If it works in Singapore, it works anywhere
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SESAME Straits –

Secure, Efficient and Safe maritime traffic Management in the Straits of Malacca and Singapore
Project background - MEH

- Marine Electronic Highway (MEH) demonstration project 2006-2010
- MEH was to improve safety and efficiency of shipping in the SOMS
- MEH focus was on accurate sea-bed surveys and ship-shore data exchange
Project background – e-Navigation

• Clear synergies between the MEH project and e-Navigation

• Ship owners and mariners need to see the benefits of any e-Navigation solution

• Seeing is believing and the importance of test-beds is identified in the IMO e-Navigation Strategic Implementation Plan (SIP)

Ref: “three sides of a coin”
SESAME Straits - objectives

The primary objective is to **develop** and **validate** shared situational awareness and collaborative decision making between ship's bridge team and shore based Vessel Traffic Service (VTS) personnel.

Secondary objectives are:
• Just In Time arrival within a Regional Maritime Service Portfolio
• Use existing systems/equipment as far as possible
SESAME Straits - partners

• **Project members:** MPA, NCA, RCN, Vestfold University, Navtor, Marintek, SimPlus, KONGSBERG

• **Country Agreement:** Singapore/Norway R&D MoU

• **Funding - MAROFF programme:** Budget approx. NOK 25 mil

• **Project Owner:** Kongsberg Norcontrol
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Sea Trial Description

MV Titania
MV Torino
Mata Ikan
Test setup VDES

Prototype VDES BS610 base station on shore, and VDES 300 mobile station onboard Mata Ikan.

VDE channels used for route transfer

Route exchange between ECDIS and VTS, with ECDIS on shore side in order to get the demo effect. Position data transferred from Mata Ikan to shore side in order to localize vessel in ECDIS.

Temporarily antenna installations onboard Mata Ikan
Channel plan A (upper and lower leg), 2*50KHz channels was used for VDE

2W TX power

Data was compressed and retransmission supported, giving high throughput.

Modulation; π/4 QPSK

VDE upper leg is close to AIS channels and co-localization between AIS & VDE will be a challenge (standardization issue).

Assessed ASM but message size is not suitable. Coordination is needed between AIS & ASM to avoid interference.
**Name:** MPA MATA IKAN  
**Callsign:** 9V5902  
**MMSI:** 563082000  
**IMO:** 9229881  
**Type:** Passenger  
**Destination:** MPA BRANI  
**AIS Status:** Receiving  
**Path Plan Status:** Accepted

**Arrival time:** 21/4/2017 14:40  
**Schedule offset:** -12 minutes  
**Next waypoint:** 13:59  
**Planed leg speed:** 19.7 kts  
**Current speed:** 8.0 kts

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Automatic Reporting testbeds

- Norway - 2nd half 2016
  - 1st generation HW/SW/concept
  - VDES and mobile communication
  - Single Window integration
  - Ship2Shore & Shore2Shore

- Singapore - February 2017
  - 2nd generation HW/SW/concept
  - VDES and mobile communication
  - Ship2Shore
Sea Trial – What did we learn?

- It works!
- Collaboration limitation of the existing RTZ format
- ASM vs. VDE
The Future – SESAME Straits Solution II

- Automated Ship-to-shore reporting
- Expanding Just-in-time arrival
- Extending e-navigation services
- Harmonized Display of Navigation Information Received via Communications Equipment (HDNICE)
- Communications – Terrestrial and Satellite VDES, utilizing the Maritime Connectivity Platform (MCP)
- Cooperation with STM Validation
- Use existing equipment and international standards

Image courtesy of Norsk Romsenter
Future testbeds

Kongsberg Seatex’s intention is to join / drive new testbeds and to further develop the VDES prototypes, both mobile and base stations, in line with the evolving standards.

All in one box

Technical questions?

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