**XML Based NtM Chart Corrections Data Exchange**

Hydrographic Offices produce charts in digital and printed formats.

The bulletins Notices to Mariners (NtM) are the medium to bring paper chart corrections to Mariners’ attention. They ensure that the chart used by the Mariner is up-to-date and reliable for conducting the intended voyage safely. Paper chart corrections have to be done manually by the Mariner.

NtMs themselves are provided in digital and printed format. The format and structure of the NtM are dependent on Hydrographic Offices design standards.

Although the mariner is the primary NtM user, NtMs are also assessed by other Hydrographic Offices which either have interests in receiving updates to their own charts covering neighbouring sea areas or which have interest in providing a global chart coverage.

With the advent of digital chart production systems, and with the responsibility to provide and exchange NtM content in the future electronically, NIPWG (Nautical Information Provision Working Group) discussed the possible harmonisation of chart corrections in NtM in spring 2018.

All chart production systems currently employed by Hydrographic Offices have the capability to export data in XML format. Thus, the request of a harmonised XML structure for NTM chart corrections was considered as most Hydrographic Offices plan to develop an XML based NTM chart correction export within the next two years.

XML is the commonly accepted programming language to exchange content with no style limits. Consequently, it makes the direct import of external XML data into chart production systems possible.

Using XML also offers the widest possible flexibility for each Hydrographic Office to develop its own style of NtM chart information provision. It prevents translation and interpretation errors and therefore, it increases the efficiency of data exchange and the reliability of information.

The primary purpose of the provided NtM XML structure is to enhance and simplify the NtM chart corrections between Hydrographic Offices.

It should be discussed if each annex should be provided as a separate link or if all annexes should be provided below the generic description.

The latter might provide better accessibility. However, the first offers greater flexibility.

ANNEX 1:

**Symbol library/lookup table**

See <http://linchart60.bsh.de/sandbox/symbols/symbols.xml>

We have to define an IHO repository with public access to enable other HOs to contribute to the list

ANNEX 2:

**UML diagram**

Data model package including \*.eap is available on GitHub.

<https://github.com/fihofi/ntm_common_xml>

To download the latest release package as zip:

<https://github.com/FihoFi/ntm_common_xml/releases/>

It has to be defined whether GitHub is the appropriate repository of such files

ANNEX 3:

**DCEG**

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ANNEX 4:

**XML**

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ANNEX 5:

**XSD Example**

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ANNEX 6:

**National chart correction examples using national styles and their XML based translation into styles used by other Hydrographic Offices**

|  |  |
| --- | --- |
| HO1 | HO2 |
|  |  |
| HO3 | HO2 |
|  |  |
| usw.  |  |