



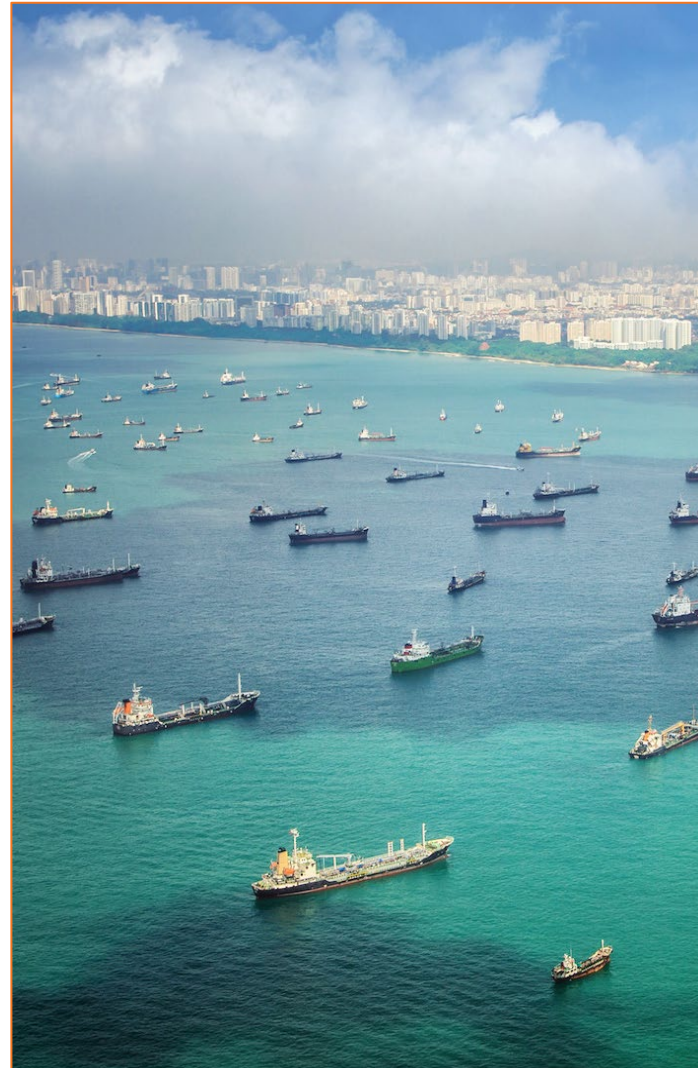
# Overseas satellite VDES development plans and international alliances



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# Problem – No data exchange with the ship bridge

Today, the coordination between ships, ports, and authorities is **voice-based!**



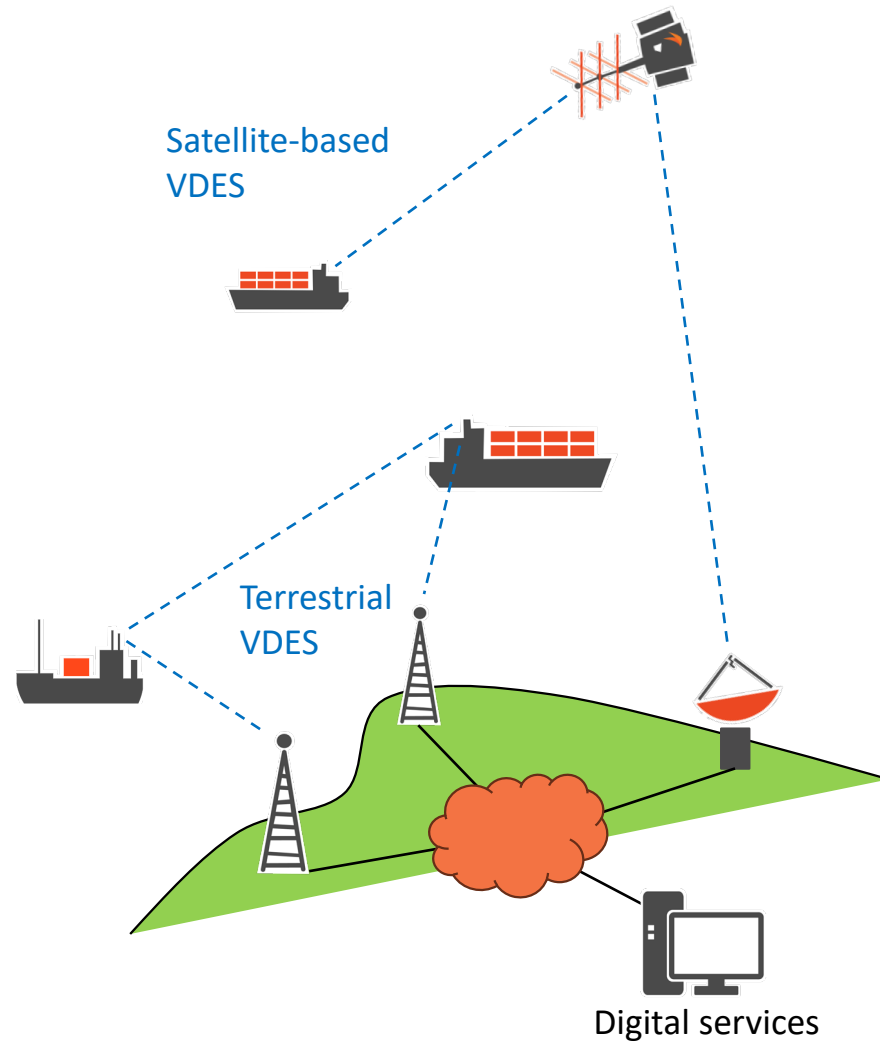
There is a strong demand for **digital coordination!**

1. **Navigation warnings**
2. **Virtual buoys**
3. **Route optimization**
4. **Sustainable fishing**
5. **Trusted AIS (de-spoofing AIS)**
6. **Port procedures**

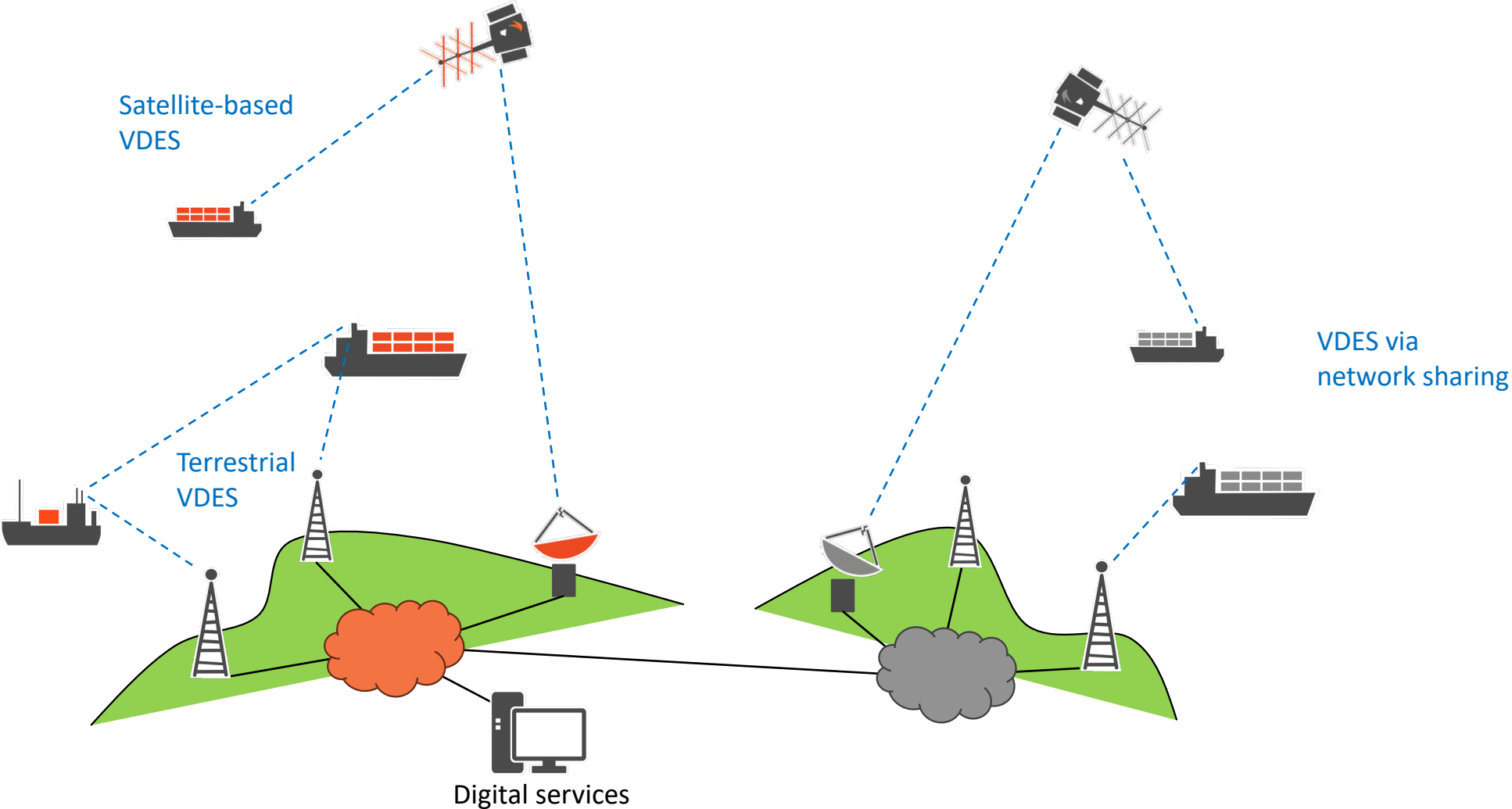
Navigation / crew safety  
Sustainability  
Security / surveyance  
Operational efficiency

**Internet is not an option!**

# Solution – VDES (AIS 2.0)



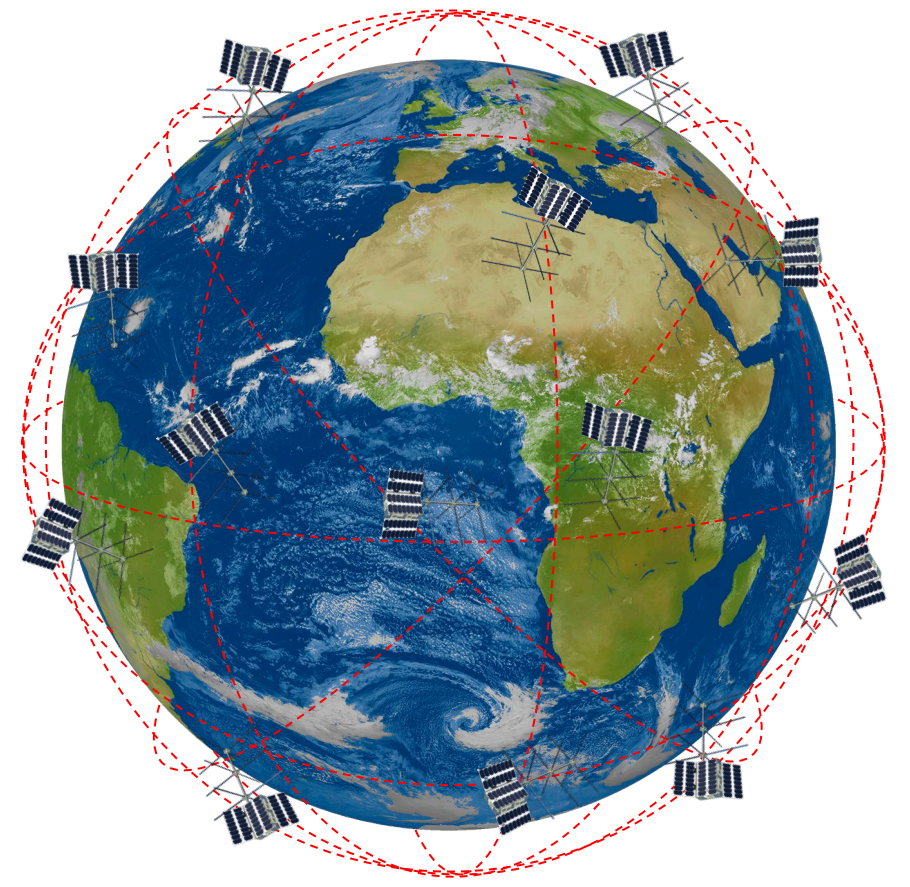
# Solution – Need for international collaboration!





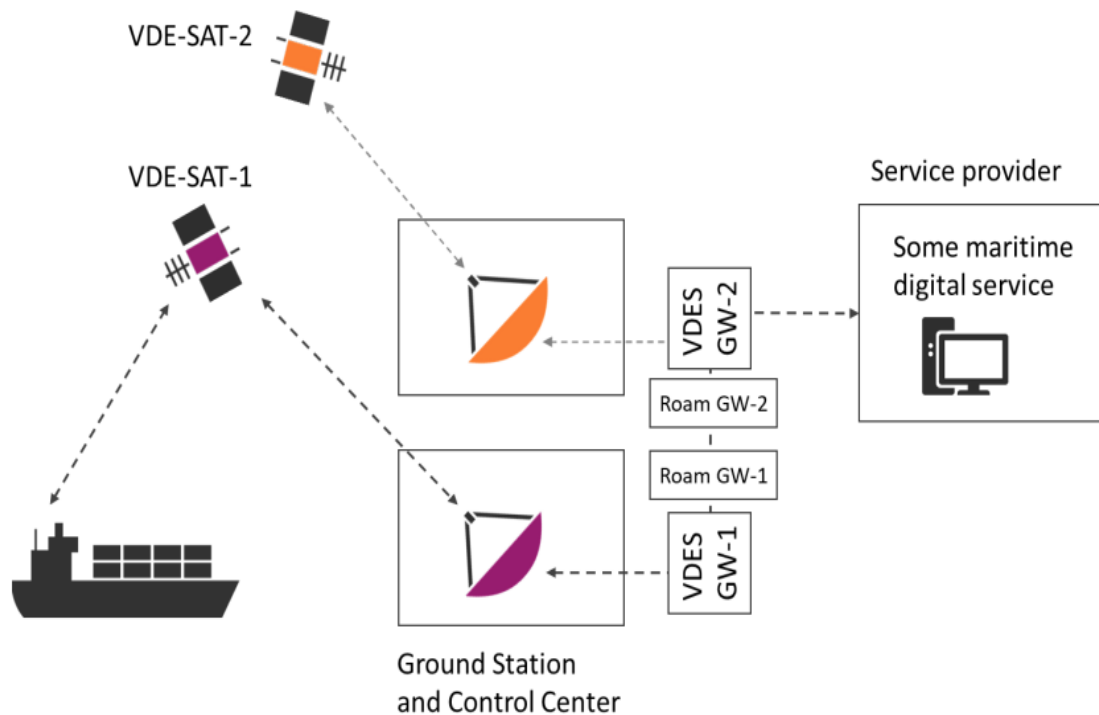
# Why we need collaboration (network sharing)?

- Satellites fly around the planet
  - Too much unused capacity if for a single nation...
- Some use cases demands (close to) realtime
  - Need for 60 satellites...
- If we want VDES soon, we cannot wait for each operator to launch 60 satellites...



# Project: MaSSha

(Maritime Safety Services over Shared VDE-SAT Network)



- Funded by European Space Agency (ESA)
  - Feasibility study: €324,000
  - 2022-2024
- Purpose: Demonstrate feasibility of network sharing for focus use cases
  - Demonstration ongoing...
- Focus use cases:
  - DSC distress monitoring
  - Commercial IoT solutions



# International VDES satellite projects

- Space Norway:** Since 2017, 2 satellites (Norsat-2, Norsat-TD)
- Sternula:** Since 2023, 1 satellite (Sternula-1) → 4 satellites in 2025
- A\*Star:** Since 2023, 1 satellite (Lumelite-4)
- AOS (AAC Clyde, ORBCOMM, Saab):** Since 2024, 1 satellite (Ymer-1)
- HEAD:** ? Satellites

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New:

- Alen Space:** 2024? (Satmar project)
- LusoSpace:** 2025?
- K-Pro:** 2025?
- NIMASA:** 2027?

- Technology promotion
  - We need people to know about VDES...
- Technical coordination
  - What is not under IALA, IMO, IEC, ...
  - **WG1** on Satellite Coordination
    - Coordination of the use of various satellite VDES resources among satellite VDES operators
  - **WG2** on Interoperability
    - Ensure the interoperability of VDES equipment from different manufacturers







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Connecting the Oceans



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