S-100 Online Testbed
KHOA S-100 Viewer and S-1OOP Project

TSM8 / KHOA

Presented by KHOA

Introduction / Background

- S-1OOP Project
  - foundation of sharing and cooperation to facilitate changeover to the S-100 world
  - alternative approaches to overcome challenges
  - to share S-100 related resources with IHO member states and stakeholders in an online system

- HSSC decision 12/13
  - project including open source strategy of KHOA S-100 viewer and invite the member states and expert contributors to join

S-100 Open Online Platform Project

- The project vision
  - S-100 Open Online Platform is the foundation for S-100 World to accelerate wide adoption of the S-100 hydrographic framework by jointly developing and making freely available the building blocks required to overcome any technical S-100 implementation barriers

- Key goals
  - Share S-100 components, TDS and info. required to construct an S-100 ecosystem
  - Exchange experience and best practice results with S-100 production processes for data producers
  - Enhance navigation, discovery and search of S-100 standards and technical guidelines for stakeholders
  - Promote development of open-source software and application models to implement the S-100 World
  - Publicize the benefits and effects of the transition to the S-100 World

S-100 Open Online Platform Project

- Building blocks
  - technical resources, resource sharing infrastructure, open source software tools, technical guidelines and reference materials
  - allow any organizations to achieve S-100 operational capability quickly and efficiently

# S-100 Open Online Platform Project

- Building blocks

| No.	Title	Description
1	GI Registry	S-100 Geospatial Information Registry contains several registers (online databases) that include items of information that are relevant to those communities developing of S-100 based products and services. (S100.iho.int)
2	Test Datasets	Datasets created for testing purpose aimed at validating various aspects of dataset creating, validation, dissemination, portrayal and updating.
3	Production Tools	Tools, generally software, designed to produce one or more data products that comply with certain standards.
4	Validation Tools	Tools, generally software, designed validate the degree of compliance of a data product to one or more standard.
5	Storage Tools	Tools, generally software, designed to store data products for various purposes, such as archive, verification and dissemination.
6	Protection Tools	Tools, generally software, designed to apply certain data protection measures, like digital signature and encryption.
7	Data viewer	Software designed to portray data products.
8	Dissemination Tools	Tools, generally software, designed to aid in making data products available to users.
9	Knowledge Base	A store of information or data that is available to draw on for highlighting the underlying set of facts, assumptions, and rules which a computer system has available to solve a problem
10	Capacity Building	The process by which the S-1OOP assesses and assists in sustainable development of the Member States, other states and stakeholders to acquire the knowledge, skills and means to adopt to the S-100 World.

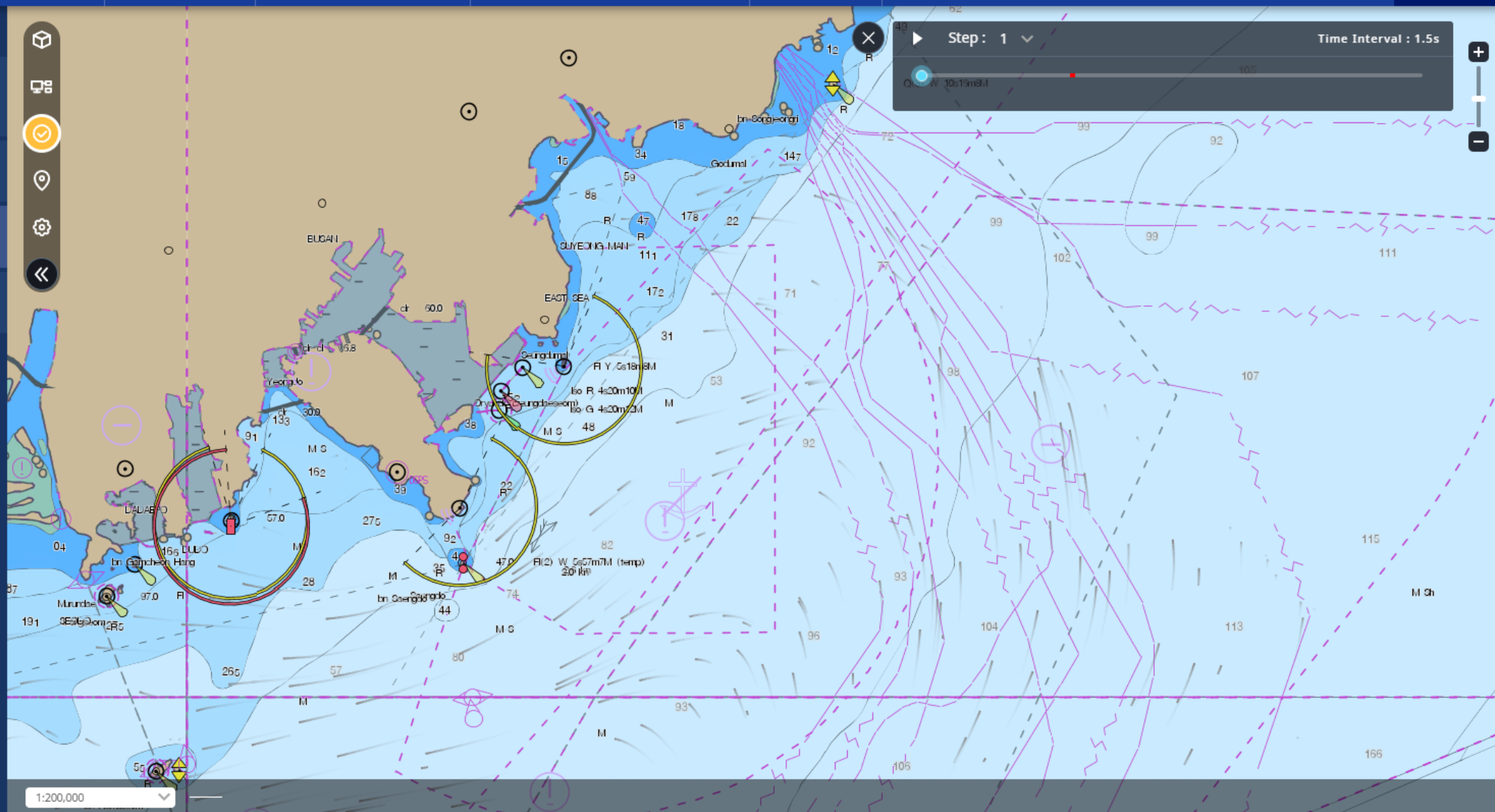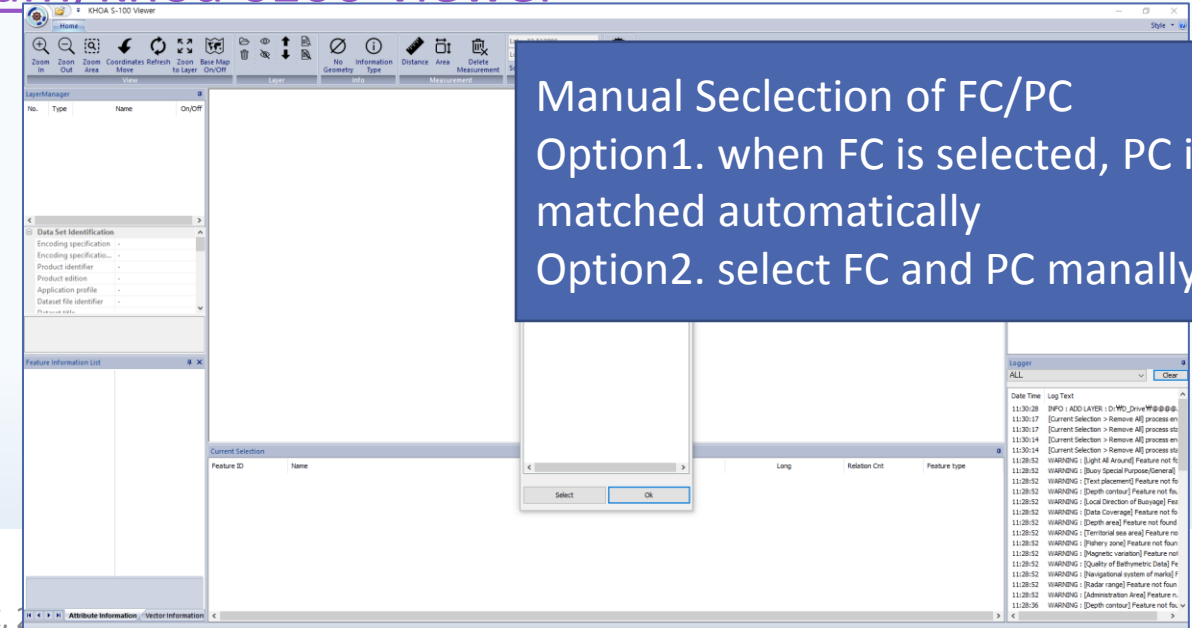# S-100 Open Online Platform Project

- Prototype
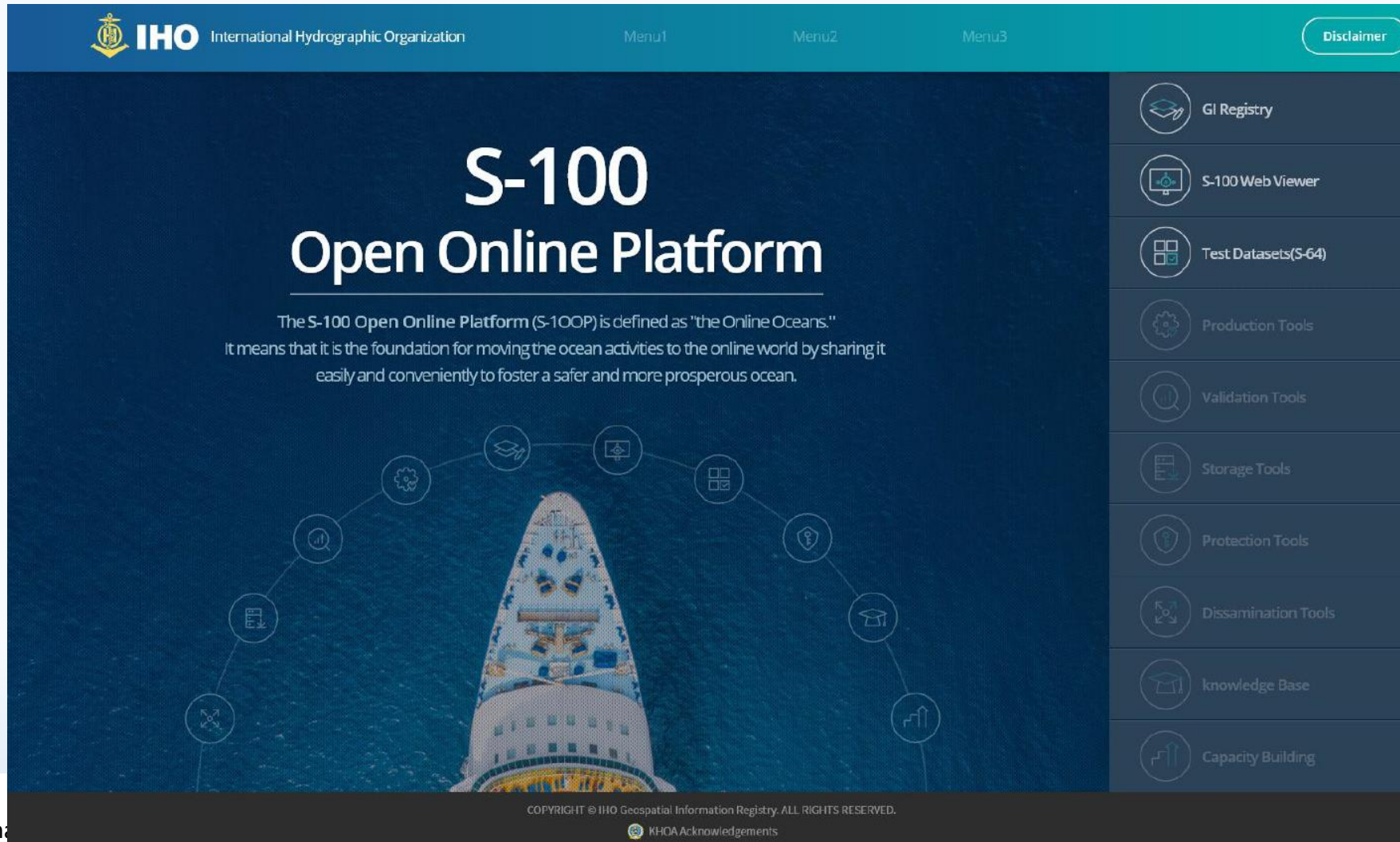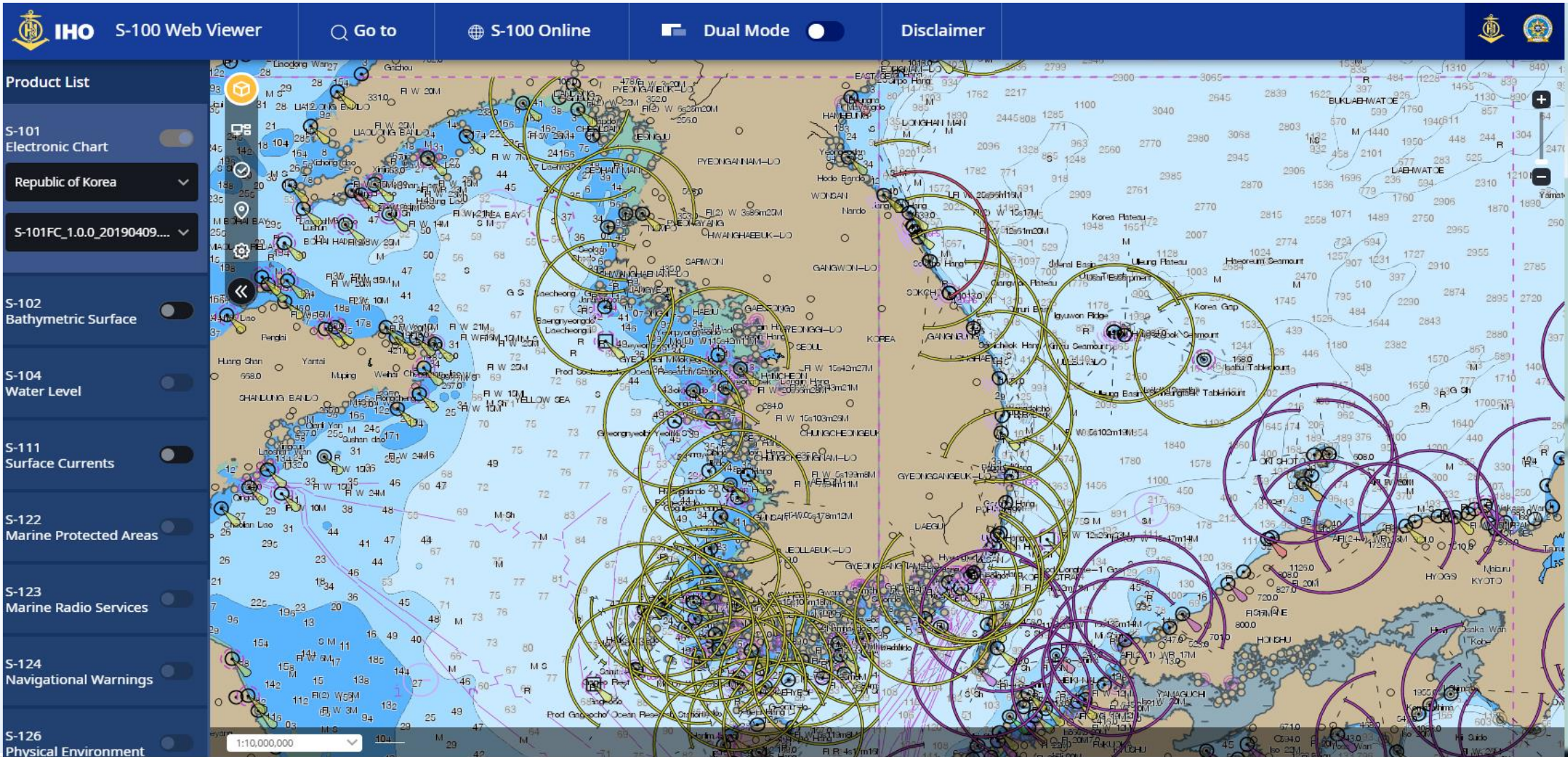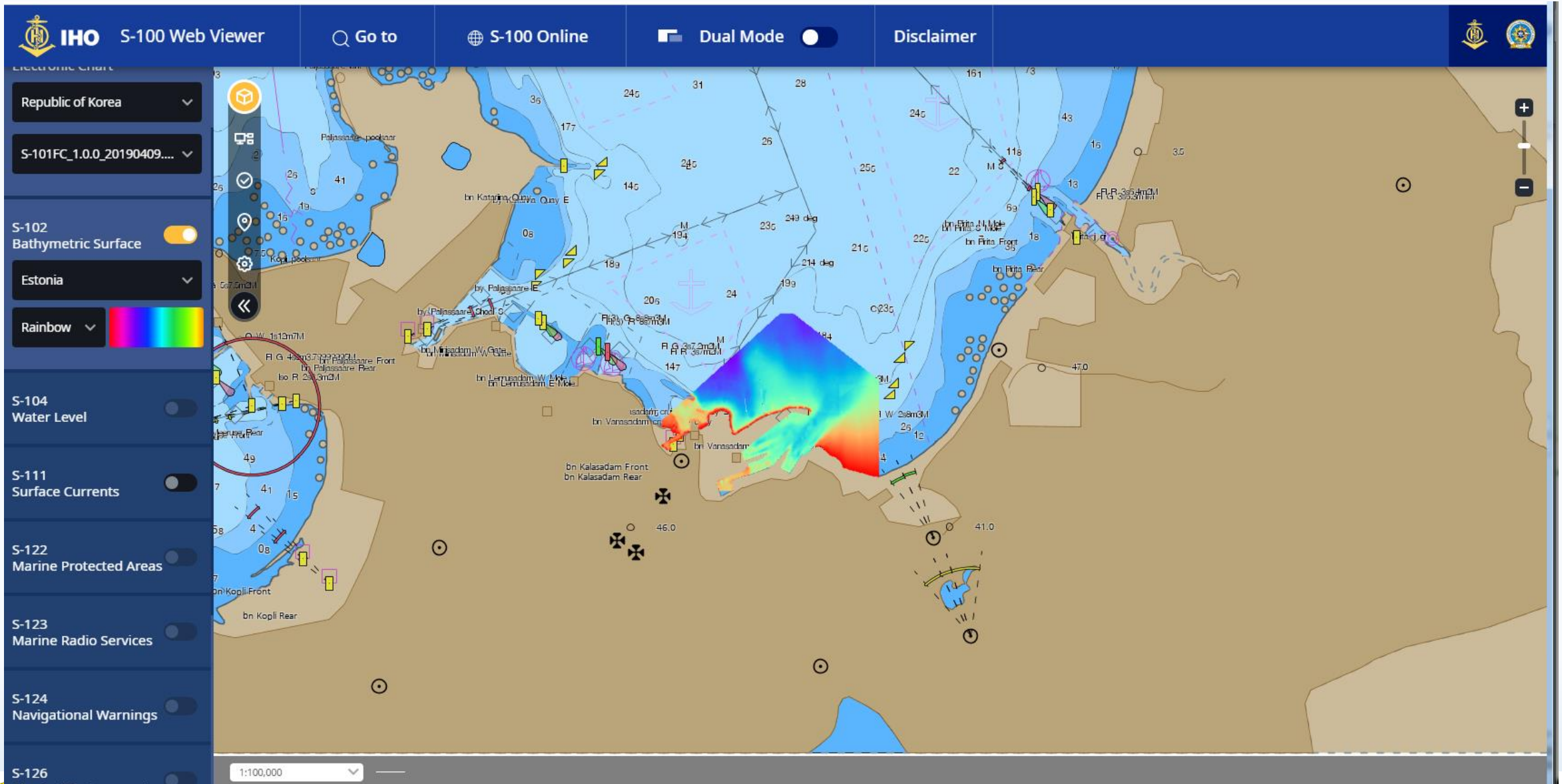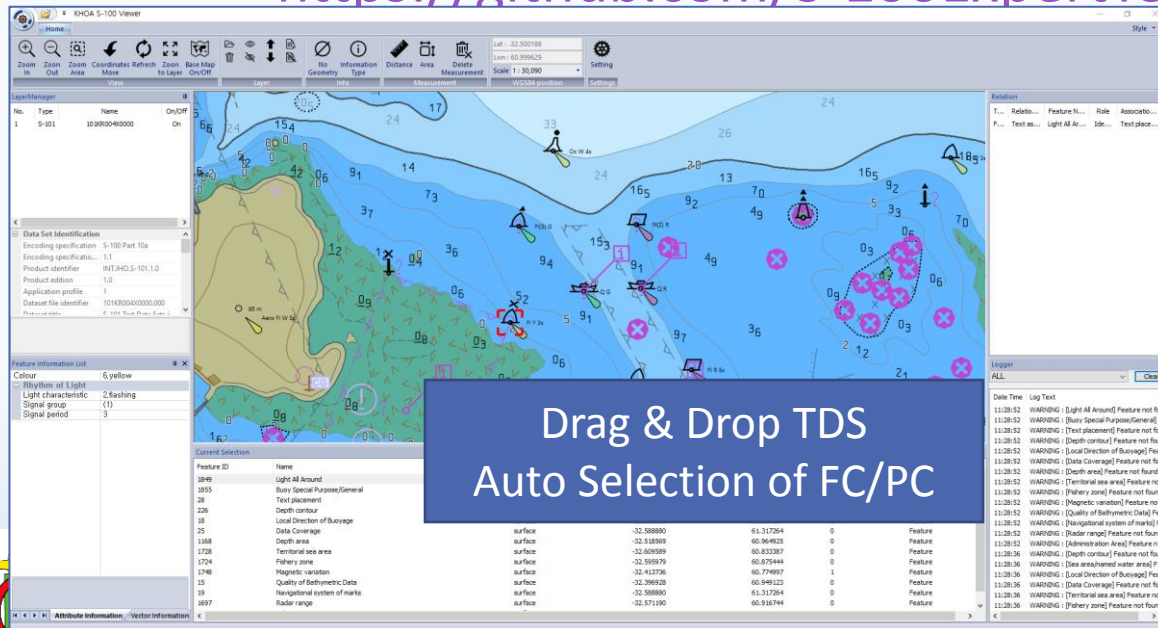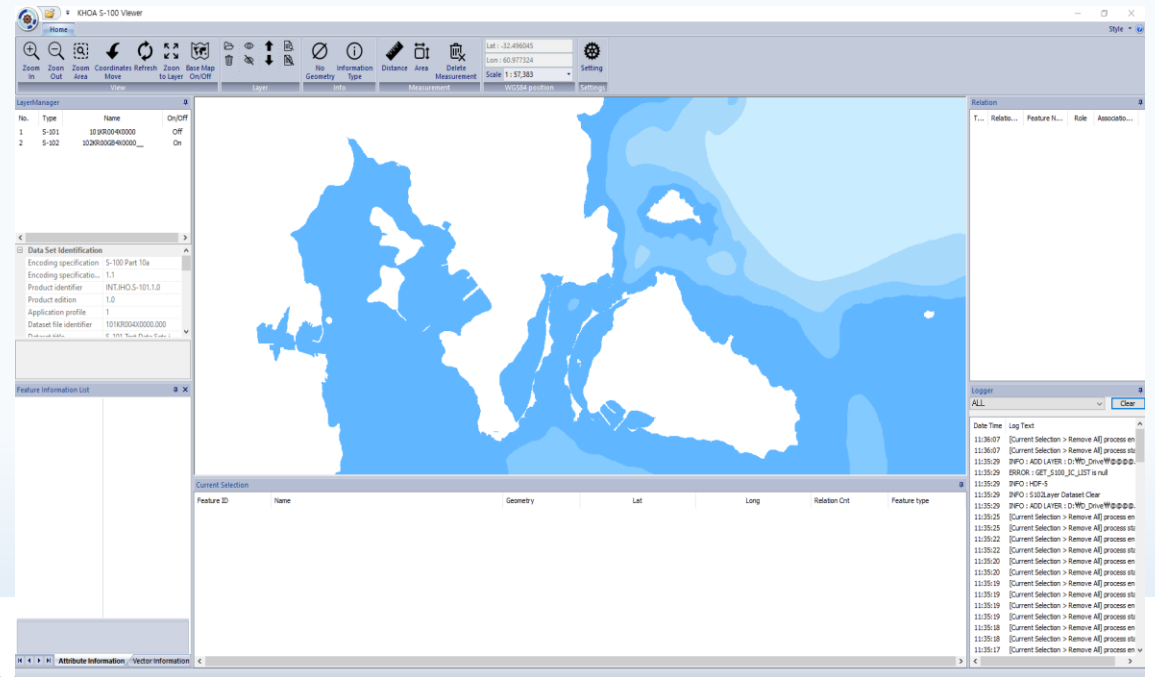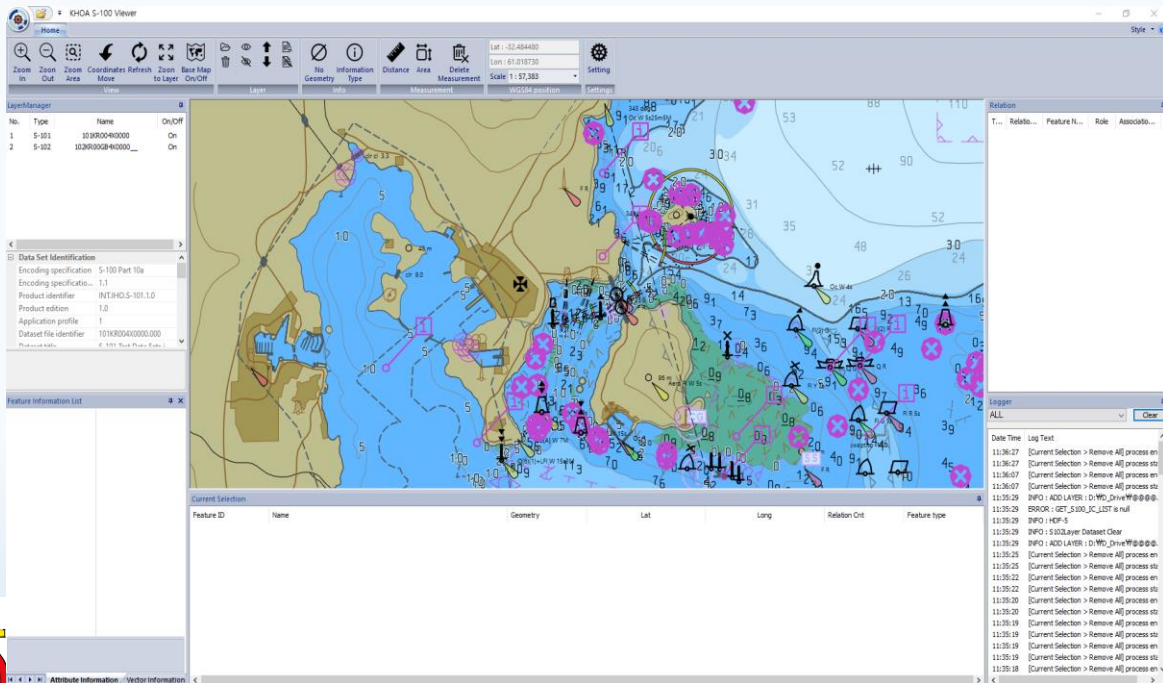
Update KHOA S-100 Viewer and release plan

- KHOA S-100 Viewer
  - supports seven S-1xx products
    - S-101 ENC, S-102 Bathymetric surface, S-111 Surface current, S-122 MPA, S-123 MRS, S-124 NW, S-127 MTM
  - Installation package, user manaual, test datasets
  - Released on Github, GI Regsitry, Basecamp
  - https://github.com/S-100ExpertTeam/khoa-s100-viewer

Drag & Drop TDS
Auto Selection of FC/PC

Manual Seclection of FC/PC
Option1. when FC is selected, PC is matched automatically
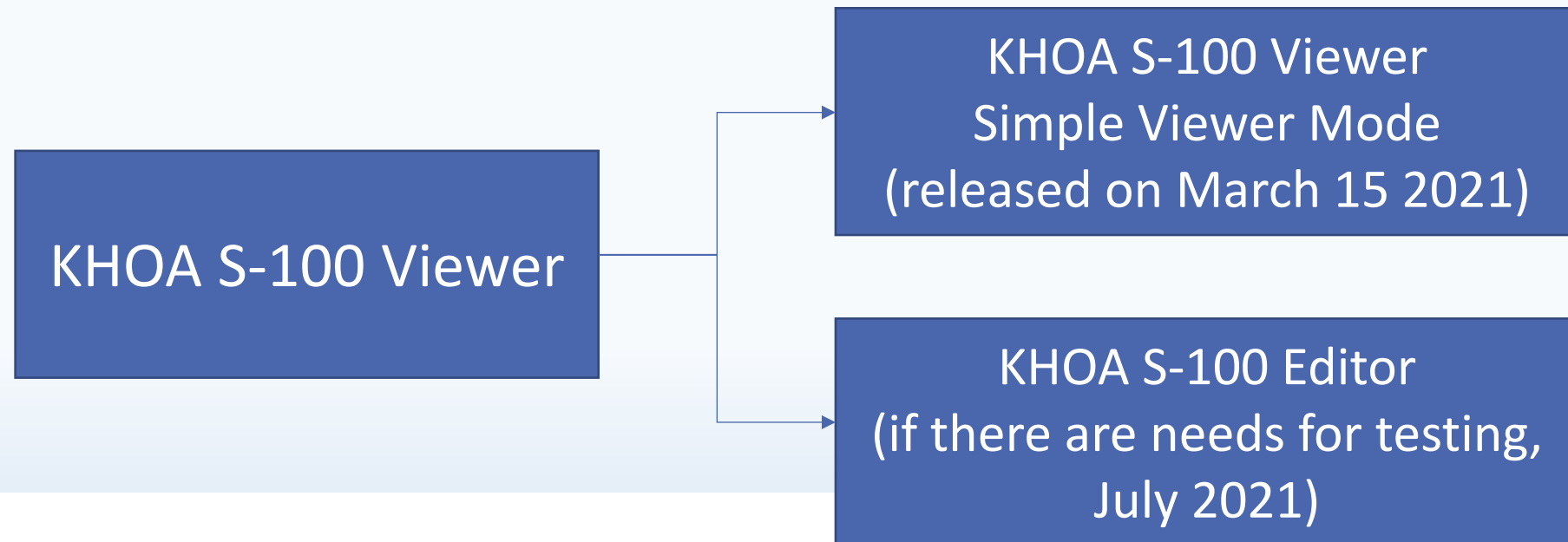Option2. select FC and PC manally

Update KHOA S-100 Viewer and release plan

- KHOA S-100 Viewer
  - Support Multi charts, GML encoding, H-5 encoding
  - Does not support the interoperability in this mode
  - Will improve to cover alert&indication, QOBD, IC and harmonized Pick report in the next version

Update KHOA S-100 Viewer and release plan

- KHOA S-100 Viewer
  - editing functions for TDS (8211, GML)
  - adding feature data and editing attribute values according to the each product feature catalogue
  - Interoperability mode (IC Level 1, Level 2)
  - request TSM to find the needs of viewer with editing function

KHOA S-100 Viewer → KHOA S-100 Viewer Simple Viewer Mode (released on March 15 2021)

KHOA S-100 Viewer → KHOA S-100 Editor (if there are needs for testing, July 2021)

Joint development of S-100 Viewer Open Source

- Open source strategy
 - support the development of navigation system and various applications without technical barriers for the IHO member states and stakeholders
  - be released by modules over 3 steps

Phase 1 (2021 ~ 2022) Preparation	Phase 2 (2023 ~ 2024) Joint development	Phase 3 (2025 ~) Implementation
• Clean source code of S-100 Viewer • Operate Github to share	• Release whole source code according the S-101 ed. 2.0 • Joint improvement with interested stakeholders	• Use the SW for MSDI purpose • Improve the Viewer for E-navigation and Web service
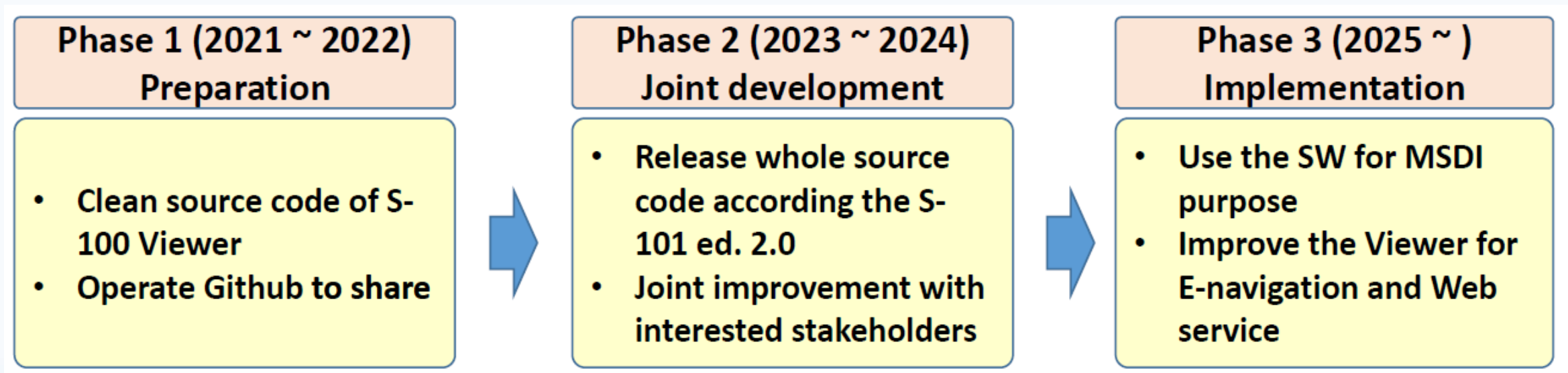
Joint development of S-100 Viewer Open Source

- ## S-100 Viewer Open source

  - shared through Github for joint development in terms of promoting development of open-source software

  - divided into a number of modules like machine readable standard (FC), dataset, portrayal process and rendering device command

  - when all parts are connected, it becomes S-101 Viewer for testing TDS and FC/PC

  - It can be used individually
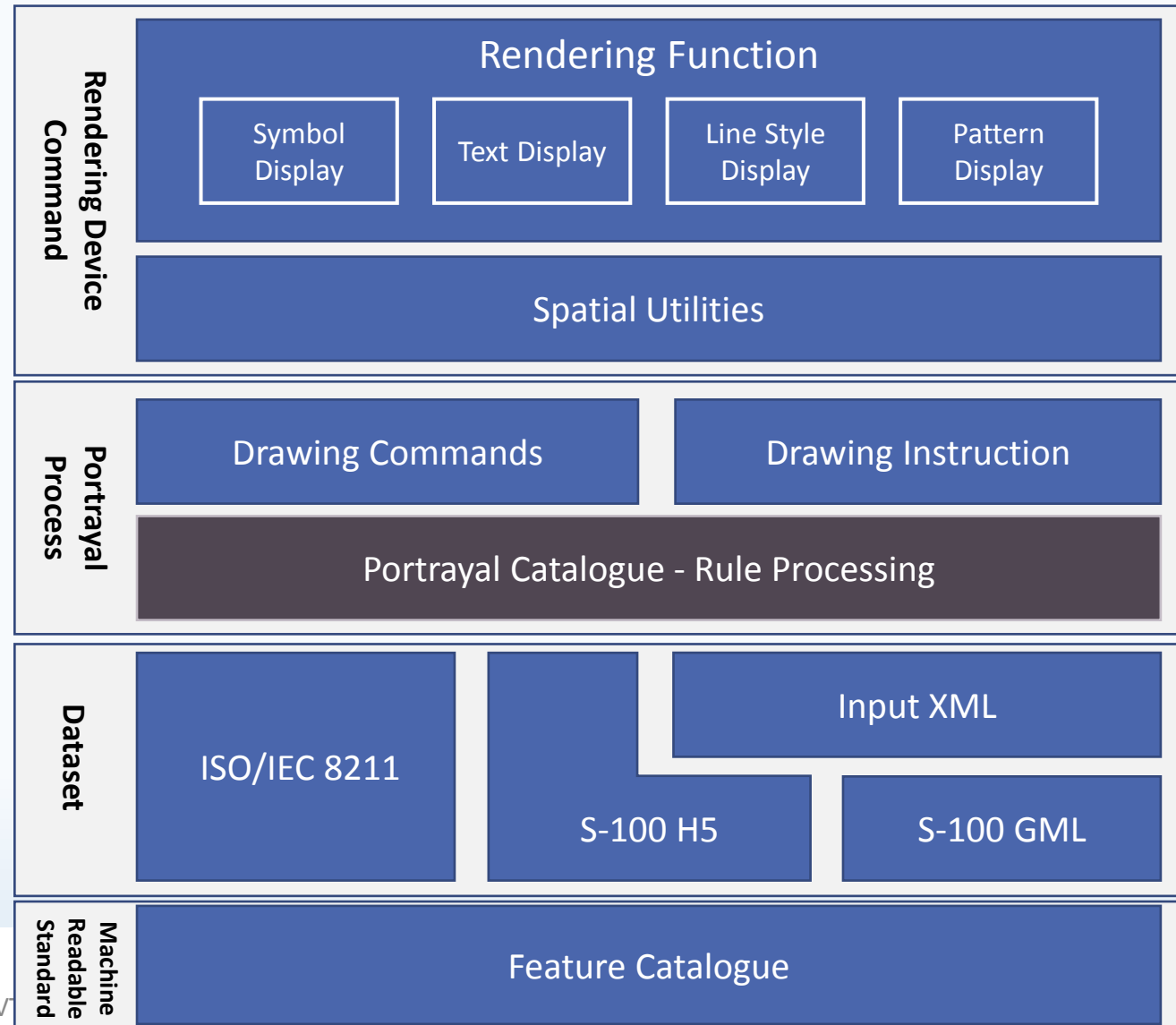
Conclusions

- KHOA S-100 Viewer (Simple Viewer Mode)
  - Release on the Basecamp, GI Registry, Github March 15st 2021
  - Update 1-2 times a year considering the latest discussion results from the WGs and relevant group discussions

- S-1OOP Project
  - Discuss overall concept of S-1OOP and its each building blocks including development of open-source software
  - required to establish a group with contributors and supporters

Action Required of TSM

- Note this paper

- To find the needs of KHOA S-100 Editor(Viewer with editing functions)

- Provide feedbacks on KHOA S-100 Viewer v.1.0.

- Discuss organizing a sub-group for S-1OOP project under S-100WG
  - To find active participations from interested Member states, experts and industry partners on S-1OOP development.