S-164, parts not covered?

A resilient test review by S-100 Part

- To find issues which are lurking, we probably need to do the following:
  - For each Part of S-100, make sure we have adequate tests for functionality required on ECDIS
- For each existing S-64 dataset, divide them into
  - **“the content matters”** – the content is designed to be exhaustive, or to test specific cases (e.g areas with special conditions, text display etc…)
  - **“the content is not so important”** – where data content isn’t crucial, where datasets are not designed to be exhaustive in any way.
- For the “content matters” datasets, double check the content is still “correct” – particularly for parts 5,6 and 7

Part 10a – ISO8211 encoding

- We have not created “exhaustive” test data for Part 10a (Yet)
- Some ambiguities have tripped up implementers already
- Others may exist
- Updating particularly is untested by all providers
- Although it doesn’t require specific tests we should aim to put as many different combinations into Part 10a
  - Examples of all different types of geometry and feature / attribution updating
  - Different kinds of geometry
  - Multiplicities and fields which may vary on ECDIS (curves, surfaces etc)
  - Which parts must be “fixed” in ECDIS, e.g. WGS84?

Composite Curves. The two ways of encoding.

```
<RECORD>
 <CCID>
  <RCNM>125</RCNM>
  <RCID>20</RCID>
  <RVER>1</RVER>
  <RUIN>1</RUIN>
 </CCID>
 <CUCO>
  <RRNM>120</RRNM>
  <RRID>1</RRID>
  <ORNT>2</ORNT>
 </CUCO>
 <CUCO>
  <RRNM>120</RRNM>
  <RRID>2</RRID>
  <ORNT>2</ORNT>
 </CUCO>
 <CUCO>
  <RRNM>120</RRNM>
  <RRID>3</RRID>
  <ORNT>2</ORNT>
 </CUCO>
 <CUCO>
  <RRNM>120</RRNM>
  <RRID>4</RRID>
  <ORNT>2</ORNT>
 </CUCO>
</RECORD>
```

```
<RECORD>
 <CCID>
  <RCNM>125</RCNM>
  <RCID>98</RCID>
  <RVER>1</RVER>
  <RUIN>1</RUIN>
 </CCID>
 <CUCO>
  <RRNM>120</RRNM>
  <RRID>356</RRID>
  <ORNT>1</ORNT>
  <RRNM>120</RRNM>
  <RRID>357</RRID>
  <ORNT>1</ORNT>
  <RRNM>120</RRNM>
  <RRID>236</RRID>
  <ORNT>1</ORNT>
  <RRNM>120</RRNM>
  <RRID>358</RRID>
  <ORNT>1</ORNT>
  <RRNM>120</RRNM>
  <RRID>359</RRID>
  <ORNT>1</ORNT>
  <RRNM>120</RRNM>
  <RRID>108</RRID>
  <ORNT>1</ORNT>
 </CUCO>
</RECORD>
```

10a-5.8.2 Composite Curve record structure

```
Composite Curve record
   |
   |--CCID (4): Composite Curve Record Identifier field
      |
      |-<0..*>-INAS (5\\*5): Information Association field
      |
      |-<0..1>-CCOC (3): Curve Component Control field
      |
      |-<0..*>-CUCO (*3): Curve Component field
```

Data Descriptive Field

```
1100;&□□□Curve□Component□Control▲CCUI!CCIX!NCCO▲(b11,2b12)▼
```

10a-5.8.2.3 Curve Component field structure

Field Tag: **CUCO**	Field Name: Curve Component

Subfield name	Label	Format	Subfield content and specification
Referenced Record name	*RRNM	b11	Record name of the referenced record
Referenced Record identifier	RRID	b14	Record identifier of the referenced record
Orientation	ORNT	b11	{1} - Forward {2} - Reverse

S-98

S-98 Items for Discussion

- Status
- Plan Update and dependencies
- Comment Review
  - From submitted comments.
- Selected GitHub issues
- Other topics for input
  - Multiple Languages
  - ~~Equivalence and loading “preferences”~~
  - ~~Dataset Lifecycle + inputs from S-164~~
  - WLA review. What gaps still exist?
  - Fileless cancellations

Status

- Around half of the github issues have been addressed and a new version sent out for review
- Review comments have been received and aggregated
- The rest of the github items require input from discussions in other groups, as well as S-98 specific discussions. These will continue…
- New draft, probably for HSSC, will address comments, and any other github items we can cover
- Some elements still to be defined.
- Structure for S-98 itself to be modified to take into account validation tests and definitions.

Big Risks

- Some functionality hasn’t been thought of yet. Some is still in development
  - Data Quality Portrayal
- Much remains untested and unimplemented by OEMs, which will then require changes and new sections.
  - Dual Fuel mode
  - Multi-Fuel Mode
  - Interoperability
  - WLA/USSC
  - Manual Updates
- Complexity means some parts will be inconsistent when worked out.
- Weaknesses and untested elements in component standards
  - S-100
  - Product Specifications
- Best way to mitigate these risks? Can not be done technically, and consensus can be difficult to achieve.

Plan

- Continue reporting with S-164
- Gather issues from other working groups
- Produce new version(s)
- Dedicated meetings to review and moderate comments (From end April onwards).
- Issues tend to come in after F2F meetings, so expect more from
  - TSM
  - S-101 PT edition 2.0.0
  - Submission of operational drafts of GML products, and TWCWG
  - Formation of Validation documentation
  - Developments from OEMs

S-98 Items for discussion from reviews.

- **Informative/Normative, Mandatory/Must/Shall/Should**
  - **This is difficult to define exactly.**
  - **What S-98 marks as informative, vs what is informative/mandatory?**
- Dataset Lifecycle(s), some aspects need to be reflected in S-98 Annex C
- “ECDIS Compatibility” (S-100, or just S-100 product specifications)?
- Product Specific functionality
  - **S-124**
  - **S-128**
  - **S-129**
  - **S-102/S-104/S-111**
  - **S-421**

					S-98 should make it explicit if both Lua and XSLT portrayal must be supported.		

Part 2 tests – details (for data lifecycle).

- Unencrypted Data
  - Load Catalogues
  - Load Data
  - Updates
- Testing Encryption and Authentication
  - Loading Permits, including multiple service providers
  - Root Certificates
  - Authentication
  - Multiple data servers
  - Permit Expiry
  - Cancel and replacement
  - Reissues
  - Support Files
  - Update Status Report (ENC and ENP)
- **What else is required, and what needs fixing, for testing data lifecycles?**

Focus on Part 2 – what is dataset lifecycle?

- Data Lifecycle
  - Install
  - Update
  - Supplementary files
  - Cancel/Replace (both types)
  - S-128 and Update Status Reports.
  - Reissues
  - Tests in S-164 for every aspect
  - Roles and Responsibilities (official/unofficial) including aggregators
- Part 15/Part 17
  - Multiple Service providers
  - Same data, multiple providers
  - Dual Fuel Selection
  - Use of Intermediary data servers – and non S-1XX products. (particularly +SECOM)

S-124 – 1 – Required ECDIS functionality

10.2 Dataset loading

10.2.1 Use of S-124 in ECDIS

In ECDIS all valid S-124 datasets must always be loaded. Validity is indicated by the **cancellationDate** attribute in the **NAVWARNPreamble** class, and any point in time prior to this time value the dataset is valid. If the **cancellationDate** attribute is empty this means the dataset is valid until cancelled by a new dataset. Validity is terminated if a cancellation dataset is issued before the **cancellationDate** of a dataset.

10.2.2 In-force bulletin

If the in-force bulletin contains one or more NAVWARNs that are not present in the system, an indication should be given.

S-124 - 2

12.1 Portrayal requirements of the Graphical User Interface

A dedicated interface is required to provide users with interaction with NAVWARN messages. This interface should be linked to an individual user so that the risk of missing information during watch handover is reduced. This interface shall, at a minimum, provide functionality for;

a) The user shall be able to tag individual messages according to the filtering requirements in section 12.2.
b) Capability for a call listing of all NAVWARN messages in the system and sorting these according to: received date and time, issue date and time, warning type, producer and series, must be provided. Additionally, a means to list according to user classification should be provided.
c) Provide an indication when a new NAVWARN message is received until it has been displayed or 24 hours have passed. This indication may be suppressed if the NAVWARN message does not meet filtering criteria set by the mariner (see 12.2).
d) Means shall be provided for the operator to enter criteria for filtering of indication of new NAVWARN messages based on time and distance from own ship, monitored route or planned route (see 12.2). Default setting is no filtering.
e) Details of the filtering options that have been enabled by user must be readily available for inspection and modification.
f) Means shall be provided to view the most recent message, past messages, and to view messages associated with selection of NAVWARN symbols in the graphical display area.
g) Listing of all NAVWARN shall include means for viewing an abbreviated view of any **NAVWARNPart**, **warningInformation** attributes present.

NOTE: It may be possible to create much of this functionality via portrayal context parameters, however, in this version of S-124, this is not included as further trials on S-100 portrayal are needed to assess the feasibility.

S-124 - 3

12.2 Filtering Navigational Warning information

S-124 navigational warnings datasets are intended for use in S-100 ECDIS as elements of an always on layer conforming to S-98 Level 1 interleaving when interoperability is on. There is a risk of clutter with this level of interoperability and it is therefore necessary to include filtering options for the user, to all the removal of not relevant information from the portrayal.

NOTE: Even though a navigational warning is not portrayed, it must still be visible and discoverable in a list of NAVWARNs that can be recalled by user action at any time.

User systems should provide filtering mechanisms for the Navigational Warning information.

At a minimum, functionality must be included that allows the user to classify the relevance of a NAVWARN against the intended route as:

- on chart (relevant for the route, must always be visualized), or;
- off chart (not relevant for the route, and need not be visualized), or;
- information (relevant for the route, but for information and need not be visualized).

On chart should be the default classification for all NAVWARNs.

Additional filtering functions could include options such as;

- filtering on route with a buffer;
- navigational warning topic;
- date range of the hazard;
- valid time of the navigational warning.

These filters could be used to assist the navigator in classifying a NAVWARN according to its relevance for the route.

Multiple Languages (for all products)

ⓐ

```
{
   nameUsage=1
   name=Rathlin
   language=eng
}
{
   nameUsage=2
   name=Reachlainn
   language=gle
}
{
   nameUsage=2
   name=Racherie
   language=gla
}
```

ⓑ

```
{
   nameUsage=1
   name=Sanda
   language=eng
}
{
   nameUsage=2

name=Sandaigh
   language=gla
}
```

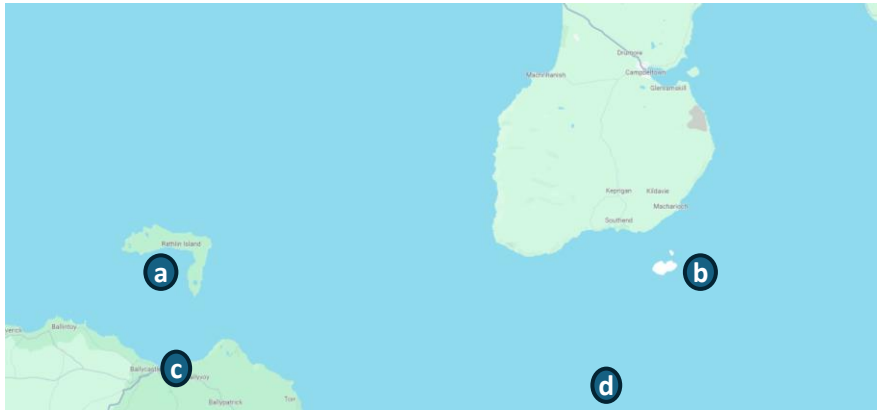
ⓒ

```
{
   nameUsage=1
   name=Baile an Chaistil
   language=gle
}
```

ⓓ

```
{
   nameUsage=1
   name=Môr Manaw
   language=cym
}
{
   nameUsage=2
   name=Irish Sea
   language=eng
}
```

gle=Irish Gaelic, **gla**=Scots Gaelic, **cym**=Welsh, **eng**=English



[gle,gla,eng]	Reachlainn	Sandaigh	Baile an Chaistil	Irish Sea
[eng,gla]	Rathlin	Sanda	Baile an Chaistil	Irish Sea
[gle,gla]	Reachlainn	Sandaigh	Baile an Chaistil	Môr Manaw
[gla,gle]	Racherie	Sandaigh	Baile an Chaistil	Môr Manaw
[gle]	Reachlainn	Sanda	Baile an Chaistil	Môr Manaw
[]	Rathlin	Sanda	Baile an Chaistil	Môr Manaw
	a	b	c	d

a

```
{
   nameUsage=1
   name=Rathlin
   language=eng
}
{
   nameUsage=2
   name=Reachlainn
   language=gle
}
{
   nameUsage=2
   name=Racherie
   language=gla
}
```

b

```
{
   nameUsage=1
   name=Sanda
   language=eng
}
{
   nameUsage=2
   name=Sandaigh
   language=gla
}
```

c

```
{
   nameUsage=1
   name=Baile an Chaistil
   language=gle
}
```

d

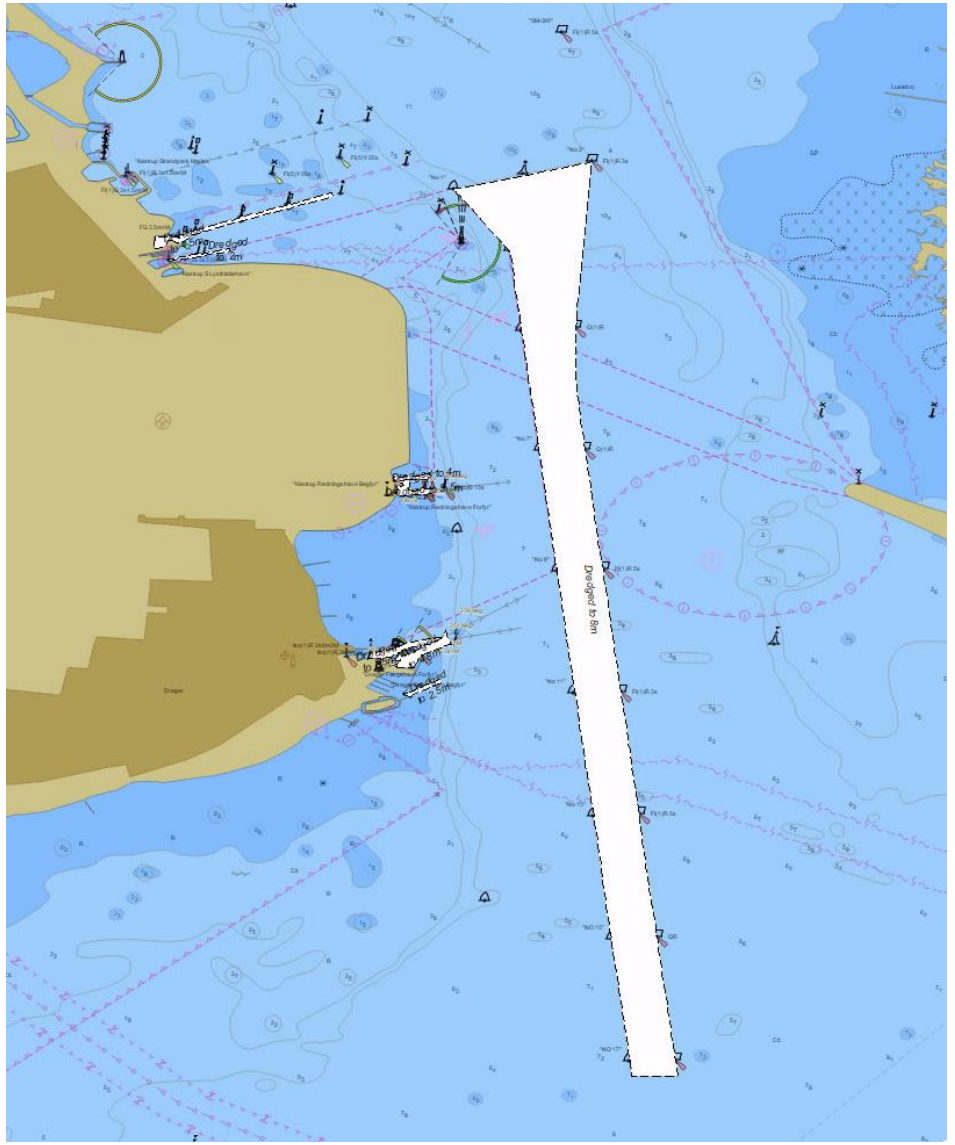
```
{
   nameUsage=1
   name=Môr Manaw
   language=cym
}
{
   nameUsage=2
   name=Irish Sea
   language=eng
}
```

gle=Irish Gaelic, **gla**=Scots Gaelic, **cym**=Welsh, **eng**=English

WLA and USSC

Water Level Adjustment

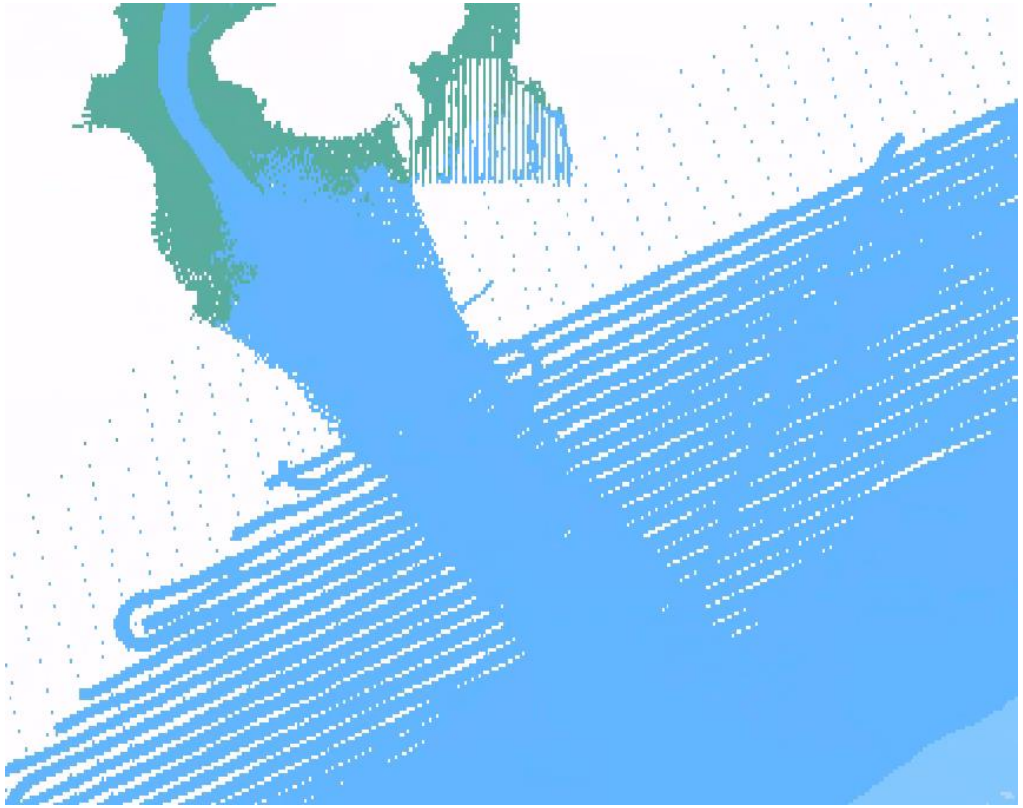
- Still lots of queries on how WLA is supposed to work.
- Some on data constraints (scheming, overlaps, coincident coverage)
- Some on how adjustment works on ENC features (VALSOU adjustment)
- Cross Product Validation and verification between ENC/S-102 is becoming more common in discussions.
- How do we deal with S-102 which has “holes” in it? What are the “holes”, or are they “gaps”?
- Lack of testbed doesn’t help. Route Checking is largely untested still.



This section is sometimes difficult to understand:

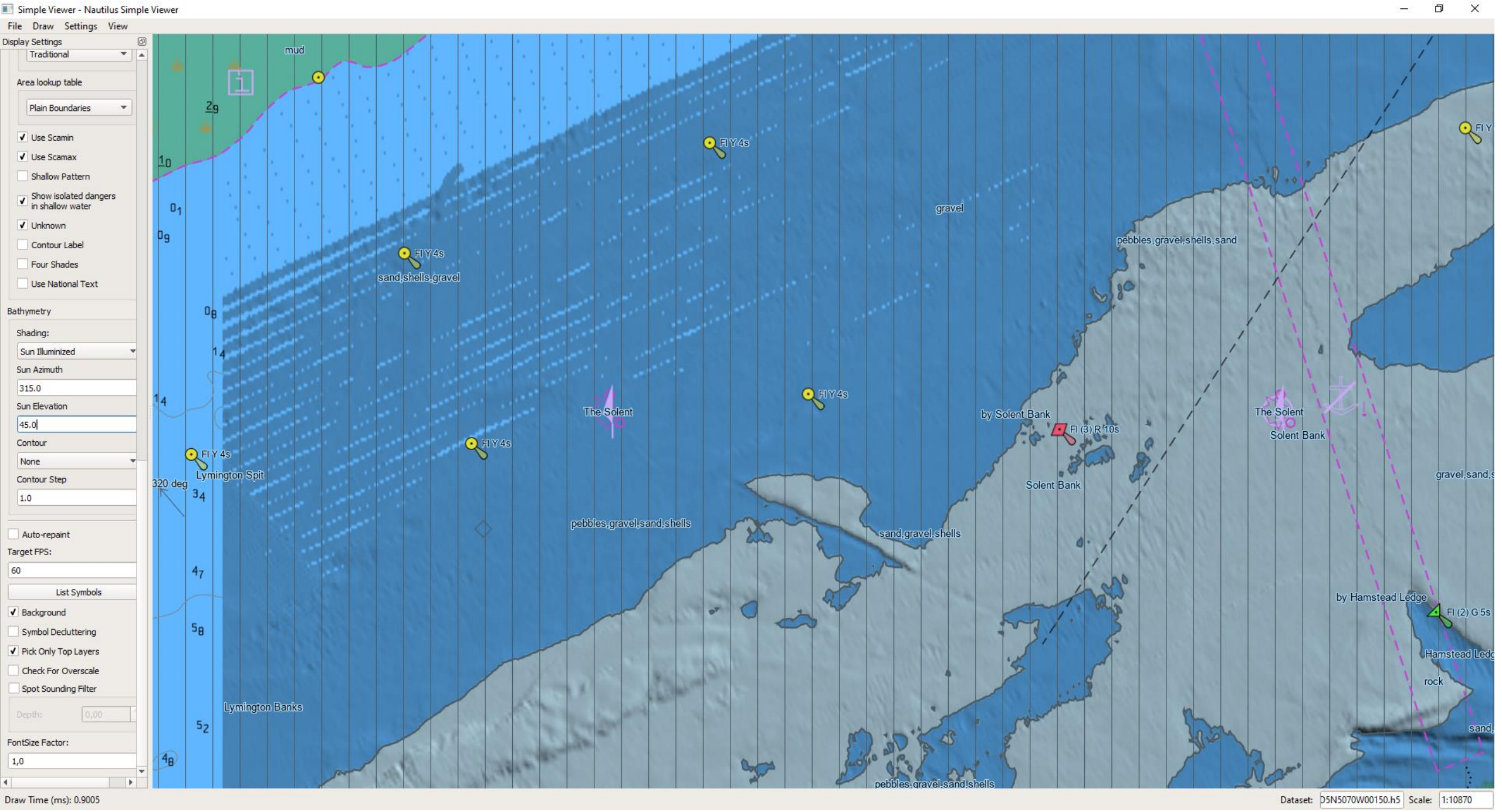
- **There are references to substitution of valueOfSounding. This attribute is on Wrecks, Obstructions, etc., but there is no mention of the Z value of sounding features. Should it be included here?**
- **What if an S-101 ENC contains a wreck, based on an CATZOC B survey, but a more recent CATZOC A1 survey in S-102 product shows no wreck. Will valueOfSounding of the Wreck be adjusted with the depth in S-102?**

The former remark relates to S-101 and S-102 product consistency. Our feeling is that S-102 MUST always be as safe as S-101. Due to time needed by HOs to process their ENCs, and the need to deliver S-102 ASAP, both products cannot be always consistent. S-102 . We think guidance is needed somewhere in S-98 for data providers.



“WLA can only be carried out in areas of coincidental S-102 and S-104 coverage”

This (“coincidental”) can be interpreted in several different ways many of which are much more restrictive than described in the details later in this clause.


Simple Viewer - Nautilus Simple Viewer
File
Draw
Settings
View
Display Settings
Traditional
Area lookup table
Plain Boundaries
Use Scamin
Use Scamax
Shallow Pattern
Show isolated dangers in shallow water
Unknown
Contour Label
Four Shades
Use National Text
Bathymetry
Shading:
Sun Illuminized
Sun Azimuth
315.0
Sun Elevation
45.0
Contour
None
Contour Step
1.0
Auto-repaint
Target FPS:
60
List Symbols
Background
Symbol Decluttering
Pick Only Top Layers
Check For Overscale
Spot Sounding Filter
Depth:
0,00
FontSize Factor:
1,0
mud
Fl Y 4s
sand,shells,gravel
gravel
pebbles,gravel,shells,sand
The Solent
by Solent Bank
Fl (3) R 10s
Solent Bank
Lymington Spit
320 deg
pebbles,gravel,sand,shells
sand,gravel,shells
by Hamstead Ledge
Fl (2) G 5s
Hamstead Ledge
rock
Lymington Banks
Draw Time (ms): 0.9005
Dataset:
Scale:
1:10870