Smart shipping

General Discussions

gertM
Jun '18

One of the 'hot topics' at the moment is smart shipping. In Flanders (and probably everywhere else in the world) I notice that a lot of initiatives are taken by private companies, governamental organisations and universities in the development of autonomous sailing on inland waterways. In this development I get questions about the IENCs and how they can be used.

The questions I have for you in these developments are:

- is the datamodel of S-57 (or S-401 in the future) the one and only model to use?
- can IEHG play a role in the development proces of smart shipping?

Please provide me with all your pros and contras for one or other opinion and your experiences. All comments will help me in understanding possible paths to follow in this process.

Bernd
Jun '18
I am sure that S-57/S-401 is containing a lot of data that is not needed for smart shipping and that we will have to add some features to support smart shipping.
Applications on smart vessels could extract the necessary information from the official IENC and use an optimized SENC.
I would prefer this approach to developing a completely new product and requiring from the authorities to publish two products, one for human skippers and one for smart vessels.

I do not think that IEHG is a group that should deal with the development of smart shipping. IEHG is focused on the development of electronic charts. It should of course react on the requirements of smart shipping and ensure that it is possible to provide the necessary information in IENCs. But the development of applications for smart shipping and the development of regulations for such applications and the use of such applications is outside of the scope of IEHG from my point of view.

These are my first thoughts about these topics. I am looking forward to see other contributions.

Best regards
Bernd

ReneVisser
Jun '18
Yesterday I spoke a serviceprovider for maritime vessels . They provide nautical information i.e. Solas Enc’s .
They asked me the same question. “ what about Enc’s & autonomous vessels in the future“

I am involved in research of 3D point clouds (lidar sensor data) and I believe that in the future unmanned vessels don’t need (geo) information of physical objects . Sensors ‘ll scan all vertical and horizontal clearances.

I think that the Enc as a database is very useful for those vessels (robot systems) as a source for not-visual information like legal ecdis features (max dimensions / speed) or ie swinging place or berth with dangerous good regulations….

If we stay in focus for publication of “good” Enc’s , smart shipping can make use of these official data.
But also as a fallback database in case the sensors have problems, but I suppose most of the time the use of ie legal information.

I have doubts about special product specifications , just use what will be available .

BR René

gertM
Dec '18
Accuracy: features or regions?

At the university of Leuven, they are investigating which technologies are needed to make autonomous sailing possible. One of the options is combining sensor data with the data from the IENCs. One important aspect is the accuracy of the features and attributes that are related to the safety of navigating (shorelines, bridges, locks, …).
At the moment there is no possibility to add accuracy-information in the charts. The CATZOC feature is not used in IENCs and is applicable on the whole chart (not for individual features).
While thinking about the problem and possible solutions, I think there are ways that we can follow:

1. The first is adding new attributes to these features needed for autonomous sailing which describes the accuracy (value, units, …). This solution is probably the best but takes a lot more effort to collect and encode.
2. The second way is to create a new feature which is applicable for a certain region which describes the accuracy like the CATZOC does. Determing these zones with the same accuracy could be difficult.

In my point of view adding new attributes for the accuracy will be the best option. But I’m very interested in what others think about the way we must handle the accuracies. A combination of both, is also possible.

Regarding the accuracy: we still have the sheet from Pieta Kluytenaar as annex with the suggested accuracies per feature that can help us.

costaneves
Dec '18
The IHO is working on data quality beyond CATZOC (ENC-specific).
The next meeting of the S-100WG will be in the end of February 2019:
https://www.iho.int/mtg_docs/com_wg/S-100WG/S-100WG4/S-100WG4_Docs.htm1
and will continue the work on the new S-97 (Guidance for PS Developers), that contains one part specifically on data quality (the draft S-97 is available in the above address).
The next meeting of the Data Quality Working Group (DQWG) will also work on the topic at its next meeting in Monaco (5-8 February 2019):
https://www.iho.int/mtg_docs/com_wg/DQWG/DQWG14/DQWG14.htm2
You are welcome to contribute. The IEHG is a recognized observing organization at the IHO and members from IEHG can be expert contributors to the IHO bodies.
Please do not hesitate to contact us if you require further information on the meetings and how to participate.
Alberto