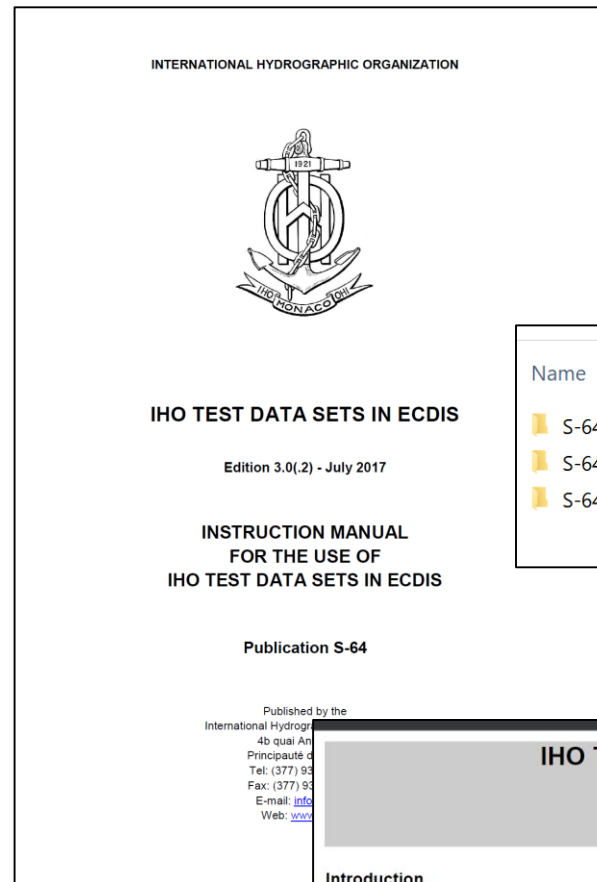


S-164 Meeting 3 (Post TSM9)

SubWG Objectives

- Draft 1.0.0 of S-164
- S-164 components
 - Test dataset manual
 - Datasets
- Support to implementers
 - IHO landing page for users



Name	Date modified	Type
S-64_e3.0.2_ENC_Encrypted_TDS	25/08/2020 16:44	File folder
S-64_e3.0.2_ENC_Unencrypted_TDS	29/06/2020 10:33	File folder
S-64_e3.0.2_RNC_TDS	29/06/2020 10:33	File folder

IHO TEST DATA SETS FOR ECDIS

Publication S-64

Edition 3.0(.2) - July 2017

Introduction

The IHO Publication S-64 comprises an **Instruction Manual** and numerous data sets. Since the release of Edition 3.0.0, a number of minor clarifications have been identified. The 2nd ENCWG meeting agreed that these should be included in a new clarification Edition 3.0(.2) of the document. The clarification edition and associated test datasets can be downloaded below.

The S-64 data sets contain both **encrypted and unencrypted ENC cells** and **Raster Navigational Charts (RNC)** data. Encrypted data sets conforming to the S-63 ENC standard, have been included so that ECDIS data loading and management operations can be tested for conformance with IEC 61174. The unencrypted data sets have been included to further test visualisation and operation aspects of the ECDIS. The RNC data sets conform to the **Hydrographic Chart Raster Format (HCRF)** and the **Maptech BSB** format.

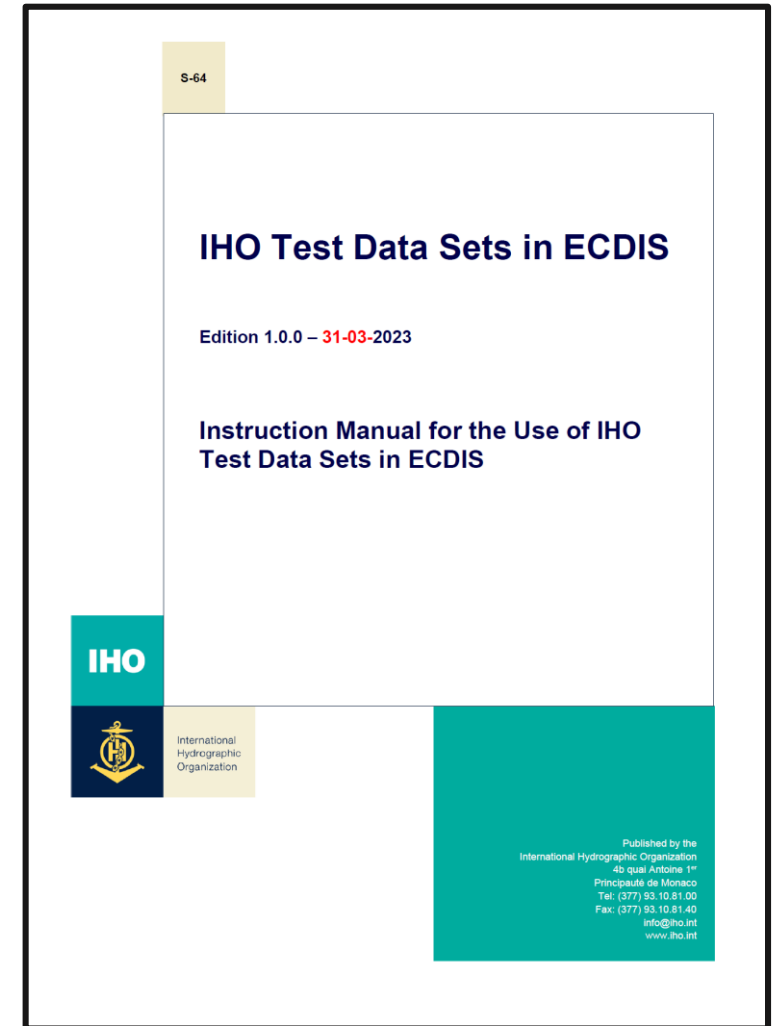
Download

The S-64 Edition 3.0.2 documents and Test Data Sets can be downloaded here:

- [Instruction Manual for the use of IHO Test Data Sets in ECDIS](#)
- [Unencrypted ENC Test Data Sets](#)
- [Encrypted ENC Test Data Sets](#)
- [RNC Test Data Sets](#)

Agenda

- Status of v1.0.0 draft
- TSM9 inputs
- S-164 Structure
- Test Status (from spreadsheet)
 - Adaptation of existing tests
 - New tests
- Plan



Draft Status

- Initial Draft on IHO TSM9 webpage (<https://iho.int/en/tsm9-2023>) and covering paper with a number of unresolved issues.
- Most issues are resolved OR resolved enough in order to complete the S-164 draft. Some remain, e.g.
 - Some aspects of S-128
 - How to differentiate unofficial vs official
 - SENC testing(?)
- There is a new release on the IHO S-164 SubWG GitHub page (publicly available):
 - <https://github.com/iho-ohi/S-164-Sub-Group/tree/main/manual/docs>
 - Also includes accompanying spreadsheet

Release Note issues

- Formatting, TSM9 copy has had grey text deleted, all tests will be standardised colours (green not blue)
- Corrected Language in a number of places for S-100 (“datasets”, “exchange sets”, S-57 Acronyms and attributes, filenames etc...)
- Screenshots in progress (some new ones inserted, **tbd** will be used to label those requiring update.
- Camelcase names now inserted into spreadsheet and mapped to exchange set names. Needs verification and fine tuning in document. This is the basis for the next phase of test definition/dataset assembly.
- References still mention S-52. In progress. Don't need 61174 references (TSM9). Draft S-98/S-100 references have been done and will be updated in document.
- SSE codes corrected. Needs updates in S-98 and stronger links between the two. To be corrected post v1.0.0.

Release Note Issues

- CATCOV=2 test removed, No Data Coverage test remains
- Unofficial data boundary test remains
- Mariner's features test removed
- S-57 tests are by reference
- Skin of the Earth tests removed from S-100 sections
- Data not authenticated by the SA is now rejected (not imported with a warning)
- Various portrayal comments ("Notes on ECDIS screen samples") have been removed (e.g. centred symbol language)
- "Complex Portrayal" tests – remains and will be recrafted as a test of more complex LUA portrayal

Test Template (S-64)

Test Reference	InitialPowerUp (2.1.1)	IHO Reference	IEC 61174/ 4.4.1
Test description			
Loading of initial datasets and indication of own ship stationary position.			
Setup			
Load the following exchange set: InitialPowerUp with the following settings:			
<ul style="list-style-type: none"> • Select Display Category Other • Set the Safety Contour value to 8 m • Set the Safety Depth value to 8 m • Select Symbolized Boundaries • Select all Text groups • Select Accuracy • Select Highlight info • Select Highlight date dependent • Select simplified points = false 			
Ship position 32°29.66'S, 060°55.86'E Heading 234.0 degrees			
Action			
Load datasets and view the chart display.			
Results			
With the charts displayed the own ship shall be placed at the jetty in Micklefirth. [TBD]			

Test Reference	2.1.1	IHO Reference	IEC 61174/ 4.4.1
Test Description			
Loading of initial datasets and indication of own ship stationary position.			
Loaded Data			
Path		Dataset	
2.1.1 Power Up\ENC_ROOT\GB4X0000.000		GB4X0000.000	
2.1.1 Power Up\ENC_ROOT\GB5X01NW.000		GB5X01NW.000	
Display Category		Independent Mariner's Selections	
Other		Accuracy	<input checked="" type="checkbox"/>
Contour Values		Highlight date dependent	<input checked="" type="checkbox"/>
Safety Contour	8	Highlight info	<input checked="" type="checkbox"/>
Safety Depth	8	Highlight document	<input checked="" type="checkbox"/>
Deep Contour		Show full light lines	<input checked="" type="checkbox"/>
Shallow Contour		SCAMIN off	<input type="checkbox"/>
Palette		Shallow pattern	<input checked="" type="checkbox"/>
Day		Shallow water dangers	<input type="checkbox"/>
Point Lookup Table		Unknown objects	<input checked="" type="checkbox"/>
Paper Chart Symbols		Update review	<input type="checkbox"/>
Area Lookup Table		Contour label	<input type="checkbox"/>
Symbolized Boundaries		Four shades	<input type="checkbox"/>
Date Dependent Objects		National language	<input type="checkbox"/>
Mode	Off		
Start Date	30 July 2021		
End Date	30 July 2021		
Display		Text Groups	
Centre	32°29.66'S, 060°55.86'E	Important text	<input checked="" type="checkbox"/>
Scale	1:50,000	Names	<input checked="" type="checkbox"/>
Orientation		Light description	<input checked="" type="checkbox"/>
		All other text	<input checked="" type="checkbox"/>
Notes			
Ship position 32°29.66'S, 060°55.86'E Heading 234.0 degrees			
Within this test dataset there are two omni directional lights co-located at 32°34.688S, 060°54.955E, this case is not a real-world example, as such the ECDIS may show a red-light sector.			
Viewing Group Layers			
Standard Display		Other	
Drying lines	<input checked="" type="checkbox"/>	Spot soundings	<input checked="" type="checkbox"/>
Buoys, beacons, structures	<input checked="" type="checkbox"/>	Submarine cables and pipelines	<input checked="" type="checkbox"/>
Lights	<input checked="" type="checkbox"/>	All isolated dangers	<input checked="" type="checkbox"/>
Boundaries and limits	<input checked="" type="checkbox"/>	Magnetic variation	<input checked="" type="checkbox"/>
Prohibited and restricted areas	<input checked="" type="checkbox"/>	Depth contours	<input checked="" type="checkbox"/>
Chart scale boundaries	<input checked="" type="checkbox"/>	Seabed	<input checked="" type="checkbox"/>
Cautionary notes	<input checked="" type="checkbox"/>	Tidal	<input checked="" type="checkbox"/>
Ships' routeing systems and ferry routes	<input checked="" type="checkbox"/>	Miscellaneous	<input checked="" type="checkbox"/>
Archipelagic sea lanes	<input checked="" type="checkbox"/>		
Miscellaneous	<input checked="" type="checkbox"/>		
Results			
Plot			

Test Reviews.

- Test structure
 - New tests for functionality introduced in S-100/S-98 specific to S-100 ECDIS (no equivalent in S-57 ECDIS)
 - Catalogue loading and compatibility
 - User selected safety contour
 - Water Level Adjustment
 - Dual Fuel mode
 - “Adapted tests” – tests which exist in S-64 but can be extended to cover S-100 use cases.
 - Portrayal of multiple datasets (S-101, S-102, S-124, S-129 etc...)
 - Complex Portrayal
 - Interrogation
 - ECDIS Status reports

Plans / Way Forward

- Focus on producing a clean copy for HSSC of Version 1.0.0 of manual and spreadsheet
- Happy to take further comments on existing document for inclusion in HSSC version. Deadline is 15th April but end of March is much better.
- Comments also VERY welcome for next version (1.0.1, 1.0.2 etc...) which will be produced between now and end 2023.
- Version 2.0.0 will be operational. There are a lot of versions between 1.0.0 and 2.0.0. Main activities are:
 - Production of test datasets, scheming and accompanying exchange sets
 - Refinements to S-98 (separate)
 - Publication of product specifications (FC and PC)
 - Interoperability catalogues
 - Testbed implementation of functionality required.
- Following HSSC submission next meeting focuses on putting timeline together for development of full S-164.

1. Catalogue Loading Tests

Catalogue Loading and System initialisation.

InitialCatalogues

Successful initial loading and confirmation of versions of multiple catalogues.

InvalidCatalogues
InvalidPC

Rejection of Invalid feature catalogue
Rejection of Invalid portrayal catalogue

PowerUPCatalogues
PowerUpCatalogues
PowerUpCatalogues
CorruptPortrayalCatalogue

OutOfSequenceCatalogues

Loading datasets for which no valid catalogue exists

PowerUPCatalogues
UpdatedCatalogueData

UpdateCatalogues

Successful updating of catalogue versions

PowerUPCatalogues
PowerUpCatalogueUpdates

NewCatalogues

Successful installation of data matching new catalogues

PowerUpCatalogues
NewProduct

2. Unencrypted datasets.

Loading of Unencrypted Datasets	InitialPowerUp	Initial loading and portrayal of datasets (all products)	InitialPowerUp
	PowerUp	Confirmation of version information in System Database	PowerUp
	AdditionalCell	Loading initial datasets (for multiple products)	PowerUp AdditionalCell
	RemoveCell	Removal of a datasets (for multiple products)	PowerUp AdditionalCell
	CorruptData	Successful rejection of invalid data	CorruptData
	CorruptUpdate	Successful rejection of invalid updates data (multiple products)	PowerUP CorruptUpdates
	SequentialUpdate	Review of update information	PowerUp [SequentialUpdate1-5]
	InvalidSequence	Rejection of out of sequence updates (ENC + GML)	PowerUp InvalidSequence[1-5]
	NewerEdition	Successful application of an update to a dataset (multiple products)	PowerUp NewUpdate GoodBaseCells
	OlderEdition	Successful rejection of an update to a chart of an older edition	GoodBaseCells OldUpdate
	Reissue	Processing of reissues	PowerUp Reissue001 ReissueX01SW Reissue004
	UpdateRejection	Manual rejection of an update	PowerUp SequentialUpdate
	ManualUpdates	Manual updates	PowerUp

3. Service Management (1)

Loading of Encrypted and Authenticated Datasets	InvalidPermit	Invalid permit (length)	InvalidPermitA
	IncorrectPermitFormat	Reject incorrectly formatted permit	InvalidPermitB
	InvalidPermitChecksum	Reject an invalid permit (CRC incorrect)	ENCLicensingC1
	MissingPermitSignature	New, PERMIT.SIG is not present	ENCLicensingC2
	InvalidPermitSignature	New, PERMIT.SIG is invalid	ENCLicensingH
	ExpiringPermit	appropriate message for permit expiring within 30 days	ENCLicnecingI
update name in doc	IncorrectUserPermit	wrong user permit in PERMIT.XML	ENCLicensingD
	ExpiredPermits	Installing data with expired permits	ENCLicensingJ
	PermitInstallation	Successful installation of permits for multiple products	ENCLicensingE
	MultipleDataServers	Installation of data from multiple data servers	ENCLicensingF
	PermitManagement	Management of multiple permit installations (multiple products)	ENCLicensingG1
	InstallSACertificate	Install new SA (root) certificate on system	ENCLicnecingG2
	MissingSACertificate	Install of data with missing SA certificate	ENCLicensingG1
	CertificateExpiry		ENCLicensingG2
	InvalidSACertificate	Install of data with an invalid SA certificate	Authentication1B
update name in doc	MissingCatalogueSignature	No CAT.SIG file	Authentication1C
	InvalidCatalogueSignature	invalid signature in CAT.SIG	Authentication1DExpired
	NonSASignedData	Attempt to install data which has a valid but non-authenticated signature	Authentication1DCurrent
update name in doc	AuthenticationDomainCoordinator	Authentication along a chain of signatures (to SA)	Authentication1E
	InvalidDatasetSignature	Invalid signature on at least one dataset/SF/Catalogue	MissingCatalogueSignature
	CorruptedSignature	Corrupted signature (duplicate id, xml format)	Authentication3B
	ContinuousAuthentication	Authentication of multiple signatures of same dataset	Authentication2B
	MultipleDataServers	Install of data from multiple data servers	AuthenticationDomainControllers
	MissingCertificate	No data server certificate found.	Authentication2C
	ExpiredPermits	Install of data with expired permits	Authentication2D
			Authentication2E
			Authentication2F
			Authentication3C
			DecryptionA
			MultipleRevisionInformation2

4. Service Management (2)

ExpiredPermits ExpiringPermits IncorrectCellKeys DataIntegrity	Install of data with expired permits Install of data with data within 30 days of expiry install Data corruption once decrypted	DecryptionA EncryptionB EncryptionC EncryptionD
DataManagement	Test of installation and management of permits/data	DataManagementA1 DataManagementA2 DataManagementB DataManagementC1 DataManagementC2
AdditionalPermits ProviderChange	Adding additional permits to user's holding Change of service provider.	DataManagementCancelBase DataManagementCancelUpdate
Cancelled Datasets	Cancelled cells (fileless and via cancellation update). Multiple products	CanceReplaceBase CanceReplaceUpdate
CancelReplace	Cancel and Replace(fileless and via cancelation update). Multiple products	DataManagementF1 DataManagementF2 DataManagementG1 DataManagementG2 DataManagementG3 DataManagementG4
Reissues	installation of reissues (GML and ENC)	DataManagementSF1 DataManagementSF2
ECDIS Management	Install and check holdings, multiple products	PowerUp PowerUP MissingRevisionInformation
SupplementaryFiles	Management of supplementary files (add, replace, reissue)	MultipleRevisionInformation1 MultipleRevisionInformation2
UpdateStatusReportENC UpdateStatusReportENP MissingRevisionInformation MultipleRevisionInformation	Successful preparation of ENC Update Status Report Successful preparation of ENP Update Status Report. No S-128 in CATALOG.XML Successful merging of multiple S-128 datasets, update, reissue, new edition.	

5. ENC Display

Display Of ENC data	DisplayBase	Display and checking of features in display base layer (from PC)	DisplayBase
	DisplayStandard	Display and checking of features in Standard display model (from PC)	DisplayStandard
	DisplayOther	Display of each group identified in thr Other display.	DisplayOther
	ViewingGroupsStd		DisplayStandard
	UnclassifiedFeatures	Those features which don't fit into Base, Standard or Other.	DisplayUnclassified
	ViewingGroupsOther	verify that ECDIS is able to change S-101 display settings using standardized controls.	DisplayOther
	TextGrouping	verify that ECDIS is able to change text display settings and display text in accordance with the S-101 portrayal catalogue	DisplayBase DisplayStandard DisplayOther
	InvalidFeaturesA	Display of features with unrecognised feature class or display of features for which available or not available attribute(s) causes special presentation.	InvalidFeatures
	InvalidFeaturesB	Display of features with unrecognised feature class or display of features for which available or not available attribute(s) causes special presentation.	InvalidFeatures PowerUP
	InvalidFeaturesPickA	Display of pick report information for features with unknown feature class.	InvalidFeatures
	InvalidFeaturesPickB	Display of pick report information for features with unknown feature class.	InvalidFeatures
	InvalidFeaturesPickC	Display of pick report information for known features which have unknown attribute(s).	InvalidFeatures
	InvalidFeaturesPickD	Display of pick report information for known features for which available or not available attribute(s) cause special presentation.	InvalidFeatures

6. Independent Mariner Selections (Context Parameters?)

Independent Mariner Selections	SimplifiedSymbolsFalse	Display of features with simplified symbols turned off.	Settings
	SimplifiedSymbolsTrue	Display of features with simplified symbols	Settings
	PlainBoundaries	Display of all features with plain boundaries	Settings
	SymbolisedBoundaries	Portrayal of features with symbolised boundaries	Settings
	DateDependentFeatures1	Display of date dependent features, current date. (DateStart and DateEnd)	Settings
	DateDependentFeatures2	Display of date dependent features, set date. (DateStart and DateEnd)	Settings
	DateDependentFeatures3	Display of date dependent features, date range. (DateStart and DateEnd)	Settings
	DateDependentFeatures4	Route checking of date dependent features, date range. (DateStart and DateEnd)	Settings
	PeriodicDateRange1	Display of date dependent features, current date. (Periodic Date Range)	Settings
	PeriodicDateRange2	Display of date dependent features, set date. (Periodic Date Range)	Settings
	PeriodicDateRange3	Display of date dependent features, date range. (Periodic Date Range)	Settings
	PeriodicDateRange4	Route checking of date dependent features, date range. (Periodic Date Range)	Settings
	FixedDateRange1	Display of date dependent features, current date. (Date Start and Date End)	Settings
	FixedDateRange2	Display of date dependent features, set date. (Fixed Date Range)	Settings
	FixedDateRange3	Display of date dependent features, date range. (Fixed Date Range)	Settings
	FixedDateRange4	Route checking of date dependent features, date range. (Periodic Date Range)	Settings
	SafetyContourDisplay1	Display of default safety contour	PowerUp
	SafetyContourDisplay2	Display of safety contour	PowerUp
	SafetyContourDisplay3	Display of Safety Contour and isolated dangers within the safe water enclosed by the ship's safety contour.	PowerUp
	SafetyContourDisplay4	Display of Safety Contour and isolated dangers within the safe water enclosed by the ship's Safety Contour using four shades for depth areas.	PowerUp

7. Mariner Selections (cont'd)

User Selected Safety Contour	UserSelectedSAfetyContour	Setting of user selected safety contour.	PowerUp
	SafetyDepth		PowerUp
	ShallowPattern	Display of shallow pattern.	PowerUp
	ContourLabels	Contour labels are an optional Mariners' selection. This test shall be performed, if the contour label option is provided.	PowerUp
	ColourPalettes1	Display of ENC in Day palette	PowerUp
	ColourPalettes2	Display of ENC in Dusk palette	PowerUp
	ColourPalettes3	Display of ENC in Night palette	PowerUp
	AdditionalInformation1	Display of additional chart information symbol (Information).	Settings
	AdditionalInformation2	Display of additional chart information symbol (Information).	Settings
	AdditionalInformation3	Display of additional chart information symbol (Information).	Settings
	ScaleMinimum	Disabling Scale Minimum using the Scale min context parameter	PowerUp
	FullLightLines	Disabling Full light lines using the Full light lines Mariner's Selection	PowerUp
	OtherLanguages	Selecting the display of text in other languages.	Settings
	LanguagePacks	Installation and pick report using Language Packs.	PowerUp
			LanguagePacks
	DifferentPriority	Different priority and different geometry	<u>DisplayPriorities1</u>

8. Mariner Selections (+Interoperability)

Interoperability	CorruptInteroperabilityCatalogue	Successful installation of an interoperability catalogue	CorruptInteroperabilityCatalogue
	UpdatedInteroperabilityCatalogue	Updating of an interoperability catalogue	UpdatedInteroperabilityCatalogue
	InteroperabilityCataloguePortrayal	Interoperability portrayal L1 and L2	InitialPowerUp
DisplayPriorities	SamePriority	Same priority and different geometry	DisplayPriorities1
	LineSuppression	Line suppression	DisplayPriorities1
	ManualUpdates	Manual updates	DisplayPriorities1
	TextDisplay1	Text display	DisplayPriorities1
	TextDisplay2	Text display	DisplayPriorities1
	TextDisplay3	Text display	DisplayPriorities1
	AreaBorders	Display of area borders	DisplayPriorities1
	UnknownSymbols	Display of unknown symbol	DisplayPriorities1
	BoundaryDisplay1		DisplayPriorities1
	BoundaryDisplay2		DisplayPriorities1
	BoundaryDisplay3		DisplayPriorities1
	ComplexPortrayal		DisplayPriorities1
	CentredSymbols1	Display of centred symbol in the centre of an area.	Settings
	CentredSymbols2	Display of centred symbols offset.	Settings
	CentredSymbols3	Display of centred symbols which conflict with the own ship symbol.	Settings
CentredSymbols4	Display of centred symbols when area is partially off screen.	Settings	
CentredSymbols5	Display of centred symbols within complex areas.	Settings	

9. Mariner Selections

Scale and Navigation Purpose			
	OverscaleIndication1	Overscale pattern display	PowerUp
	OverscaleIndication2	Display of overscale pattern.	PowerUp
	LargerScaleData	Indication of better (larger) scale data being available.	PowerUp
	ScaleBoundary	Boundaries between maximum display scales.	PowerUp
	DifferentScale1	Display of data from a smaller scale to completely cover the display.	PowerUp
	OverlappingData	Display of overlapping data.	Overlap ScaleMinimum
	GraphicalIndex	Display of graphical index of cell boundaries.	PowerUp
	DisplayScaleChange	Change of display scale by chart scale values and by increments of displayed range values in nautical miles.	PowerUp
	ScaleMinimum	Impact of ScaleMinimum values on display of charted objects.	ScaleMinimum
	MarinersFeatures	The display of Mariners' Features.	PowerUp
	WaterLevelAdjustment	Enabling WLA in partial and complete areas of S-102, S-104	PowerUp
	AdjustmentOfDepthValues	Adjustment of water level values in features	PowerUp
	WLAFeatureInformation	interrogation of features with adjusted water level	PowerUp
	WLATimePeriod	WLA over a time period instead of at an instant	PowerUp
	IncompatibleDatums	Successful rejection of WLA data on incompatible datums	PowerUp WLAInvalid
	WLAPlanning1	Using WLA for planning over a route (invalid and valid time period)	PowerUp
	PolarData1	Display of Polar Data	PolarData
	PolarData2	Display of Polar Data	PolarData

10. Mariner Selections.

Chart Related Functions

Mode and Orientation

ModeOrientation1	Display of the north arrow symbol.	PowerUp
ModeOrientation2	True motion operation.	PowerUp
ModeOrientation3	Manual adjustment of chart display area and own ship position.	PowerUp
NoDataAvailable	No ENC data available.	PowerUp
NonNorthUp	Display in non 'north-up' orientation.	PowerUp
ScaleBar	Display of scale bar at appropriate scales.	PowerUp
LatitudeBar	Display of latitude bar at appropriate scales.	PowerUp

Feature Information

FeatureInformation1	General rules for cursor pick report	PowerUp
FeatureInformation2	Pick report descriptions and sorting	PowerUp
FeatureInformation3	User defined cursor pick parameters, if available	PowerUp
FeatureInformation4	Hover-over function for object information (optional)	PowerUp
FeatureInformation5	Presentation of unknown attributes	InvalidFeatures
TidalStreamPanelData	Display of tidal stream panels	PowerUp
SupplementaryFile2	Use of fileLocator attributes (from S-98). Can also do update	PowerUp
SupplementaryFile1	Display of supplementary text file.	PowerUp
PictorialRepresentation	Display of picture representation	PowerUp

11. Accuracy Tests.

Radar and Plotting Information	RadarOverlay	Display of Radar overlays with system database information.	PowerUp
Accuracy	Accuracy1	True distance and azimuth between two geographical positions a).	PowerUp
	Accuracy2	True distance and azimuth between two geographical positions b).	PowerUp
	Accuracy3	True distance and azimuth between two geographical positions c).	PowerUp
	Accuracy4	Geographical position from known position and distance/azimuth a).	PowerUp
	Accuracy5	Geographical position from known position and distance/azimuth b).	PowerUp
	Accuracy6	Geographical position from known position and distance/azimuth c).	PowerUp
	Accuracy7	Rhumb line distance and azimuth between two geographical positions a).	PowerUp
	Accuracy8	Rhumb line distance and azimuth between two geographical positions b).	PowerUp
	Accuracy9	Rhumb line distance and azimuth between two geographical positions c).	PowerUp
	Accuracy10	Geodesic lines and circle, northern quadrant.	PowerUp
	Accuracy11	Geodesic lines southern quadrant.	PowerUp
	Accuracy12	Rhumb lines, northern quadrant.	PowerUp
	Accuracy13	Rhumb lines, southern quadrant.	PowerUp
	Accuracy14		PowerUp
	GeodesicPlotting	correct rendering of geodesics in addition to loxodromes (subject to S101PT acceptance (v1.2))	GeodesicPlotting

12. Chart 1 etc...

Symbols	SymbolSize	Display of symbols in size shown in the IHO Presentation Library.	PowerUp
	ChartSymbols	Display of the check symbol of the correct size (in mm).	Chart1
	CheckSym	Display of the check symbol of the correct size (in pixels).	Chart1
	TextSize	Display of text within the chart display and pick report.	PowerUp
	Redraw	Display of text within the chart display and pick report.	PowerUp
	UnitsLegend	Display units and chart legend.	PowerUp
Other Chart Related Functionality	ChartOne	Portrayal and interrogation of Chart 1 (ENC)	Chart1?
	ChartOne2	Potrayal and interrogation of Chart 1 (other datasets)	Chart1?

13. Alerts and Indications.

Detection and Notification of Navigational Hazards	NavigationalHazards	All Navigational hazards (from PC alerts catalogue)	NavigationalHazards
	NavigationalHazardsLS	With Overview S-101 cell	NavigationalHazards NavigationalHazardsOverview
	NavigationalHazardsMon	Monitoring mode tests	NavigationalHazards
	NavigationalHazardsMonLS	Monitoring mode tests with overview S-101 cell	NavigationalHazards NavigationalHazardsOverview
Detection and Notification of Areas for which Special Conditions Exist	SpecialConditions	Special Conditions (from PC catalogue)	SpecialConditions
	SpecialConditionsLS	Special conditions with overview S-101 cell	SpecialConditions NavigationalHazardsOverview
	SpecialConditionsMon		SpecialConditions
	SpecialConditionsMonLS		SpecialConditions NavigationalHazardsOverview
Detection and Notification of the Safety Contour	SafetyContour		SafetyContour
	SafetyContourLS		SafetyContour NavigationalHazardsOverview
	SafetyContourWLA	Safety Contour dataset with Area of S-104/S-102 and Use of WLA and its effect on safety contour portrayal. Valid and Invalid time points and periods.	SafetyContour
	SafetyContourMon SafetyContourMonLS		SafetyContour SafetyContour NavigationalHazardsOverview

14. Dual Fuel Mode 1

Dual fuel - Chart Loading and Update	DualFuelSimple	Basic DF mode loading	DualFuelSimple
	DualFuelSimpleUpdate	updating of a DF exchange set	DualFuelSimple DualFuelSimpleUpdate
	DualFuelPreference	Install - successful preference for S-101 over S-57	DualFuelPreference
	DualFuelUpdate	Updating DF exchange set (substituting S-101 for S-57)	DualFuelInitial DualFuelUpdate
	DualFuelDisplay	Dual Fuel Portrayal (side by side and vertical), Multiple datasets from cartographic and polar. Also includes other products	DualFuelInitial
	DualFuelFeatureInformation	Integrated interrogation under DF mode	DualFuelInitial
Detection and Notification of Navigational Hazards	NavigationalHazardsDF	Side by side DF mode portrayal Nav hazards with routes over all features	DualFuelNavigationalHazards
	NavigationalHazardsDFLS	Correct processing of LS data - S-101/S-57 small scale	DualFuelNavigationalHazards DualFuelNavigationalHazardsOverview
	NavigationalHazardsDFMon	DF datasets used in monitoring mode	DualFuelNavigationalHazards
	NavigationalHazardsDFMonLS	Correct processing of LS data - S-101/S-57 small scale	DualFuelNavigationalHazards

15. Dual Fuel Mode 2

Detection and Notification of Areas for which Special Conditions Exist

SpecialConditionsDF

DF detection of Special Conditions

DualFuelSpecialConditions
DualFuelSpecialConditions
DualFuelNavigationalHazards0
view

SpecialConditionsDFLS

DF use of largest scale

DualFuelSpecialConditions
DualFuelSpecialConditions
DualFuelNavigationalHazards0
view

SpecialConditionsMonDF

DF Spacial Conditions Monitoring Mode

SpecialConditionsMonDFLS

DF Special Conditions Monitoring Mode, use of largest scale

DualFuelSpecialConditions
DualFuelSpecialConditions
DualFuelNavigationalHazards0
view

Detection and Notification of the Safety Contour

SafetyContourDF

DF depiction of safety Contour

DualFuelSafetyContour
DualFuelSafetyContour
DualFuelNavigationalHazards0
view

SafetyContourDFLS

DF depiction of safety Contour (use of largest scale)

SafetyContourDFWLA

DF Safety Contour including Water Level Adjustment (valid and invalid time points and periods)

DualFuelSafetyContour

SafetyContourDFMon

DF Safety Contour monitoring mode

DualFuelSafetyContour

SafetyContourDFMonLS

DF Safety Contour monitoring mode use of largest scale

DualFuelSafetyContour

SafetyContourDFMonLSWLA

DF Safety Contour including Water Level Adjustment in monitoring mode testing use of largest scale (S_101/S-57)

DualFuelSafetyContour
DualFuelNavigationalHazards0
view