

# 資 料

## 資料1. 調査団員・氏名

### (1) 第1次現地調査 (2月12日～3月11日)

総括	岩間 敏之	独立行政法人 国際協力機構 無償資金協力部 業務第一グループ 情報通信・ガバナンスチーム長
業務主任/ 維持管理計画	興水正比古	株式会社 パシフィック コンサルタンツ インターナショナル
機材計画1 (レーダー・管制卓)	野口 光正	財団法人 日本航路標識協会
機材計画2 VHF無線・データ伝送システム)	井上 一磨	株式会社 パシフィック コンサルタンツ インターナショナル
施工・調達計画/積算	久保 眞介	財団法人 日本航路標識協会

### (2) 第2次現地調査 (4月24日～5月24日)

総括	岩間 敏之	独立行政法人 国際協力機構 無償資金協力部 業務第一グループ 情報通信・ガバナンスチーム長
技術参与	井原 清	海上保安庁 交通部整備課 信号施設室長
計画管理	糟谷 良久	独立行政法人 国際協力機構 無償資金協力部 業務第一グループ ガバナンスチーム
業務主任/ 維持管理計画	興水正比古	(株) パシフィック コンサルタンツ インターナショナル
機材計画1 (レーダー・管制卓)	野口 光正	(財) 日本航路標識協会
機材計画2 VHF無線・データ伝送システム)	井上 一磨	(株) パシフィック コンサルタンツ インターナショナル
送信施設計画/建築計画	宮武 一弘	(株) パシフィック コンサルタンツ インターナショナル
施工・調達計画/積算	久保 眞介	(財) 日本航路標識協会

(3) 第3次現地調査 (7月26日～9月2日)

業務主任／ 維持管理計画	興水正比古	(株) パシフィック コンサルタンツ インターナショナル
機材計画2 VHF無線・データ伝送システム)	井上 一磨	(株) パシフィック コンサルタンツ インターナショナル
送信施設計画／建築計画	宮武 一弘	(株) パシフィック コンサルタンツ インターナショナル
施工・調達計画／積算	久保 眞介	(財) 日本航路標識協会
船舶航行量実態調査	長谷川徳行	(株) パシフィック コンサルタンツ インターナショナル

(4) 基本設計概要説明 (12月9日～12月15日)

総括	岩間 敏之	独立行政法人 国際協力機構 無償資金協力部 業務第一グループ 情報通信・ガバナンスチーム長
計画管理	相良 冬木	独立行政法人 国際協力機構 無償資金協力部 業務第一グループ 情報通信・ガバナンスチーム
業務主任／ 維持管理計画	興水正比古	株式会社 パシフィック コンサルタンツ インターナショナル
機材計画1 (レーダー・管制卓)	野口 光正	財団法人 日本航路標識協会
施工・調達計画／積算	久保 眞介	財団法人 日本航路標識協会

## 資料2. 調査行程

(1) 第1次現地調査 (2007年2月12～3月11日)

日数	月 日	曜	総括	業務主任/維持管理計画	機材計画1	機材計画2	施工・調達計画/積算	
			岩間敏之	興水正比古	野口光正	井上一磨	久保真介	
1	2/12	月	移動(東京→ジャカルタ JL725便、17:20着)					
2	2/13	火	11:00 JICAインドネシア事務所にて打合せ及び協議					
			15:00 JICA西分専門家との協議、16:45 DGST Director of Navigation Mr. Yuri Gunadi表敬及び協議					
3	2/14	水	9:00 DGSTとのキックオフミーティング					
			15:00 BAKORKAMLA	DGSTとの協議継続(～16:00)				
4	2/15	木	9:30 ミニッツ事前協議DGSC(～15:00)					
			JICA事務所	PCIジャカルタ事務所(通訳雇用手続き等)				
5	2/16	金	10:00 タンジュン・プリオク港 VTS(Navigation Dept施設)視察					
			JICA事務所	13:30 タンジュン・プリオク港 VTS(ADPEL施設)視察				
6	2/17	土	資料整理、報告書作成					
7	2/18	日	資料整理					
8	2/19	月	8:30 ミニッツサインに係る協議(DGST)、9:30 DGST協議 (～13:00)			移動(NRT→JKT		
			14:00 JICAインドネシア事務所報告、15:30 日本大使館報告、17:00 BAKORKAMLA報告			JL725便、17:20着)		
9	2/20	火	成田着 JL726便	9:30 DGST 協議 (～13:00)、現地調査準備				
10	2/21	水		要請サイト及びレーダーカバーエリアに対する検討、現地調査準備				
11	2/22	木		9:00 DGST協議 (～12:00)				
				13:00 JICA専門家訪問	要請サイト及びレーダーカバーエリアに対する検討			
12	2/23	金		要請サイト及びレーダーカバーエリアに対する検討、現地調査準備				
				13:00 マラッカ海峡評議会佐々木氏と面談(～15:00)				
				16:00 沿岸無線プロジェクトチーム訪問、ヒアリング				
13	2/24	土	サイト状況調査(調査準備)					
14	2/25	日	資料整理	ドマイへ移動	資料整理			
15	2/26	月	バタムへ移動	ドマイ沿岸無線局調査	業務主任におなじ			
16	2/27	火	ドマイへ移動、タンジュンプリオク調査	タンジュン・メダン、モロン調査	同上			
17	2/28	水	バンアンパール、ジャンタン調査	ブンカリス、タンジュン・マリット調査	同上			
18	3/1	木	ジャンタン調査	ジャカルタへ移動	同上			
19	3/2	金	ヒュークテール調査	現地調査結果整理	同上			
20	3/3	土	ジャカルタへ移動/国内協議	現地調査まとめ/国内協議	同上			
21	3/4	日	報告書執筆	資料整理				
22	3/5	月	VTSの設置場所、運用形態に関する国内協議・検討				移動(NRT→JKT JL725便 17:20着)	
			13:00 現地調査結果を踏まえたVTSの設置場所及びシステム概要についてJICA専門家と意見交換					
			14:00 DGSTとの協議、現地調査結果を踏まえたVTSの設置場所及びシステム概要について					
23	3/6	火	VTSの設置場所及びシステム概要について国内検討/13:00 DGSTとの協議				施工・掘削計画調査、 調達事情調査	
24	3/7	水	VTSの設置場所及びシステム概要について国内検討/13:00 DGSTとの協議				同上	
25	3/8	木	BAPPENAS訪問	VTSの設置場所及びシステム概要について国内検討			同上	
			15:30 大使館報告					
26	3/9	金	9:00 DGST/10:00航行援助局長挨拶/JICAインドネシア事務所報告				同上	
27	3/10	土	業務取りまとめ/帰国(ジャカルタ発、JL725便、22:10発)					
28	3/11	日	成田着					

(2) 第2次現地調査 (2007年4月24日～5月24日)

日数	月日	曜	総括・技術参与・計画管理	業務主任/維持管理計画	機材計画1	機材計画2	送信施設計画/建築計画	施工・調達計画/積算
			総括 岩間敏之 技術参与 井原 清 計画管理 穂谷良久	奥水正比古	野口光正	井上一磨	宮武一弘	久保真介
1	4/24	火		移動(東京→ジャカルタ JL725便、17:20着)				
2	4/25	水		9:00 西分JICA専門家、14:00 JICA事務所、15:30 大使館説明				
3	4/26	木		9:00 実施機関協議				
4	4/27	金		現地再委託業務準備	現地調査準備			
5	4/28	土		パタムへ移動(GA152)、パンアンパル追加調査				
6	4/29	日		タコクテール調査				
7	4/30	月		ヒュークテール追加調査				
8	5/1	火		ジャカルタへ移動			移動(東京→ジャカルタ JL725便 17:20着)	
9	5/2	水		9:00 実施機関協議			客先表敬/自然条件調査・再委託準備	
10	5/3	木		運営維持管理体制	システム・コンフィギュレーションの検討		同左/サイト状況調査(調査準備)	
11	5/4	金		無償資金協力の妥当性	供与機材の絞り込み		パタムへ移動、パンアンパル調査	
12	5/5	土		基本設計検討			タコクテール調査	
13	5/6	日		資料整理			ヒュークテール調査	
14	5/7	月		9:00 実施機関協議			ジャカルタへ移動	
15	5/8	火		9:00 実施機関協議				施工・提供計画の検討 調達事情調査
16	5/9	水	移動(東京→ジャカルタ)	9:00 実施機関協議			施設計画の検討	同上
17	5/10	木	8:00 コリ局長との協議、10:00大使館、11:00JICA事務所	同上			同上	同上
				13:00 DGST、14:00 東京湾VTSに関するセミナー				同上
18	5/11	金		国内打合せ			施設計画の検討	同上
				コリ局長との協議				
19	5/12	土		パタムへ移動、パンアンパル調査	国内ミーティング(機材計画と施設計画、施工計画策定のためのすり合わせ)			
20	5/13	日	ジャンタン、プキット・ボンカール、タンジュン・ランブット調査、ジャカルタへ移動	ジャンタン、プキット・ボンカール、タンジュン・ランブット調査	資料整理			
21	5/14	月	国内協議	ジャカルタへ移動	国内ミーティング(設計検討作業継続)			
			14:00 BAKORKAMLA訪問、セミナー実施		13:00 実施機関協議			
22	5/15	火		実施機関協議		施設計画の検討	施工・提供計画の検討 調達事情調査	
			17:00 BAPPENAS訪問、18:30 世銀MEHプロジェクト担当者との意見交換	国内ミーティング(設計検討作業継続)				
23	5/16	水		14:00 大使館、15:00 JICA報告、帰国(JL726便、22:15発)			施設計画の検討	施工・提供計画の検討 調達事情調査
24	5/17	木		成田着			施設計画の検討	同上
25	5/18	金					同上	概算事業費積算
26	5/19	土					同上	同上
27	5/20	日					同上	成田着
28	5/21	月					測量・土質調査成果の受領	
29	5/22	火					成果の確認・チェック	
30	5/23	水					先方政府協議	
31	5/24	木					成田着	

(3) 第3次現地調査 (2007年7月26日～9月2日)

日数	月日	曜	業務主任/維持管理計画	機材計画2	送信施設計画/建築計画	施工・調達計画/積算	船舶通航実態調査
			興水正比古	井上一磨	宮武一弘	久保真介	長谷川徳行
1	7/26	木	移動(東京→ジャカルタ)				
2	7/27	金	再委託見積書評面(自然条件調査、船舶航行量実態調査) 16:00 現地再委託契約ネゴ(船舶航行量実態調査)				
3	7/28	土	10:00 現地再委託契約ネゴ(自然条件調査)				
4	7/29	日	同上		移動(東京→ジャカルタ)		
5	7/30	月	9:00 JICAジャカルタ事務所		現地調査準備		
			11:00 大使館表敬				
			12:30 西分JICA専門家表敬				
			13:00 DGST表敬・協議				
6	7/31	火	現地再委託契約(船舶航行量実態調査、自然条件調査)		現地調査準備		
			16:00～DGST協議				
7	8/1	水	バタムへ移動		ドマイへ移動		
			パツアンパル沿岸無線局				
8	8/2	木	MEH IMOコンサルタントとの協議 10:00～		ドマイ沿岸無線局調査		
9	8/3	金	MEHデータセンター調査		タンジュン・メダン調査		
10	8/4	土	ジャカルタへ移動		ブンカリス、タンジュン・パリット調査		
11	8/5	日	資料整理		ジャカルタへ移動		移動(東京～ジャカルタ)
12	8/6	月	現地再委託契約(多重伝送回線検討)契約交渉	移動(東京→ジャカルタ)	バタムへ移動及びタンジュン・ブラキット調査		調査準備
			船舶航行量実態調査再入札準備				船舶航行量実態調査再入札準備
13	8/7	火	入札説明会 15:00～	バタムへ移動	バタム経由ジャカルタへ移動		入札説明会 15:00～
14	8/8	水	団内協議、資料整理	MEH IMOコンサルタントとの協議 10:00～	先方政府協議		団内協議、資料整理
15	8/9	木	現地再委託契約(多重伝送回線検討)契約手続き	ジャカルタへ移動	成田着		船舶航行量実態調査準備
			DGST協議(MEHの件) 13:30～	DGST協議(MEHの件) 13:30～		船舶航行量実態調査準備	
16	8/10	金	船舶航行量実態調査準備	資料整理、帰国			船舶航行量実態調査準備
17	8/11	土	団内協議、資料整理	成田着			団内協議、資料整理
18	8/12	日	同上				同上
19	8/13	月	JICAインドネシア事務所 8:30～				JICAインドネシア事務所 8:30～
			DGST協議 10:00～				DGST協議 10:00～
			船舶航行量実態調査入札 15:00～				船舶航行量実態調査入札 15:00～
20	8/14	火	現地再委託契約交渉				現地再委託契約交渉
			DGST協議16:00～				DGST協議16:00～

第3次現地調査日程続き

日数	月 日	曜	業務主任/維持管理計画	機材計画2	送信施設計画/建築計画	施工・調達計画/積算	船舶通航実態調査
			奥水正比古	井上一磨	宮武一弘	久保真介	長谷川徳行
21	8/15	水	船舶航行量実態調査 契約手続き及び調査打合せ(終日)				船舶航行量実態調査 契約手続き及び調査打合せ
22	8/16	木	同、調査打合せ、準備(午後)				同、調査打合せ、準備
23	8/17	金	船舶航行量実態調査準備				船舶航行量実態調査準備
24	8/18	土	団内協議、資料整理				団内協議、資料整理
25	8/19	日	団内協議、資料整理				団内協議、資料整理
26	8/20	月	DGST協議13:00～				DGST協議13:00～
27	8/21	火	ブンカリスへ移動				ブンカリスへ移動
28	8/22	水	タンジュン・パリットへ移動、調査準備				タンジュン・パリットへ移動、調査準備
29	8/23	木	船舶航行量実態調査監督				船舶航行量実態調査監督
30	8/24	金	同上				タンジュン・ブラキットへ移動
31	8/25	土	同上				船舶航行量実態調査監督
32	8/26	日	ジャカルタへ移動				同上
33	8/27	月	調査記録整理、DGST協議				同上
34	8/28	火	JICAインドネシア事務所 大使館報告、帰国				同上
35	8/29	水	成田着				同上
36	8/30	木					同上
37	8/31	金					ジャカルタへ移動
38	9/1	土					データ整理、帰国
39	9/2	日					成田着

(4) 基本設計概要説明 (2007年12月9日～12月15日)

日数	月 日	曜	総括	計画管理	業務主任/維持管理計画	機材計画1	施工・調達計画/積算
			岩間敏之	相良冬木	奥水正比古	野口光正	久保真介
1	12/9	日		移動(東京→ジャカルタ)			
2	12/10	月	移動(東京→ジャカルタ)	基本設計概要書及び機材仕様書(案)の現地説明・協議			
3	12/11	火		大使館、JICA、海運総局表敬 基本設計概要書及び機材仕様書(案)の現地説明・協議			
4	12/12	水		基本設計概要書及び機材仕様書(案)の現地説明・協議			
5	12/13	木		ミニッツ協議、BAPPENAS表敬・協議			
6	12/14	金		ミニッツ署名 大使館、JICA報告、帰国(ジャカルタ発)			
7	12/15	土		成田着			

### 資料3. 関係者（面会者）リスト

#### 海運総局（Directorate General of Sea Transportation : DGST）

Ir. Ajiph R. Anwar	Dipl. En, Secretary to Director General
Mr. Yuri Gunadi	Director of Navigation
Capt. Suharko	Head of Sub Directorate of Marine Telecommunication
Mr. Alamsyah Sasmito	Head of Section of Equipment and Maintenance
Mr. Kardiawan S.	Staff of Section of Equipment and Maintenance
Mr. Tony Rafiq	Staff of Section of Equipment and Maintenance
Mr. Ketut Aries	Staff of Section of Equipment and Maintenance
Mr. Haposan Trmanggor	Staff of Section of Equipment and Maintenance
Mr. Asmul Khairi	Ditto
Mr. Wisnu Panca P.	Ditto
Mr. Topan Rindoyo	Head of Section of Operation
Mr. Eko Hadirumekso,	Sub-Division of Program, Div. of Planning

西分 竜二 氏	JICA 専門家（海上保安）
川上 泰司 氏	JICA 専門家（港湾保安）

#### 海上保安調整組織（Indonesian Maritime Security Coordination Board : IMSCB）

Djoko Sumaryono	Kalakhir
Drs. Tri Yuswoyo	Kapus of Information, Law and Working Cooperation
Drs. M. Rudi Wahyono, Dipl. Env.	Remoto Sesign Satelite

#### 国家開発庁（National Development Planning Agency: BAPPENAS）

Ir. Bambang Prihartono,	MSCE, Director of Transportation （ドラフト説明時）
Ir. Gumilang Hardjakoesoema, Msc.	Director of Transportation
Drs. Petrus Sumarsono, Akt, MA,	Head of Sea Transportation

#### 在インドネシア日本大使館

池光 崇 氏	一等書記官
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**JICA インドネシア事務所**

片山 祐之 氏

次長

柿岡 直樹 氏

主任

永見 光三 氏

主任

Ms. Sulisty Wardani

Program Officer for Infrastructure

**世銀 MEH プロジェクト IMO コンサルタント**

Mr. John Kreamer

IMO MEH Project Launching Consultant

Ms. Emily Hanselman

IMO MEH Procurement Consultant

資料4. 討議議事録

資料4-1 第1次現地調査時議事録

**Report on Discussions  
on the Basic Design Study on the Project for  
Development of Vessel Traffic Service in Malacca and Singapore Straits in the Republic of  
Indonesia**

In response to the request from the Government of the Republic of Indonesia (hereinafter referred to as Indonesia"), the Government of Japan decided to conduct a Basic Design Study on "Development of Vessel Traffic Service in Malacca and Singapore Straits" (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent the Basic Design Study Team (hereinafter referred to as "the Team") to Indonesia, headed by Mr. Toshiyuki Iwama, Team Director, ICT and Governance Team, Project Management Group I, Grant Aid Management Department JICA and is scheduled to stay in the country from February 12, 2007 to March 10, 2007.

The Team held discussions with the officials concerned of the Government of Indonesia and will conduct a field survey at the proposed locations. As the result of the discussions the Team summarized the main items described in the attached sheets and asks for clearance by the Indonesian side and a written confirmation. The Team will proceed to further study and prepare the Basic Design Study Report.

Jakarta, February 19, 2007



Toshiyuki IWAMA  
Leader  
Basic Design Study Team  
Japan International Cooperation Agency



Yuri GUNADI  
Director of Navigation  
Directorate General of Sea Transportation  
Ministry of Transportation

## ATTACHMENT

### 1. Objective

The objective of the Project is to improve the safety of vessel navigation at the Indonesian side of the Malacca and Singapore Straits, by establishing new radar systems.

### 2. Project Location

The proposed project locations are as described below, and as shown in Annex-1.

1) VTS at Tanjung Medang in Rupert Island, Tanjung Parit in Bengkalis Island, Jantan in Karimun Island or Hiyu kecil Island, Batu Ampar in Batam Island, Tanjung Berakit in Bintan Island.

2) Repeater Station at Dangas in Batam Island

3) VTS Center at Batu Ampar in Batam Island

4) VTS Sub-Center at Dumai

The Team will analyze whether the proposed locations are appropriate and enough to fulfill the above objective.

### 3. Responsible Organization and Implementing Agency

The responsible and implementing agency is the Directorate General of Sea Transportation (DGST) of the Ministry of Transportation. The organization chart of the DGST is shown in Annex-2.

### 4. Items Requested by the Government of Indonesia

After discussions with the Team, items requested by the Indonesian side are as follows: radar system with GPS, radar tracking, multifunction console, VHF radio communication system, transmission and communication links, AIS, CCTV, VTS data system and web server, record and play unit, meteorological sensor, power generator, air conditioner.

JICA will further assess the appropriateness of the request and will make necessary recommendation to the Government of Japan for approval.

### 5. Japan's Grant Aid Scheme

1) Indonesia side understands the Japan's Grant Aid scheme explained by the Team as described in Annex-3.

2) Indonesia side will take necessary measures, as described in Annex-4, for smooth implementation of the Project, as a condition for the implementation of Japan's Grant Aid.

### 6. Schedule of the study

1) The team will proceed to further study in Indonesia until March 10, 2007.

2) A second Basic Design Study Team will visit Indonesia around April 2007.

3) JICA will prepare the draft report in English and dispatch a mission to Indonesia in order to explain its contents around August 2007.

*J. T.*

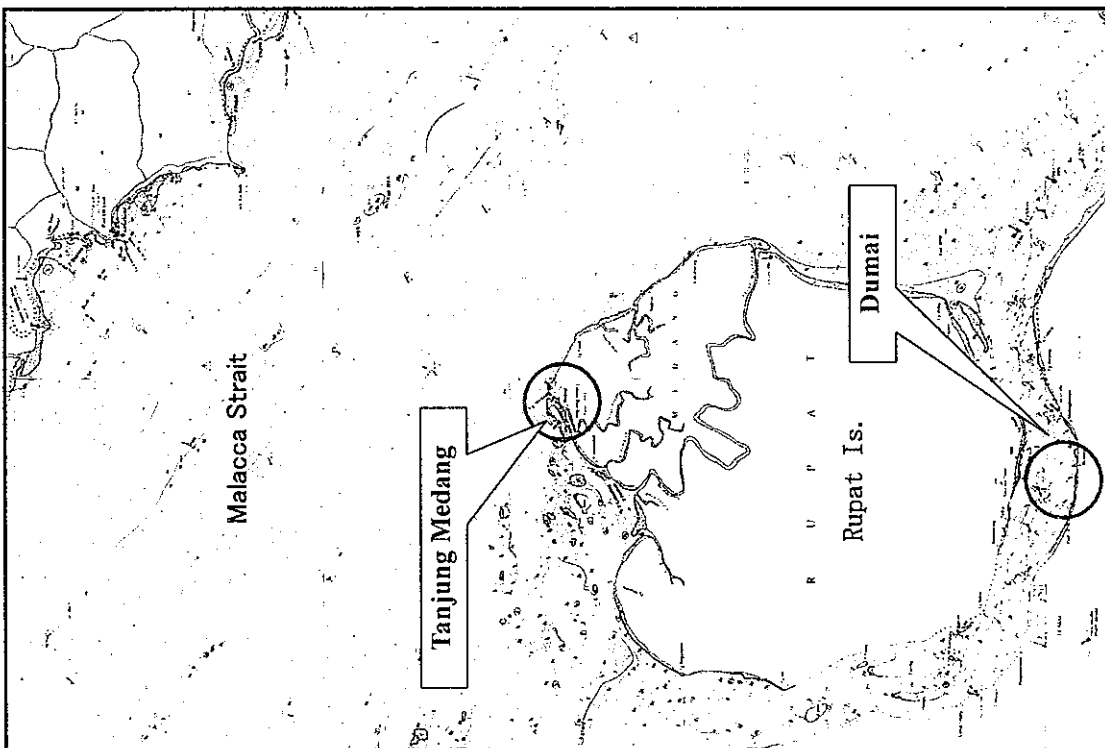
- 4) In case, the contents of the report are accepted in principle by the Government of Indonesia, JICA will complete the final report and send it to Indonesia by the end of October, 2007.

7. Other Relevant Issues

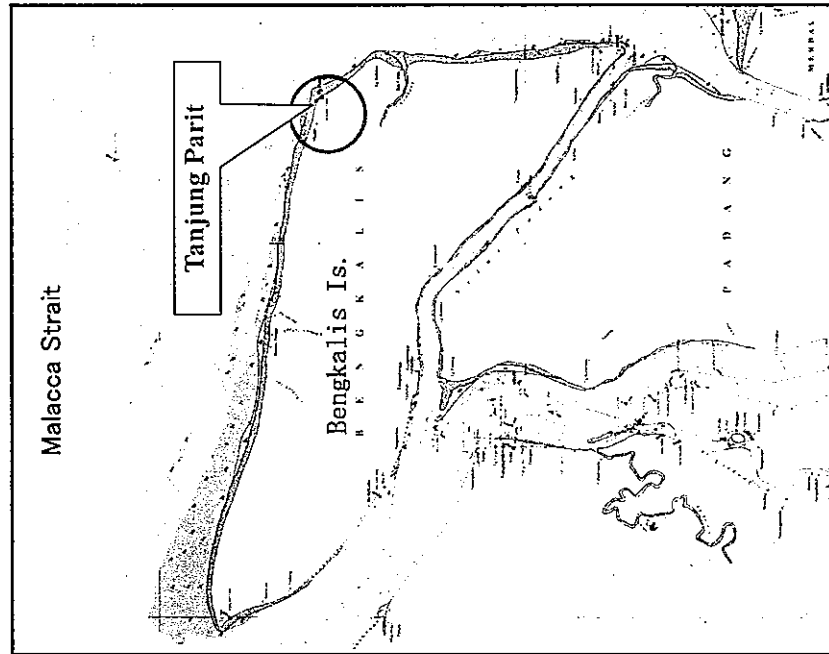
- 1) Indonesian side requests that all the system shall meet IMO and IALA recommendation.
- 2) Operation and Maintenance
  - Indonesian side clarified that the responsible organization for operation and maintenance of the equipment and facility is the Directorate of Navigation under DGST.
  - Indonesian side agrees to allocate sufficient budget and qualified staff for proper and effective operation and maintenance of the equipment and facility.
  - In case a new staff is required to be employed and assigned to DGST for the new VTS, Indonesian side shall start the necessary procedures immediately after the approval of the Project by the Government of Japan, and assure that enough staff is assigned in prior to the operation of the new VTS.
- 3) Technical Cooperation and/or Soft Component
  - It may be necessary to consider a technical cooperation or a Soft Component on VTS and its operation and maintenance. In case of a technical cooperation submission of another official request from the Government of Indonesia to the Government of Japan through JICA Indonesia Office is required for application.

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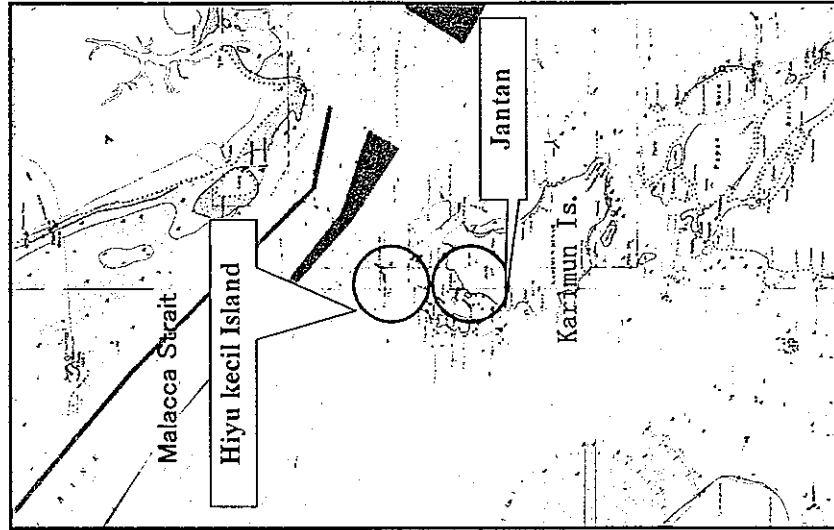
Annex - 1



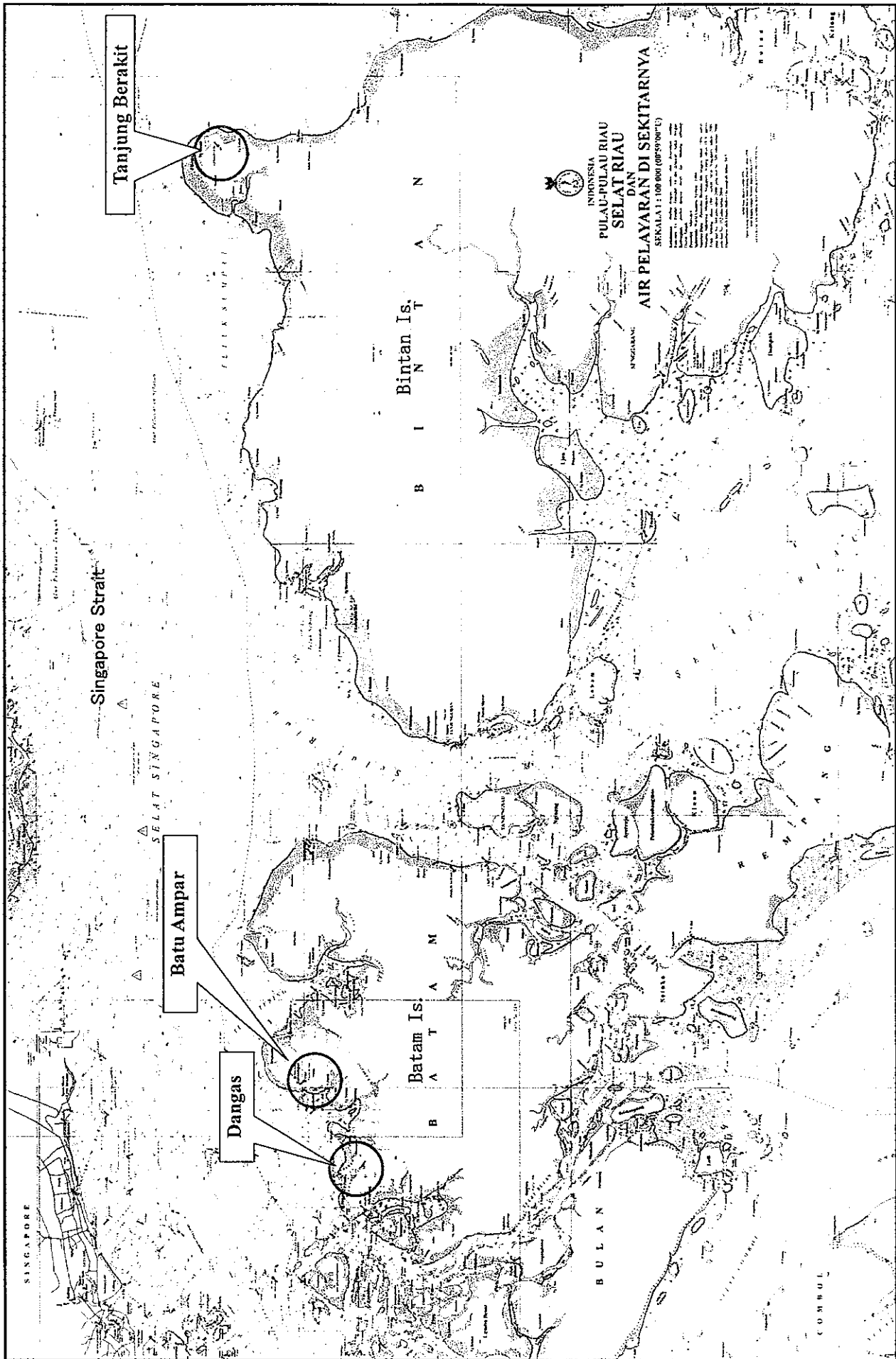
Proposed location of VTS, VTS Sub-Center  
Rupat Island (VTS), Dumai (VTS Sub-Center)



Proposed location of VTS  
Bengkalis Island

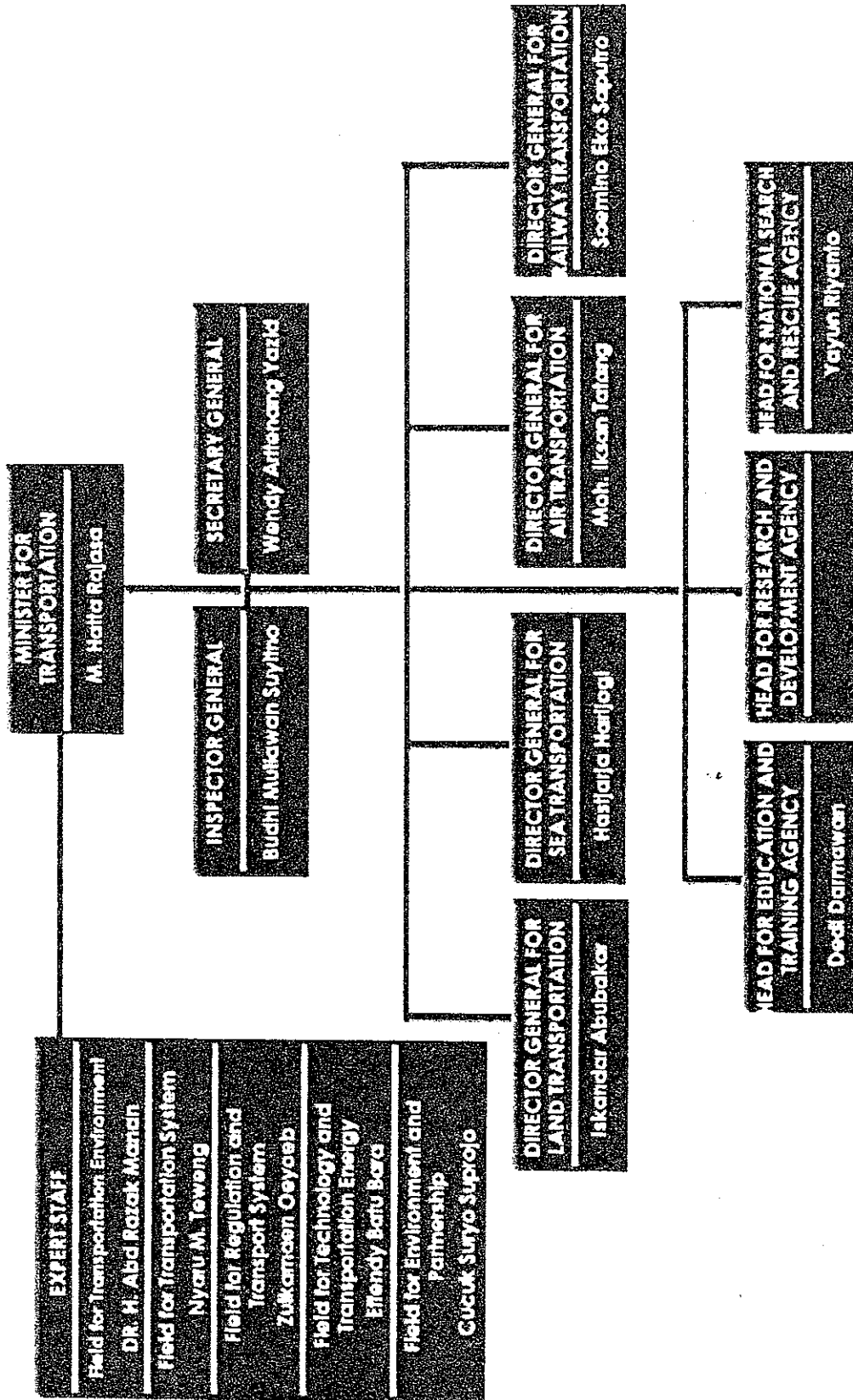


Proposed location of VTS  
Jantan/Hiyu Kecil Island

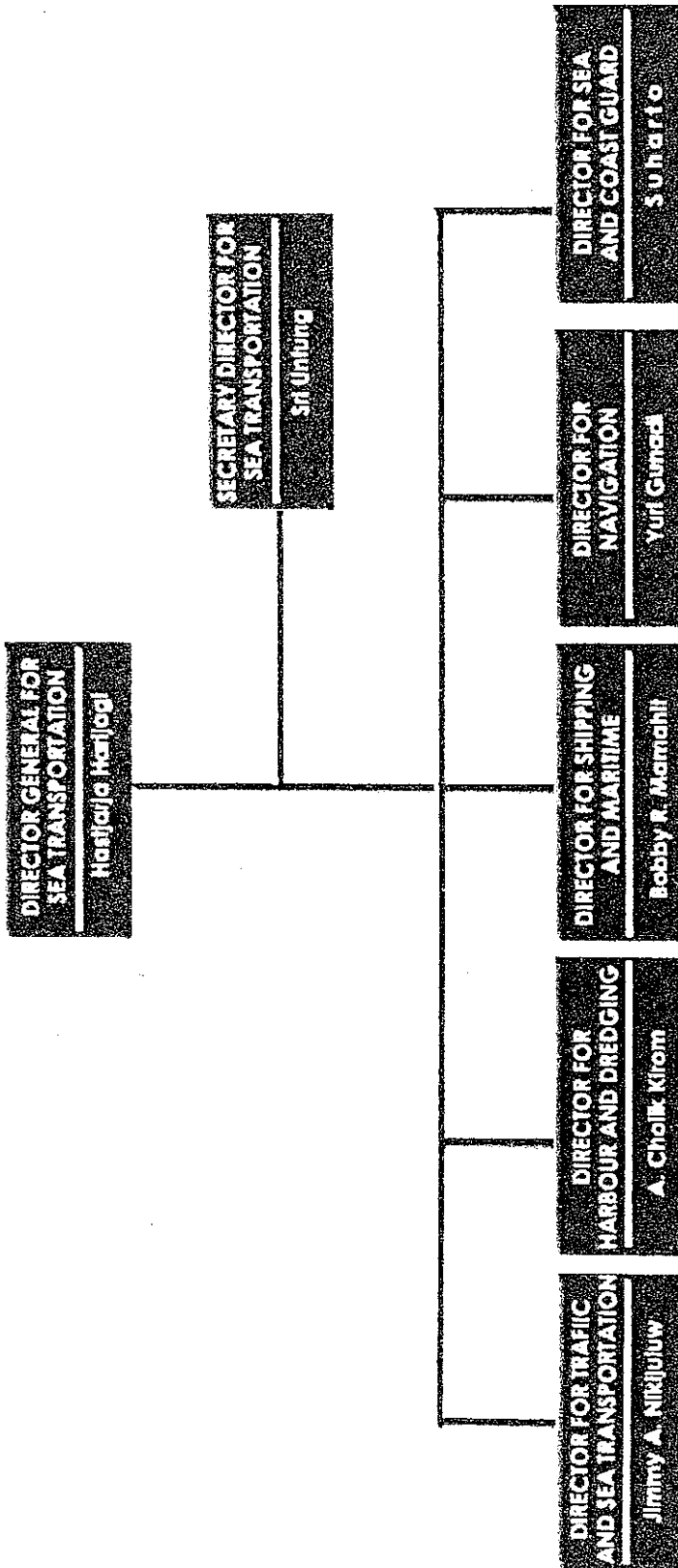


Proposed location of VTS, Repeater Station and VTS Center  
 Batu Ampar, Tanjung Berakit (VTS), Dansas (Repeater Stn.), Batu Ampar (VTS Center)

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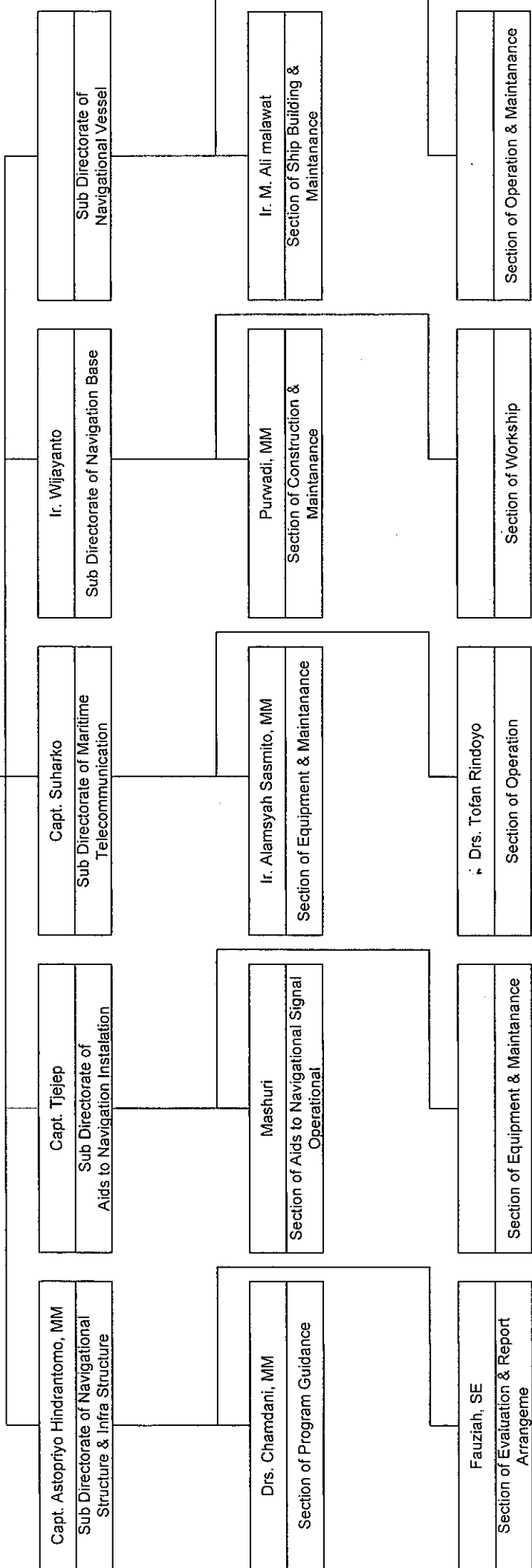


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YURI GUNADI  
DIRECTORATE OF NAVIGATION

Dra. Sri Rejeki BR, MM  
Sub Division of General Administration



ET

## JAPAN'S GRANT AID

The Grant Aid scheme provides a recipient country with non-reimbursable funds to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for economic and social development of the country under principles in accordance with the relevant laws and regulations of Japan. The Grant Aid is not supplied through the donation of materials as such.

### 1. Grant Aid Procedures

Japan's Grant Aid scheme is executed through the following procedures:

Application	(Request made by the recipient country)
Study	(Basic Design Study conducted by JICA)
Appraisal & Approval	(Appraisal by the Government of Japan and Approval by the Cabinet)
Determination of Implementation	(The Note exchanged between the Governments of Japan and recipient country)

Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA (Japan International Cooperation Agency) to conduct a study on the request.

Secondly, JICA conducts the study (Basic Design Study) using (a) Japanese consulting firm(s).

Thirdly, the Government of Japan appraises the project to see whether or not it is suitable for Japan's Grant Aid Scheme, based on the Basic Design Study report prepared by JICA, and the results are then submitted to the Cabinet for approval.

Fourthly, the project, once approved by the Cabinet, becomes official with the Exchange of Notes (E/N) signed by the Governments of Japan and the recipient country.

Finally, for the implementation of the project, JICA assists the recipient country in such matters as preparing tenders, contracts and so on.

## 2. Basic Design Study

### (1) Contents of the study

The aim of the Basic Design Study (hereafter referred to as "the Study") conducted by JICA on a requested project (hereafter referred to as "the Project") is to provide a basic document necessary for the appraisal of the Project by the Government of Japan. The contents of the Study are as follows:

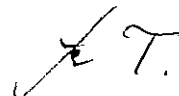
- Confirmation of the background, objectives, and benefits of the Project and also institutional capacity of agencies concerned of the recipient country necessary for the Project's implementation.
- Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, social and economic point of view.
- Confirmation of items agreed on by both parties concerning the basic concept of the Project.
- Preparation of a basic design of the Project.
- Estimation of costs of the Project.

The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design of the Project is confirmed considering the guidelines of the Japan's Grant Aid scheme.

The Government of Japan requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

### (2) Selection of Consultants

For smooth implementation of the Study, JICA uses (a) registered consulting firm(s). JICA selects (a) firm(s) based on proposals submitted by interested firms. The firm(s) selected carry(ies) out a Basic Design Study and write(s) a report, based upon terms of reference set by JICA. The consultant firm(s) used for the Study is (are) recommended by JICA to the recipient country to also work on the Project's implementation after the Exchange of Notes, in order to maintain technical consistency.



### 3. Japan's Grant Aid Scheme

#### (1) Exchange of Notes (E/N)

Japan's Grant Aid is extended in accordance with the Notes exchanged by the two Governments concerned, in which the objectives of the Project, period of execution, conditions and amount of the Grant Aid, etc., are confirmed.

(2) "The period of the Grant Aid" means the one fiscal year, which the Cabinet approves, the Project for. Within the fiscal year, all procedures such as exchanging of the Notes, concluding contracts with (a) consultant firm(s) and (a) contractor(s) and final payment to them must be completed. However, in case of delays in delivery, installation or construction due to unforeseen factors such as national disaster, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.

(3) Under the Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased. When the two Governments deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country. However, the prime contractors, namely, consulting, constructing and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

#### (4) Necessity of "Verification"

The Government of recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability to Japanese taxpayers.

#### (5) Undertakings required of the Government of the Recipient Country

In the implementation of the Grant Aid Project, the recipient country is required to undertake such necessary measures as the following:

- a) To secure land necessary for the sites of the Project and to clear, level and reclaim the land prior to commencement of the construction,
- b) To provide facilities for the distribution of electricity, water supply and drainage and other incidental facilities in and around the sites,
- c) To secure buildings prior to the procurement in case the installation of the equipment,

- d) To ensure all the expenses and prompt excursion for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid,
- e) To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts,
- f) To accord Japanese nationals, whose services may be required in connection with the supply of the products and services under the Verified contracts, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.

(6) "Proper Use"

The recipient country is required to maintain and use the facilities constructed and the equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for this operation and maintenance as well as to bear all the expenses other than those covered by the Grant Aid.

(7) "Re-export"

The products purchased under the Grant Aid should not be re-exported from the recipient country.


(8) Banking Arrangements (B/A)

- a) The Government of the recipient country or its designated authority should open an account in the name of the Government of the recipient country in a bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the Verified Contracts.
- b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an Authorization to Pay (A/P) issued by the Government of the recipient country or its designated authority.

(9) Authorization to Pay (A/P)

The Government of the recipient country should bear an advising commission of an Authorization to Pay and payment commissions to the Bank.

(End)



## Major undertakings to be taken by each Government

No.	Items	To be covered by Grant Aid	To be covered by Recipient Side
1.	To secure land		•
2.	To clear, level and reclaim the site when needed		•
3.	To construct gates and fences in and around the site		•
4.	To construct the parking lot	•	
5.	To construct roads		
	1) Within the site	•	
	2) Outside the site		•
6.	To construct the buildings (and/or tower)	•	
7.	To provide facilities for the distribution of electricity, water supply, drainage and other incidental facilities		
	1) Electricity		
	a. The distributing line to the site		•
	b. The drop wiring and internal wiring within the site	•	
	c. The main circuit breaker and transformer	•	
	2) Water Supply		
	a. The city water distribution main to the site		•
	b. The supply system within the site (receiving and elevated tanks)	•	
	3) Drainage		
	a. The city drainage main (for storm, sewer and others) to the site		•
	b. The drainage system (for toilet sewer, ordinary waste, storm drainage and others) within the site	•	
	4) Gas Supply		
	a. The city gas main to the site		•
	b. The gas supply system within the site	•	
	5) Telephone System		
	a. The telephone trunk line to the main distribution frame/panel (MDF) of the building		•
	b. The MDF and the extension after the frame/panel	•	
	6) Furniture and Equipment		
	a. General furniture		•
	b. Project equipment	•	
8.	To bear the following commissions to the Japanese foreign exchange bank for the banking services based upon the B/A		
	1) Advising commission of A/P		•
	2) Payment commission		•
9.	To ensure unloading and customs clearance at port of disembarkation in recipient country		
	1) Marine (Air) transportation of the products from Japan to the recipient country	•	
	2) Tax exemption and custom clearance of the products at the port of disembarkation		•
	3) Internal transportation from the port of disembarkation to the project site	•	
10.	To accord Japanese nationals, whose services may be required in connection with the supply of the products and the services under the verified contract, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.		•
11.	To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contracts.		•
12.	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant.		•
13.	To bear all the expenses, other than those to be borne by the Grant, necessary for construction of the facilities as well as for the transportation and installation of the equipment.		•

(B/A: Banking Arrangement, A/P: Authorization to Pay)



**Mr. Yuri GUNADI**  
**Director of Navigation**  
**Directorate General of Sea Transportation**  
**Ministry of Transportation**

Dear Mr. Yuri GUNADI

*Re: Basic Design Study on the Project for Development of Vessel Traffic Service in Malacca and Singapore Straits in the Republic of Indonesia*

I am writing you to inform the following in respect to the above-mentioned project.

In February 2007, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the First Basic Design Study Team on the Project for Development of Vessel Traffic Service in Malacca and Singapore Straits in the Republic of Indonesia (hereinafter referred to as "the Project") to Indonesia, and through discussions, field survey, and preliminary examination of the results in Japan, JICA prepared a concept of the Project.

JICA sent the Second Basic Design Study Team (hereinafter referred to as "the Team") to Indonesia, headed by myself, Toshiyuki Iwama, Team Director, ICT and Governance Team, Project Management Group I, Grant Aid Management Department JICA from April 24, 2007 to May 23, 2007.

The Team held discussions with the officials concerned of the Government of Indonesia and conducted a field survey at the proposed locations. After returning to Japan, the Team discussed further steps with the relevant ministries in Japan. As a result of these discussions, I wish to inform the main items described on the attached sheet. I have asked for a meeting with you in Jakarta during the period of 18 – 20 July, 2007. Should you be out of Jakarta at that period, I wish to ask you to assign your staff to meet with me on your behalf and leave your reply as well, so that the Team can proceed to further study and prepare the Basic Design Study Report.

Tokyo, July 9, 2007



Toshiyuki IWAMA  
Leader, Basic Design Study Team  
Japan International Cooperation Agency

Distribution: Mr. Kakioka, JICA Indonesia Office, Mr. Nishibun, JICA Expert, Mr. Ikemitsu, EOJ



## ATTACHMENT

### 1. Objective

The objective of the Project is to improve the safety of vessel navigation at the Indonesian side of the Malacca and Singapore Straits, by establishing new radar systems.

### 2. Request from Indonesia

- (1) VTS at Tanjung Medang in Rupert Island, Tanjung Parit in Bengkalis Island, Jantan in Karimun Island or Hiyu Kecil Island, Batu Ampar in Batam Island, Tanjung Berakit in Bintan Island.
- (2) Repeater Station at Dangas in Batam Island
- (3) VTS Center at Batu Ampar in Batam Island
- (4) VTS Sub-Center at Dumai

### 3. Result of the Preliminary Examination in Japan

After the examination of the results the Team explained the rationale of the Project as follows.

(1) Ships originating in the Indonesian territory of the Strait heading for TSS shall be monitored on the radar screen.

(2) The capacity to monitor and analyze the radar image shall be improved.

(3) Interference with the existing traffic control of the TSS must be avoided.

Therefore, the Team proposed to select the following to be studied further.

(1) VTS at Tanjung Medang, Hiyu Kecil Island and Batu Ampar. One additional VTS shall be installed at Takong Kecil Island to enable continuous monitoring of the congested area of the Singapore Strait.

(2) VTS Center at Batu Ampar in Batam Island and VTS Sub-Center at Dumai

(3) Vessel count survey shall be conducted at Tanjung Parit in Bengkalis Island and Tanjung Berakit in Bintan Island in order to evaluate the rationale of radar monitoring at these sites. Selection of these sites as VTS will be done based on the result of this survey and other relevant information.

(4) Facility/equipment related to the above are: radar system with GPS, radar tracking, multifunction console, VHF radio communication system, transmission and communication links, AIS, CCTV, VTS data system and web server, record and play unit, meteorological sensor, power generator, air conditioner. The radar system shall meet IMO and IALA recommendation.

JICA will further work on the appropriate component and will make necessary recommendation to the Government of Japan for approval.

### 4. Responsible Organization and Implementing Agency

During the First Basic Design Study the responsible and implementation agency is confirmed to be the Directorate General of Sea Transportation (DGST) of the Ministry of

Transportation.

5. Japan's Grant Aid Scheme

The Indonesian side understands the Japan's Grant Aid scheme and the necessary undertakings to be taken by the Indonesian side as explained by the Team and described in the Report on Discussions signed by both sides on February 19, 2007.

6. Schedule of the study

- 1) A third Basic Design Team comprising of the consultants will visit Indonesia from mid July to conduct vessel traffic surveys at Tanjung Parit and Tanjung Berakit.
- 2) The above-mentioned Team also conducts topographic and soil surveys at Tanjung Medang, Tanjung Parit, Tanjung Berakit and Dumai VTS Sub-center. Surveys at Hiyu Kecil Island, Batu Ampar and Takong Kecil have been completed.
- 3) JICA will prepare the draft report in English and dispatch a mission to Indonesia in order to explain its contents around October 2007, taking in consideration of the expected Cabinet Approval of Japan in December 2007.
- 4) In case the contents of the report are accepted in principle by the Government of Indonesia, JICA will complete the final report and send it to Indonesia by the end of February, 2008.

7. Other Relevant Issues

- 1) Technical Cooperation and/or Soft Component
  - Both sides will further discuss the content of a technical cooperation or a Soft Component on VTS and its operation and maintenance. In case of a technical cooperation, submission of another official request from the Government of Indonesia to the Government of Japan through JICA Indonesia Office is required for application.
- 2) Request for the DGST's support/assistance of the proposed Study Team's field surveys
  - The Team requests to assign DGST staff to accompany to Tanjung Parit and Tanjung Berakit for the vessel traffic count, and Tanjung Medang, Tanjung Parit, Tanjung Berakit and Dumai Coastal Radio Station for the preparation of topographic survey and soil investigations.
- 3) Request for Background Data for Tanjung Parit and Tanjung Berakit
  - While the Team will do the best to prove the rationale of radar at Tanjung Parit and Tanjung Berakit and it also asks Indonesian side to provide more background data about the necessity of the radar at these sites. Examples of necessary background data are attached.
- 4) Request for Approval of Topographic and Soil Survey
  - The Team requests to approve topographic survey and soil investigations at Tanjung Medang, Tanjung Parit, Tanjung Berakit and Dumai Coastal Radio Station for the proposed site for VTS Sub-center.
- 5) Request for Coordination with MEH Project

T.

- The Team noted that MEH Project contains AIS at Tanjung Medang and Hiyu Kecil Island. MEH Project also suggests a set-up of a joint monitor center at Batam. The Team asks Indonesian side to effectively coordinate to avoid duplication of AIS in particular. The Team will analyze the technical possibility on how to integrate monitoring function in Batam.

6) Problem of Transmitting the Radar Image from Tanjung Parit

- The Team analyzed the possibility of transmitting radar image from Tanjung Parit to Dumai VTS Sub-center and found that a repeater station or a satellite link is necessary. The Team asks the Indonesian side to make available an appropriate site for the repeater station or open a satellite link, as this will become additional prerequisite for selecting Tanjung Parit as a radar site. Otherwise, a provisional VTS monitor site needs to be selected.

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## Attachment

Request for the additional supporting information and data

### 1. Vessel Traffic

- a) Vessel traffic volume within the Indonesian territory of the Malacca and Singapore Strait in terms of the following: vessel type, vessel size, vessel path
- b) Any information on vessel traffic near the following sites: Tanjung Medan, Tanjung Parit, Tanjung Berakit

### 2. Marine Accidents

Statistics on marine accident in the Malacca and Singapore Strait in last 5 years

### 3. Registered Vessels

Information on vessel registration (number by type and size) near the following sites: Tanjung Medan, Tanjung Parit, Tanjung Berakit

### 4. TTEG

Any information or evidence showing that Indonesia has been requested at TTEG to establish and operate VTS for the safety of vessel navigation in the Malacca and Singapore Strait or STRAITREP area

### 5. IMO and International Organization

Any information or evidence showing that Indonesia has been requested by IMO, international organization, or by neighboring countries to establish and operate VTS for the safety of vessel navigation in the Malacca and Singapore Strait

### 6. Agreements

Agreement or Protocol signed by Indonesia, Malaysia and Singapore related to the safety of vessel navigation in the Malacca and Singapore Strait

### 7. Data from Vessels

E-mail data received from the vessels using the TSS under STRAITREP, and who in Indonesia is receiving the data.

T.





**DEPARTEMEN PERHUBUNGAN  
DIREKTORAT JENDERAL PERHUBUNGAN LAUT**

GEDUNG KARYA LT. 12 s/d 17

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3845430, 3507576, 3813848  
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Ref. No: NA. 717 / 08 / 20 / D.V - 07

Jakarta, 12 July 2007

To : **Mr. Toshiyuki IWAMA**  
Leader, Basic Design Study Team  
Japan International Cooperation Agency

Dear Mr. Toshiyuki IWAMA,

Re: **Basic Design Study on the Project for Development of Vessel Traffic Service in Malacca and Singapore Straits in the Republic of Indonesia**

Thank you for your letter of July 9, 2007.

From your letter, we understand several items as listed below:

1. The proposal from Indonesia covers:
  - a. Installing VTS equipments in 5 locations, i.e. Tanjung Medang, Tanjung Parit, Hiyu Kecil Island, Batam, and Tanjung Berakit.
  - b. Establishing VTS Centre at Batu Ampar, Batam
  - c. Establishing VTS Sub-centre at Dumai
2. The proposal from JICA covers:
  - a. Installing VTS equipments in 3 locations, i.e. Tanjung Medang, Hiyu Kecil Island, and Batu Ampar.
  - b. Establishing one additional VTS in Takong Kecil Island.
  - c. Particularly for Tanjung Parit and Tanjung Berakit, there shall be conducted a vessel count survey by mid of July in order to evaluate whether the places are relevant to be installed with radar.
3. Our responses on the above matters are explained as below:
  - a. In order to acquire the radar target up to the TSS area, the tower for the radar shall be at minimum of 70 – 80 metres height.
  - b. DGST shall assign staff to accompany JICA team to conduct the vessel count survey at Tanjung Parit and Tanjung Berakit.
  - c. Regarding your request for coordination with MEH Project, we consider that due to the dissimilar schedule of both projects, it is suggested that the AIS shall be operationally separated.
  - d. Regarding the problem of transmitting data from Tanjung Parit to Dumai sub-centre, we shall provide the site located in Bengkalis Coastal Radio Station which can be used by JICA to establish the repeater station.

Thank you for your kind attention and cooperation.

Yours sincerely,

**YURI GUNADI**

Director of Navigation

Directorate General of Sea Transportation



**Report of Discussions  
on the Basic Design Study  
on the Project for Development of Vessel Traffic Service in Malacca and Singapore Straits  
in the Republic of Indonesia  
(Explanation of Draft Report)**

In February, May and July 2007, the Japan International Cooperation Agency (hereinafter referred to as “JICA”) dispatched the Basic Design Study Team on the Project for Development of Vessel Traffic Service in Malacca and Singapore Straits (hereinafter referred to as “the Project”) to Indonesia, and through discussions, field survey, and technical examination of the results in Japan, JICA prepared a draft report of the study.

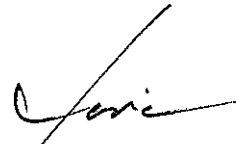
In order to explain and to consult with concerned officials of the Government of Indonesia on the components of the draft report, JICA sent to Indonesia the Draft Report Explanation Team (hereinafter referred to as “the Team”), which is headed by Mr. Toshiyuki Iwama, Team Director, ICT and Governance Team, Project Management Group I, Grant Aid Management Department JICA, from December 9 to 14, 2007.

As a result of discussions, both sides confirmed the main items described on the attached sheets.

Jakarta, December 14, 2007



Toshiyuki IWAMA  
Leader  
Draft Report Explanation Team  
Japan International Cooperation Agency



Yuri GUNADI  
Director of Navigation  
Directorate General of Sea Transportation  
Ministry of Transportation



## ATTACHMENT

### 1. Components of the Draft Final Report

The Indonesian side in principle agreed and accepted, with additional note, the components of the draft report explained by the Team.

### 2. Implementation Strategy of the Project

The Team explained the implementing strategy as follows. The Indonesian side understood and accepted it in principle.

#### 2-1 Two Stages for the Implementation

The project shall be implemented in two stages because of the increase of the total project cost.

	Component/Site
Stage-1	VTS Sensor Site : Hiyu Kecil, Takong Kecil, Tanjung Berakit VTS Center : Batu Ampar (including VTS Sensor)
Stage-2	VTS Sensor Site : Tanjung Medang VTS Sub-Center : Dumai
	VTS Sensor Site : Tanjung Parit VTS Sub-Center : Bengkalis

#### 2-2 Major issues raised for the contents of Stage-2

- Concerning Stage-2 of the Project, the Team explained that the Japanese side had not fully recognized the rationale of establishing a VTS Sensor Site at Tanjung Parit. Moreover, means for transmitting radar image from Tanjung Parit to Dumai is not realized by the Indonesian side, therefore effective monitoring operation for Malacca Strait at Dumai could not be achieved for the time being.
- Indonesian side strongly requested to include VTS Sensor Site of Tanjung Parit for the following reasons;
  - i) To enhance the vessel navigation safety in the Strait
  - ii) The policy of covering Sumatera coastal area by a number of VTS Sensor Stations.
- The Indonesian side proposed that the VTS operation and radar image monitoring shall be conducted in Dumai VTS Sub-Center, not in Bengkalis due to operational reason.
- The Indonesian side explained that the Indonesian side has a newly purchased land for the GMDSS project at Silincing that can be used as a repeater station for the Project. Therefore, the Indonesian side proposed that transmitting radar image shall be done from Tanjung Parit to Dumai through Bengkalis and Silincing instead of provision of VTS Sub-Center at Bengkalis.

- The Team understood the proposal of the Indonesian side. However, the Team recommended that the one additional repeater station shall be necessary between Bengkalis and Silincing for better maintenance and operation.
- The Team also requested the Indonesian side to identify potential locations for the additional repeater station mentioned above by the end of May 2008.
- The Team explained to the Indonesian side that if the conditions for Tanjung Parit as mentioned in 2-2 are fulfilled and the potential locations for the repeater station are identified, the Japanese side will revise the content of the basic design of Stage-2.

### 3. Japan's Grant Aid Scheme

The Indonesian side understood the Japan's Grant Aid scheme and the necessary undertakings to be taken by the Government of Indonesia as explained by the Team and described in the Report of Discussions signed by both sides on February 19, 2007.

### 4. Schedule of the Study

JICA will complete the final report in accordance with the confirmed items and send it to the Government of the Indonesia by April, 2008.

### 5. Other Relevant Issues

#### 5-1. Clarification on the function of VTS system

The Indonesian side requested that VTS system shall contain the function of "Ship Reporting System (SRS)" which is defined by the Indonesian side as the function of collecting and monitoring vessel information. The Team explained that the function of collecting and monitoring vessel information can be realized by AIS which is one of the components of VTS system. The Indonesian side understood and requested the Team to mention it in the final report. And the Team agreed.

#### 5-2. Major undertakings to be taken by the Indonesian side

The Team requested the Indonesian side to carry out following undertakings particularly necessary to implement the Project;

<Common for Stage-1 and 2>

- Entry permit to the construction area and execution permit for the construction
- Acquisition of radio frequency and permission to use the radar, the multiplex radio for data communication, VHF radio for vessels, FM broadcast and internet connection between Dumai and Batu Ampar

<For Stage-1>

- Permission to use the existing wharf at Hiyu Kecil and Takong Kecil for material transportation, and permission to reclaim to provide a temporary yard for material stocking.

- Tapping of commercial power supply for the VTS center in Batu Ampar and the VTS sub-center in Dumai
- Demolition and removal of the existing fence in Takong Kecil
- Demolition and relocation of the road in the yard in Tanjung Berakit
- Proclamation and remedial measures to be undertaken during the relocation work and re-installation of the existing lantern in Tanjung Berakit.

<For Stage-2>

- Permission to construct a temporary jetty which is required for material handling in Tanjung Medang and Tanjung Parit.
- Demolition and removal of the existing warehouse in Tanjung Medang
- Relocation of the volley ball court in Dumai
- Provision of openings for the connection of the existing office building with the new building
- Provision of internet connection between Dumai and Batu Ampar

### 5-3. Staffing for Operation and Maintenance of the VTS System

The Team requested the Indonesian side to allocate the appropriate budget and assign the appropriate number of staff with appropriate level of skill for operation and maintenance of VTS system as discussed between both sides. The Indonesian side agreed and will assign the necessary staff before the installation of VTS.

### 5-4. Technical Training

The Indonesian side requested the Team that the sufficient training shall be given by the Project. The Team explained the Project contains the initial guidance for operating and maintaining VTS. The Team also suggested the necessity of further technical training through technical cooperation (in which case separate request is necessary) or through the soft component during the implementation of Stage-2.

### 5-5. Coordination with AIS of MEH Project

The Team expressed the concern on the duplication of the AIS installed by the Grant Aid Project and MEH Project at Hiyu Kecil and Tanjung Medang. The Indonesian side explained that MEH Project starts in 2008 and uses AIS to monitor the movement of VLCC (Very Large Crude Oil Carrier) in particular to avoid environmental pollution. It will be used by different organizations and its future role is unclear because MEH Project is a demonstration project. The Team concluded that AIS for Hiyu Kecil shall be installed in Stage-1 Grant Aid Project as well because AIS is essential component of the Project. However if there is a possibility of the common use of AIS in the future, AIS component of Stage-2 Project can be modified as appropriate.

#### 5-6. Confidentiality of the specifications

The Team handed three copies of the draft detailed specifications of the equipment and the facilities to the Indonesian side, the components of which are as attached in Annex-1, and stated that these draft detailed specifications are confidential and shall neither be duplicated nor released to any outside party in order to secure the fairness of the tender of the Project. And the Indonesian side agreed.

#### 5-7. Confidentiality of the Project Cost Estimate

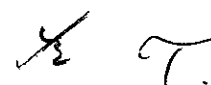
Both sides agreed that the Project Cost Estimate, as attached in Annex-2, shall neither be duplicated nor released to any outside party before the signing of all the Contract(s) for the Project.

#### 5-8. Technical Specifications

- The Indonesian side requested all technical specifications of equipment must comply with IALA recommendation V-128.
- The Indonesian side requested that the function of CCTV system shall be day and night time with thermal image camera.
- The Team replied to consult the request with relevant authorities in Japan

Annex-1: Components of the Project

Annex-2: Project Cost Estimate



ANNEX-1 Components of the Project

Table 1 Outline of Equipment to be Procured by the Project

Equipment	Unit	Quantity	1	2	3	4	5	6	7	8
			Hiyu Kecil	Takong Kecil	Batu Ampar	Tanjung Berakit	Tanjung Medang	Tanjung Parit	Bengkalis	Dumai
Radar System	Set	6	1	1	1	1	1	1		
VHF Marine Radio System	Set	5	1		1	1	1	1		
AIS Base Station System (AIS System)	Set	5	1		1	1	1	1		
CCTV Camera Equipment (CCTV System)	Set	2		1			1			
Meteorological Sensor Unit with Data Logger	Set	3	1			1	1			
Tracking System	Set	3			1				1	1
Multi function Console with VHF Radio Communication Unit	Set	10			6				2	2
Printer System (Monochrome and Color)	Set	3			1				1	1
Data Base for Vessel Information	Set	3			1				1	1
AIS Server System (AIS System)	Set	3			1				1	1
CCTV Video Display Equipment (CCTV System)	Set	2			1					1
Meteorological Monitor Console	Set	2			1					1
Record and Playback System for Vessel Traffic	Set	3			1				1	1
Resource Management System	Set	3			1				1	1
FM Transmitting Devices	Set	2			1					1
Multiplex Radio Equipment (Data Communication System)	Set	10	1	2	2	1	1	1	1	1
Connecting Devices for Internet Communication for Dumai-Batu Ampar	Set	2			1					1
Equipment Desk and Others	Set	8	1	1	1	1	1	1	1	1
Takong Kecil Light House	Set	1		1						
Tanjung Berakit Light House	Set	1				1				
Air Conditioner for Radar Sensor Site	Set	10	2	2		2	2	2		
Diesel Engine Generator	Set	5	1	1		1	1	1		
	Kva & Unit		15 KVA x 4	15 KVA x 4		15 KVA x 4	15 KVA x 4	15 KVA x 4		

*[Handwritten signature]*

**Table 2 Outline of the Facilities to be Constructed by the Project**

Facilities	Unit	Quantity	1	2	3	4	5	6	7	8
			Hiyu Kecil	Takong Kecil	Batu Ampar	Tanjung Berakit	Tanjung Medang	Tanjung Parit	Bengkalis	Dumai
VTS Center	Unit	1			1					
	m2	414			414.00					
VTS Sub-Center	Unit	1								1
	m2	207.4								207.36
Equipment Building	Unit	5	1	1		1	1	1		
	m2	211.3	42.25	42.25		42.25	42.25	42.25		
Generator Building	Unit	7	1	1		1	1	1	1	1
	m2	365	55.00	55.00		55.00	55.00	55.00	45.00	45.00
Air Conditioners (for VTS Center and Sub-Center)	Unit	3			1				1	1
Diesel Engine Generator (Emergency Backup)	Unit	3			1				1	1
	Kva, Units				60 KVA x 1				15 KVA x 2	45 KVA x 1
Fuel Tank (Outdoor)	Unit	8	1	1	1	1	1	1	1	1
	(m3)		6.0	6.0	2.0	6.0	6.0	6.0	2.0	2.0
Fuel Supply System	Unit	2	1	1						
	(m3)		1.0	1.0						
Water Reservoir	Set	2			1					1
	m3				1.5					1.0
Septic Tank	Set	2			1					1
	m3				8.0					4.0
Steel Tower for Radar and Communications	Unit	8	1	1	1	1	1	1	1	1
	m		38.00	49.00	30.00	73.00	106.00	78.00	75.00	106.00

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## ANNEX-2 Project Cost Estimate

The table below shows the rough cost estimates for the construction of the Project. This cost estimate is provisional and will be subject to review by the Japanese Government prior to the approval of the proposed Grant. Aid.

### 1) Cost to be borne by Japan

The estimated cost to be borne by the Japanese side is tentative. The estimation was conducted as follows:

#### ➤ Implementation for 8 sites

The estimated cost is shown in the table below.

(Unit: Japanese Yen Million)

	Stage-1	Stage-2	Total
Buildings	576	870	1,446
Equipment	995	805	1,800
DD CSV	142	144	286
Total	1,713	1,819	3,532

#### ➤ Alternative plan of implementation excluding Tanjung Parit and Bengkalis

In case VTS at Tanjung Parit and VTS Sub-Center at Bengkalis are excluded, the estimated cost would be as shown in the table below.

(Unit: Japanese Yen Million)

	Stage-1	Stage-2	Total
Buildings	576	538	1,114
Equipment	995	419	1,414
DD CSV	142	75	217
Total	1,713	1,032	2,745

*Handwritten initials/signature*

## 2) Conditions of the Cost Estimate

Project cost estimated under the following conditions.

- |                        |                                                                                                                                                                                                                                            |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1) Base point in time: | August 2007                                                                                                                                                                                                                                |
| 2) Exchange Rate       | 1 US Dollar=121.32 Yen<br>1 Rp.=0.0146                                                                                                                                                                                                     |
| 3) Construction period | Refer to the Implementation Schedule                                                                                                                                                                                                       |
| 4) Others              | The project will be implemented in accordance with the procedures of grant aid projects of the Government of Japan.<br><br>The estimated cost for Stage-2 will be adjusted in accordance with the revision of the basic design of Stage-2. |

## 3) Cost to be borne by the Recipient Country

The government of Indonesia is requested to be born by the following cost for the Project.

### ➤ Stage-1

- Demolition and removal of the existing fence in Takong Kecil
- Relocation of the road in the yard in Tanjung Berakit
- Others

The cost for the above works is estimated at about 11 million Rupiah.

### ➤ Stage-2

- Demolition and removal of the warehouse in Tanjung Medang
- Relocation of the Volleyball Court in the yard in Dumai
- Provision of an openings on the wall of the existing office building to connect the new office building
- Acquisition of the high speed circuit between Dumai and Batu Ampar
- Others

The cost for the above works is estimated at about 18 million Rupiah.

The estimated cost for Stage-2 will be adjusted in accordance with the revision of the basic design of Stage-2.





**The Basic Design Study on the Project for  
Development of Vessel Navigation Systems in Malacca and Singapore Straits in the  
Republic of Indonesia**

**Memorandum of Working Group Discussions**

**1 Target Vessels and Surveillance Area**

- 1) DGST pointed out that the objective of the Project is to improve the safety of navigation at the Indonesian side of the Malacca and Singapore Straits, by establishing new VTS (Vessel Traffic Services) as stated on the Report on Discussions on February 19, 2007.
- 2) DGST also mentioned that there are many small ships crossing the Malacca and Singapore Straits and these small ships become threat against the navigation safety of the large ships passing through the TSS (Traffic Separation Scheme).
- 3) DGST regarded that it was important to monitor small vessels particularly crossing the main route of the straits as well as large ships passing through the main route.
- 4) DGST requested the VTS complied with International Standard, (IMO and IALA recommendation V-128) and intends to make surveillance of small boats in the designated sea area.

**2 Analysis of the Proposed Locations**

The JICA Study Team and the DGST members are evaluated by using sea charts and land maps about the suitability of the proposed project locations where mentioned in the Report on Discussions. Based on the evaluation and the discussions with DGST, the following sites are selected as the sites to be surveyed.

**Table 1 Locations to be Surveyed by the Study Team**

Site Name	Usage	Existing Facilities	Remarks
Tg. Medang	VTS	Lighthouse	As per Report on Discussion
Morong	Repeater	PELINDO Pilot Station	Suggested by JICA Team
Dumai	VTS sub-center	Navigation Office	As per Report on Discussion
Bengkalis	Repeater	Coastal Radio Station	Suggested by JICA Team
Tg. Parit	VTS	Lighthouse	As per Report on Discussion
Tg. Berakit	VTS	Lighthouse	As per Report on Discussion
Tg. Tondang	VTS or Repeater	Beacon	Suggested by JICA Team
Batu Ampar	VTS & VTS center	Coastal Radio Station	As per Report on Discussion
Dangas	Repeater	Telkom Transmission Station	As per Report on Discussion
Dangas	VTS	Custom Radar	Found at site Note 1)
Bukit Tumiyang	Repeater	Telkom Transmission Station	Suggested by DGST Team
Jantan	VTS	Custom Radar	As per Report on Discussion
Bukit Pongkar	Repeater	Telkom Transmission Station	Suggested by DGST Team
Hiyu Kecil	VTS	Lighthouse	As per Report on Discussion

Note 1) During the site visit, it was found that there is a radar facilities owned by custom office. The additional survey was conducted.

### 3 Site Visit

Site visits for all sites listed in above Table 1 were conducted jointly by the JICA Study Team and DGST team. The site visits schedules are shown in the Attachment.

### 4 Evaluation by the JICA Study Team

According to the findings by the site visit, the JICA Study team studied about the suitability and availability of each site for the Project. The evaluation results are shown in Tables 2 to 4 below.

**Table 2 Evaluation of VTS Sites**

Site	Suitability as Radar Station	Construction Aspects	Land ownership	Prospect
Tg. Medang	Good	Good	OK	High
Tg. Parit	Good	Good	OK	High
Tg. Berakit	Good	Good	OK	High
Tg. Tondang	Good	No Space	Private Company ✓	Low
Batu Ampar	Good (yet to be studied further)	Good	OK	High
Dangas	Good	Good	Custom ✓	Low
Jantan	Good	Good (yet to be studied further)	Custom ✓	Low
Hiyu Kecil	Good (yet to be studied further <sup>1)</sup> )	Fair (Limited Space)	OK	High

1) pointed out by the JICA Study Team

**Table 3 Evaluation of Repeater Station**

Site	Suitability as Repeater Station	Construction Aspects	Land ownership	Prospect
Morong	Good	Limited Space	PELINDO I	Low
Bengkalis	Good	Good	OK	High
Tg. Tondang	To be studied	No Space	Private company	Low
Dangas ✓	To be studied	To be studied	Telkom	Low
Bukit Tumiayang ✓	To be studied	To be studied	Telkom	Low
Bukit Pongkar ✓	To be studied	To be studied	Telkom	Low

**Table 4 Evaluation of VTS Center /Sub-Center**

Site	Conditions of Infrastructure	Construction Aspects	Land ownership	Prospect
Batu Ampar	Good	Good	OK	High
Dumai	Good	Good	OK	High

## 5 Discussions about each site

Based on the above evaluation and fact findings by the site visits, following discussions are held.

### (1) Tg. Berakit

DGST requested to build a new radar tower at the position of existing lighthouse tower by the Project, since the existing lighthouse tower is old and heavily corroded. The JICA Study Team explained that in such a case, all the expenses for demolition or removal of existing lighthouse and provision of temporary facilities to maintain the function of the lighthouse during construction of new tower shall be born by the Recipient Side.

### (2) All repeater stations planned at Telkom owned sites

The site survey was conducted to find likely locations for installation of data link repeater on the existing telecommunication tower owned by the PT Telkom.

The JICA Study team explained the undertaking requirements to the Government of the Recipient Country. The required item shall be covered by the Recipient Side accordingly.

DGST stated that installation of the data link repeater facilities on the existing telecommunication tower owned by the PT Telkom will not be considered for this Project.

### (3) Dangas and Jantan

By the site survey, the JICA Study and DGST Teams found that there exist radar facilities owned by the Customs.

The JICA Study team explained the undertaking requirements to the Government of the Recipient Country. The required item shall be covered by the Recipient Side accordingly.

As similar as the above item (2), DGST will not consider the land and facilities owned by the Customs for this Project.

### (4) Hiyu Kecil

The JICA Study Team expressed further study should be carried out in detail in terms of radar performances.

### (5) P. Takong Kecil

At the final stage of the discussions, DGST proposed P.Takong Kecil lighthouse for data link repeater station since the land and facilities are owned by the 1<sup>st</sup> Class District of Navigation (Distrik Navigasi Klas I) Tg. Pinang, and available for the Project.

## 6 Land ownership of the sites

DGST explained that the following locations visited by the Teams are owned by the 1<sup>st</sup> Class District of Navigation (Distrik Navigasi Klas I) Tg. Pinang and Dumai, and they are available for the Project;

Tg. Medang, Dumai, Bengkalis, Tg. Parit, Tg. Berakit, Batu Ampar, Hiyu Kecil and P. Takong Kecil.

**7 Operation and Maintenance**

DGST explained that operation and maintenance of the VTS system will be conducted by each 1<sup>st</sup> Class District of Navigation. Directorate of Navigation will establish regulations to be necessary for VTS operation and will provide technical assistance.

DGST expects some standardized training program of O&M such as IALA recommends and further technical cooperation by Japanese Government.

Jakarta, March 7, 2007



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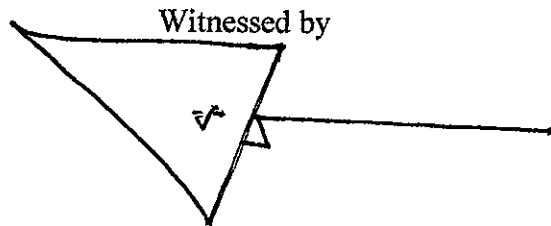
Masahiko Koshimizu  
Chief Consultants  
on behalf of  
The JICA Study Team



---

Ir. Alamsyah Sasmito, MM  
Section head of Equipment and Maintenance  
Sub-Directorate of Marine Telecommunication  
Directorate of Navigation, DGST

Witnessed by



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Capt. Suharko  
Head of Sub-Directorate of Marine  
Telecommunication  
Directorate of Navigation, DGST

**Site Visit Schedule**  
**for**  
**Basic Design Study on the Project for Development of Vessel Traffic Service**  
**in**  
**Malacca and Singapore Straits**

## 1 Schedule

## (1) Team I, Rupert and Bengkalis

Date and time	Activities	Remarks	Sites
Feb. 25, 2007 5:00 6:25 8:30	<b><u>Travel to Dumai</u></b> Check in Travel from Jakarta to Pekanbaru by Air GA 170 (06:25 – 08:00) Move to Dumai Travelling by Car (4-5 hours) (Lunch on the Way) Stay at Dumai, Grand Zuri Dumai (076-31999)	Air Ticket Rental Car	
Feb. 26, 2007 9:00 12:00 13:00 15:00	<b><u>Visit to Dumai Coastal Radio Station</u></b> Meeting with District of navigation Dumai Office Lunch Site Survey at Dumai Coastal Radio Station Preparation for Visit to Tg. Medang Stay at Dumai, Grand Zuri	Rental Car	District Navigation Office
Feb. 27, 2007 7:00 10:00 12:00 13:00 14:00 15:00	<b><u>Survey of Tg. Medan and Teluk Klecah Pilot Station</u></b> Move from Dumai to Tg. Medang by Boat (2.5 hours) Site survey in Tg. Medang and surrounding area (2 hours) Lunch Move from Tg. Medang to Morong Pilot station by boat (1 hours) Site survey in Pilot station (1 hour) Move to Dumai by boat (1 hour) Stay at Dumai, Grand Zuri	Rental boat	Tg. Medang  Pilot station (PELINDO I)
Feb. 28, 2007 7:00 10:00 12:00 14:00 15:30 17:00 18:30	<b><u>Visit to Survey of Tg. Parit, Tg. Jati</u></b> Move from Dumai to Bengkalis by regular boat (2.5 hours) Visit to Coastal Radio Station of Bengkalis by car (30 min.) Meeting with Chief of Coastal Station at Bengkalis Move from Bengkalis to Tg. Parit (2 hours) (Lunch on the way) Site Survey in Tg. Parit (1.5 hour) Move from Tg. Parit to Tg. Jati (1.5 hour) Site Survey in Tg. Jati (1.5 hour) Move from Tg. Jati to Bengkalis (1 hour) Stay at Bengkalis, Horizon Hotel (0766-23388)	Regular Boat  Rental Car	Coastal Radio Station at Bengkalis

Date and time	Activities	Remarks	Sites
Mar. 1, 2007	<b><u>Return Back to Jakarta</u></b>		
9:00	Travel from Bengkalis to Pekanbaru by boat (5 hours)	Regular Boat	
15:00	Travel from Pekanbaru to Jakarta by Air GA 177 16:35-18:15	Air Ticket	

(2) Team II, Batam, Bintan and Karimun

Date and time	Activities	Remarks	Sites
Feb. 26, 2007	<b><u>Travel to Batam and Survey for Tg. Berakit in Bintang Is.</u></b>		
	Travel to Batam	Air Ticket	
8:00	Jakarta to Batam by Air, GA 152 9:00 – 10:30		
10:45	Move from airport to Telaga Punggur by Taxi (20min.)	Taxi	
11:15	Move from Telaga Punggur to Tg. Pinang by Regular Boat (1 hour)	Regular boat	
12:20	Lunch		
13:00	Move to Navigation District at Kijang (1 hour)	Rental Car	Navigation District
14:00	Visit to Navigation District Kijang		
14:40	Move to Tg. Berakit by Car		
16:00	Site survey at Tg. Berakit (2 hours)		Tg. Brakit Lighthouse
	Move to Hotel at Tg. Uban		
	Stay at Hotel (Wisma Puri Anda)		
Feb. 27, 2007	<b><u>Survey of Tg. Tondang, Batu Ampar and Dangas</u></b>		
7:00	Start from Hotel to Tg. Tondang (1 hour)	Rental car	
8:00	Site survey at Tg. Tondang (1 hour)		
9:00	Move from Tg. Tondang to Tg. Uban Coastal Radio Station by car (1 hour)		Tg. Tondang
9:40	Visit to Coastal Radio Station Tg. Uban		Tg. Uban Coastal Radio Station
10:15	Move from Coastal Radio Station to Tg. Uban Ferry Terminal		
10:30	Move from Tg. Uban to Telaga Punggur by Regular Boat	Regular boat	
11:00	Move from Telaga Punggur to Batu Ampar Coastal Radio Station by Taxi	Taxi	Batu Ampar Coastal Radio Station
13:15	Start from Batu Ampar to Dangas by Taxi	Taxi	
	Lunch on the way		
14:00	Survey on Dangas		Telkomsel and Custom Radar Station
16:20	Move from Dangas to Bukit Tumiyang Telkom tower by car		Telkomsel
16:30	Survey on Bukit Tumiyang		
	From Bukit Tumiyang to Hotel (Novotel, Tel: 0778-425555)		

Date and time	Activities	Remarks	Sites
Feb. 28, 2007 7:20 7:50 9:05 10:30 12:00 12:30 13:40 15:30 17:00	<b>Survey of Jantan</b> Move from Hotel to Sekupang Move from Seikupang to Tg. Balai Karimun 1.5 hours Visit to ADPEL Office of Tg. Balai Karimun Visit to Custom Office Move to Jantan by Car (30 min.) Lunch Site survey at Jantan (Custom radar site) Arrival at near site Survey at radar site Move to Tg. Balai Karimun by Car Stay at Tg. Balai Karimun (Wisma 21 <sup>st</sup> Century, Tel: 0777-326688)	Taxi Regular Boat Rental Car	Custom owned
Mar. 1, 2007 7:30 10:00 10:30 11:30 12:00 13:00 14:00 14:50 16:30 17:50	<b>Survey of Hiyu Kecil</b> Travel from Tg. Balai Karimun o Hiyu Kecil by boat (Return to Tg. Balai Karimun since rough wave condition) Discussion in ADPEL office Team I: Hiyu Kecil Start from Tg. Balai Karimun to Pasir Panjang Visit Harbor Master office on Pasir Panjang Start from Pasir Panjang to Hiyu Kecil by Tug Boat Site survey at Hiyu Kecil Move to Pasir Panjang Move from Pasir Panjang to Tg. Balai Karimun Team II: Repeater site and custom radar operation room Visit to custom radar operation room at Tg. Balai Karimun Move to Bukit Ponkar Site survey of Bukit Ponkar Travel from Tg. Balai Karimun to Sekupang by regular boat Move from Sekupang to Hotel Stay at Batam, Novotel Batam	Boat (ADPEL) Rental Car Tug Boat Rental Car Regular Boat Taxi	Lighthouse Hiyu Kecil Custom radar Telkom
Mar. 2, 2007 9:00	<b>Return Back to Jakarta</b> Move to Airport (by taxi) Travel to Jakarta by Air GA 153, 11:10 – 12:40	Taxi Air Ticket	





## 2 Team Members

### (1) Team I (Rupat and Bengkalis)

#### 1) JICA Study Team

Mr. Mitsumasa Noguchi

#### 2) DGST

Mr. Kardiawan S.

Mr. Tony Rafiq

#### 3) JICA Study Team Local Staff Assistant (Translator/Engineer)

Mr. Satrio Setyawan

### (2) Team II (Batam, Bingtan and Karimun)

#### 1) JICA Study Team

Mr. Masahiko Koshimizu

Mr. Kazuma Inoue

#### 2) DGST

Mr. Alamsyah Sasmito

Mr. Ketut Aries

Mr. Ryuji Nishibun (JICA Expert)

#### 3) JICA Study Team Local Staff Assistant (Translator/Engineer)

Mr. Irwan Wahidin

**Minutes of Working Group Discussions  
on the Basic Design Study on the Project for  
Development of Vessel Traffic Service in Malacca and Singapore Straits in Indonesia**

Date : Monday, 07-09 May 2007  
Time : 09.00 W I B  
Place : DGST, 13<sup>th</sup> floor  
Subject : Project Sites, Proposed Facility Plan, List of Equipment and others

Attendants : As attached

Documents Distributed for the Meeting:

- 1) AGENDA
- 2) Handout for explanation
- 3) Site Visit Schedule (May 12 to May 13)
- 4) Project Implementation Schedule

Contents of the Meeting

Mr. Alamsyah Sasmito opened and chaired the meeting. The discussions have been made in accordance with the AGENDA provided by the JICA study team. Following issues were discussed.

**1 Reconfirmation of Request by the Government of Indonesia**

DGST and the JICA study team reconfirmed the request of the Government of Indonesia those were as follows:

(1) Objective

The objective of the Project is to improve the safety of vessel navigation at the Indonesian side of the Malacca and Singapore Straits, by establishing new radar system.

(2) Project Sites

1) VTS Sensor (Five sites)

Tg. Medang in Rupal Island, Tg. Parit in Bengkalis Island, Jantan in Karimun Island or Hiyu Kecil Island, Batu Ampar in Batam Island and Tg. Berakit in Bintan Island

2) Repeater Station (Two sites)

Dangas, and Takong Kecil Island (additionally requested)

3) VTS Center (One site)

Batu Ampar

4) VTS Sub-center (One-site)

Dumai

(3) Equipment

Radar system with GPS, radar tracking, multifunction console, VHF radio communication system, transmission and communication links, AIS, CCTV, VTS data system and web server, record and playback unit, meteorological sensor, power generator, air conditioner.

**2 Current Results of the Study**

2.1 Available sites for the Project (based on the site reconnaissance survey)

DGST and the JICA Study Team reconfirmed the available site for the Project which was discussed and stated on the Memorandum of working Group Discussions on March 7, 2007 as follows:

1) VTS (Radar Sensor) Site

Tg. Medang in Rupert Island, Tg. Parit in Bengkalis Island, Hiyu Kecil Island, Batu Ampar in Batam Island and Tg. Berakit in Bintan Island

2) Repeater Station

Takong Kecil Island

3) VTS Center

Batu Ampar

4) VTS Sub-center

Dumai

2.2 Technical study results

The JICA study team presented their reviews and results of the technical study regarding the installation of VTS system after reviewing the proposed project sites and explain as follows.

(1) Target vessel size

The target vessel for the VTS system shall include a small vessel coming and going to/from the Indonesian ports along with the ordinary IMO targeted ships.

The small vessel is to be defined as of a steel ship of 100GT and more in the design. The ship size is to be determined considering the international and domestic passenger ferry boats those frequently navigate in the Malacca and Singapore Straits.

DGST stated that small boats such speed boats, motor boats, fishing boats etc. would like to detect by the radar system.

(2) Radar coverage area considering the small vessel

- 1) The radar will be installed more than 60m above sea level high that will give visibility distance of over 18 NM and, achievable radar surveillance area for a 100 GT ship by an IALA recommended class radar system will be more or less 15 NM range as shown in Fig. 1 (in handout). Yet installation of VTS sensors according to the request, it shall be noted that there still remains rather wide blind area where small boats can not be detected by VTS system especially in sea waters between Tg. Medang and Tg. Parit, and also

between Tg. Parit and Hiyu Kecil.

- 2) It is also noted that the above detective range, which is given for a steel vessel, is shorter for a fiber or wooden vessels.

(3) Data communication link

DGST stated the data communication link is essential in the VTS system. The JICA study team stated:

- 1) It was found that data communication link from Tg. Medang to Dumai, from Tg. Parit to Dumai are not feasible without repeater station.
- 2) It is suggested to provide a repeater station between Tg. Berakit and Batu Ampar in order to maintain the communication quality.

(4) VTS System configuration

After presentation of those background, a likely system configuration of VTS system was presented and discussed. (See the attached Fig. 3).

DGST understand that the necessity of the repeater. DGST suggested that Morong would be a repeater station between Tg. Medang and Dumai, and between Tg. Parit and Dumai, but the landowner of Morong site is Pelindo I, so both party agreed to discuss this issues on May 11, 2007 with team leader of JICA study team.

(5) Issues

The JICA study team explained that the technical study was conducted how to satisfy the request by the Government of Indonesia, namely, 1) to detect and monitor the small ships crossing the TSS main route as well as the large ships passing through the Straits to maintain the navigation safety, 3) to establish the VTS center and VTS Sub-center at Batu Ampar and Dumai To satisfy the above request and to consider the proper operations of the VTS system, the JICA study team consider the followings.

- 1) International and domestic passenger ferry routes are studied and considered as one of the target small vessels to be monitored by the radar system, because no information is available to know the exact and actual situations of the small vessels traffic conditions in the straits. As shown in the Fig.1, the JICA study team could not be explained that the small vessels are really passing thorough the area where radar cover range at Tg. Medang, Tg, Parit and Tg. Berakit. According to the lighthouse officer, there are some small boats crossing the Strait during night time.
- 2) The JICA study team requested DGST to investigate supporting data or information of small vessel traffic in the areas. DGST replied that it is quite difficult without observation for months, because, some of such small vessels are not registered.
- 3) To detect the target vessels crossing the TSS, the locations of Tg. Medang, Tg. Parit and Tg.Berakit are rather far from the TSS main route.

(6) Focus

The JICA study team explained that the focus of the study is as follows:

- 1) Hiyu Kecil, Batu Ampar and Takong Kecil

These three sites are ready for further study to implement. The JICA study team suggested that the surveillance area by VTS system would be continuous from Hiyu Kecil to Batu Ampar by adding Takong Kecil as a radar sensor site as shown in Fig.2.

2) Tg. Medang, Tg. Parit and Tg. Berakit

It is necessary to make further discussions how to provide more effective and better VTS system including technical cooperation for operation and maintenance.

DGST stated that all the sites shall be in one Project consist of Tg. Medang, Tg. Parit, Hiyu kecil, Batu Ampar, Takong Kecil and Tg. Berakit. This issue should be discussed with the Study Team Leader on May 10 or 11, 2007.

(7) Scheme of the Japanese Grant Aid Project

The JICA study team explained DGST the Japanese Grant Aid scheme as follows.

- 1) Project site and land space shall be provided by the recipient country.
- 2) The basic design study shall be completed in a short time. Most of this basic design work shall be completed by the end of coming July, 2007. Therefore, "undetermined or to-be-determined" matters shall be eliminated.

2.3 Facilities to be constructed at each site

The JICA study team explained the construction facilities and its position of Hiyu Kecil, Takong Kecil and Batu Ampar by Fig. 4a to 4c, and Fig. 5a and 5b. Following matters are discussed about the facilities.

- 1) Directorate of Navigation of DGST confirmed that the land of the above mentioned project sites are owned by DGST.
- 2) The land use permission/coordination with Navigation District should be born by the Indonesian side (Directorate of Navigation of DGST) according to the Japan Grant Aid Scheme.
- 3) Hindrances against the existing light caused by building of a radar tower at the Takong Kecil will be solved by some technical measures. The JICA study team plans the radar tower will be built in the range of the red sector.

**3 List of equipment**

The JICA study team presented an equipment list (Table 1). Following matters are discussed.

(1) Warranty Period

- 1) DGST requested that three years warranty period, the JICA study team explained that liability period is one year in the Japan Grant Aid Scheme.
- 2) Cost for operation (i.e. staff salary, consumer goods such as fuel, electrical power etc.), equipment maintenance after one year guaranty period, updating software if necessary, shall be born by the Indonesian side.

(2) Equipment

DGST agreed the list of equipment presented in the Table 1. DGST requested to make discussions about the contents of the technical specifications of the listed equipment before

tendering. The JICA study team replied that such discussion may be able to on next visit of the study team for explanation of the draft basic design study.

DGST stated that the equipment have to be provided for all locations, namely Tg. Medang, Tg. Parit, Hiyu Kecil, Takong Kecil, Batu Ampar and Tg. Berakit.

(3) Frequency of radar and multiplex communication link

DGST and the JICA study team was confirmed as follows:

- Frequency of radar: X-band
- Multiplex communication link: 7.5 GHz Band

DGST will prepare license for the above in place and in time.

**4 Staffing for VTS System Operation and Maintenance**

The JICA study team explained the idea of least staffing for VTS system operation and maintenance. DGST presented of their staffing schedule as shown in Table A below.

**Table A Staffing Schedule for VTS System Operation and Maintenance**

Function	VTS Center Station	VTS sub-center	VTS Sensor Station
Manager	1	1	-
Deputy Manager	1	1	-
Administrative Staff	2	1	-
Computer System Engineer	1	1	-
VTS Officer	5	5	-
VTS Operator	10	5	-
Radio Operator	-	-	-
Electrician	2	2	1
Technician	2	2	2
Total Staff for O & M	24	18	3

**5 Project Design Matrix (PDM)**

The JICA study team presented that their proposed Project Design Matrix (PDM) as attached. DGST and the JICA study team discussed about the effects of the project and what the Indonesian side have to do to satisfy the purpose of the project and to reach the overall goal. Following discussions were held.

(1) Activities

As stated in the draft PDM, Indonesian side is requested

- To provide available land spaces for construction of VTS center and sensor sites,
- To establish the appropriate organization for VTS system operation and maintenance,

- To provide sufficient number of staff and allocation of appropriate position,
- To allocate and to reserve sufficient budget for VTS system operation and maintenance.

In line with this, following matters are discussed.

1) Staff allocation for VTS system operation and maintenance

The JICA Study team stated that it is necessary to make plan and to assign staff and division or sub-division to take responsible for VTS system operation and maintenance. Based on the previous discussions, the JICA study team understood that VTS system operations and maintenance will be conducted by the 1<sup>st</sup> class of District of Navigation as follows:

- a. Tg. Pinang: Batu Ampar, Takong Kecil, Tg. Berakit
- b. Dumai Tg. Medang, Tg. Parit and Hiyu Kecil

DGST stated that the staff allocations are still under arranging.

2) Budget allocations

The JICA study team explained that project implementation may start from January 2008, and according to this schedule, VTS system may be ready to operation by December 2009.

DSGT stated the budget for operation from December 2009, it is necessary to submit the application to Planning and Budgeting Division in DGST until March 2008.

3) Operator skill

DGST have to develop skilled VTS operators in time, and requested for JICA study team to carry out for technical assistance program urgently while implementing the Project. The JICA Study team stated that some training program will be considered as training program of O & M such as IALA recommends.

The JICA study team also stated that the Japanese government has intentions to conduct technical assistance for the operation of the VTS system provided by the Japanese Grant. Therefore, the JICA study team suggested DGST to apply for Japanese technical cooperation aggressively.

(2) Outputs

Outputs by the Activities are

- Marine traffic surveillance is conducted for ship navigation safety in the Malacca and Singapore Straits.
- Economic activities conducting by the ship passing through the Straits are sustained and vitalized.

Objectively verifiable indicators to evaluate the above out puts are:

- Operation hours for marine traffic surveillance by VTS system,
- Number of monitored ships by VTS radar system
- Ships traffic report

The DGST is requested to conduct appropriate and sustainable VTS operations.

(3) **Project Purpose**

The Project purpose is

“VTS system is established along the Indonesian coast to improve the navigation safety.”

Objectively verifiable indicator is, “frequency of joint operation between VTS center and patrol and/or rescue boats.”

Expected important assumptions are;

- Practical and effective activities of BAKORKAMLA are started.
- Information system with VTS system will be well established in DGST with KPLP, KPPP and other related marine security and safety organizations.

Expected means of verifications are:

- VTS operation logs,

(4) **Overall goal**

Navigation safety in the Malacca and Singapore Straits will be improved.

Objective verification indicator is “statistics data of vessel traffic in the Malacca and Singapore Straits will be build, which is essential to review safety of navigation in the Straits.

**6 Further Schedule of the Basic Design Study and the Project**

The JICA Study team explained that the further schedule of the Basic Design Study by using the bar chart as shown in Table 3 and Table 4.

**7 Preparation Minutes Discussions after Team Leader Coming to Jakarta**

(1) **Arrival of Team Leader**

The JICA Study Team informed DGST again that the team leader of the JICA Study team will arrive at Jakarta on May 9, 2007.

(2) **Appointment with Mr. Yuri Gunadi, Director of Navigation**

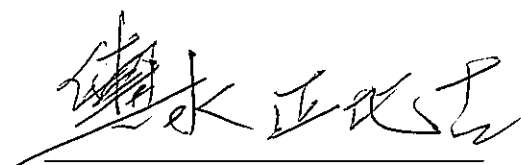
First appointment with Mr. Yuri Gunadi, Director of Navigation was confirmed at 8:00 a.m. on May 10, 2007.

(3) **Site visit of team leader**

The JICA study team informed DGST than the schedule of site visit was changed to May 12 and 13, 2007. From DGST, Capt. Suharko and Mr. Alamsyah Sasmito, will join them.



May 9, 2007



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Mr. Masahiko Koshimizu  
Chief Consultants  
On behalf of  
The JICA Study Team



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Ir. Alamsyah Sasmito,MM  
Section head of Equipment and Maintenance  
Sub-Directorate of Marine Telecommunication  
Directorate of Navigation, DGST

Witnessed by

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Capt. Suharko  
Head of Sub-Directorate of Marine  
Telecommunication  
Directorate of Navigation, DGST

### **List of Attendance**

#### Directorate General of Transportation (DGST)

Mr. Alamsyah Sasmito,	Head of Section of Equipment and Maintenance Directorate of Navigation
Mr. Ketut Aries,	Staff of Sub-directorate of Maritime Telecommunication
Ms. Erika	Staff of Sub-directorate of Maritime Telecommunication
Ms. Mittahuljanah Saleh	Staff of Sub-directorate of Maritime Telecommunication
Mr. Ryuji Nishibun,	JICA Expert

#### The JICA Study Team

Mr. Masahiko Koshimizu,	Chief Consultant, Maintenance, Operation and Management Specialist
Mr. Mitsumasa Noguchi,	Equipment Planning Specialist I
Mr. Kazuma Inoue,	Equipment Planning Specialist II
Mr. Satrio Steyawan.	Architect

**AGENDA**

Meeting on May 7, 2007  
at 13th Fl. DGST

**1 Reconfirmation of Request by the Government of Indonesia**

- (1) Objective
- (2) Project sites
- (3) Equipment

**2 Current Results of the Study**

- (1) Available sites for the Project
- (2) Target vessel size
- (3) Radar coverage area
- (4) Data communication link
- (5) Radar installation sites
- (6) Facilities to be constructed at each site
- (7) List of Equipment

**3 Staffing for VTS System Operation and Maintenance**

**4 Project Design Matrix (PDM)**

**5 Further Schedule of the Basic Design Study and the Project**

**6 Preparation of Minutes Discussions after Team Leader Arrival**

- (1) Arrival of Team Leader
- (2) Appointment with Mr. Yuri Gunadi, Director of Navigation
- (3) Site Visit of Team Leader

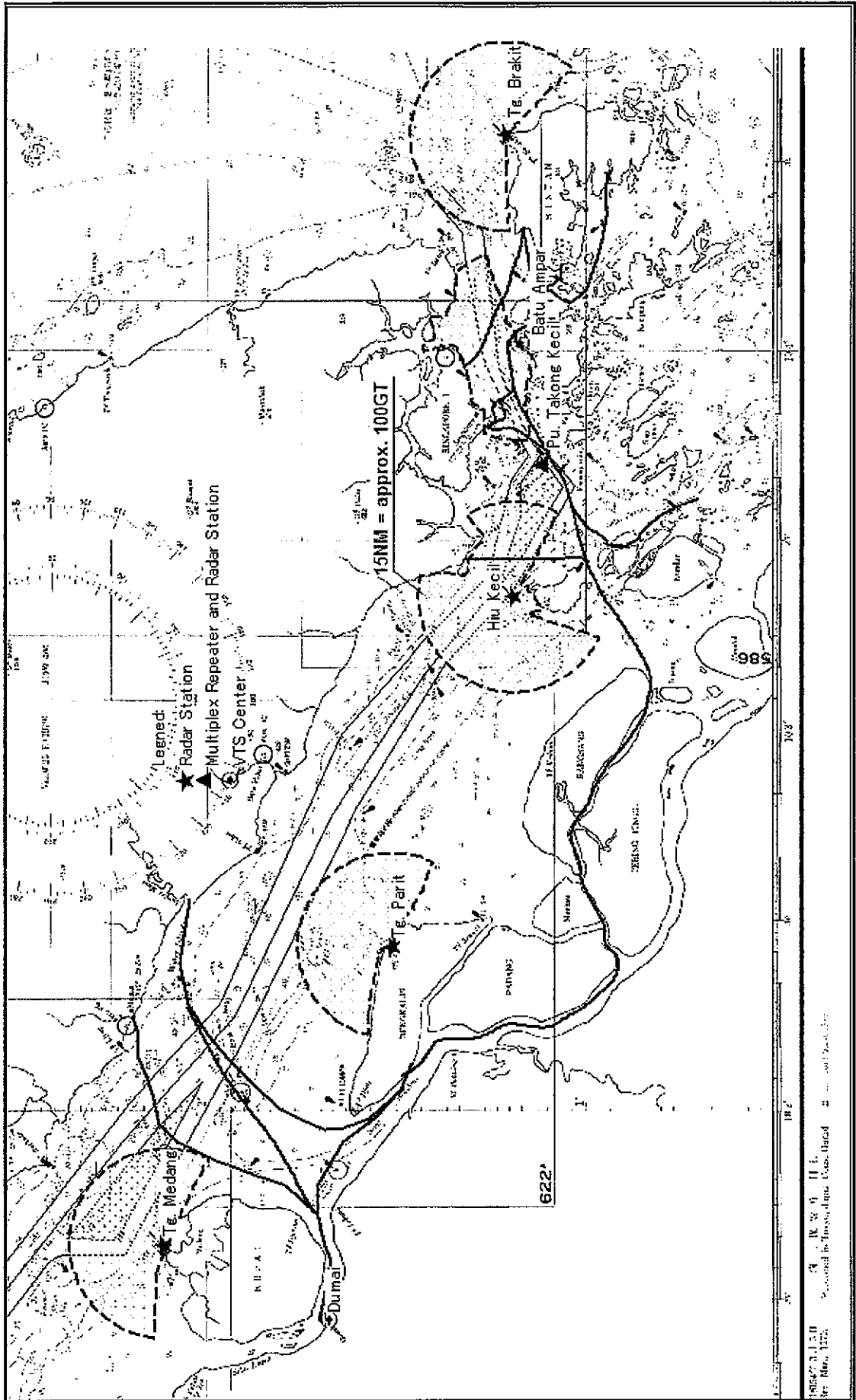
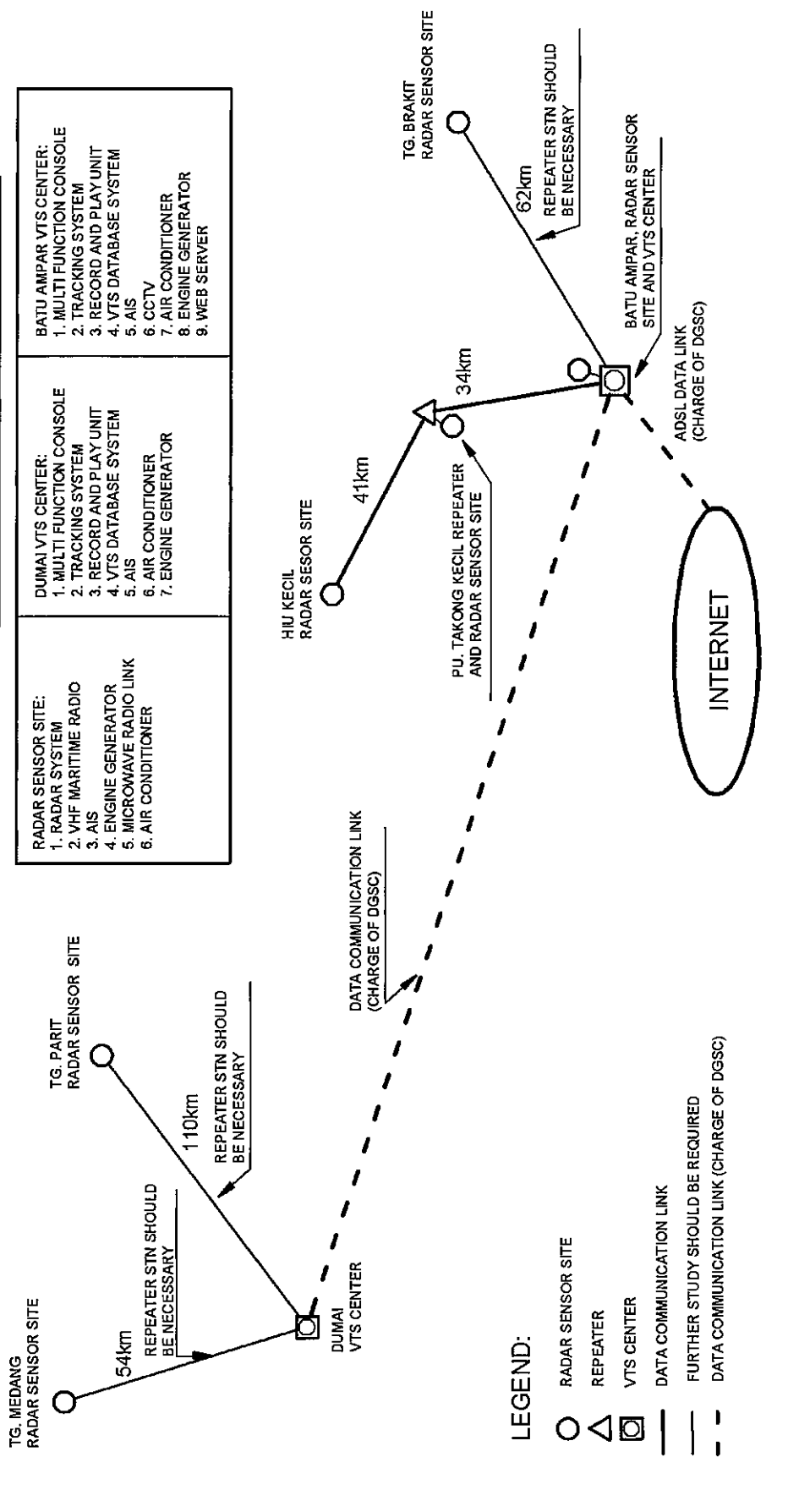


Fig. 1 Radar Cover Area for Approx. 100 GT Steel Vessels at Requested Sensor Sites

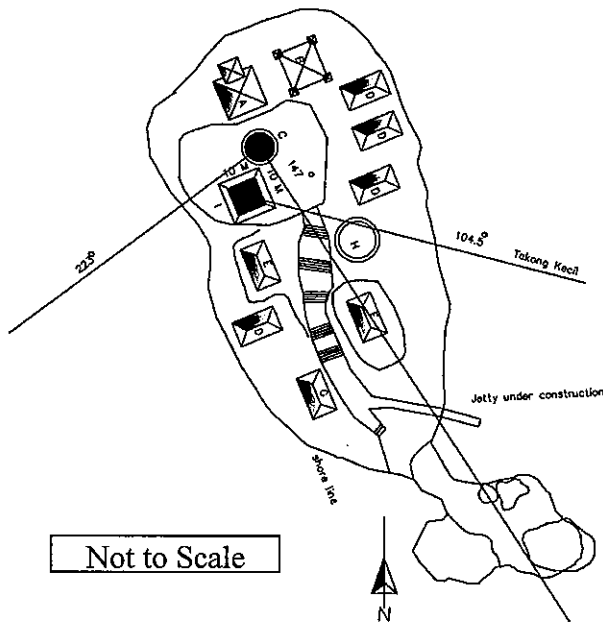
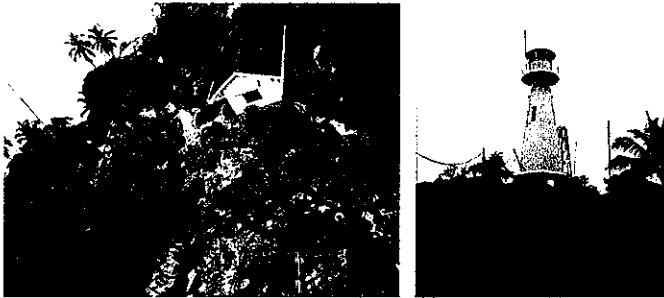


**SYSTEM CONFIGURATION (DRAFT)**

<p><b>RADAR SENSOR SITE:</b></p> <ol style="list-style-type: none"> <li>1. RADAR SYSTEM</li> <li>2. VHF MARITIME RADIO</li> <li>3. AIS</li> <li>4. ENGINE GENERATOR</li> <li>5. MICROWAVE RADIO LINK</li> <li>6. AIR CONDITIONER</li> </ol>	<p><b>DUMAI VTS CENTER:</b></p> <ol style="list-style-type: none"> <li>1. MULTI FUNCTION CONSOLE</li> <li>2. TRACKING SYSTEM</li> <li>3. RECORD AND PLAY UNIT</li> <li>4. VTS DATABASE SYSTEM</li> <li>5. AIS</li> <li>6. AIR CONDITIONER</li> <li>7. ENGINE GENERATOR</li> </ol>	<p><b>BATU AMPAR VTS CENTER:</b></p> <ol style="list-style-type: none"> <li>1. MULTI FUNCTION CONSOLE</li> <li>2. TRACKING SYSTEM</li> <li>3. RECORD AND PLAY UNIT</li> <li>4. VTS DATABASE SYSTEM</li> <li>5. AIS</li> <li>6. CCTV</li> <li>7. AIR CONDITIONER</li> <li>8. ENGINE GENERATOR</li> <li>9. WEB SERVER</li> </ol>
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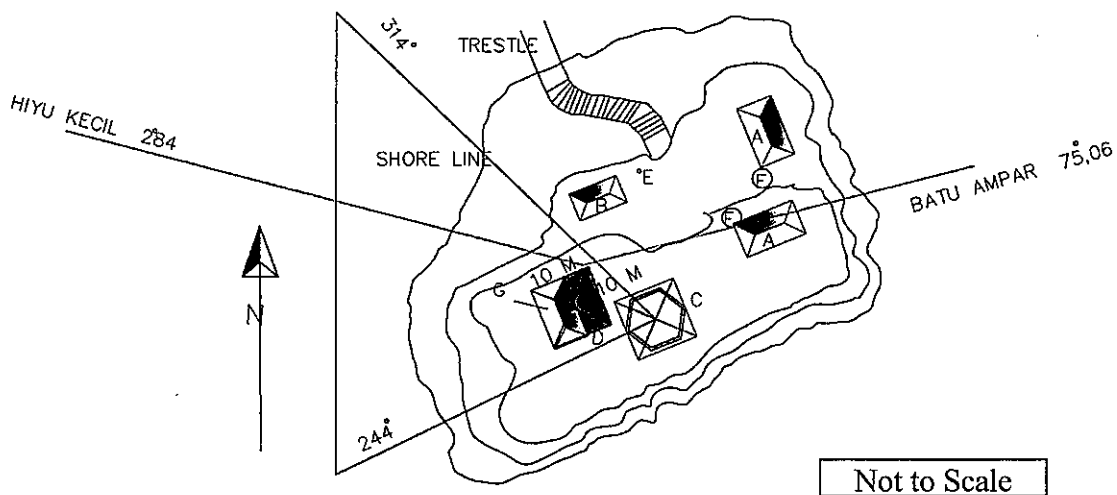
**Fig. 3 System Configuration for VTS of Malacca and Singapore Straits in Indonesia**



Legend	
A	: Surveillance Building (Navy)
B	: VHF Antenna Tower (Navy)
C	: Light House
D	: House
E	: Generator Set House
F	: Warehouse
G	: Fuel Storage
H	: Water Collection and Reservoir Tank
I	: Radar Tower (Proposed Location)

(Above Drawing is produced by field sketch without any measurement)

**Fig. 4a Site Conditions and Radar Tower Proposed Location of Hiyu Kecil**

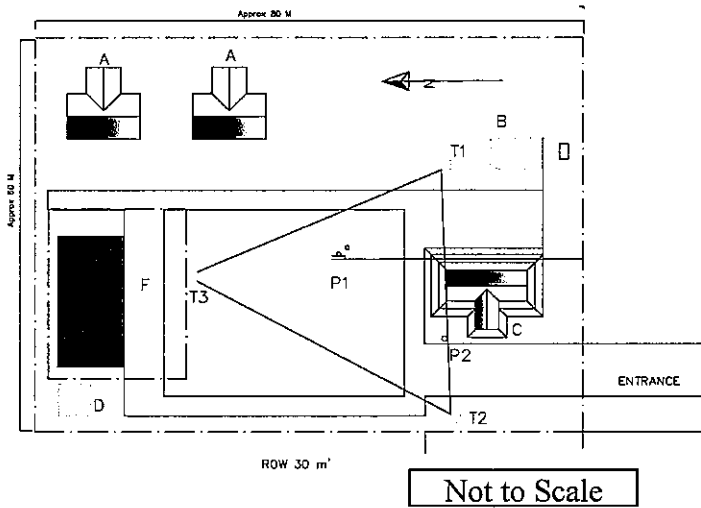
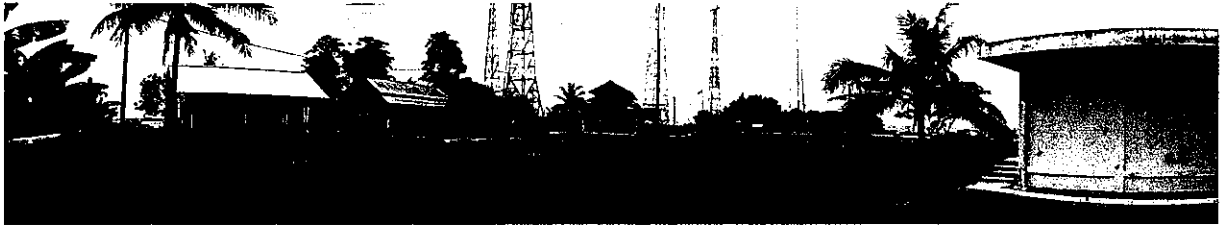


Legend	
A :	House
B :	Generator Set House
C :	Light House
D :	Warehouse and Reservoir
E :	Flag Pole
F :	Water Collection and Reservoir Tank
G :	Radar Tower (Proposed Location)
	Relocation of Existing warehouse is required.

(Above drawing is produced by field sketch without any measurement.)

**Fig. 4b Site Conditions and Radar Tower Proposed Location of Takong Kecil**





**Legend**

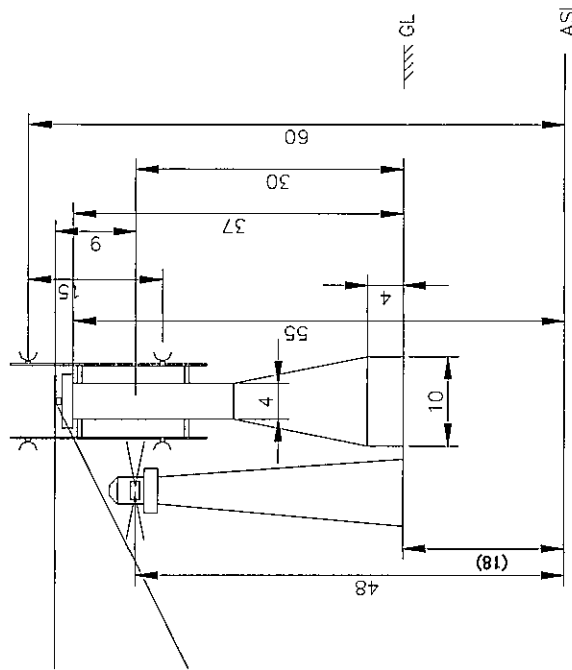
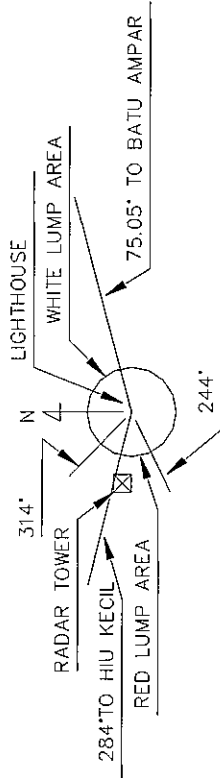
- A : House
- B : Generator Set House
- C : Office Building
- D : Transformer House

**Self Supporting Tower**  
 T1: 30M, T2: 20m, T3: 20m  
 P1: Pole, 2.5m  
 P2: Pole, 2.5m

F : VTS Center (posed Location)

(Above drawing is produced by field sketch without any measurement.)

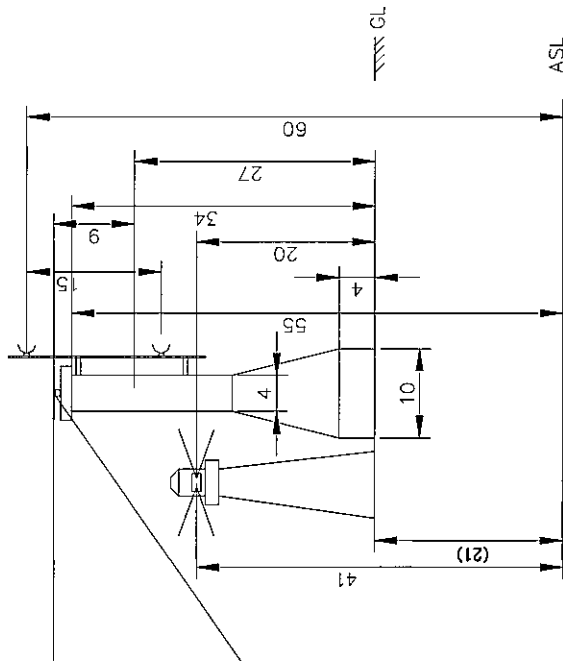
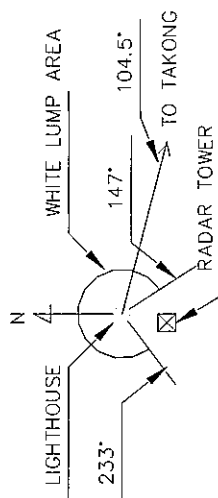
**Fig. 4c Site Conditions and Radar Tower Proposed Location of Batu Ampar**



問題点: タコングケールの赤ランプがレーダー塔の陰になる。  
この対策は何かないか?  
GL WILL BE DECIDED AFTER  
TOPO SURVEY

DRAFT ONLY

TAKONG KECIL RADAR  
TOWER SITE LAYOUT



GL WILL BE DECIDED AFTER  
TOPO SURVEY

DRAFT ONLY

HIU KECIL RADAR  
TOWER SITE LAYOUT

Fig 5a Conceptual Drawing of Radar Tower and existing Light House of Hiyu Kecil and Takong Kecil

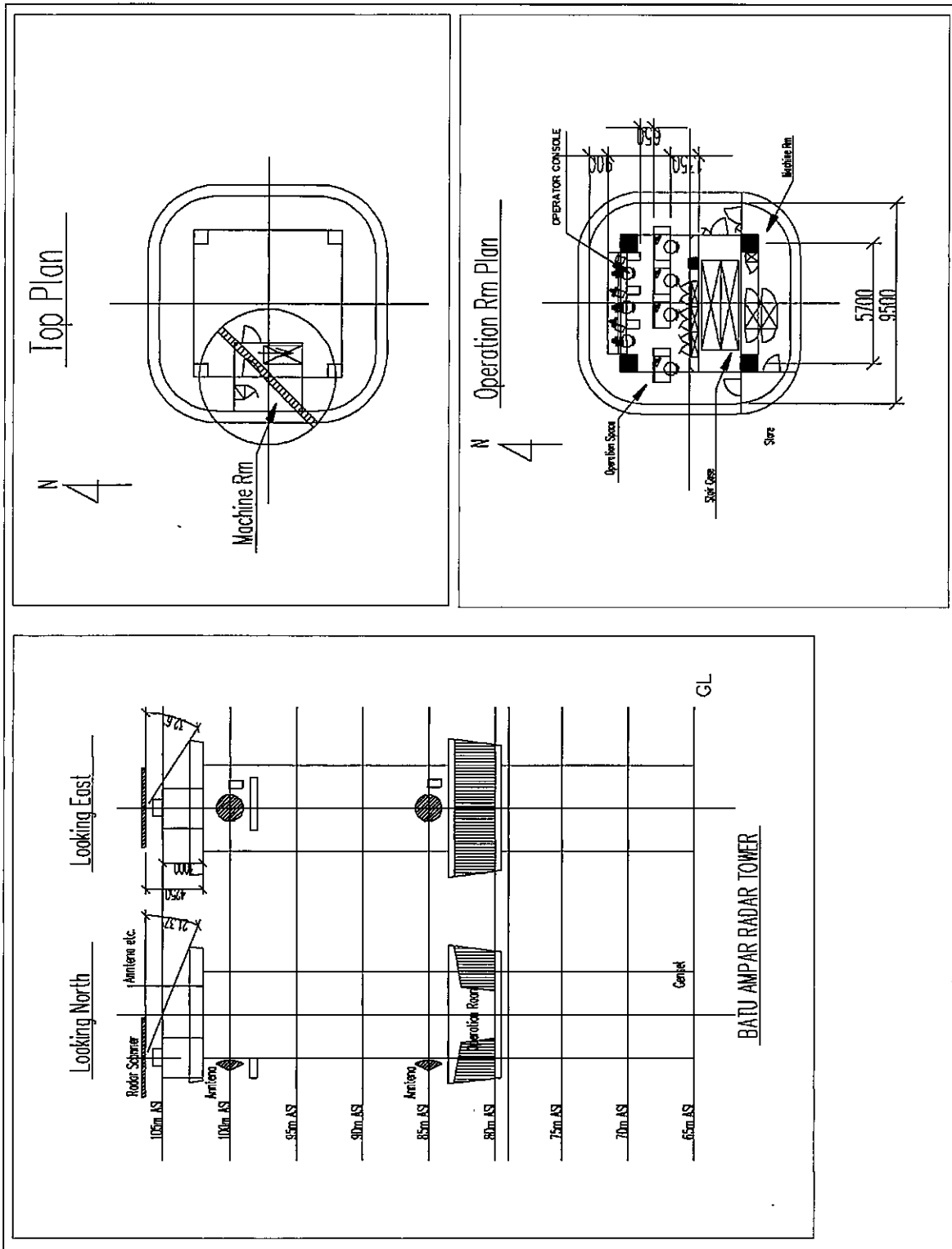


Fig. 5b Conceptual Drawing of VTS Center of Batu Ampar (Draft Only)

**Table 1 Equipment List for Each Site (Draft)**

No.	Site Name			
	Equipment Name	Hiu Kecil	Takong Kecil	Batu Ampar
	Function of VTS Sensor Site	○	○	○
	Function of VTS Center Site			○
01.	Radar Surveillance System - Radar Transmitter and Receiver (TRX) - Antenna Scanner - PPI Monitor - Radar Signal Processor - Tracking System ( Multi signal composition processor) - Multi-function Console (Radar & AIS Operator Console)	○ ○ ○ ○	○ ○ ○ ○	○ ○ ○ ○ ○ ○
02.	VHF Maritime Radio Communication System - Antenna - VHF Maritime Radio Transceiver - VHF Radio Console	○ ○	○ ○	○ ○ ○
03.	Data Communication Link - Radio Communication Equipment	○	○	○
04.	AIS Base Station System - Antenna - Transponder	○ ○		○ ○
05.	CCTV System - CCTV Camera Unit - Video Display Equipment		○	○ ○
06.	AIS Server System (Vessel Traffic Data Server)			○
07.	Record and Play Back System for Traffic Data with AIS data.			○
08.	WEB Server for Dissemination of Vessel Traffic data and others			○
09.	Meteorological Observation System - Sensor Unit - Monitor Console	○	○	○ ○
10.	Power Supply System - Diesel Engine Generator - Power Distribution Board - Uninterrupted Power Supply	○ ○ ○	○ ○ ○	○ ○ ○
11.	Air Conditioner (Separate type)	○	○	○

## Staffing for VTS System Operation and Maintenance

Conditions to be considered

A 24-hours service is essential for a VTS center station, so there shift systems must be applied in order to support a full operation of VTS function. Only a daily maintenance work and recovery operations against system down are expected for at VTS sensor stations.

**Table 2 Least Staffing for VTS System Operation and Maintenance**

Function	VTS Center Station	VTS Sensor Station
Manager	1	-
Deputy Manager	2	-
Administrative Staff	2	1
Computer System Engineer	1	-
VTS Officer	3	-
VTS Operator	9 (depending on the spread of monitoring area)	-
Radio Operator	-	-
Electrician	1	1
Technician	1	1
Total Staff for O & M	20	3

**Table 3 Schedule of the Basic Design Study**

Year	2007									
Month	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.
Preparation of the Study in Japan	[White bar]									
Field survey in Indonesia (1 <sup>st</sup> )		[Black bar]								
Analysis in Japan (1 <sup>st</sup> )			[White bar]							
Field survey in Indonesia (2 <sup>nd</sup> )				[Black bar]						
Analysis in Japan (2 <sup>nd</sup> ) (Preparation of Draft Basic Design Report in Japan)					[White bar]					
Explanation of Draft Basic Design Report in Indonesia							[Black bar]			
Submission of Basic Design Report										[Black triangle]

**Project Design Matrix (PDM) (Draft for Discussion)**

**Project Title:** The Basic Design Study on  
the Project for Development of Vessel Traffic Services  
in Malacca and Singapore Straits in Indonesia

**Target Area:** Malacca and Singapore Straits

**Implementing Agency:** Directorate of General of Transportation

**Target Group:** Directorate of Navigation

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p><b>Overall Goal</b> Navigation safety in the Malacca and Singapore Straits is improved</p>	<ul style="list-style-type: none"> <li>Decrease number of marine accident</li> <li>Decrease number of incidents of piracy and armed robbery in the Straits</li> </ul>	<ul style="list-style-type: none"> <li>IMB Report</li> </ul>	<ul style="list-style-type: none"> <li>Number of marine accident is decreased if navigation safety in the Straits is improved..</li> </ul>
<p><b>Project Purpose</b> VTS System is established along the Indonesian coast for implementation of navigation safety.</p>	<ul style="list-style-type: none"> <li>Frequency of joint operation between VTS center and patrol and/or rescue boat</li> </ul>	<ul style="list-style-type: none"> <li>VTS system and patrol/ rescue boat operation logs</li> <li>Report of the related organizations</li> </ul>	<ul style="list-style-type: none"> <li>Practical and effective activities for coordination by BAKORKAMLA are started.</li> <li>Appropriate operation and cooperation shall be conducted with KPLP , KPPP and other related marine security and safety organizations.</li> </ul>
<p><b>Outputs</b> Marine traffic surveillance is conducted for ship navigation safety in the Malacca and Singapore Straits. Economic activities conducting through the ships passing through the Straits are sustained and vitalized.</p>	<ul style="list-style-type: none"> <li>Accumulated operation hours for marine traffic surveillance by using VTS system</li> <li>Number of detected and monitored ships by using the VTS radar system</li> </ul>	<ul style="list-style-type: none"> <li>VTS system operation record</li> </ul>	<p>Appropriate and sustainable operations of VTS system shall be conducted by Directorate of Navigation in DGST.</p>
<p><b>Activities</b></p> <ul style="list-style-type: none"> <li>Introducing and conducting marine traffic surveillance by using the VTS system provided by the Project</li> <li>To enable early detections of the suspicious ships through surveillance activities by using VTS radar system</li> </ul>	<b>Inputs</b>		<ul style="list-style-type: none"> <li>Responsible divisions and/or sub-divisions for VTS system operations and maintenance shall be clarified and established.</li> <li>VTS operators shall have adequate skills.</li> <li>Sufficient budget for VTS system operation and maintenance shall be allocated and reserved.</li> </ul>
	<p><b>Japanese Side</b></p> <ul style="list-style-type: none"> <li>Construction of VTS system</li> <li>Procurement and installation of radar system, tracking system, multi-function console etc.</li> <li>Provision of VHF radio communication system</li> <li>Provision of the data communication links</li> </ul>	<p><b>Indonesian Side</b></p> <ul style="list-style-type: none"> <li>Provision of available land space for construction of VTS center and sensor station</li> <li>Establishment of an appropriate organization for VTS system operation and maintenance</li> <li>Provision of sufficient number of staff and allocation of appropriate position</li> </ul>	

**Site Visit Schedule (May 12 and 13)**  
**for**  
**Basic Design Study on the Project for Development of Vessel Traffic Service**  
**in**  
**Malacca and Singapore Straits**

**1 Schedule**

Day	Date		Activity	Remarks
1	12	Sat	Fly from Jakarta (09:00) to Batam (10:30) by GA 152 Batu Ampar Coastal Radio Station by Rental Car (30min.) Visit Coastal Radio Station (11:00 – 12:00) Lunch (12:30 – 13:30) Visit Dangas Custom Radar Site (14:00 – 15:00) Stay at Harmony Hotel	Rental Car (at site)
2	13	Sun	From Hotel (6:30) to Sekupang Ferry Terminal (30 min.) Move from Sekupang (7:30) to Tg. Balai Karimun (8:45) by Ferry Visit Jantang (9:30-10:30) Visit Bukit Ponkar (Telkom Tower) (11:00 – 12: 00) Lunch Visit Tg. Rambut Lighthouse (13:20-14:00) Move from Tanjung Balai Karimun (15:00) to Sekupang (16:15) Fly from Batam (18:25) to Jakarta (19:55) by GA 157	Ferry Ticket (at site) Rental Car (at site)  Ferry Ticket (at site)

**2 Hotel**

Harmoni Hotel

Jl. Imam Bonjol, Nogoya, Batam Indonesia

TEL:0778-459308, 459311, FAX:0778-459306, 450507

e-mail: [info.hhbtm@harmonigroup.biz](mailto:info.hhbtm@harmonigroup.biz)

website: [www.harmonigroup.biz](http://www.harmonigroup.biz)



### 3 Members

#### 1) JICA Study Team

Mr. Toshiyuki Iwama

Mr. Kiyoshi Ihara

Mr. Yoshihisa Kasuya

Mr. Masahiko Koshimizu

#### 2) DGST

Mr. Suharko

Mr. Alamsyah Sasmito

Mr. Ryuji Nishibun (JICA Expert)

### 4 Phone Numbers

#### (1) Mobile Phone Numbers

Mr. Masahiko Koshimizu: 0813-8971-3519

Mr. Alamsyah Sasmito 0817-6881-103

Mr. Ryuji Nishibun 0812-1076-294

#### (2) Satellite Phone

0868-1103-4161

0868-1103-4162



**The Basic Design Study on the Project for  
Development of Vessel Navigation Systems in Malacca and Singapore Straits in the  
Republic of Indonesia**

**Memorandum of Working Group Discussions**

**1 Target Vessels and Surveillance Area**

- 1) DGST pointed out that the objective of the Project is to improve the safety of navigation at the Indonesian side of the Malacca and Singapore Straits, by establishing new VTS (Vessel Traffic Services) as stated on the Report on Discussions on February 19, 2007.
- 2) DGST also mentioned that there are many small ships crossing the Malacca and Singapore Straits and these small ships become threat against the navigation safety of the large ships passing through the TSS (Traffic Separation Scheme).
- 3) DGST regarded that it was important to monitor small vessels particularly crossing the main route of the straits as well as large ships passing through the main route.
- 4) DGST requested the VTS complied with International Standard, (IMO and IALA recommendation V-128) and intends to make surveillance of small boats in the designated sea area.

**2 Analysis of the Proposed Locations**

The JICA Study Team and the DGST members are evaluated by using sea charts and land maps about the suitability of the proposed project locations where mentioned in the Report on Discussions. Based on the evaluation and the discussions with DGST, the following sites are selected as the sites to be surveyed.

**Table 1 Locations to be Surveyed by the Study Team**

Site Name	Usage	Existing Facilities	Remarks
Tg. Medang	VTS	Lighthouse	As per Report on Discussion
Morong	Repeater	PELINDO Pilot Station	Suggested by JICA Team
Dumai	VTS sub-center	Navigation Office	As per Report on Discussion
Bengkalis	Repeater	Coastal Radio Station	Suggested by JICA Team
Tg. Parit	VTS	Lighthouse	As per Report on Discussion
Tg. Berakit	VTS	Lighthouse	As per Report on Discussion
Tg. Tondang	VTS or Repeater	Beacon	Suggested by JICA Team
Batu Ampar	VTS & VTS center	Coastal Radio Station	As per Report on Discussion
Dangas	Repeater	Telkom Transmission Station	As per Report on Discussion
Dangas	VTS	Custom Radar	Found at site Note 1)
Bukit Tumiayang	Repeater	Telkom Transmission Station	Suggested by DGST Team
Jantan	VTS	Custom Radar	As per Report on Discussion
Bukit Pongkar	Repeater	Telkom Transmission Station	Suggested by DGST Team
Hiyu Kecil	VTS	Lighthouse	As per Report on Discussion

Note 1) During the site visit, it was found that there is a radar facilities owned by custom office. The additional survey was conducted.

### 3 Site Visit

Site visits for all sites listed in above Table 1 were conducted jointly by the JICA Study Team and DGST team. The site visits schedules are shown in the Attachment.

### 4 Evaluation by the JICA Study Team

According to the findings by the site visit, the JICA Study team studied about the suitability and availability of each site for the Project. The evaluation results are shown in Tables 2 to 4 below.

**Table 2 Evaluation of VTS Sites**

Site	Suitability as Radar Station	Construction Aspects	Land ownership	Prospect
Tg. Medang	Good	Good	OK	High
Tg. Parit	Good	Good	OK	High
Tg. Berakit	Good	Good	OK	High
Tg. Tondang	Good	No Space	Private Company ✓	Low
Batu Ampar	Good (yet to be studied further)	Good	OK	High
Dangas	Good	Good	Custom ✓	Low
Jantan	Good	Good (yet to be studied further)	Custom ✓	Low
Hiyu Kecil	Good (yet to be studied further <sup>1)</sup> )	Fair (Limited Space)	OK	High

1) pointed out by the JICA Study Team

**Table 3 Evaluation of Repeater Station**

Site	Suitability as Repeater Station	Construction Aspects	Land ownership	Prospect
Morong	Good	Limited Space	PELINDO I	Low
Bengkalis	Good	Good	OK	High
Tg. Tondang	To be studied	No Space	Private company	Low
Dangas ✓	To be studied	To be studied	Telkom	Low
Bukit Tumiayang ✓	To be studied	To be studied	Telkom	Low
Bukit Pongkar ✓	To be studied	To be studied	Telkom	Low

**Table 4 Evaluation of VTS Center /Sub-Center**

Site	Conditions of Infrastructure	Construction Aspects	Land ownership	Prospect
Batu Ampar	Good	Good	OK	High
Dumai	Good	Good	OK	High

## 5 Discussions about each site

Based on the above evaluation and fact findings by the site visits, following discussions are held.

### (1) Tg. Berakit

DGST requested to build a new radar tower at the position of existing lighthouse tower by the Project, since the existing lighthouse tower is old and heavily corroded. The JICA Study Team explained that in such a case, all the expenses for demolition or removal of existing lighthouse and provision of temporary facilities to maintain the function of the lighthouse during construction of new tower shall be born by the Recipient Side.

### (2) All repeater stations planned at Telkom owned sites

The site survey was conducted to find likely locations for installation of data link repeater on the existing telecommunication tower owned by the PT Telkom.

The JICA Study team explained the undertaking requirements to the Government of the Recipient Country. The required item shall be covered by the Recipient Side accordingly.

DGST stated that installation of the data link repeater facilities on the existing telecommunication tower owned by the PT Telkom will not be considered for this Project.

### (3) Dangas and Jantan

By the site survey, the JICA Study and DGST Teams found that there exist radar facilities owned by the Customs.

The JICA Study team explained the undertaking requirements to the Government of the Recipient Country. The required item shall be covered by the Recipient Side accordingly.

As similar as the above item (2), DGST will not consider the land and facilities owned by the Customs for this Project.

### (4) Hiyu Kecil

The JICA Study Team expressed further study should be carried out in detail in terms of radar performances.

### (5) P. Takong Kecil

At the final stage of the discussions, DGST proposed P.Takong Kecil lighthouse for data link repeater station since the land and facilities are owned by the 1<sup>st</sup> Class District of Navigation (Distrik Navigasi Klas I) Tg. Pinang, and available for the Project.

## 6 Land ownership of the sites

DGST explained that the following locations visited by the Teams are owned by the 1<sup>st</sup> Class District of Navigation (Distrik Navigasi Klas I) Tg. Pinang and Dumai, and they are available for the Project;

Tg. Medang, Dumai, Bengkalis, Tg. Parit, Tg. Berakit, Batu Ampar, Hiyu Kecil and P. Takong Kecil.

7 **Operation and Maintenance**

DGST explained that operation and maintenance of the VTS system will be conducted by each 1<sup>st</sup> Class District of Navigation. Directorate of Navigation will establish regulations to be necessary for VTS operation and will provide technical assistance.

DGST expects some standardized training program of O&M such as IALA recommends and further technical cooperation by Japanese Government.

Jakarta, March 7, 2007



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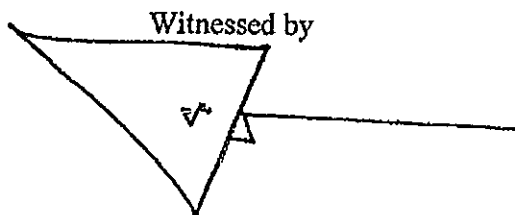
Masahiko Koshimizu  
Chief Consultants  
on behalf of  
The JICA Study Team



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Ir. Alamsyah Sasmito, MM  
Section head of Equipment and Maintenance  
Sub-Directorate of Marine Telecommunication  
Directorate of Navigation, DGST

Witnessed by



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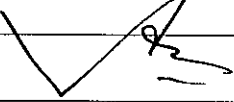
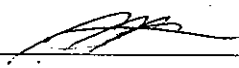
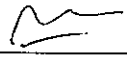

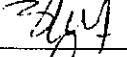

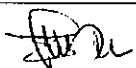
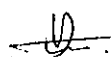
Capt. Suharko  
Head of Sub-Directorate of Marine  
Telecommunication  
Directorate of Navigation, DGST

## ATTENDANCE SHEET

Agenda : Basic Design Study on VTS System Project in Malacca Strait  
(cont.)

Date : Wednesday, 09 May 2007

Venue : Jadayat Meeting Room



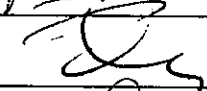
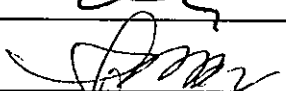
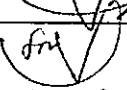

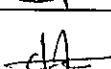
NO	NAME	DIVISION	SIGNATURE
1	Alamsyah, S	Ditnav	
2	Masrifi Keshimin	PCI/JICA	
3	Miftahuljannah Sales	Ditnav	
4	Lucenna INDOG	Dms/JICA	
5	ERIKH. M	DITNAV	
6	Satrio Setyawan	PCI/JICA	
7	I Ketut Aries Nabela	DITNAV	
8	<sup>NOBUCHI</sup> MITSUMASA	PCI/JICA	
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# ATTENDANCE LIST

Topic : The basic Design study on the Project for Development of VTS System in Malacca Straits

Date : 08 May 2007

Place : Jadayat

No	Name	Organization / Company	Sign
1	Alamsyah S	Ditnav	
2	Miftahuljannah Saleh	Ditnav	
3	Wanuna / Noug	JMS / JICA	
4	Sahio Setyawan	PI / JICA	
5	MIYATAKE	JICA	
6	IRWAN	JICA	
7	M. NOGUCHI	JAWA / JICA	
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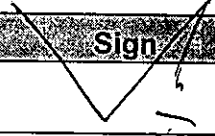

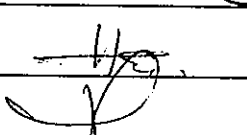
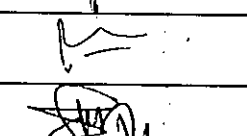
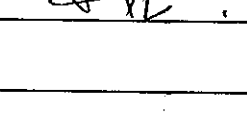
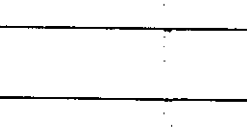
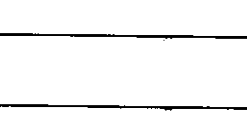


# ATTENDANCE LIST

Topic : The basic Design study on the Project for Development of VTS System in Malacca Straits

Date : 07 May 2007

Place : Jadayat

No.	Name	Organization / Company	Sign
1	Alamsyah S	Ditnav	
2	Masahiko Koshimizu	PCZ / JICA	
3	K INOUE	DMS / JICA	
4	M. W. BERNARDI	"	
5	Sahro Febrian	PCI / JICA	
6	Miftahuljannah Saleh	Ditnav	
7	I. ketut APRES Nabulo	Ditnav	
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Minutes of Meeting

on

The Marine Electric Highway (MEH) Project by IMO and

the Project for Development of Vessel Traffic Service in Malacca and Singapore Straits

by JICA

Date: August 9, 2007, 13:30 -

Place: 13<sup>th</sup> floor DGST, Jl. Medang Merdeka Barat No.8 Guding Karya

Attendants:

DGST: Mr. Alamsyah Sasmito and Mr. Tofan Rindoyo

JICA Study Team : Mr. Masahiko Koshimizu, Mr. Kazuma Inoue, Mr. Satrio Setiawan

Subject: VTS Center at Batu Ampar, and AIS installation

After series of discussions with MEH Project Launching Consultants, DGST and JICA Study Team had meeting at DGST on August 9, 2007, and concluded as follows:

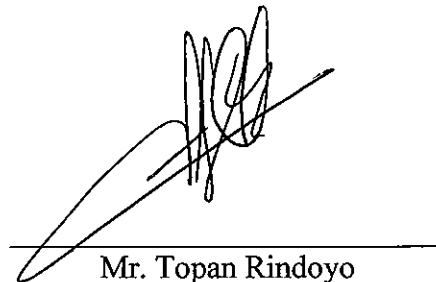
The JICA VTS Project will provide a meeting room in the VTS Center at Batu Ampar. When MEH project require the space for Indonesian Data Center, both parties confirmed the room could be applicable for this purpose.

JICA VTS Project will provide capability of interfacing of AIS information between MEH and JICA Project to avoid duplication of installation in AIS facilities at Tg. Medang and Hiyyu Kecil.

DGST:



Mr. Alamsyah Sasmito

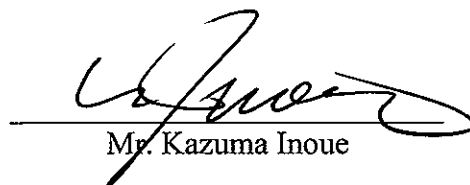


Mr. Topan Rindoyo

JICA Study Team:



Mr. Masahiko Koshimizu



Mr. Kazuma Inoue



Mr. Satrio Setiawan

