

The Development of VDES in Japan

At IMO NCSR13, June 2026

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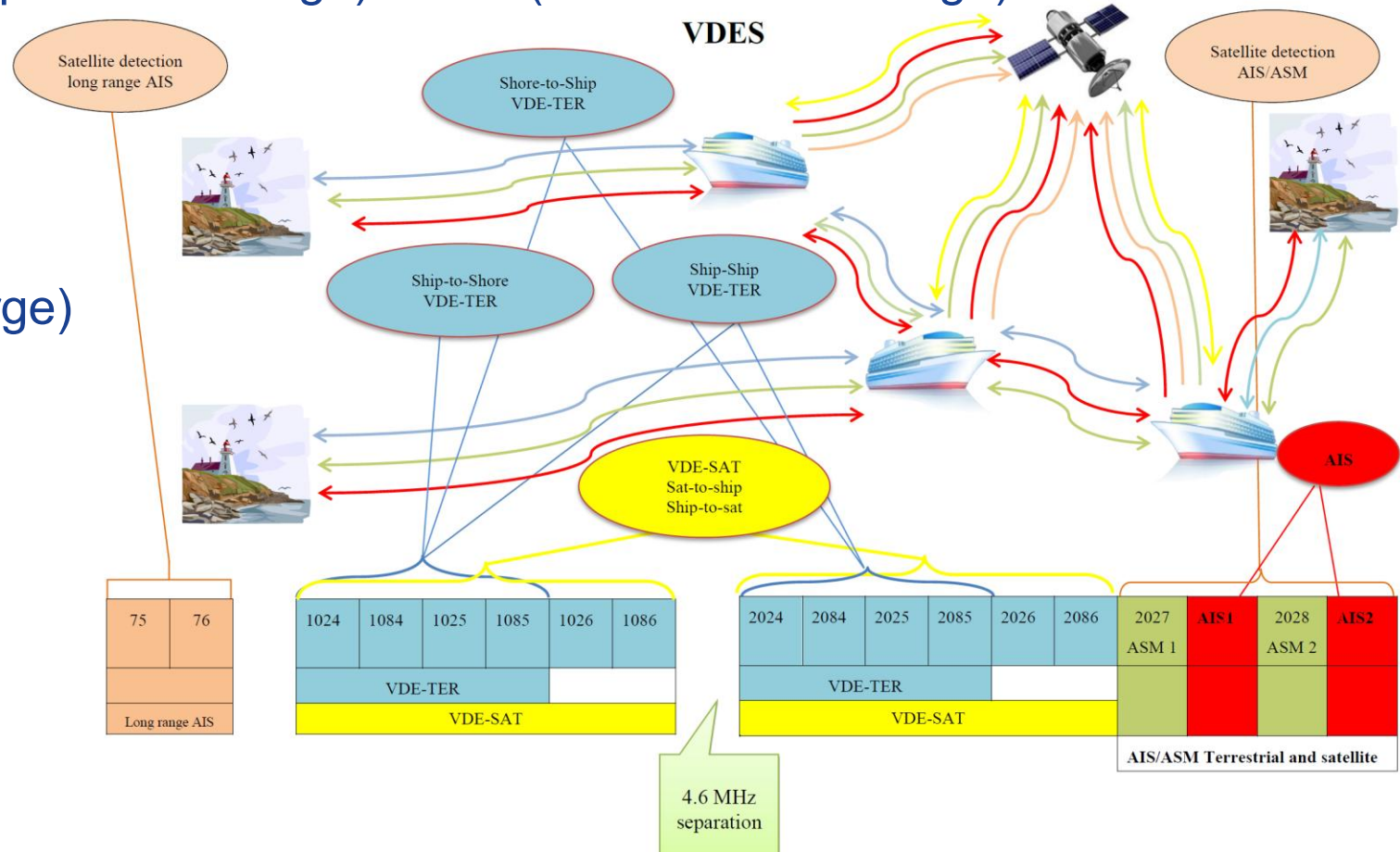
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Japan

- VDES Introduction
- VDES in IMO NCSR
- Development of use cases of VDES
- Development of VDES Standards/Guidelines
- Trials on VDE-TER and VDE-SAT in Japan
 - at Oshima Marchant Marine College
 - at OPRI, Sternula Japan, JSTRA (Video presentation)
- Conclusions

Introduction of VDES

■ VHF Data Exchange System

- Development at IALA (International Organization for Marine Aids to Navigation) since 2010s
- VDES = AIS + ASM(Application Specific Message) + VDE(VHF Data Exchange).
- Two-way communication
- Max. 307.2kbps
- Certainty of communication :
Not affected by weather
- Free use (no communication charge)



Consideration on VDES at IMO

- NCSR11 (June 2024) agreed the use of VDES as an alternative to AIS SOLAS/V (NCSR11/19 9.14), and also agreed that the purpose of VDES should be clarified (as a new output) before consideration on SOLAS/IV (NCSR11/19 9.15).
- NCSR12 (June 2025) finalized the draft amendments to SOLAS/V for use of VDES as an alternative to AIS
- MSC111 adopted the amendments to SOLAS/V19 and approved related guidelines on VDES; effective from 1 January, 2028.



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VDES guidelines/standards in IALA

IALA Guidelines G1117 VDES Over-view

- OPRI proposed some additional use cases of VDES
 - Coordination of navigation/collision avoidance
 - Fish-catch certificate
 - Disaster management
 - Maritime Domain Awareness

IALA Guidelines G1181 VDES-VDL Integrity monitoring

IALA Guidelines G1192 VDES Authentication

IALA Guidelines G1193 VDES signal measurement

IALA is developing

- Guidelines on VDES Shore-based infrastructures
- Guidelines on VDES facilities/resource sharing (OPRI is leading the development)

SPF/OPRI has actively contributed to the development of VDES Guidelines



Trials of VDES in Japan

In 2023, VDES trials were conducted by National Institute of Technology, Oshima College with the support of FURUNO for demonstration of use of VDES for route exchanges between vessels.

It was confirmed the effectiveness of VDES, such as:

1. Successful exchange of vessels' routes
2. VDES can inform own vessel's direction to other vessels with rudder angle degree.
3. VDES can visualize the vessel transmitting VHF in the vicinity, and
4. VDES is quite useful to exchange navigational information exchange between vessels for prevention of collision.



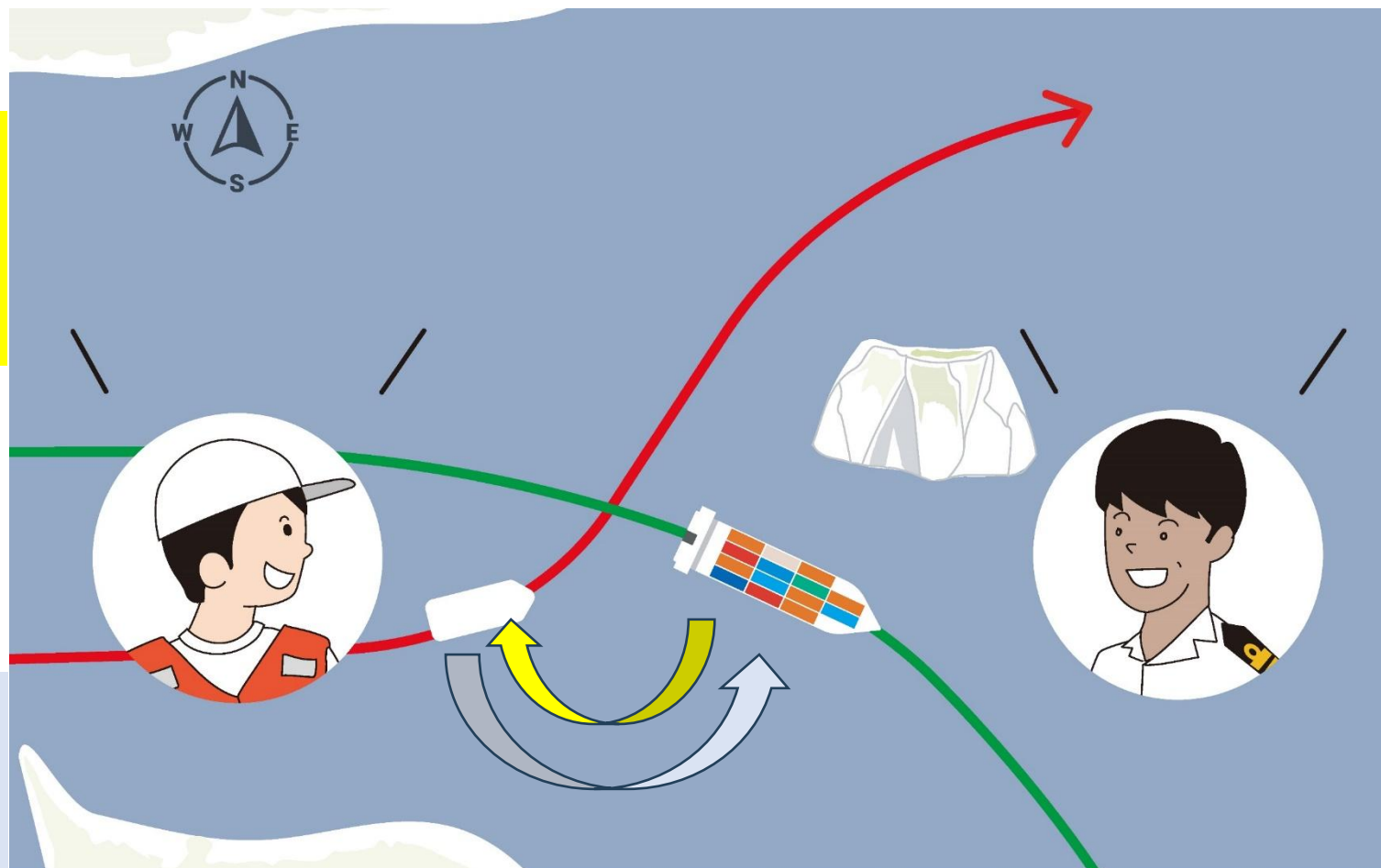
An example of use case of VDES

Ship-to-ship coordination of navigation when they come close

VDES receives the digital message and translate it into Japanese.

Fisherman replies in Japanese “OK, I will go cross after you”

VDES makes the message into digital signal and send it to the fishing boat



Containership
Speaking in English:
“May I go straight?”

VDES makes the message into digital signal and send it to the fishing boat

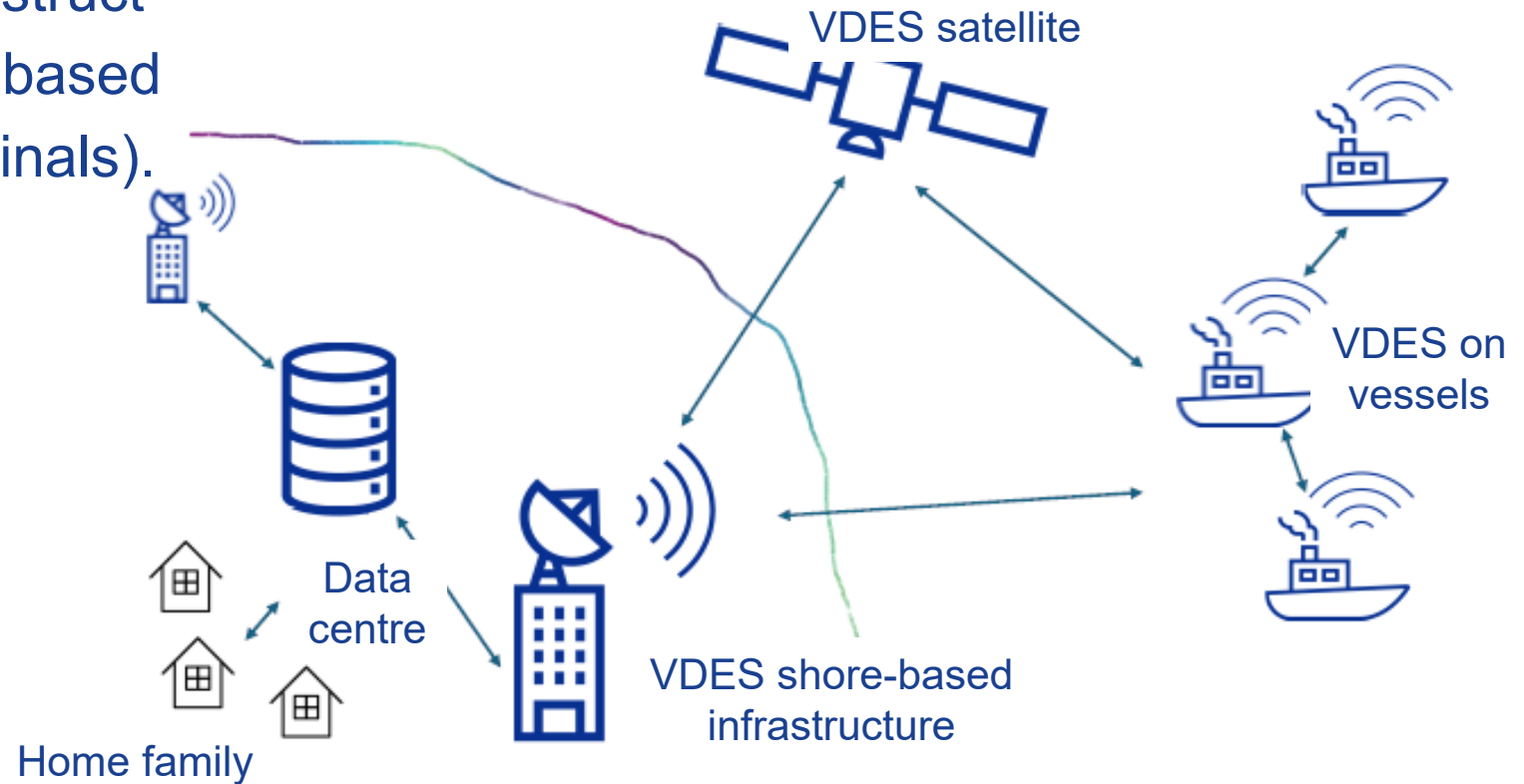
VDES receives the digital message and translate it into English.

Video presentation



Conclusions

- VDES is useful for maritime safety.
- It is necessary clarify and develop **actual use cases** of VDES for maritime safety.
- It is necessary to conduct trials for confirmation of the use cases of VDES.
- It is necessary to establish/construct the VDES infrastructures (shore-based stations, satellites, onboard terminals).



Thank you very much for your attention

