundings in a short time, BSH asked the German Companies "Smile Consult" and "7Cs" to create a software witch corresponding to our need.

The ENC Bathymetry Plotter is the result. This Plotter can be used to create contour lines and selected soundings for incorporation into ENCs or other digital hydrographic chart products. Point Cloud or Gridded bathymetry data that serve as input is processed and transformed into a so called Nautical Elevation Model. A Nautical Elevation Model is shoal-biased smoothed-out underwater terrain model.

The result of the Nautical Elevation Model creation process can be imagined as draping a sheet over a rough and bumpy surface to make it appear much smoother. The degree of generalization can be defined by the user to suit the targeted scale of the final chart product. To see more, visit: <https://www.sevencs.com/enc-production-tools/enc-bathymetry-plotter/>

Parallel to the BSH work, other HO's change there workflows to optimise the production of contour lines and soundings. They are also involved in the development of new software tools to try finding new solutions. To harmonise the knowledge and to chair the ideas, Germany will arrange a workshop on this issue. Members of BSHC are invited to attend this workshop. The envisaged date of the workshop is the second half of April 2019. More details will be provided in due course by e-Mail.

10. Conclusions

None