Release history for the document

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| Date | Comments |
| 21-01-14: 0.1 | Template - first version  |
| 21-01-22: 0.2 | Input by Nathalie L efter meeting 20/1  |
| 21-01-27: 0.3 | Two points under the heading 6. Activities will be added efter meeting 27/1- Review of Feature Catalog Edition 1.n.n – Performed by DQWG- Review of Validation check – Performed by DQWG |
| 21-02-15: 0.4 | Introduced example of a Header. Some minor text adjustement under the hedings. Under item 5. Objekt in is added: *S-101, Value Added Roadmap*  |
| 21-03-01: 0.5 | Removed *S-10, Value Added Roadmap* from document list. Added Work Plan and Work Item Item in the Header. |

1. **Purpose**

The purpose with this routine is to ensure the path for the design of Product Specification S-101, as well as approval and publication.

The routine also includes the Process scheme S-101 Product Specification.

1. **Scope**
The scope refer to everyone who comes into contact whith the work for example members within:
- DQWG (Data Quality Working Group)
- S-100 WG (S-100 Working group)
- HSSC (Hydrographic Services and Standards)
- IRCC (Inter-Regional Coordination Committee)
- IHO Member state
- Industry, equipment manufacturers
2. **Needs of relevant stakeholders**

Needs from relevant stakeholders are listed in the table below.

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| **Relevant stakeholders** | **Needs / expectations** | **Verification of meeting expectations** |
| Hydrographic servicesIHO member states | Approved S-101 Ed 2.0.0 to start productionMeeting deadlines | Available ENC conform to standard |
| Industry, equipment Manufacturers, other users | Approved S-101 Ed 2.0.0 to develop systemsTest data sets Meeting deadlines | ECDIS & ECS-systems S-101 compatibleStakeholder feedback |

1. **Responsibility**Responsible for the routine is HSSC (Hydrographic Services and Standards)
2. **Object in**Documents or other inputs are presented below to support and be able to perform the activities in the process.
* Published S-101 Edition 1.0.

Needed development and amendment of IHO's technical standards
Technical readiness Level 1 achived
*Level 1:*Contains the minimum amount of components needed to commence the development of test datasets and system prototypes. This should be considered the final stage of development before demonstration begins, and would typically be Edition 1.0.0 of a Product Specification.

* Documents

**M3**, Resolution of the IHO

**S-97**, IHO Guidelines for Creating S-100 Product Specifications

**S-99**, Operational Procedures for the Organization and Management of the S-100 Geospatial Information Registry

**S-98**, Specification for Data Product Interoperability

**S-100**, Universal Hydrographic Data Model

* Feedback from Stakeholder

1. **Activities**Activities to be able to carry out the process
* Achieve Technical readiness level 2-4, see below
* Register a new version of the Product Specification
* Review of S-101 Edition 1.n.n – Performed by DQWG
* Review of Feature Catalog Edition 1.n.n – Performed by DQWG
* Review of Validation check – Performed by DQWG
* Perform an Impact Study and obtain stakeholder feedback
* Endorsement by HSSC/IRCC – after completed Impact Study. The Committee submit the standard to the Council
* IHO Member state approval - the New Edition is submitted to Member States by the IHO Secretariat for approval of the content, and confirmation of the “effective date” of implementation.

*Level 2:* Includes additional items such as data quality checks and test data sets so that the Product Specification can be demonstrated in prototype environments. This would typically map to Edition 1.n.n - 2.0.0 of a Product Specification. Depending on the end-user requirements of the Product Specification, Level 2 can be implemented in an operational context. Subsequent S-100 Readiness Levels are then dependent on operational requirements of the product within navigation systems.

*Level 3:* Builds on Level 2 and includes a fully featured and documented exchange catalogue and (optionally) an encryption layer for the data and implementing system. At this level, prototype systems, products or processes should be demonstrated in a real-world environment.

*Level 4:* Intended only for use in vessel navigation systems such as ECS and ECDIS. At this level, the developer of the Product Specification needs to ensure that documented considerations have been given to interoperability via S-98 and alerts and indications functionality. At this level,there should be a baselined and compliant system, process or product that is shown to operate or function as expected.

1. **Object out**

The delivery of the process is presented here:

* Approved S-101 edition 2.0.0

The IHO Secreteriat publish and publicize
New Edition

1. **Risk and opportunities**For risk and opportunities see separate document - *Manage risks and opportunities of S-101 product specification*