

Japan's consideration on the utilizations of VDES

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1st Workshop on International Standardization of Next Generation AIS (VDE) (reported to IALA)

(3 - 7 December 2012) 26 experts from 6 countries, sponsored by OPRF※

Developed the concept of VDES and prototype radio for VDES

※OPRF: Ocean Policy Research Foundation



2nd Workshop on International Standardization of VDES (reported to IALA)

(20 - 24 January 2014) 37 experts from 10 countries, sponsored by OPRF

Agreed the importance of user and operational requirements

3rd Workshop on International Standardization of VDES (reported to IALA)

(1 - 5 December 2014) 30 experts from 7 countries, sponsored by OPRF

Developed the working document towards draft IMO P/S for VDES



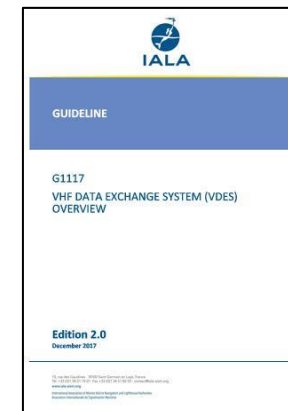
IALA Workshop on Development of VDES

(15 - 19 February 2016) 63 experts from 22 countries & etc.

Developed the draft recommendation on performance standards for shipborne VHF data exchange system

IALA guideline VDES overview (G1117)

Published in December 2016



- The focus group was established in FY2017
- Objective: To discuss **possible operations and utilizations of VDES** in Japan.
- Participants:
 - Governmental agency:
 - Japan Coast Guard (JCG)
 - Ministry of Internal Affairs and Communication (MIC)
 - Ministry of Land Infrastructure, Transport, and Tourism (MLIT)
 - Japan Fisheries Agency (JFA)
 - Japan Meteorological Agency(JMA)
 - Academia:
 - Tokyo University of Marine Science and Technology(TUMST)
 - National Maritime Research Institute
 - Industry: Furuno, JRC and Tokyo Keiki
 - Maritime Stakeholders: Captains, Ship owners, Port related bodies, Pilots, Fishermen, Ferry operators ...etc.

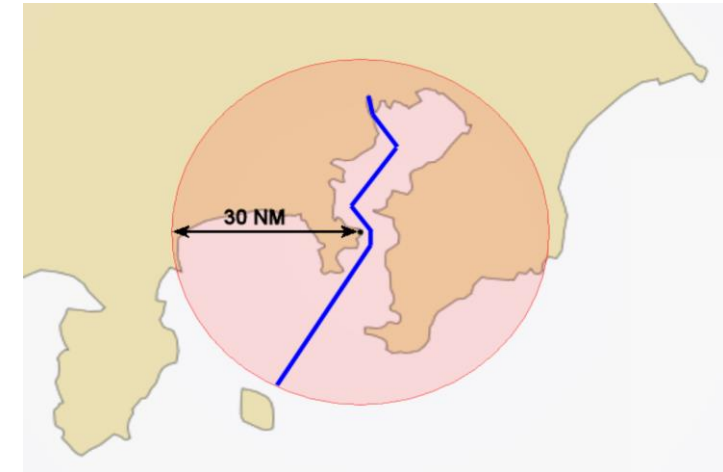
- Operational needs for VDES that was demonstrated in the focus group:
 1. location of small fishery boats and fishery net
 - Possibly done by AMRD
 - Incentivize fishermen is the biggest issue
 2. Support of the local port operation
 - Replacing voice communication with data exchange
 - Smooth port entering and departure (less time for waiting)
 3. Provision of weather information
 4. Remote medical services
 5. Other needs
 - Integration of navigational displays
 - Information provision on emergency evacuation
 - Management of paperwork in navigation
 - Display of navigational warnings on ECDIS



Discussion in the meeting in FY2017

- Needs from the maritime stakeholders has been categorized by MSPs
 - VTIS Information Service (IS: MSP 1)
 - VTS Traffic Organization Service (TOS: MSP 3)
 - Local Port Service (LPS: MSP 4)
 - Pilotage Service(MSP 6)
 - Telemedical Maritime Assistance Service(TMAS: MSP 9)
 - Meteorological Information Service (MSP14)
 - Search and Rescue (SAR) Service (MSP 16)
- Among them, MSP 1, 4, and 14 have strong demand from the maritime stakeholders as possible usage of VDES
- Some needs from the maritime stakeholders could not be categorized by MSPs
 - Location of fishery boats and fishery nets
 - Information on emergency evacuation ... etc.

- Strategy
 - Match the aim and characteristic of VDES
 - Demonstrate an example which is available for VDES
- Schedule: December 11-13, 2018
- Venue: Tokyo Bay
- Stations:
 - Coastal Station: Kannon-saki Radar site
 - Vessel Station 1: Shioji-maru
 - Vessel Station 2: Yayoi



Planned route for the test bed



Kannon-saki Radar site
(previously Tokyo-wan VTS centre)

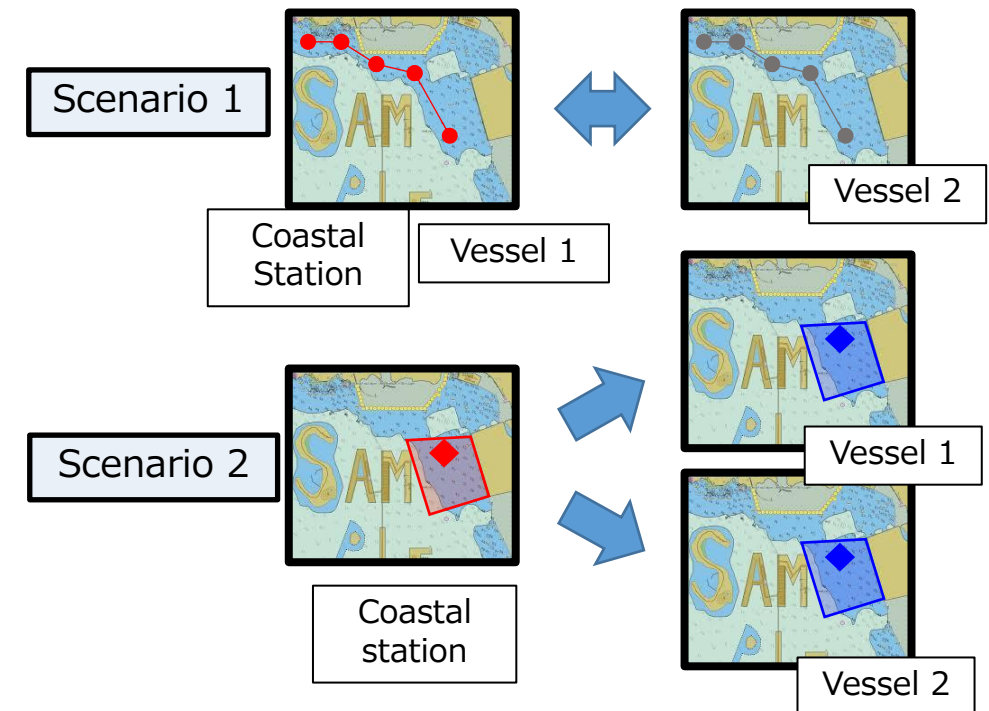
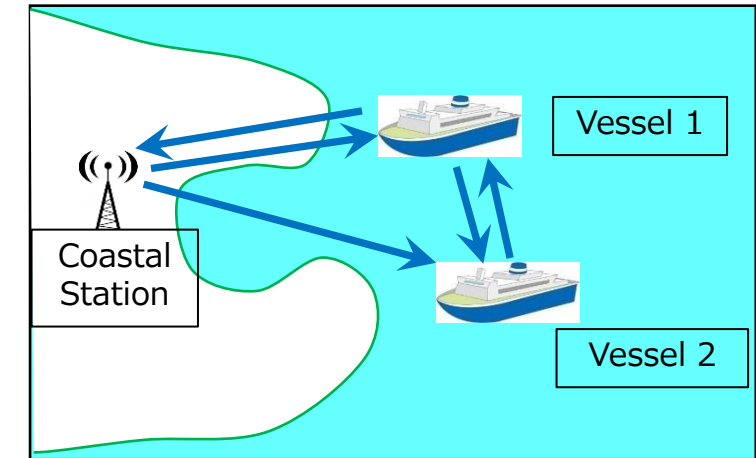


Shioji-maru (425GT, 49.9m)



Yayoi (19GT, 19.7m)

- Scenarios are selected based on the needs from the maritime stakeholders
- Scenario 1 : 1 on 1 communication
 - Route exchange between two vessels
 - Route advice from a coastal station to a vessel
 - Replacement or supplement of voice communication
- Scenario 2 : information broadcasting
 - Port entering management
 - Displaying an area information on electrical charts
 - Weather information
 - Navigational warnings
 - Amendments of chart(s)



- VDES Prototype:
 - Produced by JRC in FY2017
 - Available for the following:
 - ASM(25kHz – Pi/4 QPSK)
 - VDE (25kHz, 50kHz, 100kHz – Pi/4 QPSK)
 - VDE (25kHz, 50kHz, 100kHz – 8PSK)
 - VDE (25kHz, 50kHz, 100kHz – 16QAM)



- A focus group on the possible operation of VDES was established.
- Operational needs has been collected from the group.
 1. location of small fishery boats and fishery net
 2. Support of the local port operation
 3. Provision of weather information ...etc.
- Japan is conducting a test bed on VDES operations in December 2018
 - VDS prototype has been developed for the test bed
- Japan would like to share the result of the test bed in the future IALA ENAV meetings
- Japan proposes all IALA members to share all the results of test bed with each other

Thank you for your attention