

S-101 Electronic Navigational Chart Project Team

# Report on KHOA S-100 Testbed

**S-101PT5 / KHOA**

Presented by KHOA

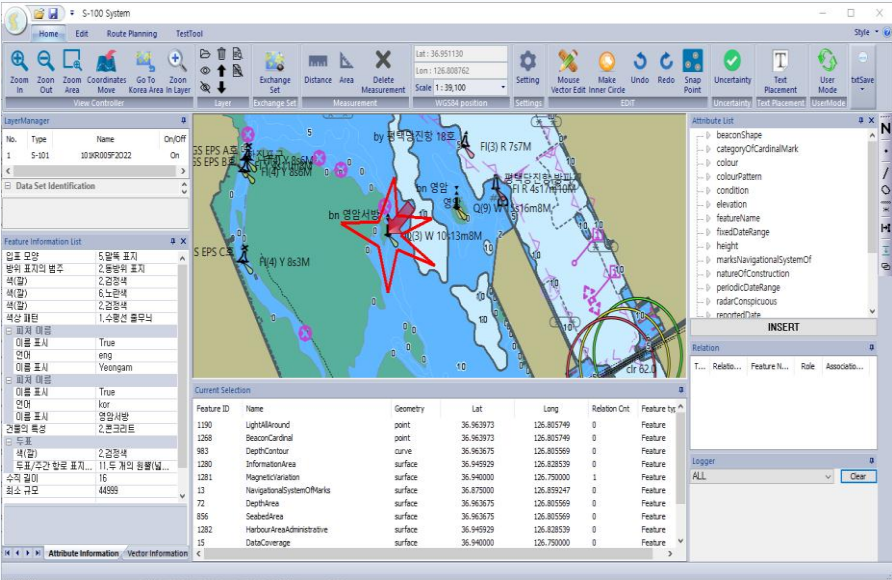


# Introduction/Background

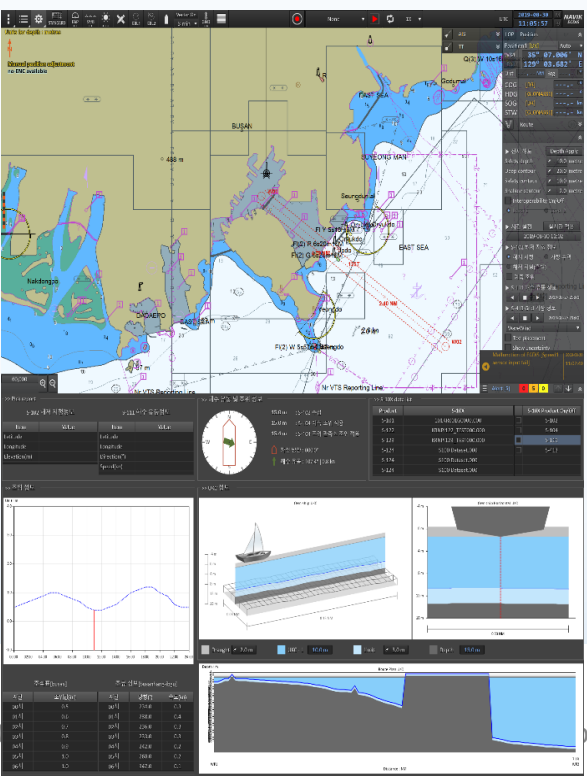
- **KHOA S-100 Testbed**

- (S-100 Testbed SW) developed to support Phase3 and Phase 6
- (3 Types) S-100 Viewer, Shore based ECDIS and Online Viewer

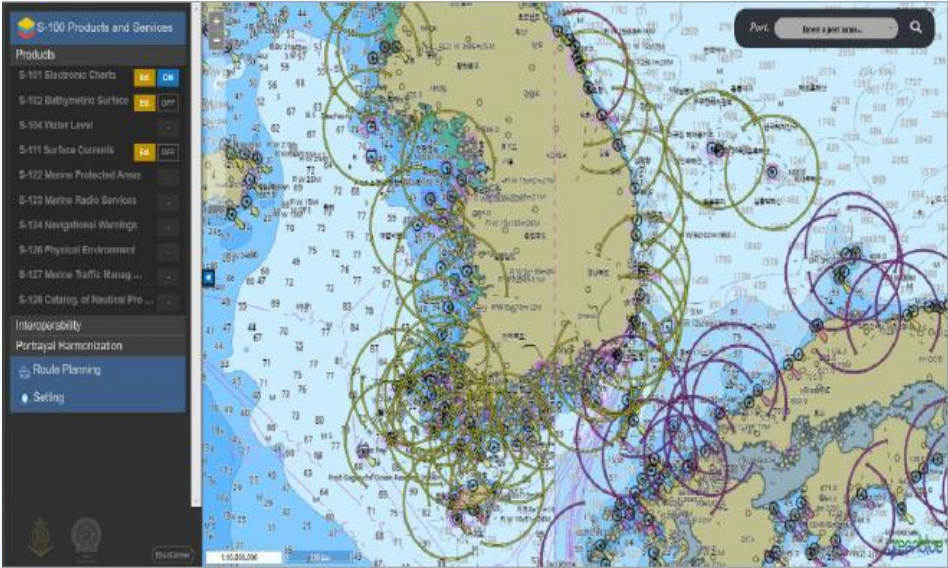
S-100 Viewer



Shore based ECDIS



Online Viewer



# Introduction/Background

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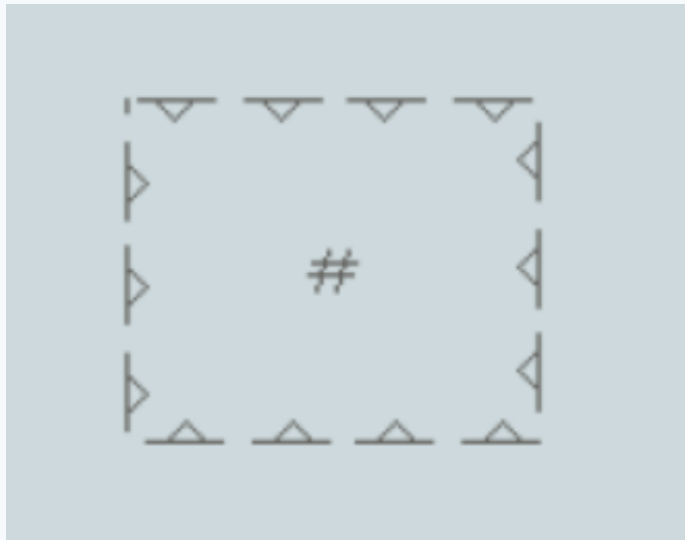
- **KHOA S-100 Testbed**

- The major progress of KHOA testbed reported at each S-100WG, TSM and S-101 PT meeting
- This document describes updates of KHOA S-100 Viewer
  - Update of Lua Scripting Reference
  - Application of Text Placement
  - Updates of KHOA S-100 Viewer
  - Consideration of Releasing KHOA S-100 Viewer

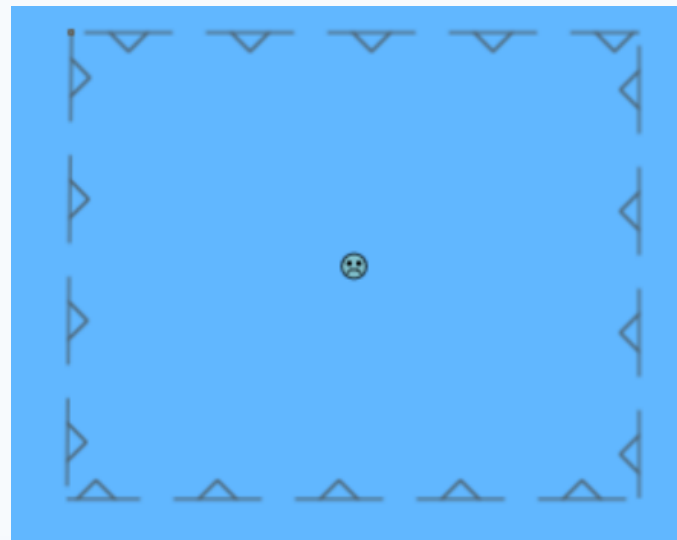


# Update of Lua rule

- **Foul Ground feature displays the [testPCB.svg], unhappy symbol**
  - S-101 Lua (1.0.10)
  - **Obstruction (CATOBS=7) -> Foul Ground**



S-64 Ed\_3.0.2\_EN.pdf



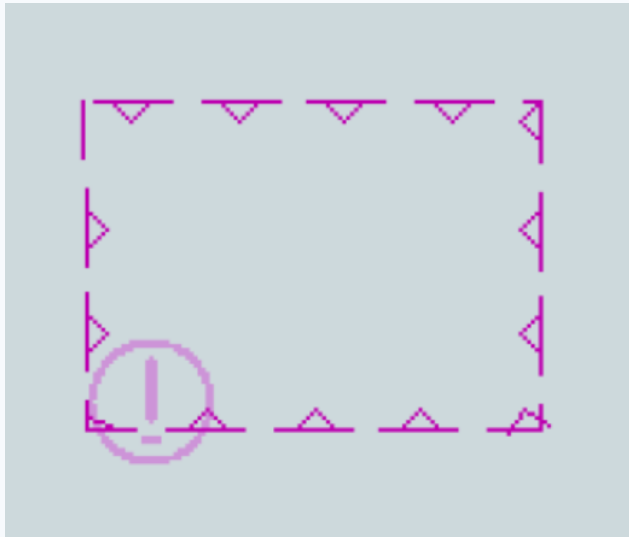
Foul Ground – Original Rule



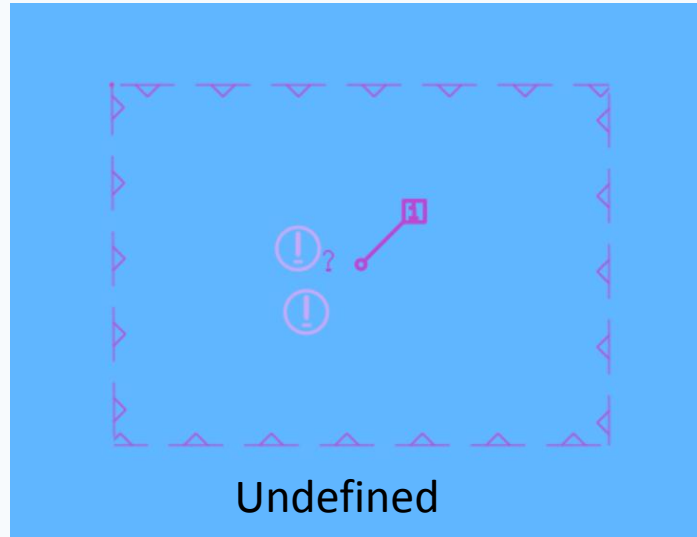
Foul Ground – Revision Rule

# Update of Lua rule

- **feature.restriction in the RESTRN01 as CS(Conditional Symbology)**
  - **displayed same symbol for undefined(X) and unknown(O)**

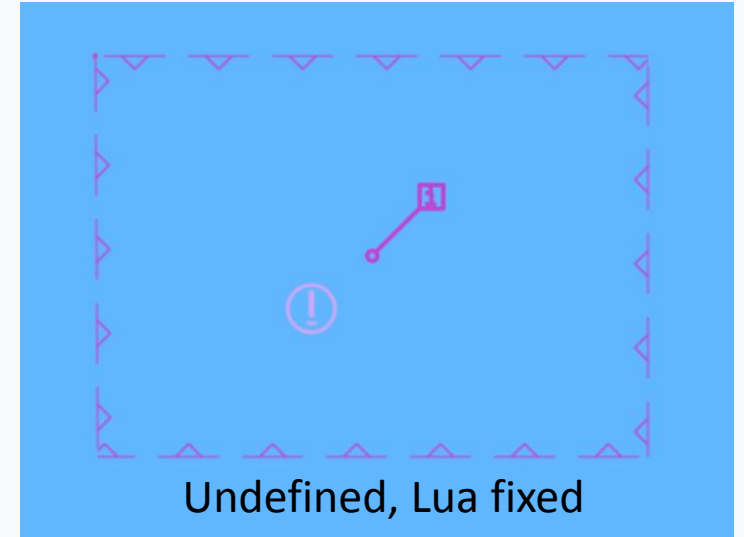


S-64 Ed\_3.0.2\_EN.pdf



Undefined

which has restriction attribute  
Original Rule

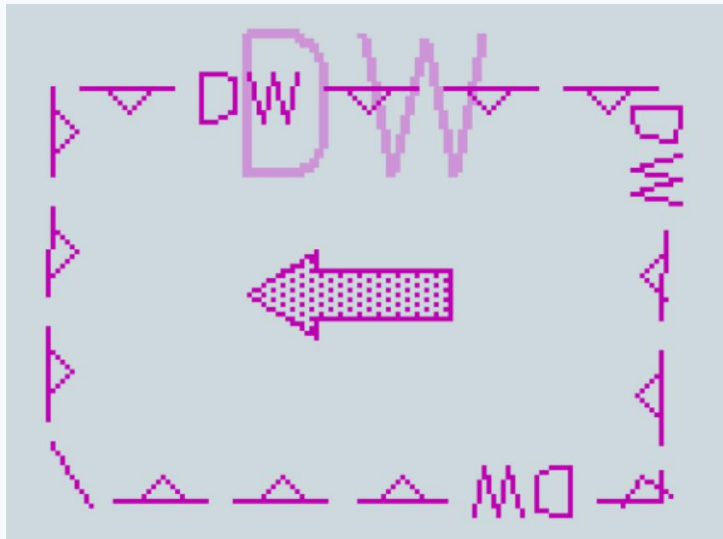


Undefined, Lua fixed

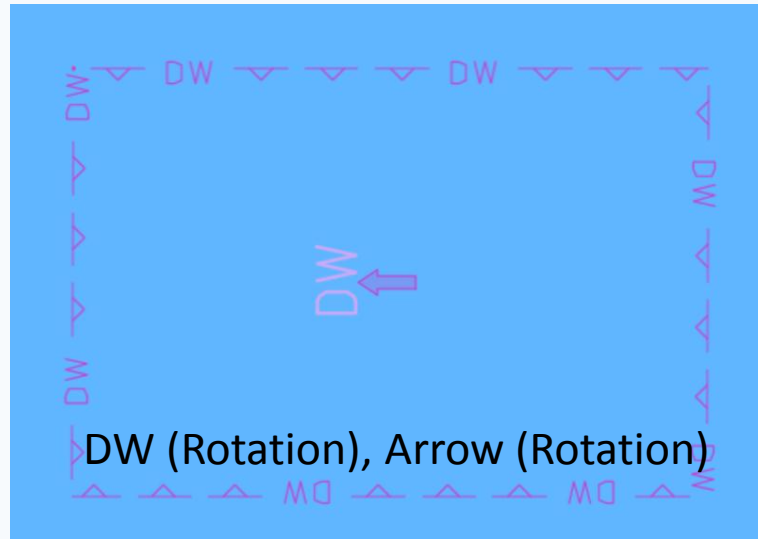
which has restriction attribute  
Revision Rule

# Update of Lua Scripting Reference

- ‘Deep Water Route Part’, ‘Traffic Separation Scheme Lane Part’
  - One is displayed with Rotation, the other is without Rotation.
  - However, both are displayed with Rotation in the S-101 portrayal catalogue.



S-64 Ed\_3.0.2\_EN.pdf



Original Rule



Revision Rule



# Application of Text Placement

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- **Text Placement – Add Lua rule**

```
-- TextPlacement portrayal rules file.

-- Main entry point for feature type.
function TextPlacement(feature, featurePortrayal, contextParameters)
  if feature.PrimitiveType == PrimitiveType.Point then
    featurePortrayal:AddInstructions('ViewingGroup:22220;DrawingPriority:7;DisplayPlane:OverRADAR')
    --featurePortrayal:AddInstructions('Point Instruction:POSGEN04')

    offsetValue = 0.0
    if feature.textOffset then
      if feature.textOffset.valueOfX then
        offsetValue = feature.textOffset.valueOfX:ToNumber()
      end
    end

    flipBearing = 0
    if feature.flipBearing then
      flipBearing = feature.flipBearing
    end

    if feature.text then
      featurePortrayal:AddInstructions('LocalOffset:' ..
offsetValue .. ',0;TextAlignVertical:Center;TextAlignHorizontal:End;FontSize:10;FontSlant:' ..
flipBearing .. ';TextInstruction:' .. EncodeString(feature.text) .. ',26,8')
    end
  end
end
```



# Application of Text Placement

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- **FC Update**

- 'Text Placement' : Relation with all features

```
<S100FC:featureBinding roleType="association">  
  <S100FC:multiplicity>  
    <S100Base:lower>1</S100Base:lower>  
    <S100Base:upper xsi:nil="false" infinite="false">1</S100Base:upper>  
  </S100FC:multiplicity>  
  <S100FC:association ref="TextAssociation" />  
  <S100FC:role ref="identifies" />  
  <S100FC:featureType ref="TextPlacement" />  
</S100FC:featureBinding>
```

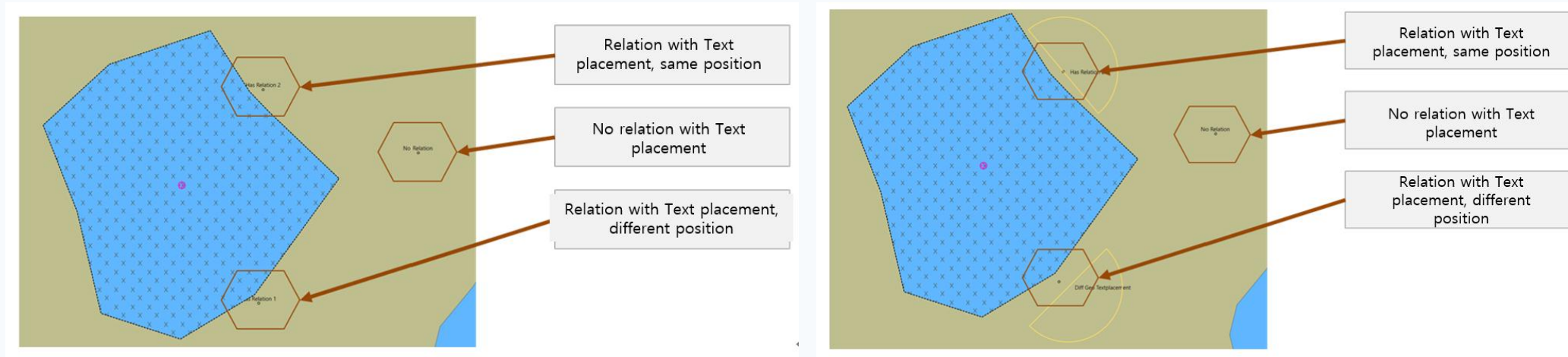
- Add textOffset Attribute to Text Placement Feature





# Application of Text Placement

- **Development function of Text Placement with Flip bearing**



- **Discussion**

- KHOA supports relation with same position
- How to troubleshoot the geometry differences problem when zooming in/out
  - Option 1. use instruction offset X
  - Option 2. Augmented Point



# Updates of KHOA S-100 Viewer

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- Change of Graphics API(DirectX2D)
  - the performance greatly improved
- The errors found in the S-100 Viewer executions were fixed.
- New function for editing S-101 and S-12X dataset (Vector type – GML)



# Consideration of releasing KHOA Viewer

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- KHOA S-100 Viewer
  - Improved with testing S-10X TDS and FC/PC
  - Technical issues fixed and reflected in the S-100 viewer.
- Future plan
  - (S-100 viewer) can be helpful for interested member states and stakeholders
  - Capable of testing and editing S-10x products
  - Reduce the implementation barriers by sharing a measure
  - Currently only supports the vector encoding
  - Grid encoding will be available in the next release version
  - Releasing date and location is not yet decided.



# Consideration of releasing KHOA Viewer

- KHOA S-100 Viewer

The screenshot displays the S-100 System software interface, which is used for nautical charting and navigation. The main window shows a nautical chart with various navigational features, including buoys, lights, and depth soundings. The interface includes a menu bar (Home, Edit, Route Planning, TestTool), a toolbar with various navigation and editing tools, and several data panels.

**LayerManager:**

No.	Type	Name	On/Off
1	S-101	101KR00400000	On

**Data Set Identification:**

- Encoding specification: S-100 Part 10a
- Encoding specification: 1.1
- Product identifier: INTLHO.S-101.1.0
- Product edition: 1.0
- Application profile: 1
- Dataset file identifier: 101KR00400000.000
- Dataset title: S-101 Test Data Sets L...
- Dataset reference date: 20200626
- Dataset language: EN
- Dataset abstract:
- Dataset edition: 1.0

**Feature Information List:**

Colour	Value
Light characteristic	3.red
Rhythm of Light	3.long-flashing
Light characteristic	(1)
Signal group	10
Signal period	10

**Current Selection:**

Feature ID	Name	Geometry	Lat	Long	Relation Ont	Feature type
1815	BuoyLateral	point	-32.530811	61.027628	1	Feature
925	LightAllaround	point	-32.530811	61.027628	1	Feature
96	SeaAreaNamedWaterArea	surface	-32.498452	61.015200	0	Feature
18	LocalDirectionOfBuoyage	surface	-32.588880	61.317264	0	Feature
25	DataCoverage	surface	-32.588880	61.317264	0	Feature
1413	DepthArea	surface	-32.503989	61.062425	0	Feature
1728	TerritorialSeaArea	surface	-32.605989	60.833387	0	Feature
1724	FisheryZone	surface	-32.595979	60.875444	0	Feature
1748	MagneticVariation	surface	-32.413776	60.774997	1	Feature
15	QualityOfBathymetricData	surface	-32.569128	60.949123	0	Feature
19	NavigationalSystemOfMarks	surface	-32.588880	61.317264	0	Feature
1697	RadarRange	surface	-32.571190	60.916744	0	Feature
1742	AdministrationArea	surface	-32.579239	60.774997	0	Feature

**Attribute List:**

- categoryOfLight
- colour
- exhibitionConditionOfLight
- featureName
- fixedDateRange
- height
- lightVisibility
- majorLight
- markNavigationalSystemOf
- multiplicityOfFeatures
- periodicDateRange
- rhythmOfLight
- signalGeneration
- status
- valueOfNominalRange
- verticalDatum
- scaleMinimum
- flareAngle

**Relation:**

T...	Relatio...	Feature N...	Role	Associatio...
F...	Structu...	LightA...	sup...	BuoyLater...

**Logger:** ALL Clear



# Conclusion

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- Upgrade of S-100 viewer with S-101 Lua
- Test implement of text placement
- Consideration of releasing KHOA Viewer
  - for interested member states and stakeholders
  - Releasing date and location is not yet decided

