

Report of the Resurvey Working Group (RWG)

Meetings Held During the Reporting Period

1. RWG6, 10 – 11 November 2017, Rostock DE. Chaired by NL (Dorst).

The meeting was attended by the following member states: BE (Debuck), DE (Vahrenkamp), DK (Vedel, Hensen), FR (Langois), NL (Dorst, Veen), SE (Olsson), UK (Waters, Worth, Payne)
In addition, the following observer was present: NL RWS (Bicknese), UK MCA (English, Kinnear)

2. RWG7, 7th to 8th November 2018, London UK. Chaired by UK (Warren-Locke).

The meeting was attended by the following member states: BE (Debuck), DE (Vahrenkamp), DK (Vedel, Hensen), FR (Lamarre), NL (Loog), UK (Warren-Locke, Payne, Settle).

In addition, the following observer was present: UK MCA (Colenutt)

Apologies were received from: SE (Olsson)

The NSHC Re-survey Working Group Decisions and Action lists are shown at Annex A.

3. RWG8 will be hosted by FR in Paris Sep/Oct 2018.

Progress on NSHC Action Items

No/year Agenda item	Subject	Action	When	Status
8/2016 D.1	DSSS Agreement	Pertinent parts of the DSSS agreement are to be incorporated in the ToR of the RWG, taking into account the remit for a common risk assessment of the DSSS area.	33 rd NSHC	COMPLETED New ToR included.
7/2016	www.nshc.pro	All NSHC WGs were requested to distribute information on the NSHC website, unless sensitivity of the subject does not allow this, as assessed by the WGs.	All WGs	CONTINUOUS THE RWG has tasked DE representative to create a password protected section of the website to allow collaboration over sensitive datasets.
6/2014 (Concl.122)	Risk Assessment	Undertake a risk assessment analysis for the North Sea area, including the Dover Strait.	Chair RWG	OPEN Formats for an initial exchange of national risk assessments has been agreed which will be shared on the member's section of the NSHC website. Harmonisation of approaches to be discussed at next meeting.
1/2012 (Concl.97)	Resurvey Working Group	[Updated text after 32 nd NSHC] Incorporate a standing agenda item to NSHC Conference dealing with airborne and satellite bathymetry. Members are encouraged to participate and present input papers and in general to contribute to the work with airborne and satellite bathymetry.	Chair RWG	CONTINUOUS This is a standing agenda item along with autonomous vehicle use and crowd sourced bathymetry.
3/2010	NSHC re-survey WG	NSHC decided to task the NSHC RWG:	law. NSHC	OPEN

(Concl.89)		-to complete the overview where applicable; To publish the scheme on the internet; To propose a way forward to harmonize the presentations of the resurvey schemes and of C55; To include conclusion 28 "Resurveying of critical areas" in their work program.	RWG action list	- Overview complete - Scheme is on NSHC.pro - Decisions on formats agreed to allow harmonisation. - C55 discussion outstanding.
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Risk Assessment (NSHC Conclusion 122)

4. During the 6th WG the possibility of creating a North Sea Risk Assessment was discounted as each MS had its own strategy based on the physics of its part of the North Sea, the particularities of usage and its own capacities. It was therefore decided in the first instance to limit any work to the Dover Strait area and to commence by an exchange of national strategies.
5. During the 7th WG the requirement for a common exchange format was discussed with a decision to use SHAPE files for exchange of areas. Those using ArcMap are also to provide .prj file.

Applicability of Alternative Survey Techniques (NSHC Conclusion 97 refers)

6. RWG6 & RWG7 both had wide-ranging discussions on lidar, SDB, CSB and autonomous vehicles with several interesting papers due to be made available from a number of MS.

Lidar: Several MS are utilising lidar surveys both in the North Sea and other areas. SHOM are already collaborating with BE to conduct cross area surveys and have offered a similar approach to UK.

SDB: UK provided the RWG with a paper on the use of SDB for charting, while FR are currently tendering for a study on empirical v full physical approach to SDB. Tests have already been conducted with hyperspectral imagery but they are not content with results. DK are also to run SDB test in the far north of their areas.

CSB: It was noted that while originally CSB was for thought of as a tool for filling in white chart areas, discussions held by the WG moved towards the use of it for change detection in areas of highly mobile seabed to better inform future resurvey work.

- As a further note, across boundary data providers need to be coordinated with Trusted Partners to provide change analysis.
- The IHO guidance is seen as being too long and 'hydrographic' to be of general use and the WG see it as their job to give advice on procedures.
- Open Sea Map project is of a much lower quality and the results are not suitable for charting as not quality controlled in any way.

Autonomous Surveying:

- An area for the WG to keep an eye on, but are waiting on autonomous vehicle regulations from the IMO (sitting shortly).
- NL looking at AS with mine counter measures community. Remus was checked against MBES and found to be wanting. Trial with Hugin v MBES due to take place which will be reported on at the next meeting.
- DK – Currently use remotely operated 25m MCM boats.
- FR – New ships to be fitted with UAV and USVs.

7. The NSHC is invited to:
 - a. **Note** this report
 - b. **Endorse** the Terms of Reference and Rules of Procedure agreed at the 6th NSHC RRWG shown at Annex B.
 - c. **Endorse** the WG plan to initially limit the Risk Assessment to a harmonisation of national plans in the Dover Strait area.
 - d. **Task** the RWG to provide guidance on the IHO CSB paper.
 - e. **Note** a cordial invite to members of the NSHC not already part of the RWG to attend future meetings.

NSHC Re-survey Working Group – Decisions Lists

Number	Decision item	Responsible	Comments
1	The creation of a common risk assessment or merging of individual risk assessments is not currently achievable. Individual DSSS RAs to be provided as a discussion piece.	BE, FR, NL, UK	
2	SHAPE Files are to be used for the transfer of survey polygons.	MS	When supplying to DE a .prj file needs to be included.
3	EMODnet as an EU project will not be discussed as a separate agenda item during forthcoming meetings. Individual MS are to report any developments of interest to the WG.	Chair	
4	All risk assessment and planning documentation to be made available on restricted area of website (see Action 2) until further discussions have taken place.	DE	
5	Applicability of alternate surveying methods to be kept as a standing agenda item.	Chair	To be included in TORs.
6	France to host 2018 WG		
7	Denmark to host 2019 WG		

NSHC Re-survey Working Group –Actions List

Number	Action item	Responsible	Comments	Status
1	Deliver updates to the Technical Hydrographic Instructions, (status of 31-12-2016 will be published on web site)	MS		COMPLETE
2	Create a password protected area within the NSHC website	DE		COMPLETE
3	Update the website with links to the INSPIRE portals of MS	DE, assisted by MS	Completed - UK	ongoing
4	Share link to paper “check on resurvey interval” with MS	UK		COMPLETE
5	Share “SDB Safety Paper” with MS	UK		COMPLETE
6	Publish THIs on web site	DE		due 28-02-2017
7	Provide state of survey CATZOC polygons	MS		ongoing
8	Provide planned survey areas for next season.	MS		ongoing
9	Provide updates to resurvey frequency plan.	MS	As applicable	ongoing
10	Provide risk assessment outcomes (DSSS Area)	BE, FR, NL, UK		26/01/2018
11	UKHO to discuss and respond to FR offer of lidar surveys in the Channel Islands	UK		28/02/2018

12	Comments on IHO CSB paper as relevant to seabed change analysis to be passed to chair.	MS	DE to publish draft IHO CSB WG paper on restricted website	26/01/2018
13	Provide DE with specific specialist contact details as required. (Eg lidar)	MS	To be published on restricted website area.	26/01/2018 Completed - UK
14	Confirm members of WG.	Chair		

NSHC Resurvey Working Group (RWG) Terms of Reference and Rules of Procedure

Scope

With reference to NSHC conclusion 28, and actions 3/2010, 1/2012 and 8/2016, and considering the need to

monitor the implementation of the North Sea Hydrographic Commission's Member States re-survey plans, the North Sea Hydrographic Commission has established the **NSHC Resurvey Working Group (RWG)** with the following terms of Reference and Rules of Procedure.

The geographic scope of the RWG is the entire area of the North Sea Hydrographic Commission. The RWG should give due consideration to the Dover Strait / Pas-de-Calais, defined by the areas of the Traffic Separation Scheme (TSS) "North Hinder South" and adjoining TSS "In the Strait of Dover and Adjacent Waters" as adopted by the International Maritime Organization (IMO) and published in the IMO "Ship's Routing". The RWG will give special attention to the routes selected for deep draught vessels passing through the Dover Strait/Pas-de-Calais, published in the IMO "Ship's Routing".

1. Terms of Reference

The NSHC Resurvey Working Group is tasked for the entire area of the North Sea Hydrographic Commission:

- 1.1 To maintain and develop the North Sea Resurvey Scheme and present it on the internet.
- 1.2 To maintain a resurvey metadata database where applicable.
- 1.3 To follow up the implementation of the Resurvey Scheme.
- 1.4 To identify possible problems and propose solutions or workarounds to them.
- 1.5 To specify and propose updates and changes to the Resurvey Scheme.
- 1.6 To liaise with national Maritime Administrations and other relevant organisations and groups regarding the North Sea Resurvey Scheme.
- 1.7 To monitor and report on the development of aerial and satellite bathymetry.
- 1.8 To report to the NSHC at the conferences, and whenever found necessary.

Additionally, the NSHC Resurvey Working Group is tasked for the Dover Strait/Pas-de Calais:

- 1.9 To promote that the responsibility for surveying is shared between the Member States.
- 1.10 To note the Member States reports on survey activities in that area, and comment on those survey activities.
- 1.11 To monitor that Member States prioritize the deployment of hydrographic survey capacity to the routes selected for deep draught vessels, and report concerns, if any, to the NSHC.
- 1.12 To share data, information and knowledge on dynamic behaviour of the sea floor.
- 1.13 To acquire up-to-date Technical Hydrographic Instructions of each Member State.

2. Rules of Procedure

- 2.1 Each member state of NSHC shall nominate a representative to the RWG, if relevant to the scope and terms of reference. The representatives should be experts in the field of hydrographic survey planning.
- 2.2 The RWG shall work mainly by correspondence, preferably by e-mail.
- 2.3 Meetings shall be arranged when found feasible and at least once between two consecutive NSHC conferences. Hosting of the meetings takes turn between the members of the RWG.
- 2.4 The RWG has a Chair and possibly a Vice-Chair.
- 2.5 The Chair and Vice-Chair shall be members of the RWG and are nominated by the NSHC.
- 2.5 With the Chair's approval non-members may attend the RWG meetings.
- 2.6 Decisions should be made by consensus.
- 2.7 The Technical Hydrographic Instructions (THI) for the Dover Strait/Pas-de-Calais serve to provide insight into the national hydrographic survey policy. It consists of at least a description of the types of resources deployed for each survey, and an approach to resurveying.
- 2.8. The THI of each Member State is reviewed during each meeting of the RWG. Each Member State will consider the comments made by the other Member States. Comments should aim to balance each other's survey policies.
- 2.9. The THI will be publicly available on the internet.