Preliminary Basic Design Study
on the Project for Improvement of Broadcasting Equipment
For National Broadcasting Corporation in Papua New Guinea

1 Objective Station Kimbe, West New Britain Province

2 Period of Survey 6th Nov to 7th Nov, 2001

3 Qualification Survey

(1) Project Site

The location of site is at the west end of the Kimbe city, at about 500m from the Radio West New Britain. The proposed land is 56,000m². The distance to proposed site from the airport is about 30km. Eight houses of illegal residents are in the site.

(2) Sustainability

The financial support of the Provincial Government is different in every year.

Though the studio equipment was renewed by the fund of the Provincial Government in 2000, the financial management of the Radio West New Britain is suffering the shortage of the funds for the electricity bill for this year. Therefore, the morning session of Kundu Service has stopped for 2000.

Although decaying, the Transmitter for Kundu Service is very well maintained by obtaining the parts from other equipment appropriately.

The official comments made by Mr. Paul Smith Rame, Deputy Provincial Administrator in West New Britain is positive for the continuation of financial support for Kundu Service by the Provincial Government.

(3) Beneficial Effect

Total Population: 184,000.

The number of responses from the radio listener is about 500 per month by means of the telephone or letter. Main responses are the requests of the songs and questions on Gospel. However, the demand for the replacement of deteriorated Transmitting equipment is emphasized by the Administration Office in the viewpoint of the precaution of serious disaster caused by eruptions of Mt. Pago

The beneficial population of this investment is about 70%(129,000) of the total population.

(4) Status of Station Building

The existing SW transmitter station building is a wooden one that exceeded its durability.

Moreover, the distance from the building to the expected MW antenna site is too far (about 300m) and there is no space for 10kW Medium Wave Transmitter.

Therefore, a TX Shelter in the site near the MW antenna is recommendable for the installation of a new MW Transmitter.

(5) Status of SW TX for Kundu Service

The existing SW Transmitter is judged to be replaced due to the deterioration of the parts such as connectors, circuit breaker, various contactors used for tuning, and Transmission Tube Socket.

(6) Measures to be taken by Papua New Guinean side

On condition that the Government of Japan approves the improvement of the existing SW Transmitting station of the Radio West New Britain, the Government of Papua New Guinea agreed to take necessary measures as follows.

1) Leveling of the proposed project site.
2) Completion of Gate and Fencing of the proposed project site.
3) Installation, Test and Commissioning of Main Power Lines to TX Shelter.
4) Installation, Test and Commissioning of Program Feed Lines to TX Shelter.
5) Removal illegal residence from the proposed site.
6) Secure the operation and maintenance expense incurred by new equipment.
7) Prepare the future replacement plan based on the depreciation account of new equipment.
8) Execution of the PNG's side work listed Annex-4 of the Minutes of Discussions on the Basic Design Study on the Project for Improvement of Broadcasting Equipment for National Broadcasting Corporation made November 1, 2002 between Mr. Katsutoshi Komori, Leader of Basic Design Study Team, Japan International Cooperation Agency and Kristoffa Ninkama, Managing Director, National Broadcasting Corporation.

(7) Assigned Frequency

ITU assigned frequency for Kundu Service of Radio West New Britain is 1215kHz

(8) Power Supply

Surge Protector and Emergency Engine Generator are necessary for the protection from Lightening Surge, Fluctuation of Power Supply and sudden Power Stoppage.

(9) Status of Studio

In order to improve the quality and productivity of programme, it is necessary to improve studio equipment.

Basic Design Study
on the Project for Improvement of Broadcasting Equipment
for National Broadcasting Corporation in Papua New Guinea

1 Objective Station Wewak, East Sepik Province

2 Period of Survey 27th Oct to 28th Oct, 2002

3 Qualification Survey

(1) Project Site

The site is located next to the Wewak airport. Therefore, in conformity with the International Civil Aviation Regulation, there is a limitation to the tower height. The site is occupied with Karai MW antenna and Kundu SW antenna, hence there is no space for Kundu MW antenna.

(2) Sustainability

The financial support of the Provincial Government is not certain and the financial management of the Radio East Sepik is suffering the shortage of the funds for the operation and maintenance. The station power supply has stooped for more than one year due to the non-payment of electricity bill.

(3) Beneficial Effect

Total Population: 343,000.

The very little beneficial effect is expected due to the location of antenna site next to the airport and a mountainous range of 1000m high.

The majority of the people in East Sepik Province are living in the valley after the mountain range. For the effective coverage of the Kundu Service, it is necessary to consider the relocation of the station in the future.

(4) Status of Station Building

The existing SW transmitter station building is a wooden one that exceeded its durability.

And, the station building is accommodating one SW transmitter and one MW transmitter, thus there is no space for others.

(5) Status of SW TX for Kundu service

The existing SW Transmitter is judged to be replaced due to the deterioration of the parts such as connectors, circuit breaker, various contactors used for tuning, and Transmission Tube Socket.

(6) Measures to be taken by Papua New Guinean side

On condition that the Government of Japan approves the improvement of the existing SW Transmitting station of the Radio East Sepik, the Government of

Papua New Guinea agreed to take necessary measures as follow.

1) Execution of the PNG's side work listed Annex-4 of the Minutes of Discussions on the Basic Design Study on the Project for Improvement of Broadcasting Equipment for National Broadcasting Corporation made November 1, 2002 between Mr. Katsutoshi Komori, Leader of Basic Design Study Team, Japan International Cooperation Agency and Kristoffa Ninkama, Managing Director, National Broadcasting Corporation.

(7) Assigned Frequency

ITU assigned frequency for Kundu Service of Radio East Sepik Province is 1314kHz.

(8) Power Supply

Surge Protector and Emergency Engine Generator are necessary for the protection from Lightening Surge, Fluctuation of Power Supply and sudden Power Stoppage.

(9) Status of Studio

In order to improve the quality and productivity of programme, it is necessary to improve studio equipment.

Member of the Site Survey Team

Momose Region

Period of Survey

27th Oct., to 28th Oct., 2002	Wewak, East Sepik
29th Oct., to 30th Oct., 2002	Vanimo, West Sepik
01st Nov., to 02nd Oct., 2002	Lae, Morobe

Participants

NBC	Mr. Demas Totil
JICA Study Team	Mr. Masatoshi Hamada
	Mr. Hiromu Kamijyo
	Mr. Toru Uruwashi

Island Region

Period of Survey

06th Nov., to 07th Oct.,2002	Kimbe, West New Britain

Participants

NBC	Mr. Demas Totil
JICA Study Team	Mr. Yoshihiro Nohara
	Mr. Toru Uruwashi

Highland Region

Period of Survey

04th Nov., to 05th Nov, 2002	Goroka, Eastern Highlands
06th Nov., to 07th Nov, 2002	Kundiawa, Simbu
08th Nov., 2002	Wabag, Enga
09th Nov., to 10th Nov., 2002	Mt. Hagen, Western Highlands

Participants

NBC	Mr. Issac Marinjembi
JICA Study Team	Mr. Hiroaki Otsuka
	Mr. Masatoshi Hamada
	Mr. Hiromu Kamijyo
JICA(PNG)	Mr. Tony Ombo

■ 基本設計概要説明調査（2003年2月25日）

Minutes of Discussions
on the Basic Design Study on the Project for Improvement of Broadcasting Equipment for the National Broadcasting Corporation in the Independent State of Papua New Guinea (Explanation on Draft Report)

In October 2002, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Basic Design Study Team on the Project for Improvement of Broadcasting Equipment for the National Broadcasting Corporation (hereinafter referred to as "the Project") to the Independent State of Papua New Guinea (hereinafter referred to as "the PNG"), 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 the officials concerned of the Government of PNG on the components of the draft report, JICA sent to PNG the Basic Design Explanation Team (hereinafter referred to as "the Team"), which was headed by Mr. Katsuro Saito, Resident Representative of the JICA PNG Office, from February 17 to 26, 2003.

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

Port Moresby, 25 February 2003

Katsuro Saito
Leader
Basic Design Explanation Team
Japan International Cooperation Agency

Kristoffa Ninkama
Managing Director
National Broadcasting Corporation

Mosilayola Kwayaila
First Assistant Secretary
Aid Coordination and Management Division
Department of National Planning & Rural Development

Henao Iduhu
Director General
Office of Information & Communication

ATTACHMENT

1. Components of the Draft Report

The PNG side agreed and accepted in principle the components of the draft report explained by the Team.

However, as the result of the field survey jointly conducted by the PNG side and the Team, both sides concluded that proposed site for relay station at Hafaru, Eastern Highland Province, was not suitable due to the lack of necessary access road and power supply. Based on a comprehensive search for an alternative site, both sides temporarily concluded that a relay station at Kainantu, which could cover larger population than the one at Hafaru, would be suitable in terms of land space, access and power availability. The PNG side shall, as referred to in 4-5 of this Minutes of Discussions, obtain the legal permission to use the land and facilities for the proposed relay station in Kainantu, which are currently owned by the TELIKOM. The Team shall examine the technical and financial feasibility of the plan in Japan.

2. Japan's Grant Aid Scheme

The PNG side understands the Japan's Grant Aid scheme and the necessary measures to be taken by the Government of PNG as explained by the Team and described in ANNEX-3 and ANNEX-4 of the Minutes of Discussions signed by both sides on November 1, 2002.

3. Schedule of the Study

JICA will complete the final report in accordance with the confirmed items and send it to the Government of PNG by the end of April 2003.

4. Other Relevant Issues

4-1. The PNG side shall secure personnel and budget necessary for the Project.

4-2. The PNG side shall take all possible measures to secure safety of the people concerned during the implementation of the Project. The PNG side shall arrange police escort for the Japanese people concerned of the Project all the time at PNG side's expense.

4-3. The PNG side shall allocate the necessary budget for operation and

maintenance of each station of the Project in cooperation with a relevant provincial government. The PNG side shall submit to the JICA PNG Office the letters from each provincial governor to ensure that the provincial government shall allocate necessary budget by the end of February 2003.

4-4. The PNG side shall replace the equipment to be installed in the Project at their own expense in the future when the equipment becomes deteriorated, as mentioned in the letter from the Minister of Communication and Information, dated November 11th, 2002.

4-5. The PNG side shall secure adequate lands and facilities for installation of a transmitter and an antenna for each main station and relay station of the Project. The PNG side shall obtain the official and legal permission to use the land and facilities from the relevant authorities and submit the copy of permission to JICA PNG Office by 14th March 2003.

4-6. The PNG side shall secure frequencies from PANGTEL for each main and relay station of the Project as follows:

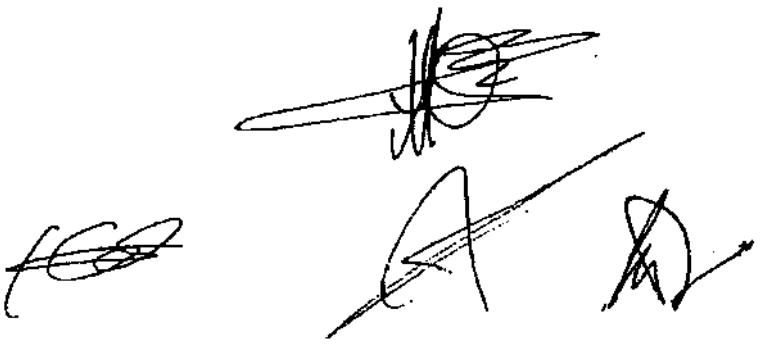
Vanimo	585 KHz (STL 490.075 MHz)
Kimbe	900 KHz (STL 490.075 MHz)
Lae	810 KHz
Mt. Hagen	91.5 MHz
Goroka	91.9 MHz (STL 490.075 MHz)
Kainantu (Relay station)	91.1 MHz

4-7. The PNG side shall take the following measures for each station of the Project:

1) To clear, level and reclaim the lands,
2) To construct gates and fences,
3) To construct access roads,
4) To construct telephone trunk line,
5) To supply electricity,
6) To secure spaces for temporal works such as offices, stockyards and etc.,
7) To remove obstacles such as trees for installation works,
8) To relocate utilities such as water pipe, gas pipe, power supply line, etc.
9) To remove the existing SW antenna, which becomes unnecessary.

4-8. The PNG side shall, as mentioned in the letter from the Minister of Communication and Information dated November 11th 2002, air a message of acknowledgement and appreciation of the Project from the stations of the

Project, so that the people of PNG are fully aware that the Japanese Grant Aid makes the broadcasting possible. The message will be announced three times a day, e.g. at the beginning, noon and closing time of the daily service, for the period of at least one year.



6. 事業事前評価表

1. 協力対象事業名
パプアニューギニア国　国営ラジオ放送局機材整備計画
2. わが国が援助することの必要性・妥当性
(1) わが国が当該国に対し援助することの必要性・妥当性 パプアニューギニア国（以下「PNG」）は、南太平洋フォーラム、太平洋共同体を通じた南太平洋諸国との友好関係の維持・発展を重視、域内最大国として指導的地位に有り、わが国とは独立以来一貫して友好的な関係を維持してきている。最大の援助国である豪州が援助を増加させていないこともあり、わが国に対する期待が高まっている。以上を踏まえ、わが国は同国の開発ニーズに即した幅広い援助を実施している。 (2) 当該プロジェクトを実施することの必要性・妥当性 クンドゥ放送（地方放送）は州ごとにその地域の言語により放送される公共放送であり、政府公報、国民への啓蒙等の重要な役割を担っている。わが国は 1989 年に無償資金協力により 17 のクンドゥ放送用送信機を整備したが、機材は既に 13 年を経て老朽化し維持管理が困難なうえ可聴範囲も極度に狭まっており、早急に更新する必要がある。本プロジェクトでは、特に機材の老朽化が著しいとして PNG から更新の要請のあった 8 州のうち条件（土地、予算等）の整う 5 州について整備を行う。
3. 協力対象事業の目的（プロジェクト目標）
本プロジェクトは、クンドゥ放送（地方放送）の送信設備を整備することにより、対象各州の住民がその地方の言語で保健衛生・農業等、生活水準向上に必要な情報を容易に得られるようにすることを目的とする。
4. 協力対象事業の内容
(1) 対象地域 西ハイランド州、モロベ州、西ニューブリテン州、西セピック州、東ハイランド州の 5 州。 (2) アウトプット 対象各州で送信設備が整備される。 (3) インプット 【日本側】 西ハイランド州　Mt.ハーゲン局：3kW FM 放送送信機、60m 鉄塔、電源 モロベ州　ラエ局　：10kW 中波放送設備、80m アンテナ、電源 西ニューブリテン州　キンベ局：10kW 中波放送設備、80m アンテナ、電源 西セピック州　バニモ局　：10kW 中波放送設備、80m アンテナ、電源 東ハイランド州　ゴロカ局　：3kW FM 放送設備、60m 鉄塔、電源 100W 中継機（設置場所：カイナンツ）

【相手国側】

建設用地の確保（使用許可、整地）、周波数の確保、アクセス道路の建設
各州政府による地方放送局の運営維持管理費の確保

(4) 総事業費

概算事業費 8.35 億円（日本側 8.20 億円、PNG 側 15 百万円）

(5) スケジュール

詳細設計を含めて約 15 ヵ月。

(6) 実施体制

1) 主管官庁：情報通信庁
2) 実施機関：国営ラジオ放送公社（NBC）

5. プロジェクトの成果

(1) プロジェクトの裨益対象の範囲及び規模

対象 5 州の住民約 136 万人

(2) 事業の目的（プロジェクト目標）達成を示す成果指標

ア. 対象地域全体での聴取可能人口

	2003 年（実施前）	2004 年（実施後）
西ハイランド州	86,000 人	431,000 人
モロベ州	119,000 人	323,000 人
西ニューブリテン州	14,000 人	129,000 人
西セピック州	9,000 人	130,000 人
東ハイランド州	70,000 人	350,000 人
合計	212,000 人	1,363,000 人

イ. 聴取可聴地域の拡大

	2003 年（実施前）	2004 年（実施後）
西ハイランド州	500 km^2	1,700 km^2
モロベ州	10,000 km^2	13,800 km^2
西ニューブリテン州	500 km^2	8,400 km^2
西セピック州	500 km^2	7,200 km^2
東ハイランド州	500 km^2	1,400 km^2
合計	12,000 km^2	32,500 km^2

6. 外部要因リスク

- クンドゥ放送を永続的に実施するためには、将来の設備の償却ならび設備の更新費用を PNG 側で計画的に確保する。

7. 今後の評価計画

(1) 事後評価に用いる成果指標

1) 聴取人口
2) 可聴範囲

(2) 評価のタイミング

2009 年（供用開始 5 年後）以降を予定。

7. 入手資料リスト／参考資料

■ 入手資料リスト

No.	資 料 名	編集者、出版社
1	Provincial Document	
-1	Kimbe, West New Britain	Filled by NBC (Kimbe)
-2	Vanimo, West Sepic (Sandaun)	Printed by Sundaun Pro.
-3	Lae, Morobe	Filled by NBC (Lae)
-4	Goroka, Eastern Highlands	Filled by NBC(Goroka)
-5	Mt. Hagen, Western Highlands	Filled by NBC (Mt. Hagen)
-6	Kundiawa, Simbu (Chinbu)	Printed by Simbu Pro.
-7	Wabag, Enga	Filled by NBC(Wabag)
2	Broadcasting Corporation Act.	Printed by Broadcasting Commission 1995
3	Corporate Plan 2003-2007	Printed by NBC
4	Broadcasting Development Plan 1992	Printed by NBC
5	Development Plan 1992	Printed by ITU
6	Policy on Electoral Broadcasts 2001	Printed by NBC
7	Telephone Directory 2002	
8	Destination Papua New Guinea	Printed by PNG
9	OK TEDI24:00	Printed by PPA
10	Provincial Map 1:170,000	
-1	West Sepik (Sandaun)	National Mapping Bureau
-2	East Sepik	National Mapping Bureau
-3	West New Britain	National Mapping Bureau
-4	Enga	National Mapping Bureau
-5	Western Highlands	National Mapping Bureau
-6	Chinbu	National Mapping Bureau
-7	Morobe	National Mapping Bureau
11	School Broadcast Schedule	Department of Education
12	The Restoration of Kurakakaul Transmitting Station	Gazelle Restoration Authority
13	Final Preliminary Design Report	- do-
14	Satellite Broadcast(Up-link)	NBC
15	Existing Equipment	
-1	Instruction Manual I	NEC
-2	Instruction Manual II	NEC
-3	Auxiliary Equipment	NEC