



# **Progress of Project 13 and further approach for safe navigation in SOMS**

**12<sup>th</sup> Cooperation Forum (CF)  
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Semarang, Indonesia**

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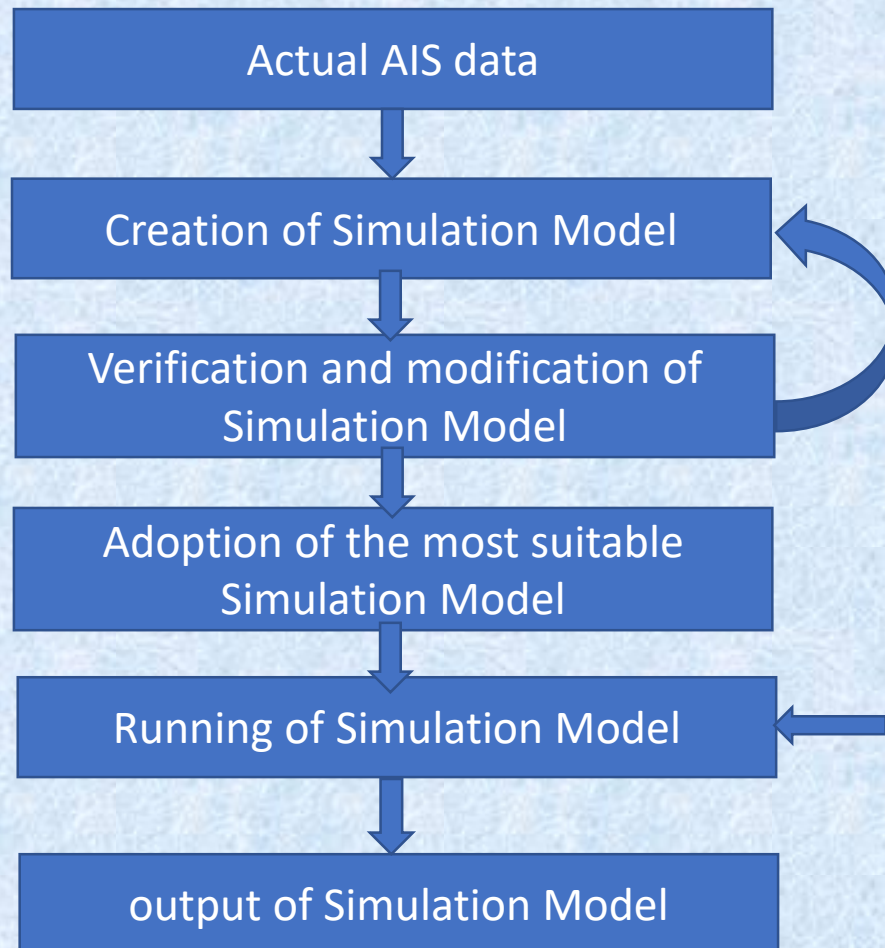
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# Aims of the study

- To enhance safe navigation in the SOMS by reducing collision risk
- To evaluate the reduction of collision risk if overtaking restriction were introduced in a certain area in Singapore Strait
- To study other possible measures other than overtaking restriction for reducing collision risk in Singapore Strait

# Method and Analysis of the Study

## Method

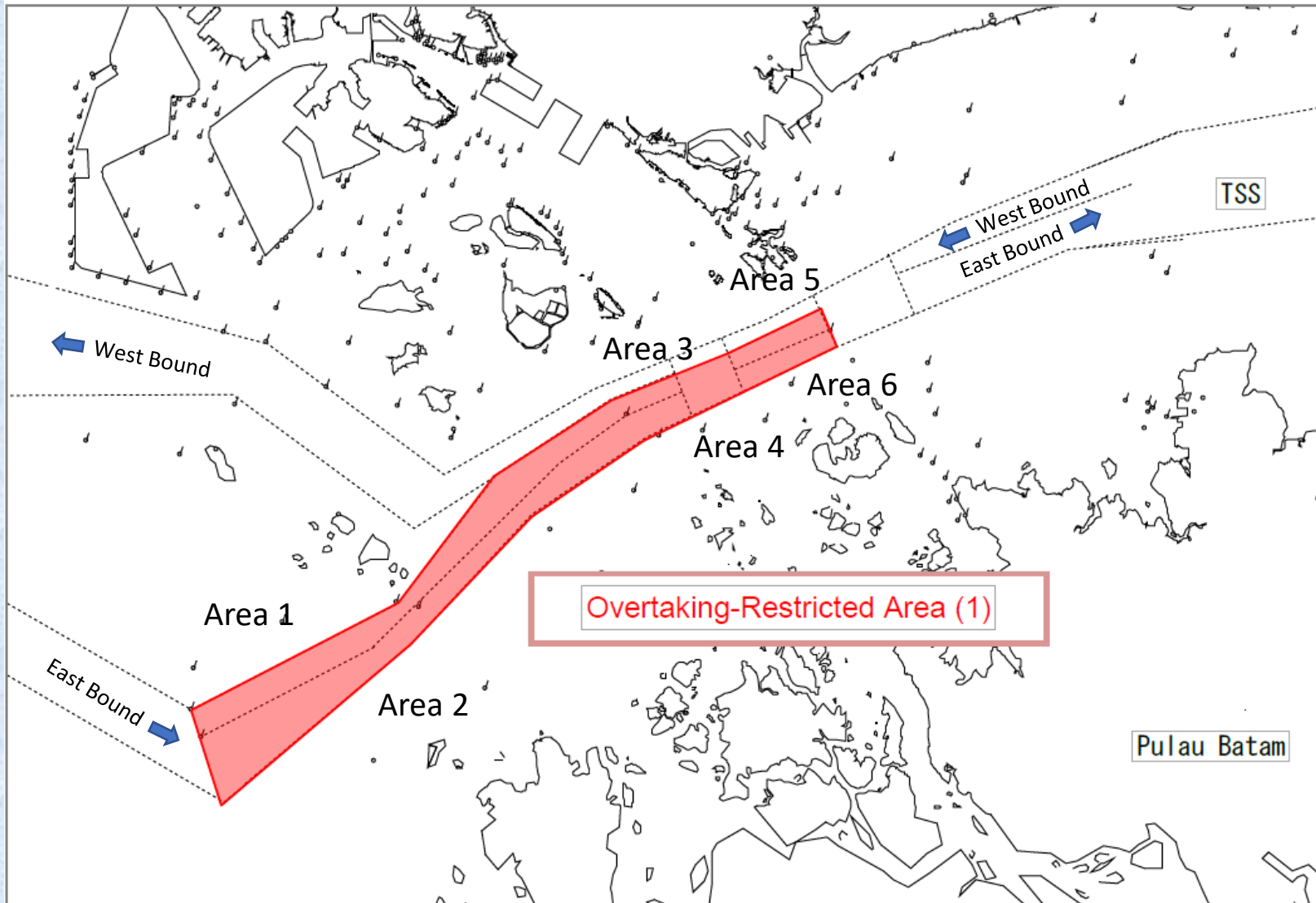


## Analysis

1. Collision Risk Analysis
2. Navigational Environmental Stress (ES) Analysis

# Phase 1 study

- Overtaking restriction area



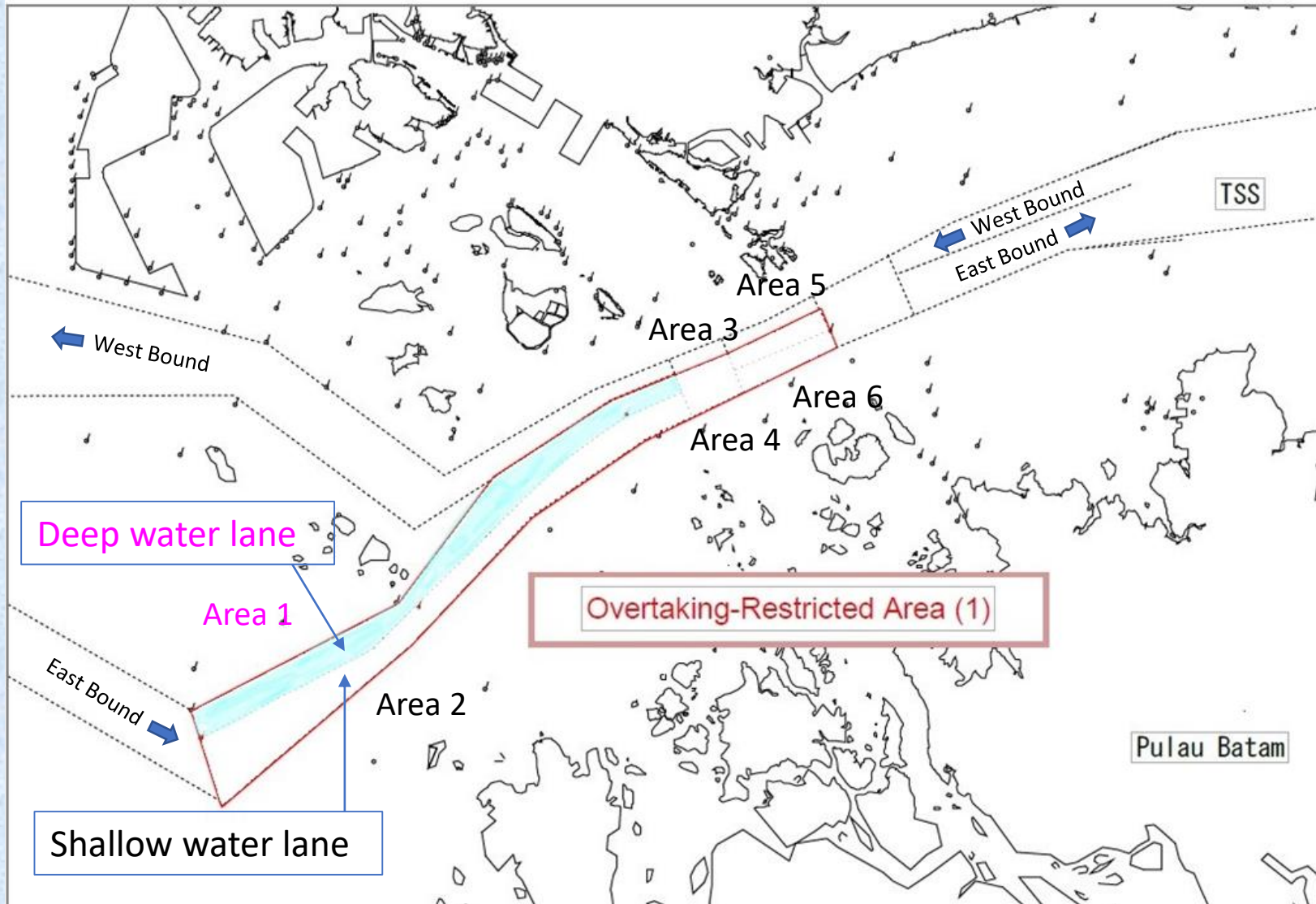


# Conclusion of the Phase 1 study

- The overtaking restriction setting has the effect of reducing Collision risk values regardless the length of the restricted areas.
- Setting the overtaking restriction in the eastbound lane on the west side of the Singapore Strait is considered to be effective for improving safety.
- There expressed some concerns at the PCC and TTEG that the maneuvering of high speed ships would be hampered if overtaking restriction were introduced the studied areas overall.
- The 11<sup>th</sup> PCC and the 43<sup>rd</sup> TTEG meetings recommended MSC to study further and report the study results at the next PCC and TTEG meetings in 2019.

# Phase 2 study

- Overtaking restriction area



## Passage rule in the East-bound lane under overtaking restricted

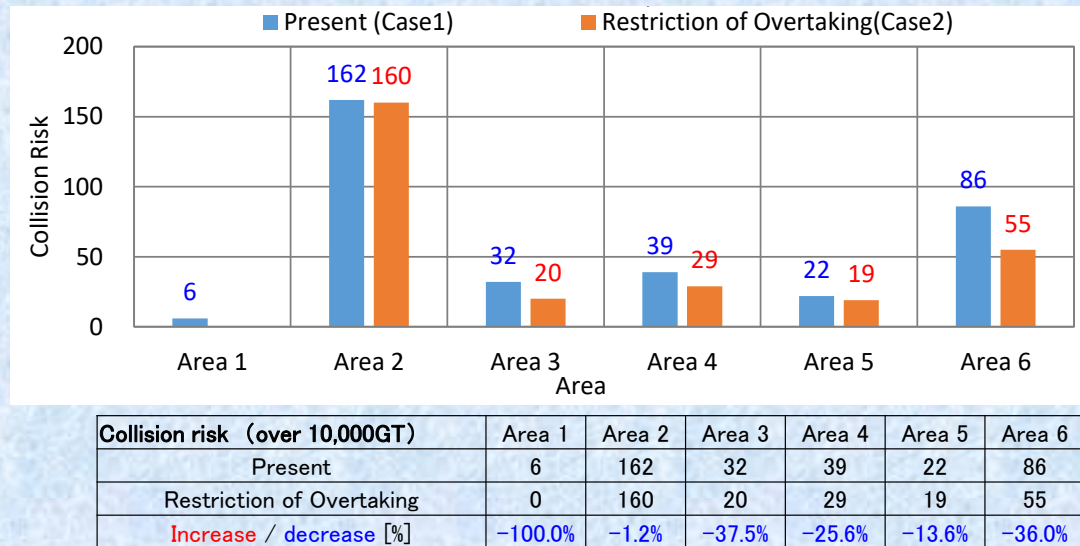
	Passage ships	Passage rule in the East-bound lane
Deep-water lane	<ul style="list-style-type: none"> <li>Deep draft ship (Ship with draft more than 15 m)</li> <li>Tanker more than VLCC equivalent (Tanker with LOA more than 250 m)</li> </ul>	<ul style="list-style-type: none"> <li>Speed less than 12 knots</li> <li>As far as practicable, to avoid overtaking</li> </ul>
Shallow-water lane	<ul style="list-style-type: none"> <li>Ships other than above</li> </ul>	<ul style="list-style-type: none"> <li>Low speed ships (speed less than 5 knots) and small ships (less than 500 GT) navigate in the right of the lane.</li> <li>When navigating in the right, set as the right 1/3 width of the channel</li> </ul>

## Simulation Cases

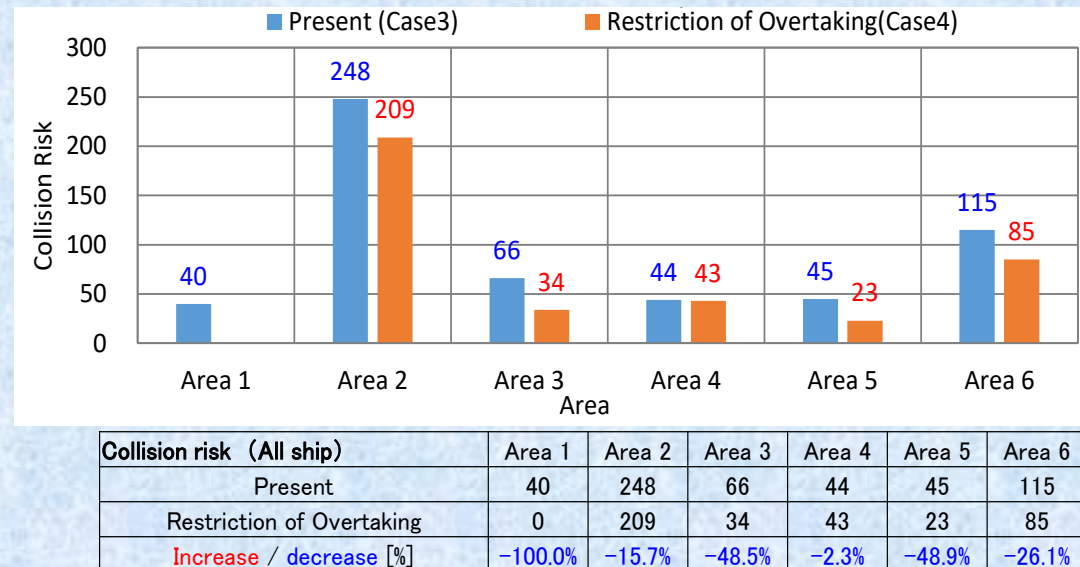
	Traffic volume	Existence of overtaking restriction
Case. 1	Current	Not set
Case. 2		Set
Case. 3	Traffic volume increased for restricted vessels. The following vessels is approximately doubled.	Not set
Case. 4	Pass the Deep-water lane and <ul style="list-style-type: none"> <li>Deep draft ship (Ships with draft more than 15 m)</li> <li>Tanker more than VLCC equivalent (Tankers with LOA more than 250 m)</li> </ul> The other ships are the current traffic volume.	Set



## Current volume



## Double volume



# Result of Phase 2 study

- The simulation studies showed that under the limited conditions if overtaking restrictions are provided, the frequency of occurrence of encounter and collision risk decrease in the entire area (Area 1 to Area 6) within the East-bound lane compared with the current situation.
- Within the overtaking restriction section, the occurrence of the overtaking intersection has been eliminated and the occurrence of "Crossing", "Head-on" has also disappeared. Therefore, it is expected that the risk of ships passing through this area could be reduced.
- Also, we also examined the effect of overtaking restrictions in the situation which the large ships ("Deep-draft ships" and "Tankers more than VLCC equivalent") targeted for overtaking restriction increased from the current traffic volume. As a result of comparing the improvement effect of the collision risk according to the traffic volume of the target ship, it was shown that the improvement effect of the collision risk increases as the traffic volume increases in almost the entire area.

# Conclusion

- Introducing overtaking restriction needs international concession and further discussion in the international maritime community, not only shipping industry but also the Littoral States.
- The simulation study while useful does not include physical and practical conditions such as tidal changes, crossing situations and varying speeds of vessels. In addition, shipmaster should be given ultimate control and decision of the vessel. Nonetheless, the outcome of the simulation study can be taken into account, where appropriate.
- There are the existing “Rules for Vessels Navigating Through the Straits of Malacca and Singapore” for shipmasters i.e. Rule 2 - eastbound deep draught vessels navigating in the deep-water routes shall, as far as practicable, avoid overtaking; and Rule 8 - all vessels to maintain a safe speed consistent with safe navigation, proceed with caution and be in a maximum state of manoeuvring readiness
- To ensure safety of navigation, all vessels should adhere to the “Rules for Vessels Navigating through the SOMS” as well as other international obligations such as COLREGS and take note of the safety advisories issued by VTS authorities when traversing the SOMS.

**THANK YOU**