

## 付 属 資 料

- 1 . S / W、 M / M、 T / R
- 2 . 主要面談者リスト、 Q / N
- 3 . 収集資料リスト
- 4 . ローカルコンサルタントリスト
- 5 . 協議記録

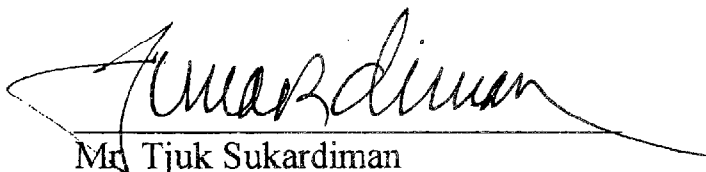


SCOPE OF WORK  
FOR  
THE STUDY FOR THE MARITIME TRAFFIC SAFETY SYSTEM  
DEVELOPMENT PLAN

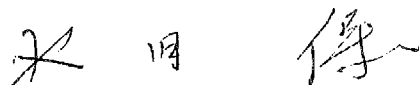
AGREED UPON  
BETWEEN  
DIRECTORATE GENERAL OF SEA COMMUNICATION  
MINISTRY OF COMMUNICATIONS, THE REPUBLIC OF INDONESIA  
AND  
JAPAN INTERNATIONAL COOPERATION AGENCY

JAKARTA, INDONESIA

November 13th, 2000.



Mr. Tjuk Sukardiman  
Director General of Sea  
Communication,  
Ministry of Communications



Mr. Tamotsu Ikeda  
Leader,  
Preparatory Study Team,  
Japan International Cooperation Agency

## I. INTRODUCTION

In response to the request of the Government of the Republic of Indonesia (hereinafter referred to as "GOI"), the Government of Japan (hereinafter referred to as "GOJ"), has decided to conduct the STUDY FOR THE MARITIME TRAFFIC SAFETY SYSTEM DEVELOPMENT PLAN (hereinafter referred to as "the Study"), in accordance with the relevant laws and regulations in force in Japan.

Accordingly, the Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation programs of GOJ, will undertake the Study in close cooperation with the authorities concerned of the GOI.

The present document sets forth the scope of work with regard to the Study.

## II. Objectives of the Study

The objectives of the Study are:

- (1) Formulation of master plans of Aids to Navigation up to the target year of 2020
- (2) Formulation of master plans of the maritime telecommunications system up to the target year of 2020
- (3) Formulation of short term plans and implementation of Feasibility Study up to the target year of 2007
- (4) To transfer technology related to the Study


## III. Study Area

The Study shall cover all over coastal and sea areas of Indonesia.

## IV. Scope of the Study

To achieve the objectives mentioned above, the Study shall cover the following items:

1. Review and analysis of present conditions including :
  - (1) Social economy
  - (2) Natural environment



- (3) Sea lanes
  - (4) Maritime Shipping, Traffic Routes and Shipping Accidents
  - (5) Sea Borne Cargoes and Passengers
  - (6) Information technology and commercial energy supply
  - (7) Ports and Harbours
  - (8) Existing related plans and strategy
2. Formulation of master plans of Aids to Navigation up to the target year of 2020:
- (1) To set up socio-economic framework up to the target year
  - (2) To forecast the future demands up to the target year
  - (3) To plan of rehabilitation and improvements of the existing aids to navigation and establishment of the new aids to navigation
  - (4) To plan of establishment of VTS (Vessel Traffic Service) system for Malacca & Singapore Straits and SEA LANE I, II, III
  - (5) To plan of supporting facilities
  - (6) To define and prepare priority area(s) and project(s) up to the target year of 2007
3. Formulation of master plans of the maritime telecommunications system up to the target year of 2020:
- (1) To set up socio-economic framework up to the target year
  - (2) To forecast the future demands up to the target year
  - (3) To analyze of telecommunication technology
  - (4) To plan of rehabilitation and improvement of the existing coastal radio
  - (5) Expansion and upgrading of the maritime telecommunications system to meet the international requirements as the GMDSS and ship reporting system
  - (6) To plan of telecommunication satellite system including satellite communication system and HF (High Frequency) communication system using IT (Information Technology)
  - (7) To define and prepare priority area(s) and project(s) up to the target year of 2007
4. Formulation of short term plans and implementation of Feasibility study on the priority project(s) up to the target year of 2007

- (1) To conduct natural survey for the specified project sites
  - (2) To conduct preliminary engineering design and cost estimation
  - (3) To conduct economic and financial analysis
  - (4) To conduct initial environmental examination (IEE) and environmental impact assessment (EIA)
5. Recommendation of enhancement of operation and maintenance system
6. Recommendation of education and training of personnel
7. Overall Recommendation

## V. STUDY SCHEDULE

The Study shall be carried out in accordance with the tentative study schedule attached as shown in APPENDIX.

## VI. REPORTS

JICA shall prepare and submit the following reports in English to GOI.

1. INCEPTION REPORT

Thirty (30) copies at the commencement of the Study in Indonesia

2. PROGRESS REPORT (1)

Thirty (30) copies within four (4) months after the commencement of the Study

3. INTERIM REPORT

Thirty (30) copies within six (6) months after the commencement of the Study

4. PROGRESS REPORT (2)

Thirty (30) copies within ten (10) months after the commencement of the Study

5. DRAFT FINAL REPORT

Fifty (50) copies after twelve (12) months after the commencement of the Study

GOI will provide JICA with its written in English comments within one (1) month after the receipt of the Draft Final Report.



## 6. FINAL REPORT

Fifty (50) copies within two (2) months after the receipt of the comments on the Draft Final Report from GOI.

## VII. UNDERTAKINGS OF GOI

1. To facilitate smooth implementation of the Study, GOI shall take necessary measures:
  - (1) To secure the safety of the Japanese study team (hereinafter referred to as "the Team") in Indonesia;
  - (2) To permit the members of the Team to enter, leave and sojourn in the Republic of Indonesia for the duration of their assignment therein, and exempt them from foreign registration requirements and consular fees;
  - (3) To exempt the members of the Team from taxes, duties, fees and other charges on equipment, machinery and other materials brought into and out of the Republic of Indonesia for the conduct of the Study;
  - (4) To exempt the members of the Team from income taxes and charges of any kind imposed on or in connection with any emoluments or allowance paid to the members of the Team for their services in connection with the implementation of the Study;
  - (5) To provide necessary facilities to the Team for remittance as well as utilisation of the funds introduced into the Republic of Indonesia from Japan in connection with the implementation of the Study;
  - (6) To secure permission for entry into private properties or restricted areas for the implementation of the Study;
  - (7) To secure permission for the Team to take all data and documents including maps, photographs related to the Study out of Indonesia to Japan; and
  - (8) To provide the medical services as needed. Its expenses will be chargeable on members of the Team.
  
2. GOI shall bear claims, if any arises, against the members of the Team resulting from, occurring in the course of, or otherwise connected with, the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or wilful misconduct on the part of the members of the Team.



3. Directorate General of Sea Communication, Ministry of Communications (hereinafter referred to as “DGSC”) shall act as the counterpart agency to the Team and also as the coordinating body in relation with other governmental and non-governmental organisations concerned for the smooth implementation of the Study.
4. DGSC shall, at its own expense, provide the Team with the followings in cooperation with other organisation concerned :
  - (1) Available data and information related to the Study, including aerial photographs and maps;
  - (2) Counterpart personnel;
  - (3) Suitable office space with necessary equipment in Jakarta; and
  - (4) Credentials or identification cards to the members of the Team.

#### VIII. UNDERTAKINGS OF JICA

For the implementation of the Study, JICA shall take the following measures:

1. To dispatch, at its own expense, the Team to Indonesia; and
2. To pursue technology transfer to the Indonesian counterpart personnel in the course of the Study.

#### IX. OTHERS

JICA and DGSC shall consult with each other in respect of any matter that may arise from or in connection with the Study.





APPENDIX

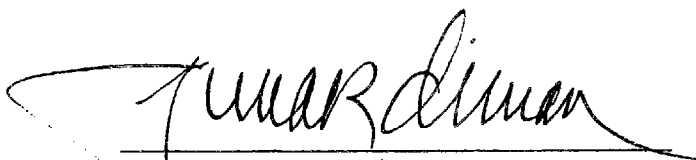
TENTATIVE STUDY SCHEDULE															
Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Work in Indonesia	■					■							■		
Work in Japan	□				□						□				□
	△			△		△				△		△			△
	IC/R			P/R(1)		IT/R				P/R(2)		DF/R			F/R

IC/R: Inception Report  
 P/R : Progress Report  
 IT/R: Interim Report  
 DF/R: Draft Final Report  
 F/R : Final Report

*Handwritten signature*

MINUTES OF MEETING  
ON  
SCOPE OF WORK  
FOR  
THE STUDY FOR THE MARITIME TRAFFIC SAFETY SYSTEM  
DEVELOPMENT PLAN  
AGREED UPON  
BETWEEN  
DIRECTORATE GENERAL OF SEA COMMUNICATION  
MINISTRY OF COMMUNICATIONS, THE REPUBLIC OF INDONESIA  
AND  
JAPAN INTERNATIONAL COOPERATION AGENCY  
JAKARTA, INDONESIA

November 13th, 2000



Mr. Tjuk Sukardiman  
Director General of Sea  
Communication,  
Ministry of Communications



Mr. Tamotsu Ikeda  
Leader,  
Preparatory Study Team,  
Japan International Cooperation Agency

In response to the request of the Government of the Republic of Indonesia (hereinafter referred to as "GOI"), the Government of Japan (hereinafter referred to as "GOJ"), dispatched the preparatory study team headed by Mr. Tamotsu Ikeda (hereinafter to as "the Team"), from November 2 to November 13, 2000, through the Japan International Cooperation Agency (hereinafter referred to as "JICA"), to discuss a technical cooperation on the proposed THE STUDY FOR THE MARITIME TRAFFIC SAFETY SYSTEM DEVELOPMENT PLAN (hereinafter referred to as "the Study").

The Team conducted site-visits at Benoa and Lombok Strait, and had a series of discussions with authorities of GOI, Directorate General of Sea Communication, Ministry of Communications (hereinafter referred to as "DGSC") and relevant organisation.

Meeting were held between Indonesian side and the Team. The list of participants to the meetings is shown in APPENDIX-I.

The following summarizes the major points discussed between the Team and DGSC during the meetings of Scope of Work.

#### 1. Commencement of the Study

The Study will be expected to commence around February 2001 and to implement the study tentative schedule as shown in APPENDIX-II.

#### 2. Steering Committee

Both sides agreed that DGSC should formulate a steering committee composed of National Development Agency (Bappenas), Secretariate General of MOC, DGSC and the other responsible organizations including local governments, if necessary, under the chairmanship of DGSC. DGSC also agreed to formulate the steering committee by the full-scale study team's first arrival in Indonesia.

#### 3. Counterpart Personnel

Both sides agreed that DGSC select and decide counterpart personnel by the full-scale study team's first arrival in Indonesia.

Counterpart Personnel shall work together with the full-scale study team.

#### 4. Seminar

Both sides agreed that the full-scale study team and DGSC should hold the seminar after the submission of IT/R and DF/R.

#### 5. Undertaking of GOI

The Team requested suitable office space with necessary equipment for the full-scale study team, but DGSC explained that it could provide small space in DGSC for a liaison office.

6. Regional Autonomy and Light dues

Both side agreed that DGSC should inform JICA through JICA Indonesia Office of the process and progress of Regional Autonomy and Light dues.

7. GPS positioning accuracy

Both sides agreed that the full-scale study team conduct to measure and analyse the GPS positioning accuracy in Indonesia after SA (Selective Availability) considering the following points ;

- (1)Error measurement considering the model difference of GPS receivers
- (2)Error measurement for a long time considering seasonal changes
- (3)Confirmation of static and dynamic accuracy

8. Counterpart Training

DGSC requested that two Indonesian counterpart personnel should take advantage of training course in Japan related to the Study to promote an effective technology transfer. The team explained that it is very difficult to accept two counterpart personnel for training course in Japan.

The Team promised to convey these requests to JICA Headquarters.

9. Report

Both side agreed that the final report should be open to the public.



## List of Attendants of Indonesian Side

**Directorate General of Sea Communication, Ministry of Communication**

Tjuk Sukardiman	Directorate General
Capt. T. Walla	Secretary of Directorate General
Poltak Panjaitan	Head of Planning Division
Capt. Mardowo	Acting Director of Navigation
Besar Waluyo	Head of Sub Directorate of Maritime Telecommunication
Sufrisman Djafar	Head of Sub Directorate of Aids to Navigation
Tonny Budiono	Head of Sub Directorate, Directorate of Navigation
Capt. Albert Lopian	Head of Sub Directorate, Directorate of Guard and Rescue
Haryanto	Head of Sub Directorate, Directorate of Guard and Rescue
Petrus Sumarsono	Bappenas
Agus Edi Susilo	Planning Bureau, MOC
Martha H. S.	Finance Bureau, MOC
Adolf R. Tambunan	Head of Sub Division, Planning Division
T. Sitorus	Head of Section of Sub Directorate of Maritime Telecommunication, Directorate of Navigation
Ronald S	Planning Division
Viva I. A	Planning Division
Willy Situmorang	Finance Division
Hendra Syahputra	Directorate of Ports and Dredging
Suharto	Directorate of Sea Transport and Traffic
Agus Sularto	Directorate of Marine Safety and Seafarers
Orihiko Murata	JICA Expert

## List of Attendants of Japanese Side

### **The Preparatory Study Team, JICA**

Tamotsu Ikeda	Leader
Mitsuhiro Nakashige	Member
Kenji Moribe	Member
Kazuya Narukawa	Member
Takuro Terashima	Member

### **JICA Indonesia Office**

Juhichi Akiyama



**TENTATIVE STUDY SCHEDULE**

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Work in Indonesia	Work in Indonesia 1					Work in Indonesia 2						Work in Indonesia 3				
Work in Japan	Work in Japan 1				Work in Japan 2						Work in Japan 3			Work in Japan 4		
	△			△		△				△		△			△	
	IC/R			P/R(1)		IT/R				P/R(2)		DF/R			F/R	
	IC/R: Inception Report		P/R : Progress Report			IT/R: Interim Report						DF/R: Draft Final Report		F/R : Final Report		

- Work in Japan 1 To prepare an inception report.
- Work in Indonesia 1 To conduct site surveys.
- Work in Japan 2 To formulate master plans of Aids to Navigation and the maritime telecommunications system.  
To select and prepare priority area(s) and project(s) for feasibility studies.
- Work in Indonesia 2 To define and prepare the priority area(s) and project(s) for feasibility studies under discussion with Indonesian side.  
Formulation of short term plans and implementation of Feasibility Study for the priority project(s).  
Formulation of urgent plans and implementation of Feasibility Study for the urgent project(s).
- Work in Japan 3 To establish short term plans and Feasibility Study.  
To prepare a draft final report.
- Work in Indonesia 3 To present the draft final report to Indonesia.
- Work in Japan 4 To finalize the final report.

# STUDY FOR THE MARITIME TRAFFIC SAFETY SYSTEM DEVELOPMENT PLAN

## TERM OF REFERENCE

### 1. BACKGROUND

- (1). The development of marine aids to navigation in Indonesia until now has been implemented on the bases of the master plan which covers in its long term plan until the year 2000 under the technical assistance of the Japan International Cooperation Agency (JICA) and accomplishment status in term of a number of aids to navigation established, is considered to be satisfactory. The maritime traffic in Indonesia have then been continuously and conspicuously on uphill demands for further provision of the effective and extensive coverage of aids to navigation. This reflects the steady growth of its economy and social activities resulting from in part the development of a number of ports etc., in the marine sector. Demands for extension and improvement of aids to navigation also come from newly established sea lanes, the sea lanes which were established according to the United Nation Convention on the Law of Sea (UNCLOS) and other vessel traffic routes designated as a result of steady increasing marine activities.

Especially, the Malacca Singapore Straits where TSS been established are crucial sea lanes for dangerous sub- stances such as a crude oil carrier. Therefore, Republic of Indonesia has been stricken by serious accidents. Such experiences induced recommendations for reinforcement and consolidation of the safety navigation system, such as Vessel Traffic Information Service (VTIS).

- (2). In line with the long term development plan of the maritime telecommunications system covering up to the year 2000 which was established in March 1982 also under technical assistance of JICA, three (3) phases of maritime telecommunications development projects and one (1) search and rescue telecommunications project have been formulated and, the telecom phase-III project is under going. Through these projects, all the first-class and second-class coast stations as well as a part of the third or forth-class stations and some DGSC vessels for aids to navigation have been modernized to meet the international requirements as the Global Maritime Distress and Safety System (GMDSS) station. However number of stations modernized remains yet at some 40s stations out of 250s (200s of coast and 50s of ship) stations. In order to cope with the growing telecommunications demand to support economic activities, securing sea communications in the archipelago country, expansion and upgrading of maritime telecommunications system are imminent. On the other hand, mobile telecommunication



system has already entered to the era of using global scale satellites. Thus Indonesian maritime telecommunications system shall be reviewed from a new angle taking recent technologies for ship position reporting system shall also be considered. Considering such situations and development sustainability, it is urgently required to establish an overall plan for the next decades.

- (3). The Republic of Indonesia in this regard is in need of the master plan which covers further extension and upgrading plans of both fields of marine aids to navigation and telecommunications system for utilization in years after 2000.

## 2. OBJECTIVES

The objectives of the study are :

- (1). Aids to Navigation System. (Visual, system Electronic system & VTIS System for Malacca & Singapore Straits).

To meet the present and future extension of marine aids to navigation in the light of the rapid progress of national economic development and the establishment of Indonesian Sea Lanes, and TSS for Malacca & Singapore Strait, hence leading to ever increasing demands for development to maritime infrastructures and to conduct a feasibility study of selected system. The study shall comprise both the short term and the long term development plan.

- (2). Maritime Telecommunications System

To establish an overall plan for the expansion of maritime telecommunications system including maritime safety telecommunications system covering up to the year 2015. In the planning, following studies will be included in addition to the expansion of GMDSS facilities :

- a. Utilization of satellite system
- b. Enhancement of operation and maintenance system.  
And to define and prepare a priority project in the implementation program for the long term plan.

## 3. GEOGRAPHICAL AREAS

All over coastal and sea areas of Indonesia.

#### 4. SCOPE AND CONTENTS OF STUDY

(1). Present Status and For-cast

The study shall take into account the present status

- a. Social Economy
- b. Natural Environment
- c. Sea lanes
- d. Maritime Shipping and Traffic Routes
- e. Sea Borne Cargoes and Passengers
- f. Ports and Harbors

(2). Accomplished status of the respective Master Plan and Implementation Plan

- a. Aids to Navigation (Visual System, Electronic System & VTIS System for Malacca & Singapore Straits).
- b. Maritime Telecommunication System
- c. Supporting Facilities

(3). Fields to be covered in the plan

- a. Long term plan with target year of 2015

The long term plan for marine Aids to Navigation and telecommunications system shall consist of the following :

- AIDS to Navigation

Rehabilitation and improvements of the existing Aids in main traffic routes and ports, and establishment of the new Aids which can be suitable for use in waters including electronic system and VTIS system for Malacca & Singapore Straits which can be suitable for use in waters.

- Expansion and upgrading of maritime

Telecommunications system, including expansion of GMDSS and ship position reporting system.

Supporting Facilities

Aids to Navigation ships and workshop facilities will be reviewed for priority implementation.

Education and training of personnel

The Education and Training will be planned for personnel.

b. Short term plan with the target year of 2005

The short term plan or preparation of project implementation program for the priority project will be established for visual and electronic aids to navigation, including VTIS system for Malacca & Singapore Straits the supporting facilities the maritime telecommunications system and education and training of personnel, which have priority implementation.

c. Feasibility Study

- Selection System
- Field Survey
- Preliminary Design
- Cost Estimation
- Implementation Program
- Recommendations on the operation scheme

## 5. STUDY SCHEDULE

The total period of the study will be eighteen (18) months. The study will be conducted in accordance with the tentative schedule as shown in EXHIBIT B.

## 6. REPORT

The following report shall be submitted in English to the Government of the Republic of Indonesia.

(1). Inception Report

Twenty (20) copies will be submitted at the commencement of the study.

(2). Progress Report (1)

Twenty (20) copies will be submitted within three (3) months after the commencement of the study.

(3). Interim Report (1)

Twenty (20) copies will be submitted within nine (9) months after the commencement of the study.

(4). Interim Report (2)

Twenty (20) copies will be submitted within twelve (12) months after the commencement of the study.



## APPROXIMATE COST ESTIMATE

1. FOREIGN EXPERT (In Direct Cost)	: US\$ 2.100.000
2. FOLLOW SHIP (3 Persons DGSC/MOC)	: US\$ 100.000
3. OTHER (Direct Cost)	: US\$ 400.000
Total Cost	: US\$ 2.600.000