

IHO S-100 Working Group

# S-100 Data Services via SMART Navigation Platform

Presented by KHOA



# Background

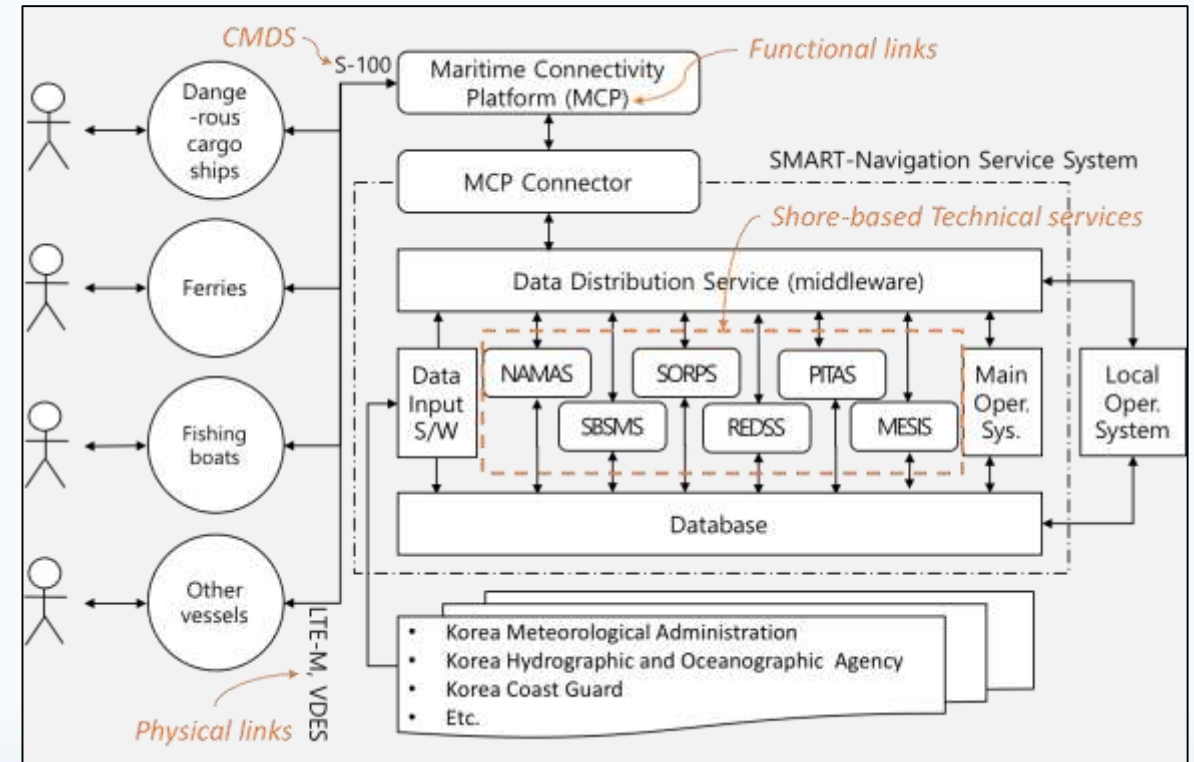
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- Korean e-Navigation Project
  - to reduce ship accidents and improve the efficiency of maritime transport
  - The Brand Name is SMART Navigation
  - Main research topics
    - Establishment of maritime communication network (LTE-M)
    - Co-development of MCP (Maritime Connectivity Platform) with European e-Navigation Project teams
    - Development of shore-based services considering the MSP (Maritime Service Portfolio) of e-Navigation
- S-100 data service
  - KHOA planned to produce S-100 data
  - Provide those to non-SOLAS ships via the SMART Navigation Platform from 2021



# Overview of SMART Navigation

- Major characteristics
  - Focus on the Non-SOLAS ships considering the IMO e-Navigation SIP



# Production and Service of S-100 data

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- Research for creating TDS
  - to produce the S-100 based test data for the S-10X products such as S-101 ENC, S-111 Surface Currents and S-122 MPA since 2017
- Plan to service S-100 data using LTE-M and MCP
  - S-101 Electronic Navigational Chart (ENC)
  - S-102 Bathymetric Surface
  - S-104 Water Level Information for Surface Navigation
  - S-111 Surface Currents
  - S-122 Marine Protected Areas (MPAs)
  - S-123 Marine Radio Services
  - S-124 Navigational Warnings
  - S-127 Marine Traffic Management



# Production and Service of S-100 data

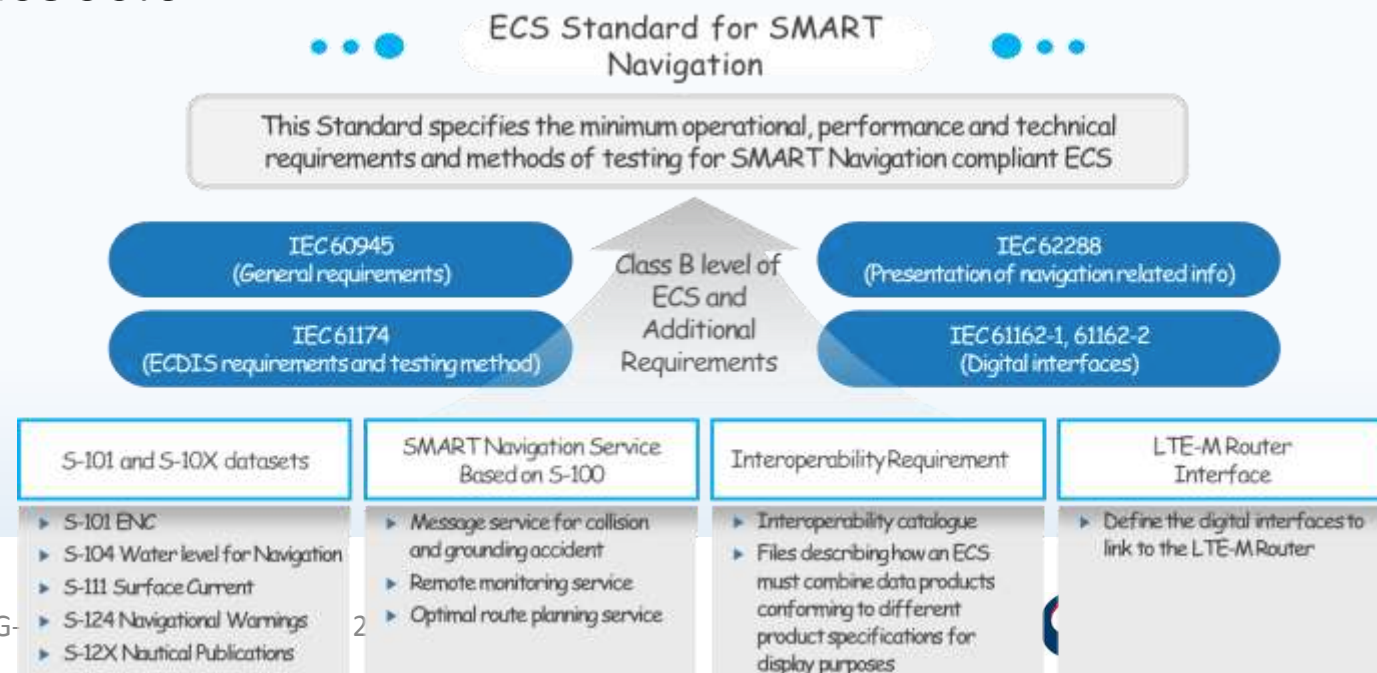
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- Major schedule
  - The SMART Navigation project is planned to be serviced officially from 2021, KHOA plans to produce and distribute S-100 hydro data with the following schedules
- Preparation phase of S-100 hydro data
  - Production of S-100 data: From 2019 to 2020
  - Update of S-100 data: From 2021
- Operational phase of S-100 data service
  - Pilot operation: 2020
  - Service operation: From 2021



# ECS Standard and Related Regulations

- ECS (Electronic Chart System)
  - main user system receiving the SMART Navigation services based on the Common Maritime Data Structure (CMDs), S-100 and S-10X Product Specifications
  - The standard was developed with reference to relevant international documents for ECS – IEC 60945, IEC 62288, IEC 61174, IEC 61996-2, IEC 62376, IEC 6238 and RTCM standard 10900.6



# TDS and Symbol of S-101 ENC for Non-SOLAS ships

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- Since the ECS was expected as a main user system of SMART Navigation service
- There was a requirement to prepare the S-100 TDS and presentation library for simplified certification process of the ECS
- Accordingly, KHOA will draft the S-100 TDS and portrayal catalogue to support the ECS certification as a navigation system on-board in the SMART Navigation project
- Regarding the portrayal catalogue of S-101 ENC, KHOA has been carrying out S-101 Portrayal Harmonization Project for non-SOLAS ships since 2018



# Conclusions

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- ROK has been conducting the SMART Navigation project to reduce ship accidents and improve the efficiency of maritime transport
- In this regard, KHOA will produce S-100 data from 2019 to 2020 and provide those data to non-SOLAS ships via MCP and maritime communication network (LTE-M) developed by SMART Navigation project.





# Recommendations

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- In order to support the certification process of the ECS
- draft the S-100 TDS and portrayal catalogue in 2019 and try to improve S-101 symbols for non-SOLAS ships
- KHOA hopes to share the progress and results at the next S-100WG meeting if invited
- Member States or industries, who are interested in KHOA project, are invited to leave any comments.

