

## Status on Implementation of the S-100 Roadmap (U.S.)

2024

WORKING DRAFT

The IHO Roadmap for the S-100 Implementation Decade (2020-2023) Version 3 is the latest edition of the IHO's transition plan for harmonized production and dissemination of S-100 products and services (October 2023). Annex 2 provides the following timeline for the roll out of prioritized S-100 product specifications.<sup>1</sup>

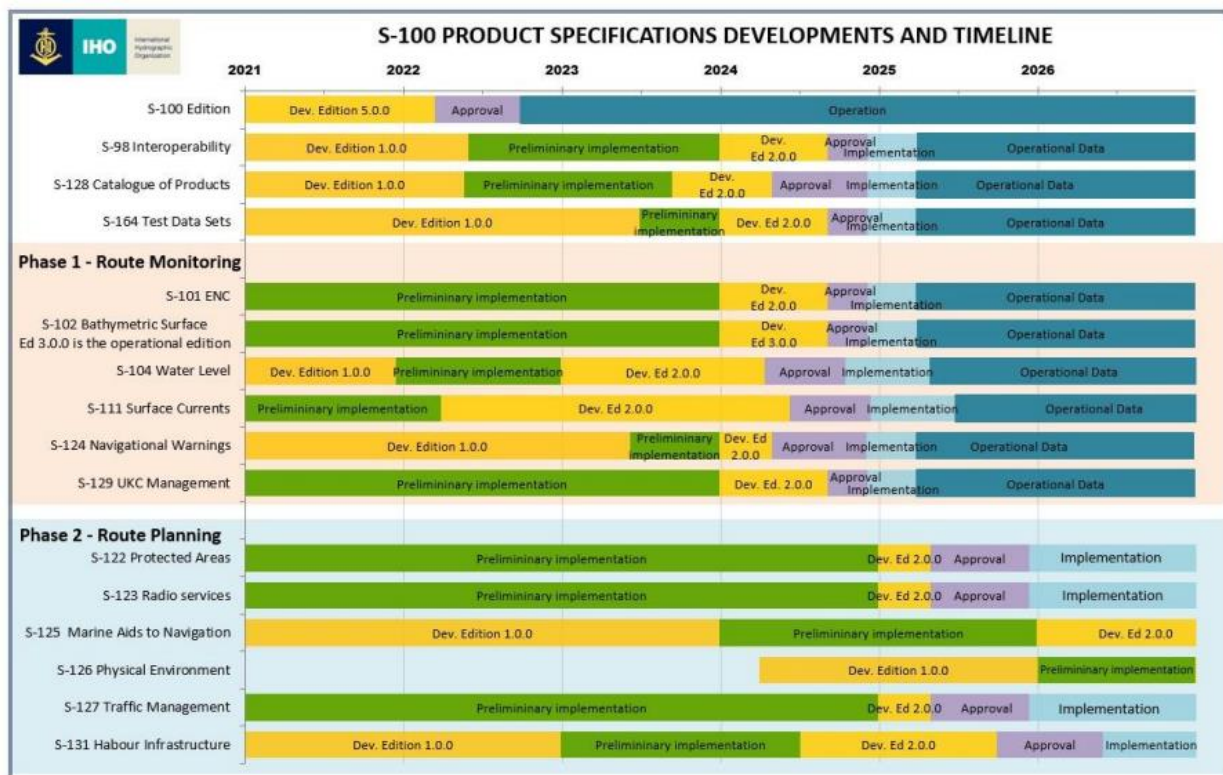


Figure 3 This S-100 timeline is updated: 9 July, 2023.

<sup>1</sup> Roadmap for the S-100 Implementation Decade (2020-2030) Version 3 is available at: <https://iho.int/en/s-100-implementation-strategy>

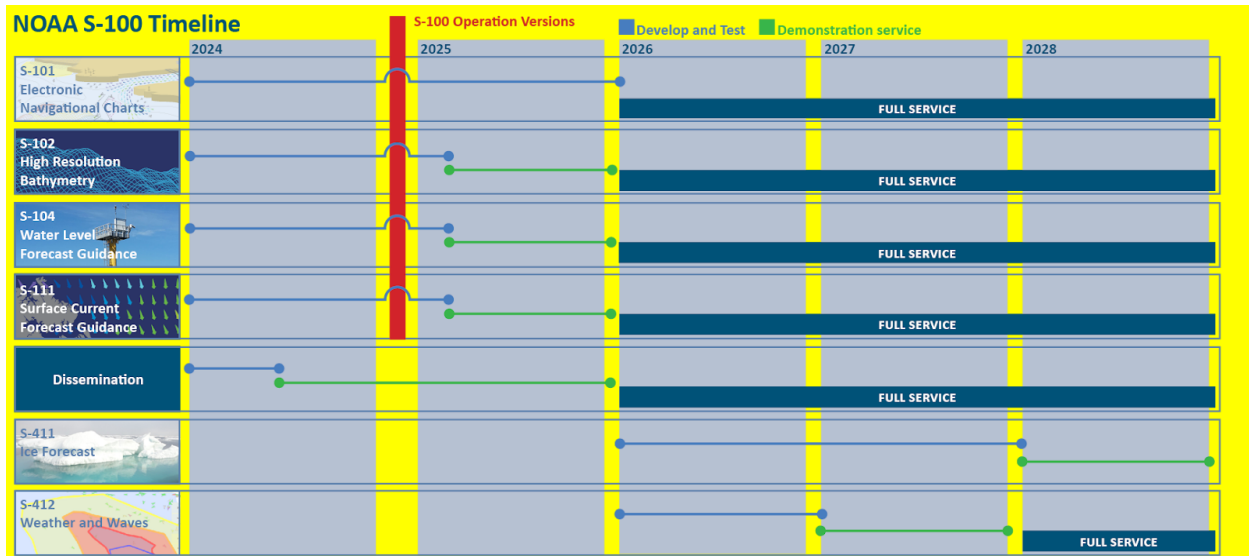
Within the U.S., Route Monitoring and Route Planning primary governmental agency stakeholders are the following.<sup>2</sup>

		Product Specification	Key Governmental Authority
	<a href="#">S-98</a>	Interoperability	
	<a href="#">S-128</a>	Catalogue of Products	
Route Monitoring Mode	<a href="#">S-101</a>	Electronic Navigational Chart	NOAA (OCS, NGS), USACE, USCG, NGA
	<a href="#">S-102</a>	Bathymetric Surface	NOAA (OCS), US Navy
	<a href="#">S-104</a>	Water Level Information	NOAA (OCS)
	<a href="#">S-111</a>	Surface Currents	NOAA (OCS)
	<a href="#">S-124</a>	Navigational Warnings	USCG, NGA, NOAA, USACE
	<a href="#">S-129</a>	Under Keel Clearance Management	NOAA (OCS)
Route Planning Mode	<a href="#">S-122</a>	Marine Protected Areas	NOAA (National MPA Center), U.S. Department of the Interior, State and Local governments
	<a href="#">S-123</a>	Radio Services	U.S. Coast Guard
	<a href="#">S-125</a>	Marine Aids to Navigation	
	<a href="#">S-126</a>	Physical Environment	
	<a href="#">S-127</a>	Traffic Management	
	<a href="#">S-131</a>	Harbor Infrastructure	

<sup>2</sup> For questions regarding U.S. S-100 services in areas where the U.S. serves as the Primary Chart Authority, please contact: [maritimeinternational@nga.mil](mailto:maritimeinternational@nga.mil)

## S-98 Interoperability

## S-128 Catalogue of Products



### S-101 Electronic Navigational Chart

- [Edition 1.1.0 \(April 2023\)](#) ([English](#))
- IHO Roadmap Operational Data Target: early 2025
- NOAA is working toward being ready to release our first S-101 ENC's in 2026, in accordance with the IMO timelines recently put forward by the Maritime Safety Committee's adoption of updated ECDIS performance standards to address S-100. We completed a detailed [S-101 transition plan](#), reviewing various S-57 to S-101 conversion options, ensuring that our existing S-57 ENC's are conversion-ready, and preparing updates to our Nautical Information System database to handle the S-101 schema. The local availability of S-101 ENC's will initially be focused on major U.S. ports.

*further information:*

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### S-102 Bathymetric Surface (High Resolution Bathymetry)

- [S-102 Edition 2.2.0 \(April 2023\)](#) ([English](#))
- IHO Roadmap Operational Data Target: early 2025
- NOAA is currently demonstrating prototype S-102 products for Los Angeles/Long Beach, New York/New Jersey, Boston, Charleston and Savannah. The release of Edition 3.0 will be required

before operational services are available. Edition 3.0 is expected at the end of 2024. NOAA will be tying its release of official S-102 data for navigation in conjunction with its S-101 build out.

*Further information:*

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### **S-104 Water Level Information**

- [S-104 Edition 1.1.0 \(March 2023\)](#)
- IHO Roadmap Operational Data Target: 2025
- NOAA is developing prototype S-104 water level forecast data using the Global Storm Surge and Tide Operational Forecast (STOFS) model. NOAA hopes to offer this data experimentally by spring 2025.

*Further information:*

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### **S-111 Surface Currents**

- [S-111 Edition 1.2.0 \(April 2023\)](#)
- IHO Roadmap Operational Data Target: 2025

- NOAA is testing prototype S-111 surface current data in many ports around the U.S. See [NowCOAST S-100 Coverage Viewer](#) for locations (click “S-100 Product Coverage” tab, zoom to area of interest and click on “yellow” areas).

*Further information:*

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### **S-124 Navigational Warnings**

- [S-124 Edition 1.0.0 \(May 2023\)](#)
- Edition 2.0.0. will likely be approved in 2025
- IHO Roadmap Operational Data Target: The HSSC report to IRCC13 had the operational target date of 2026
- NGA expects to begin development of a capability to create and start testing S-124 Edition 1.0.0 in 2024 for NAVAREA IV and XII, and expects to be able to provide operational data for these two areas in 2026.
- The U.S. and information providers in general are concerned with how to deliver S-124 data. The current terrestrial broadcast method, NAVTEX, cannot support S-124. Satellite systems (Inmarsat and Iridium) do not seem to have the bandwidth to support S-124 for the same number of navigational warnings broadcast today and would certainly not be able to absorb the 10-fold increase required to fill the gap from NAVTEX. There would also be a lengthy period of parallel operations, dramatically increasing the amount of broadcast data via today’s available and approved methods. Finally, there is not an approved method for an ECDIS to receive S-124 data, although using S-98 is being discussed.
- Responsibility for S-124 Navigational Warnings lies with NGA

*Further information:*

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### **S-129 Under Keel Clearance**

- [S-129 Edition 1.0.0 \(June 2019\)](#)
- IHO Roadmap Operational Data Target: early 2025
- S-129 Services is a function of an internal system that will display go-no go areas in a standardized manner. While NOAA S-100 products may be used in the calculation of S-129, NOAA will not be responsible for a S-129 service.

*Further information:* TBD

## **PHASE 2 PRODUCT DEVELOPMENT**

### **S-122 Marine Protected Areas**

- [S-122 Edition 1.0.0 \(January 2019\)](#)
- IHO Roadmap Operational Data Target: not specified
- The U.S. does have a recognized [national inventory](#) of Marine Protected Areas. The [National MPA Center](#) is a partnership between NOAA and the Department of the Interior<sup>3</sup>. S-122 is not part of the initial S-98 interoperability phase and is not ready for testing and implementation. The specification needs to be updated.
- NOAA Office of Coast Survey is reviewing the inventory of marine protected areas assembled by the [ProtectedSeas](#) Organization. NOAA OCS understands ProtectedSeas may have a role in the development of S-122.

*Further information:* TBD

### **S-123 Radio Services**

- [S-123 Edition 1.0.0 \(January 2019\)](#)
- IHO Roadmap Operational Data Target: not specified
- The U.S. Coast Guard has not started work to transition the Radio publication to S-123 and will wait until edition 2.0 is completed before they begin.

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### **S-125 Marine Aids to Navigation**

### **S-126 Physical Environment**

### **S-127 Traffic Management**

### **S-131 Harbour Infrastructure**

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<sup>3</sup> <https://marineprotectedareas.noaa.gov/>

## PHASE 2 PRODUCT DEVELOPMENT

### **S-411 Ice Information**

- [S-411 Edition 1.1.0 \(June 2014\)](#)
- IHO Roadmap Finalized Standard Target: 2026
- NOAA Fisheries, Oceans Canada and ECCCC are working to update standards to edition 5.0 or higher, Target 2026.

*Further information:*

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### **S-412 Marine Weather Warnings**

- [S-412 Edition 1.0.0](#)
- IHO Roadmap Finalized Standard Target: 2025
- Under development, WMO ET-MS to stand up an S-412 WG.

*Further information:*

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### **S-413 Wave and Weather Conditions**

- [S-413 Edition 1.0.0](#)
- IHO Roadmap Finalized Standard: 2026
- Under development, WMO ET-MS to stand up an S-413 WG.

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### **S-414 Wave and Weather Observations**

- [S-414 Edition 1.0.0](#)
- IHO Roadmap Finalized Standard Target: 2027
- Under development, WMO ET-MS to stand up an S-414 WG.

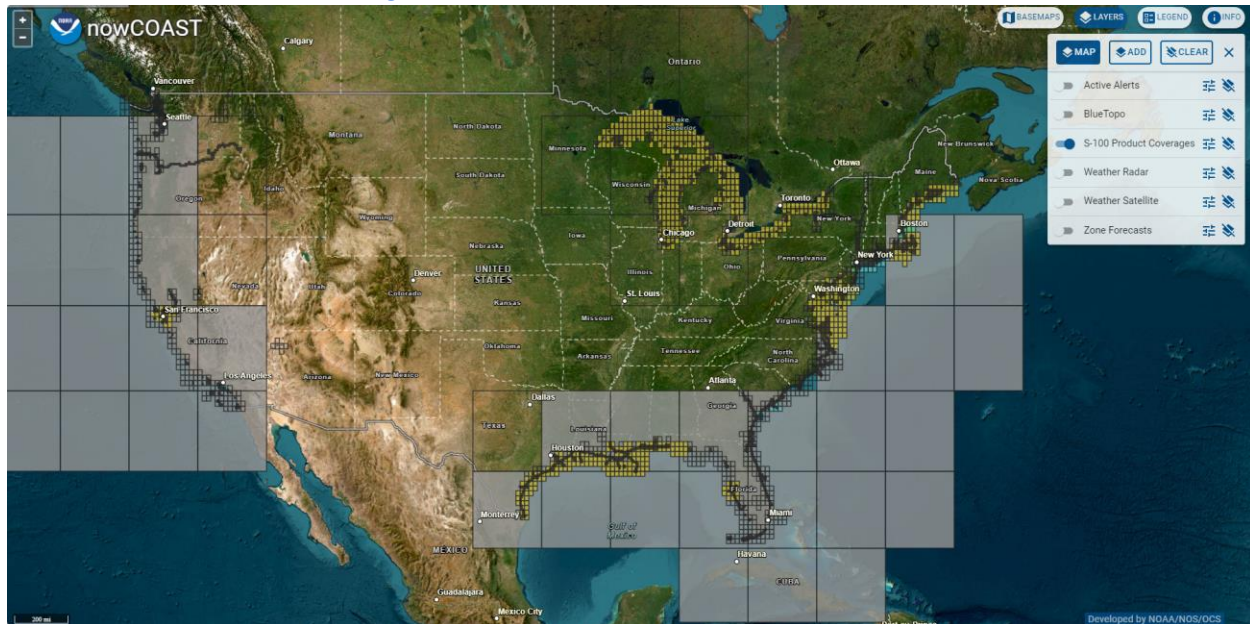
*Further information:*

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NOAA has developed a web based national display system for S-100 coverage. As new products are developed, they will be added to this display. This can be found at [www.nowcoast.noaa.gov](http://www.nowcoast.noaa.gov)

### [NOAA NowCOAST S-100 Coverage Viewer](#)



Click “S-100 Product Coverage” tab

### What has changed since last year (March 2023)?

- IHO Council has updated several planning documents related to S-100 implementation.
- The S-100 Product Coverage web map is available on-line at [www.nowcoast.noaa.gov](http://www.nowcoast.noaa.gov)
- Several Product Specifications have been updated (indicated above)
- The NOAA [Nautical Charting Plan](#) was released August 2023
- By December 2025, NOAA will cease producing traditional paper charts.
- No S-101 charts have been produced

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