

Title: Standardization of the portrayal of shared edges in ECDIS

S-98 Maintenance - Change Proposal Form

Organisation	NIWC	Date	10/17/2022
Contact	David Grant	Email	david.m.grant22.civ@us.navy.mil

Change Proposal Type (*Select only one option*)

1. Clarification	2. Correction	3. Extension
X		

Location (*Identify all change proposal locations*)

S-98 Version No.	Part No.	Section No.	Proposal Summary
1.0	Annex C		See redlines

Change Proposal

The S-101PT has requested the following additions to S-98 annex C:
* Ensure ECDIS renders dash patterns along shared edges as intended.
* Add recommendations for ECDIS to improve the appearance of complex line styles rendered along shared edges.

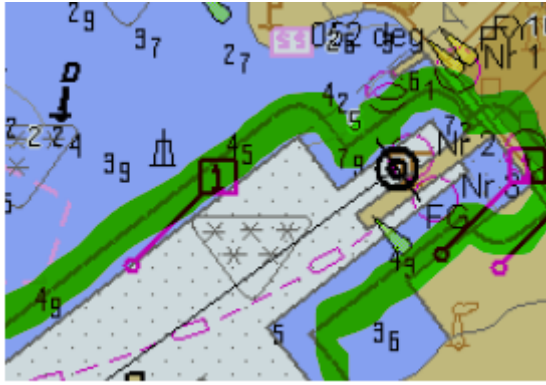
Change Proposal Justification

Shared edges portrayed with dash patterns may be presented incorrectly to the mariner when the ECDIS draws the edge in both directions.

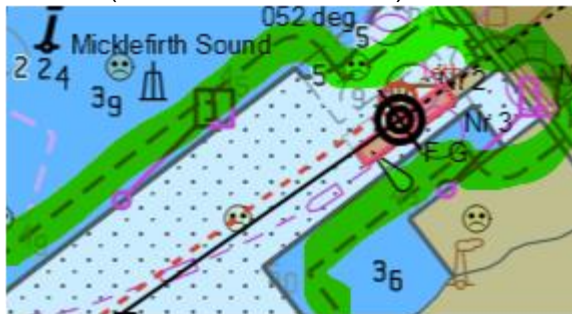
This issue can occur along the shared edges of features which abut, such as restricted areas or anchorages which tessellate a given area. Rendering the dash pattern in both directions can alter the pattern from what is intended, and in some cases may result in a solid line.

In the figures below, note the edges under the green highlight:

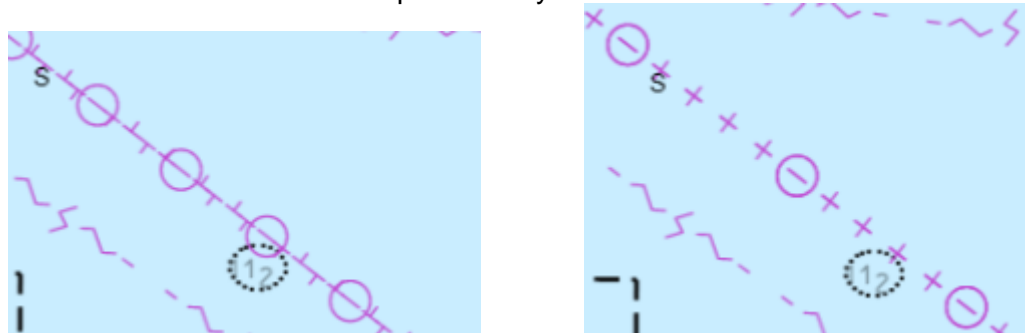
Incorrect (from S-64):



Correct (NIWC S-100 Testbed):



The issue can also affect complex line styles:



What parts of the S-100 Infrastructure will this proposal affect?

- S-100 Feature Concept Dictionary Interface or Database
- S-100 Portrayal Register
- S-100 Feature Catalogue Builder
- S-100 Portrayal Catalogue Builder
- S-100 UML Models
- S-100 GitHub Schemas

Please send completed forms and supporting documentation to the secretary S-100WG.

C-7.2.5 Line styles

The Portrayal Catalogue uses two types of line styles: simple line styles and complex line styles. Simple line styles are solid, dashed or dotted lines with varying colour and thickness (width or stroke width). Complex (or “composite”) line styles are composed of repeating line patterns.

Simple line styles are generally described by continuity, width, and colour. The full specification of a simple line style may also include other elements such as dash interval, cap and join types (see S-100 clauses 9-12.4 and 9a-11.2.2.3), defaults for which may be set in the Portrayal Catalogue. Complex line styles consist of additional elements, described in S-100 9-12.4 and 9a-11.2.2.3.

Complex linestyles may be one-sided (symbols, text, etc., which are part of the line extend to only one side of the line) or two-sided (symbols, text, etc. extend on both sides of the line).

In the context of S-100 line styles effect curve geometry portrayal.

An ECDIS must ensure that when a simple line style is rendered in both directions along a given curve that the resulting presentation shows the pattern as intended. This can be accomplished by either suppressing the presentation in one direction, or by ensuring both patterns are aligned along the curve.

Edge Traversal	Appearance	Notes
Left to right (forward)	— . — . — . — .	Line style drawn left to right
Right to left (reverse)	. — . — . — . —	Line style drawn right to left
Forward + Reverse	— — — —	Incorrect: line style naively drawn in both directions.
Forward + Reverse	— . — . — . — .	Correct: line style drawn with one direction suppressed or drawn in both directions with pattern alignment.

To improve the appearance of the chart, an ECDIS may apply pattern alignment when rendering complex line styles but must not suppress the presentation in either direction.

Without Alignment	With Alignment
