社会開発協力部報告書

No. 8

インドネシア共和国
沿岸無線網整備拡充計画(長期計画)
事前調査報告書

昭和56年3月

国際協力事業団

インドネシア共和国

沿岸無線網整備拡充計画(長期計画)

事前調査報告書

昭和56年3月

国際協力事業団

はしがき

日本国政府は、インドネシア共和国政府の要請に基づき、同国の沿岸無線網整備拡充計画（長期計画）について調査を行うことを決定し、国際協力事業団がこの調査を実施した。

当事業団は、郵政省電波監理局無線通信部航空海上課小林陽一無線局検査官を団長とする4名の事前調査団を昭和56年1月31日から、同年2月9日まで現地に派遣した。

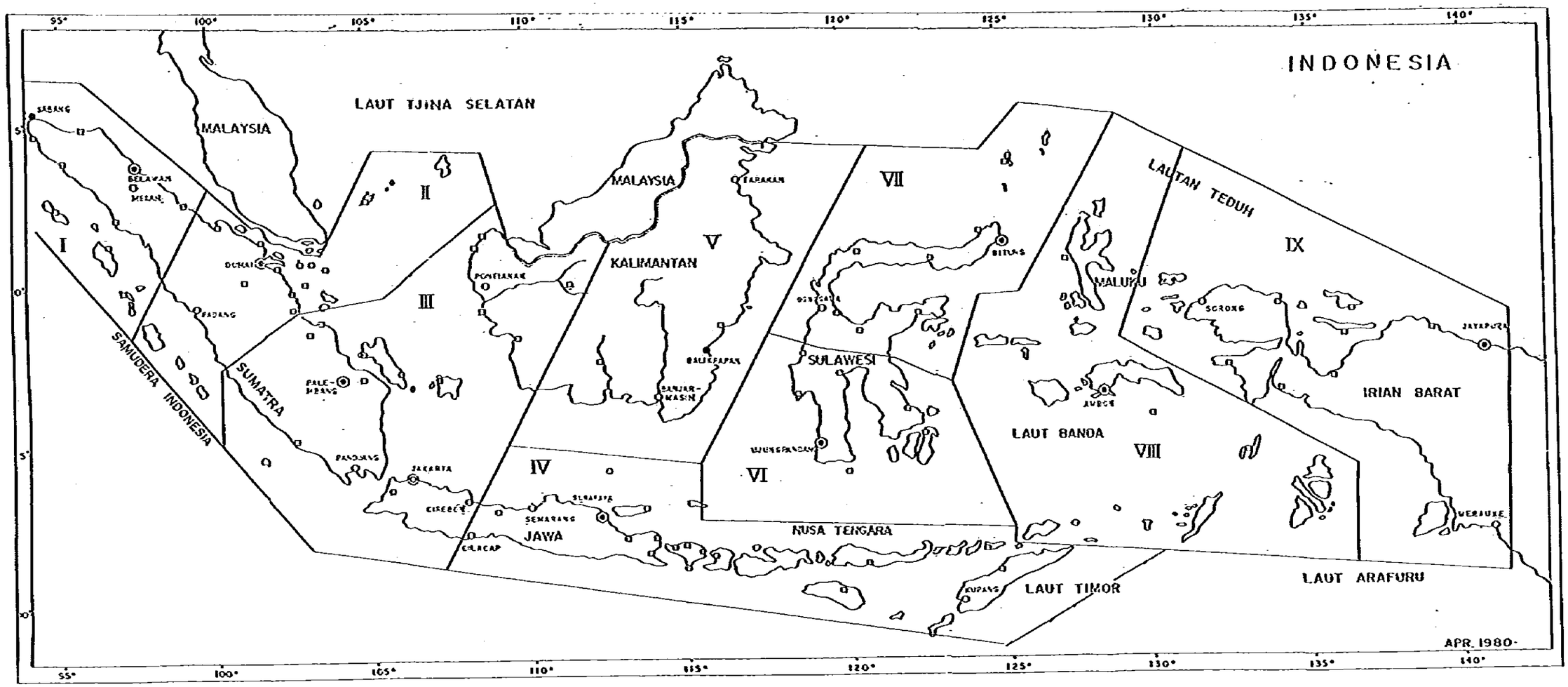
今回の事前調査は、要請の背景となる現有沿岸無線通信施設の実態を調査し、プロジェクトの規模および内容について概略検討を行い、本格調査の必要性と実施の可能性について確認すると同時に、次に実施する本格調査が円滑に、かつ効果的に進められるよう、インドネシア国政府と充分な協議を行ってScope of Workを作成・署名し、併せて所要資料の収集を行うことを主目的としたものである。

本調査報告書が、今後の本格調査の立案・検討および実施に際して参考となることを期待すると共に、今回の調査実施にあたり、多大のご協力をいただいたインドネシア共和国政府、在インドネシア日本大使館、在メダンおよびウジュンパンダン領事館ならびに関係機関に対し厚くお礼を申し上げる次第である。

昭和56年3月

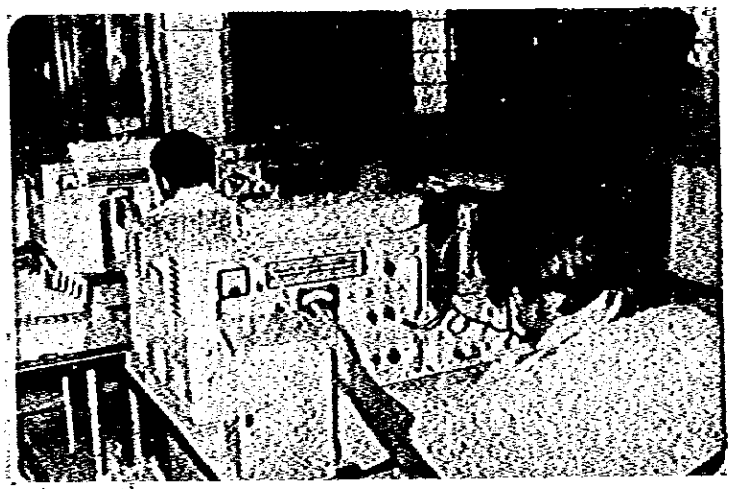
国際協力事業団
理事 中沢弋仁

MAP OF EXISTING COAST STATIONS



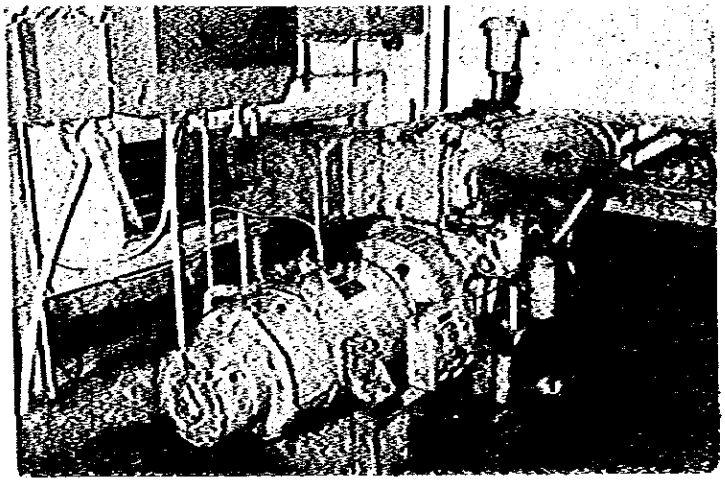
- CENTRAL STATION
- 1ST CLASS STATION
- 2ND CLASS STATION
- 3RD CLASS STATION
- 4TH CLASS STATION

左より伊藤一等書記官、高橋　専門家、
田中、河内団員、小林団長、大竹団員

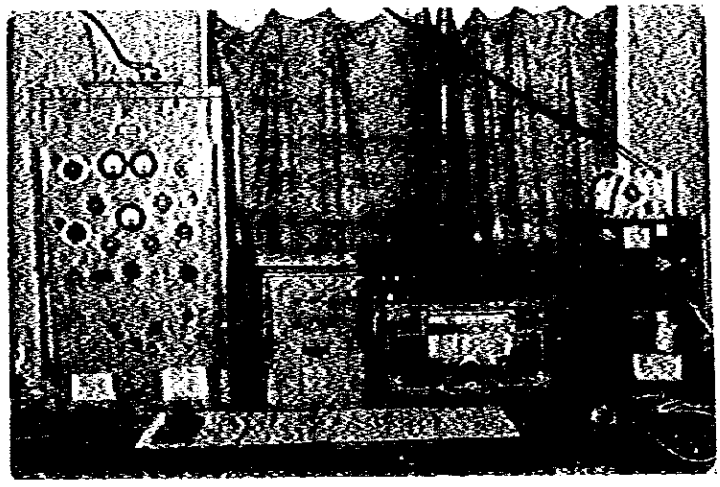


運用風景（ジャカルタ受信所）

アンテナ群（ＡＭＢＯＮ送信所）

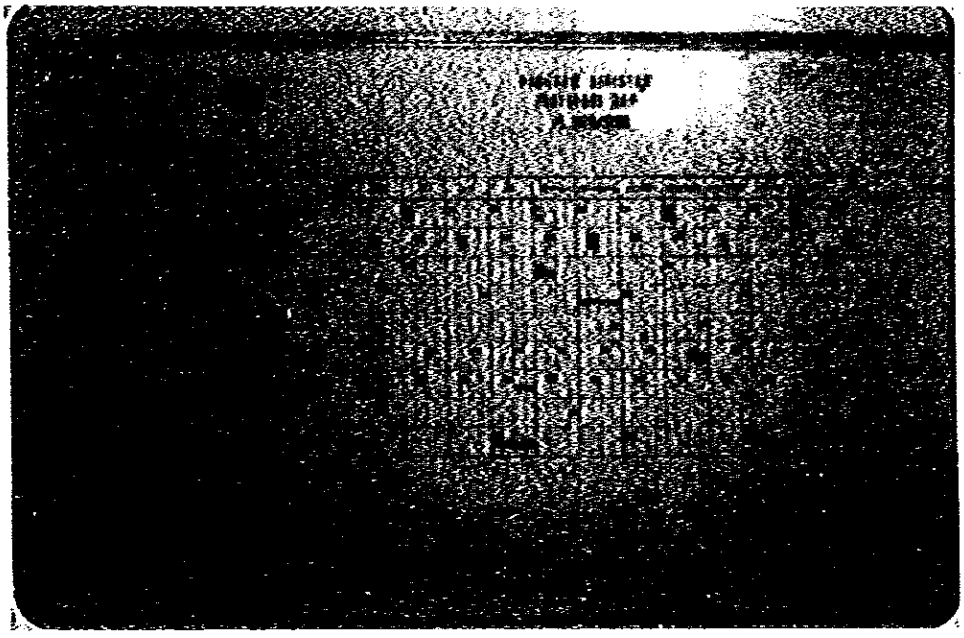


ジーゼル発電機
（ジャカルタ受信所）

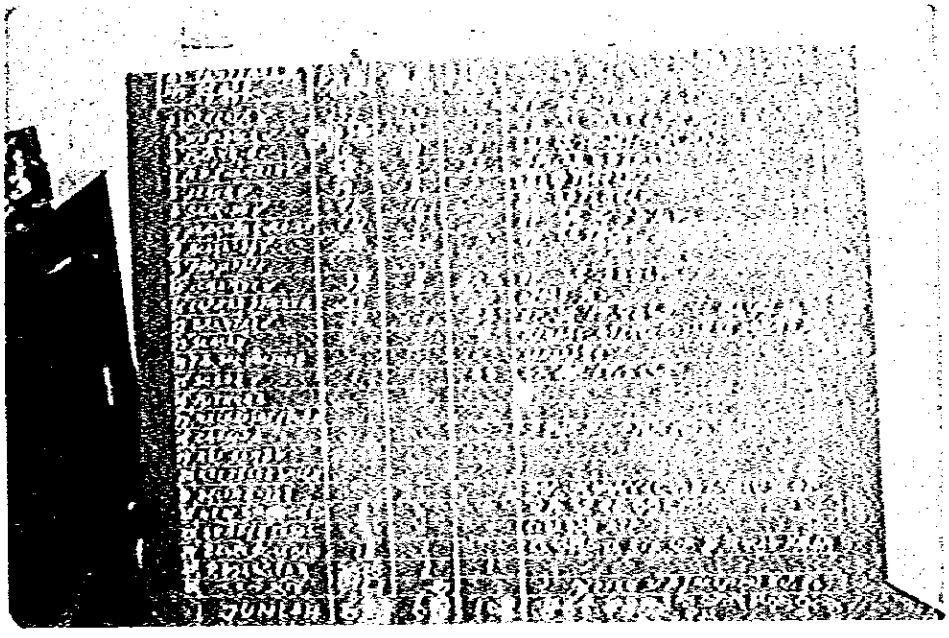


旧式な送・受信機
（ＢＥＮＯＡ海岸局）

女子オペレータ
（ＢＥＮＯＡ海岸局）



スマラン局受信所年間作業スケジュール



スラバヤ受信局 タムボーマス Ⅱ号海難救助活動

目　　次

1. 調 査 の 目 的

インドネシア国における沿岸無線網の整備は、1958年頃から取り組まれていたが、個々の海岸局について独自に行われていたため進展をみなかった。

その後、第1次経済開発5か年計画（1969／70年～1973／74年）に組み入れられ日本及びオランダ両国の経済援助により、整備計画が推進された。

この間、1970年12月には計画の部分修正の妥当性についての検討のため、我が国から調査団が派遣された。また、1971年10月から1973年10月までの2年間にわたり、整備計画の推進を円滑に行うため、専門家を派遣して積極的に協力してきたところである。

一方、無線通信（特に海上移動業務）は電子技術の飛躍的な進展と利用技術の高度化が目覚ましく、また、海上における通信の確実性、迅速性を求める声が増大してきたことから、国際電気通信条約に付属する無線通信規則の改正、1974年海上における人命の安全のための国際条約の制定（1960年同条約の全面改正）。1979年海上捜索救難に関する国際条約の制定等の措置が講じられた。

インドネシア国海運総局は、既設設備の老朽化による更新に際し、上記諸条約への対応等について長期的展望の下に計画を策定して具体化を図ることとし、我が国に対し技術協力を求めてきたものである。

我が国としては、これを開発調査案件として取り上げることとし、海運総局とScope of Work（調査内容、スケジュール、便宜供与等）について討議するとともに、現地の状況を把握するため、昭和56年1月31日から2月9日まで事前調査団を派遣したところである。

なお、協議の結果、Scope of Workは長期計画及び短期計画に分けて2件とし、短期計画分のフィージビリティ調査は、引き続いて2月10日から2月20日まで実施した。

2. 調査団の編成

氏　　名	担当業務	所　　属
小林陽一	総　括	郵政省電波監理局無線通信部航空海上課無線局検査官
河内正孝	施設計画	〃　　〃　技術調査課郵政技官
田中迪利	回線構成	国際電信電話株式会社海外協力部海外協力課主任
大竹紀元	業務調整	国際協力事業団社会開発協力部参事

3. 調査日程

日順	月日	曜日	調　査　内　容
1	1／31	土	(出発)東京発10:15　JL711　ジャカルタ着17:50
2	2／ 1	日	調査準備
3	2	月	大使館　JICA事務所あいさつ　海運総局にて協議(T／R)
4	3	火	海運総局にて協議(S／W)
5	4	水	〃
6	5	木	ジャカルタ海岸局調査
7	6	金	海運総局にて協議
8	7	土	署名(S／W、M／M)
9	8	日	資料整理
10	9	月	(現地調査打合せ)

4. 交 渉 経 緯

インドネシア国沿岸無線網整備拡充計画（BAPENASのコード番号F－TA－193）と併行して進められている沿岸無線通信システム開発プロジェクト（同コード番号F－ST－12）との関連を考慮し、F－ST－12がF－TA－193 の計画の支障となることなく、また、F－ST－12の効果を十分に発揮させるため、F－ST－12の内容をF－TA－193による長期計画の第1段階として位置づけることとした。また、併せてF－ST－12 の実施に支障を来たさないように進める方法として、Scope of Work を長期計画と短期計画（F－ST－12に対応する分）の2件とすることで双方が了解し、当方が予め準備したScope of Work 原案を討議した。

協議の結果、短期計画はほぼ原案どおり、長期計画は若干表現上の修正を行い、第5項に示すScope of Work のとおり合意に達した。

主な修正点は次のとおりである。

(1) 短期計画の計画線表にもdraft final reportの提出時（F/S終了後帰国前）を明示すること。

(2) 長期計画中"master plan"とあるのを"development plan"に改めること。

(3) 長期計画の調査項目に次の点を明記すること。

A インドネシア無線通信産業の現状に関する資料収集

B 海岸局の運用・保守・要員訓練等の現状分析

C インドネシア国の開発5ケ年計画（REPELITA）に各フェーズを合わせる

(4) 日本側の便宜供与に、日本国内における報告書作成作業へのカウンターパートの参加・研修を含めること。

5. 交 渉 結 果

5－1 Scope of Work

SCOPE OF WORK

FOR

STUDY

ON

LONG TERM DEVELOPMENT

OF

MARITIME COMMUNICATION SYSTEM

IN

THE REPUBLIC OF INDONESIA

SCOPE OF WORK

FOR

STUDY

ON

LONG TERM DEVELOPMENT

OF

MARITIME COMMUNICATION SYSTEM

IN

THE REPUBLIC OF INDONESIA

AGREED

BETWEEN

THE JAPANESE PRELIMINARY AND FEASIBILITY STUDY TEAM

AND

THE DIRECTORATE GENERAL OF SEA COMMUNICATIONS

DATE: 7 February 1981

For
Directorate General of
Sea Communications

J.E. HABIBIE
Secretary of the
Directorate General of
Sea Communications

For
Japan International
Cooperation Agency

小林陽一

Yoichi KOBAYASHI
Leader of the Preliminary
Study Team for Long Term
Development of Maritime
Communication System

I. INTRODUCTION

In response to the request of the Government of Indonesia, the Government of Japan has decided to conduct a necessary study for long term development of maritime communication system in accordance with law and regulations in force in Japan.
The Japan International Cooperation Agency (JICA), the official agency responsible for the implementation of the technical cooperation programmes of the Government of Japan, will carry out the study in close cooperation with the Government of the Republic of Indonesia and the authorities concerned.

II. OBJECTIVE OF THE STUDY

This study aims at formulating the long term development plan of maritime communication system in Indonesia and its stage-wise program for implementation, which meets the future needs until the year 2000, including search and rescue (SAR), taking into account the development of shipping activities and latest development of telecommunication system in general.

III. OUTLINE OF STUDY

(1) The study area
Whole part of Indonesia including sea area.

(2) Contents of the study

A. Data collection and analysis
   a) trend of export and import
   b) transport activity using ship
   c) traffic of communication
   d) the present and future needs
   e) port planning
   f) present and planned satellite networks in Indonesia

g) present and planned communication networks by other agencies
h) Present status of Indonesian telecommunication Industries
i) map & chart
j) other necessary data

B. Analysis of present status of coastal radio communication network, coast station facilities and services, operation, maintenance, training of personnels, etc.

C. Plan of long term development of maritime communication system
   a) criteria for classification of coastal radio stations
   b) the telecommunication system for traffic operation, data information and shipping activity and so forth
   c) the telecommunication system for safety of life at sea, safety of navigation and search and rescue (SAR)
   d) use of domestic satellite system (PALAPA) for maritime communication system
   e) Possibility of the use of International Maritime Satellite System (INMARSAT) in Indonesia

D. To make up stage-wise implementation program for each phase considering the Indonesian Government 5 year development plan (REPELITA)

E. Interview with relevant Government departments and Agencies.

F. Law and regulations concerned.

G. Economic and financial analysis.

IV. REPORTS

JICA will prepare and submit the following reports in English to the Government of Indonesia.

(1) Interim report
- 20 copies
- within 2 months after completion of the field survey
- the Government of Indonesia will provide JICA with its comments within 2 weeks after the receipt of the Interim report

(2) Draft final report
- 20 copies
- within 2 months after the receipt of the comments on the Interim report
- the Government of Indonesia will provide JICA with its comments within 2 weeks after the receipt of the Draft final report

(3) Final report
- 50 copies
- within 2 months after receipt of the comments on Draft final report.

V. CONTRIBUTION OF THE GOVERNMENT OF JAPAN

(1) To send the Japanese experts team to Indonesia for execution of the study.

(2) To provide necessary measuring equipment and materials for the execution of the field survey.

(3) To transfer the knowledge and technology of the Project to the Indonesian counterpart personnels during the field survey period and report making stage including their training in Japan.

VI. CONTRIBUTION OF THE GOVERNMENT OF INDONESIA

(1) To provide the study team with relevant data, information and materials necessary for implementation of the study.

(2) To exempt the study team from the taxes and duties on the materials, equipment and personal effects brought into Indonesia by the study team.

(3) To appoint the official counterparts of the study team during survey period.

(4) To make the study team secure during their stay in Indonesia.

(5) To provide the study team with suitable office space, necessary office facilities and means for the study, such as vehicle, photo-copier typewriter, etc.

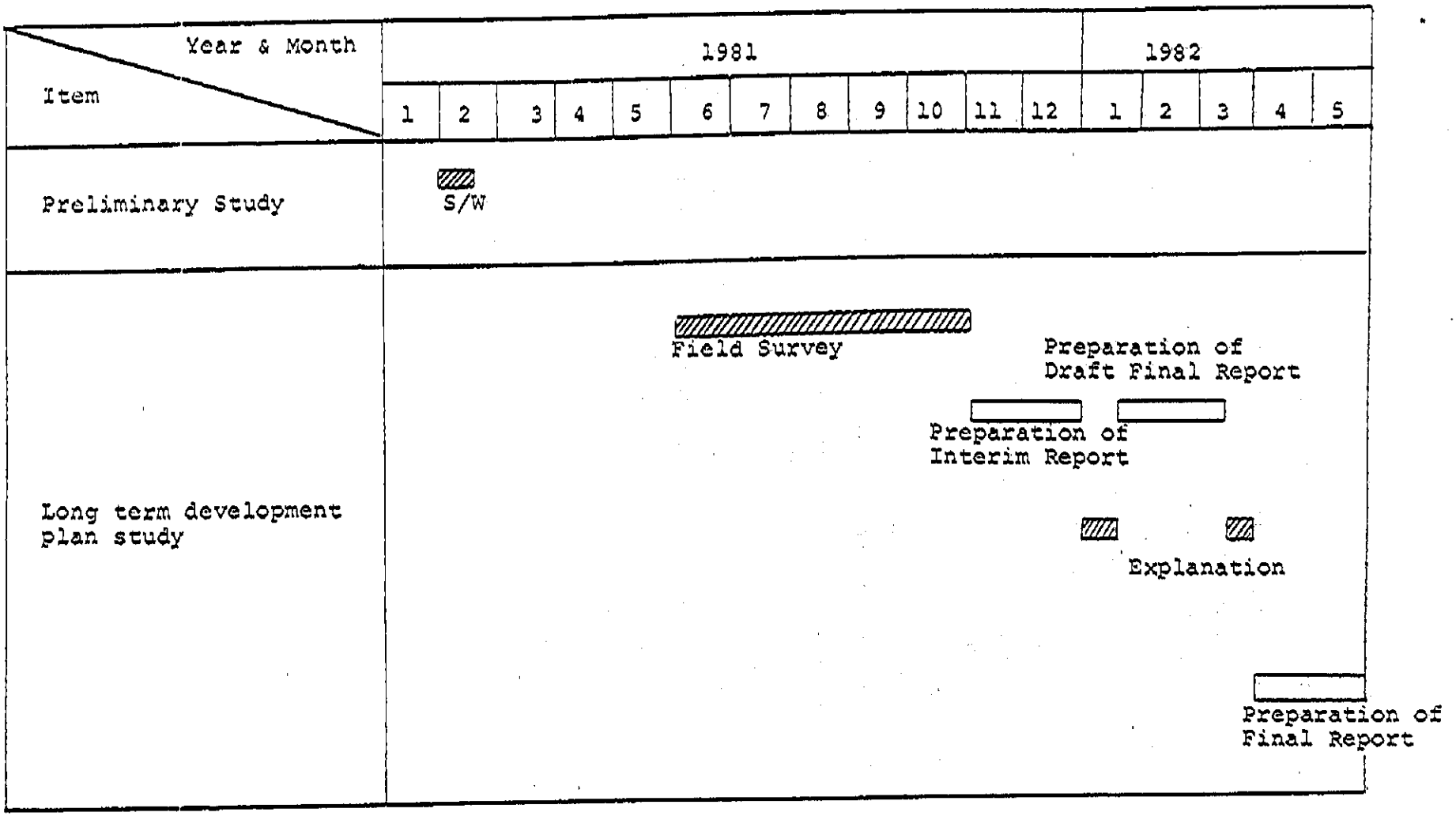
(6) To make arrangement for the study team to take the necessary data, maps and materials concerning the study back to Japan in order to prepare the reports.

VII. SCHEDULE OF STUDY

The study shall be undertaken in accordance with the schedule of study (refer to Annex).

Annex

TENTATIVE SCHEDULE OF STUDY



Remarks: work in Indonesia work in Japan

5 - 2 Minutes of Meeting

MINUTES OF MEETING

ON

THE SCOPE OF WORKS

FOR

THE FEASIBILITY STUDY ON COASTAL RADIO COMMUNICATIONS

AND FOR

THE STUDY ON LONG TERM DEVELOPMENT OF MARITIME COMMUNICATION SYSTEM

IN THE REPUBLIC OF INDONESIA

7TH FEBRUARY 1981

MINUTES OF MEETING ON THE SCOPE OF WORKS FOR THE FEASIBILITY STUDY ON COASTAL RADIO COMMUNICATIONS AND FOR THE STUDY ON LONG TERM DEVELOPMENT OF MARITIME COMMUNICATION SYSTEM IN THE REPUBLIC OF INDONESIA

The meetings between the Japanese Study Team and the Directorate General of Sea Communications were held from 2nd to 4th February 1981, at the conference room of the Directorate of Navigation, Jakarta, Indonesia, to set-up the Scope of Works for the feasibility study on Coastal Radio Communications and for the study on Long Term Development of Maritime Communication System in the Republic of Indonesia.

The result of the exchange of views and discussions of the meeting is attached hereto.

Date: 7th February 1981

For
Directorate General of
Sea Communications

J.E. HABIBIE
Secretary of the Directorate
General of Sea Communications

For
Japan International
Cooperation Agency

小林陽一

Yoichi KOBAYASHI
Leader of the Japanese
Study Team

RECORD OF THE MEETING

1. Capt. J.M. Manusama, Director of Navigation, expressed his thanks to the Japanese Study Team which was sent to Jakarta on the request of the Government of the Republic of Indonesia.

2. Mr. Yoichi Kobayashi, leader of the Japanese Study Team, appreciated the cooperation extended by Directorate General of Sea Communications.

   (List of attendats is given in Annex I)

3. Capt. J.M. Manusama, on behalf of the Directorate General of Sea Communications submitted the Terms of Reference for the Study on Long Term Development of Maritime Communication System (F-TA-193) to Mr. Yoichi Kobayashi.

4. Indonesian side explained their understanding on correlation between F-TA-193 Project and F-ST-12 Project using an explanation sheet. (See Annex II)

5. Based on the above-mentioned TOR, the Japanese Team submitted the following Draft Scope of Works to Directorate General of Sea Communications for its consideration.

   a) The Feasibility Study on Coastal Radio Communications in Indonesia.

   b) The Study on Long Term Development of Maritime Communication System in Indonesia.

6. The Japanese Team explained the relationship between the two Scope of Works. Then it was agreed that the Scope of Work for the Feasibility Study on Coastal Radio Communications is considered as a basis of the F-ST-12 Project.

7. The Scope of Work for the Feasibility Study on Coastal Radio Communications was fully agreed by both parties. And the field survey for the Feasibility Study is going to start after the signing of the Scope of Work.

8. The Scope of Work for the Study on Long Term Development of Maritime Communication System was agreed after some minor amendments by both parties.

Relating to this Scope of Work, the following opinions and proposals were expressed by Indonesian side. And these were taken note by Japanese side.

A. Long Term Development Plan of Maritime Communication System will be made considering the harmony with the present and future plan of total communication system in Indonesia.

B. To transfer the knowledge and technology of the project to the Indonesian counterparts, the training in Japan should cover the following fields.

a. Maritime telecommunication Administration.
b. Maritime telecommunication Engineering.
c. Search and Rescue Communication.
d. Maritime Satellite Communication.

C. The information and detailed specification about the equipment brought into Indonesia for the survey by the study team is to be informed to the Directorate General of Sea Communications two months prior to the survey to clear the Indonesian Government formality.

9. "Plan of Long Term Development of Maritime Communication System" III (2)C of the Scope of Work includes the plan of coastal radio communication network, coast station facilities and services, operations, maintenance, training of personnels, etc.

ANNEX I

LIST OF ATTENDANTS

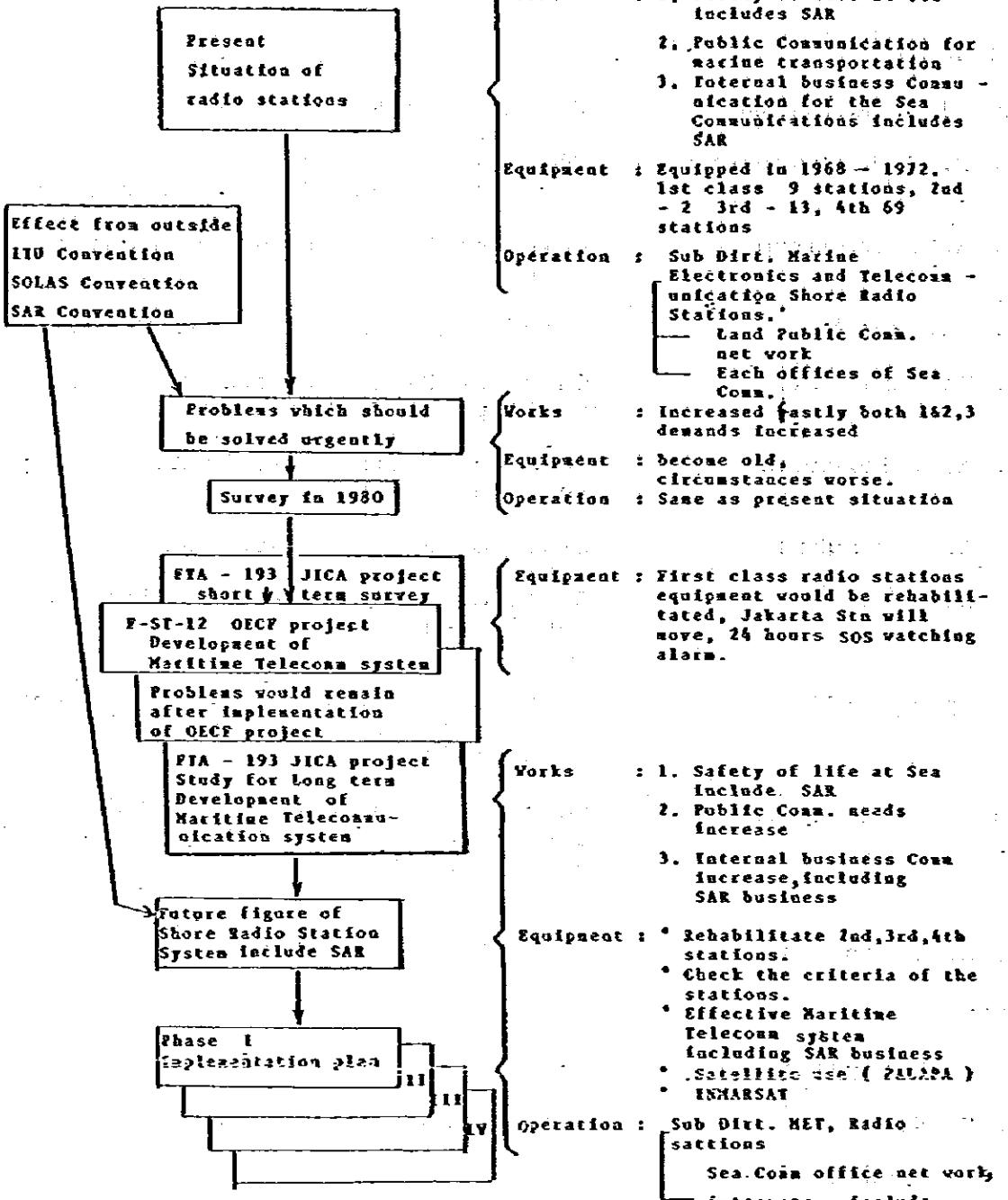
INDONESIA

Cap. J.M. Manusama	Director of Navigation
Mr. D. J.M. Manuputty	Head of Sub-Directorate for Marine Electronics and Telecommunications
Mr. R.P. Soemarto	Chief of Marine Telecommunication Control Section
Mr. Ch. Paath	Chief of Marine Technical Section
Mr. Harmani S.N.	Chief of Marine Telecommunication Development Section
Mr. A.N. Sorongan	Chief of Marine Traffic Accounting Section
Mr. A. Pamungkas	Staff of Planning Division
Mr. Dewata	Staff of Marine Telecommunication Development Section
Drs. Sudjanadi	Chief of Sub-Division for Planning, Program and Foreign Technical Cooperation
Drs. Supardi Inam	Chief of Long Term Planning Sub-Division, Planning Bureau, Department of Communications
Mr. S. Takahashi	Colombo Plan Experts

JAPAN

Mr. Y. Kobayashi	Leader of JICA Study Team
Mr. M. Kawauchi	Member of JICA Study Team
Mr. M. Tanaka	" " " "
Mr. N. Ohtake	" " " "
Mr. S. Itoh	First Secretary of the Embassy of Japan
Mr. A. Kojima	Vice Representative of JICA Jakarta Office

ANNEX II General Idea on Maritime Telecommunication project



5 - 3 Record of Discussion

RECORD OF DISCUSSION

The meeting between the Japanese Study Team and the Directorate General of Sea Communications was held on 19th February 1981 at the conference room of the Directorate of Navigation, Jakarta, to discuss the feasibility study report (draft) on Coastal Radio Communications.
The result of the exchange of views and discussions of the meeting is as follows.

1. Indonesian side accepted, in principle, the draft report. In the case that the Indonesian side has some minor comments later on, the comments will be sent through JICA Jakarta Office in written form.
2. The project of F-ST-12 shall be proceeded based on this draft report.
3. The following data will be sent to Japanese side through JICA Jakarta Office as soon as possible.
   1) Station site layout of Surabaya, Semarang, Jakarta, and Jayapura.
   2) Present equipment layout of related stations.

Date: 19th February, 1981

D.J.M. Manuputty
Head of Sub-Directorate
for Maritime Electronic and
Telecommunications
Directorate General of Sea
Communications

Y. Kobayashi
Leader of the Japanese
Feasibility Study Team

6. 所　　感

本プロジェクトの実施主体は運輸通信観光省の海運総局であるが、通信システムとしては省全体の統合的なシステムの一部としてとらえることを基本とし、例えば国内通信衛星（PALAPA）の利用については郵電総局の長期計画を十分考慮して計画に取組むなど極めて積極的な姿勢が示された。

従って、長期計画の策定に当たっては、単に海運総局の通信計画のみならずP. T. INDOSAT（国際公衆通信事業者）、PERUMTEL（国内公衆通信事業者）、気象庁などの機関の通信の現状と将来計画を十分に考慮に入れる必要がある。

イ側は無線通信のみならず、コンピュータの導入についても省全体の統合的システムの構想を持っており、船舶の位置登録管理にコンピュータを利用する要求に対し、これを保留したままとなっているとのことである。

交渉の中で、報告書の言語についてインドネシア語の希望が口頭で述べられ、これに対し公式な報告書の作成は困難であり応じられない旨回答したところ了承が得られたが、英文の報告書を受け取った後改めて翻訳しなければ利用できないので、この作業を日本で行ってほしいとするものであった。

また、現地踏査した結果、各局の改善或いは新設に当たっては、機器の更新等に加えて、送受信所の立地条件、局舎の環境条件、塩害対策等を十分考慮する必要が認められた。さらに、職員の資質、運用管理、保守管理などに留意し、体制の確立にきめ細い配慮が必要であることが痛感され、この点についてはイ側関係者も同様の意見表明があった。

7. 面会者リスト

INDONESIA側

Cap. J.M. Manusama	Director of Navigation (Tel. 366468)
Mr. D. J.M. Manuputty	Head of Sub-Directorate for Marine Electronics and Telecommunications (Tel. 341689)
Mr. R.P. Soemarto	Chief of Marine Telecommunication Control Section (Tel. 366253)
Mr. Ch. Paath	Chief of Marine Technical Section
Mr. Harmani S.N.	Chief of Marine Telecommunication Development Section
Mr. A.N. Sorongan	Chief of Marine Traffic Accounting Section
Mr. A. Pamungkas	Staff of Planning Division
Mr. Dewata	Staff of Marine Telecommunication Development Section
Drs. Sudjanadi	Chief of Sub-Division for Planning, Program and Foreign Technical Cooperation
Drs. Supardi Inam	Chief of Long Term Planning Sub-Division, Planning Bureau, Department of Communications

Belawan

Mr. Kurdi Sudjatmika	Head, Shipping Region I
Mr. A. Ali	Director, Belawan Coastal Radio Station (Tel. 180)
Mr. Mariono	Chief, Navigation, Shipping Region I
Mr. Siahaan	Member, Belawan Coastal Radio Station

Samarang (Jln Maluku 27)

Mr. Romly Widjaja	Director, Semarang Coastal Radio Station (Tel. 25903)
Mr. Jusuf Burhan	Chief, Navigation, (Tel. 22039)

Surabaya (Jln Kalimas Baru 194)

Mr. Soeharto	Head, Shipping Region IV (Tel. 291447)
Mr. A. Budi Santoso	Secretary, Shipping Region IV
Mr. R. Soemarsono	Chief, Navigation, Shipping Region IV
Mr. J.M. Bos	Director, Surabaya Coastal Radio Station
Mr. Suminta	Chief, Operation, Surabaya Coastal Radio Station

Ambon

Mr. Iun Rafiun	Director, Ambon Coastal Radio Station
Mr. G.K. Gafur	Chief, Operation, Ambon Coastal Radio Station
Mr. M.Q. Gaspersz	Technician, Ambon Coastal Radio Station
Mr. Mochamad Amin	Head, Shipping Region VIII

Ujung Pandang

Mr. P. Hadisuprapto	Director, Ujung Pandang Coastal Radio Station

Bitung

Mr. Nasation	Director, Bitung Coastal Radio Station

Benoa

Mr. Soetadji	Chief, Benoa Navigation Office

日　本　側

在インドネシア日本国大使館　（TEL　324500，325140）

伊　藤　鎮　樹　　1等書記官

在メダン日本国総領事館

益　田　　寛　　総領事

在ウジュンパンダン日本国総領事館　（TEL(0411)21030，22323）

鈴　山　喜三郎　　総領事

JICAジャカルタ事務所　（TEL　322387，326818）

宮　本　守　也　　所　長

小　島　　明　　参　事

JICAコロンボプラン専門家（海上保安）（TEL　357806）

高　橋　　迪　　専門家

電電公社ジャカルタ海外駐在事務所　（TEL　333909(Ex2170，2171)）

海老原　勇　夫　　所　長

8. 付 属 資 料

8－1 Term of Reference

TERM OF REFERENCE

STUDY FOR LONGTERM DEVELOPMENT OF MARITIME COMMUNICATION SYSTEM

F-TA-193

DIRECTORATE GENERAL OF SEA COMMUNICATIONS

DEPARTMENT OF COMMUNICATIONS

December, 1980.

I. BACKGRAOUND AND SUPPORTING INFORMATION

1. Justification of the Project.

The national territories of the REPUBLIC OF INDONESIA include five major islands. Besides them, a large number of inslands, big and small, are scattered in the Equatorial zone extending for approximately 5,000 km from east to west and for approximately 2,000 km from north to south. In other words, the whole territories extend from 140 degrees, East Longitude, in the east to 95 degrees, East Longitude, in the west and from 5 degrees, North Latitude, in the north to 10 degrees, South Latitude, in the south.

Futhermore, the territories face the Pacific Ocean and East China Sea on the north and the Indian Ocean on the south. These seas teem with maritime traffic consisting of incoming and outgoing ships to and from Indonesian ports and foreign service vessels that navigate in the nearby open waters. The volume of marine traffic in these seas continues to increase year after year.

The primary objective of the coast station is to give absolute priority, in the International Telecommunication Convention, to all telecommunications concerning the safety of life at sea.

Generally, the coast station manages international telecomaunications

between the coast station and domestic and foreign ships. The communication equipments of the coast station, like those of ship stations, are designed, based on the Radio Regulation, CCIR recommendations, reports and so forth, as well as SOLAS, in regard to the catagory of service, method of operation, operating frequency, and charecteristics of equipments.

The Governments of the Republic of Indonesia is carrying out the rehabilitation and modernization of communication equipments of all coast stations since 1969 as an integral part of the five-year development plan series.

For the ships navigating in the open seas, the telegraph, telex and telephone communications with overland shippers and cargo clients through the coast stations and ship stations as well as between coast stations has been increased remarkably in recent years.

In view of such spiral growth of maritime communication volume, the improvement and modernization of coast station equipments contribute a great deal to the service performance at top efficency, including the service speed-up.

By such improvement and modernization of coast station equipments, the broadcasting of information for safety of ships navigating in the open seas, as well as the rescue activities at the time of out-

break of an emergency, can also be carried out effectively. These are indispensable duty items of the coast station.

2. Study for Long Term Developments of Maritime Communication System.

a. The facilities of the coast stations were completed a considerable time ago by the Japanese and Netherlands development aid (IGGI). Ten to twelve years have elupsed since their establishment.

At present these facilities are handicapped in many respects. In the first place, maintenance parts are in shortage. Secondly, transmitters have their transmitting power degraded and receivers have their sensitivity deteriorated.

b. Futhermore the surrounding areas of several receiving stations located near ports have been developed for many open storage fields, storage buildings and industrial facilities. These conditions have given noises and radio interferences to the receiving station.

c. The international/maritime and radio regulations have been revised since the present system is completed.
Therefore the existing system and equipment shall be reorganized in accordance with such regulations concerned.

d. The export / import activities in some of the harbour have shown a rapid development the last years. To back up the growing activities of these harbours, considerations must also be given to the maritime communication system for a better service in cargo handling and flow of goods.

e. The PERUMTEL network especially the Palapa System plays an important role in the point to point communications between the main harbour in Indonesia. The plan for the extention of the domestic satellite network by erecting more small ground stations in the near future will help to promote the harbour operations.

The above mentioned situations must be carefully studied and examined to draw up an effective and efficient plan for a long term development of maritime communication system.

3. Institutional Framework.

The coastal radio stations in Indonesia are owned and operated by the Directorate General of Sea Communication.
These stations are now totally 94 in number and classified in four classes namely 1st. 2nd. 3rd. and 4th. class coastal stations with Jakarta as the central station.
Almost all the coast stations had been planned and rehabilitated during the first 5-year development plan (PELITA I). The implemen-

tation of the rehabilitation plan taken place between 1968 and 1972 had been completed.

Cooperation between the coastal radio station and other government owned communication agencies such as Perum. Telekomunikasi, Meteorological Institute, Search and Rescue Centers is of great importance for the benefit of the shipping world in general.

4. Government Follow Up.

It is generally known that the upgrading and modernization of the maritime communication system in Indonesia is essential.
If the need for upgrading and modernization of equipment of coastal radio stations is not undertaken seriously, in the near future a grave or worse situation will prevail after the coming into force of the ITU Radio Regulation 1979, SOLAS 1974 and the Maritime Search and Rescue Convention 1979.

The results and aim of the development of maritime communication system is not only to meet the demands of a reliable communication but also achievement in an increase in safety, navigation and operational radio traffic.
Good and realible communication between ships and coastal radio stations in the various catagories will serves the safe sailing and effecient operations of ships and ports.
Satisfactory operations of the maritime communication system depend to a great extent upon the characteristies of site and free

from interferences up to date equipments and last but not least qualified operators and technicians.

II. OBJECTIVE OF THE PROJECT.

1. To examine, analyse and reorganise the function of maritime Telecommunication system for effective and effecient use to meet the present and future needs (until the year 2000) including search and rescue (SAR).

2. To determine the criteria for classification of the coastal radio station according to development of telecommunication technique and standards.

3. To plan maritime communication system covering the following function:
   a. Traffic operation of message/information for the safely of life at sea (SAR) and safety of navigation including notice to mariner.
   b. Traffic operations and data informations and shipping activities etc. to increase the flow of goods and passengers.
   c. Traffic operations of messages from the Directorate General of Sea Communications to the maritime District and vise versa utilizing the domestic satellite communication system (PALAPA).

4. To study the use of International Maritime Satellite Communications System (INMARSAT) in Indonesia.

5. To make up the implementation programs for each phase in accordance

with the long term development plan of Maritime Telecommunication System in Indonesia taking into account the development of shipping activities and the latest development of telecommunication system in general.

6. Criteria for frequency assignment coordination arrangements in planning telecommunication systems particularly maritime communication system operated and planned by Indonesia's neighbouring countries.

7. To make a system definition for a maritime communication system covering the determination of the required system and its performance requirements as a function of time.

III. PLAN OF OPERATION.

1. The study should cover the predicted activities upto the year 2000.

2. Survey Items:

   a. Data Collection and Field Survey.

   b. Economic and Technical Study.

   c. Analysis.

   The survey should examine the whole aspect of maritime communication such as present condition of the equipments, location/site, the existing management system, training of personnel and maintenance of the maritime communication system of the Directorate General of Sea Communication.

3. Review of Long Term Development Plan.

   The review should formulate better maritime telecommunications system taking into consideration the cases such as:

   a. The present and future needs.

   b. Data Communications network utilizing Domestic Satellite Communication System (PALAPA) to promote shipping and habour activities.

   c. Utilization of International Maritime Satellite (INMARSAT) in Indonesia.

4. Formulation of Stage-wise Programs.

   The Programs should include a complete and detailed proposal for the government.

The draft should cover all aspects such as: location, equipment, manpower, development, cost and budget management and program schedule.

IV. EXTERNAL AND GOVERNMENT INPUTS.

はしがき

1. External input

日本国政府は、インドネシア共和国政府の要請に基づき、同国の沿岸無線網整備拡充計画（長期計画）について調査を行うことを決定し、国際協力事業団がこの調査を実施した。

当事業団は、郵政省電波監理局無線通信部航空海上課小林陽一無線局検査官を団長とする4名の事前調査団を昭和56年1月31日から、同年2月9日まで現地に派遣した。

今回の事前調査は、要請の背景となる現有沿岸無線通信施設の実態を調査し、プロジェクトの規模および内容について概略検討を行い、本格調査の必要性と実施の可能性について確認すると同時に、次に実施する本格調査が円滑に、かつ効果的に進められるよう、インドネシア国政府と充分な協議を行ってScope of Workを作成・署名し、併せて所要資料の収集を行うことを主目的としたものである。

本調査報告書が、今後の本格調査の立案・設計および実施に際して参考となることを期待すると共に、今回の調査実施にあたり、多大のご協力をいただいたインドネシア共和国政府、在インドネシア日本大使館、在メダンおよびウジュンパンダン領事館ならびに関係機関に対し厚くお礼を申し上げる次第である。

昭和56年3月

国際協力事業団
理事 中沢弐仁

a. The foreign experts for the implementation of the whole program are required to have the following qualification on:

-. Telecommunication System Engineering.
-. Radio Engineering (in general)
-. Direct Printing and Selective Calling System for Maritime Communication.
-. Maritime Safety and SAR.
-. Maritime Communication Traffic Analyses
-. Administrative Management

The estimated cost to work out this program is:

-. Expert service : 36 MM = US$250,000.00
(incl. the survey equipments)
-. Fellowship : 20 MM = US$ 50,000.00

Total = US$300,000.00

2. Government Input.

The Indonesian counterpart will provide the necessary data's and make arrangements for a side survey where-ever needed. Assistance will be extended to make a successful study and survey for development of the maritime comunication system.

8 - 2 Scope of Work (Short Term)

SCOPE OF WORK

FOR

FEASIBILITY STUDY

ON

COASTAL RADIO COMMUNICATIONS

IN

THE REPUBLIC OF INDONESIA

SCOPE OF WORK

FOR

FEASIBILITY STUDY

ON

COASTAL RADIO COMMUNICATIONS

IN

THE REPUBLIC OF INDONESIA

AGREED

BETWEEN

THE JAPANESE PRELIMINARY AND FEASIBILITY STUDY TEAM

AND

THE DIRECTORATE GENERAL OF SEA COMMUNICATIONS

DATE: 7 February 1981

For
Directorate General of
Sea Communications

J.E. HABIBIE
Secretary of the Directorate
Ceneral of Sea Communications

For
Japan International
Cooperation Agency

小林陽一

Yoichi KOBAYASHI
Leader of the Preliminary
and Feasibility Study Team
on Coastal Radio Communications

I. INTRODUCTION

In response to the request of the Government of Indonesia, the Government of Japan has decided to conduct a feasibility study on Coastal Radio Communications in accordance with laws and regulations in force in Japan.
Japan International Cooperation Agency (JICA), the official agency responsible for implementation of the technical cooperation programmes of the Government of Japan, will carry out the study. The present document sets forth the Scope of Work with regard to the above-mentioned study, which is to be carried out in close cooperation between the authorities concerned.

II. OBJECTIVE OF THE STUDY

To study the feasibility of the improvement and modernization of the Coastal Radio Communications as the first stage of long term master plan of maritime communications in Indonesia.

III. OUTLINE OF THE STUDY

(1) Study area
Jakarta Central coast station
First class coast station (Surabaya, Belawan, Ujung Pandang, Ambon, Dumai, Bitung, Jayapura)
Third class coast station (Semarang, Sorong, Merauke)

(2) Contents of the study

a) present status of coastal radio communication network, coast station facilities and services

b) coastal radio communication development plan

c) technical standards of coast station facilities

d) interview with relevant Government department and Agency.

e) field survey of the relevant coast stations as many as possible.

f) data collection and analysis

g) law and regulations concerned

h) system design

i) estimation of facilities, operation and maintenance costs.

j) economic and financial analysis

k) project evaluation.

IV. REPORTS

JICA will prepare and submit the following reports in English to the Government of Indonesia.

(1) Draft final report
* Soon after completion of field survey
* The Government of Indonesia will provide JICA with its comments within soon after the receipt of the draft final report.

(2) Final report
* 20 copies
* Within 2 months after receipt of the comments on draft final report.

V. CONTRIBUTION OF THE GOVERNMENT OF JAPAN

(1) To send the Japanese experts team to Indonesia for execution of the study.

(2) To provide necessary measuring equipment and materials for the execution of the field survey.

(3) To transfer the knowledge and technology of the Project to the Indonesia counterpart personnels during the study period.

VI. CONTRIBUTION OF THE GOVERNMENT OF INDONESIA

(1) To provide the study team with relevant data, information and materials necessary for implementation of the study.

(2) To exempt the study team from the taxes and duties on the materials, equipment and personal effects brought into Indonesia by the study team.

(3) To appoint the official counterparts of the study team during survey period.

(4) To make the study team secure during their stay in Indonesia.

(5) To provide the study team with suitable office space, necessary office facilities and means for the study, such as vehicle, photo-copier, type-writer, etc.

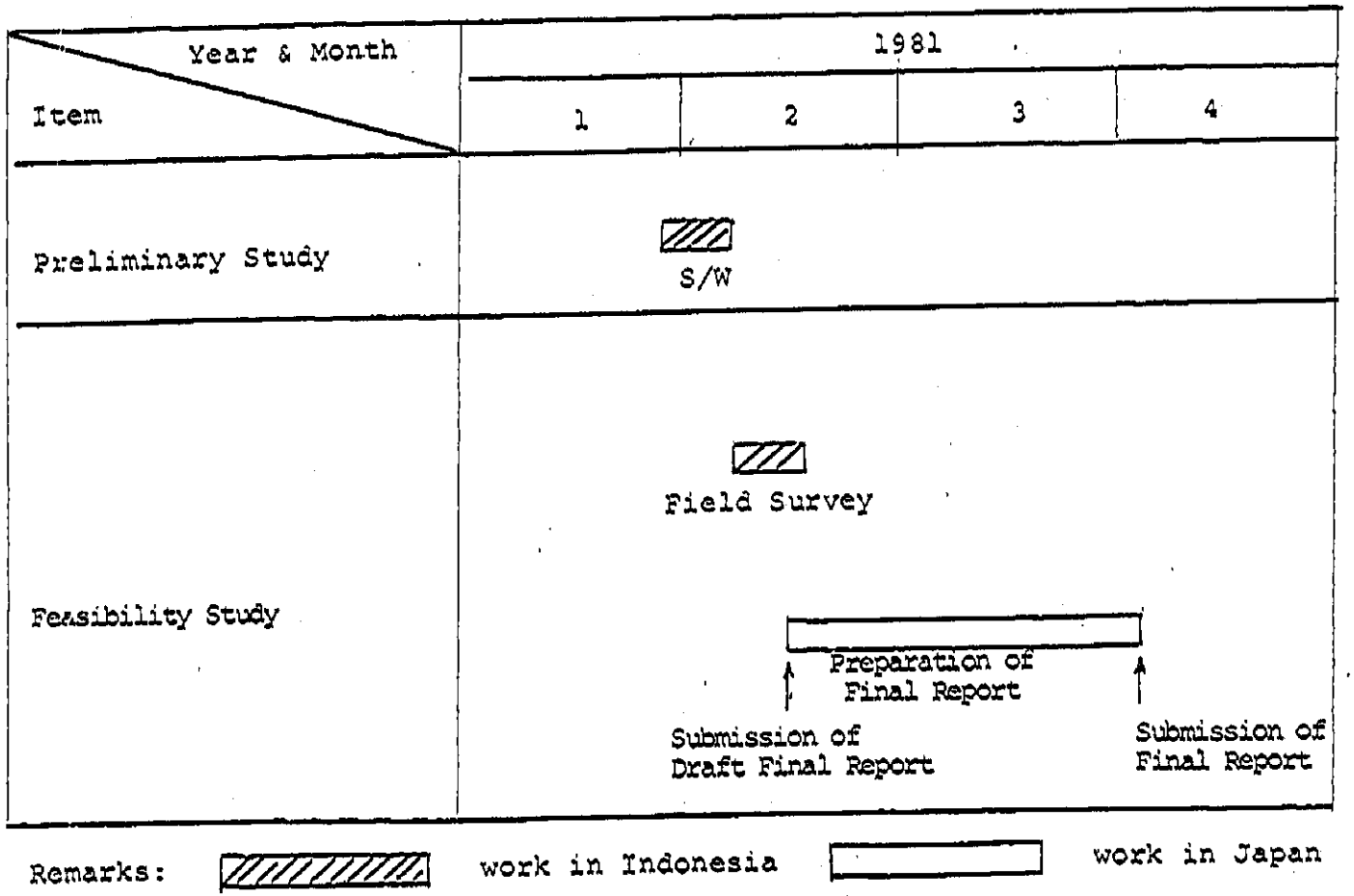
(6) To make an arrangement for the study team to take the necessary data, maps and materials concerning the study back to Japan in order to prepare the reports.

VII. SCHEDULE OF STUDY

The study shall be undertaken in accordance with the schedule of study (refer to Annex).

Annex

SCHEDULE OF STUDY



8 － 3　1級局等のリスト

DAFTAR NAMA-NAMA KEPALA SETASIUN RADIO (11 KASROP)

NO.	NAMA SETASIUN RADIO PANTAI	NAMA PEJABATNYA	NOMOR TELEPON	NOMOR TELEX	ALAMAT
1.	JAKARTA RADIO	MEMED SADELI	490354 491723 491727	49215 49354	Jln. Curacau Koja Ranal Tg. Priok.
2.	SURABAYA	R. SOEMARSONO	293919 291934 291755	31389	Jln. Kalimas Baru No. 194 Surabaya.
3.	UJUNG PANDANG	P. HADISUPRAPTO	22198 22886	71154	Jln. Hatta Pangkalan Soekarno Upandang.
4.	BELAWAN	A. ALI	178 180	51320	Jln. Ujung Baru Belawan.
5.	DUMAI	R.H. SOEKISNO	21382	56165	Jln. Tegalega Bukit Datuk Dumai
6.	AMBON	IUN RAFIUN	2661	73121	Jln. Pelabuhan Ambon
7.	BITUNG	A.R. NASUTION	87	74126	Jln. Setasiun Radio Pantai Bitung
8.	SEMARANG	ROMLY WIJAYA	22039 22903	22224	Jln. Usman Janatin No. 8 Semarang
9.	SORONG	ONLY LOUHENAPESSY	1515	77111	Jln. Tg. Dofior Sorong.
10.	MERAUKE	M. MAREY	21781		d/a Kepala Pelabuhan Merauke
11.	JAYAPURA	SOEKARMAN	21630 21730	76111	Jln. Kayu Batu Tg Ria Base G No. 6 Jayapura.

8－4　インドネシアの祝祭日（1981年）

Holidays in 1981

January	*1	Thursday	New Year's Day
	2**	Friday	Office to be closed
	3**	Saturday	Office to be closed
	15	Thursday	Adult's Day
	*18	Sunday	Maulid Nabi Muhammad SAW （モハメット降誕祭）
February	11	Wednesday	Commemoration of the Founding of the Nation
March	21	Saturday	Vernal Equinox Day
April	*17	Friday	Wafat Isa Al Masih （キリスト受難日）
	29	Wednesday	Emperor's Birthday
May	4	Monday	Constitution Day
	5	Tuesday.....	Children's Day
	*28	Thursday	Kenaikan Isa Al Masih （キリスト昇天祭）
	*31	Sunday	Mi'raj Nabi Muhammad SAW （モハメッド昇天祭）
August	*1	Saturday	Idul Fitri 1401 H （断食月明け）
	*2	Sunday	Idul Fitri 1401 H （断食月明け）
	*17	Monday	Proklamasi Kemerdekaan RI （独立記念日）
September	15	Tuesday	Respect for the Aged Day
	23	Wednesday	Autumn Equinox Day
October	*8	Thursday	Idul Adha 1401 H （犠牲祭）
	10	Saturday	Sports Day
	*29	Thursday	Muharam 1402 H （回教徒新年）
November	3	Tuesday	Cultural Day
	23	Monday	Labour Thanksgiving Day
December	*25	Friday	Christmas （クリスマス）
	29**	Tuesday	Office to be closed
	30**	Wednesday	Office to be closed
	31**	Thursday	Office to be closed

* Indonesian Holidays

** Duty Officerat Work

JICA