

The Nordic Agreement to Improve Data Exchange for Paper Chart Production through ENCs

Background

During 2007 a working group was established within the Nordic Hydrographic Commission (NHC) in order to harmonize the Nordic Paper Charts regarding structure (e.g. scales), appearance (cartography) and updating. In the final report from this working group the most alarming issue identified was that charts covering the neighbouring country's area were not properly updated.

The working group from 2007 concluded that there was a need to improve the data exchange between the Nordic countries. It was also suggested that using ENC would improve the data exchange. At the 52nd Meeting, 2008, the NHC decided that the Improved Data Exchange Working Group (IDEWG) should be established. This new working group was chaired by Sweden and had representatives from Denmark, Finland, Iceland and Norway. It became active in September 2008 and presented the final report to the 53rd NHC Meeting in April 2009 (NHC/53/6.2B). All recommendations made by the working group were approved by NHC. A presentation was also given by Sweden at the 6th CSPCWG (IHO – Chart Standardization and Paper Chart Working Group) meeting 2009.

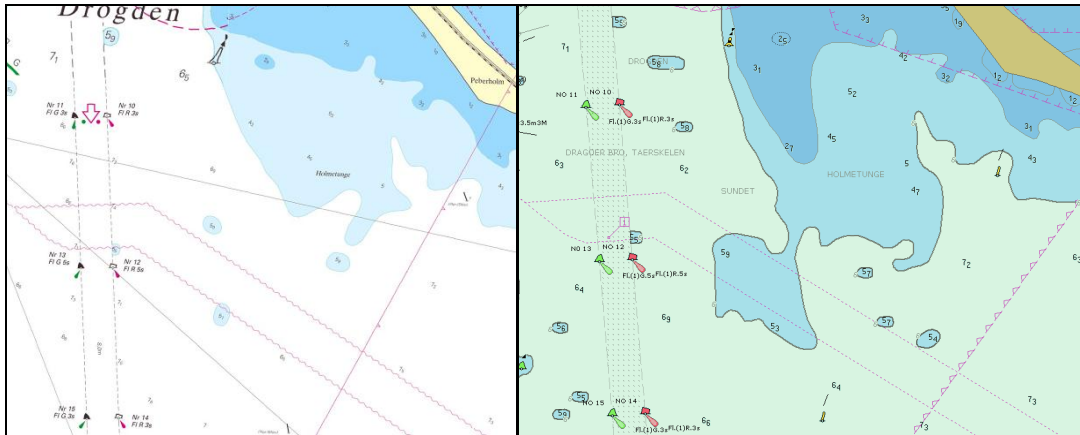
The Nordic countries have since 2010 worked in accordance with the recommendations made by the working group. In May 2011 a follow-up was made via a questionnaire to the participating countries. The outcome of the questionnaire showed that all countries were of the opinion that the recommendations have led to improved data quality in the paper charts covering neighbouring countries. A presentation was made at the BSICCWG-meeting in Norrköping in June 2011 and it was proposed by the BSICCWG that Sweden made a presentation at BSHC16 in order to discuss if there would be an interest to widen the method to also be used by other countries within the Baltic Sea region.

Analysis/Discussion

The focus of the analysis made by the IDEWG was on geographical areas of common charting responsibility, i.e. the areas of the national paper chart that are covering another nation's waters. When discussing data exchange it is necessary to consider the fact that there are sea areas of different navigational interest and that the need for effective data exchange between countries differs. For example The Sound, between Denmark and Sweden, is a congested area of great importance which consequently means that the data exchange between Denmark and Sweden is in general of more importance than for example that between Norway and Denmark, over the area of the North Sea, where the data exchange is not likely to be as critical.

Updates in charts covering the neighbouring country's area are generally made from information published in the neighbouring country's Notice to Mariners (NM). It is impossible, however, to give a complete description of all updates in NM. A new survey is one example of an update that could only be described in general terms. If a producer country is about to print a chart covering the neighbouring country the producer country does not have any detailed information about the survey from NM. It could in fact take years until the primary charting country has published a New Chart or a New Edition where all details are available. During which time the neighbouring country would then have to print a New

Edition/Reprint of their chart without the new detailed survey data. Hence, the method of keeping a neighbouring country's chart information updated solely through the NM inevitably leads to the information becoming inaccurate (Picture 1). ENC's are on the other hand continuously kept up to date and the detailed survey data is available there. Therefore the working group recommended using the neighbouring country's ENC's to keep the paper charts properly updated.



Picture 1.
The Swedish chart SE8141 (2009) compared to the Danish ENC cell shows that the depth information differs as a result of the insufficient updating method.

When charting an area within another country the major advantage of using ENC as an exchange format for paper chart production is the existence of the infrastructure provided by the RENC. Denmark, Finland, Norway and Sweden agreed a few years ago to freely make use of each other's ENC's for paper chart production. The ENC's (EN and ER) are available through the PRIMAR database and could be downloaded at any time.

In order to use ENC's and the existing data infrastructure as a basis for data exchange, one need to know which ENC's are of interest for each nation's paper chart production. Within the Nordic countries each nation has compiled a Paper Chart Source Information List from which it is possible to see which foreign ENC's are sources for each national paper chart.

When a neighbouring country's ENC's are being used as a source for paper charts it is critical that the content of the paper chart is kept as close as possible to the content of the corresponding ENC's. This makes it possible to update the paper chart with subsequent ENC updates. In implementing the updating process it was decided that each nation should be able to produce an ENC Update Report containing information about all ENC updates between a selectable start date and end date.

Agreements made within the Nordic Hydrographic Commission

The Nordic Hydrographic Commission approved and agreed upon the following recommendations, made by the Improved Data Exchange WG, which are to be used within the Nordic countries Denmark, Finland, Iceland, Norway and Sweden.

1. National paper charts at a scale of 1:750 000 and larger that cover another nation's waters should be produced from the other nations ENC's.
2. Generalisation of the neighbouring countries ENC data should be kept to a minimum to ensure the quality and for more efficient updating.
3. Once the paper chart is based on ENC's the update should be done via ENC updates.

4. A Paper Chart Source Information List should be kept up to date by each Nordic Hydrographic Office.
5. An ENC Update Query Web Service or an equivalent query function should be provided by each Nordic Hydrographic Office.
6. If no ENC Update Query Web Service is available then it should be possible to produce an ENC Update Report on request by another country.
7. To present the recommendations and the suggested methods in this report to the IHO Chart Standardization and Paper Chart Working Group.
8. Implementation plan:
 - a. If not already available then start to collect administrative information for the ENC Update Report 1st Jun 2009.
 - b. Each country should on request be able to produce an ENC Update Report from the 1st Dec 2009.
 - c. Paper Charts should be based on the neighbouring countries ENC's according to the following time schedule.
 - i. Chart with scale larger than 1:150 000 completed 1st Jan 2011.
 - ii. Scale 1:150 000 – 1:400 000 completed 1st Jan 2013.
 - iii. Scale 1:400 000 – 1:750 000 completed 1st Jan 2015.
9. Each country to present the status of implementation at every NHC-meeting.

Recommendations

The BSHC is invited to note and discuss this Paper for Consideration and the member states are invited to participate in the co-operation established by NHC.