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Issues experienced during implementation & test of new Ecdis IHO standards

Dear Tom,

like many other manufacturers we are currently now in the process to adapt our Ecdis products to the new Ecdis performance standard IEC 61174 Ed.4 which includes the new IHO standards. During the implementation and test phase we experienced several issues which we like to address in the following. The below mentioned issues require from our point of few immediate clarification and in case an update of the relevant test data sets and procedures. As this might take some time we kindly ask you to comment the below mentioned issues case by case. An official statement in short term is highly appreciated in order not further to delay our currently now ongoing MED type approval process.

The experienced issues are structured into the following groups:

- S-52 PresLib Ed 4.0.1 Chart1 (finalized)
- IEC 61174 Ed. 4.0 Preslib (still ongoing – further issues may come up)
- S-64 Ed. 3.0.0 (finalized)

1. Tests performed by means of using IHO CHART1

The new CHART1 consists of 15 different S57 data files. None of these data files have the mandatory data-coverage object.

In the following an overview about all experienced discrepancies between Chart1 printouts in “S-52 PresLib Ed 4.0.1 Part I.pdf and the presentation in the Wärtsilä SAM ECDISPILOT Platinum:

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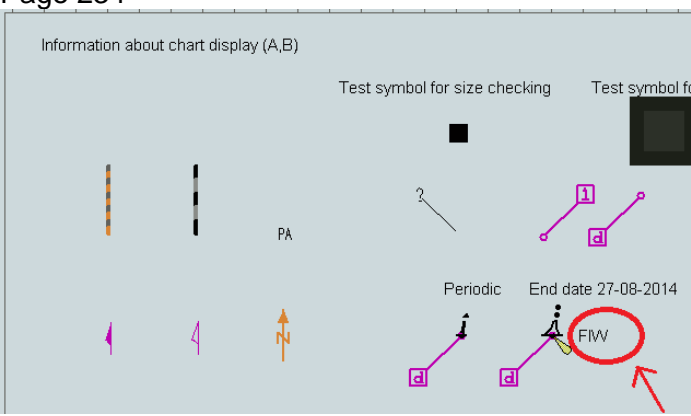
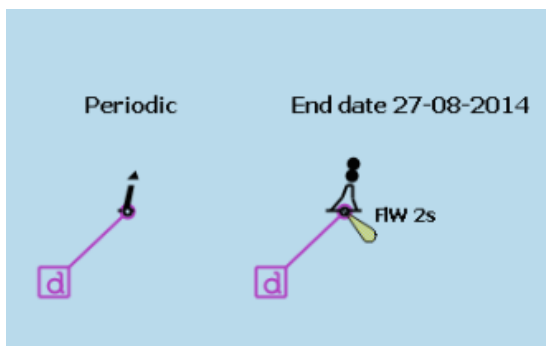
Board of Management:
Armin Groth, Carsten Sippel,
Maik Stövhave

Supervisory Board:
Stephan Kuhn (Chairman)

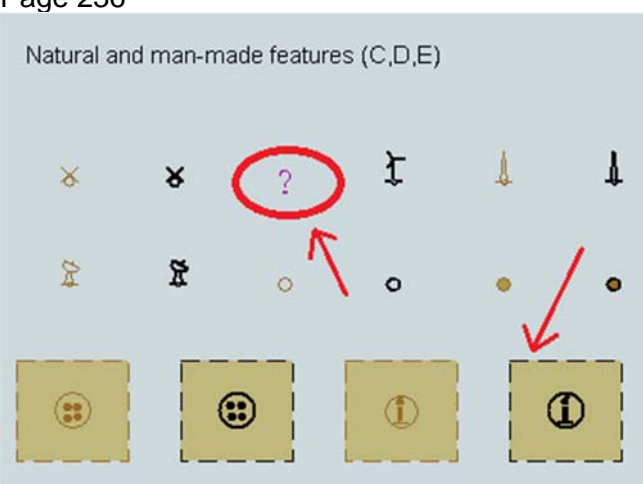
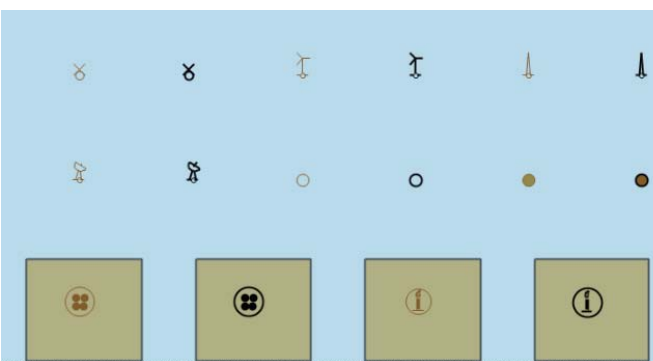
Commerzbank AG, Hamburg
IBAN: DE55 2004 0000 0404 5175 00
BIC: COBADEFF200
HSH Nordbank AG, Hamburg
IBAN: DE11 2105 0000 1000 3396 10
BIC: HSHNDEHHXXX

Part of printout from the document "S-52 PresLib Ed 4.0.1 Part I.pdf"	Part of screen dump from presentation of the Chart1 in the SAM Platinum ECDIS.
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a)

<p>Page 234</p>  <p>The number of the signal period '2s' in the light characteristic label is missing.</p>	 <p>With the Pick-Report the signal period of the light object may be displayed and verified that the display of the light characteristic label is correct.</p>
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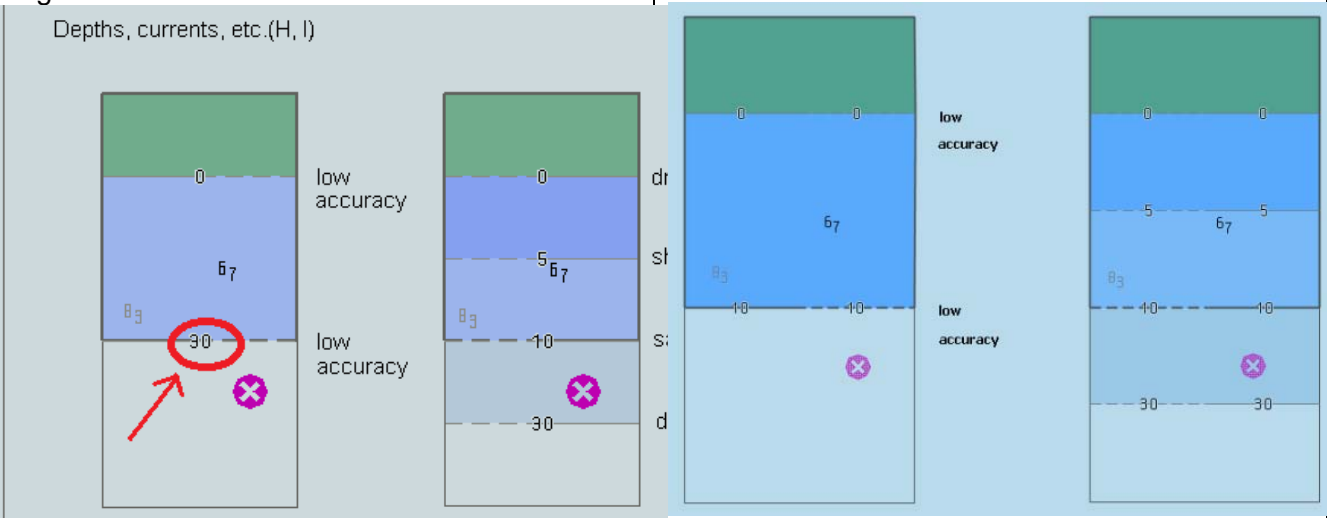
b)

<p>Page 236</p>  <ol style="list-style-type: none"> The symbol "WNDMIL02" is missing. (Symbol "?" is wrong.) The borders of the Land areas are not drawn as "Safety Contour". 	 <ol style="list-style-type: none"> The Pick-Report at 15°06.433' N 005°03.452' W tells there is a 'Landmark' object with category 'windmotor', not visual conspicuous. (show symbol WNDMIL02) According to the 'Safety Contour' detection procedure the border of 'Land area' has to be drawn as "Safety Contour".
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c)

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Depths, currents, etc.(H, I)



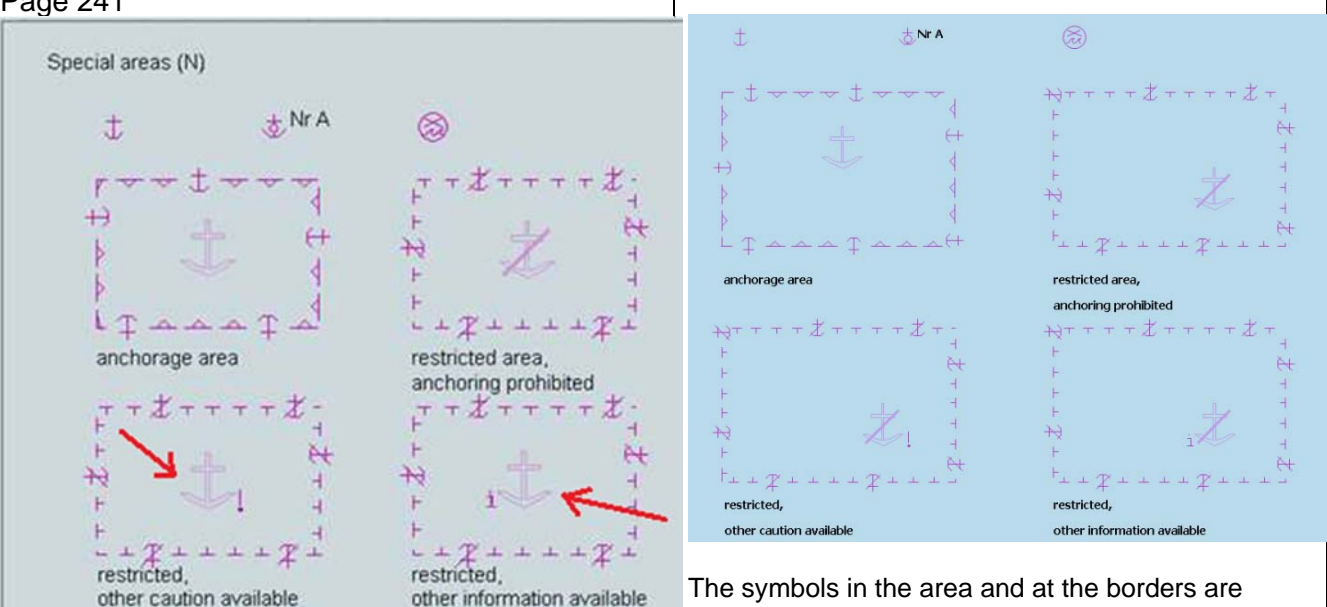
The label '30' at the Safety contour is wrong. The label must be '10'.

With the Pick-Report at the Safety contour the value of the depth contour may be displayed and verified.

d)

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Special areas (N)



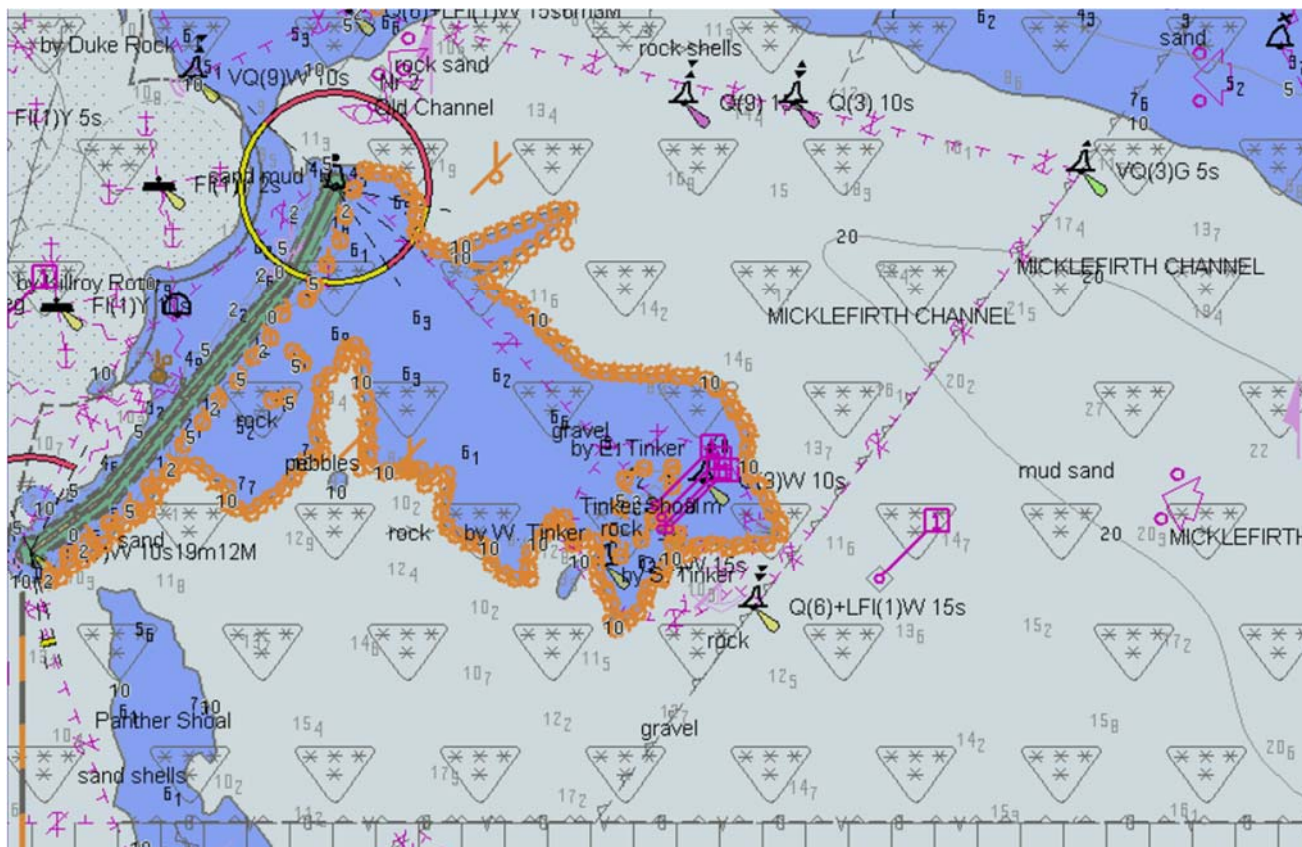
These 2 areas are of type 'Restricted area' with attribute 'anchoring prohibited', so the symbol in the area is wrong, but the symbols at the borders are correct.

The symbols in the area and at the borders are correct. (Same as with older Chart1.)

Note: It is difficult and time consuming to judge whether the inconsistency is related to the printouts in the document "S-52 PresLib Ed 4.0.1 Part I.pdf", in the data files of Chart1 S57 or in the Ecdis software. Therefore a consistent documentation should be the pre-condition for implementation as well as for the test procedure.

2. Tests of new Presentation Library using the S64 Test Data Set

a) From the document “S-64_e3.0.0_ENC_TIM_December_Final.pdf”, Page 18: ‘Review Updates’



During this update the sounding of 12.8m at 32°31.75'S 060°56.85'E is replaced with a 9.4m Sounding and a part of the 10m depth contour is deleted and inserted with some new additional geographic points.

This part of the 10m depth contour is a part of the border of the 5-10m depth area, the 10-20m depth area, a harbour area and a meta navigational system of marks.

If the user has activated now the “Review Update” mode and has selected the date range including 03 Nov 2005, then the updated parts should be marked with the appropriate orange symbols.

Problem:

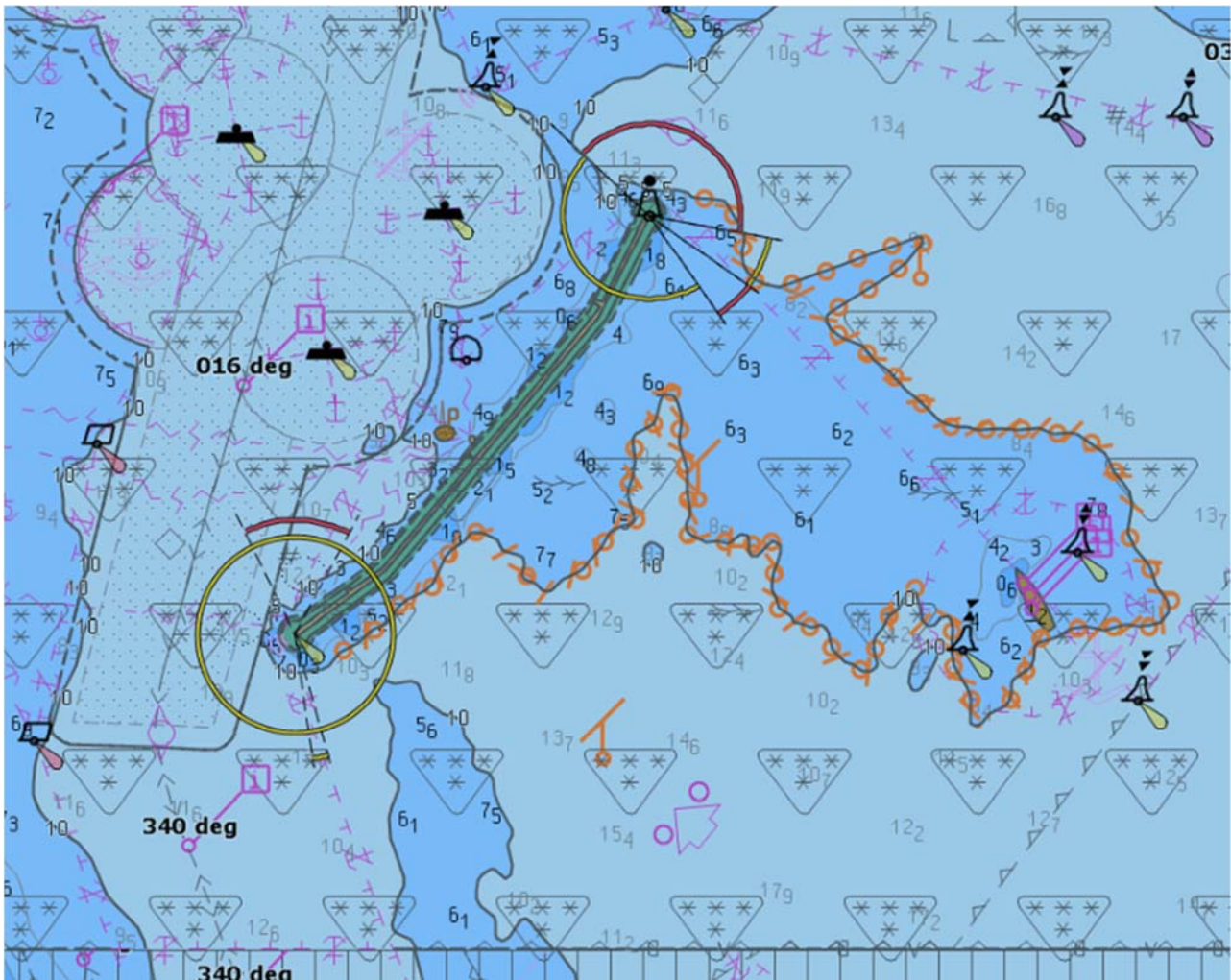
Because the modified ‘edge’ of the 10m depth contour belongs to 4 different areas, all those areas have the status ‘modified’, there is no priority.

According to “S-52 PresLib Ed 4.0.1 Part I.pdf” 10.7.2 ‘Identifying Automatic Chart Corrections On Mariners Demand’, all the modified areas should be marked with overwriting the area boundaries and a centred symbol.

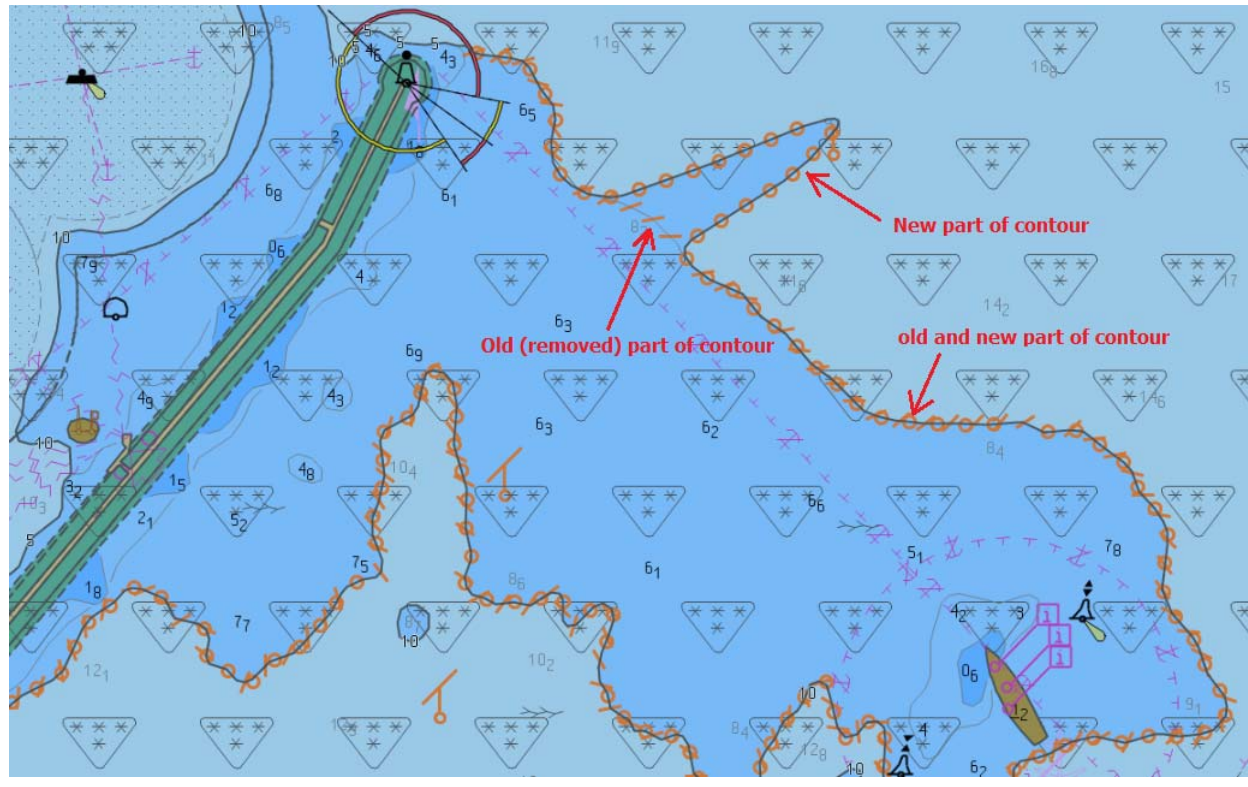
This is not the case in the picture above (10-20m depth area borders are not marked) and it would also definitely clutter the screen, and indeed confuse the user.

If instead only the modified part of the area borders should be marked, then the picture above is also not correct, because the north-west border part was not modified.

In order not to confuse the user and only mark the parts of the geometry which have really been modified, the Ecdispilot Platinum will overwrite only the parts of the modified geometry lines and the modified areas only in such cases with the centered symbol.



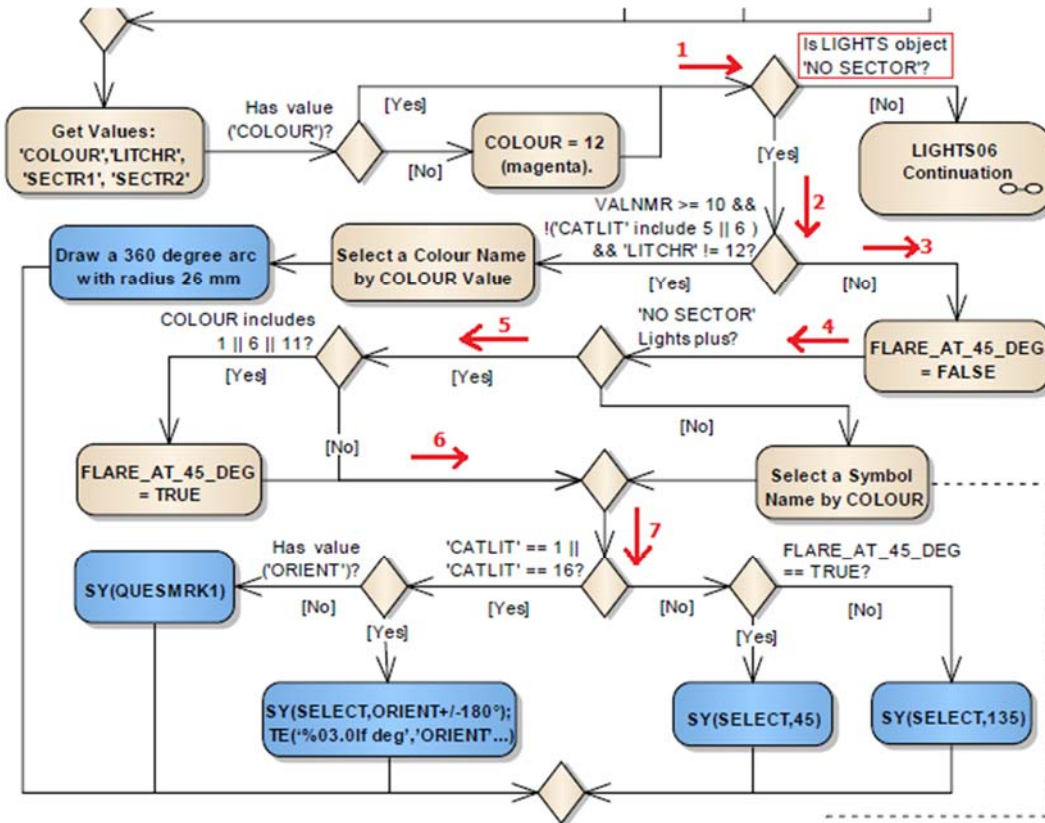
For better understanding in the following an additional screen shot at higher scale with manually overwritten comments in red:



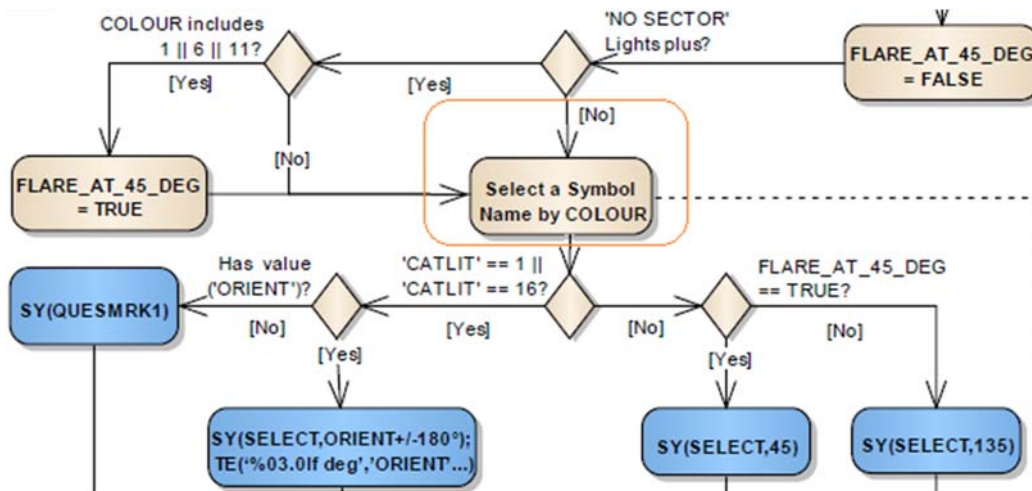
b) From the document “S-52 PresLib Ed 4.0.1 Part I.pdf”

13.2.4 Conditional Symbology Procedure LIGHTS06 (Page 123)

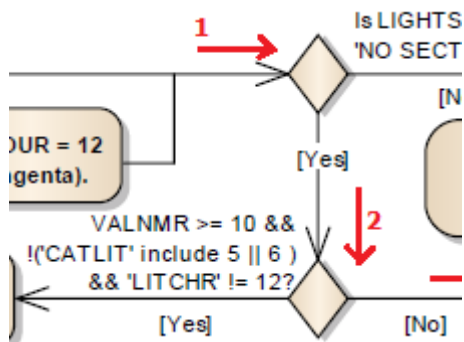
Figure 7 LIGHTS06 conditional symbology procedure (Page 124, middle part):



Problem 1: If the decision path is following the red arrows, then after arrow 7 there is no symbol selected for using. Next picture shows SAM Platinum ECDIS behaviour:



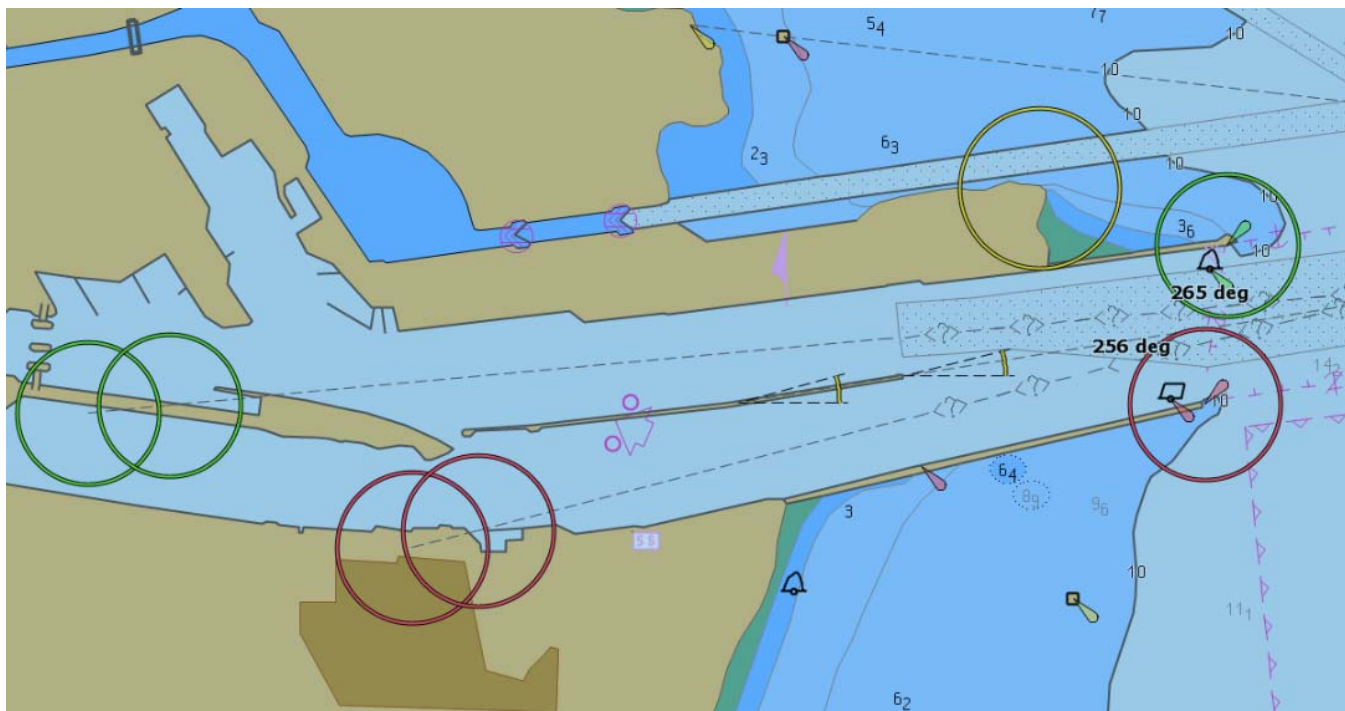
Problem 2: After the decision "Is LIGHTS object 'NO SECTOR'?" is answered with "Yes" the next check is for VALNMR >= 10 && !('CATLIT' include 5 || 6) && 'LITCHR' != 12?



CATLIT == 5 : "aero light"
6 : "air obstruction light"

LITCHAR == 12 : "morse"

If this is implemented accordingly, then a lot of lights will be displayed with a fixed 360° arc:
(S64 Test Data Set, Pos 32°36,3' S 060°53.0' E)



Following exactly the "Conditional Symbology Procedure" of Lights then some of them are drawn with the fixed size 360° arc and there is maybe no symbol at the position of the light.

The picture below is created with the procedure for lights from the “old” PresLib 3.4:



The following picture is created with a **combination** of the procedure for lights from the “old” PresLib 3.4 and the new PresLib 4.0:
 Now the fixed 360° arc is an additional indication for the mariner that the light has an attribute “Value of nominal range” VALNMR with a value ≥ 10 m.



Question: What is the wanted and “right” solution?

3. Tests of S-64 Ed. 3.0.0

- a) Test Item 2.1.3 Load additional cell and check chart library
The test result according to TIM is “removed”, which is not correct because an additional cell has been installed. Instead we expect “added” as test result.
- b) 2.1.5 Loading of Corrupted Data
It is requested to load cell GB5X01NE, this is not possible because as the result of the test before this cell is already installed. Hint is missing, that this cell needs to be deleted beforehand.
Note: As long as cells with equal or higher version are already available in SENC the cell cannot be installed again.
- c) 2.2.3 Loading update in an invalid sequence
It is not possible to load cell GB5X01NE because this cell has been installed already in the previous test.
Note: In the Setup a hint is missing that the cell needs to be deleted beforehand.
- d) 2.5.4 b) Change and update installed certificate
Cells installed under 2.5.4 a) should be kept installed according to TIM. But the product list of 2.5.4 b) does not include the two cells GB100001, GB100002 which have been installed under 2.5.4 a) not anymore. This means that these cells are not anymore supported by the data server (withdrawn). This will be recognized and the before installed cells will be provided for manual deletion.
In case the data set of 2.05.4 a) should be kept installed the product list needs to be adapted. Alternatively the Setup needs to be modified in such a way that the cells incl. their permits in question need to be deleted.
- e) 2.5.4 f) Check certificate parameter values
The two certificates DS1 (29.08.2013) and DS2 (16.08.2010) which should be installed are expired. Without changing the system time the certificates cannot be installed.
- f) 2.5.5 c) ENC signature validation
In this TDS the cell GB301660 is licensed and part of the product list. But in the data set this cell is missing.
Note: In case the user is trying to install the cell error messages are the consequence.
- g) 2.5.5 e) Check authentication is continuous and complete
The cell GB302020 is licensed and also part of the data set. Consequently this cell will be installed. But in the TIM this cell is not part of the list of installed cells.
- h) 2.5.6 d) Validate ENC data file integrity
The expected result of this test for cell GB40162C is “should not be installed (with SSE21)”. In our system this cell will be installed correctly without error messages. This is in our opinion correct! Furthermore the hint SSE21 seems not to be correct.
- i) 2.5.6 e) Missing ENC update

The "Data Server Id's" belonging to the permits of the TDS are "GB". But the "Data Server Id's" in SERIAL.ENC is "PM". Without modifying the Data Server Ids" within the PERMIT.TXT to "PM" this test could not be carried out.

Furthermore the test cell "FR5Test2" could neither be authenticated with the already installed SA certificate nor with certificate which is part of TDS.

Note: With certificate which is not part of the TDS the cell could be authenticated.

- j) 2.5.7 d) ECDIS management of cancelled cells
In the list of installed cells ("Result") the canceled cell GB280200 will be mentioned with the status edition 2 und update 1. In the product list is the update 1 not mentioned? Consequently this update will not be executed.
Either the TIM or the product list needs to be adapted.
- k) 2.5.7 e) ECDIS Display of Replacement ENC Cells
Same issue as mentioned under 2.5.7 d) but relevant additionally for the cells GB380620 and GB380720.
- l) 2.5.7 g) ECDIS management of Base and Update Exchange Sets
The text file GB531905 referenced via the cell GB401186D is missing in BASE 2 WK30_06 exchange set.
- m) 2.5.7 h) ENC Status Report
Under result in the TIM the reference date 02.Sep. is mentioned. This seems to be wrong. The correct reference date is 09.Feb.2009.
- n) 2.5.7 i) ECDIS management of multiple exchange sets
In the result list of the installed cells for this test the cells GB50162B, GB501162C and GB501162D are mentioned with "No ENC Permit". This is not correct. The permits are installed and the cells are installed.
- o) 2.5.7 j) ECDIS management of multiple exchange sets and multiple purchases
Under 7j – purchase 2 [WK 37_07] as "Result" is mentioned for GB50162C "No updates for this cell"
Correct would be "No ENC permits".
- p) 2.5.8 d) Media validation of encrypted ENC service status
The cell GB100001 is missing in the list of installed cells "after installation of 8d [1] final update".

Kind regards

Wärtsilä SAM Electronics GmbH

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