

Proposal of a New Study for the Enhancement of the Safety of Navigation in the Straits of Malacca and Singapore

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1. Description of Study Proposal in 2015-2016

Malacca Strait Council (MSC) in cooperation with Japanese Shipowners' Association (JSA) would like to propose to conduct following studies for the enhancement of the safety of navigation in the Straits of Malacca and Singapore (SOMS) in 2015-2016 upon endorsement of TTEG.

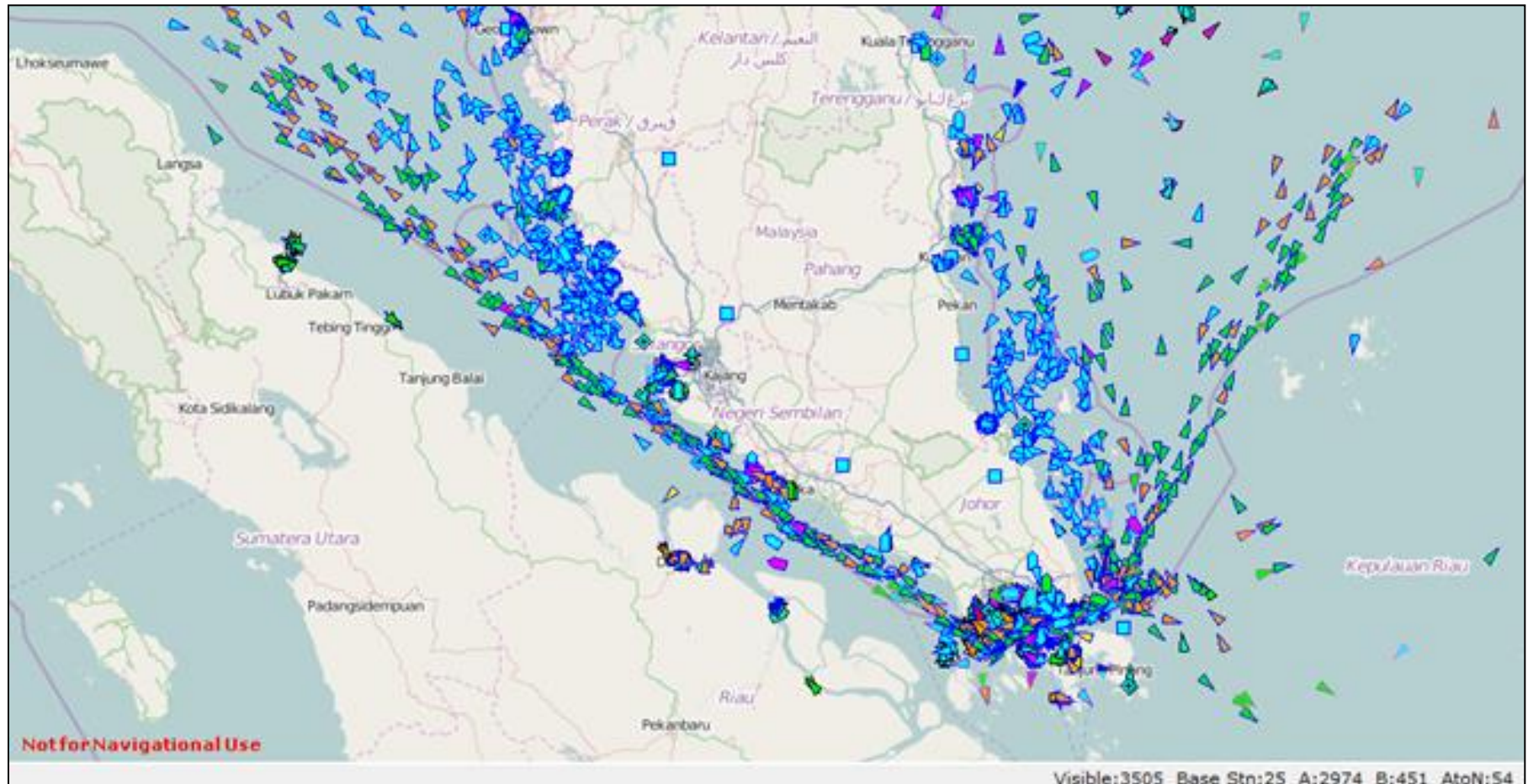
- 1) A Study on Various Areas in SOMS and Recommendations of Safety Measures--- Consideration of the need and possibility of introduction of “maximum and minimum speed limits” and “non-overtaking area” at certain area(s) in TSS.
- 2) A Study of the Risks associated with Entering and Exiting the Singapore Strait and Recommendations--- Consideration of risk-mitigating measures such as possible extension of TSS on east end in the area of southward of the East Bank as one of the options--

2. Backgrounds

Current situation of SOMS

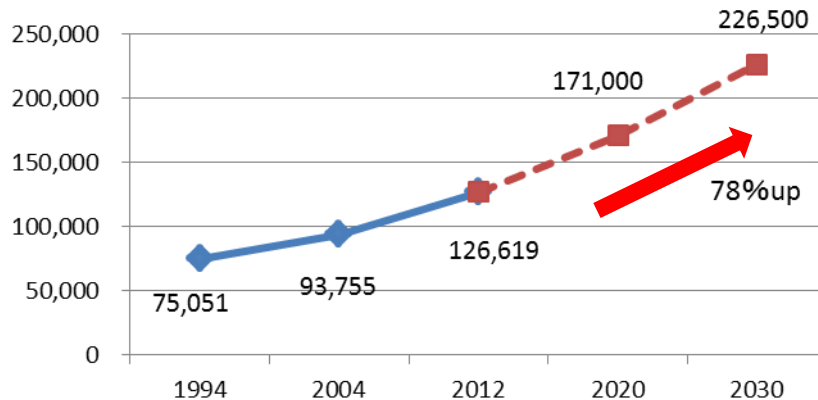
- ✓ The SOMS is well known as one of the most important and busiest routes for international seaborne trade
- ✓ Such as collisions of vessels cause no doubt serious damage to healthy developments of the world economy
- ✓ Potential risk of vessels transiting the Strait is increasing due to ever-increasingly heavy traffic
- ✓ The need to introduce new measures to enhance the safety of navigation in SOMS is raised from the ship masters based on their experiences

Examples of traffic volume of large size vessels transiting SOMS

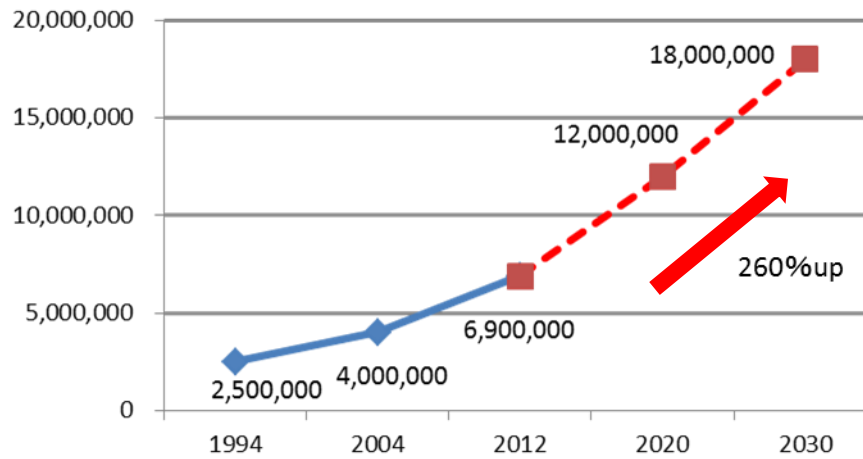


Forecast of Volume of Ships navigating SOMS

Number of ships



Thousand M/T



Past / Now / Future

| | | |
|--------------------|------------------------|---------------------------|
| 2004 | 94,000 vessels | 3,990 million dwt |
| | ↓ 35%up | ↓ 74%up |
| 2012 | 127,000 vessels | 6,940 million dwt |
| | ↓ 78%up | ↓ 260%up |
| 2030 (est.) | 226,500 vessels | 18,000 million dwt |

High growths in size and volume of vessels are expected to continue

Source: Nippon Foundation/Institute for Transport Policy Studies

3. Japanese Stakeholders

MSC (Malacca Strait Council of Japan)

- ❑ is NPO established in 1969 representing Japanese stakeholders related to SOMS with close collaboration with the Government of Japan
- ❑ has been continuously cooperating for the safety of navigation in the SOMS over past 45 years including the Joint Hydrographic Survey, Updating of nautical charts, Installation of Aids to Navigations, Donation of Tender vessels, Establishment of Revolving Funds against oil pollution, Contribution to the Aids to Navigation Fund and other measures.

JSA (Japanese Shipowners' Association)

- ❑ has been continuously cooperating for the safety of navigation in the SOMS over 40 years through MSC as one of the main users.
- ❑ has been given earnest requests from the masters of the Japanese merchant vessels transiting SOMS related to the possible solutions against current potential risks in the Strait.

• MSC/JSA believes that the proposals;

- ❑ will be the new steps to enhance the safety of navigation for all large vessels.
- ❑ will be beneficial to all the users of SOMS if the result of the studies will bring the actual introduction of new measures for enhancement of safety of navigation.

4-1. Potential risks and possible solutions **Study 1**

Present situation and Potential risk

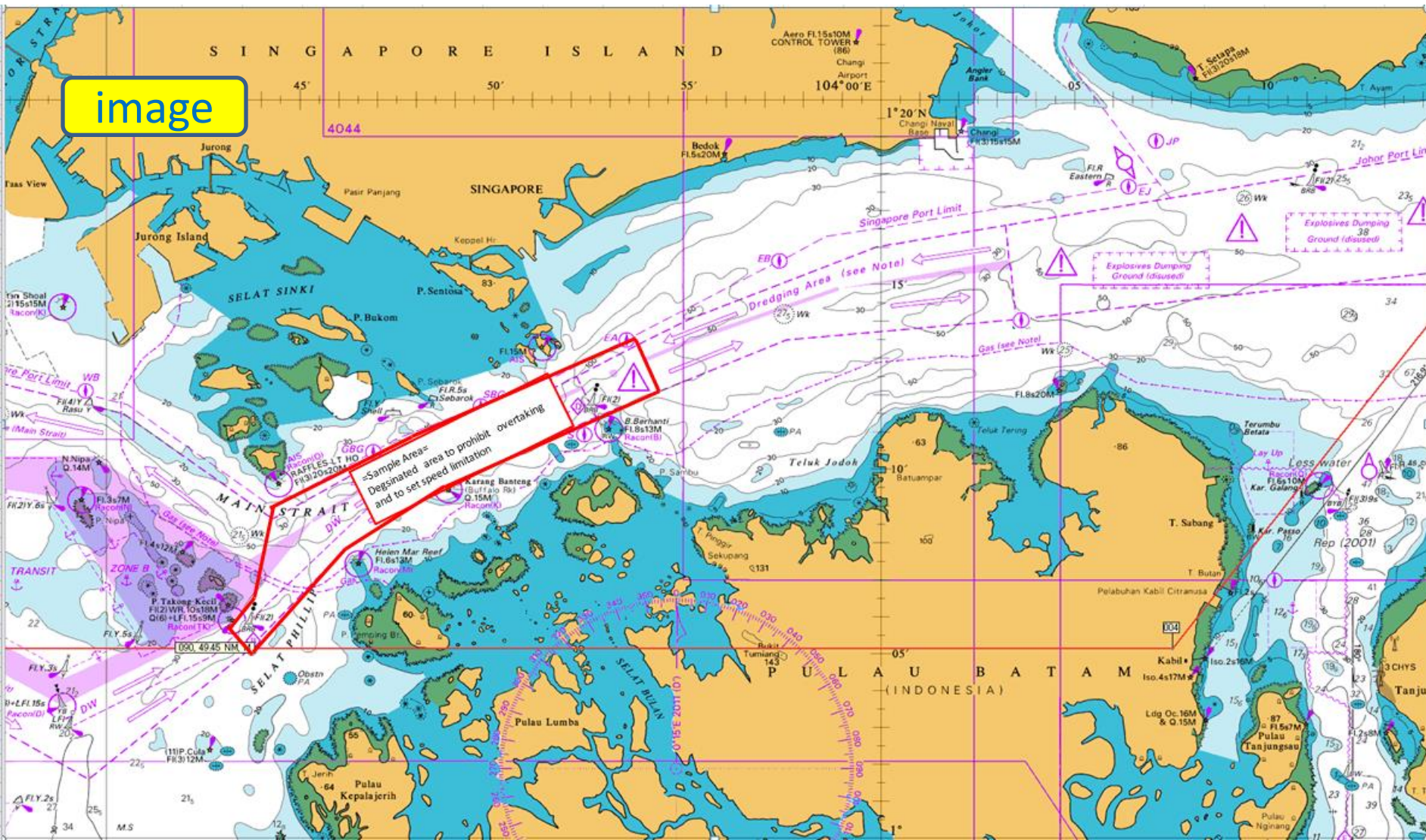
✓ Heavy traffic congestion within certain critical areas in TSS due to increasing number of vessels transiting with different destinations and speed

Consideration of Measures for Possible Solution

- ✓ Introduction of “maximum and minimum speed limits” at certain area(s) in TSS
- ✓ Introduction of “non-overtaking area” at certain area(s) in TSS

Study 1 : Possible Solution

Introduction of Partial Navigational Restrictions in the TSS



4-2. Potential risks and possible solutions

Study 2

Present situation and Potential risk :

- ✓ High potential risk of sea casualties can be observed at the eastern area of the east end of the TSS due to heavy traffic and natural conditions such as shallow water and/or sunken rocks

- ✓ Conduct study to identify risks associated with entering and exiting the Singapore Strait. Study to recommend measures.

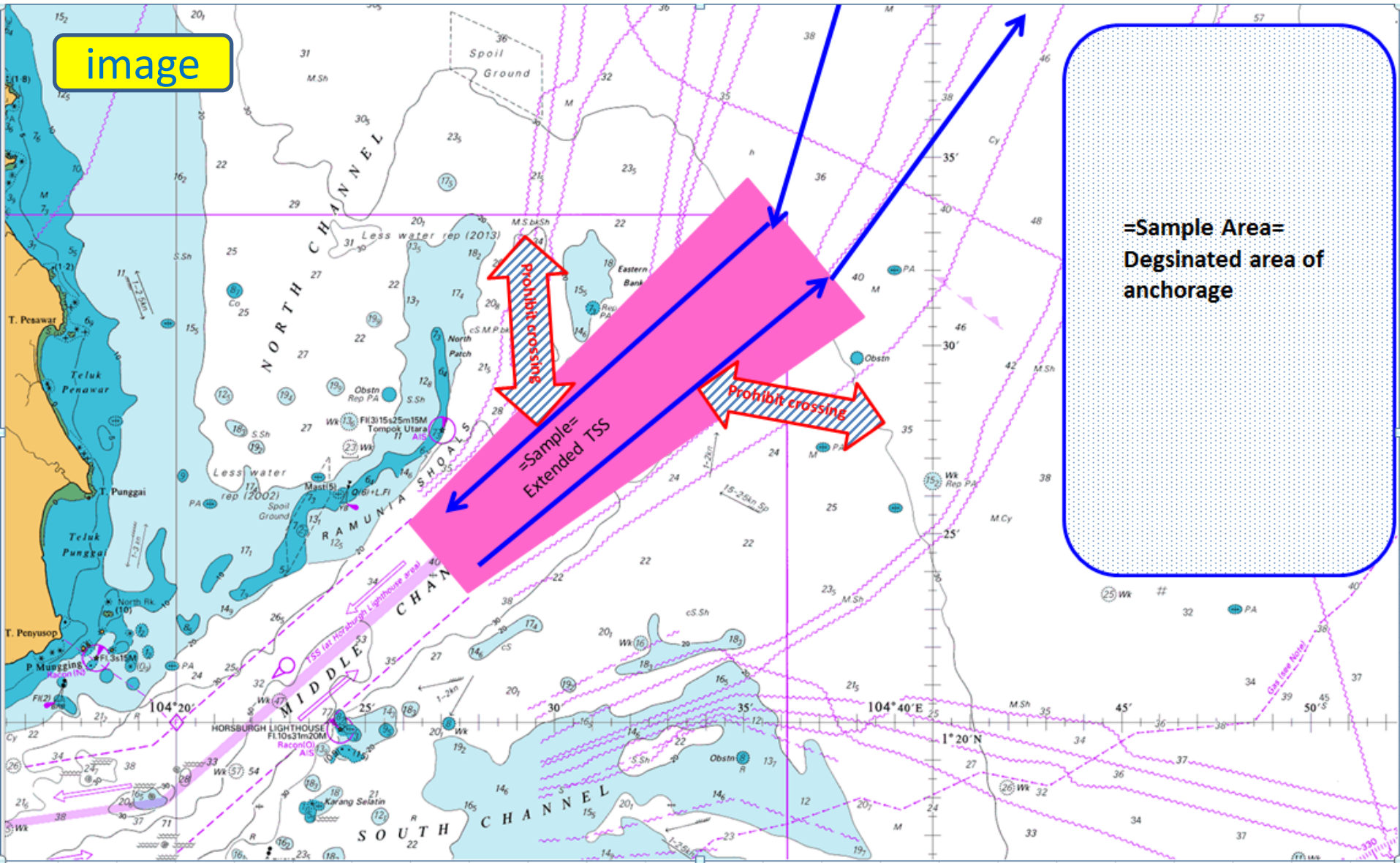
Consideration of Measures for Possible Solution

- ✓ Extension of TSS on east end in the southern area of the Eastern Bank

- ✓ Establishment of restricted area(s) of crossing at west of the Eastern Bank

- ✓ Establishment of designated anchorage area(s) near the extended TSS

Consideration of Extension of the TSS on East End



5. Outline of Proposed Studies (Study 1 and Study 2)

(1) Objective

To analyze the trucks of vessels in SOMS from AIS data and assess the critical area in TSS. Then to produce Simulation Models based on this trucks to assess the effect of the introduction of possible measures of “maximum and minimum speed limits” as well as “non-overtaking area” and (2) the extension of TSS to eastward in the southern area of Eastern Bank

(2) Methods

Step 1 : Preparatory work

Step 2 : AIS data collection

Step 3 : Actual Traffic Data (AIS) Analysis

Step 4 : Identification of Critical areas with risks

Step 5 : Development of Simulation Models

Step 6 : Verification of Simulation Models by adopting actual traffic movement

Step 7 : Modification of the Simulation Model

Step 8: Identification and Assessment of risks

Step 9 : Consideration of possible new measures and the introduction cost analysis

Step10: Assessment of the effect of new measures using Modified Simulation

Step11 : Prioritization of the possible measures

Step12 : Evaluation for introduction of new measures

Step13 : Production of the study report and recommendation

(3) Implementation Period : 8-9 months (Dec..2015- Aug. 2016)

Result of the Study to be reported at Co-operation Forum in 2016

(4) Estimated Cost : 100 thousand US dollars (Sponsored by the MSC)

6. Proposed Work Schedule

| | | Dec. 2015 | Jan. 2016 | Feb. 2016 | Mar. 2016 | Apr. 2016 | May 2016 | Jun. 2016 | Jul. 2016 | Aug. 2016 |
|---------|--|-----------|-----------|-----------|-----------|-----------|----------|-----------|-----------|-----------|
| Step 1 | Preparatory work | → | | | | | | | | |
| Step 2 | AIS data gathering | → | | | | | | | | |
| Step 3 | Actual traffic data (AIS) analysis | → | → | | | | | | | |
| Step 4 | Identification of Hotspots and risks | | → | → | | | | | | |
| Step 5 | Development of Simulation Model | | | → | → | | | | | |
| Step 6 | Confirmation of the replication of present traffic by Simulation Model | | | | → | | | | | |
| Step 7 | Modification of Simulation Model | | | | | → | | | | |
| Step 8 | Consideration of possible new measure including cost analysis | | | | | → | → | | | |
| Step 9 | Assessment of the effect of new measures using Modified Simulation | | | | | | → | → | | |
| Step 10 | Prioritization of the possible measures | | | | | | → | → | | |
| Step 11 | Evaluation | | | | | | | → | → | |
| Step 12 | Production of Study report and recommendation | | | | | | | | → | → |

7. Proposal for the endorsement by TTEG

- 1) MSC would like to propose the above proposed studies to be endorsed by TTEG.
- 2) If endorsed by TTEG, MSC in consultation with the Littoral States, would like to contract with a consultant for the implementation of the studies.
- 3) The result of the studies will be reported at 9th CF and 41st TTEG in 2016.

8. Other Measures to be Considered for Long-term

MSC in cooperation with JSA also would like to bring attentions on other possible measures to be studied and considered for the enhancement of the safety of navigation in SOMS for the future

- 1) Consideration of the need and possibility of changing disembarkation points of pilot for the east-bound vessels after crossing the westbound lane
- 2) Consideration of the need and possibility of enhancement of VTIS of the Littoral States

Thank you for your kind attention

