

Making marine geodata fit-for-purpose

Mike Osborne and **John Pepper** look at the aims and objectives of the UN Working Group on Marine Geospatial Information and reflect on the need for a marine geoinformation community that is forward-thinking, inclusive and responsive

Back in 2017 The United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM) endorsed the terms of reference for establishing a Working Group on Marine Geospatial Information (UN-WGMGI). This working group recently convened its first meeting in the Republic of Korea.

A bit of background

The UN-GGIM aims to address global challenges relating to how geospatial information is created, managed and utilised. The UN seeks to overcome these challenges by improving access to fit-for-purpose geospatial information and making it an essential enabler in meeting the global community's Sustainable Development Goals'. UN SDG 14 refers to Life Below Water, and several other SDG's, have a marine component.

The terms of reference of the newly

formed UN-WGMGI are focussed at a policy level, raising awareness and highlighting the importance of reliable, timely and fit for purpose marine geospatial information to support the administration, management, governance of the marine environment. To deliver this, the working group is encouraging the use of internationally agreed frameworks, systems and standards to improve the relationships between people and the marine environment. It will also support the committee of experts to develop high quality and reliable regional capacity-building initiatives under the UN-GGIM's wider mantra of 'nobody left behind'.

It is no coincidence that the objectives of the UN-WGMGI mirror those of the International Hydrographic Office's Marine Strategic Development Goal (IHO-MSDI) Working Group. Established in 2007, the Group has done much to promote

and foster the wider use - and re-use - of hydrographic data and information. The IHO C-17 document, first published in 2009, still provides an excellent reference text for those wanting to know more about MSDI².

In 2016, the Open Geospatial Consortium (OGC) Marine Domain Working Group was established to act as a focal point for OGC activities and to present interoperability requirements, use cases, pilots, and implementations of OGC standards within the marine geospatial community. As with the UN-WGMGI, this group helps to build understanding between the marine and geospatial communities. As an example of how this is being achieved, one of the outputs from the recent inaugural face-to-face meeting of UN-WGMGI in Busan, Republic of Korea in early March, was to ask OGC to compile a non-technical guide on the different standards and their role in SDI.



The 17 United Nations Sustainable Development Goals (left) and (right) the four pillars of a Marine Spatial Data Infrastructure (MSDI). OceanWise/IHO, 2009



Members of the UN-WGMGI at their inaugural meeting in Busan

Common objectives

The fact that the aims of the three working groups are so closely aligned is of great benefit. This was apparent at the first joint meeting, when it was agreed to pursue these aims and, in doing so, create a common set of objectives and a joined-up work-plan, supported by the technical capability of the OGC and the weight of the UN in influencing policy at a national level. The first meeting of the UN Marine Geospatial Information Working Group marked a major milestone in the evolution of marine geospatial information management and re-use.

With the backing of the UN, and links to the OGC, the hydrographic community now has more reason than ever to pursue an agenda much wider than just safety of navigation. This means that this community should make its data more freely available and be encouraged to move towards managing it and making it available in such a way to support a wider range of products and services, such as those provided by OceanWise, into non-traditional markets.

MSDI is often seen as something separate from a national hydrographic office's main purpose of providing nautical charting and publications. This viewpoint could not be further from the truth, as all the basic principles of MSDI - to manage data centrally, to consistent standards, and improving how data and information is exchanged between stakeholders - applies equally to navigational safety as it does to any other application area, be it marine spatial planning and licensing, or emergency planning and response.

Real challenge

For national hydrographic offices, this new way of working represents a real challenge.

Not only do they have to educate their workforces and adapt their processes and traditional ways of working to make data, not product, central to their operations, but they also need to assess which types of geospatial information for which they are responsible, and which other data authorities they need to connect with.

If national hydrographic offices embrace this new way of working, they will form part of an overall 'marine geospatial data ecosystem'. The issues of data quality (see box), lifecycle and, ultimately, governance are key success factors so that they, as data originators, value added resellers, and an expanding range of users will be much better off, and the goals of the UN-GGIM can be met.

There is much work to do, but some key issues have been identified that provide the basis for further work. Making existing product data more easily accessible as a legitimate means to access marine geospatial information can only go so far, but it is start. There are so many reasons why a nautical chart is not fit for any other purpose than navigation; shoal-bias, discontinuities across chart boundaries and features that are removed or modified for reasons of safety are just a few. These are issues of data quality (see box) and need to be addressed in terms of creating products and services that meet the exact needs of users.

Coordinated effort

The temptation to make navigation product data - or the source data such as individual hydrographic surveys - more accessible is to miss the point. The former can be misleading, and the latter can result in significant amount of specialist data

- 1. ACCURACY & PRECISION
- 2. LEGITIMACY & ACCURACY
- 3. RELIABILITY & CONSISTENCY
- 4. TIMELINESS & RELEVANCE
- 5. COMPLETENESS & COMPREHENSIVENESS
- 6. AVAILABILITY & ACCESSABILITY
- 7. GRANULARITY & UNIQUENESS

The seven characteristics that define data quality (DAMA International):

processing, e.g. to make it fit for use in GIS. What is required is a coordinated effort to create a range of products and services that have an authoritative and comprehensive base and that are fit-for-purpose for the application they are designed to support. Navigation is one such application, but there are many others, as users of OceanWise marine mapping data will testify.

This all emphasises, even more strongly, the need for fundamental change and improvement in how marine geospatial information is viewed and managed. The first meeting of the UN-WGMGI made this point loud and clear. Let's hope it will go from strength to strength and that we can continue to build a marine geospatial information community that is forward thinking, inclusive, responsive and meets the aims of the UN-GGIM and beyond.

References

- 1. <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>
- 2. https://www.iho.int/iho_pubs/CB/C-17_e1.1.o_2011_EN.pdf

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