BACKGROUND INFORMATION ON PROJECTS UNDER THE CO-OPERATIVE MECHANISM

There has been concrete progress made by users of the Straits of Malacca and Singapore in sponsoring projects to maintain navigational safety and protect the marine environment in the Straits.

Six projects, which were first presented at the Kuala Lumpur Meeting in 2006, have been proposed under the Co-operative Mechanism. These projects provide a concrete avenue for users and stakeholders of the Straits to work with the littoral States in a tangible and direct manner.

Project 1: Removal of Wrecks in the Traffic Separation Scheme in the Straits

Objective	The objective of the project is to enhance the safety of navigation in the Straits for deep-draught vessels, particularly within the Traffic Separation Scheme (TSS), by determining the risks and removing of hazards to allow continuous and unobstructed navigation.
Current Status	While wrecks lying along the Straits do not pose an immediate threat to shallow draught vessels, these wrecks remain a navigational challenge for deeper draught vessels. Vessels with draughts of greater than 20 metres currently have to plan their passage through the Straits with careful consideration of tide levels.
Scope of Project	There are four main components to the project: (i) Hydrographic survey of the TSS to ascertain the locations and positions of wrecks with precision; (ii) Risk assessment of each wreck to evaluate the risks to vessels and to identify any consequential risk arising from wreck removal operations; (iii) Removal of wreck upon confirmation that removal is necessary; and (iv) Development of a Wreck Management Information System (WMIS)
Potential Benefits	Some of the potential benefits include: (i) Improved safe passage for transiting vessels. (ii) More efficient transit since need of timing of transit according to tides is reduced. (iii) Greater room for vessel manoeuvring in emergency situations. (iv) Protection of the marine environment arising for reduced likelihood of incidents.
Estimated Costs	- US$6.3 million for overall risk assessment of the wreck areas, and for training of resource persons - US$5 million per wreck removal

Project 2: Cooperation and Capacity Building on Hazardous and Noxious Substance (HNS) Preparedness and Response in the Straits

Objective	The objective of the project is to enhance marine environment protection in the Straits by enhancing the preparedness and response capabilities of the littoral States against any ship-based hazardous and noxious substances incident.
Current Status	Currently, preparedness and capability to respond to hazardous and noxious substances (HNS) incidents in the Straits varies amongst the littoral States. An inadequacy in this area could mean that there could be shortcomings in preventing serious damage to the marine environment and resources in the Straits, in the event of any HNS spill from ships. The economic livelihood of thousands of fishermen along the Straits may also be impacted. The IMO Protocol on Oil Pollution Preparedness and Response and Cooperation to Pollution Incidents by Hazardous and Noxious Substances, 2000 (OPRC-HNS Protocol) entered into force in June 2007. Singapore is a party to the OPRC-HNS Protocol.
Scope of Project	There are four main components to the project: (i) Establishment of a common HNS databank to enable quick identification of substance involved in an HNS incident, as well as the appropriate response procedures required. (ii) Formulation of Standard Operating Procedures (SOPs) for littoral States to jointly combat HNS spills in the Straits and conduct regular exercises. (iii) Establishment of HNS Response Centres at critical locations along the Straits. (iv) Development of capacity building programmes, which include training and exercises at regional and national levels.
Potential Benefits	Some of the potential benefits include: (i) The littoral States will have a common HNS Databank and each will have its own Response Centre to combat HNS spills from ships. (ii) The common standard operating procedures and coordinated training will enable greater cooperation among littoral States. (iii) Enhancement of ability to protect the marine environment and resources. (iv) Indirectly contributing to navigational safety in the Straits with the improved capability to deal with ships involved in HNS incidents.
Estimated Cost	US$3.5 million

Project 3: Demonstration of Class B Automatic Identification System (AIS) Transponders on Small Ships

Objective	The objective of the project is to enhance the safety of navigation within the Traffic Separation Scheme (TSS) in the Straits by preventing collisions, particularly between small ships and bigger ocean-going vessels, and the safety of life at sea.
Current Status	Under the IMO's Safety of Life at Sea Convention (SOLAS), ships of 300GT and above are required to carry Automatic Identification System (AIS) transponders which positively identify the ships and provide additional information that may assist in collision avoidance. However, there are numerous small vessels of less than 300GT navigating in the Straits that are not subject to SOLAS Regulations and do not carry the Class A units. Radars are also not very effective in detecting small ships. These include small ships that cross the Straits, travelling perpendicularly to transiting traffic. If ships of less than 300GT are equipped with Class B AIS, their presence and identities can be easily detected by other ships navigating in the Straits, as well as by the shore-based vessel tracking stations.
Scope of Project	The project will comprise three phases as follows: <u>Phase 1: Project Design</u> This would involve the conceptualisation and design of the demonstration project which would include refining and outlining the project's objectives, processes and parameters. <u>Phase 2: Supply, installation and testing of a Class B AIS system</u> This would involve working with a potential Class B AIS transponder supplier on the following: (i) Supply of 30 Class B AIS transponders; (ii) Installation of transponders on trial vessels; (iii) Installation of infrastructure such as servers and monitoring terminals; and (iv) Testing of Class B AIS System. <u>Phase 3: Operational trial</u> An operational trial would be conducted to promote the voluntary carriage of Class B AIS transponders by small vessels from the littoral States. The purpose is to assess the economic and technical viability of using the AIS Class B system for vessels of less than 300GT in the Straits.
Potential Benefits	Some of the potential benefits include: (i) Ships transiting the Straits will have positive identification of smaller vessels and the capability to monitor their movements. This will help shipmasters make well-informed decisions on safe navigation. (ii) Enable better identification of smaller ships by larger vessels during inclement weather, such as rain showers. (iii) The availability of information on small craft would enable vessel traffic monitoring centres to better manage traffic and assist shipmasters to navigate safely with the provision of essential traffic information. The masters of the smaller ships will also have information of other ships on their AIS screens to help them navigate safely. This will contribute to the overall safety for all users of the Straits.
Estimated Cost	US$100,000

Project 4: Setting Up a Tide, Current and Wind Measurement System for the Straits to Enhance Navigational Safety and Marine Environment Protection

Objective	The objective of the project is to enhance navigational safety and marine environment protection in the Straits through the continuous collection and processing of tide, current and wind data in the Straits.
Current Status	Currently, tide, current and wind conditions in the Straits are monitored by individual littoral States through their respective monitoring stations. Such data is important for safe navigation and marine environmental protection. For example, providing ships with real time tidal variation information can assist ships to avoid shallow waters. It is therefore important that such data received from the littoral States are shared.
Scope of Project	The scope of this project includes the design, supply, installation and commissioning of a system of tide, current and wind monitoring stations. The system includes six Acoustic Doppler Current Profilers (ADCP), six tide stations, six wind stations and the application of an Information Delivery System (IDS). The data from the stations will be transmitted to three shore-based stations. One shore-based station will be located in each of the littoral States. The three littoral States shall co-operate through an agreed mechanism on the protocol (eg. through the Internet) to deliver the data to the users.
Potential Benefits	Some of the potential benefits include: (i) The information will be particularly helpful to shipmasters of deep-draught vessels transiting the Straits to ensure adequate under-keel clearance and maintenance of a safe distance from navigational dangers. (ii) The information will help enhance accuracy of various modelling predictions, such as for search and rescue (SAR) operations and oil, chemical, or other HNS spills. The enhanced accuracy will enable more effective deployment of limited and valuable resources during SAR or clean-up operations. (iii) The information will be used in conjunction with hydrodynamic modelling to assist shipping lines in voyage planning, so as to maximise fuel consumption and improve ship schedules.
Estimated Cost	US$1.6 million

Project 5: Replacement and Maintenance of Aids to Navigation in the Straits

Objective	The objective of this project is to replace and maintain critical aids to navigation in the Straits to ensure continued safe navigation for vessels transiting through the Straits.
Current Status	There are a total of 51 principal aids to navigation installed in the Straits to assist vessels to navigate safely through the Traffic Separation Scheme (TSS). These aids to navigation mark out hazardous or shallow areas. Several of such aids to navigation along the Straits have been identified as requiring replacement or repair. There is also a need for regular maintenance.
Scope of Project	The project will require the replacement and maintenance of the identified aids to navigation. The selected aids to navigation which need to be replaced and maintained within a 10-year period consist of 18 light beacons, 1 lighthouse and 1 light buoy. In addition, there are 2 lighthouses which require only scheduled maintenance during this period. Hence there are a total of 22 aids to navigation selected for this project.
Potential Benefits	Aids to navigations will enhance the safe passage of vessels in the Straits, especially deep-draught vessels. Avoidance of shipping incidents will help protect the marine environment.
Estimated Cost	US$28.2 million

Project 6: Replacement of Aids to Navigation Damaged by the Tsunami Incident

Objective	The objective of this project is to replace aids to navigation off the Coast of Sumatra.
Current Status	Seven lighthouses and beacons along the eastern coast of Sumatra Island were damaged by the tsunami incident on 26 December 2004. These aids to navigation are currently not functioning and have to be replaced.
Scope of Project	The project will require the renewal of the identified aids to navigation that are damaged. This will include the installation of new aids to navigation to replace the damaged light houses and light beacons. The damaged aids to navigation comprised of 5 lighthouses and 2 light beacons. The exact structure to be built to replace the damaged aids will be determined following site surveys.
Potential Benefits	Aids to navigations will enhance the safe passage of vessels in the Straits, especially vessels plying near the eastern coast of Sumatra Island. Avoidance of shipping incidents will help protect the marine environment.
Estimated Cost	US$2.6 million