

S-100 Data Management

SevenCs / ChartWorld a quick overview



SevenCs / ChartWorld a quick overview

- Founded in 1992 in Hamburg, Germany
- SevenCs belongs to ChartWorld
International group of companies
- Digital Chart Agent, ECDIS Manufacturer,
VAR, Chart distribution services
- Voyage planning solutions

=> Variety of Products and Services
related to ENC and ECDIS

Founded in 1992

150+ Employees

5 Office locations

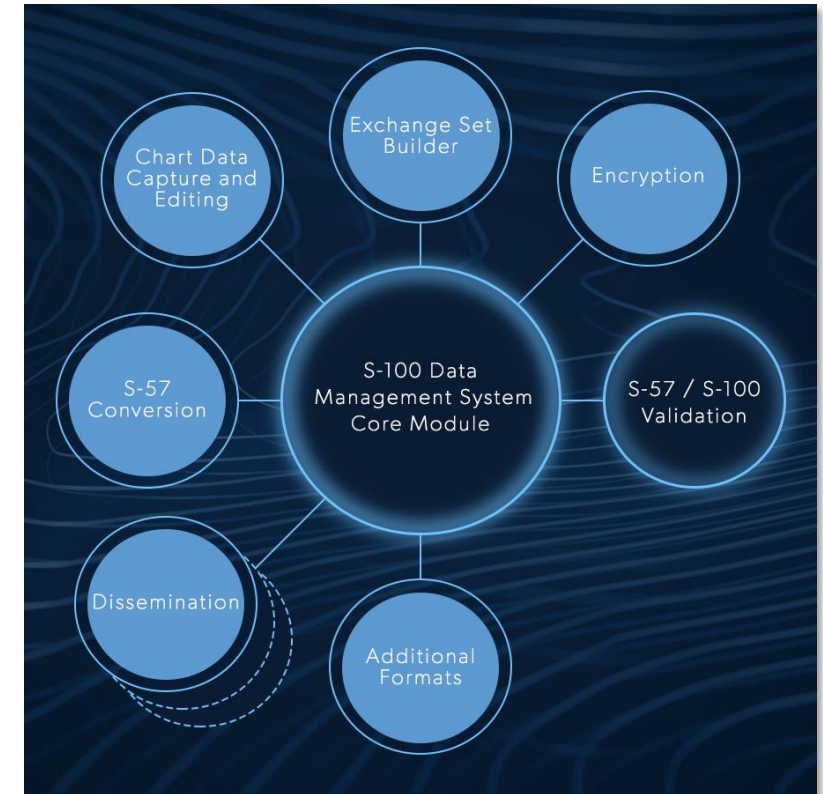
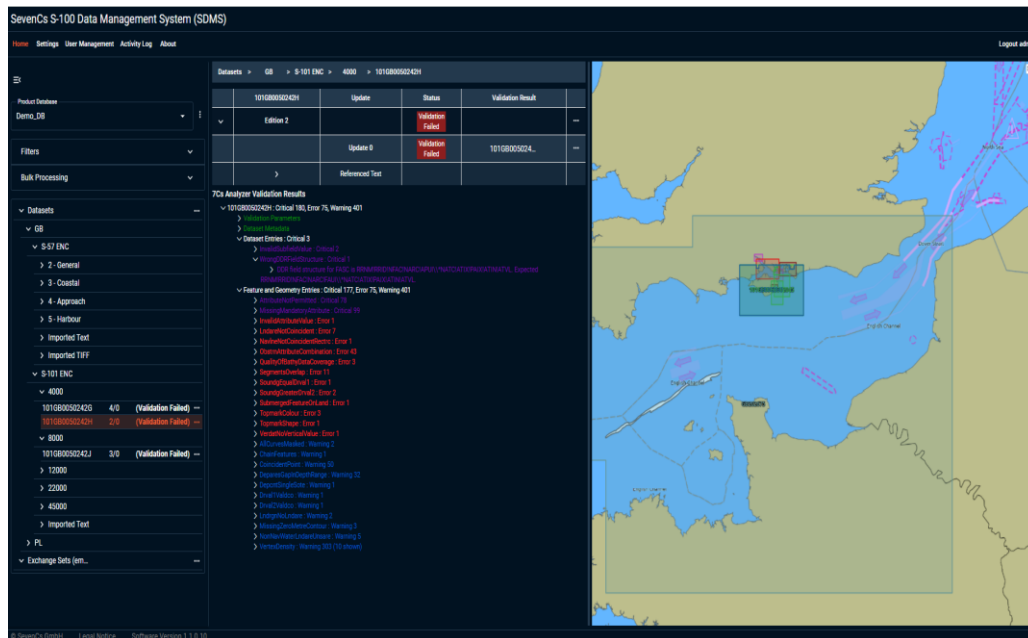


**S-100 Data Management
System - SDMS
what it is all about?**



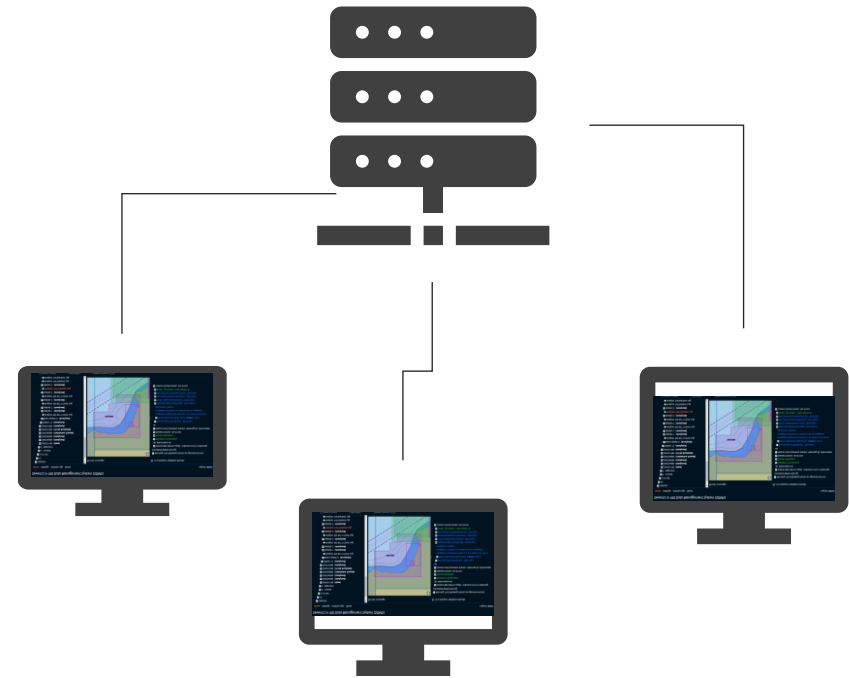
S-100 Data Management System

- The S-100 Data Management System (SDMS) is a modular, and scalable Management System for S-57 and S-100 Workflows

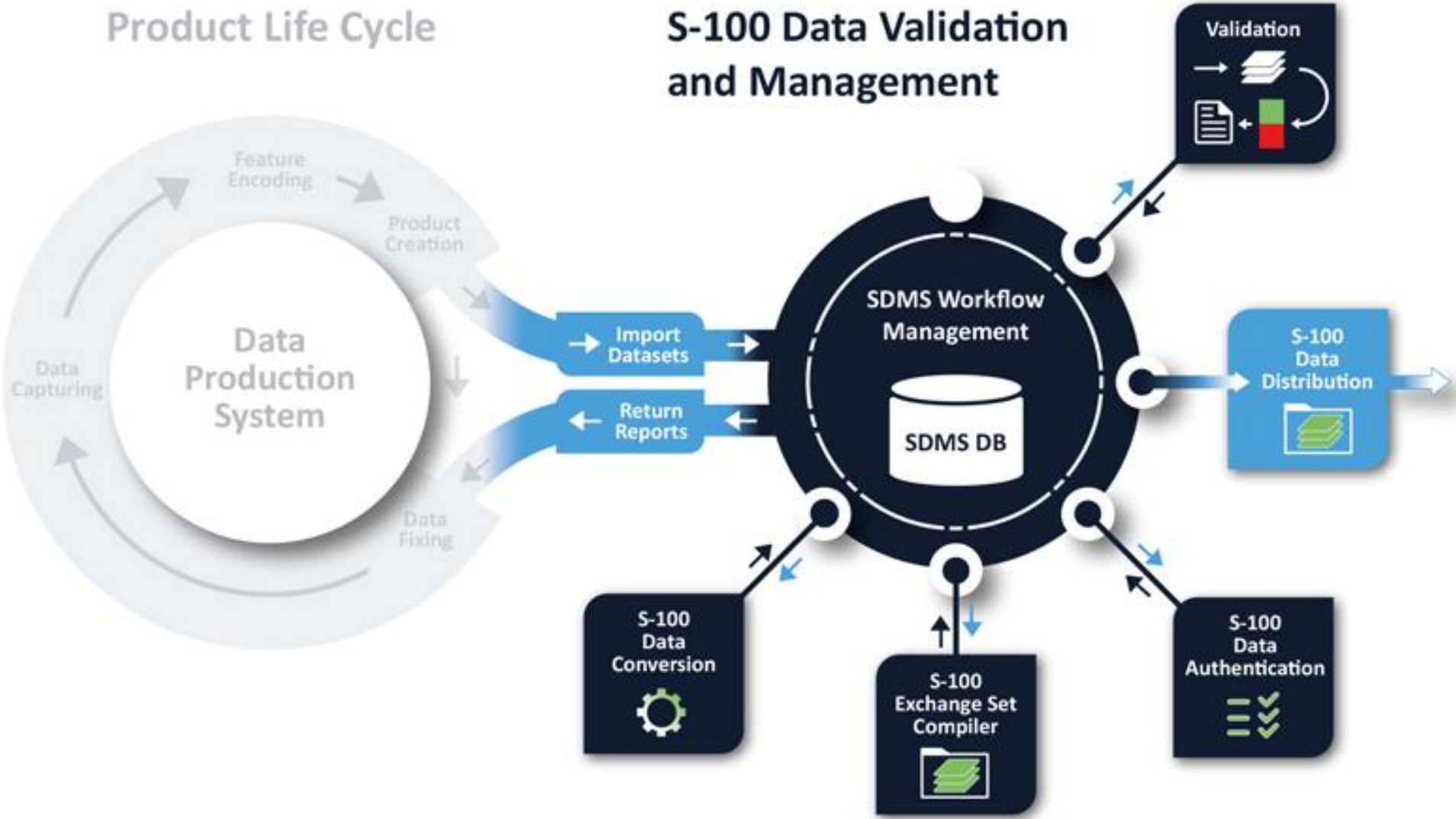


SDMS – main features

- focus on 'after-editing' processes and workflows
- works as client-server application
- single or multi-user operation
- physical or cloud-based environment
- or desktop solution
- self-deployed or hosted



SDMS position in the ENC production



S-100 Data Management System -GUI

SevenCs S-100 Data Management System (SDMS)

Home Settings User Management Activity Log About

Logout admin

Product Database
Demo_DB

Filters

Bulk Processing

▼ Datasets

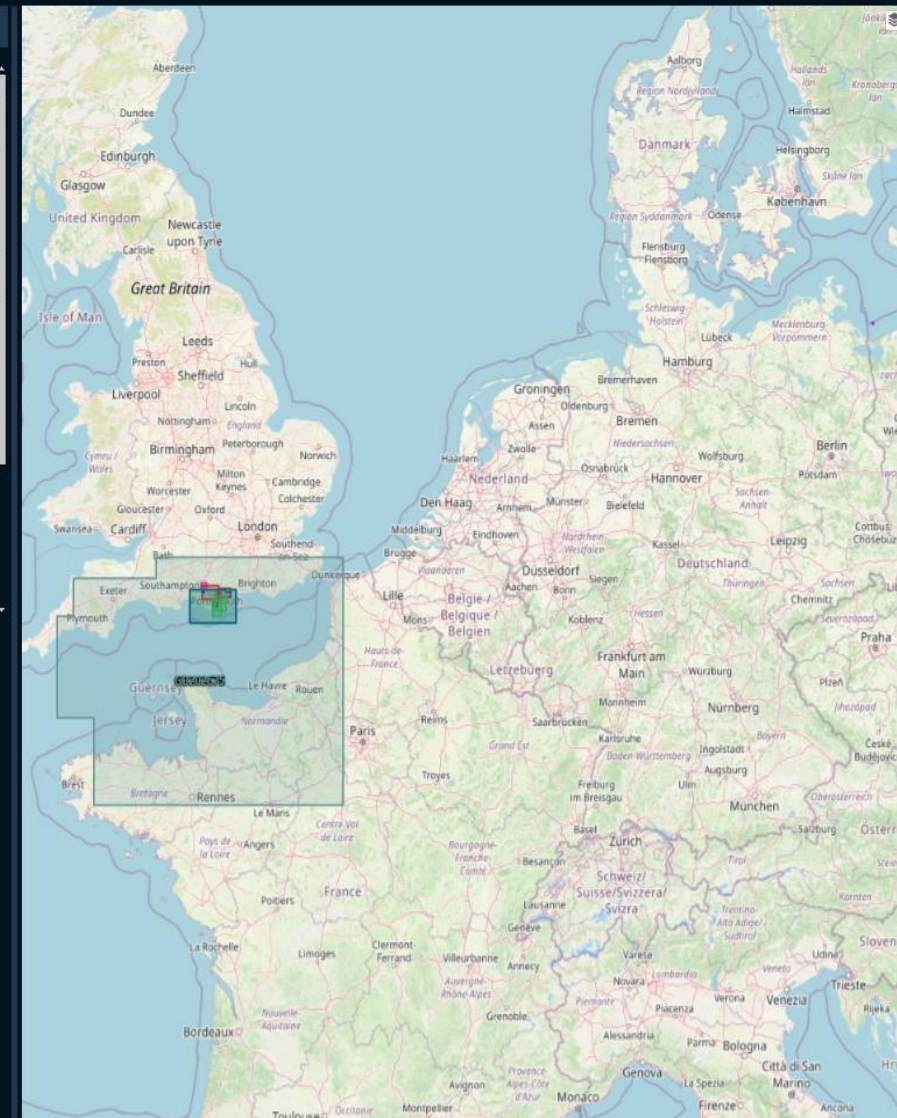
- ▼ GB
 - ▼ S-57 ENC
 - > 2 - General
 - > 3 - Coastal
 - > 4 - Approach
 - > 5 - Harbour
 - > Imported Text
 - > Imported TIFF
 - ▼ S-101 ENC
 - ▼ 4000
 - 101GB0050242G 4/0 (Validation Failed) ...
 - 101GB0050242H 2/0 (Validation Failed) ...
 - ▼ 8000
 - 101GB0050242J 3/0 (Validation Failed) ...
 - > 12000
 - > 22000
 - > 45000
 - > Imported Text
 - > PL
 - ▼ Exchange Sets (em...

Datasets > GB > S-101 ENC > 4000 > 101GB0050242G

	101GB0050242G	Update	Status	Validation Result
▼	Edition 4		Validation Failed	
		Update 0	Validation Failed	101GB005024...
		Referenced Text		
		101GB001A000...		
		101GB001A0007...	Missing	
		101GB001A0015...	Missing	
		101GB00A16XX...	Missing	
		101GB00G10BX...		
		101GB00G1DXX...	Missing	
		101GB00N0049...		
		101GB00N0049...		

7Cs Analyzer Validation Results

- ▼ 101GB0050242G : Critical 37, Error 9, Warning 30
 - > Validation Parameters
 - > Dataset Metadata
 - ▼ Dataset Entries : Critical 3
 - > InvalidSubfieldValue : Critical 2
 - ▼ WrongDORFieldStructure : Critical 1
 - > DOR field structure for FASC is RRNMIRRIDINFACINARCIPURV*NATCIATIXIPAIYATINATVL. Expected RRNMIRRIDINFACINARCIFALV*NATCIATIXIPAIYATINATVL.
 - ▼ Feature and Geometry Entries : Critical 34, Error 9, Warning 30
 - > AttributeNotPermitted : Critical 6
 - > MissingMandatoryAttribute : Critical 28
 - > NavlineNotCoincidentRectrc : Error 2
 - > ObstrnAttributeCombination : Error 7
 - > AllCurvesMasked : Warning 2
 - > CoincidentPoint : Warning 2
 - ▼ DeparedGapInDepthRange : Warning 4
 - > 120/132 There is a gap in the depth ranges between two bordering DepthArea areas.
 - > 120/541 There is a gap in the depth ranges between two bordering DepthArea areas.
 - > 120/544 There is a gap in the depth ranges between two bordering DepthArea areas.
 - > 120/693 There is a gap in the depth ranges between two bordering DepthArea areas.
 - > VertexDensity : Warning 22





Managing the validation process with SDMS

Managing the ENC validation process with SDMS

- Upload S-57 and /or S-101 ENCs and select datasets for validation

Datasets > GB > S-57 ENC > 2 - General > GB202675

	GB202675	Update	Status	Validation Result	
▼	Edition 26		New		...
		Update 0	New	GB202675.vld	
	>	Referenced Text			

Data Set Information
GB202675 Edition 26
Status: **New**
Issue date: **2023-11-10**
Compilation scale: **1 : 350000**
Bounding rectangle:
Lat: **48° 00' 00.00" N ; 51° 14' 47.27" N**
Lon: **004° 52' 00.00" W ; 001° 51' 57.01" E**
Navigational purpose: **2 - General**
Horizontal Coordinate Reference System: **World Geodetic System 1984**

Focus on Coverage
Download
Select For Validation
Delete
Download GB202675.vld
Download GB202675_vld.shp.zip

Managing the ENC validation process with SDMS

- Interaction with 7Cs Analyzer

(SDMS)

Datasets > GB > S-57 ENC > 2 - General > GB202675

	GB202675	Update	Status	Validation Result	
▼	Edition 26		To Be Analyzed		...
		Update 0	To Be Analyzed	GB202675.vld	
	>	Referenced Text			

Data Set Information
GB202675 Edition 26
Status: To Be Analyzed
Issue date: 2023-11-10
Compilation scale: 1 : 350000
Bounding rectangle:
Lat: 48° 00' 00.00" N ; 51° 14' 47.27" N
Lon: 004° 52' 00.00" W ; 001° 51' 57.01" E
Navigational purpose: 2 - General
Horizontal Coordinate Reference System: World Geodetic System 1984

Focus on Coverage
Download
Analyze (Desktop)
Analyze (Service)
Reset To New
Delete
Download GB202675.vld
Download GB202675_vld.shp

Validation Results

Results

- GB202675, Edition 26, Update 0 : Critical 1, Error 6, Warning 2453
 - Validation Parameters
 - Dataset Metadata
 - Dataset Entries : No Errors
 - Feature and Geometry Entries : Critical 1, Error 6, Warning 2453
 - ObstrMissingHeight : Critical 1
 - AttributeFormat : Error 2
 - LightsValnmrNoStructure : Error 1
 - FE/3965 (540,11831639,1) LIGHTS: Omnidirectional LIGHTS on land with VALNMR greater than 10 NM does not have an appropriate aid to navigation structure feature as master.
 - ObstrAttributeCombination : Error 1
 - SegmentsOverlap : Error 1
 - TseznNotCoincident : Error 1
 - AllCurvesMasked : Warning 7
 - AtonEquipmentNoMaster : Warning 71
 - CoincidentPoint : Warning 2
 - DeparesGapInDepthRange : Warning 451 (10 shown)
 - MissingTopmark : Warning 1
 - TSPanelValuesOrnt : Warning 1
 - VertexDensity : Warning 1919 (10 shown)
 - WrecksAttributeCombination : Warning 1



Managing the ENC validation process with SDMS

- Overview of validation status

SevenCs S-100 Data Management System (SDMS)

Home Settings User Management Activity Log About Logout admin

Product Database: Demo_DB

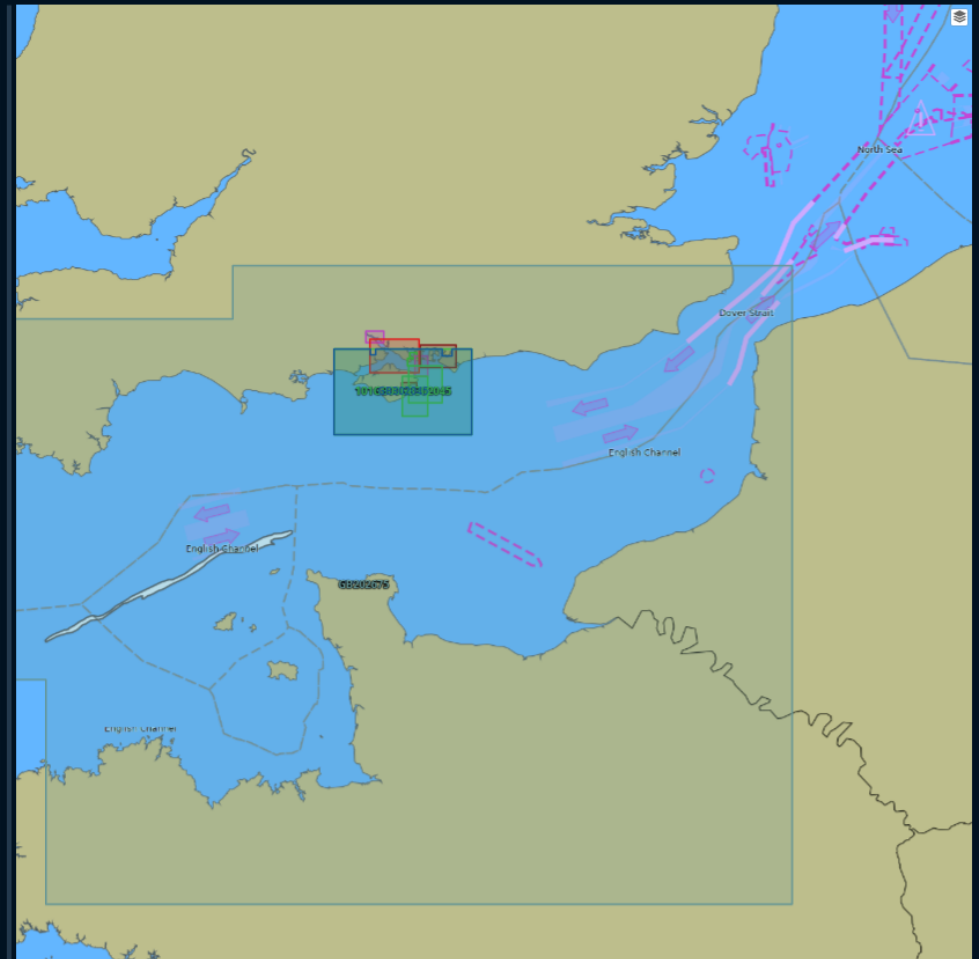
Filters Bulk Processing

Datasets > GB > S-101 ENC > 4000 > 101GB0050242H

101GB0050242H	Update	Status	Validation Result
Edition 2		Validation Failed	
	Update 0	Validation Failed	101GB005024...
	Referenced Text		

7Cs Analyzer Validation Results

- 101GB0050242H : Critical 180, Error 75, Warning 401
 - Validation Parameters
 - Dataset Metadata
 - Dataset Entries : Critical 3
 - invalidSubfieldValue : Critical 2
 - WrongDDRFieldStructure : Critical 1
 - DDR field structure for FASC is RRRNMRRID\FNACINARCIPAU*\NATCIATIXIPAIXIATINIATVL_Expected RRRNMRRID\FNACINARCIPAU*\NATCIATIXIPAIXIATINIATVL
 - Feature and Geometry Entries : Critical 177, Error 75, Warning 401
 - AttributeNotPermitted : Critical 78
 - MissingMandatoryAttribute : Critical 99
 - InvalidAttributeValue : Error 1
 - LndareNotCoincident : Error 7
 - NavlneNotCoincidentRectrc : Error 1
 - ObstrmAttributeCombination : Error 43
 - QualityOfBathyDataCoverage : Error 3
 - 100/357 DepthArea Bathymetric area is not fully covered by a QualityOfBathymetricData.
 - Categories:
 - Topology
 - Suggested Solution: Ensure that bathymetric area is fully covered by a QualityOfBathymetricData.
 - References:
 - S-58, Ed. 7.0.0, checks 505 and 549
 - 100/2912 DepthArea Bathymetric area is not fully covered by a QualityOfBathymetricData.
 - 100/3008 DepthArea Bathymetric area is not fully covered by a QualityOfBathymetricData.
 - SegmentsOverlap : Error 11
 - SoundgEqualDrval1 : Error 1
 - SoundgGreaterDrval2 : Error 2
 - SubmergedFeatureOnLand : Error 1
 - TopmarkColour : Error 3
 - TopmarkShape : Error 1
 - VerdatNoVerticalValue : Error 1
 - AllCurvesMasked : Warning 2
 - ChainFeatures : Warning 1
 - CoincidentPoint : Warning 50
 - DeparesGapInDepthRange : Warning 32
 - DeprcntSingleSote : Warning 1
 - Drval1Valdco : Warning 1
 - Drval2Valdco : Warning 1
 - LndrgrnNoLndare : Warning 2
 - MissingZeroMetreContour : Warning 3
 - NonNavWaterLndareUnsure : Warning 5





**Managing the validation
process of converted S-101 data
with SDMS**

Manage validation of converted S-101 data

- Review 7Cs Analyzer validation results of S-101 datasets

SevenCs S-100 Data Management System (SDMS)

Home Settings User Management Activity Log About Logout admin

Product Database: Demo_DB

Filters

Bulk Processing

Datasets

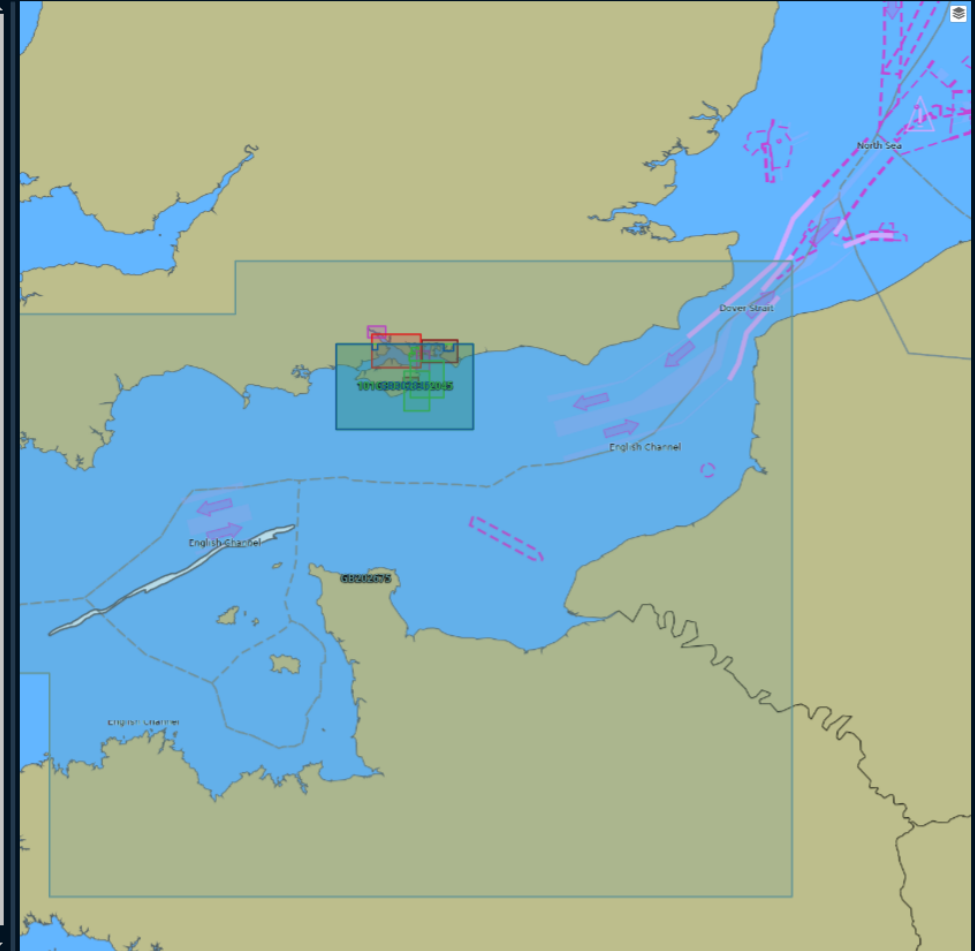
- GB
 - S-57 ENC
 - 2 - General
 - 3 - Coastal
 - 4 - Approach
 - 5 - Harbour
 - Imported Text
 - Imported TIFF
 - S-101 ENC
 - 4000
 - 101GB0050242G 4/0 (Validation Failed) ...
 - 101GB0050242H 2/0 (Validation Failed) ...
 - 8000
 - 101GB0050242J 3/0 (Validation Failed) ...
 - 12000
 - 22000
 - 45000
 - Imported Text
 - PL
 - Exchange Sets (em...)

Datasets > GB > S-101 ENC > 4000 > 101GB0050242H

	101GB0050242H	Update	Status	Validation Result	
▼	Edition 2		Validation Failed		...
		Update 0	Validation Failed	101GB005024...	...
		Referenced Text			

7Cs Analyzer Validation Results

- 101GB0050242H : Critical 180, Error 75, Warning 401
 - Validation Parameters
 - Dataset Metadata
 - Dataset Entries : Critical 3
 - InvalidSubfieldValue : Critical 2
 - WrongDDRFieldStructure : Critical 1
 - DDR field structure for FASC is RRNMIRRIDINFACINARCIAPIUW*NATCIATIXIPAIXIATINIATVL. Expected RRNMIRRIDINFACINARCIAPIUW*NATCIATIXIPAIXIATINIATVL
 - Feature and Geometry Entries : Critical 177, Error 75, Warning 401
 - AttributeNotPermitted : Critical 76
 - MissingMandatoryAttribute : Critical 99
 - InvalidAttributeValue : Error 1
 - LndareNotCoincident : Error 7
 - NavlineNotCoincidentRectro : Error 1
 - ObstrnAttributeCombination : Error 43
 - QualityOfBathyDataCoverage : Error 3
 - 100/357 DepthArea Bathymetric area is not fully covered by a QualityOfBathymetricData. Categories: Topology Suggested Solution: Ensure that bathymetric area is fully covered by a QualityOfBathymetricData. References: S-58, Ed. 7.0.0, checks 505 and 549
 - 100/2912 DepthArea Bathymetric area is not fully covered by a QualityOfBathymetricData.
 - 100/3008 DepthArea Bathymetric area is not fully covered by a QualityOfBathymetricData.
 - SegmentsOverlap : Error 11
 - SoundgEqualDrval1 : Error 1
 - SoundgGreaterDrval2 : Error 2
 - SubmergedFeatureOnLand : Error 1
 - TopmarkColour : Error 3
 - TopmarkShape : Error 1
 - VerdatNoVerticalValue : Error 1
 - AllCurvesMasked : Warning 2
 - ChainFeatures : Warning 1
 - CoincidentPoint : Warning 50
 - DeparesGapInDepthRange : Warning 32
 - DeportSingleSote : Warning 1
 - Drval1Valdoo : Warning 1
 - Drval2Valdoo : Warning 1
 - LndrgrNoLndare : Warning 2
 - MissingZeroMetreContour : Warning 3
 - NonNavWaterLndareUnsaare : Warning 5



Manage validation of converted S-101 data

- Overview of validation status of S-101 datasets

SevenCs S-100 Data Management System (SDMS)

Home Settings User Management Activity Log About Logout admin

Datasets > GB > S-57 ENC > 2 - General > GB202675

	GB202675	Update	Status	Validation Result	
▼	Edition 26		New		...
		Update 0	New	GB202675.vld	...
	>	Referenced Text			

Data Set Information
GB202675 Edition 26
Status: New
Issue date: 2023-11-10
Compilation scale: 1 : 350000
Bounding rectangle:
Lat: 48° 00' 00.00" N ; 51° 14' 47.27" N
Lon: 004° 52' 00.00" W ; 001° 51' 57.01" E
Navigational purpose: 2 - General
Horizontal Coordinate Reference System: World Geodetic System 1984

Product Database: Demo_DB

Filters

Bulk Processing

Datasets

- GB
 - S-57 ENC
 - 2 - General
 - GB202675 26/0 (New)**
 - 3 - Coastal
 - 4 - Approach
 - GB4DEVQK 3/0 (Analyzed)
 - 5 - Harbour
 - GB5DEVQG 1/2 (Analyzed)
 - Imported Text
 - Imported TIFF
 - S-101 ENC
 - 4000
 - 101GB0050242G 4/0 (Validation Failed)
 - 101GB0050242H 2/0 (Validation Failed)
 - 8000
 - 101GB0050242J 3/0 (Validation Failed)
 - 12000
 - 22000
 - 45000
 - Imported Text
 - PL

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SDMS News

SDMS News

- New improved Layout
- Data Filtering
- Bulk Processing
- Integration with 7Cs Analyzer Service API
- Integration with Caris Composer
- Support for IENCs and bENCs
- S-100 Data Signing
- S-100 Exchange Set Creation

SevenCs S-100 Data Management System (SDMS)

Home Settings User Management Activity Log About Logout admin

Datasets > US > S-57 ENC > 3 - Coastal > US3CA85M

US3CA85M	Update	Status	Validation Result
Edition 21		New	
	Update 0	Analyzed	
	Update 1	Analyzed	
	Update 2	Analyzed	
	Update 3	Analyzed	
	Update 4	Analyzed	
	Update 5	Analyzed	
	Update 6	Analyzed	
	Update 7	Analyzed	
	Update 8	Analyzed	

Product Database: NOAA ENCs CA

Filters (active)

- Filter Type: Usage, Operator: Equals, Usages: 3 - Coas...
- Filter Type: Status, Operator: Equals, Statuses: New

Bulk Processing

Datasets

- US
- S-57 ENC
 - 3 - Coastal
 - US3CA69M (New)
 - US3CA70M (New)
 - US3CA85M (New)
 - 4 - Approach
 - 5 - Harbour
 - Imported TIFF
 - Imported Text
 - Exchange Sets (empty)

Data Set Information

US3CA85M Edition 21

Status: New

Issue date: 2022-01-05

Compilation scale: 1 : 216116

Bounding rectangle:

Lat: 34° 12' 59.89" N; 96° 18' 59.90" W

Lon: 122° 17' 03.72" W; 120° 28' 03.52" W

Navigational purpose: 3 - Coastal

Horizontal Coordinate Reference System: World Geodetic System 1984

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SDMS News – New Improved Layout

SevenCs S-100 Data Management System (SDMS)

Home Settings User Management Activity Log About Logout admin

Product Database
NOAA ENC's CA

Filters (active)

- Filter Type: Usage, Operator: Equals, Usages: 3 - Coas...
- Filter Type: Status, Operator: Equals, Statuses: New

Bulk Processing

Datasets

- US
 - S-57 ENC
 - 3 - Coastal
 - US3CA69M (New)
 - US3CA70M (New)
 - US3CA85M (New)**
 - 4 - Approach
 - 5 - Harbour
 - Imported TIFF
 - Imported Text
 - Exchange Sets (empty)

Datasets > US > S-57 ENC > 3 - Coastal > US3CA85M

US3CA85M	Update	Status	Validation Result
Edition 21		New	
	Update 0	Analyzed	
	Update 1	Analyzed	
	Update 2	Analyzed	
	Update 3	Analyzed	
	Update 4	Analyzed	
	Update 5	Analyzed	
	Update 6	Analyzed	
	Update 7	Analyzed	
	Update 8	Analyzed	

Data Set Information
US3CA85M Edition 21
Status: New
Issue date: 2022-01-05
Compilation scale: 1 : 216116
Bounding rectangle:
Lat: 34° 12' 59.85" N ; 36° 18' 59.98" N
Lon: 122° 17' 03.72" W ; 120° 28' 03.53" W
Navigational purpose: 3 - Coastal
Horizontal Coordinate Reference System: World Geodetic System 1984

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SDMS News – Data Filtering

SevenCs S-100 Data Management System (SDMS)

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Product Database: FMK Demo

Filters (active)

- Filter Type: Usage, Operator: Equals, Usages: 3 - Coas...
- Filter Type: Status, Operator: Equals, Statuses: New
- Filter Type: Maximum..., Operator: Equals, Scales: Scales

Bulk Processing

Datasets

- 5W
- 7C
- US
 - S-57 ENC
 - S-101 ENC
 - 45000
 - 101US004CA46M (New)
 - 101US004CA60M (New)
 - 90000
- Exchange Sets (empty)

Datasets > US > S-101 ENC > 45000 > 101US004CA46M

101US004CA46M	Update	Status	Validation Result	Actions
Edition 7		New		...
Update 0		New		...
Referenced Text				
101US004CA46A.TXT		Missing	🚫	
101US004CA46B.TXT		Missing	🚫	
101US004CA46C.TXT		Missing	🚫	
101US004CA46D.TXT		Missing	🚫	
101US004CA46E.TXT		Missing	🚫	
101US004CA46F.TXT		Missing	🚫	

Data Set Information

101US004CA46M Edition 7

Status: New

Issue date:

Min scale: 1 : 90000

Max scale: 1 : 45000

Bounding rectangle:


Lat: 37° 44' 49.70" N ; 37° 57' 11.28" N

Lon: 121° 37' 14.91" W ; 121° 17' 22.23" W

Horizontal Coordinate Reference System: World Geodetic System 1984

The map displays a coastal region with a blue sea and a brownish-green landmass. A blue rectangular box highlights a specific area on the coast, labeled 'US3CA14M'. Within this box, there are red and purple lines indicating data boundaries or features. A green square box is located on the landmass to the right of the highlighted area.

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SDMS News – Bulk Processing

SevenCs S-100 Data Management System (SDMS)

Home Settings User Management Activity Log About

Product Database
FMK Demo

Filters (active)

- Filter Type: Usage, Operator: Equals, Usages: 3 - Coas...
- Filter Type: Status, Operator: Equals, Statuses: New
- Filter Type: Maximu..., Operator: Equals, Scales: Scales

Bulk Processing

Bulk Action

- Pass Validation
- Fail Validation
- Download
- Delete
- Analyze (Desktop)
- Analyze (Service)

101US004CA60M (New)

> 90000

> Exchange Sets (empty)

Datasets > US > S-101 ENC > 45000 > 101US004CA46M

101US004CA46M	Update	Status	Validation Result	Actions
▼	Edition 7	New		...
	Update 0	New		...
▼	Referenced Text			
	101US004CA46A.TXT	Missing	🔴	
	101US004CA46B.TXT	Missing	🔴	
	101US004CA46C.TXT	Missing	🔴	
	101US004CA46D.TXT	Missing	🔴	
	101US004CA46E.TXT	Missing	🔴	
	101US004CA46F.TXT	Missing	🔴	

Data Set Information
101US004CA46M Edition 7
 Status: **New**
 Issue date:
 Min scale: 1 : 90000
 Max scale: 1 : 45000
 Bounding rectangle:
 Lat: 37° 44' 49.70" N ; 37° 57' 11.28" N
 Lon: 121° 37' 14.91" W ; 121° 17' 22.23" W
 Horizontal Coordinate Reference System: **World Geodetic System 1984**



SDMS News – Integration with 7Cs Analyzer Service

Datasets > US > S-101 ENC > 45000 > 101US004CA46M

101US004CA46M	Update	Status	Validation Result	Actions
▼ Edition 7		To Be Analyzed		...
	Update 0	To Be Analyzed		
>	Referenced Text			

Data Set Information
101US004CA46M Edition 7
Status: **New**
Issue date:
Min scale: **1 : 90000**
Max scale: **1 : 45000**
Bounding rectangle:
Lat: **37° 44' 49.70" N ; 37° 57' 11.28" N**
Lon: **121° 37' 14.91" W ; 121° 17' 22.23" W**
Horizontal Coordinate Reference System: **World Geodetic System 1984**

- Focus on Coverage
- Download
- Analyze (Desktop)
- Analyze (Service)
- Reset To New
- Delete


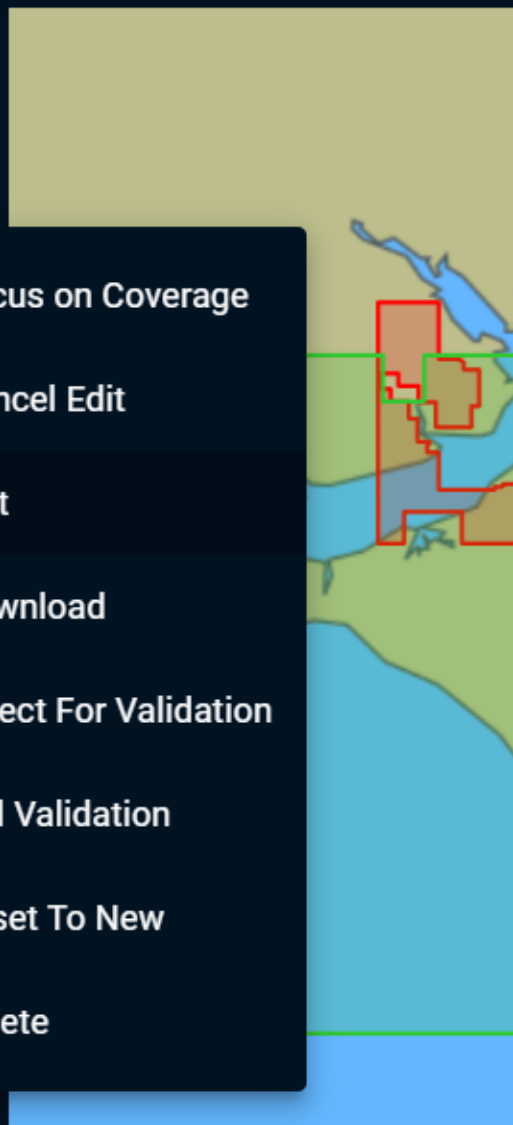
SDMS News – Integration with Caris Composer

Datasets > GB > S-101 ENC > 22000 > 101GB0040242B

	101GB0040242B	Update	Status	Validation Result
▼	Edition 2		To Be Edited	
		Base 0 ✓	Validation Passed	101GB004024...
	>	Referenced Text		

Data Set Information
101GB0040242B Edition 2
Status: **To Be Edited**
Issue date:
Min scale: **1 : 45000**
Max scale: **1 : 22000**
Bounding rectangle:
Lat: **50° 42' 54.97" N ; 50° 53' 01.98" N**
Lon: **001° 27' 21.61" W ; 001° 03' 59.30" W**
Horizontal Coordinate Reference System: **World Geodetic System 1984**
For Navigation: ✗
Is Copyrighted: ✓
Navigation Purpose: **1 - port**

- Focus on Coverage
- Cancel Edit
- Edit
- Download
- Select For Validation
- Fail Validation
- Reset To New
- Delete



SDMS News – Data Authentication (Signing)

SevenCs S-100 Data Management System (SDMS)

Home Settings User Management Activity Log About

Filter Type: Name Operator: Contains Name: GB

Bulk Processing
Bulk Action: Pass Validation

Datasets > GB > S-101 ENC > 22000 > 101GB0040242B

	101GB0040242B	Update	Status	Validation Result	
▼	Edition 2		Validation Passed		...
		Base 0 ✓	Validation Passed	101GB004024...	...
	>	Referenced Text			

Data Set File Information

Base Update 0 of data set 101GB0040242B

File name: 101GB0040242B.000

Status: Validation Passed

Description:

Update date: 2022-02-04

Imported at: 05/26/2024 08:00:41

Data Authentication: SIGNED at 05/26/2024 08:00:42

101GB0040242B 2/0 (Validation Passed)

> 45000

> Imported Text



SDMS News – Exchange Sets Creation for S-100 Datasets

SevenCs S-100 Data Management System (SDMS)

Home Settings User Management Activity Log About Logout admin

Exchange Set Properties

Name: ENC_ROOT_2024-05-26T08:23:49

Exchange Catalogue Description: CHC2024 Demo

Exchange Catalogue Comment: CHC2024 Demo

ADD SELECTED **SAVE**

Product Database: CHC2024

Filters (active): Filter Type: Name, Operator: Contains, Name: GB

Bulk Processing: Bulk Action: Pass Validation

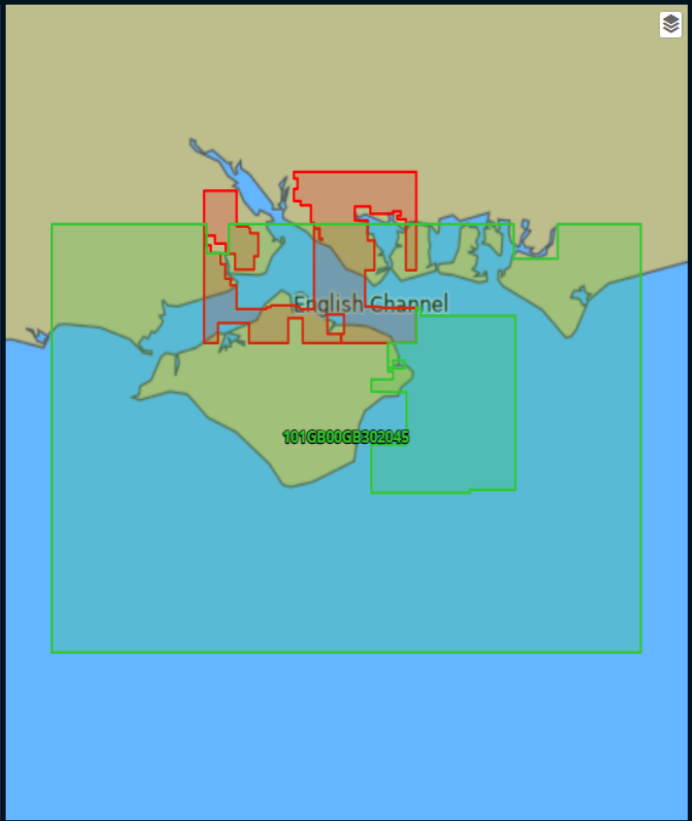
Datasets

GB

Unreferenced Files...

Datasets and Support Files

Category	Item	Action
Data Sets	45000	X
	101GB00GB302045	X
	101GB0040242C	X
22000	101GB0040242B	X
	Support Files	
	101GB00A25XXX.TXT	X
	101GR00G1AXXX.TXT	X



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Conversion Quality Assurance

- How to make sure that the S-57 to S-101 conversion went well and no data was lost during the process?
- The goal is to increase the conversion completeness confidence level
- Independent service for Conversion Completeness Quality Assurance (as part of SDMS)



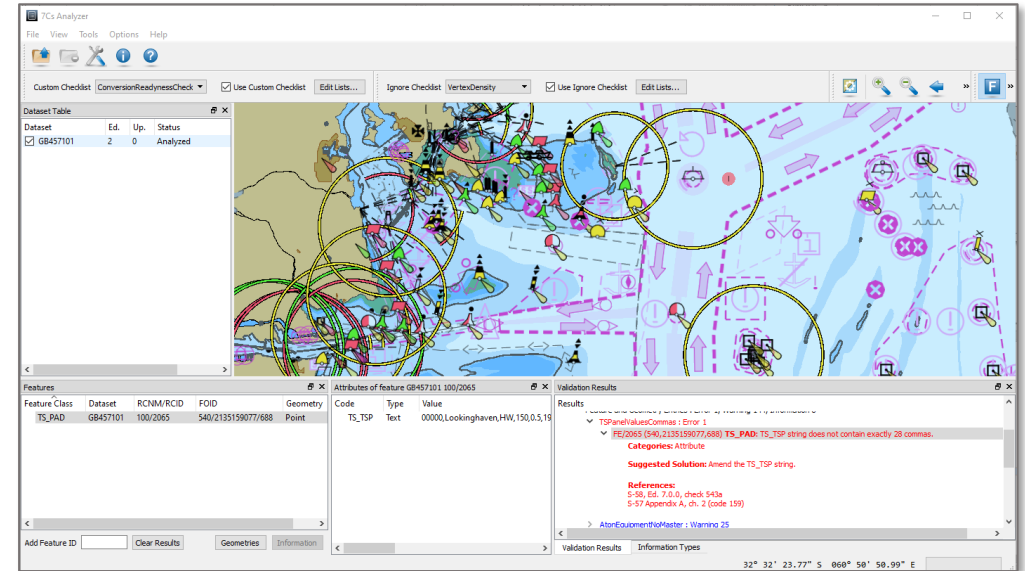
7Cs Analyzer



7Cs Analyzer for S-57/S-101 validation – latest updates

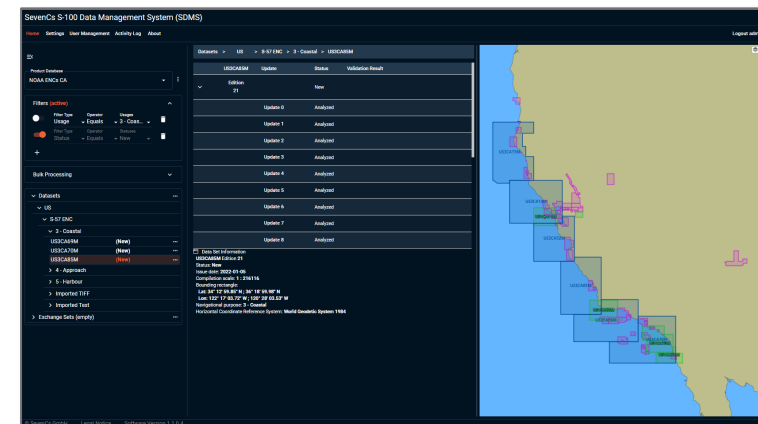
- Version 5.2.1 released in May 2023

- S-58 Edition 7.0.0
- S-101 1.1.0
- Integration with SevenCs S-100 Data Management System (SDMS)



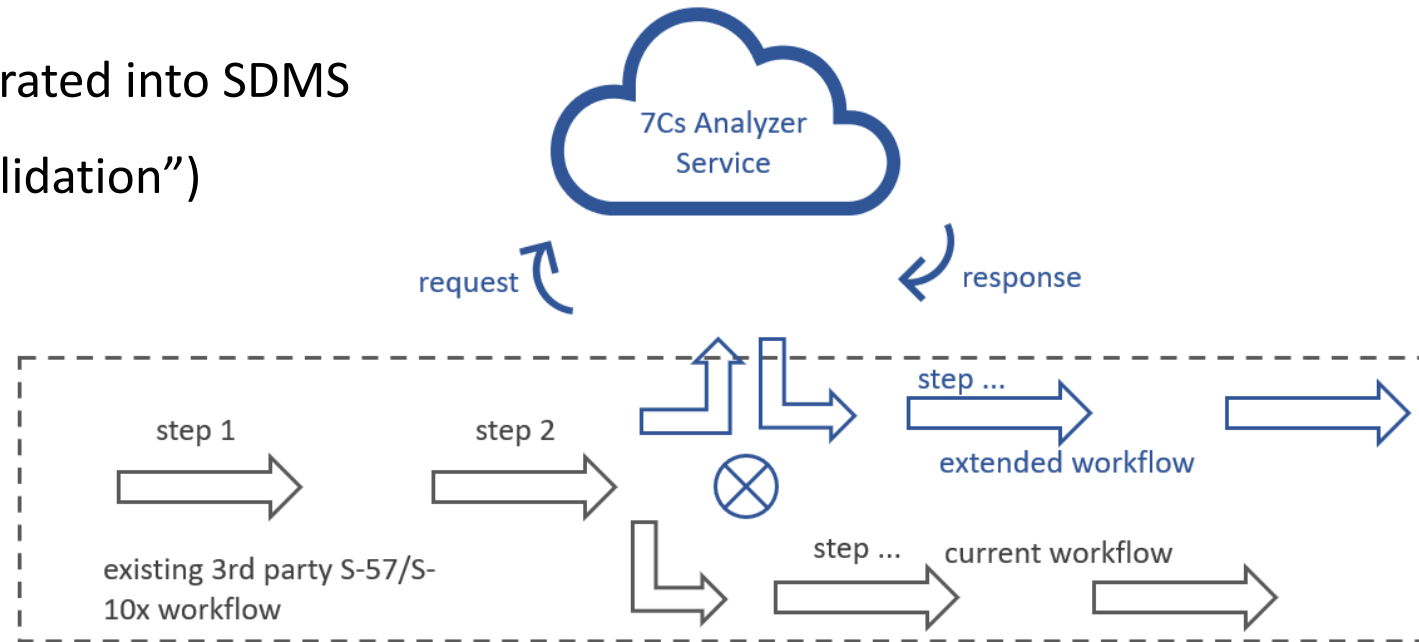
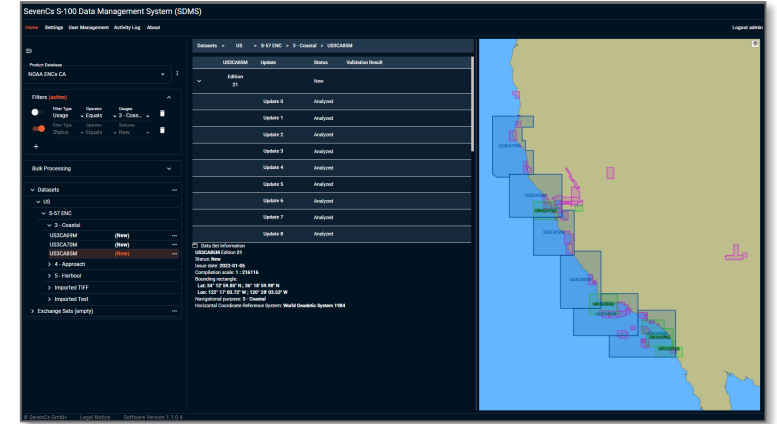
- Next release (Q2 2024)

- S-58 Edition 8.0.0
- Alignment of S-101 checks with official IHO checks (S-100/S-101)
- S-102 support



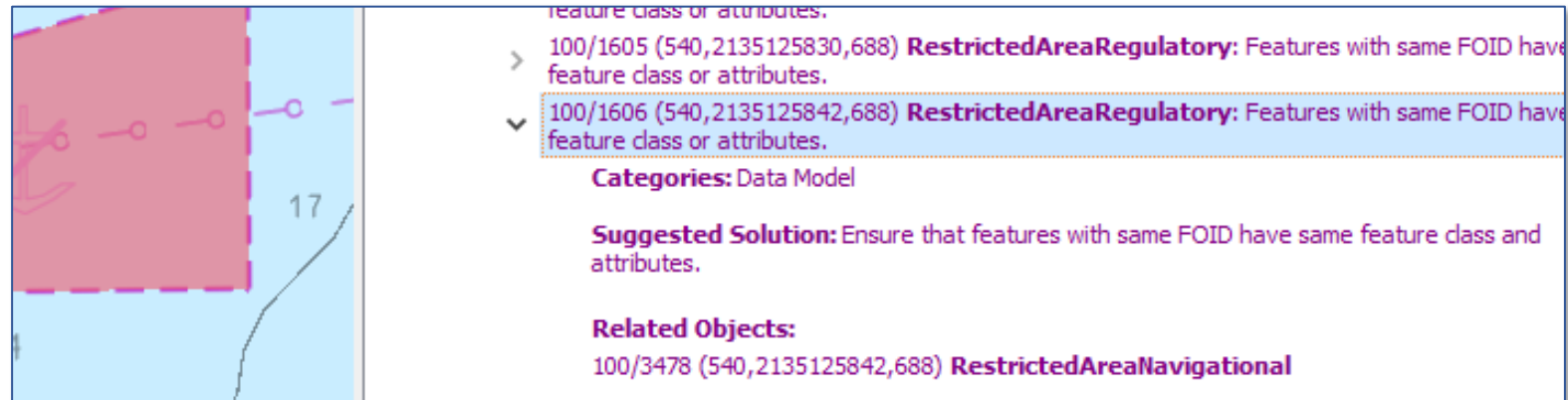
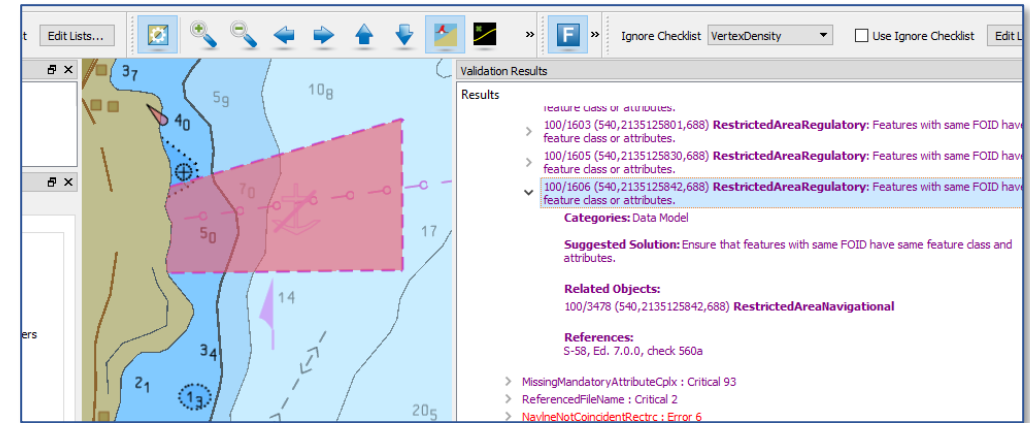
7Cs Analyzer Service API

- Release version has been completed
- Several trials have been set up to test the automation of the validation process
- Currently being integrated into SDMS (to support “silent validation”)



S-101 validation

- S-101 validation rules in progress
- 7Cs Analyzer uses S-101 checks as far as they have been defined already
- very useful to assess status of conversion results
- and a huge amount of derived S-58 checks
 - iso checks
 - geometry
 - valid feature types
 - valid attributes, values





Thank You