

The 27th UN/CEFACT Forum



Service standard

Maritime VHF digital communication technology and measures for efficient and facilitated maritime logistics business

KL-Net
26 Apr, 2016

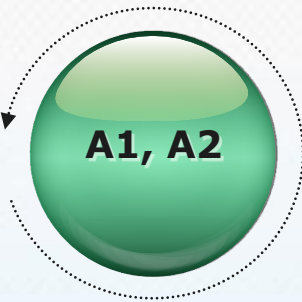
- **National Project in ROK**
 - ✓ **Subject : Maritime Logistics**
 - ✓ **10-year project**
 - ✓ **On 9th year of the schedule**
- **Category**
 - ✓ **Standardization**
 - ✓ **Technology Development**

- The need for implementation and definition of maritime communication environment
 - ❖ Background
 - Global market-opening and tech. advancement → cross-border trading and rising international trade volumes
 - Demand for real-time vessel control and security to ensure efficiency and safety
 - ❖ International maritime status
 - ISM Code separates the responsibilities of ship and shore-side safety managements
 - Implementation of GMDSS following the IMO's SOLAS convention
 - Implementation of e-Navigation by IMO and WRC
 - Need to develop and define services for future maritime communication environment

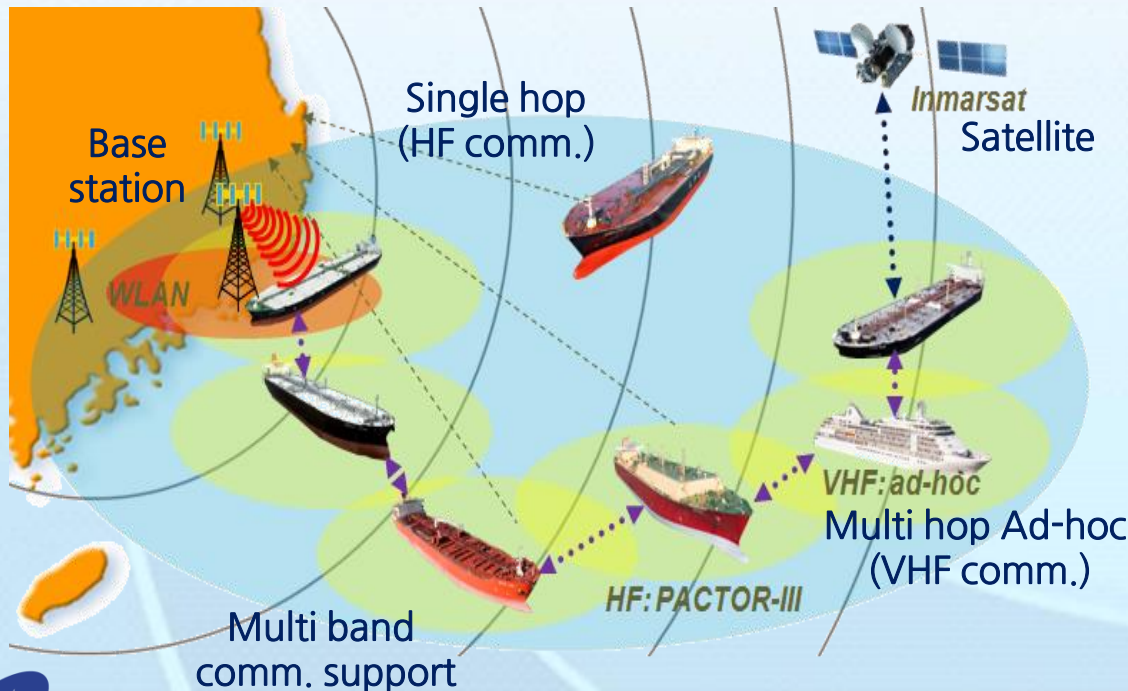
Status of maritime logistics information service

Communication base for different sea areas

- Littoral sea
- Domestic sailing area



- Ocean, int'l sailing area
- Satellite : comm. cost ↑
reliability ↓
- HF : reliability ↓



A research on the multi band ad-hoc technology that connects selectively to adequate channels, considering different circumstances, is in progress

Status of maritime logistics information service

- The need for application service based on maritime data exchange



The rising need for maritime digital communication technology in maritime transport business

⋮



Ship-shore and ship-ship broadband maritime radio data comm. environment required

⋮



Automatic ship reporting at shore and support for safe and efficient navigation and port management

Development of maritime data based application services to support safe entries/departures, vessel monitoring services, etc. for enhanced maritime information service

Technical standardization status

○ Maritime VHF digital communication technology

WRC resolution on the use of maritime VHF digital tech., 2000

WRC decides to adopt the maritime VHF digital tech., 2003

WRC allocates experimental frequencies for maritime VHF comm., 2007

Recommendation ITU-R M.1842 on the maritime VHF digital comm. tech., 2008

Revised Recommendation ITU-R M.1842, 2009

- Standardization of maritime VHF band digital comm. in progress
- IALA plans to define maritime digital mobile comm. system and to revise ITU-R Recommendation

WRC allocates maritime VHF digital frequencies, 2012

- Will be effective from 1 Jan 2017

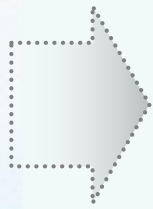
IMO COMSAR meeting, 2013

- Decided to upgrade all the MF/HF and VHF radio equipment after 1 Jan 2017

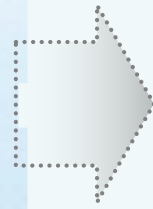
→ **Maritime digital radiocomm. equipment will be mandatory to all ships in the near future**

Efficient and facilitated maritime logistics

- Maritime digital comm. tech. application plan



Electronic access to ship documents and certificates for the safety of the ship and the crews



Electronic access to documents and certificates related to ship security inspections, utilizing maritime digital comm. tech.



Digitalization of paper documents and certificates and standardization

Efficient and unified information integration to support interoperability and information sharing in the maritime field

Prevent damages or losses of the documents/certificates required to be carried on board

Applicable to vessel control, vessel traffic control, etc.



Efficient and facilitated maritime logistics

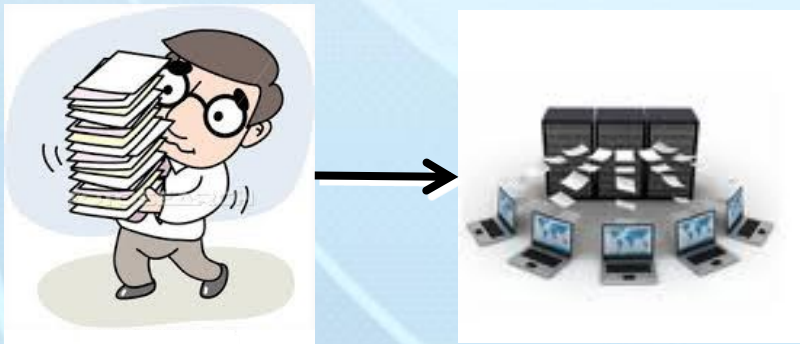
- Maritime digital comm. tech. application plan

Digitalization of ship documents and certificates

Establish a strategic implementation plan for implementing detailed business processes related to the maritime digital comm. tech. application

Develop international common maritime data reference model

Business process standardization and technological advancement to foster electronic access to ship documents/certificates for facilitated ship reporting and to achieve seamless ship to shore data gathering



Research project – Standardization

Project name

- ❑ Electronic access of ships and integration with port information system for efficient maritime logistics

Period

- ❑ Period : 2016.4 ~ 2016.12 (9 months)
- ❑ KL-Net : Sunho Park, Taekmin Lee

Project scope

- ❑ Electronic versions of documents and certificates required on board ships
- ❑ Revision of ISO 28005 standards for electronic port clearances in Maritime Single Window(MSW)
- ❑ Information integration with MSW prototype
- ❑ Other maritime related data element mapping possibilities



Project background

- ❑ There has been growing demand for provision of various international maritime services with increasing efforts to automate, standardize and simplify ship to shore processes
- ❑ Following the development of ship to ship and ship to shore infrastructure, the need to research on the data standardization in marine safety and security domains and the possibility of integrating with port information has been emphasized
- ❑ EU, IMO, ISO, IEC, UN/CEFACT and other international organizations are working on the interoperability of single window systems and also on the common maritime data model for e-navigation





Project objective

- ❑ Efficient and unified info. integration to support interoperability and info. sharing in maritime industry
- ❑ Provide technical specification for efficient electronic information exchange between ships and shores
- ❑ Define core data elements and messages related to ship to shore safety and security for electronic info. exchange

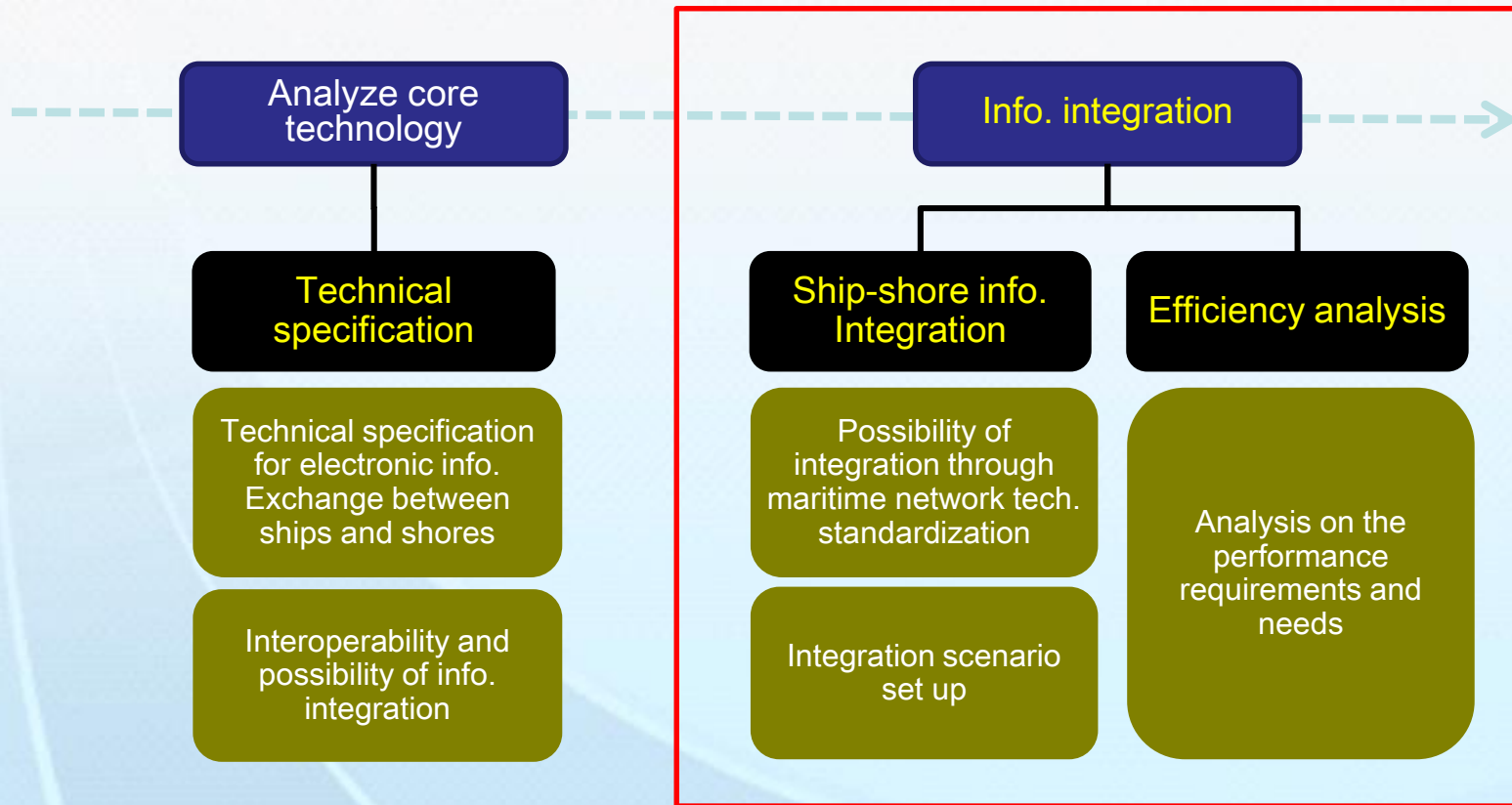


Research areas

- ❑ **Develop electronic documents/certificates and related BRS and RSM base on the UN/EDIFACT or XML schema**
- ❑ **Revise the use of ISO 28005 standard for electronic port clearances of MSW**
- ❑ **Mapping of maritime related data elements on to the e-Navigation's basic data model framework, IHO's S-100**
- ❑ **Submit a report to IMO FAL 41**

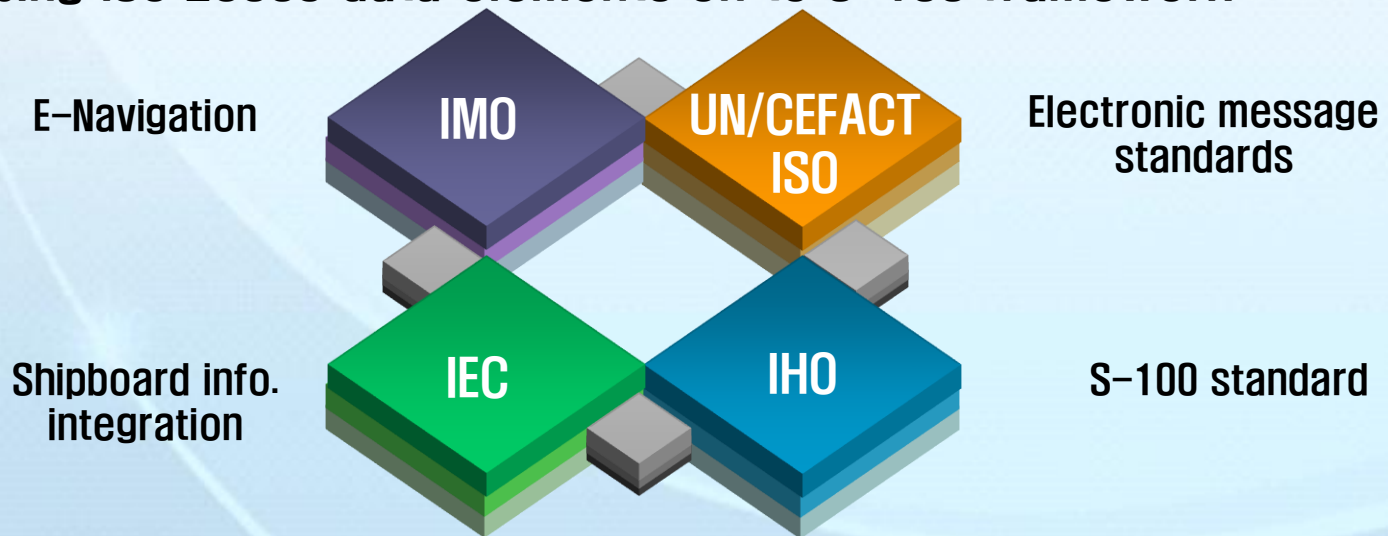
Research areas

Electronic access of ships and integration with port information system



Maritime communication technology standardization progress

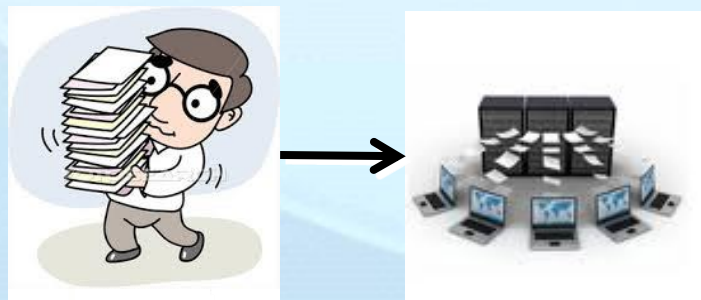
- ❑ IMO adopted IHO's S-100 Standard as the baseline data structure for maritime information in e-Navigation.
- ❑ IEC working on the standardization of IEC 61162 series as to make sure the interoperability of different equipment on board – need to consider S-100
- ❑ Mapping ISO 28005 data elements on to S-100 framework



Standardization plan

Measures for automation, facilitation and standardization

- ❑ IMO FAL 38 – List of documents and certificates required to be carried on board (38/5 Annex 2)
- ❑ IMO FAL 39 – to treat e-certificates equivalent to traditional ones and will become mandatory by 2017
- ❑ International Safety Management Code (ISM Code) necessitates certificate inspections in Port State Control (PSC)
- ❑ But still documents and certificates are stored in paper forms



Standardization plan

Measures for automation, facilitation and standardization

- ❑ IMO FAL 38/5 Annex 2 – 47 out of 92 doc./cert. required on board are eligible for electronic versions
- ❑ Digitalization and standardization of such doc./cert. are required
 - Define common data models and messages
 - BRS(Business Requirement Specification) and RSM(Requirements Specification Mapping)
 - Authentication of the printed versions of electronic documents/certificates
- ❑ Prioritized doc./cert. are Document of Compliance (DOC) and Safety Management Certificate (SMC) – ISM Code certificates

Expected Outcomes

Expected outcomes

- ❑ Standardization and interface of common data model for maritime transport business that enables integration with port information systems
- ❑ Reduced administrative burdens with facilitated ship clearances and digitalized and automated data exchanges
- ❑ Harmonized collection, integration, exchange, presentation and analysis of maritime information with electronic means for procedures including system interfaces of various protocols and network technologies
- ❑ Provision of new and various maritime information services such as the maritime safety information, traffic controls and etc.



Thank You

... for your listening

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