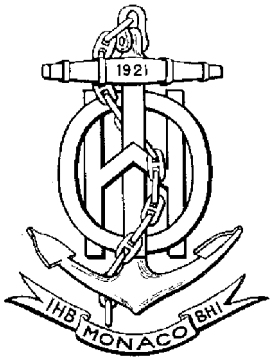
TSMAD25-4.3.1B

INTERNATIONAL HYDROGRAPHIC ORGANIZATION



S-10n Product Specification Template

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1 Overview

<This clause provides general introductory information about the product specification>

1.1 Introduction

<Provide a general introduction regarding the intent and use of this product specification

1.2 References

S-100 IHO Universal Hydrographic Data Model

1.3 Terms, definitions and abbreviations

1.3.1 Use of Language

<This clause is optional>

Within this document:

- "Must" indicates a mandatory requirement.
- "Should" indicates an optional requirement, that is the recommended process to be followed, but is not mandatory.
- "May" means "allowed to" or "could possibly", and is not mandatory.

1.3.2 Terms and Definitions

<Insert Terms and Definitions>

1.3.3 Abbreviations

<Insert Abbrivevations>

CRS Coordinate Reference System

ECDIS Electronic Chart Display Information System

EPSG European Petroleum Survey Group

ENC Electronic Navigational Chart

IHO International Hydrographic Organization

IMO International Maritime Organization

ISO International Organization for Standardization

1.4 General Data Product Description

<This clause provides general information regarding the product>

Title:

Abstract:

Content:

Spatial Extent:

Description:

East Bounding Longitude:

West Bounding Longitude:

North Bounding Latitude:

South Bounding Latitude

Purpose:

1.5 Data product specification metadata

<This information uniquely identifies this Product Specification and provides information about its creation and maintenance. For further information on dataset metadata see the metadata clause.>

Title:

S-100 Version: 1.0.0

S-10n Version: 0.0.0

Date:

Language:

Classification:

Contact:

URL:

Identifier:

Maintenance:

1.5.1 IHO Product Specification Maintenance

<This clause should be retained in IHO Product Specifications, for non IHO Product Specifications it may be removed or modified to meet the needs of the organization.>

1.5.1.1 Introduction

Changes to S-10n will be released by the IHO as a new edition, revision, or clarification.

1.5.1.2 New Edition

New Editions of S-101 introduce significant changes. *New Editions* enable new concepts, such as the ability to support new functions or applications, or the introduction of new constructs or data types. *New Editions* are likely to have a significant impact on either existing users or future users of S-10n.

1.5.1.3 Revisions

Revisions are defined as substantive semantic changes to S-10n. Typically, revisions will change S-101 to correct factual errors; introduce necessary changes that have become evident as a result of practical experience or changing circumstances. A *revision* must not be classified as a clarification. *Revisions* could have an impact on either existing users or future users of S-10s. All cumulative *clarifications* must be included with the release of approved corrections revisions.

Changes in a revision are minor and ensure backward compatibility with the previous versions within the same Edition. Newer revisions, for example, introduce new features and attributes. Within the same Edition, a dataset of one version could always be processed with a later version of the feature and portrayal catalogues.

In most cases a new feature or portrayal catalogue will result in a revision of S-10n.

1.5.1.4 Clarification

Clarifications are non-substantive changes to S-10n. Typically, clarifications: remove ambiguity; correct grammatical and spelling errors; amend or update cross references; insert improved graphics in spelling, punctuation and grammar. A clarification must not cause any substantive semantic change to S-10n.

Changes in a clarification are minor and ensure backward compatibility with the previous versions within the same Edition. Within the same Edition, a dataset of one clarification version could always be processed with a later version of the feature and portrayal catalogues, and a portrayal catalogue can always rely on earlier versions of the feature catalogues.

Changes in a clarification are minor and ensure backward compatibility with the previous versions

1.5.1.5 Version Numbers

The associated version control numbering to identify changes (n) to S-10n must be as follows:

New Editions denoted as **n**.0.0

Revisions denoted as n.**n**.0

Clarifications denoted as n.n.**n**

2 Specification Scopes

< Some parts of a product specification may apply to the whole product whereas other parts of the product specification may apply to parts of the product. Coordinate reference system will generally apply to the complete product; whereas maintenance regimes may be different for navigational features and contextual features. If a specification is homogeneous across the whole data product it is only necessary to define a general scope (root scope), to which each section of the data product specification applies>

Scope ID:

Level:

Level name:

3 Dataset Identification

<Information that uniquely identifies the dataset>

Title:

Alternate Title:

Abstract:

Topic Category:

Geographic Description:

Spatial Resolution:

Purpose:

Language:

Classification: Data can be classified as one of the following:

Unclassified
Restricted
Confidential
Secret
Top Secret

Spatial Representation Type:

Point of Contact:

Use Limitation:

4 Data Content and structure

4.1 Introduction

<This clause mandates different requirements for data product specifications. There are different requirements for feature based data and imagery based data.

This template focuses only on feature based data>

4.2 Application Schema

<Normally, the full application schema is described in this section. It can be described using UML, however, for specifications that have large application schemas (such as S-101) it can also be realised in the feature catalogue and the product specification can contain specific examples.>

4.3 Feature Catalogue

4.3.1 Introduction

<The S-10n Feature Catalogue describes the feature types, information types, attributes, attribute values, associations and roles which may be used in an ENC.

The S-10n Feature Catalogue is available in an XML document which conforms to the S-100 XML Feature Catalogue Schema and can be downloaded from the IHO website.>

4.3.2 Feature Types

<The following clauses describe the different feature types that may be used in the feature catalogue.>

4.3.2.1 Geographic

<Geographic (geo) feature types form the principle content of the dataset and are fully defined by their associated attributes and information types.>

4.3.2.2 Meta

<Meta features contain information about other features within a data set. Information defined by meta features override the default metadata values defined by the data set descriptive records.

Meta features must be used to their maximum extent to reduce meta attribution on individual features.>

4.3.2.3 Aggregated

<An Aggregated Feature Type is a feature which is made up of component features. >

4.3.3 Feature Relationship

<A feature relationship links instances of one feature type with instances of the same or a different feature type. There are three common types of feature relationship: Association, Aggregation and Composition >

4.3.4 Information Types

<Information types are identifiable pieces of information in a dataset that can be shared between other features. They have attributes but have no relationship to any geometry; information types may reference other information types.>

4.3.5 Attributes

<The following clauses specify the different types of attributes that may be used in a product specification. They may be either simple or complex.>

4.3.5.1 Simple Attributes

< The following table is an example of the different types of simple attributes.>

Type	Definition
Enumeration	A fixed list of valid identifiers of named literal values
Boolean	A value representing binary logic. The value can be either *True* or *False*. The default state for Boolean type attributes (i.e. where the attribute is not populated for the feature) is *False*.
Real	A signed Real (floating point) number consisting of a mantissa and an exponent
Integer	A signed integer number. The representation of an integer is encapsulation and usage dependent.
CharacterString	An arbitrary-length sequence of characters including accents and special characters from a repertoire of one of the adopted character sets
Date	A date provides values for year, month and day according to the Gregorian Calendar. Character encoding of a date is a string which must follow the calendar date format (complete representation, basic format) for date specified by ISO 8601:1988. EXAMPLE 19980918 (YYYYMMDD)
Time	A time is given by an hour, minute and second. Character encoding of a time is a string that follows the local time (complete representation, basic format) format defined in ISO 8601:1988. EXAMPLE 183059 or 183059+0100 or 183059Z
Date and Time	A DateTime is a combination of a date and a time type. Character encoding of a DateTime shall follow ISO 8601:1988 EXAMPLE 19850412T101530

4.4 Dataset Types

4.4.1 Introduction

<There is the capability to have different types of datasets, typically they are classified as complete, scale dependent and scale independent. Most products that are designed to be used with an ENC will be of a complete nature – where it contains the information needed to form a complete picture.>

4.5 Dataset Loading and Unloading

< TSMAD to provide some guidance on how non ENC data should load and unload in relation to ENC data.>

4.6 Geometry

<Geometric representation is the digital description of the spatial component of an object as described in S-100 and ISO 19107. Specify which S-100 Level of Geometry is to be used in the product specification.>

5 Coordinate Reference Systems (CRS)

5.1 Introduction

<This clause specifies the type of Coordinate Reference System used in the product.>

Spatial reference system:

Projection:

Vertical coordinate reference system:

Temporal reference system:

Coordinate reference system registry: EPSG Geodetic Parameter Registry

Date type (according to ISO 19115):

Responsible party: International Organisation of Oil and Gas Producers (OGP)

URL: http://www.ogp.org.uk/

Coordinate reference system identifier (CRSID):

Code space:

6 Data Quality

< The data quality overview element should include at least the intended purpose and statement of quality or lineage. Other data quality elements cover: completeness, logical consistency, positional accuracy, temporal accuracy, thematic accuracy, and anything specifically required for the product being specified.>

7 Data Capture and Classification

<The data product specification shall provide information on how the data is to be captured. This should be as detailed and specific as necessary.>

8 Maintenance

Maintenance and Update Frequency:

Data Source:

Production Process:

9 Portrayal

Item Name	Description	M/O	Card	type
portrayalLibraryCitation	Bibliographic reference to the portrayal	O	0..1	CI_Citation (ISO

	library			19115)

10 Data Product format (encoding)

10.1 Introduction

<This clause specifies the encoding for S-10n datasets. While various encodings may be used such as GML and XML, if the primary intent is that this data will be used in conjunction with S-101 ENCs and on an ECDIS, then if possible the S-100 8211 encoding should be used.>

Format Name:

Version:

Character Set:

Specification:

11 Data Product Delivery

11.1 Introduction

<This clause specifies the delivery mechanisms for datasets. >

Units of Delivery:

Transfer Size:

Medium Name:

Other Delivery Information:

11.2 Dataset

11.2.1 Datasets

<Specify the types of datasets (New Edition, Update, Re-issue)>

11.2.1.1 Dataset size

<Specify the maximum dataset size>

11.2.2 Dataset file naming

<Specify the dataset naming convention>

11.3 Support Files

<Specify if the product will utilize support files>

11.3.1 Support File Naming

<Specify if naming convention for support files>

11.4 Exchange Catalogue

<Specify if the datasets will be part of an exchange catalogue>

12 Metadata

12.1 Introduction

<This clause Specifies the discovery metadata for the dataset, it is usually in an XML format and conforms to S-100 metadata.>

12.2 Language

<Specify the language to be used>

Annex A - Data Classification and Encoding Guide

Comment [JLP1]: Do we want to put in a list of features that may be common to multiple product specifications:
Feature Name
Information
Textual Description
Fixed Date Range
Periodic Date Range

IHO Definition: **FEATURE:** Definition. (Source of definition).

S-101 Geo Feature: Feature (S-57 Acronym) S-101 feature and corresponding S-57 acronym

Primitives: Point, Curve, Surface Allowable geometric primitive(s)

Real World	*Paper Chart Symbol*	*ECDIS Symbol*
Example if real world instance(s) of the Feature.	Example(s) of paper chart equivalent symbology for the Feature.	Example(s) of ECDIS symbology for the Feature.

S-101 Attribute	S-57 Acronym	Allowable Encoding Value *	Type	Multiplicity
Category of beer		1 : ale 2 : lager 3 : porter 4 : stout 5 : pilsener	EN	1,1
This section lists the full list of allowable attributes for the S-101 feature. Attributes are listed in alphabetical order. Sub-attributes (Type prefix (S)) of complex (Type C) attributes are listed in alphabetical order and indented directly under the entry for the complex attribute (see below for example).	This section lists the corresponding S-57 attribute acronym. A blank cell indicates no corresponding S-57 acronym.	This section lists the allowable encoding values for S-101 (for enumerate (E) Type attributes only). Further information about the attribute is available in Section XX.	Attribute type (see clause X.X).	Multiplicity describes the "cardinality" of the attribute in regard to the feature. See clause X.X.
Fixed date range			C	0,1
Date end	(DATEND)		(S) DA	0,1
Date start	(DATSTA)		(S) DA	0,1

INT 1 Reference: The INT 1 location(s) of the Feature – by INT1 Section and Section Number.

X.X.X Sub-clause heading(s) (see S-4 – B-YYY.Y)

Introductory remarks. Includes information regarding the real world entity/situation requiring the encoding of the Feature in the ENC, and where required nautical cartographic principles relevant to the Feature to aid the compiler in determining encoding requirements.

Specific instructions to encode the feature.

Remarks:

- Additional encoding guidance relevant to the feature.

X.X.X.X Sub-sub-clause heading(s) (see S-4 – B-CCC.C)

Clauses related to specific encoding scenarios for the Feature. (Not required for all Features).

Remarks:

- Additional encoding guidance relevant to the scenario (only if required).

Distinction: List of features in the Product Specification distinct from the Feature.

Annex B –Data Product format (encoding)

Annex C – Normative Implementation Guidance

Annex D – Feature Catalogue

Annex F – Portrayal Catalogue