



S-100 Universal Hydrographic Data Model: the limits and boundaries challenge

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Ocean behaviour can't be understood by methods and rules that are not spread and shared all around the world. Traditionally the maritime community agreed rules about safety of navigation and the historical path of this collaboration has followed the need to move safely from one point to another of the Planet by sea. Today we are not just using the sea for navigation, but also for many other applications, such as exploration and exploitation, fishing, tourism, scientific research. On the other hand, we are trying to balance the use of the sea with its preservation, trying to reach a balance for a sustainable blue growth.

This balancing process is complex, and the rules and laws must be applied in the marine environment clearly and by clear geographical extents. The hydrographic community, deeply involved mainly in safety of navigation for a long time, is now steering to a more holistic approach of the marine environment and it is elaborating a new concept to describe the marine geospatial information.

By adopting the S-100 Universal Hydrographic Data Model, the International Hydrographic Organisation (IHO) started to develop a versatile standard framework aligned with the International Organization for Standardization (ISO) 19100 Geographic Information / Geomatics series of standards. The IHO S-100 standard aims to support a wide range of users by developing digital products and transfer standards for the marine community. Moreover, it opens the possibility of better marine administration by facilitating the integration of Hydrographic, Scientific and Legislative information.

Among the standards already developed this work focuses the attention on those connected with many different communities and referring to a strong legal framework where all activities can be performed in a clear and defined jurisdiction and sovereignty and where the rule of law can be easily applied.

In particular, S-121 is a product specification for Marine Limits and Boundaries (MLB) for the administration of the marine domain. It creates a strong geospatial framework that allows for the representation of marine areas and their associated rights, restrictions and responsibilities in alignment with the United Nations Convention of the Law of the Sea (UNCLOS). MLB definition and sharing throughout data and metadata are a fundamental precondition for the successful management of the blue growth. Territorial waters, continental shelf, economic exclusive zones, contiguous, archaeological protection zones are just an example of the way in which the sea is layered into different and overlapped areas that need to be managed by a geographical set of rules.

The S-121 standard is designed to provide a flexible management and communication solution that can support any type of MLBs for the broadest range of users, evolving current practices to provide a foundation for sustainable administration of the world's blue development.