

BSHC Working Group
 for Monitoring the Implementation
 of the Harmonised Re-survey Scheme (MWG)

MWG Report to the BSHC 16th Conference

[5 September 2011]

The MWG Work Programme requests the MWG Chair to give a report of the MWG Actions to the BSHC yearly and to the BSHC Conferences. Previous MWG Report was given at the BSHC 15th Conference in September 2010. The BSHC15 confirmed its commitment to the implementation of the Moscow 2010 Declaration and approved a roadmap for that until 2013. Major features related to the work of the MWG since the BSHC15 are below.

1. Status of Work of MWG since BSHC15

A MWG Meeting was held immediately after BSHC 15th Conference on 23 September 2009 in Gdynia. Altogether 12 participants from 7 countries were participating the meeting. Main issues in that meeting were: to review the requirements of the Moscow 2010 declaration, the outcome of the BSHC 15th Conference, the status of implementing the re-survey scheme and developing of the re-survey database, and the status of MWG Work Programme and to give guidance for future work of MWG.

Another MWG meeting was held on 10-11 May 2011 in Norrköping. Altogether 10 participants from 5 countries were participating the meeting. This meeting reviewed the progress and actions since last meeting, including reporting to various bodies, initially drafted the revised Re-survey Scheme 3.0, and gave guidance for future MWG work. There was also a workshop for training to use the new version of the re-survey database and for agreeing some further guidance for populating the database.

The next MWG meeting will be held on the 22nd September 2011, Norrköping, immediately after the BSHC 16th Conference. The main issues are planned to be: to review the actions since last MWG meeting, to develop further the revised Re-survey Scheme 3.0, and give guidance for the future work of the MWG.

The revised MWG TORs and MWG Work Programme 6.1 were approved by BSHC/15. There are only minor updates to the status of Tasks of the Work Programme.

2. Status of re-surveys

Re-surveys are a continuing activity for all members. The re-survey database has been updated by MWG Members. The status of re-surveys can be seen by the open interface to the database, <http://helcomresurvey.sjofartsverket.se/helcomresurveysite/>.

The revisions of the national re-survey schemes are ongoing including the Categories I, II and III, as requested by the HELCOM Moscow 2010 Declaration and agreed by the decision of the BSHC. The implementation is partly behind the schedule agreed by BSHC15; only less than half of the BSHC members (Estonia, Finland, Germany, Sweden) have provided information on their revised schemes, see [Annex 1](#). All BSHC members are strongly asked to foster their development actions in order to reach the deadline 2013.

The EU TEN-T project *'MonaLisa'* includes a Sub activity 3.1 for speeding up re-surveys during 2011 - 2013. The re-surveys are going on on the Finnish and Swedish waters and will increase significantly the amount of re-surveyed areas.

3. Reporting

Finland gave a presentation at Hydro2010 in Rostock on a topic *"Co-operation within the Baltic Sea Hydrographic Offices on Hydrographic Re-surveys and Other Joint Hydrographic Activities for Increasing the Safety of Navigation"*.

In May 2011 Denmark presented at IRCC3 meeting the paper *"Baltic Sea Hydrographic Commission Approach for Coordinating Hydrographic Surveys on the Baltic Sea and for Displaying Survey Status"*. This was presented as an example of a regional implementation of displaying survey status as an input for developing C-55 further on. The presentation was well received and led the IRCC to agree an action to design a suitable framework for the development of C-55, [ref. IHO CL 53/2011 and IRCC3 Minutes and Action #9].

In June 2011 the Chair gave to the Steering Committee for Priority area 13 of the EU Strategy for the Baltic Sea Region (EUSBSR) a progress report of the Flagship project 13.3 *"Speeding up re-surveys"* including the revision of the Re-survey Scheme. The Steering Group welcomed this information.

Further reporting activities are planned e.g. to EUSBSR, HELCOM MARITIME, TEN-T *MonaLisa* Project and IRCC.

4. Status of development of the Re-survey the database

The Version 2 was installed in June 2010. Version 2 of the database will allow the national database operators to add, modify and update all information of their re-survey areas (including the geometry).

Database workshop was held on 11 May 2011 in Norrköping. Some further guidance for populating and operating of the database were developed. The Workshop was found useful and will be repeated during the next MWG meeting.

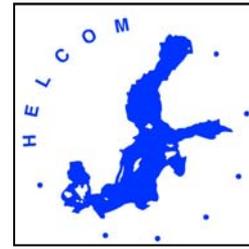
5. Actions for the BSHC 16th Conference:

The BSHC 16th Conference is requested to

- take note on this Report
- strongly encourage the BSHC members to foster the develop of their revised re-survey schemes (with CAT I, II and III)
- endorse the development of the Re-survey Scheme 3.0 document
- give further guidance to the MWG, as seen appropriately

Annexes:

1. Draft BSHC Re-survey Scheme V3.0



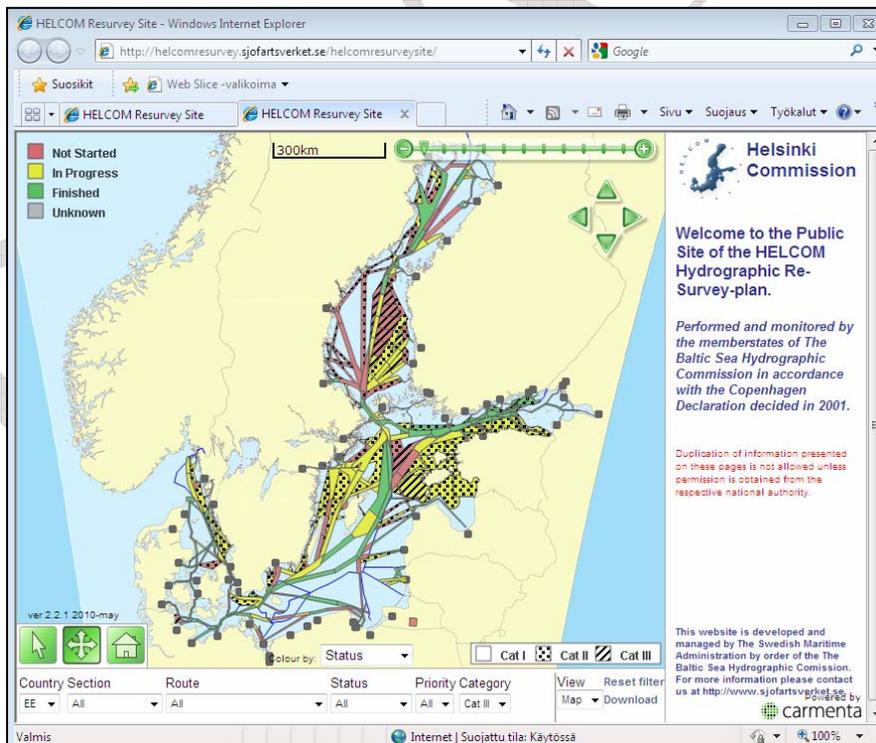
International Hydrographic Organisation/
Baltic Sea Hydrographic Commission

Helsinki Commission

Draft Baltic Sea Revised Harmonised Hydrographic Re-Survey Scheme

[Proposed to be approved by the BSHC 18th Conference in 2013]

[Draft Incomplete Version 3.0, by 1 September 2011]



The Hydrographic Offices of Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Russia and Sweden have developed this Scheme during 2002 - 2011.



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Information for developing this document:

Purpose:

This document is intended to be developed by the MWG to be approved by the BSHC and to be forwarded to HELCOM, as a reply to the MOSCOW 2010 Ministerial Declaration " *to present their national re-survey plans preferably by 2013, but not later than 2015, including time schedule estimations; and to undertake necessary measures to ensure that sufficient funding, including external funding, will be available for re-surveys*".

Procedures:

[as approved by BSHC 15th Conference, September 2010]

First draft do be developed by Mid-August 2011 and forwarded to BSHC 16th Conference for review in September 2011. This draft should include at least:

- Overall structure of the document
- Chapter 1 information
- Chapter 2 outlines and some information based on national schemes
- Information on national schemes (as far as possible): basic principles in each country, CAT I areas, CAT II and CAT III areas, their status and time estimations, re-survey frequencies where applicable, funding arrangements, etc.

Second draft is intended to be developed and forwarded to BSHC 17th Conference in 2012 for in depth review and for approval to be finalised for BSHC 18th Conference in 2013. In addition to the first draft this draft should include at least:

- Completed CAT I, II and III areas (to cover the whole Baltic Sea area)
- Time schedules for CAT I and II (may be reservations)
- More detailed funding descriptions
-

Final draft will be proposed to be approved by the BSHC 18th Conference in 2013 and to be forwarded to HELCOM by end of 2013. There may be some reservations until 2015.

The re-survey plans:

It is a common understanding that even if the re-survey Plans will be approved by the BSHC and forwarded to the HELCOM, these plans are not fixed. They are likely to be modified when new needs or priorities arise.

1. Introduction and Background

1.1 HELCOM Copenhagen 2001 Declaration

The HELCOM Copenhagen Declaration was adopted on 10 September 2001 by the HELCOM Extraordinary Ministerial Meeting [1]. It was included also as a *Regulation 9 Paragraph 1. b)* into the HELCOM Convention entering into force on 1 December 2002 [2].

The requirement of the re-survey Scheme is written into the Copenhagen Declaration in *Paragraph III. a)* as follows:

a) Re-surveying of major shipping routes and ports

- *by requesting the Governments of the Contracting Parties to develop a scheme for systematic re-surveying of major shipping routes and ports in order to ensure that safety of navigation is not endangered by inadequate source information. The survey shall be carried out to a standard not inferior to the latest edition of IHO S-44. The scheme shall be elaborated jointly by the hydrographic services responsible for the areas in question not later than by the end of 2002 with the aim to begin implementation by 2003.*

1.2 Original Re-survey Scheme 2002

The BSHC approved Version 1.0 of Harmonised Hydrographic Re-Survey Plan in December 2002.

In 2008 the BSHC 13th Conference approved a slightly modified and completed Harmonised re-Survey Scheme Version 2.1.

Each country has specified the main and secondary routes and ports in its area of responsibility. Originally these routes were based on the list of main ports used as a background document for Copenhagen Declaration [3]. See **Fig. 1**. These routes and areas are included in the MWG database. [Later on some of the routes and areas have been updated and extended by the MWG members. These areas are later on called as Category I areas]. There were no fixed time schedules for these re-surveys.

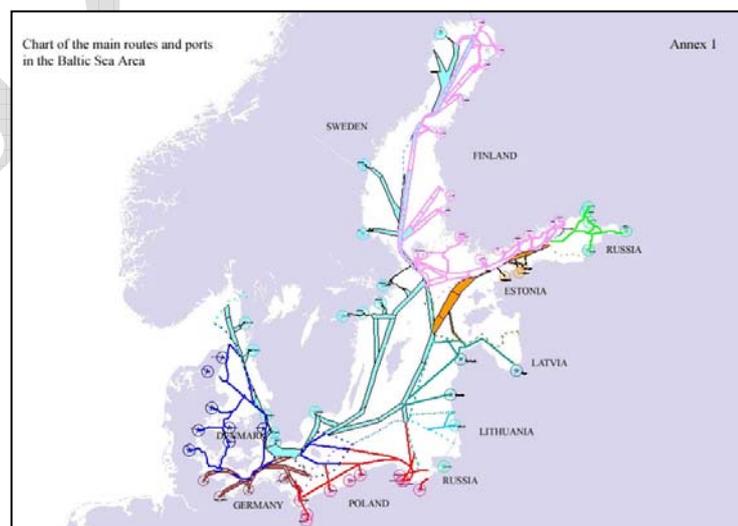


Fig. 1. Original Re-survey Scheme (based on Copenhagen 2011 Declaration)

1.3 BSHC Re-survey Monitoring Working Group

The BSHC established in 2002 the BSHC Re-survey Monitoring Working Group (MWG) to coordinate and monitor the implementation of the re-survey schemes. All BSHC members are participating to the work of the MWG.

1.4 Implementation of the Scheme

Each HO will implement the Harmonised Re-survey Scheme in its area of responsibility.

Necessary co-operation between the HOs will be discussed on bilateral negotiations and agreed on Bilateral Arrangements.

1.5 Re-survey database

Sweden volunteered to develop and maintain the re-survey database and its web-based user interface. The first version was released in 2002. Some updates were made during 2003 – 2011. The latest version is Version 2 allowing to load and update the revised scheme.

The database contains metadata of the re-survey areas and the status of their re-surveys.

With the web-based database restricted interface the metadata of re-survey routes and areas can be loaded and updated in this Database. The re-survey data is processed and stored by each HO by nominated National Database Operators.

The Browser interface is open to all via the link:

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

The HOs shall make links to this Scheme on their national web pages.

The database has been linked as a regional extension to the IHO C-55 database. In the HELCOM Web pages there is also a link to this database.

There are plans for further development of the database, e.g. up update the software based on modern GIS tools, to allow more flexible printing capabilities, etc. The further developments are intended to be done in line with the IHO C-55 further developments.

1.6 Principles used for the Re-survey Scheme

This Scheme has been prepared according to the following basic principles:

- This Scheme will concentrate only on the hydrographic surveys.
- Common understanding of the HELCOM Copenhagen Declaration is: All routes are to be re-surveyed, if the old survey data cannot be interpreted according to the IHO S-44 standard.

- The new S-44 Ed.5 will be applied in future surveys with the principle that where Order 1 survey is required, the survey should fulfil new Order 1a requirements.
- Each country is responsible for the interpretation of the IHO S-44 and compliance of its data regarding its own surveys.
- The main and secondary routes and ports are defined mainly by the traffic volumes of dangerous goods and passengers.
- As a general guideline the width of the routes in coastal areas should be at least two nautical miles; for open sea areas 6 nautical miles. The actual width of the routes and areas will be described in the Scheme.
- The S-44 feature detection requirement for Order 1a up to 40 metres should be interpreted bearing in mind the maximum draft of Danish Sounds.

1.7 Harmonisation of Re-survey Schemes

There are still issues to be harmonised, e.g. differences on the width of routes and disjoint sections. All Hydrographic Offices will make necessary actions to harmonise the routes and areas between neighbouring countries.

Bilateral or multilateral negotiations between the Hydrographic Offices of the neighbouring countries may be needed.

1.8 Prioritized time schedules of Re-surveys

Each HO is responsible for setting prioritised time schedules re-surveys under its responsibility. Especially the following general principles should be considered:

- importance for international and regional traffic
- depth and expected shallows or obstructions
- quality and up-to-dateness of previous surveys
- importance for other uses

The main routes may be highlighted by priority.

1.9 Revision of the harmonised Re-survey Scheme

During the past years from 2002 it has been found that there are several needs to revise the original scheme, e.g. new routeing measures approved and planned, high priority areas outside original routes, AIS data allows accurate tracking of ships routes, there are other needs than navigation

On its 14th Conference in August 2009 the BSHC approved a new Vision for revised re-survey scheme to extend the original scheme to cover the whole Baltic Sea area. The re-surveys are in three Categories: CAT I for original re-survey scheme, CAT II for extension needed for the safety of navigation, and CAT III for areas to be re-surveyed for other reasons, (e.g. for environmental reasons). In the *Fig. 2* there is a scheme of this Vision.

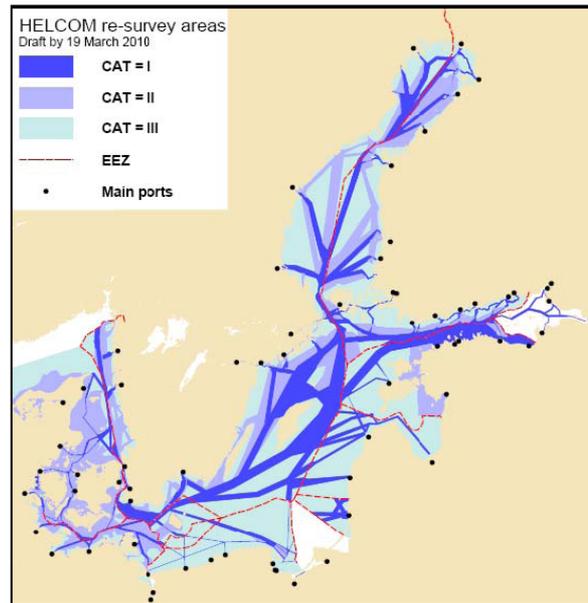


Fig. 2. BSHC 2009 Vision for re-surveys.

1.10 HELCOM Moscow 2010 Declaration

In May 2010 the HELCOM Moscow Ministerial meeting agreed

- *to extend the scope of the 2001 HELCOM Copenhagen Declaration to cover all routes and other areas used for navigation according to the revised Baltic re-survey scheme to be developed based on the 2009 Baltic Sea Hydrographic Commission Vision for the resurvey as contained in Annex 2;*
- *to present their national re-survey plans preferably by 2013, but not later than 2015, including time schedule estimations;*
- *to undertake necessary measures to ensure that sufficient funding, including external funding, will be available for re-surveys;*
- *to undertake measures to improve mariners' abilities to assess and interpret hydrographic content in nautical charts and publications either in printed or digital form, especially in the Electronic Chart Display and Information System;*

The Moscow Declaration 2010 and its supporting documents can be found in references [4], [5] and [6].

On its 15th Conference in September 2010 the BSHC confirmed that all Baltic Sea Hydrographic Offices are committed to the implementation of the Moscow Declaration. The BSHC approved also draft outlines for this implementation with the goal to present the revised schemes by 2013.

1.11 Principles of distribution of the re-surveys data

The re-survey data will be processed as soon as feasible to the appropriate nautical charts and products, basically to printed charts and ENCs. The quality of information on data should be transferred with the data.

Other possible exchange and distribution of the re-survey data should be agreed within the Bilateral Arrangements between the HOs.

1.12 Principles of presentation of the re-survey data

Wherever possible, common symbologies (based on IHO specified symbology) for presenting re-surveyed areas on printed nautical charts should be used.

1.13 Communication

The development and implementation of the Harmonised Re-survey Scheme has been communicated to BSHC, NHC and NSHC meetings, HELCOM MARITIME meetings, EU Baltic Sea Strategy meetings, IMO NAV 51 meeting 2005, IHO Circular Letter 12/2003, IHO CHRIS/20 meeting, PIANC 2004 meeting. There have been presentations at least at IHO XVII Conference 2007, Hydro2010 Conference.

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2. Overview on the Baltic Sea Revised Harmonised Re-survey Scheme

2.1 Routes and areas according to HELCOM Moscow 2010 Declaration

The HO's have various time schedules to complete the re-surveys, some of them extend beyond 2020. Possible means to enhance and foster the implementation of the re-surveys should be studied. These could be the possibilities to utilize the capacity more effectively, possibilities to get extra funding for speeding up the re-surveys, etc. [if these areas are specified by safety of navigation reasons, these are called as Category II areas; if for other reason, then Category III areas]. In **Fig.3** there is shown the current status of CAT I, II and III areas.

The National Re-survey Schemes are attached in Annexes 1 - 9.

In Fig.3 there are some pictures derived from the re-survey database (status by category).

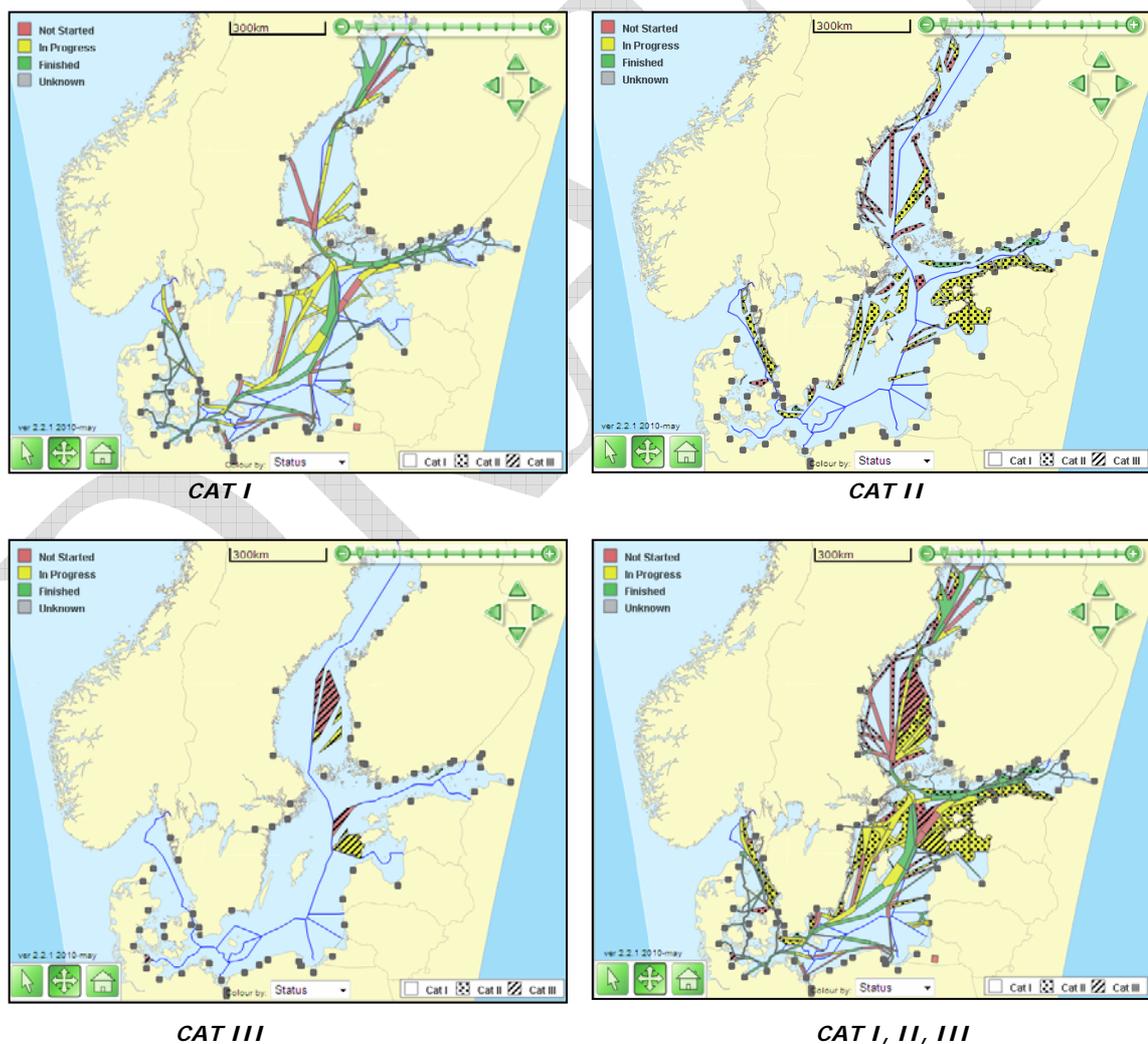


Fig.3: The current status of CAT I, II and III areas (by 26 August 2011).

2.2 Summary statistics of the national re-survey schemes

Currently in the database the total amount of re-survey areas is 169.562 km². The amount of areas to be resurveyed is 102.327 km². The estimation for re-survey work is 2808 days. See *Table 1*.

Re-survey areas and work		
Sum of re-survey areas	169526	[Km ²]
Sum of re-survey areas left	102327	[Km ²]
Sum of Re-survey work	2808	[days]

Table 1: Total Re-survey work and remaining Re-survey areas (by May 2011).

The status of CAT I, II and III areas in the database are shown in *Table 2* and in *Fig.4*.

Statistics by Categories	Total	CAT I	CATII	CAT III	Total	
Denmark	8746	7714	1032	0	8746	5,2
Estonia	8333	8333	0	0	8333	4,9
Finland	44743	19961	11195	13587	44743	26,4
Germany	3406	3406	0	0	3406	2,0
Latvia	5313	2221	3092	0	5313	3,1
Lithuania	1612	1612	0	0	1612	1,0
Poland	6043	6043	0	0	6043	3,6
Russia	1272	1272	0	0	1272	0,8
Sweden	90058	58330	31652,57	75	90058	53,1
Total	169526	108892	46972	13662	169526	100,0
%		64	27,7	8,1		100,0

Table 2: Re-survey areas in the database by Categories (by May 2011).

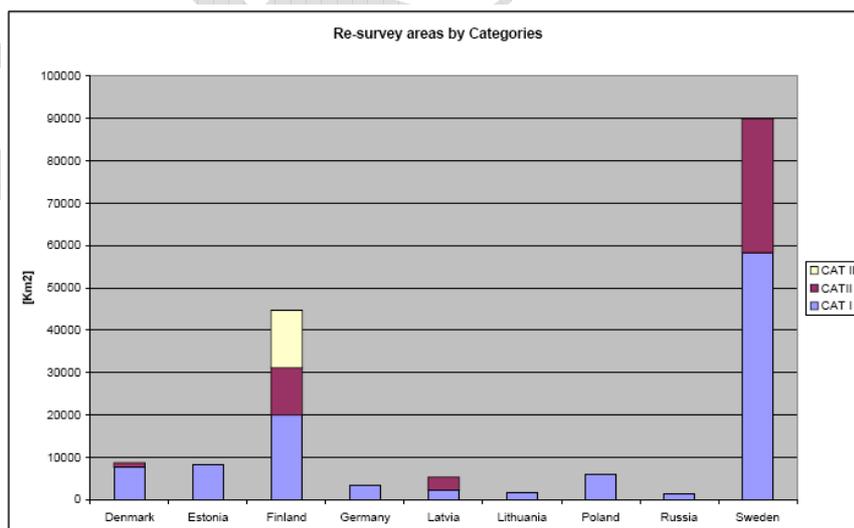


Fig.4: The current status of re-surveys by Categories.

The status of CAT I re-surveys is shown in *Table 3* and in *Fig.5*.

[Similar status tables and figures can be created for CAT II and III when these have been populated into the database.]

Status for CAT I	Finished	In progress	Not Started	Unknown	Total to be surveyed	Total	%
Denmark	5626	455	1632		2088	9801	5,6
Estonia	2245	3328	2760		6088	14420	8,2
Finland	8346	6165	5450		11615	31576	18,0
Germany	2187	447	772		1219	4624	2,6
Latvia	2221	0	0		0	2221	1,3
Lithuania	549	1063	0		1063	2676	1,5
Poland	2632	0	3411		3411	9453	5,4
Russia	714	0	558		558	1829	1,0
Sweden	18163	30042	10126		40167	98498	56,3
Total	42684	41500	24708	0	66208	175100	100,0
%							

Table 4: Status of CAT I re-survey areas (by May 2011) .

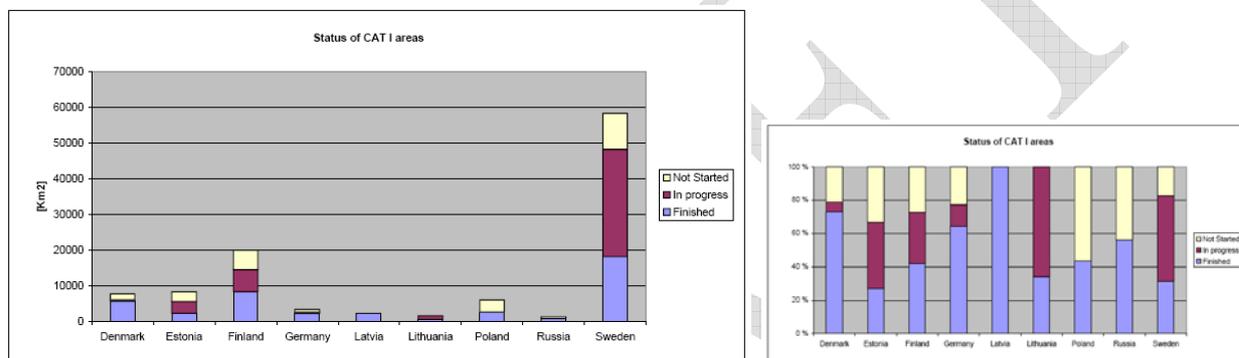


Fig.5: Status of CAT I re-survey areas (by May 2011).

2.3 Summary of time schedules for national re-surveys

A summary of national time schedules is shown in Table 5.

National Time Schedules (Examples only)

	CAT I	CAT II	CAT III	Remarks
Denmark	2014	2035		
Estonia	2015	2027		
Finland	2015	2015		
Germany	Periodical 5-25 years.	Periodical 5-25 years.		
Latvia	2011	2018		
Lithuania				
Poland	2020	2032		
Russia				
Sweden	Not specified	Not specified		
Total				

Table 5: Summary of time schedules of National Re-survey Schemes.

2.4 Summary of National Funding regimes

A summary of national funding regimes (for CAT I and CAT II) is shown in *Table 6*.

National Funding Regimes (Examples only)

	Funding by HO budget	External Funding		Total Funding
Denmark				
Estonia				
Finland				
Germany				
Latvia				
Lithuania				
Poland				
Russia				
Sweden				
Total				

Table 6: Summary of time schedules of National Re-survey Schemes.

2.5 Overview analysis of National Re-survey Schemes

[To be written when more information is available]

References:

- [1] HELCOM Copenhagen Declaration, 10 September 2001
- [2] AMENDMENTS TO ANNEX IV "PREVENTION OF POLLUTION FROM SHIPS" TO THE HELSINKI CONVENTION. HELCOM Recommendation 22E/5, 10 September 2001
- [3] Major shipping routes and harbours. HELCOM EXTRA PREP 3/2001 Document No. 2., 3 August 2001.
- [4] HELCOM Moscow Ministerial Declaration, 20 May 2010
- [5] Vision for the Revised BSHC/HELCOM Re-survey Scheme. Supporting document to Moscow Declaration, 20 May 2010.
- [6] Background information on revision of the 2001 Copenhagen Declaration regarding BSHC/HELCOM Re-survey Scheme and ECDIS training. Supporting document to Moscow Declaration, 20 May 2010.

Annexes:

Draft National Re-survey Schemes:

- 1 Denmark
 - 2 Estonia
 - 3 Finland
 - 4 Germany
 - 5 Latvia
 - 6 Lithuania
 - 7 Poland
 - 8 Russia
 - 9 Sweden
-

Annex 1. Draft National Re-survey Scheme of Denmark

[To be provided Denmark]

1.1. Plans for CAT I and II areas

1.2. Status for re-surveys on CAT I and II areas

1.3. Plans for CAT III areas

1.4. Status of re-surveys on CAT III areas

1.5. Status of re-surveys on all areas

1.6. Funding of re-surveys

Annex 2. Draft National Re-survey Scheme of Estonia

[To be provided Estonia]

2.1. Plans for CAT I and II areas

2.2. Status for re-surveys on CAT I and II areas

HELKOM		CAT-I		
ala	pindala	tehtud	valm%	tegemata
EBS-01	861,526	0	0	861,526
EBS-02	1777,943	0	0	1777,943
EBS-03	1241,874	205,48	16,54	1036,394
GOF-05	177,347	177,347	100	0
GOF-062	15,819	15,819	100	0
GOF-07	424,94	424,94	100	0
GOF-081	219,675	219,675	100	0
GOF-082	128,177	128,177	100	0
IRB-03	16,633	16,633	100	0
KUN-01	196,697	196,697	100	0
MUU-01	156,869	156,869	100	0
PAL-01	129,035	129,035	100	0
PAL-02	1243,853	1049,54	84,04	194,313
SAA-01	845,075	363,313	42,99	481,762
SIL-01	429,358	429,358	100	0
TAL-01	177,229	177,229	100	0
TAL-02	190,649	190,649	100	0
VEN-021	57,882	0	0	57,882
VEN-031	122,417	0	0	122,417
KOKKU	8412,998	3880,761	46,13	4532,237

CAT-II				
ala	pindala	tehtud	tegemata	valm%
kolga	876,497	797,954	78,543	91,03
kunda	1112,478	466,164	646,314	41,91
liivi e	3425,604	643,81	2781,794	18,79
liivi w	4392,117	159,024	4233,093	3,62
narva	1042,406	422,752	619,654	40,57
prangli	422,505	405,2	17,305	95,91
soela	2464,145	11,862	2452,283	0,48
pakri	676,191	455,324	220,867	67,34
tahkuna	1652,042	106,354	1545,688	6,44
tal a	75,172	75,172	0	100
tal b	1104,422	1048,499	55,923	94,94
voosi	1114,28	451,694	662,586	40,5
vainameri	1509,909	385,94	1123,969	25,56
vaindloo	289,055	199,727	89,328	69,09
venepiir	319,341	153,007	166,334	47,92
	20476,164	5782,483	14693,681	28,24

Table 2.2. Status of Estonian Re-survey scheme for CAT I and CAT II areas by August 2011.

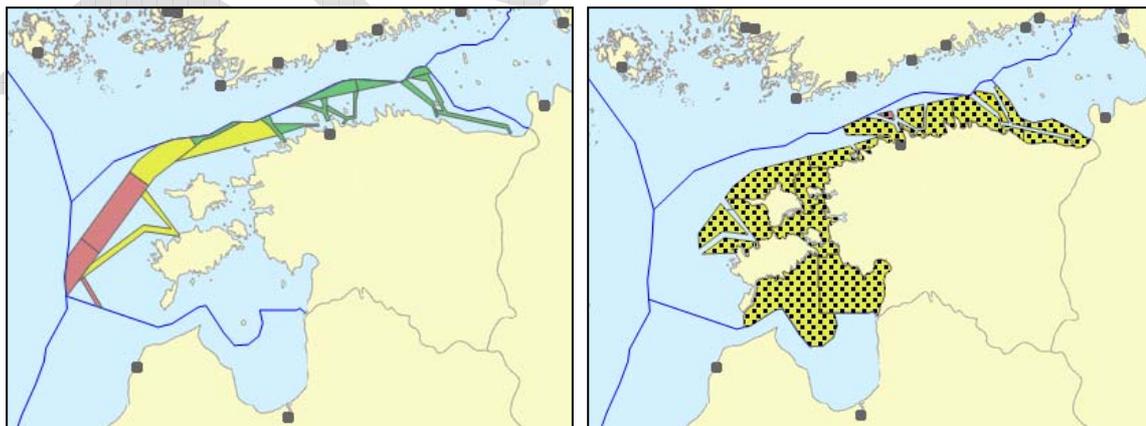


Fig. 2.2. Status of Estonian Re-survey scheme for CAT I and CAT II areas in the re-survey database in August 2011.

2.3. Plans for CAT III areas

2.4. Status of re-surveys on CAT III areas

CAT-III				
ala	pindala	tehtud	tegemata	valm%
w_rannik	4874,856	74,345	4800,511	1,53
w_shelf	2129,023	0	2129,023	0
	7003,879	74,345	6929,534	1,06

Table 2.3. Status of Estonian Re-survey scheme for CAT III areas by August 2011.

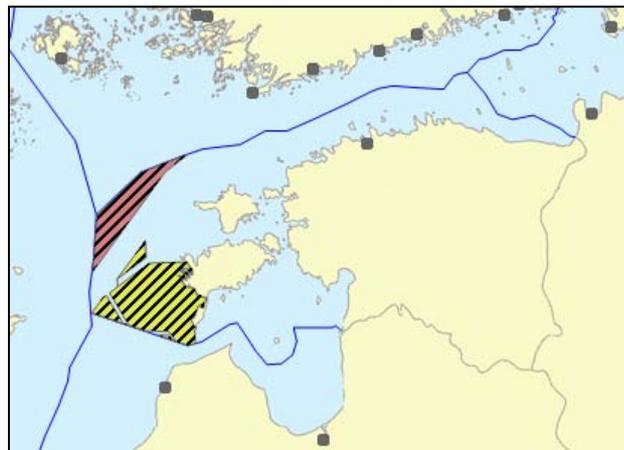


Fig 2.4. Status of Estonian Re-survey scheme for CAT III areas in the re-survey database in August 2011.

2.5. Status of re-surveys on all areas

kõik kategooriad				
kategooria	pindala	tehtud	valm%	tegemata
CAT-I-H	8412,998	3880,761	46,13	4532,237
CAT-II	20476,164	5782,483	16,76	14693,681
CAT-III	7003,879	74,345	1,53	6929,534
	35893,041	9737,589	27,13	26155,452

Table 2.4. Status of Estonian Re-survey scheme for all areas by August 2011.

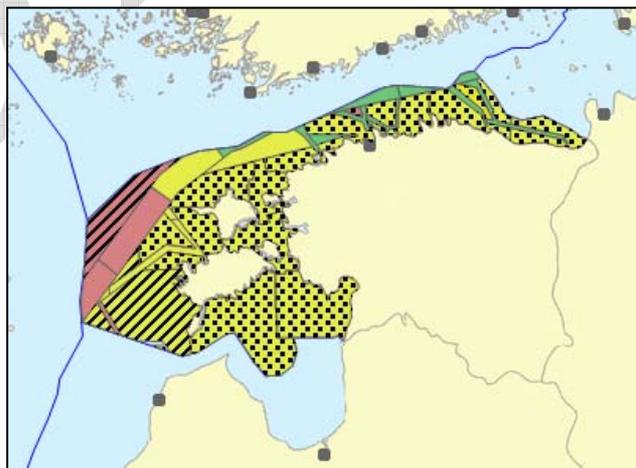


Fig 2.5. Status of Estonian Re-survey scheme for all areas in the re-survey database in August 2011.

2.6. Funding of re-surveys

[To be provided Estonia]

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Annex 3. Draft National Re-survey Scheme of Finland

[Draft by 5 August 2011.

To be developed further on and details to be fixed.]

3.1. Plans for CAT I and II areas

Finland has plans to complete its CAT I and CAT II re-surveys by 2015. This has been approved between the Ministry of Transport and Communication and the Finnish Transport Agency (FTA). See Table 3.1 and Fig 3.1. When making the decision to outsource the survey capacity of the Hydrographic Office of the FTA, a stable funding for ordering surveys has been allocated at least up to 2015.

	41362	2009	2010	2011	2012	2013	2014	2015
Helcom I+II Completion %		35 %	40 %	49 %	62 %	77 %	94 %	100 %
Helcom I+II re-survey areas left [Km2]		26716	25016	21016	15716	9416	2616	0
Helcom I+II re-surveys [Km2]			1700	4000	5300	6300	6800	2616
Funding [k€]			2500	3000	2600	2500	2500	2000
Direct ordering of re-surveys [k€]				1600	600			
External				1400	2000	2500	2500	2000

Table 3.1. Finnish Re-survey scheme for CAT I and CAT II areas by 2015.

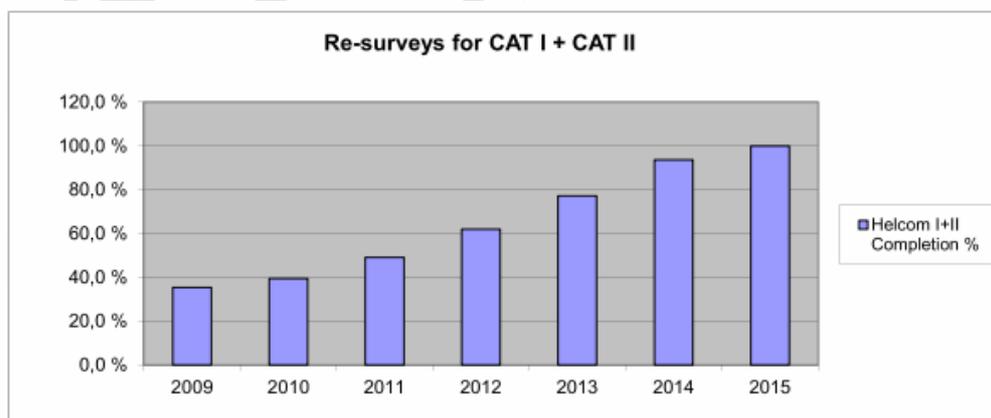


Fig 3.1. Finnish Re-survey scheme for CAT I and CAT II areas by 2015.

When new information received that the commercial shipping is frequently using routes or areas which are currently as CAT III areas, then these areas will be moved to CAT II areas.

3.2. Status for re-surveys on CAT I and II areas

The Ministry will follow up the implementation of the percentage values as in Table 3.1. The current status of this in the re-survey database can be seen in Table 3.2¹ and in Fig 3.2.

Status for CAT I	Finished	In progress	Not Started	Total	% completed
Finland	8346	6165	5450	19961	41,8

Status for CAT I + II	Finished	In progress	Not Started	Total	% completed
Finland	11136	6165	13856	31156	35,7

Table 3.2. Status of Finnish Re-survey scheme for CAT I and CAT II areas in the database by May 2011 [Note: The database is not yet fully updated and these figures are not yet comparable to the re-survey plans above].

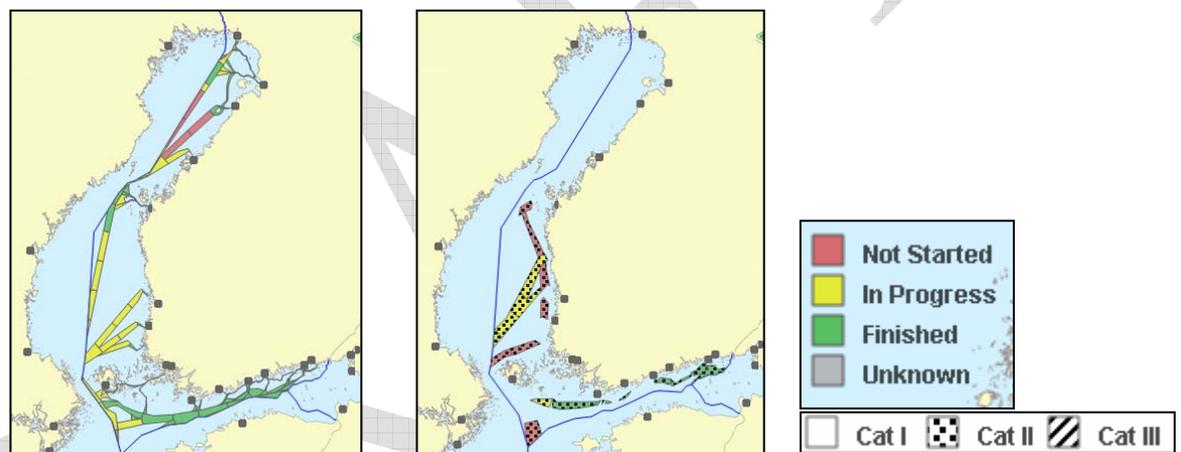


Fig. 3.2. Status of Finnish Re-survey scheme for CAT I and CAT II areas in the re-survey database in August 2011.

3.3. Plans for CAT III areas

For CAT III there are some plans, see Table 3.3 and Fig 3.3. The current status in the re-survey database can be seen in Fig 3.4. Re-surveys of CAT III areas are done for many reasons. One reason is if there is a CAT III area between CAT I or II areas and it will be cost effective to re-survey also the CAT III area between them. There are also needs of other uses of data than safety of navigation, e.g. environmental users. They should also provide funding for these re-surveys.

In the Fig 3.3 it can be noted that the amount of re-surveys of CAT III areas increases remarkably in 2015. This is possible due to the fact that in 2014 and

¹ Note: There is a slight difference between the table shown to the Ministry and the database (for CAT I+II 40% vs. 35.7%). This is due to the fact that the database value has been counted without using the percentage value for "In progress" Section and the database is not fully updated. This will be corrected in the final version.

2015 the CAT I and II surveys are close to be completed and their amount is decreasing.

	41362	2009	2010	2011	2012	2013	2014	2015
	12346							
Helcom III		5,7 %	6,5 %	7,3 %	8,9 %	10,5 %	12,2 %	44,6 %
Helcom III re-survey areas left [Km2]		11644	11544	11444	11244	11044	10844	6844
Helcom III re-surveys [Km2]			100	100	200	200	200	4000
Funding [k€]								
Direct ordering of re-surveys [k€]								
External								

Table 3.3. Finnish Re-survey scheme for CAT III areas.

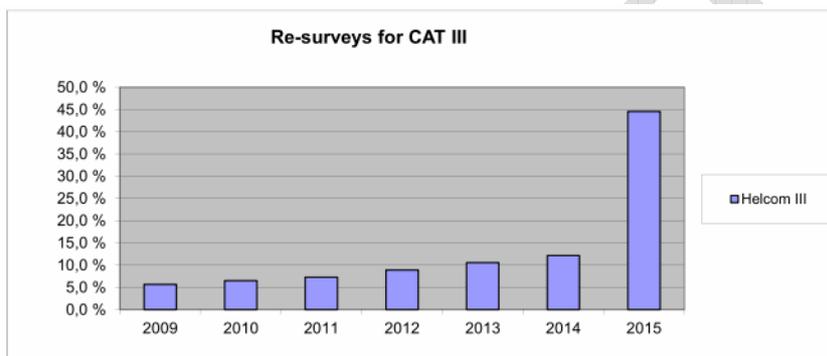


Fig 3.3. Finnish Re-survey scheme for CAT III areas.

3.4. Status of re-surveys on CAT III areas

In figure Fig 3.4 the overall status of all re-surveys in the database is shown.

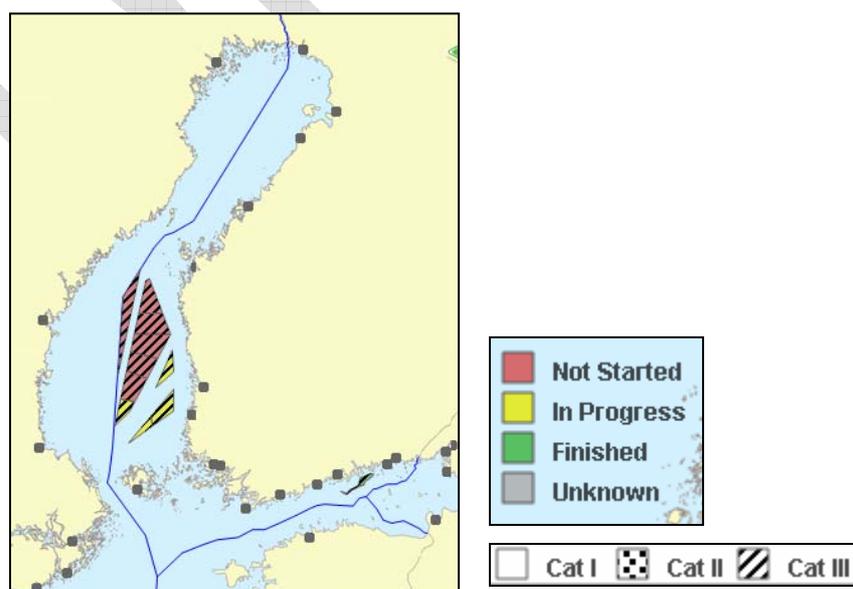


Fig 3.4. Status of Finnish Re-survey scheme for CAT III areas in the re-survey database in August 2011.

3.5. Status of re-surveys on all areas

In figure Fig 3.5 the overall status of all re-surveys in the database is shown. In figures Fig 3.6 – Fig 3.7 the overall status by sea areas is shown.

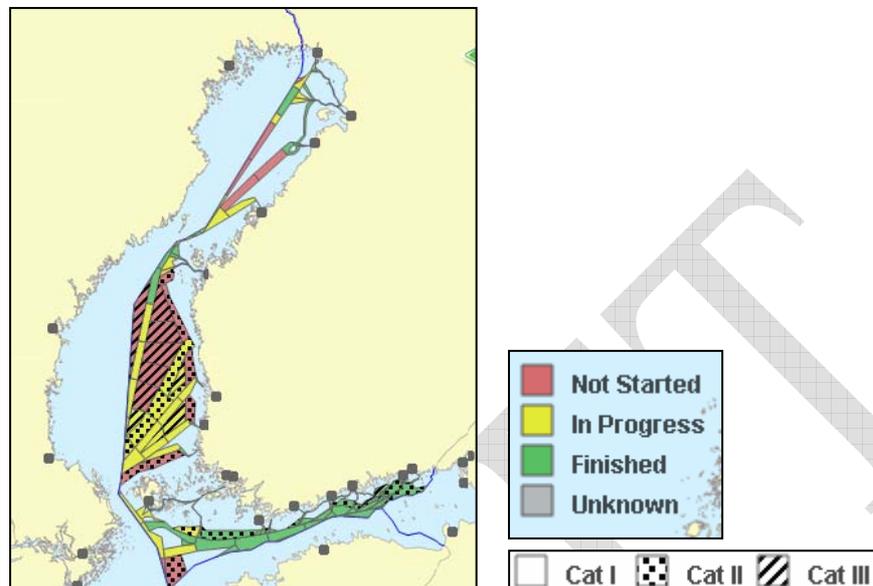


Fig 3.5. Status of Finnish Re-survey scheme for all areas in the re-survey database in August 2011.

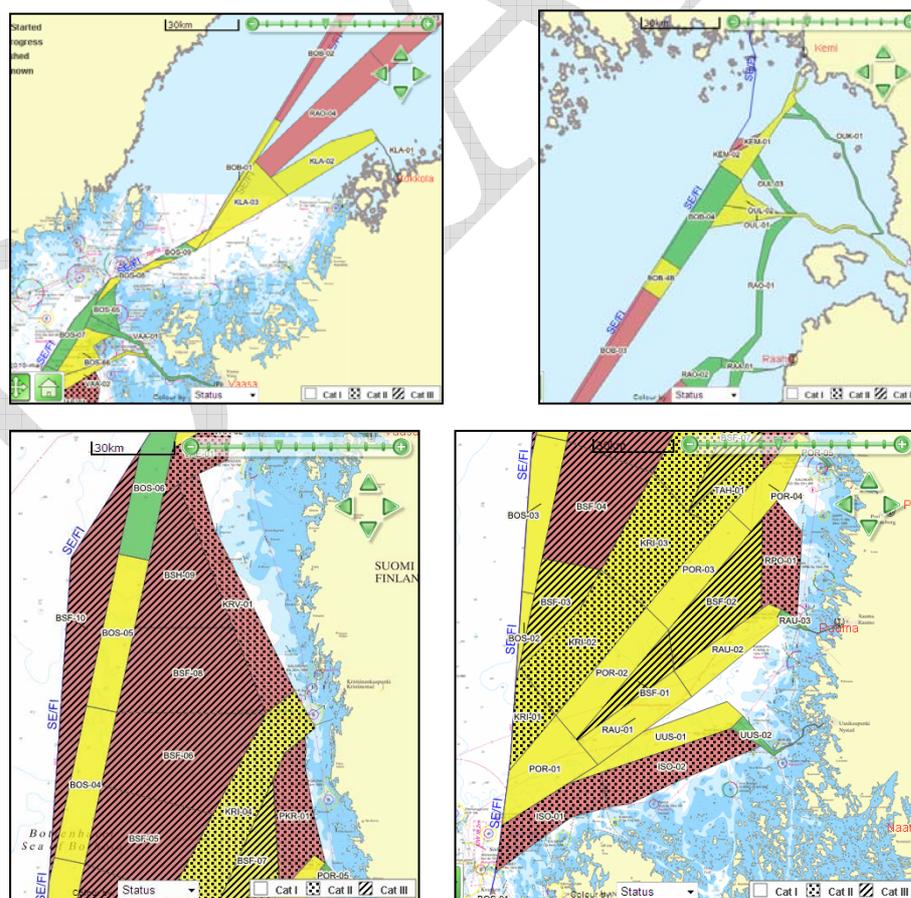


Fig 3.6. Status of Finnish Re-survey scheme for all areas on Gulf of Bothnia in the re-survey database in August 2011.

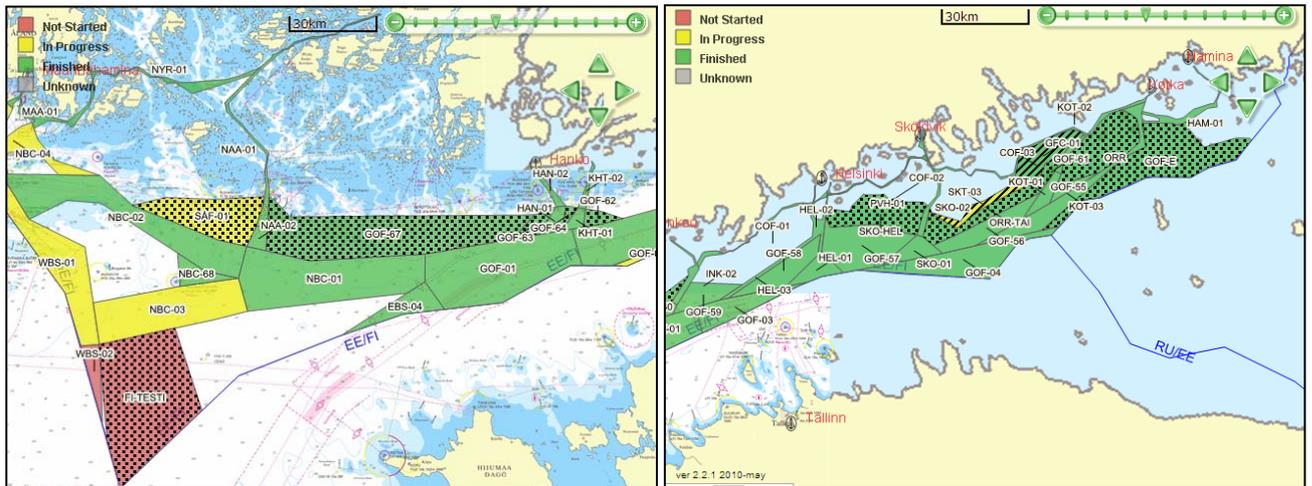


Fig 3.7. Status of Finnish Re-survey scheme for all areas in Gulf of Finland in the re-survey database in August 2011.

3.6. Funding of re-surveys

The re-surveys of CAT I and II will be funded mainly by the HO's budget. There is a fixed plan between the Ministry of Transport and Communication and the Finnish Transport Agency (FTA) for funding re-surveys by 2 – 3 Mill € yearly until 2015.

External funding will be currently received from the EU TEN-T "Motorways of the seas" concept together with Sweden [MonaLisa project].

Germany does not distinguish between CAT II and III. The plans are to improve the survey accuracy from 1b to 1a (S-44, Edition 5) to over 50% of the CAT II, III areas. A 100% coverage is derived by means of multibeam survey and/or sidescan sonar investigations depending on the topography.

The re-surveys of CAT I and II will be executed by the survey fleet of the HO.

In the **Table 4.1** there are more details for re-survey areas German resurvey scheme on the Baltic Sea.

Area number	Name	Size [km ²]	line spacing [m]	frequency [years]	Order (S44)	remarks
101	Ansteuerung Kiel 1	41,72	100	10	1a	Side-Scan Sonar
102	Ansteuerung Kiel 2	135,78	100	10	1a	Side-Scan Sonar
103	Weg H	177,41	100	10	1a	Side-Scan Sonar
104	Weg T	123,27	100	10	1a	Side-Scan Sonar
105	Ansteuerung Lübeck 1	65,63	100	10	1a	Side-Scan Sonar
106	Ansteuerung Lübeck 2	399,02	100	10	1a	Side-Scan Sonar
107	Rostock-Weg T	101,88	100	10	1a	Side-Scan Sonar
108	Ansteuerung Rostock	29,47	100	10	1a	Side-Scan Sonar
109	Rostock-Kadetrinne	73,08	100	10	1a	Side-Scan Sonar
110	Kadetrinne	79,90	Multibeam	10	1a	Side-Scan Sonar
111	Tiefwasserweg DW17	129,77	100	10	1a	Side-Scan Sonar
112	Route Schweden 1	72,83	100	10	1a	Side-Scan Sonar
113	Route Schweden 2	360,15	100	10	1a	Side-Scan Sonar
114	Route Sassnitz 2	556,29	100	10	1a	Side-Scan Sonar
115	Route Sassnitz 1	54,24	100	10	1a	Side-Scan Sonar
116	Route Swinemünde 2	451,91	100	10	1a	Side-Scan Sonar
117	Route Swinemünde 1	41,93	100	10	1a	Side-Scan Sonar
118	Route Polen	447,36	100	10	1a	Side-Scan Sonar
201	Kieler Bucht N	459,29	250	25	1b	
202	Kieler Bucht S	484,61	250	25	1b	
203	Mecklenburger Bucht N	665,00	250	25	1b	
204	Mecklenburger Bucht S	643,58	250	25	1b	
205	Mecklenburger Bucht O	24,89	250	25	1b	
206	zw. Rügen u. Mön	1.284,02	250	25	1b	
207	vor Kriegers Flak	179,85	250	25	1b	
208	zw. Rügen u. Bornholm N	1.492,08	250	25	1b	
209	zw. Rügen u. Bornholm S	1.441,04	250	25	1b	
210	ostwärts Rügen	148,92	250	25	1b	
211	Pommersche Bucht	184,41	250	25	1b	
301	Flensburger Förde	173,95	Multibeam	25	1a	
302	Eckernförder Bucht	177,91	100	25	1b	
303	Hohwachter Bucht bis Kiel	155,31	100	25	1b	
304	Fehmarn	274,32	100	25	1b	
305	Ostholstein	300,70	100	25	1b	
306	Wismarbucht W	90,43	100	25	1b	
307	Wismarbucht O	217,15	100	25	1b	
308	Rostock bis Darss	230,29	100	25	1b	
309	vor Zingst	511,26	100	25	1b	
310	Großer Stromrücken	15,88	100	25	1b	
311	ostwärts Hiddensee	111,35	100	10	1b	
312	Kubitzer Bodden	60,89	100	25	1b	
313	Jasmunder Bodden	123,34	100	25	1b	
314	Tromper Wiek u Nordk. Rügens	117,80	100	25	1b	
315	Prorer Wiek bis Südperd	103,02	100	25	1b	
316	Greifswalder Bodden N	170,13	100	25	1b	
317	Kooser Haken	34,24	100	25	1b	
318	Greifswalder Bodden S	515,25	100	25	1b	
319	Kleines Haff/Achterwasser	419,40	100	25	1b	
320	Oderbank	466,78	100	25	1b	
401	Darsser Ort	39,24	50	5	1b	

501	Schleimündung	29,02	50	10	1b	
502	Kieler Förde	50,01	Multibeam	10	1a	Side-Scan Sonar
503	Route Fehmarnsund	99,57	50	10	1b	
504	Neustadt	18,20	50	25	1b	
505	Walkyriengrund	6,09	50	25	1b	
506	Travemündung	11,56	50	10	1a	Side-Scan Sonar
507	Ansteuerung Wismar	132,75	50	10	1b	
508	Warnowmündung	23,06	Multibeam	10	1a	Side-Scan Sonar
509	Unterwarnow	9,66	Multibeam	10	1b	
510	Boddenkette	182,58	50	25	1b	
511	Strelasund	110,69	50	10	1b	
512	Ostansteuerung Stralsund	199,43	50	10	1b	
513	Peenestrom	16,28	50	10	1b	
514	Adlergrund	57,03	50	25	1b	
601	Flensburger Innenförde	6,68	Multibeam	25	1a	
602	Schlei	53,69	25	25	1b	
603	Trave bis Lübeck	22,58	25	10	1b	
604	Uecker	0,50	20	25	1b	
	Total	15.687				

Table 4.1. Details for re-survey areas German resurvey scheme on the Baltic Sea.

Annex 5. Draft National Re-survey Scheme of Latvia

[To be provided by Latvia]

5.1. Plans for CAT I and II areas

5.2. Status for re-surveys on CAT I and II areas

5.3. Plans for CAT III areas

5.4. Status of re-surveys on CAT III areas

5.5. Status of re-surveys on all areas

5.6. Funding of re-surveys

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Annex 6. Draft National Re-survey Scheme of Lithuania

[To be provided by Lithuania]

6.1. Plans for CAT I and II areas

6.2. Status for re-surveys on CAT I and II areas

6.3. Plans for CAT III areas

6.4. Status of re-surveys on CAT III areas

6.5. Status of re-surveys on all areas

6.6. Funding of re-surveys

DRAFT

Annex 7. Draft National Re-survey Scheme of Poland

[To be provided by Poland]

7.1. Plans for CAT I and II areas

7.2. Status for re-surveys on CAT I and II areas

7.3. Plans for CAT III areas

7.4. Status of re-surveys on CAT III areas

7.5. Status of re-surveys on all areas

7.6. Funding of re-surveys

DRAFT

Annex 8. Draft National Re-survey Scheme of Russia

[To be provided by Russia]

8.1. Plans for CAT I and II areas

8.2. Status for re-surveys on CAT I and II areas

8.3. Plans for CAT III areas

8.4. Status of re-surveys on CAT III areas

8.5. Status of re-surveys on all areas

8.6. Funding of re-surveys

DRAFT

Annex 9. Draft National Re-survey Scheme of Sweden

[Draft by 25 August 2011.

To be developed further on and details to be fixed.]

9.1. Plans for CAT I and II areas

Sweden is still in the process to schedule the Re-Survey plan. Sweden has decided to schedule the surveys in a period of three years' time with the upcoming year in detail (e.g. 2012, 2013-2015, 2016-2018 etc.). The reason is, within the three year period, to re-schedule surveys more unobstructed and to adapt the re-survey plan to the Swedish Maritime Administration three year business plan. One implication of this method is that it demands frequently updates in the HELCOM Re-survey data base.

9.2. Status for re-surveys on CAT I and II areas

At the time being the CAT I and II areas are defined but the administration will continue the work of evaluate and adjust areas for re-survey. Sweden has surveyed approximately 40% of CAT I and II areas to the S44 standard.

The Status of Swedish Re-survey scheme for CAT I and CAT II areas can be seen Figure 9.2.

Status for CAT I	Finished	In progress	Not Started	Total	% of total
Sweden	18163	30042	10126	58330	31,1

Status for CAT I + II	Finished	In progress	Not Started	Total	% completed
Sweden	19277	50147	20559	89983	21,4

Table 9.2. Status of Finnish Re-survey scheme for CAT I and CAT II areas in the database by May 2011.

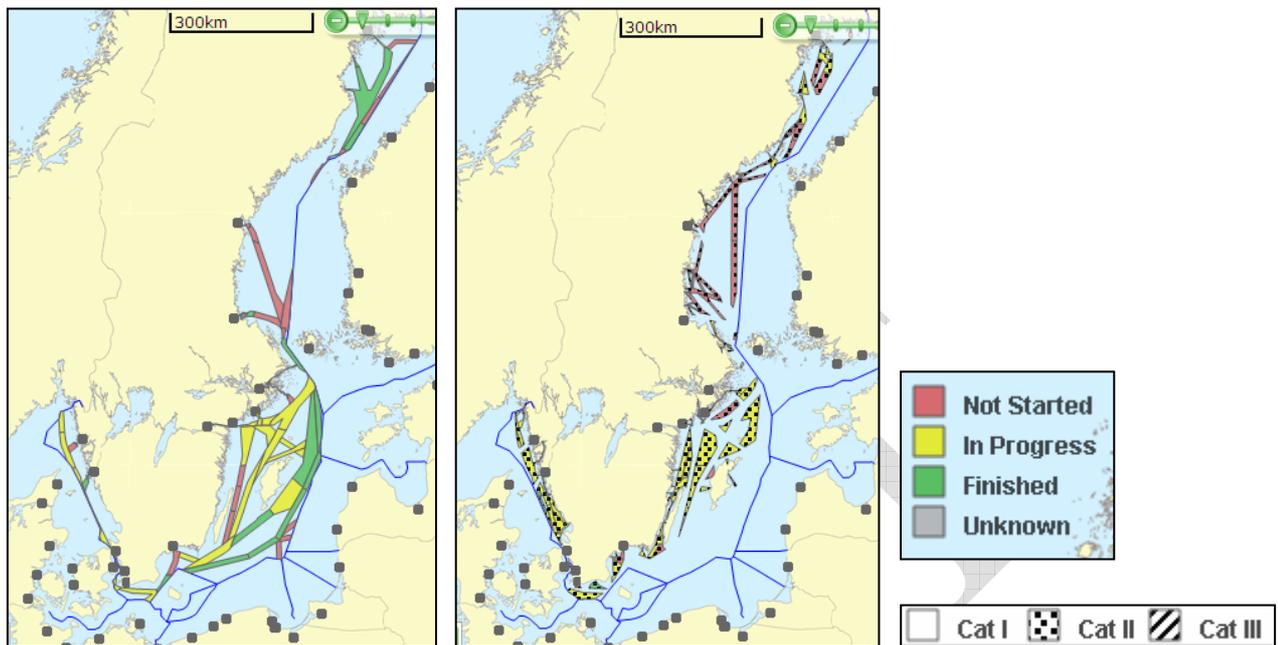


Fig. 9.2. Status of Swedish Re-survey scheme for CAT I and CAT II areas in the re-survey database in August 2011.

9.3. Plans for CAT III areas

CAT III areas will be populated in the HELCOM Re-survey plan but the administration will for time being focus on CAT I and II.

9.4. Status of re-surveys on CAT III areas

9.5. Status of re-surveys on all areas

In figure Fig 9.5 the overall status of all re-surveys in the database is shown.

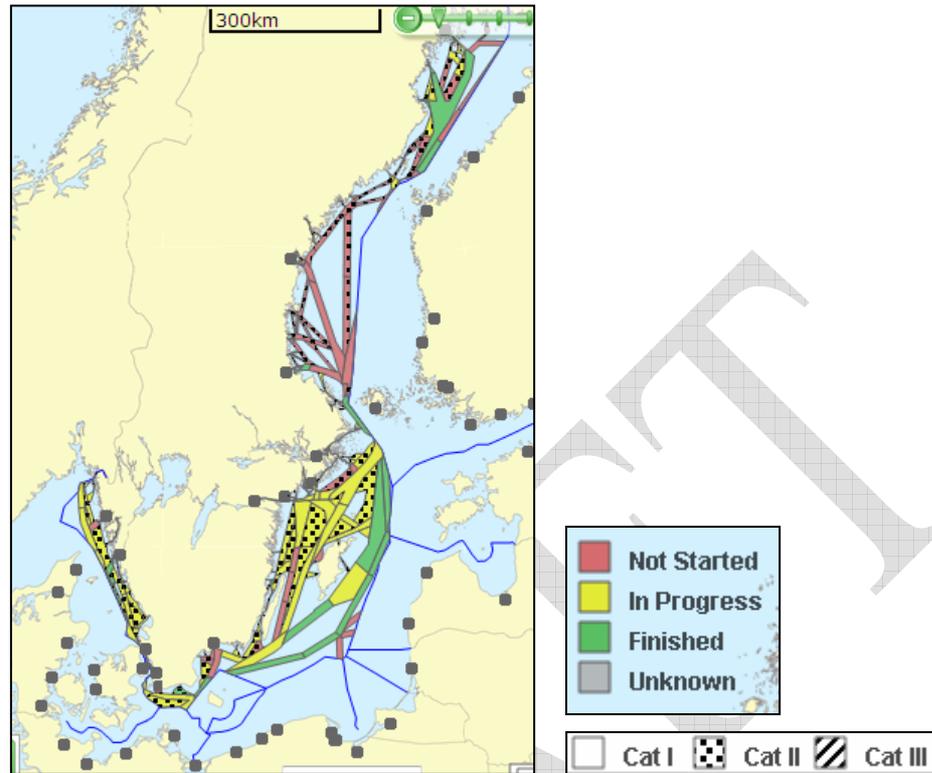


Fig. 9.5. Status of Swedish Re-survey scheme for all areas in the re-survey database in August 2011.

9.6. Funding of re-surveys

Funding of Re-surveys for CAT I and II is mainly from the HO's budget but also external funding is currently received from the EU TEN-T concept together with Finland (*MonaLisa* project).