MALLACA AND SINGAPORE STRAITS ENCs EVENTUAL IMPLEMENTATION OF S-100

MSS ENC COORDINATOR

5th S-100 WG MEETING, TAUNTON

3-6 MARCH 2020

MALLACA AND SINGAPORE STRAITS ENCs

- MALLACA AND SINGAPORE STRAITS ONE OF BUSIEST ROUTES IN THE WORLD;
- JOINT PRODUCTION LITORAL STATES (INDONESIA, MALAYSIA AND SINGAPORE) DISTRIBUTED BY JHA SINCE 2005, INDONESIA AS A COORDINATOR;
- REGULARLY MAINTAINED BY JOINT SURVEY (ENHANCING CATZOC, HD CONTOURS, SANDWAVES, ETC)

LONG DISCUSSION BETWEEN LITORAL STATES ON S-100 IMPLEMENTATION

S-100 IMPLEMENTATION DECADE

(Roadmap for the S-100 Implementation Decade 2020 – 2030, IHO SecGen at IHO Council C-3 Monaco Oct. 2019)

APPROVED PRODUCTION SPESIFICATIONS (HSSC)

Product ID	Name	Version
S-101	Electronic Navigational Chart	1.0.0
S-102	Bathymetric Surface for Navigation	2.0.0
S-111	Surface Currents	1.0.0
S-122	Marine Protected Areas	1.0.0
S-123	Marine Radio Services	1.0.0
S-129	Under Keel Clearance Management	1.0.0

- *Note that since S-101 contains features and attributes not available in S-57, fully-featured S-101 ENCs cannot be created through a simple conversion process of S-57 ENCs (Features and Object Atribution);*
- *Nautical cartography software industry has to confirm that S-101 ENC production systems and validation tools will be ready by end of 2022 and training can be provided;*
- *The S-101 PS will be technically ready for regular production of S-101 ENCs by end of 2022;*
- *New ECDIS systems to be brought into the market at the time then S101 ENC coverage starts (2024) have to be capable to process both formats: S-57 ENCs and S-101 ENCs in parallel*

DUAL FUEL S-57 dan S-101 ON 2024

S-57 ENC ECDIS S-57 ???

2024 — *Dual Fuel* — 2030 — 20XX
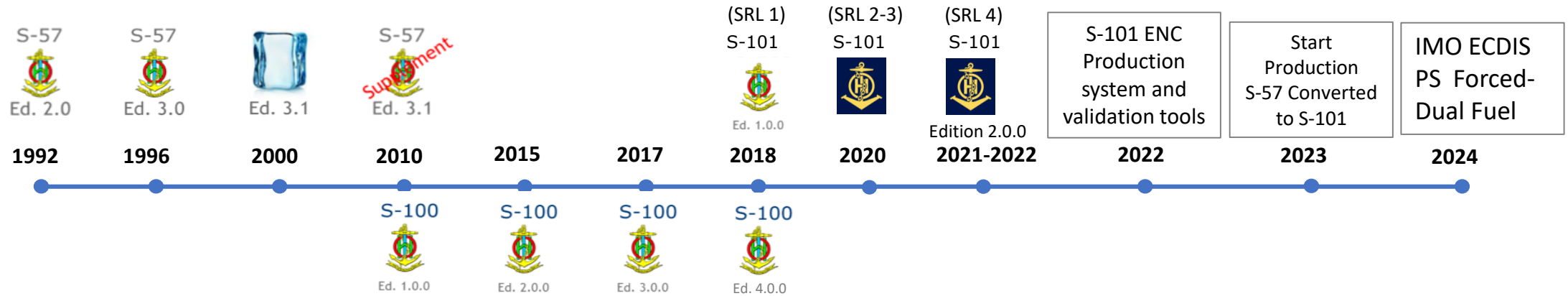
S-101 ENC ECDIS S-100
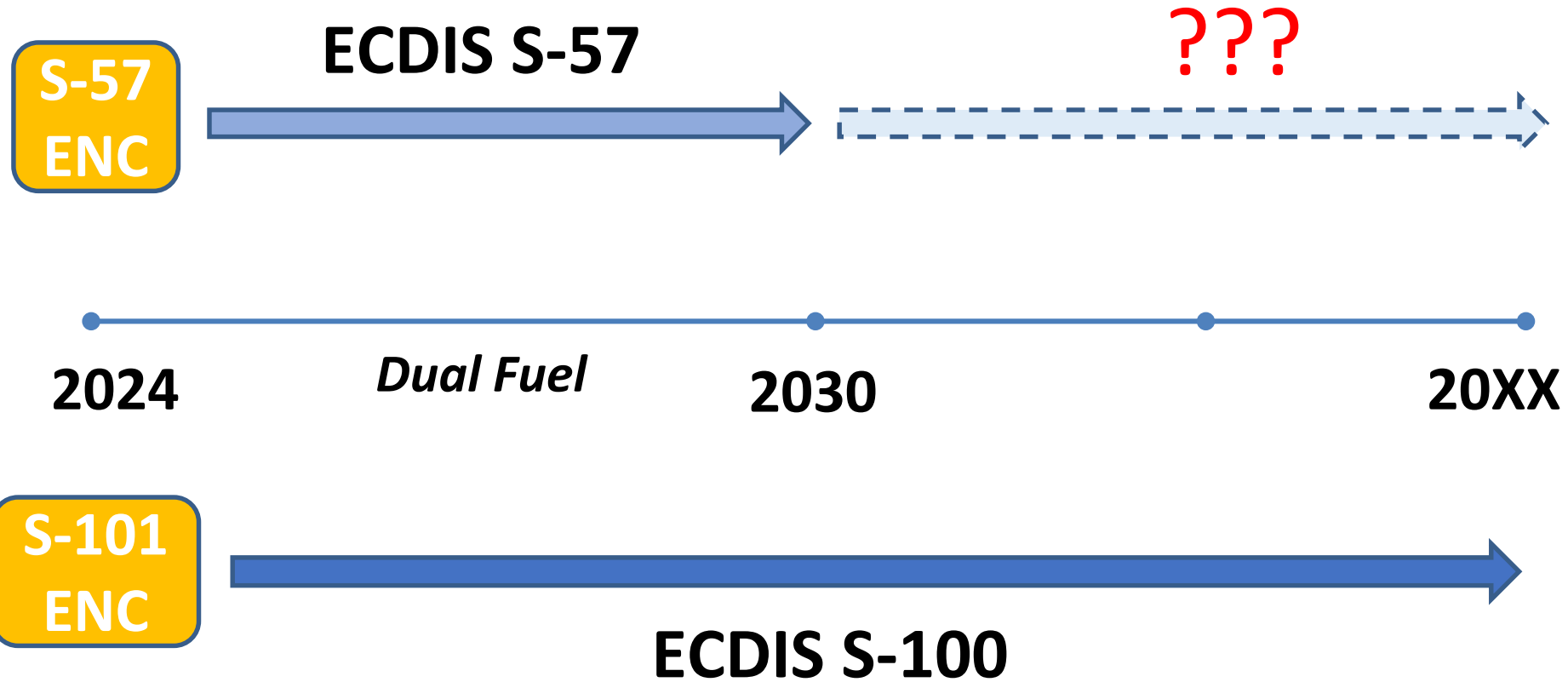
NOTE:
- Consequently, there will be two databases (products) of MSS ENCs
- The termination of ENC S-57 still not determined, how many ENCs from all HO's will be converted after 2024

ENC DEVELOPMENTS AND TRANSFORMATION DECADE

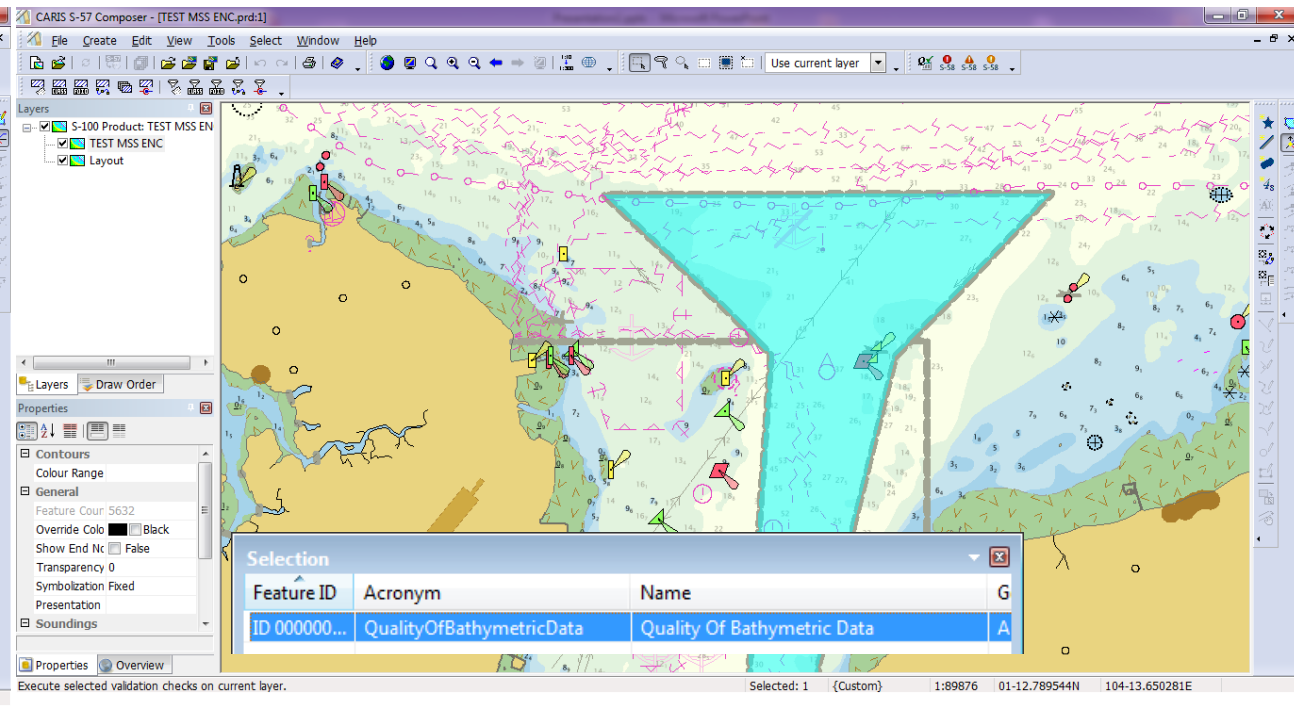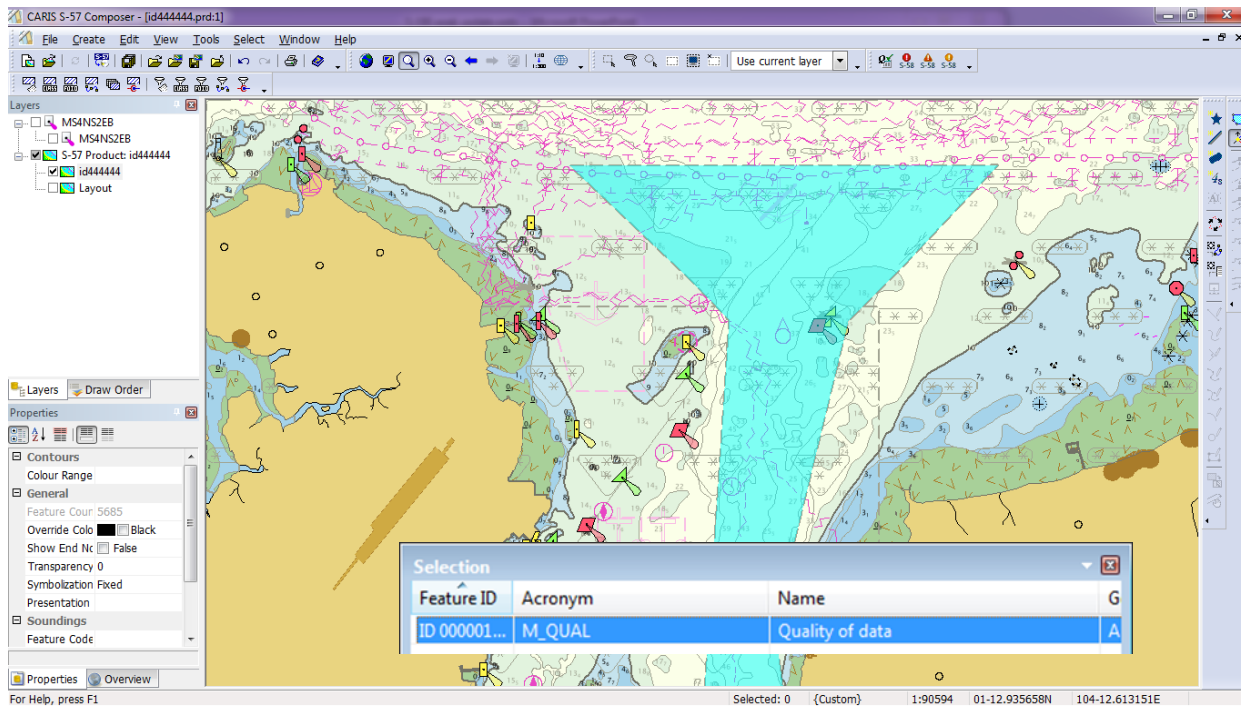| 1992 | 1996 | 2000 | 2010 | 2015 | 2017 | 2018 | 2020 | 2021-2022 | 2022 | 2023 | 2024 |

Note :

- S101 Product Specification (PS) will be ready for operational on 2022
- S-101 come into force 1 January 2024 as new compulsory navigational equipment (IMO)

PROPOSAL BY IHO S-101 PROJECT TEAM OCT. 2019 (3RD IHO COUNCIL)

Components	Edition 1.0.0 (2018)	Edition 1.X.X (2020-21)	Edition 2.0.0 (2022)
Main Documentation	✓	✓	✓
Feature Catalogue	✓	✓	✓
Portrayal Catalogue	Partial	✓	✓
Validation	Partial	✓	✓
Data Classification and Encoding Guide	✓	✓	✓
Encoding Format	✓	✓	✓
Encryption		✓	✓
Alerts and Indications		✓	✓
Full Test Data Sets for Type approval		Partial	✓
Notes **SRL = S100 Readiness Levels**	Portrayal will be limited to S-52 rules translated to LUA (SRL =1)	Edition 1.X.X refines all the additional rules (SRL =2-3)	**Operational Edition** **(SRL =4)**

The latest edition proposed by the S-101 project team covered many fundamentals of ENC production and distribution component

MSS ENC TEST ON SIMPLE CONVERSION S57 TO S-101 MSS ENC USING CARIS S57 COMPOSER 3.1.1 (S-101 draft) (DATA ENCODING AND POPULATION CHALLENGE)

S-57
M_QUAL

Only one
Mandatory
Atribute (CATZOC)

S-101
Quality of
Bathymetric Data

More than one and
Many more
Mandatory Atribute

ANOTHER SIMPLE CONVERSION WITH NEW CARIS ENC AND VECTOR (S-101 edition 1)

VALIDATION TEST USING 7CS FOUND (DATA COVERAGE) ERRORS ISSUES

MSS ENC PRODUCTION CHALLENGE FACED

- S57 to S101 conversion is still needs more consideration and its not a simple process;
- ENC migration to total S-101 coverage will be time consumed;
- MSS ENC litoral states as ENC producer still need to be trained and improved especially on data encoding and data population process and management;
- Litoral states still need time to provide new data of S-101 ENC for total coverage production;
- Litoral states still needs production platform time to prepared ENC product conversion and migration;
- S 101 operational timeline based on IHO roadmap to be complied needs comprehensive task and action.

MSS ENC SC MEETING

TOKYO, JAPAN , 4th FEBRUARI 2020

- To prepare for the eventual implementation of S-101 MSS-ENC;

- To establish an MSS-ENC Task Group (MTG);

- To develop The Term of Reference of the MTG to meet its objectives;

- To investigate and formulate processes and quality assurance; methodologies (validation) on S-100 MSS-ENC;

- To identity suitable training programs needed.

MSS ENC WORKPLAN ON S-100 IMPLEMENTATION

IHO TIMELINE

(SRL 1)	(SRL 2-3)	(SRL 4)	S-101 ENC Production system and validation tools	Start Production S-57 Converted to S-101	IMO ECDIS PS Forced-Dual Fuel
S-101	S-101	S-101			
Ed. 1.0.0	Edition 1.X.X	Edition 2.0.0			

2018	2020	2021-2022	2022	2023	2024

MSS ENC MTG WORKPLAN

- Establish MTG
- Develop TOR and Workplan
- Liaise Competent Body (S-100WG/ROK/PRIMAR/CARIS)
- Evaluate Conversion
- Training Programme
  - S-101 Spec/DCEG
  - Conversion
  - Production & Update
  - Validation
  - 2 People (Each Countries)

- S-101 Tools
- Conversion Testbed
  - Additional edit
  - Validation
  - ECDIS S-100 Performance
  - Evaluation
- Start MSS ENC S-101 Production & Maintenance

- Launching of S-101 MSS ENCs
- Dual fuel Maintenance
- S-10X products extend

The S-100 WG is invited to:

Note this paper and give some comments and recommendations.