



EfficienSea2 Conference:  
**GETTING CONNECTED  
TO THE FUTURE**

8-9 November 2016



This project has received funding from The European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement no. 636329



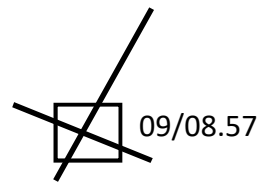
**EFFICIENSEA**  
2.0 GETTING CONNECTED

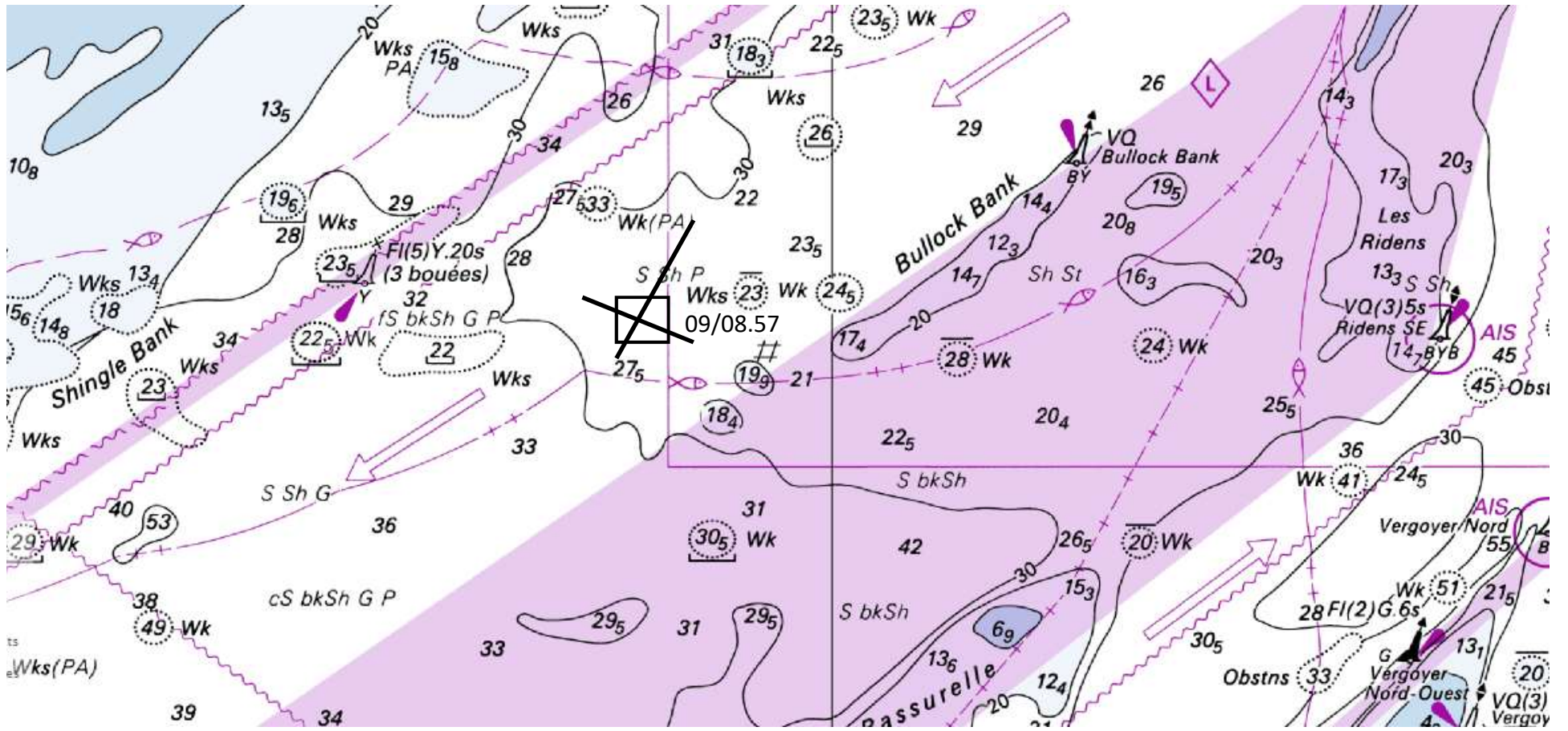
# SESSION 4: SMART NAVIGATION SERVICES – WITH BUSINESS VALUE

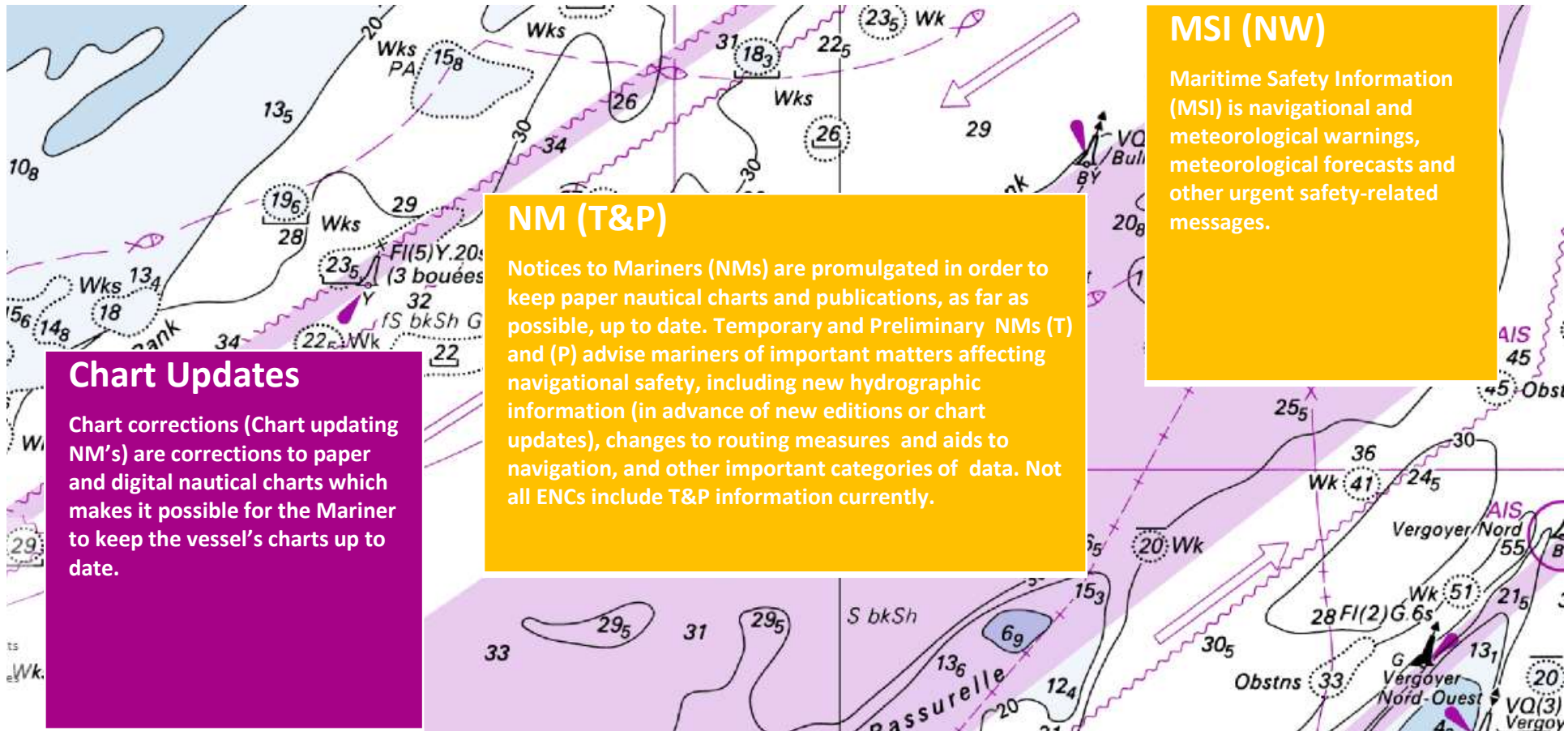
Charts services (basic data): Charts S-101 and updates,  
Navigational warnings & Notices to Mariners, and  
Bathymetry S-102

09-11-2016

Carsten Nørby and Mads Bentzen Billesø







### Chart Updates

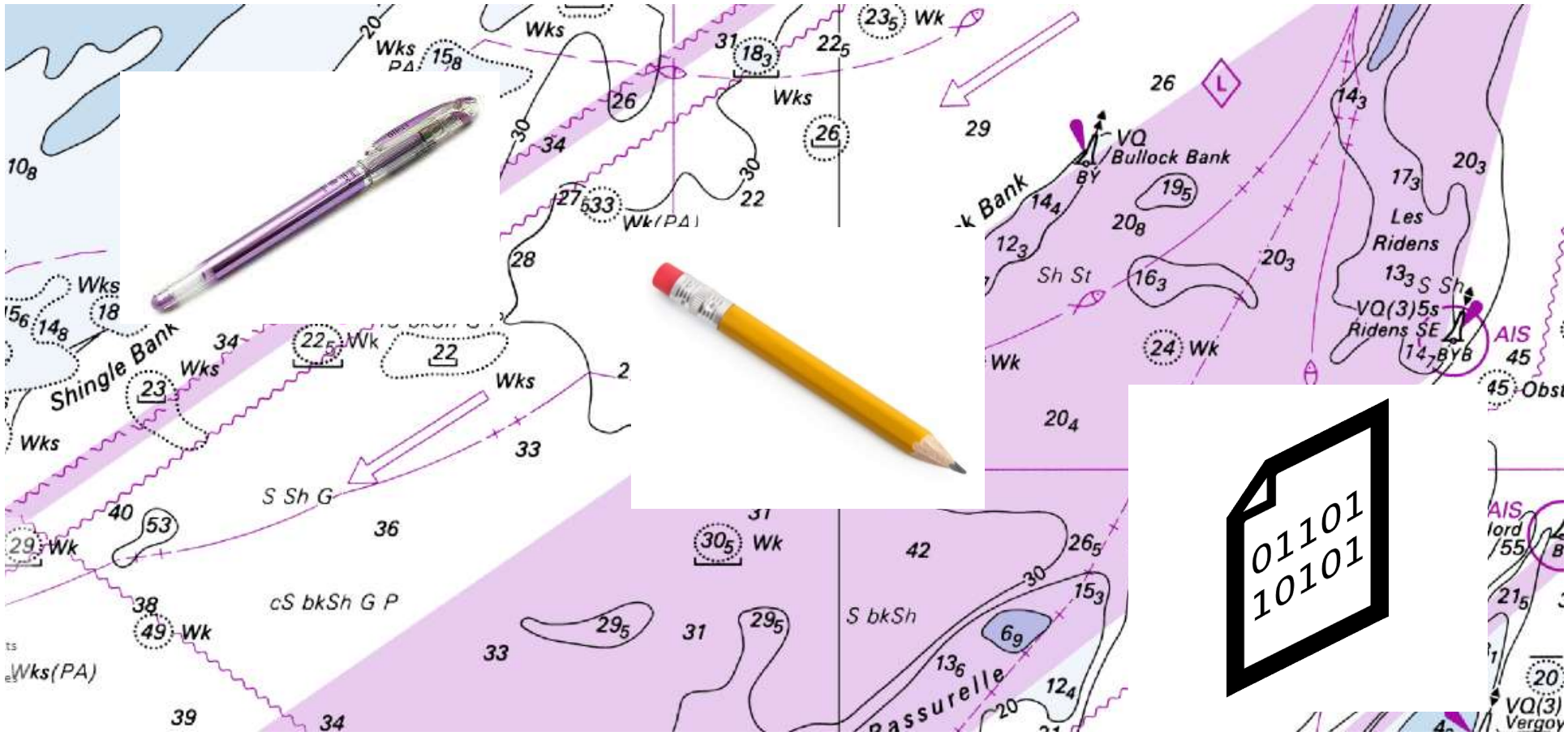
Chart corrections (Chart updating NM's) are corrections to paper and digital nautical charts which makes it possible for the Mariner to keep the vessel's charts up to date.

### NM (T&P)

Notices to Mariners (NMs) are promulgated in order to keep paper nautical charts and publications, as far as possible, up to date. Temporary and Preliminary NMs (T) and (P) advise mariners of important matters affecting navigational safety, including new hydrographic information (in advance of new editions or chart updates), changes to routing measures and aids to navigation, and other important categories of data. Not all ENC's include T&P information currently.

### MSI (NW)

Maritime Safety Information (MSI) is navigational and meteorological warnings, meteorological forecasts and other urgent safety-related messages.





**rocket brothers**

- Digital Map Solutions with **MAP TECH**

## **EfficienSea2**

1. S-101 Rendering
2. Maritime Cloud Integration
3. Demonstration App



# IHO S-100 Framework

- What is the S-100 Framework?
- What are the benefits of the S-100 Framework?





## What is the S-100 Framework?

- Set of tools for creating geographical standards.
- Feature model, Spatial primitives, Attribute types, Portrayal Catalogue.
- Pick and choose to create a standard, ex:
  - S-101 Sea Charts
  - S-102 Bathymetrics
  - S-124 Navigational Warnings



## **What are the benefits of the S-100 Framework?**

- Unified data model across standards
- Formal portrayal description (machine readable)



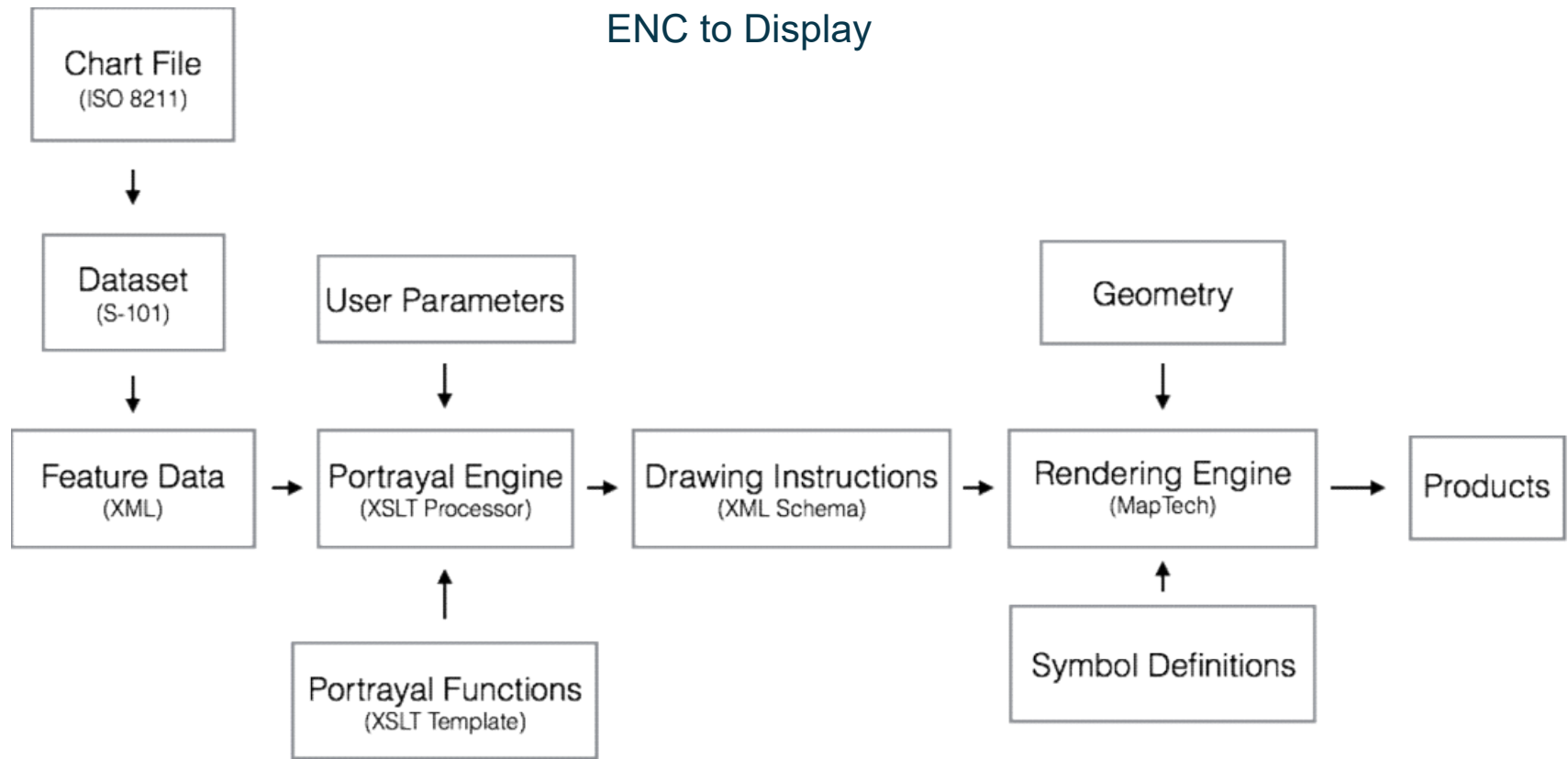
## What is S-101?

- ENC Product Specification (Chart data)
- Describes Features ex. Buoys, Lighthouses etc.
- Describes the actual portrayal of features.
- Compatible with S-57.



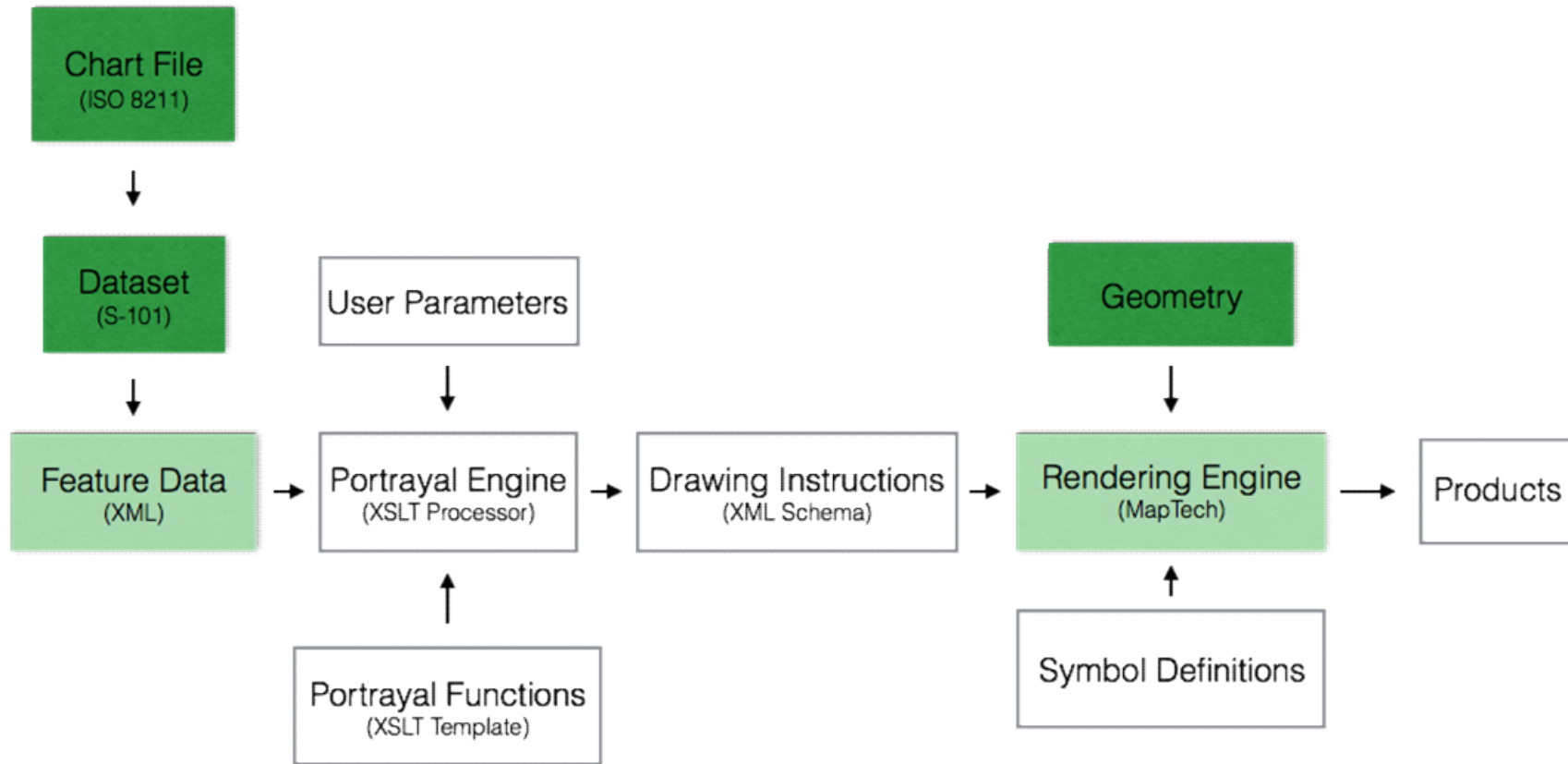
# The S-101 Challenge

## ENC to Display



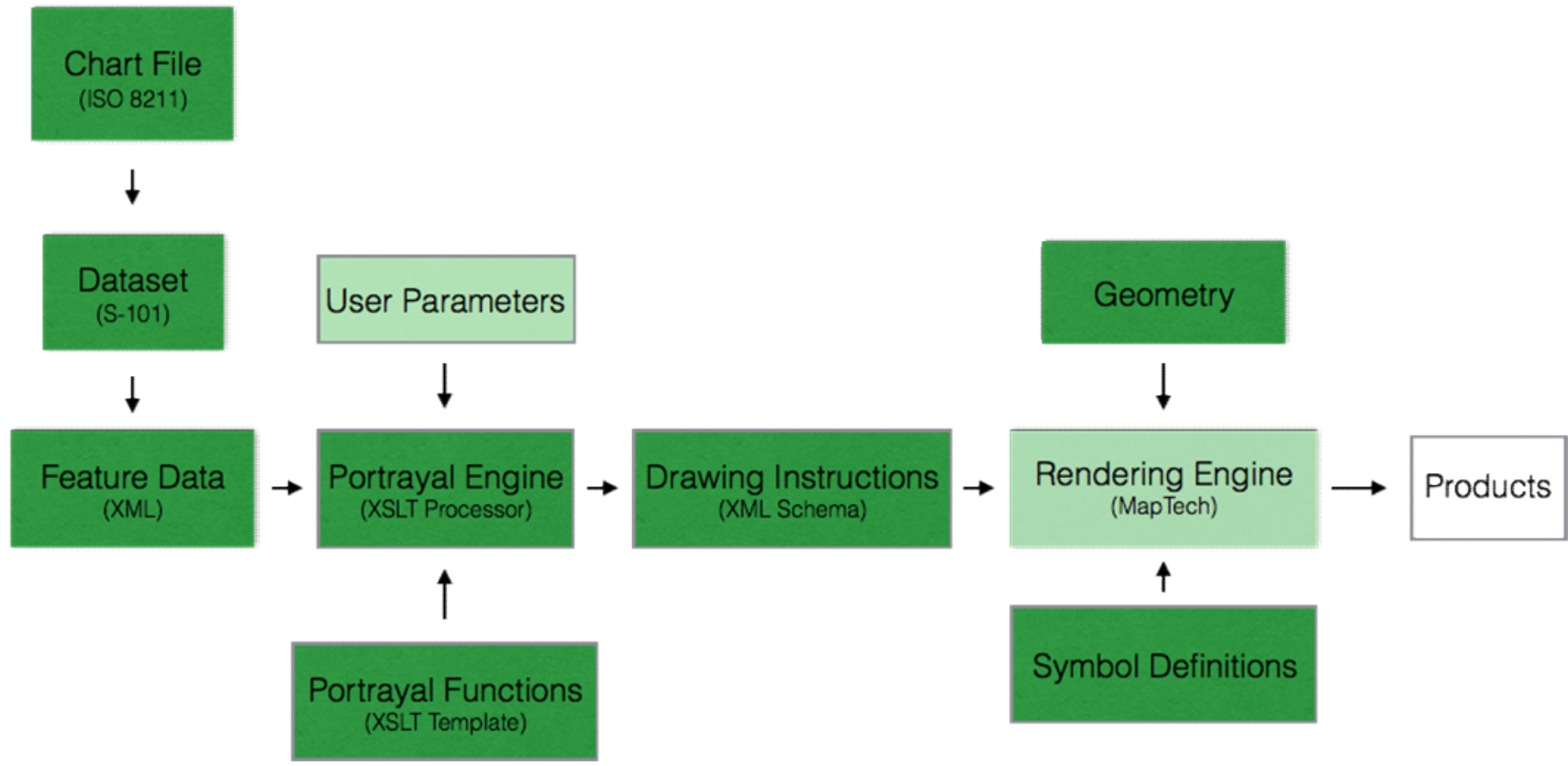


# Status May 2016





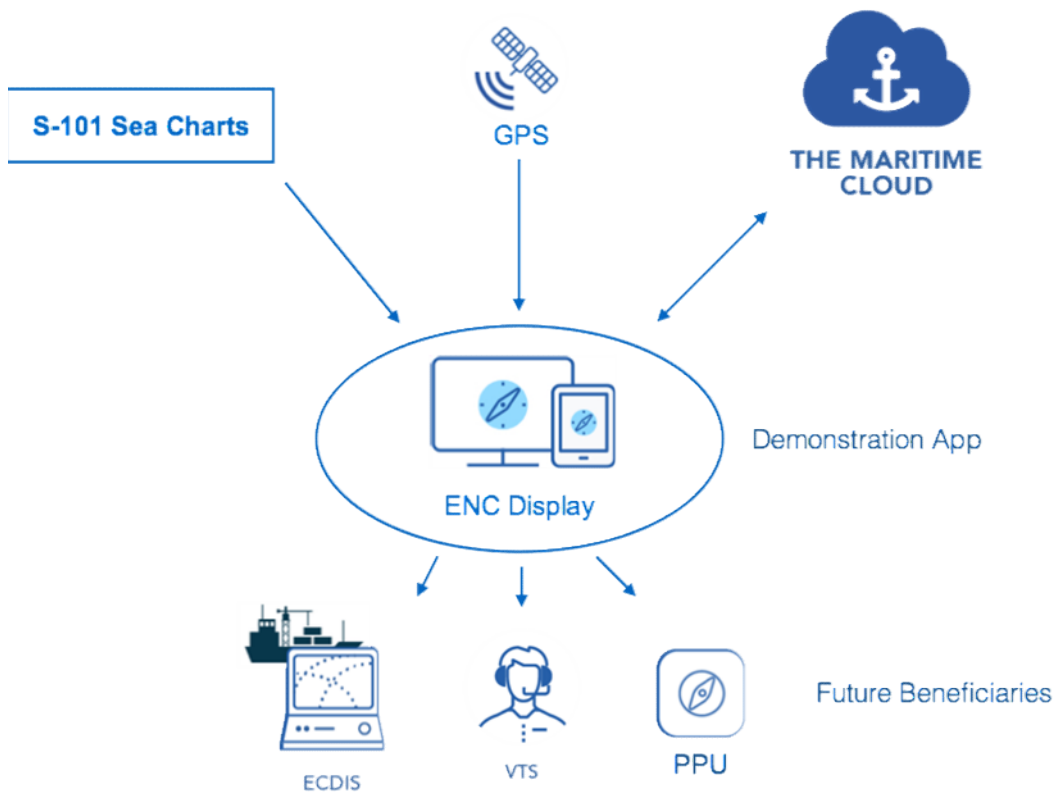
# Status November 2016







# Product





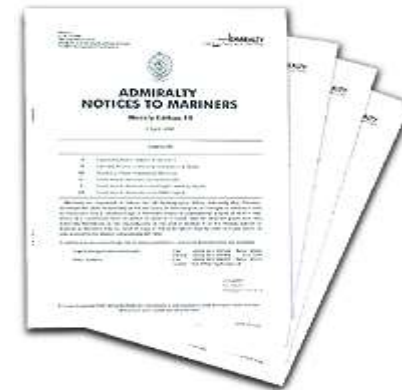


# IHO S-124 development – Tentative Schedule

Work Item	Date start	Date end	Comment
Define a work program			done
Review needs, gaps and requirements	Feb. 2014	Nov. 2014	done
Identify basic functions	Dec. 2014	Dec. 2015	Aboard functions have priority. In relation with WWNWS for the new ways of operations and the scenario of the transition. On going
Improve UML model	Feb. 2015	Dec. 2015	On going
Define the portrayal of the NW	Sep. 2015	Jul. 2016	
Tests	2015	2017	
Contribute to draft performances standards	2016	2017	
Enlarge as appropriate the membership and relationships	2014	2017	So that other projects feed us of their ideas and find a normative outlet in them works, to validate functions by actors, to feed other works of other bodies, to reach a consensus, ...
Reach a consensus (impact on stakeholders,...)	2016	2017	
Submit S124 for endorsement		2017	



# User friendly?



# Present and future context





**Thank you!**

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