Baltic Sea International Charting Coordination Working Group (BSICCWG)

BSICCWG Report to the 25th BSHC Conference (VTC)

1. Status of the work of BSICCWG since BSHC 24th Conference

There have been no BSICCWG meetings since BSHC24. Last meeting (BSICCWG6) took place in Latvia, April 2019. The communication and tasks for the BSICCWG (including the BSHC 24 actions) have been carried out by circulars and e-mail.

Mr Jarmo Mäkinen has acted as the Chair of the BSICCWG. *Mr Jukka Helminen* has acted as a secretary in the BSICCWG.

The membership of the WG:

Denmark	*Mr Peter Ladegaard Sørensen*
Denmark	*Mr Kell Torp Jensen*
Estonia	*Ms Gabriela Kotsulim*
Estonia	*Ms Maris Akkerman*
Finland	*Mr Jarmo Mäkinen*
Finland	*Mr Jukka Helminen*
Germany	*Ms Sylvia Spohn*
Latvia	*Ms Linda Purina*
Latvia	*Ms Ilze Driksne*
Lithuania	*Ms Alla Bira*
Poland	*Mr Jacek Kijakowski,*
Poland	*Mr Adam Klosinski*
Russia	*Capt Sergey Egorov*
Sweden	*Ms Anita Bodin->Mr Stefan Cederberg*
Sweden	*Mr Hans Engberg-> Thomas Granne?*

2. BSHC 24 actions for BSICCWG

8.	--	B.2	**Provide** continuous updates to S-11 Part B for INT Region E through the INToGIS tool; Implement the procedure depicted in IHO CL 64/2015 for the review and monitoring of INT charts and **define** approved ENC Schemes.	All MS, BSICCWG Chair	Permanent	

An ongoing process that is in operation.

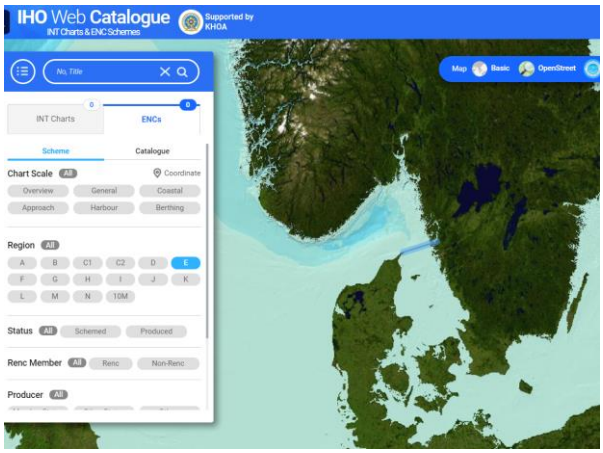
26.	11.	D.2	To inform NSICCWG Chair about the refining of the charting limits between Region E and D	Chair BSICCWG	End 2019	Done

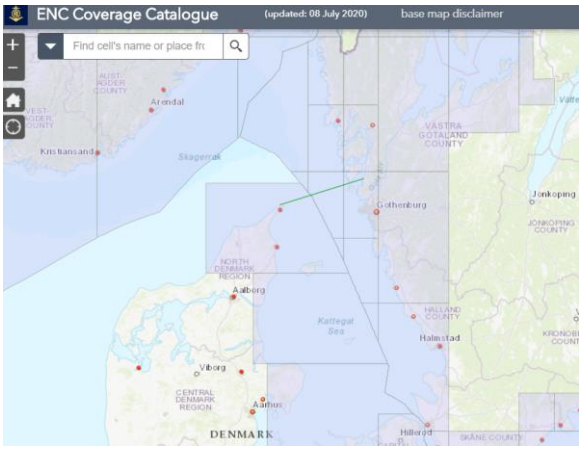
BSHC 24 approved the proposal to refine the definition of the limit between charting Region D (North Sea) and charting Region E (Baltic Sea) in accordance with S-23 by defining coordinates for GIS-purposes. It was noted that NSICCWG should be informed about the refined limit.

Both NSICCWG Chair (North Sea Chart Coordination Working Group) and NSHC Chair (North Sea Hydrographic Commission) have been informed in September 2019.

27.	12.	D.2	To take further action as to update relevant IHO publications with regards to charting limits between region D and E.	Chair BSICCWG	BSHC 25	

BSICCWG Chair sent a proposal to Nautical Cartography Working Group (NCWG5-06.4A-paper for consideration) to make relevant updates to S-4 (A.204), S-11 (INT Web Tool), IHO ENC Catalogue, as agreed in BSHC24. All of these publications were updated soon after the NCWG meeting in November 2019.





29.	14.	D.2	BSICCWG to supply information of regional CATZOC practices To IHO DQWG chair.	Chair BSICCWG	End 2019	

BSHC24 tasked BSICCWG to gather information on how the CATZOC values are populated from the surveys to the chart in the Baltic Sea area and provide that information to the DQWG (Data Quality Working Group) Chair. BSICCWG Circular letter (4/2019) includes a questionnaire concerning the use of CATZOC values. Replies were received from seven countries and the results were submitted to the DQWG Chair (Mr Rogier Broekman) in January 2020. The responses are in the Annex 1.

3. INT Chart Web Catalogue; Updating of S-11 Part B, Region E

Workshop for Chart Coordinators

The 2nd Workshop for Chart Coordinators took place in Stockholm, Sweden, November 2019, back-to-back with the 5th meeting of the NCWG. 12 out of 15 Charting Regions were present or represented. The IHO Secretariat provided an update on the preparation of the commissioning and timelines of the INToGIS II web services (S-11 Part B, web catalogue of ENCs and INT charts, new layers in the Manager mode such as AIS data, CATZOC, Ports database, enhanced user interface, layers with different patterns).

INToGIS II

The new INToGIS II tools have been successfully launched since 2 January 2020 (IHO CL 60/2019). All the regional databases were designated Ed. 4.0.03 - January 2020.

INToGIS II on-line services represent a major step forward in the management of ENC Schemes and INT Charts (INT Charts schemes are not a priority anymore).

New tool has been successfully introduced in all the Baltic countries (with the exception of Russia).

Link to **INT Chart Web Catalogue**

Baltic Sea INT Scheme- Status of New INT Charts/Numbers

New INT charts;

- INT 1378 (DK 121) Kattegat – Ålbæk Bugt, scale 100 000
- INT 13540 (DE 1516) Sassnitz, scale 12 500

Status of ENC Coverage in Baltic Sea- Baltic Sea ENC scheme

Based on WENDWG10 overlap reports (UK, IC-ENC) amount of overlaps have been reduced in the Baltic Sea area. Overall severity of risk of remaining overlaps, has been classified low or accepted. not navigationally significant. Monitoring and analysis of the ENC coverage is permanent, continuous process in member states.

6. Future work of BSICCWG

The future work of BSICCWG will consist:

- ✓ To monitor ENC coverage in the Baltic Sea.
- ✓ To maintain and adopt ENC schemes in Baltic.
- ✓ To analyze gaps and overlaps and report to BSHC and WENDWG.
- ✓ To update List of Ports (IHO ENC catalogue).
- ✓ To review ENC harmonization recommendations connected to S-100 products.
- ✓ To provide continuous updates to S-11 Part B for INT Region E through the INToGIS II tool.
- ✓ To put updating of INT charts by INToGIS II tool as a permanent and continuous process in every member state.
- ✓ To review and monitor new INT Charts (IHO CL 64/2015).
- ✓ To develop and maintain INT chart scheme for the Baltic Sea.
- ✓ To follow and coordinate all the planned new INT charts and the freezing numbers.

7. Next BSICCWG-meeting

Germany has kindly offered to host the BSICCWG7 (11-12.11.2020) meeting in Rostock. Due to the circumstances, a VTC meeting or postponement of the meeting to spring 2021 is being considered.

8. Actions for the 25th BSHC Conference (VTC)

- Note this report.
- Give further guidance on future work of BSICCWG.

Annexes
Annex 1 Replies for the Baltic Sea CATZOC questionnaire

BSHC (Baltic Sea Hydrographic Commission)
BSICCWG (Baltic Sea International Charting Coordination Working Group)

BSICCWG Questionnaire (Dec 2019):

CATZOC practices in the Baltic Sea area

Responses

BSICCWG Questionnaire

CATZOC practices in the Baltic Sea area/Denmark

Please describe your national methodology or rules of allocation from survey data to CATZOC value.

CATZOC	IHO Survey order	Survey method	Positioning method	Other methodology/ factor	Other comments
CATZOC A1	Special order and Order:1a Ref IHO S44 Ed5 of 2008. Order:1 in areas with full sea floor ensonification and Special order; Ref. IHO s44 Ed. 4 of 2000.	Controlled, systematic high accuracy Survey with Multibeam, or mechanical sweep system.	1.WGS 84 datum; using DGPS and controlled tidal correction. WGS 84 Datum; 2.RTK GPS or similar service surveying directly on the Ellipsoid	Typical surveys collected by Danish Hydrographic Service from 2000 and onwards. Selected Surveys from external parties from 2000 and onwards.	All data is collected directly in a digital format.
CATZOC A2	Order:1 ref. IHO s44 Ed. 4 of 2000 in areas where full sea floor ensonification is achieved.	Controlled, systematic survey to standard accuracy; using Multibeam or single beam with Side Scan Sonar	WGS 84 datum or ED.50.	Typical surveys collected by Danish Hydrographic Service from 1995 to 2000.	Data collected directly in a digital format.
CATZOC B	Order:1b. Ref. IHO S44 Ed5 of 2008. Order 1. Ref. IHO s44 Ed. 4 of 2000 where full sea floor ensonification is not achieved.	Controlled, systematic survey to standard accuracy. With single Beam echo sounder	Coastal surveys with electronic fixing aids. Absolute positioning with reference to a known datum.	Typical surveys collected by Danish Hydrographic Service from 1953 to 2000.	
CATZOC C	Order:2 Ref. IHO s44 Ed. 4 of 2000. Full seafloor coverage not achieved; depth anomalies may be expected.	Low accuracy survey or data collected on an opportunity basis such as soundings on passage	Coastal and of shore surveys where relative positioning is used.	Typical surveys collected by Danish hydrographic service prior to 1953.	
CATZOC D	Order:3 Ref. IHO s44 Ed. 4 of 2000. Full seafloor coverage not achieved; large depth anomalies may be expected.	Poor quality data or data that cannot be quality assessed due to lack of information.		Typical surveys from external sources prior to 1953	
CATZOC U		UNSURVYED			

If those above are not feasible for your methodology, please describe the process in your office:

BSICCWG Questionnaire

CATZOC practices in the Baltic Sea area/Estonia

Please describe your national methodology or rules of allocation from survey data to CATZOC value.

CATZOC	IHO Survey order	Survey method	Positioning method	Other methodology/ factor	Other comments
CATZOC A1	*S-44 special order full seafloor coverage*	*Multibeam or multi-channel echosounder*	RTK GNSS	-	-
CATZOC A2	*S-44 1a order full seafloor coverage*	*Multibeam or multi-channel echosounder*	RTK GNSS		
CATZOC B	*S-44 1b order full seafloor coverage not achieved*	*Multibeam or multi-channel echosounder*	RTK GNSS		
CATZOC C	*S-44 II order*	*Single-beam echosounder*	*DGPS or not known*	*All surveys older than 1994, most surveys from 1994 to 1997.*	
CATZOC D					
CATZOC U					

If those above are not feasible for your methodology, please describe the process in your office:

BSICCWG Questionnaire

CATZOC practices in the Baltic Sea area/Germany

Please describe your national methodology or rules of allocation from survey data to CATZOC value.

CATZOC	IHO Survey order	Survey method	Positioning method	Other methodology/ factor	Other comments
CATZOC A1	*Special order 1a or 1b*	*Multibeam or Singlebeam plus Side Scan Sonar*	*GNSS based positioning (RTK or PPP)*	*Not used*	-
CATZOC A2	*Not used*	*Not used*	*Not used*	*Not used*	-
CATZOC B	*Special order 2*	*Singlebeam*	*GNSS based positioning (RTK or PPP)*	*Not used*	*Full area search not achieved*
CATZOC C	*Not used*	*Not used*	*Not used*	*Not used*	-
CATZOC D	*Not used*	*Not used*	*Not used*	*Not used*	-
CATZOC U	*Not used*	*Not used*	*Not used*	*Not used*	-

If those above are not feasible for your methodology, please describe the process in your office:

BSICCWG Questionnaire

CATZOC practices in the Baltic Sea area/Finland

Please describe your national methodology or rules of allocation from survey data to CATZOC value.

CATZOC	*IHO Survey order*	*Survey method*	*Positioning method*	*Other methodology/ factor*	*Other comments*
CATZOC A1	*Special order* *Order1a* *Exclusive order*	*Multibeam* *Echo sweeping*	VRS/RTK DGPS Trisponder 3 or 4 stations	*Year of the survey included as metadata*	Full seafloor coverage On Finnish Charts A= A2.
CATZOC A2	Special order Order 1a Exclusive order	*Multibeam* *Echo sweeping*	Syledis Trisponder 2 stations	*Year of the survey included as metadata*	Full seafloor coverage
CATZOC B	Special order Order 1a Order 1b Order 2	Single beam LiDAR	VRS/RTK, DGPS Decca		Full seafloor coverage not achieved. Depth anomalies may exist.
CATZOC C		Single beam	(DGPS, GPS) Miscellaneous methods		Full seafloor coverage not achieved. Depth anomalies may be expected.
CATZOC D	Not used	Not used	Not used	Not used	
CATZOC U					Data unassessed.

If those above are not feasible for your methodology, please describe the process in your office:

BSICCWG Questionnaire

CATZOC practices in the Baltic Sea area/Lithuania (associated)

Please describe your national methodology or rules of allocation from survey data to CATZOC value.

CATZOC	IHO Survey order	Survey method	Positioning method	Other methodology/ factor	Other comments
CATZOC A1	*special order, 1a*	*Multibeam*	DGPS, PPK		*full seafloor coverage*
CATZOC A2	*special order, 1a*	*Multibeam*	DGPS		*full seafloor coverage*
CATZOC B	1b	*Singlebeam*	DGPS, RTK		*Or multibeam without full seafloor coverage*
CATZOC C					*Not used*
CATZOC D					*Not used*
CATZOC U					*Used for information from old charts*

If those above are not feasible for your methodology, please describe the process in your office:

- **Information on IHO survey order, survey and positioning methods is indicated on processed survey fairsheet that cartographers can use for evaluation**

CATZOC practices in the Baltic Sea area/Latvia

Please describe your national methodology or rules of allocation from survey data to CATZOC value.

CATZOC	*IHO Survey order*	*Survey method*	*Positioning method*	*Other methodology/ factor*	*Other comments*
CATZOC A1	Order 1A or better Full seafloor coverage	Multibeam after year 2001	RTK, DGPS	Surveys made after year 2001	Charts made using MAL MBES
CATZOC A2	Order 1B or better Full seafloor coverage in areas surveyed after Year 2001.	Multibeam after year 2001 Singlebeam from 1994 up to year 2001	RTK, DGPS	Surveys made after year 1994	Charts made using MAL SBES un MBES
CATZOC B	Order 1B or better Full seafloor coverage in areas surveyed after Year 2001.	Singlebeam up to year 1994	EPS? Exact methods are unknown but we assume surveys are made in high quality regarding that time	USSR survey sheets. Surveys made between year 1957-1994	Used in areas where aren't MAL surveys
CATZOC C	Order 1B	Singlebeam up to year 1994	EPS? Exact methods are unknown but we assume surveys are made in high quality regarding that time	Surveys taken from USSR paper charts 1957-1994 Scale: 1:10 000-1:250 000	Used in areas where aren't MAL surveys
CATZOC D	Order 2	Unknown	Unknown	Surveys taken from other unclassified sources	Not used creating MAL Navigation Charts with exceptions in shallow non navigable areas
CATZOC U	Unknown	Unknown	Unknown	Unknown	Not used creating MAL Navigation Charts

BSICCWG Questionnaire

CATZOC practices in the Baltic Sea area/Poland (Hydrographic Office of the Polish Navy)

CATZOC	IHO Survey order	Survey method	Positioning method	Other methodology/ factor	Other comments
CATZOC A1	*IHO S-44 5th edition Special, 1a Order and Polish National Hydrographic Exclusive Order[1].* *Full area search undertaken* *Feature detection according IHO S-44 5th edition Special or 1a Order and Polish National Hydrographic Exclusive Order[1].*	*Controlled systematic survey (comprising planned survey lines on a geodetic datum that can be transformed to WGS 84) using a multibeam echosounder*	*Positioning method which meets position accuracy criteria for IHO S-44 5th edition Special or 1a Order and Polish National Hydrographic Exclusive Order[1].*		*Paper charts – no ZOC diagrams, only conventional source diagrams which provide information about source data - survey authority, survey date, scale of the source plan and seafloor coverage information (if full area search achieved)*
CATZOC A2	*IHO S-44 5th edition Special, 1a standard and Polish National Hydrographic Exclusive Order[1].* *Full area search undertaken* *Feature detection according IHO S-44 5th edition Special or 1a standard and Polish National Hydrographic Exclusive Order[1].*	*Controlled systematic survey (comprising planned survey lines on a geodetic datum that can be transformed to WGS 84) using a modern survey singlebeam echosounder with 100% sea floor coverage with side scan sonar.*	*Positioning method which meets position accuracy criteria for IHO S-44 5th edition Special or 1a Order and Polish National Hydrographic Exclusive Order[1].*		
CATZOC B	*IHO S-44 5th edition 1b or 2 standard* *Full area search not achieved.* *Uncharted features, hazardous to surface*	*Controlled systematic survey (comprising planned survey lines on a geodetic datum that can be transformed to WGS*	*Positioning method which meets position accuracy criteria for IHO S-44 5th edition 1b or 2 Order.*		

	navigation are not expected but may exist	*84) using a modern survey singlebeam echosounder but no sonar system. Controlled systematic survey using a LIDAR equipment.*			
CATZOC C	*Low accuracy survey, historical data or data that cannot be quality assessed due to lack of information. Full area search not achieved. Depth anomalies may be expected.*				
CATZOC D	Not used in HOPN				
CATZOC U	Unassessed – quality of the bathymetric data has not been assessed				

All information about each CATZOC must be read in conjunction

1) *Polish National Hydrographic Exclusive Order:*
   - *description of area – designated for hydrotechnical constructions (building, foundation and verification)*
   - *maximum allowable THU 95% Confidence level – 2 m,*
   - *maximum allowable TVU 95% Confidence level:*
     - *a = 0,15 m,*
     - *b = 0,004,*
   - *full sea floor search – required,*
   - *feature detection:*
     - *cubic features > 0,5m,*
     - *cubic features > 0,2m (for mechanical sweep system),*
   - *recommended maximum line spacing – not specified, full sea floor coverage required,*

BSICCWG Questionnaire

CATZOC practices in the Baltic Sea area /Sweden

Please describe your national methodology or rules of allocation from survey data to CATZOC value.

CATZOC	IHO Survey order	Survey method	Positioning method	other methodology/ factor	Other comments
CATZOC A1				*Survey fulfills FSIS-44 and the assessment of data does not change the general classification*	
CATZOC A2					
CATZOC B				*The default Catzoc classification of the geographic areas that have not yet been classified in A1 or C*	
CATZOC C				*Survey does not fulfill FSIS-44 or the assessment of data has changed the general classification*	
CATZOC D					
CATZOC U					

If those above are not feasible for your methodology, please describe the process in your office: