

Name of country	Technical Cooperation Project on Enhancing of Vessel Traffic Service System Management Capacity
Republic of Indonesia	The project on Enhancing of Vessel Traffic Service System Management Capacity Phase 2

I +Project summary

Background of the projects	Indonesia has a vast sea area as well as its adjacent area including crucial sea straits such as Sunda Straits, Lombok Straits, and Malacca and Singapore Straits, inter alia, Malacca and Singapore Straits (the Straits) are international shipping thoroughfares essential to world trade. More than 94,000 ships pass through the Straights annually and 90 % of crude oil to Japan is imported through the Straits. The volume of traffic in the Straits is projected that the number of vessels will be increased by 50 % and be 141.000 vessels in 2020 so that the risk of accident and marine pollutions becomes higher.																								
Objectives of the project	<p>Through strengthening the system for information gathering and provision, including Vessel Traffic Safety, improving the capability, mainly through the operation of the Vessel Traffic Safety system, strengthening the cooperation among neighboring countries in the field of maritime safety and security, formulation of Operation Manuals and User's Guide for Dumai VTS center and a manual for management and maintenance of VTS, a public relation (PR) activity, establishing a training system, and promoting cooperation with the counterpart institutions in Singapore and Malaysia, the projects aim at properly operating Vessel Traffic Safety and Security Management and Information Service System necessary to ensure Safety of vessels navigating in the Indonesian territorial waters especially in the service area of Batam and Dumai VTS center, thereby contributing to play a role in the maritime safety and security in Indonesian territorial waters especially through Vessel Traffic Safety management of Malacca and Singapore Straits in cooperation with Singapore and Malaysia.</p> <p>1. Overall Goal: <Phase 1> To secure maritime safety and security in Malacca and around Indonesian territorial sea, mainly Malacca and Singapore Straits. <Phase 2> To play a role in the maritime safety and security in Indonesian territorial waters especially through Vessel Traffic Safety management of Malacca and Singapore Straits in cooperation with Singapore and Malaysia.</p> <p>2. Project Purpose: <Phase 1> To enhance the capacity to secure maritime safety and security in Malacca and around Indonesian territorial sea, mainly Malacca and Singapore Straits. <Phase 2> To properly operate Vessel Traffic Safety and Security Management and Information Service System necessary to ensure Safety of vessels navigating in the Indonesian territorial waters especially in the service area of Batam and Dumai VTS center.</p>																								
Activities of the Project	<p>1. Project site: <Phase 1> Jakarta, Dumai, Batam, Tg. Medang, Tg. Parit, Hiyu Kecil, Takong Kecil, Tg. Berakit <Phase 2> Jakarta, Dumai, Batam</p> <p>2. Main activities: <Phase 1> 1) Strengthening the system for information gathering and provision, including VTS, 2) Enhancing the capacity to secure maritime safety and security mainly focusing on operation of VTS in Malacca and Singapore Straits, 3) Strengthening the cooperation among neighbouring countries in the field of maritime safety and security <Phase 2> 1) Clearing Batam and/or Dumai VTS center's mission, and establishing improvement ideas, 2) Reinforcing management and operation structure of Batam and/or Dumai VTS center, 3) Constructing good cooperation with relevant administrative agencies and private sectors to maritime safety and security in the region of Batam and/or Dumai VTS center, 4) Developing training system for the management and operation of the VTS center, 5) Promoting cooperation with the counterpart institutions in Singapore and Malaysia.</p> <p>3. Inputs (to carry out above activities)</p> <table border="0"> <tr> <td>Japanese side</td> <td>Indonesian side</td> </tr> <tr> <td><Phase 1></td> <td><Phase 1></td> </tr> <tr> <td>1) Experts: 19 persons</td> <td>1) Staff allocated: 38 persons</td> </tr> <tr> <td>2) Trainees received: 19 persons</td> <td>2) Land and facilities: Office space</td> </tr> <tr> <td>3) Equipment: LCD display, high-speed boat</td> <td>3) Operation cost.</td> </tr> <tr> <td>4) Operation cost.</td> <td></td> </tr> <tr> <td><Phase 2></td> <td><Phase 2></td> </tr> <tr> <td>1) Experts: 11 persons</td> <td>1) Staff allocated: 16 persons</td> </tr> <tr> <td>2) Trainees received: 18 persons</td> <td>2) Land and facilities: Office space</td> </tr> <tr> <td>3) Equipment: VTS Simulator, Desks, Chairs and UPS</td> <td>3) Operation cost.</td> </tr> <tr> <td>4) Operation cost.</td> <td></td> </tr> </table>			Japanese side	Indonesian side	<Phase 1>	<Phase 1>	1) Experts: 19 persons	1) Staff allocated: 38 persons	2) Trainees received: 19 persons	2) Land and facilities: Office space	3) Equipment: LCD display, high-speed boat	3) Operation cost.	4) Operation cost.		<Phase 2>	<Phase 2>	1) Experts: 11 persons	1) Staff allocated: 16 persons	2) Trainees received: 18 persons	2) Land and facilities: Office space	3) Equipment: VTS Simulator, Desks, Chairs and UPS	3) Operation cost.	4) Operation cost.	
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Project Period	<Phase 1> (ex-ante) January 2012 – January 2015 (actual) January 2012 – February 2015 <Phase 2> (ex-ante) March 2015 – March 2018	Project Cost	<Phase 1> (ex-ante) 345 million yen (actual) 228 million yen <Phase 2> (ex-ante) 191 million yen																						

	(actual) March 2015 – September 2018		(actual) 215 million yen
Implementing Agency	Director of Navigation, Director General for Sea Transportation (DGST), Ministry of Transportation		
Cooperation Agency in Japan	JAPAN AIDS TO NAVIGATION ASSOCIATION		

II. Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

- Considering that the phase 2 was subsequent project of the phase 1 and the overall goals of both phase 1 and phase 2 are almost same, the evaluation is conducted based on the project purpose and the overall goal of the phase 2.

1	Relevance/Coherence
	<p>[Relevance]</p> <p><Consistency with the Development Policy of Indonesia at the Time of Ex-Ante Evaluation ></p> <p>The project was consistent with the development policy of Indonesia at the time of ex-ante evaluation. In order to strengthen maritime security in Indonesian Exclusive Economic Zone (EEZ), Indonesian Maritime Security Coordination Body (BAKORKAMLA) was established as a coordinating body for 12 maritime security enforcement agencies by Presidential Regulation in December 2005 and became fully operational in 2007.</p> <p><Consistency with the Development Needs of Indonesia at the Time of Ex-Ante Evaluation ></p> <p>The project was consistent with the development needs of Indonesia at the time of ex-ante evaluation. BAKORKAMLA and DGST took the lead in enacting the presidential regulations for the establishment of the Indonesian Coast Guard (ISCG), and although Indonesia was moving toward the realization and embodiment of a unified maritime safety and coast guard organization. However, as of January 2012, there was no prospect for the establishment of the ISCG. DGST still had most of the ships, personnel, and facilities that were the working forces in the field of maritime safety and maritime security in Indonesia, and thus, the importance of strengthening its structure and capacity was high.</p> <p><Appropriateness of Project Design/Approach></p> <p>The project design/approach was appropriate. No problem attributed to the project design/approach was confirmed.</p> <p><Evaluation Result></p> <p>In light of the above, the relevance of the project is ③¹.</p>
	<p>[Coherence]</p> <p><Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation></p> <p>The project was consistent with the Japan's ODA policy to Indonesia at the time of ex-ante evaluation. Regarding phase 1, the project contributed to economic infrastructure development for "sustainable growth led by private sector" and security for "peace and stability" in "Rolling Plan for the Republic of Indonesia" (2004). The project was also consistent with economic infrastructure development for "sustainable growth led by private sector" and traffic safety for "peace and stability" in "Country Assistance Policy for the Republic of Indonesia" (2009). Regarding phase 2, "Country Assistance Policy for the Republic of Indonesia" (2012) positioned "assistance for correction of inequality and establishment of a safe society" and "assistance for the enhancement of capacity to address issues of Asian region and international society" as one of the priority areas and "JICA Country Analysis Paper for the Republic of Indonesia" (March 2012) positioned "correction of inequity and strengthening connectivity" and "responding to challenges in Asia and global community" as major development issues.</p> <p><Collaboration/Coordination with other JICA's interventions></p> <p>The collaboration/coordination between the project and the following projects of JICA was planned at the time of ex-ante evaluation and was implemented, the positive effects were confirmed at the time of ex-post evaluation. There was synergy between these technical cooperation projects and a grant project, the Project for Enhancement of Vessel Traffic System in Malacca and Singapore Straits (Phase 2), which constructed Dumai VTS center. The synergy effect between the technical cooperation and the grant project was that the human resources of Dumai VTS received training in TC which resulted in their skills in operating and doing maintenance of the equipment and system received from the grant project.</p> <p><Cooperation with other institutions/ Coordination with international framework></p> <p>The cooperation/coordination with Australian Maritime Safety Authority (AMSA) was planned at the time of ex-ante evaluation and implemented as planned, and the positive effect(s) was/were confirmed at the time of ex-post evaluation. The Standards of Procedures (SOP) was developed and VTS operator training was conducted cooperating with AMSA during the project. Singapore Maritime and Port Authority (MPA) and Marine Transport Training Institute in Malaysia (MATRAIN) also cooperated in training VTS operators in Indonesia. They complemented the project and improved the skills of the VTS operators.</p> <p><Evaluation Result></p> <p>In light of the above, the coherence of the project is ③.</p>
	<p>[Evaluation Result of Relevance/Coherence]</p> <p>In the light above, the relevance/coherence of the project is ③.</p>
2	Effectiveness/ Impact
	<p><Achievement status of Project Purpose at the time of completion of the project></p> <p>The Project Purpose was mostly achieved as planned by the time of project completion. As for Batam VTS, the number of VHF communication between Batam VTS and vessels navigating around Batam was dramatically increased. As for Dumai VTS, Dumai VTS started up the operation of VTS services successfully and communicated with vessels (around 50 vessels / day) around Dumai (Indicator 1). Batam VTS agreed MOUs for mutual cooperation with Pelindo 1 (Indonesia Port Corporation) and BP Batam (port authority) respectively, and Dumai VTS held the official briefing for stakeholders and over 100 stakeholders both private sector and government organization participated in. DGST and MPA held meetings regularly and DGST dispatched 2 staffs to VTS operator training held at MATRAIN in</p>

¹ ④ : very high, ③ : high, ② : moderately low, ① : low * To be the same afterwards.

Malaysia (Indicator 2).

<Continuation status of project effects at the time of Ex-post evaluation>

The project effects have been continued by the time of ex-post evaluation. Although there are some declines from 2020 due to the pandemic, the number of services rendered and number of communication by VTS centers has increasing trend.

<Status of achievement of Overall Goal at the time of Ex-post evaluation>

The Overall Goal was partially achieved at the time of ex-post evaluation. International meetings at the central level are regularized, although the information exchange among VTS centers has been still limited as there is no agreement yet.

<Other impacts confirmed at Ex-post evaluation>

At the time of Ex-post evaluation other impact was not confirmed.

<Evaluation Result>

From above, the effectiveness and impact of the projects is ③.

Achievement of Project purpose and Overall goal

Target	Indicators	Results	Source																																																							
Project Purpose To properly operate Vessel Traffic Safety and Security Management and Information Service System necessary to ensure Safety of vessels navigating in the Indonesian territorial waters especially in the service area of Batam and Dumai VTS center.	Indicator 1: Information Service (INS), Navigation Service (NAS) and/or Traffic Organization Service (TOS) are increased.	<p><u>Status of achievement: Mostly achieved as planned (Continued)</u> (At the time of completion of the project)</p> <ul style="list-style-type: none"> As for Batam VTS, as a result of activities, the number of VHF communication between Batam VTS and vessels navigating around Batam was dramatically increased after stating the project within 1 year as follows. February 2015: 252 → February 2016: 1071 March 2015: 798 → March 2016: 1305 <p>At the moment of completion of the project, Batam VTS communicated with all vessels navigating around Batam which was installed AIS equipment.</p> <ul style="list-style-type: none"> As for Dumai VTS, after Dumai VTS was handed over, Dumai VTS started up the operation of VTS services successfully and communicated with vessels (around 50 vessels / day) around Dumai. <p>(At the time of Ex-post evaluation)</p> <ul style="list-style-type: none"> Although there are some declines from 2020 due to the pandemic, the number of services rendered has increasing trend as below: <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="8">No. of Services (NIS, NAS, TOS) Rendered</th> </tr> <tr> <th>Year</th> <th>2015</th> <th>2016</th> <th>2017</th> <th>2018</th> <th>2019</th> <th>2020</th> <th>2021</th> </tr> </thead> <tbody> <tr> <td>Batam VTS</td> <td>12,071</td> <td>14,033</td> <td>13,690</td> <td>32,269</td> <td>33,341</td> <td>15,530</td> <td>6,371</td> </tr> <tr> <td>Dumai VTS</td> <td>N/A</td> <td>N/A</td> <td>5,818</td> <td>11,952</td> <td>16,480</td> <td>16,410</td> <td>17,133</td> </tr> </tbody> </table>	No. of Services (NIS, NAS, TOS) Rendered								Year	2015	2016	2017	2018	2019	2020	2021	Batam VTS	12,071	14,033	13,690	32,269	33,341	15,530	6,371	Dumai VTS	N/A	N/A	5,818	11,952	16,480	16,410	17,133	Project Completion Report Interview with Batam/Dumai VTS center																							
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Indicator 2: INS and exchange of information with relevant agencies on maritime security are increased.	<p><u>Status of achievement: Mostly achieved as planned (Continued)</u> (At the time of completion of the project)</p> <p>(1) Relationship with Other Organization</p> <ul style="list-style-type: none"> Batam VTS agreed MOU for mutual cooperation with Pelindo 1 (Indonesia Port Corporation). Batam VTS also agreed MOU for mutual cooperation with BP Batam (port authority) at the phase 1, therefore, Batam VTS agreed MOU with stakeholders both private sector (Pelindo 1) and government organization (BP Batam). Dumai VTS held the official briefing for stakeholders and over 100 stakeholders both private sector and government organization participated in. <p>(2) Relationship with Singapore and Malaysia</p> <ul style="list-style-type: none"> DGST and MPA held meetings regularly 2times a year based on MOU between DGST and MPA and one of the agenda was cooperation of VTS operation of Batam VTS. DGST dispatched 2 staffs to VTS operator training held at MATRAIN in Malaysia and 2 staffs were certificated as VTS operator. <p>(At the time of Ex-post evaluation)</p> <ul style="list-style-type: none"> Although there are some declines from 2020 due to the pandemic, the number of communications by VTS centers has increasing trend as below: <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="8">No. of Communication on Maritime Security</th> </tr> <tr> <th>Year</th> <th>2015</th> <th>2016</th> <th>2017</th> <th>2018</th> <th>2019</th> <th>2020</th> <th>2021</th> </tr> </thead> <tbody> <tr> <td colspan="8">Batam VTS</td> </tr> <tr> <td>INS</td> <td>23</td> <td>33</td> <td>37</td> <td>58</td> <td>65</td> <td>34</td> <td>17</td> </tr> <tr> <td>Exchange information</td> <td>6</td> <td>14</td> <td>3</td> <td>9</td> <td>9</td> <td>11</td> <td>6</td> </tr> <tr> <td colspan="8">Dumai VTS</td> </tr> <tr> <td>INS including</td> <td>N/A</td> <td>N/A</td> <td>4</td> <td>15</td> <td>4</td> <td>7</td> <td>8</td> </tr> </tbody> </table>	No. of Communication on Maritime Security								Year	2015	2016	2017	2018	2019	2020	2021	Batam VTS								INS	23	33	37	58	65	34	17	Exchange information	6	14	3	9	9	11	6	Dumai VTS								INS including	N/A	N/A	4	15	4	7	8	Project Completion Report Interview with Batam/Dumai VTS center
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Overall Goal: To play a role in the maritime safety and security in Indonesian territorial waters especially through Vessel Traffic Safety management of Malacca and Singapore Straits in cooperation with Singapore and Malaysia.	Adjustment and exchange of information among VTS centers of Indonesia, Malaysia, Singapore are increased.	Status of achievement: <u>Partially achieved</u> (At the time of Ex-post evaluation)							Interview with Batam/ Dumai VTS center, DGST	
		<ul style="list-style-type: none"> • Tripartite Technical Experts Group (TTEG) forum hold annually for the three countries to discuss the management of the Malacca and Singapore Straits handled at the central level. However, due to the COVID-19, TTEGs were not held in 2020 and 2021. • There is no agreement yet between Malaysian and Singapore VTS for the communication takeover when the vessels went out of Traffic Separation Scheme (TSS) to Indonesian territorial water. However, sometimes Singapore VTS will contact Batam VTS through a call center when they need help from Batam VTS, while there is no information exchange between VTS Dumai, Malaysia, and Singapore. 								
		Year		2018	2019	2020	2021			
		No. of Regular Meeting with MPA Singapore		2	2	0	0			
		No. of Staffs dispatched to VTS operator training held at MATRAIN in Malaysia		2	2	2	0			

3 Efficiency

Although the total project cost of the phase 1 and the phase 2 was within the plan (ratio against plan: 83%), the total project period exceeded the plan (ratio against plan: 109%) due to procedural reason and producing outputs. There were delay of introduction of VTS simulator and completion of grant aid. Outputs of both projects were achieved as planned.

From the above, the efficiency of the overall projects is ③.

4 Sustainability

<Policy Aspect>

There are the regulations related to promoting VTS operation which was supported by the project at the time of ex-post evaluation as follow.

- Reviewing Ministerial Regulation No. 26/2011 (MOT) regarding shipping telecommunication and vessel traffic management services in Indonesia waters (still draft regulation, currently in process)
- Ministerial Regulation No. 18/2022 (MOT) regarding Installation and Activation of Automatic Identification Systems (AIS) for the Ships Sailing in Indonesian Territorial Waters. This regulates the obligation of the vessel to install and activate AIS and regulates the sanction when the vessel violates the regulation.

<Institutional/Organizational Aspects>

The current structures in both VTS centers and DGST have been functioning well and they don't have particular problem.

The general PR activity was done by the Bureau of Communication and Public Information under the Secretariat General. The promotion/outreach activities are conducted by District Navigation. The number of staff has been sufficient.

<Technical Aspect>

The staff in the VTS centers participates every year in various training such as AMSA, MATRAIN, MPA, PT VTS, BP2TL in order to sustain technical level.

In Dumai VTS, some training materials are still used when communicating with vessels. Also, the manual and SOP from the project are still being used. In Batam VTS, the user manual and operation handbook have been still used to operate the VTS system. They even made some minor update on the user manual in 2022 (regarding the changes in the software features).

<Financial Aspect>

VTS centers have sufficient budget allocation from the State Budget for the O&M activities (in 2022.708.9 million Indonesian Rupiah (IDR) for Batam VTS, and 1.08 billion IDR for Dumai VTS). Although there was a budget cut since COVID-19, they seem to have firm budget allocation.

<Environmental and Social Aspects>

There was no monitoring system considered at the time of ex-ante evaluation and there is no monitoring activity related to the risk to the environment and social aspects.

<Evaluation Result>

In the light of above, no problem has been observed in terms of the policy / institutional/organizational / technical / financial/ environmental and social aspects. Therefore, the sustainability of the effects though the projects is ④.

5 Overall evaluation

The projects mostly achieved as planned project purpose which aimed at properly operating Vessel Traffic Safety and Security Management and Information Service System necessary to ensure Safety of vessels navigating in the Indonesian territorial waters especially in the service area of Batam and Dumai VTS center and partially achieved the overall goal to play a role in the maritime safety and security in Indonesian territorial waters especially through Vessel Traffic Safety management of Malacca and Singapore Straits in cooperation with Singapore and Malaysia. The project effects have been continued by the time of ex-post evaluation. Although there are some declines from 2020 due to the pandemic, the number of services rendered and number of communication by VTS centers has increasing trend. With reference to sustainability, no problem has been observed in terms of the policy / institutional/organizational / technical / financial/ environmental and social aspects and the government's policies support VTS operations and the staff participate training regularly and the manuals are being utilized properly. With reference to efficiency, the total project period exceeded the plan due to procedural reason and

producing outputs.

Considering all of the above points, this project is evaluated to be highly satisfactory.

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- VTS Batam has been operating for 10 years, and VTS Dumai has been operating for nearly 6 years, the human resources are in regeneration as many of the civil servant officers are nearing their retirement age. Meanwhile, the recruitment process of civil servant officers needs a long time, and only a limited number of personnel can be employed. Currently, a lot of VTS officers are contract workers, which means that they do not have adequate skills and knowledge of VTS, and they also cannot receive proper training. The contract worker can only learn VTS knowledge from their civil servant senior and colleagues who received proper training from the ministry. It was quite a concern that there are not enough VTS officers with adequate skills in the near future. Therefore, the VTS Center needs to have a sufficient number of civil servant VTS officers, so that at least the VTS Center should have an officer who can receive proper training from the Ministry and share the knowledge gained from such training with the contract workers.
- VTS Batam and Dumai are located in very busy and strategic straits, Malacca and Singapore Straits, which both are currently managing the TSS area. As it was expected that Indonesia will also be able to participate in the TSS management, the VTS officers are expected to have the necessary skill to conduct the work on maintaining TSS. To realize it, the VTS officers need to upgrade their skills and received proper, certificated training. Currently, there is a very limited International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA)-accredited training center in Indonesia, so it is not easy for the officers to receive certified training. There is some training in collaboration with several institutions such as AMSA, MATRAIN, and MPA Singapore, but each only has a limited quota. Therefore, it is quite important for DGST to have a plan on how to make more VTS officers receive certified training. It is also important for the officers to have an adequate certificate, such as IALA V103/4 (VTS On-the-Job Instructor) so DGST can hold their certified VTS Training within their institution.

Lessons Learned for JICA:

- One of the success factors of this project is that the VTS centers were constructed under JICA's grant project as well. It can be considered that this contributed for DGST and VTS centers in maintaining the ownership of the project. Also, if there were no technical cooperation project implemented together with the grant project, VTS centers wouldn't have been operated and maintained satisfactory like now. Thus, when considering grant projects, it is recommended to consider accompanying technical cooperation project as well in parallel so that they can synergize.



VTS Batam Control Room



VTS Dumai Control Room