



## TECHNICAL REPORT

# S-127 / S-123 Portrayal

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## 1 Introduction

This document contains documentation for the S-123 and S-127 Portrayal carried out by IIC Technologies. The accompanying digital data files contain

1. S-100 conformant portrayal catalogues and component parts for both S-127 and S-123
2. SLD/SVG components equivalents of the S-123 and S-127 portrayal

Some example screenshots for the portrayal developed are contained in the next two sections. These screenshots have been constructed using the KHOA S-100 viewer (version 1.11) along with GML test datasets constructed specially for the project with exhaustive geographic features. Test datasets (located alongside the S-64 test datasets) have been constructed and encoded as well as use made of the RAMN S-127 encodings during development.

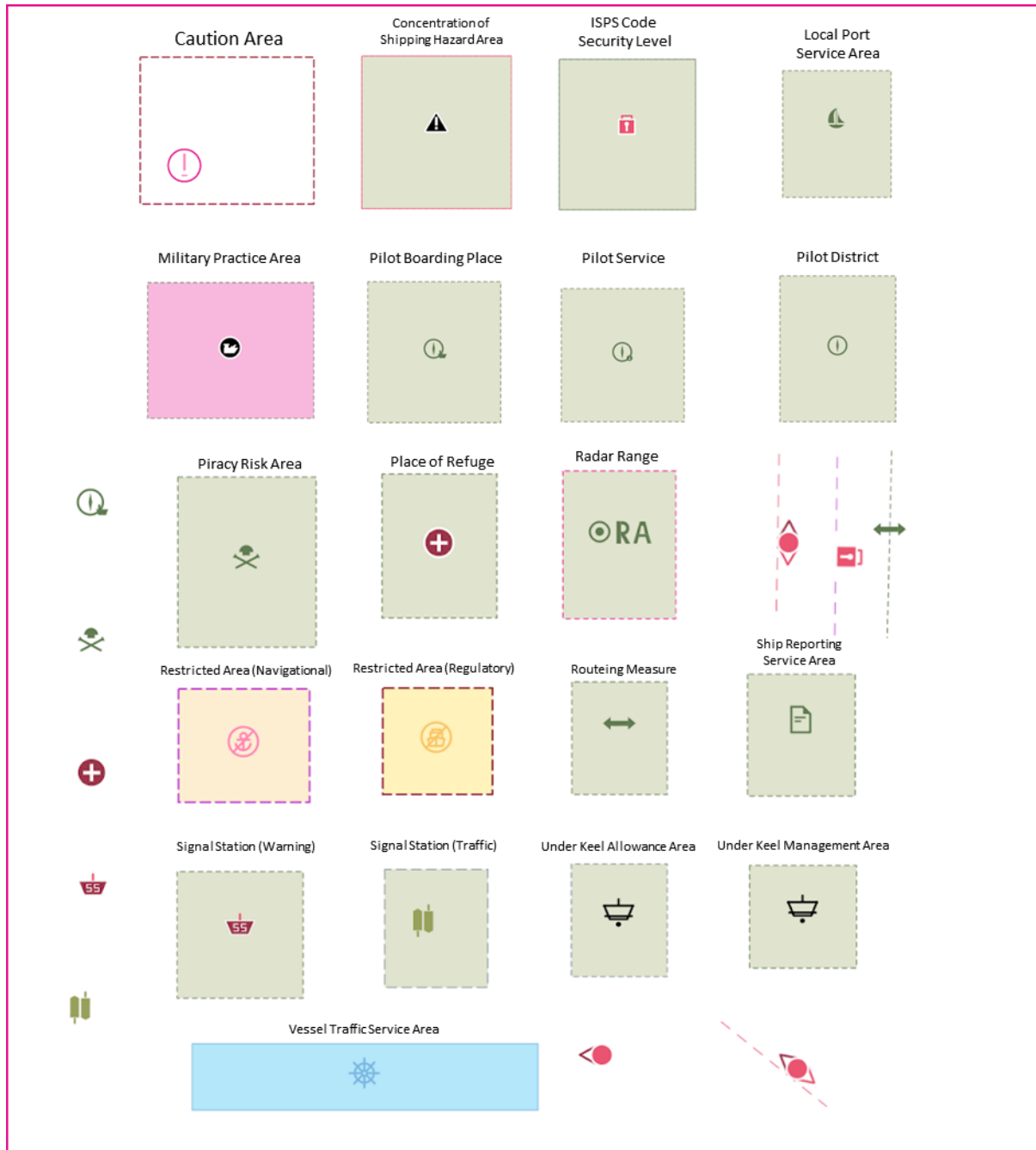
The symbology is based on the existing KHOA symbology for S-127 and S-123 and is presented as an initial release along with suggestions for completion, subject to CCG's approval of individual items.

Some overarching design decisions (from the S-100 point of view) should be taken over a colour schema and look and feel, probably along the lines of:

1. Isolating "core" features from each product specification, as opposed to those who support other features within the feature catalogue.
2. Overall approach with respect to colour fill. The use case for S-127 and S-123 from a SOLAS/ECDIS point of view is really planning and so existence of areas, rather than the navigational detail may be more important for the appraisal and initial planning – this would suggest a fill pattern to overlay S-101 chart data and show existence of "core" S-123/S-127 features
3. Understanding the likelihood of suppression of features with S-101. Features such as RadioCallingInPoints should probably suppress the S-101 features and therefore replicate closely the portrayal the mariner is used to. For other features this may be less clear (e.g. restricted areas and caution areas)
4. Updates to colours and individual symbols is reasonably simple to achieve – area features which may be encoded with common geometry should be approached with care to ensure centred symbols do not overlap.
5. New features (not in S-101 or other product specifications) require new symbols with a good level of recognition. Some suggestions are made at the end of this document for some.

SLD version of all the symbols, fills and linestyles for both S-123 and S-127 are included in the

## 2 S-127 Portrayal



### S-127 Notes:

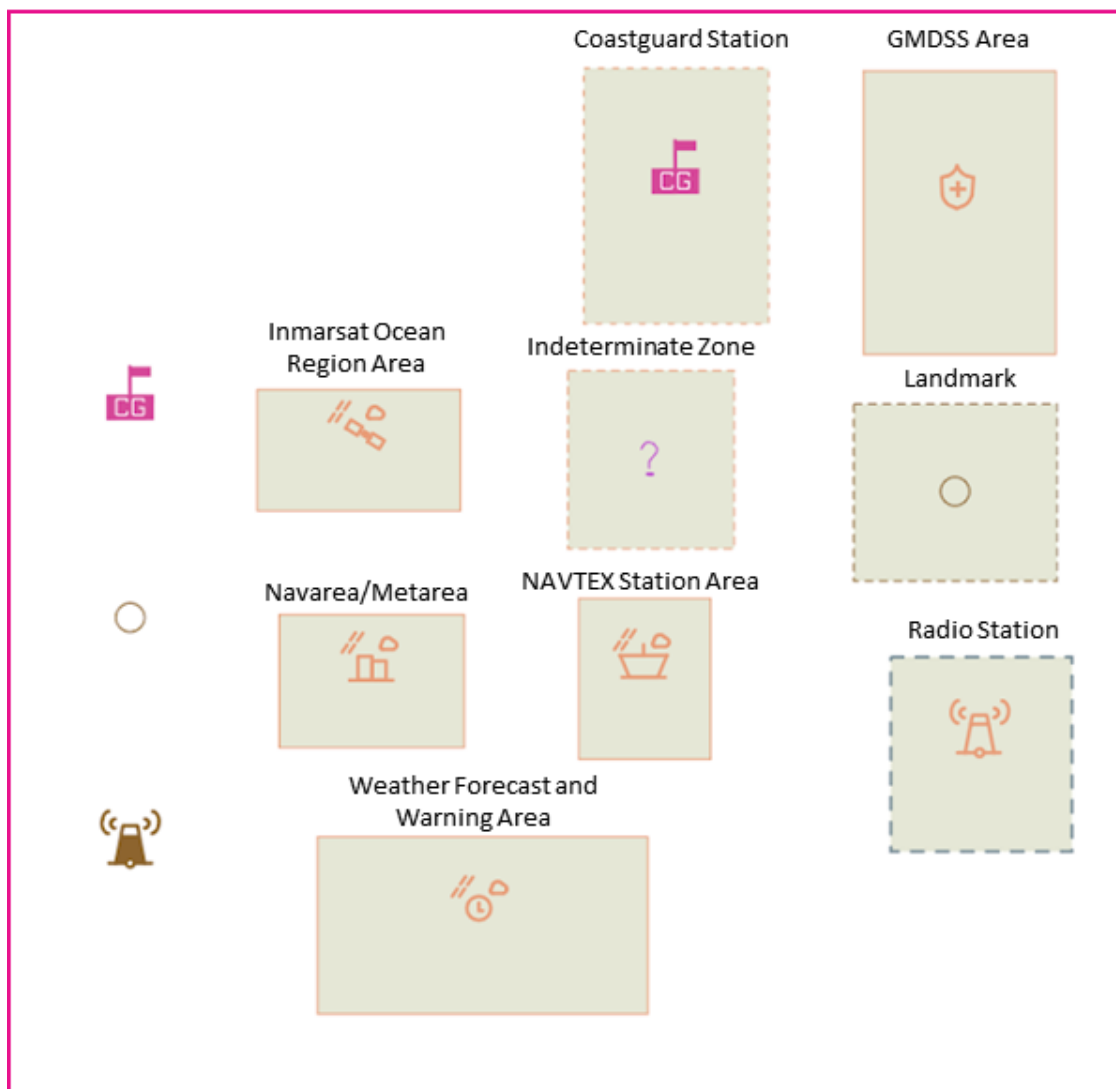
1. Symbols are mostly original KHOA designed ones
2. Linestyles, colours and transparency have been changed.
3. Complete representation of the contents of the feature catalogue are represented. So, every feature and primitive are encoded.

### 3 S-123 Portrayal

S-123 Notes. Similarly the S-123 feature catalogue has been encoded into a single dataset with features and primitives. Area fills are based on a 30% opacity to show features underneath (a similar approach is taken with S-127 – this should be looked at as a general approach for these product specifications).

The S-123 is a far simpler product specification to develop portrayal for there are no curve primitive features and a smaller number of geographic features.

Some of the centred symbols could be redeveloped as they seem counter-intuitive, and some suggestions for these have been included later in this section.



S-123 has a more tightly defined set of geographic features within the “radio services” theme and could be grouped better by colour/fill and/or linestyle, e.g. navigation (GMDSS, NavTex,

NAvarea/Metarea), comms (Inmarsat) and meteorological (Weather Forecast)? These could provide themed areas/styles for development.

As can be seen the transparent fill is common across S-123 and S-127 – this is presented for review and can be changed as development is supported and modified/enhanced.

## 4 Proposals for Refinements.

Some proposals have been made for refinements with the portrayal developed. These are described in the following two tables. These will be implemented as revisions to the portrayal and have arisen as notes from the work done so far.

S-127		
	Caution Area	Retain but tidy symbol. Round edges. Possibly change colours to differentiate from S-101 easier. Off-centre is too large.
	ConcentrationOfShippingHazardArea	Needs better colouring of symbol for Hazard. Exclamation mark is ok but triangle should be better filled. Consider simple symbolised linestyle?
	ISPSCodeSecurityLevel	Needs new symbol. Solid line (zone)
	LocalPortServiceArea	symbol is ok. Probably needs recolouring.
	MilitaryPracticeArea	Doesn't need a fill. Symbol can be left (but coloured a military colour).
	PilotBoardingPLace	Should be the plain symbol
	PilotService	Use Pilot Boarding place symbol.
	PilotageDistrict	S-101 is going to possibly use a box around pilot symbol to denote District. This seems sensible to use.
	PiracyRiskArea	Needs better symbol but skull and crossbones seems ok to use. Probably unfilled (could even use symbolised linestyle). Better colours
	PlaceOfRefuge	OK, if symbol doesn't confuse with S-101. Could use red cross on white fill instead?
	RadarRange	Doesn't need RA and should colour circles as per S-101. Unfilled
	RadioCallingInPoint	Symbol needs harmonising with S-101. Probably should be the same if interoperability might suppress S-101 (which it could)
	RestrictedAreaNavigational	Use simplified S-101 symbology. Check if these should replace S-101 RESARE
	RestrictedAreaRegulatory	Use simplified S-101 symbology. Check if these should replace S-101 RESARE
	RouteingMeasure	These are drawn around (more detailed) S-101 routeing areas so should be a simple line style. The arrow works but needs redrawing (possibly with box)
	ShipReportingServiceArea	Report symbol seems ok.

	SignalStationWarning	Harmonise with S-101. There is a proposal to change SS to a traffic light symbol which we could use.
	SignalStationtraffic	Similar?
	UnderkeelClearanceAllowanceArea	Needs a better symbol representing UKC.
	UnderkeelClearanceManagementArea	Colour of symbol can represent Allowance or Management. Red vs MGD?
	VesselTrafficServiceArea	Needs new symbol as wheel is used elsewhere (type approval). Does IALA have a symbol for VTS. Blue should be changed to a more management colour. Possibly outline only?
	WaterwayArea	Change to S-101 style with no fill. Not sure of intention so needs to be harmonised with usage in DCEG.

S-123		
	<i>Building</i>	Are these required? I think building may be removed.
	<i>Coastguard Station</i>	Should use S-101 symbol. (no flag)
	GMDSS Area	Needs better symbol. Needs something symbolising distress or rescue. Can't find a GMDSS symbol - IALA maybe
	InmarsatOceanRegionArea	Inmarsat logo? Needs a satellite-type symbol
	Indeterminate Zone	Has a QUESMRK but could change to a fill pattern instead to represent uncertainty.
	Landmark	Left in. Using S-101 brown circle.
	Navigational Meteorological Area	Needs better symbol. Cloud/Sun?
	Navtex Station Area	Needs better symbol. NavTex machine?
	Radio Service Area	Needs better symbol, possibly using different colour radio station
	Radio Station	Could use better symbol
	Weather Forecast Warning Area	Possibly use weather forecast symbol as per Nav/Met area, with different colour.
	Forecast Area Aggregate	None required?
	Radio Service Area Aggregate	None required?

A further modification, prior to a more formal review is to establish whether portrayal can navigate the relationships within the geographic feature. This should (probably) be akin to the information symbol on some geographic features and alert the user to the presence of (potentially complex) relationships in the data. These are still under development.

## 5 Potential new Symbols (selection).

A selection of potential new symbols for S-123 is shown below. These are being down-selected for potential inclusion in the next release of the S-100 symbols to address some of the observations made so far in reviewing the current symbol set.



Satellites – GMDSS?



Indeterminate



Weather Forecast Area



Radio Station



( From IALA Publication)