IHO S-100 FRAMEWORK - BASELINE STANDARD FOR E-NAVIGATION MARITIME SERVICES

Abri Kampfer
Director, IHO
What is the International Hydrographic Organization?

... intergovernmental consultative and technical organization
... established in 1921
... to support safety of navigation and the protection of the marine environment

The Mission of the IHO is;

... to facilitate the provision of adequate and timely hydrographic information
... for world-wide marine navigation and other purposes
... through the co-ordination of the endeavors of national hydrographic offices
How did the Organization Come About?

1899  International cooperation in the field of hydrography began with a Conference held in Washington

1908  International Congress of Navigation, St Petersburg

1912  International Maritime Conference, St Petersburg

1919  International Hydrographic Conference, London ...
How did the Organization Come About?

1919 International Hydrographic Conference, London
How did the Organization Come About?

.....

1921   IHB established - based in Monaco
1970   International Convention: established
2005   Protocol of Amendments to the IHO Convention
2016   ... majority of Member States’ approved the amendments ....
2016   International Hydrographic Bureau (IHB) changed to the IHO Secretariat
2017   IHO held its first Assembly and Council meeting ....
The International Hydrographic Organization

Current Status of the IHO

• 87 Member States
• 43 Observer organizations
IHO ENC Coverage
The times – they are a changing ....

Come gather 'round people Wherever you roam And admit that the waters Around you have grown And accept it that soon You’ll be drenched to the bone If your time to you is worth saving Then you better start swimmin' or you’ll sink like a stone For the times they are a-changin [Bob Dylan]
Why Change from S-57?

S-57;
... was developed during the late 1980s to the late 1990s –
... it reflects the technology of that period
... was developed primarily for ENC data exchange

S-57 has a number of limitations which include;
... difficult to extend or change;
... has limited support for different data types e.g. gridded data
and encoding formats

These limitations prompted the development of the S-100 standard framework.
IHO Standards Development with Respect to Other Important Organizations

IMO

IALA/IEC

IHO

Standards Development

Stakeholder Community

Other Standards Organizations
The Structure of the IHO?

Technical Programme

Regional Coordination Programme
S-100 Universal Hydrographic Data Model
S-100 Based ECDIS

- will need to support multiple products that will interoperate within the same system

- will have a more manageable maintenance regime

- will be able to support different data types (e.g. gridded, vector)
Product Interoperability – Domains of use.

S-100 Product Specification Numbers:

IHO Domain: S-101 to S-199
IALA Domain: S-201 to S-299
International Oceanographic Commission (IOC): S-301 to S-399
Inland ECDIS Harmonization Group Domain: S-401 to S-410
JCOMM Ice Information: S-411
JCOMM Weather Overlay: S-412
International Electrotechnical Commission (IEC) domain: S-421 to S-430
NATO GMWG: S-501 to S-525
The Registry provides a framework for managing several Registers (databases) that contain information about:

- Features,
- Portrayal elements,
- Data Producer Codes and
- Product Specifications and their associated catalogues and other resources.

http://www.registry.iho.int
Several Testbed Projects have been held over the past few years. In 29th to 31st August 2017 KHOA and NOAA held S-100 Interoperability Workshop (Daejeon, Republic of Korea) to validate the concept of the multiple product interoperability within an S-100 based ECDIS.

The S-100 Working Group have developed an Interoperability Catalogue (IC). One of the main objectives workshop was to test the use of product datasets in an S-100 ECDIS.

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Way Forward…….

S-100 Future
- Edition 4.0. expected to be released in 2019
  - Two proposals that are under consideration for the next edition include Data Streaming and Marine Resource Names submitted by IALA.

S-101 Status
- S-57 to S-101 Data Converter – (about 80% direct conversion)
- KHOA have built editor to insert missing features
- Feature Catalogue – for testing.
- Test datasets have been developed – used in test bed projects.
- Edition 1.0 of S-101 expected to be released in 2018 for trial purposes.
Questions / Comments?
For more information: http://www.iho.int
Contact: info@iho.int