

## JAPAN'S GRANT AID

The Government of Japan (hereinafter referred to as “the GOJ”) is implementing the organizational reforms to improve the quality of ODA operations, and as a part of this realignment, a new JICA law was entered into effect on October 1, 2008. Based on this law and the decision of the GOJ, JICA has become the executing agency of the Grant Aid for General Projects, for Fisheries and for Cultural Cooperation, etc.

The Grant Aid is non-reimbursable fund provided to a recipient country to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for its economic and social development 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

The Japan's Grant Aid is supplied through following procedures :

- Preparatory Survey
  - The Survey conducted by JICA
- Appraisal &Approval
  - Appraisal by the GOJ and JICA, and Approval by the Japanese Cabinet
- Authority for Determining Implementation
  - The Notes exchanged between the GOJ and a recipient country
- Grant Agreement (hereinafter referred to as “the G/A”)
  - Agreement concluded between JICA and a recipient country
- Implementation
  - Implementation of the Project on the basis of the G/A

### 2. Preparatory Survey

#### (1) Contents of the Survey

The aim of the preparatory Survey is to provide a basic document necessary for the appraisal of the Project made by the GOJ and JICA. The contents of the Survey are as follows:

- Confirmation of the background, objectives, and benefits of the Project and also institutional capacity of relevant agencies of the recipient country necessary for



the implementation of the Project.

- Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, financial, social and economic point of view.
- Confirmation of items agreed between 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 by the recipient country are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design of the Project is confirmed based on the guidelines of the Japan's Grant Aid scheme.

JICA requests the Government of the recipient country to take whatever measures necessary to achieve 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 of the recipient country which actually implements the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country based on the Minutes of Discussions.

## (2) Selection of Consultants

For smooth implementation of the Survey, JICA employs (a) registered consulting firm(s). JICA selects (a) firm(s) based on proposals submitted by interested firms.

## (3) Result of the Survey

JICA reviews the Report on the results of the Survey and recommends the GOJ to appraise the implementation of the Project after confirming the appropriateness of the Project.

## 3. Japan's Grant Aid Scheme

### (1) The E/N and the G/A

After the Project is approved by the Cabinet of Japan, the Exchange of Notes (hereinafter referred to as "the E/N") will be signed between the GOJ and the Government of the recipient country to make a pledge for assistance, which is followed by the conclusion of the G/A between JICA and the Government of the recipient country to define the necessary articles to implement the Project, such as payment



conditions, responsibilities of the Government of the recipient country, and procurement conditions.

(2) Selection of Consultants

In order to maintain technical consistency, the consulting firm(s) which conducted the Survey will be recommended by JICA to the recipient country to continue to work on the Project's implementation after the E/N and G/A.

(3) Eligible source country

Under the Japan's Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased. When JICA and the Government of the recipient country or its designated authority 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, constructing and procurement firms, and the prime consulting firm are limited to "Japanese nationals".

(4) Necessity of "Verification"

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

(5) Major undertakings to be taken by 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 Annex.

(6) "Proper Use"

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

(7) "Export and Re-export"

The products purchased under the Grant Aid should not be exported or 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 under the name of the Government of the recipient country in a bank in Japan (hereinafter referred to as "the Bank"). JICA 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 JICA 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 paid to the Bank.

(10) Social and Environmental Considerations

A recipient country must carefully consider social and environmental impacts by the Project and must comply with the environmental regulations of the recipient country and JICA socio-environmental guidelines.

(End)

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FLOW CHART OF JAPAN'S GRANT AID PROCEDURES

Stage	Flow & Works	Recipient Government	Japanese Government	JICA	Consultant	Contract	Others
Application	<p>Request (T/R : Terms of Reference)</p> <p>Screening of Project → Evaluation of T/R → Project Identification Survey*</p>						
Project Formulation & Preparation	Preparatory Survey	<p>Preliminary Survey* → Field Survey Home Office Work Reporting</p> <p>Basic Design → Selection &amp; Contracting of Consultant by Proposal → Field Survey Home Office Work Reporting</p> <p>Explanation of Draft Final Report → Final Report</p> <p>*if necessary</p>					
Appraisal & Approval	<p>Appraisal of Project</p> <p>Inter Ministerial Consultation</p> <p>Presentation of Draft Notes</p> <p>Approval by the Cabinet</p>						
Implementation	<p>E/N and G/A (E/N : Exchange of Notes) (G/A : Grant Agreement)</p> <p>Banking Arrangement (A/P : Authorization to Pay)</p> <p>Consultant Contract → Verification → Issuance of A/P</p> <p>Detailed Design &amp; Tender Documents → Approval by Recipient Government → Preparation for Tendering</p> <p>Tendering &amp; Evaluation</p> <p>Procurement /Construction Contract → Verification → A/P</p> <p>Construction → Completion Certificate Recipient Government → A/P</p> <p>Operation → Post Evaluation Study</p>						
Evaluation & Follow up	<p>Ex-post Evaluation → Follow up</p>						

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**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 roads		
	1) Within the site	•	
	2) Outside the site		•
5	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) 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	To bear the following commissions of the Japanese bank for banking services based upon the B/A		
	1) Advising commission of A/P		•
	2) Payment commission		•
7	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	•	
	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	•	
8	To accord Japanese nationals, whose service 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		•
9	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		•
10	To maintain and use properly and effectively the facilities contracted and equipment provided under the Grant Aid		•
11	To bear all the expenses, other than those to be borne by the Grant Aid, 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)

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**Minutes of Discussions**  
**on the Preparatory Survey**  
**on the Project for the Improvement of Radio Broadcasting Network**  
**for Administration of Disaster Prevention**  
**in Solomon Islands**  
**(Explanation on Draft Report)**

In October 2009, Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Preparatory Survey Team on "The Project for the Improvement of Radio Broadcasting Network for Administration of Disaster Prevention" (hereinafter referred to as "the Project") to the Government of Solomon Islands, and through discussion, field survey as well as after technical examination of the results in Japan, JICA prepared a draft report of the study.

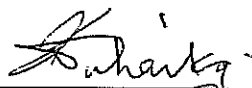
In order to explain and consult with the concerned officials of the Solomon Islands on the components of the draft final report, JICA sent to the Solomon Islands the Draft Final Report Explanation Team (hereinafter referred to as "the Team") which is headed by Mr. Tokuro Watanabe, Resident Representative, JICA Solomon Islands Office from December 13 to 20, 2010.

In the course of discussions and field survey, both sides confirmed the main items described in the attached sheets.

Honiara, January 7, 2011

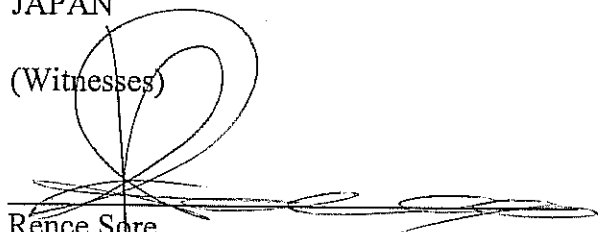


Tokuro Watanabe  
Leader  
Preparatory Survey Team  
Japan International Cooperation Agency  
JAPAN



John Tuhafka  
Secretary to Cabinet  
Office of the Prime Minister and Cabinet  
Solomon Islands

(Witnesses)



Rence Sore  
Permanent Secretary  
Ministry of Environment, Climate Change,  
Disaster Management, & Meteorology  
Solomon Islands



Cornelius Rathamana  
General Manager  
Solomon Islands Broadcasting Corporation  
Solomon Islands



## ATTACHMENT

### 1. Component of the Draft Final report

The Solomon Islands side has agreed and accepted in principle the component of the draft final report and the draft detailed specifications of the equipment explained by the Team.

### 2. Japan's Grant Aid Scheme

The Solomon Islands side understands the Japan's Grant Aid scheme and the necessary undertakings to be taken by the Solomon Islands as explained by the Team and described in the Minutes of Discussions signed by both sides on October 8, 2009.

### 3. Schedule of the Survey

JICA will complete the final report in accordance with the confirmed items and send it to the Solomon Islands by the beginning of May, 2011.

### 4. Other Relevant Issues

4-1. Both sides confirmed that the antenna construction planned site will be relocated to the place at Lot No.10 of LR83/R Parcel Number 192-004-0005 shall be resumed for the Project assurance on behalf of the Solomon Islands.

4-2. Both sides agreed the components of the Project as shown in Annex-1.

4-3. The Solomon Islands side agreed to apply for budget allocation from national treasury annually to operate and maintain the equipment described on the draft final report as a part of subsidy to Solomon Islands Broadcasting Corporation" (hereinafter referred to as "SIBC").

4-4. Both sides confirmed that the following undertakings shall be taken by the Solomon Islands at its expense.

- A) Weeding and removal of obstacles from the new antenna site.
- B) License fee for HF Radio (per year)
- C) Construction of perimeter fencing and a gate at the new antenna site
- D) Procedure fee for the A/P facility

4-5. Both sides agreed that the draft detailed specifications of the equipment are confidential and should not be duplicated or released to other parties in order to secure the fairness of the tender of the Project.

4-6. Both sides agreed that the Project Cost Estimation, as attached in Annex-2, should never be duplicated or released to other parties before the signing of all the Contract for the Project.

Both sides agreed that the Project Cost Estimation will be amended after review for the location of alternative antenna area.

4-7. The Solomon Islands sides shall organize and confirm the frequency allocation (159.100MHz and 159.700MHz or 158.500MHz) regarding the Disaster Prevention Broadcasting Communication Radio System. The Solomon Islands sides shall submit an official letter to JICA Solomon Office for informing the result by January 31, 2011.



4-8. The Solomon Islands side shall remove all unexploded ordnances (UXO) and land mines from the Project areas, which need the above clearance activities shown by the Japanese side during this preparatory survey period. The Solomon Islands side shall acquire official certificates of completion for all of them, and shall submit an official letter to the JICA Solomon Office to notify the result by January 31, 2011.

4-9. The Solomon Islands side shall secure enough budget and personnel necessary for the operation and maintenance of the radio broadcasting networks constructed by the Project, including periodical maintenance works after the completion of the Project. The necessary budget for the undertakings to be taken by the Solomon Islands side shall be estimated and shown by the Team at the timing of explanation of DBD. The Solomon Islands side shall submit the budget figures for the fiscal year 2011, by January 31, 2011.

<List of Annex>

Annex-1 Component of the Project

Annex-2 Project Cost Estimation

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## Component of the Project

Item	Q'ty
1. Short Wave Transmitter System	1 set
2. Short Wave Antenna System	1 set
3. Power Supply Equipment for Transmitter	1 set
4. Disaster Prevention Broadcasting Communications Radio System	1 set
5. SIBC Equipment (Program Transmission Link Equipment)	1 set
6. Maintenance Equipment and Tools	1 set
7. Spare Parts	1 set
8. Consumable Parts	1 set

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**This Page is closed due to the confidentiality**

## 資料 - 5 事業事前計画表（基本設計時）



## 5. 事業事前計画表(基本設計時)

<b>1. 対象事業名</b>
ソロモン国 防災ラジオ放送網改善計画
<b>2. 要請の背景(協力の必要性・位置付け)</b>
<p>(1) ソロモン国(以下、「ソ」国と称す)は、2000年の部族抗争激化後、著しく疲弊した経済の建て直しのため策定された「ソ」国 国家経済復興改革開発計画(以下、NERRDP)(2003年～2006年)により、「生産部門の活性化と社会基盤の整備」、「基本的な社会サービスの回復と社会開発の促進」を重点的に取り組んできた。その後 NERRDP 終了後に引き継がれた中期開発戦略(Medium Term Development Strategy 2008 to 2010)の6項目の重点戦略のうち、当該セクターは、「効果的社会サービスの提供」の文脈の中で、自然災害等の有事において、「ソ」国国土へ迅速かつ正確な情報の伝達を使命として担っている。全国へ迅速に情報伝達が可能な設備が乏しい中、公共放送の果たす役割は非常に大きい。</p> <p>(2) 「ソ」国では、ソロモン放送公社(以下、SIBC)により、短波、中波及びFMラジオ放送での全国放送が実施されてきた。しかしながら、既設ラジオ放送網は送信機の故障による停波、または電力事情による影響のため停止、現用機の機能が不十分なため、従来の放送サービスエリアから大きく後退し、国民に対する情報伝達に関して支障を来している。特に災害発生時(発生予測も含む)に対する効果的な代替案はなく、国土全体を放送サービスエリアとすることが可能な短波放送を改善し、国民の安全で安定した生活環境を確保するため、災害時に対応できる短波放送網の改善が喫緊の課題となっている。これに伴い、首都ホニアラより全国土に対して緊急災害・防災放送を実現できる短波ラジオ放送網整備に関する無償資金協力が要請された。</p> <p>(3) この要請を受けて我が国は協力準備調査を実施し、無償資金協力事業としての必要性、緊急性、妥当性を確認するとともに、「ソ」国に本計画によって導入される機材の維持管理能力及び離島におけるラジオ放送の役割や緊急災害・防災放送に対する要望が強いことを確認した。</p> <p>(4) 本計画は短波ラジオ放送機材及び緊急災害/防災放送用連絡機材の調達・据付けを行うことを目的としている。これにより、離島を含むソロモン国全土に短波ラジオ放送が提供されるとともに、災害などが発生した際に、信頼性の高い緊急災害情報を迅速かつ正確に短波ラジオ放送を通じて全国民に対し提供することが可能となる。</p>
<b>3. プロジェクト全体計画概要</b>
<p>(1) <b>プロジェクト全体計画の目標(裨益対象の範囲及び規模)</b> 短波ラジオ放送が再開され、「ソ」国全土の国民に対し緊急災害/防災情報が迅速且つ確実に伝達される。 《裨益対象の範囲及び規模》 SIBC のラジオ放送を受信可能である「ソ」国全国民(534,000人)</p> <p>(2) <b>プロジェクト全体計画の成果</b> <u>短波ラジオ放送機材及び緊急災害/防災放送用連絡システムが調達・据付けされる。</u> 離島の住人を含む全国民に緊急災害/防災放送が提供される。</p> <p>(3) <b>プロジェクト全体計画の主要活動</b></p> <ol style="list-style-type: none"> <li>1) <u>短波送信機、短波ラジオアンテナ、自動電圧制御装置、緊急災害/防災用連絡システム等の機材を調達・据付する。</u></li> <li>2) 緊急災害放送の迅速化及び効率化を実現する。</li> <li>3) 運営・維持管理体制を整え、必要な予算措置及び人員の配置を行う。</li> <li>4) 上記施設・機材に関する運営・維持管理の予算を確保する。</li> </ol> <p>(4) <b>投入(インプット)</b></p> <ol style="list-style-type: none"> <li>1) 日本側(=本案件): 無償資金協力(施工・調達業者契約認証まで非公開)</li> </ol>

<p>2) 「ソ」国側</p> <p>(ア) 運営維持管理費及び要員の確保</p> <p>(イ) 施設・機材の運営・維持管理に係る経費</p> <p>(5) 実施体制</p> <ul style="list-style-type: none"> <li>・ 主管官庁: 首相府</li> <li>・ 実施機関: ソロモンメディア放送公社 (Solomon Islands Broadcasting Corporation: SIBC)</li> </ul>						
<p><b>4. 無償資金協力案件の内容</b></p>						
<p>(1) サイト</p> <p>「ソ」国ホニアラ</p> <p>(2) 概要</p> <p>SIBCにおいて、放送設備・機材(短波送信システム、短波アンテナシステム、送信機用電源設備、緊急災害/防災放送用連絡システム、保守用測定器・工具、消耗品)の調達・据付工事</p> <p>(3) 相手国側負担事項</p> <p>1) プロジェクト・サイト近隣における一時保管場所の提供、2) 送信局舎の修繕(短波送信機のためのエアコン設置工事を含む)、3) 新アンテナ用地内の草刈り及び障害物の撤去、4) 撤去資材の廃棄場所の確保、5) 新送信アンテナ周囲フェンス設置、6) 本計画に関し受入国で課される関税、内国税及び他の会計の徴収等の免除</p> <p>(4) 概算事業費</p> <p>施工・調達業者契約認証まで非公開</p> <p>(5) 工期</p> <p>18.5ヶ月(各詳細設計、入札期間を含む)</p> <p>(6) 貧困、ジェンダー、環境及び社会面の配慮</p> <p>なし</p>						
<p><b>5. 外部要因リスク</b></p> <p>大きな政治、経済混乱がない。</p>						
<p><b>6. 過去の類似案件からの教訓の活用</b></p> <p>なし</p>						
<p><b>7. プロジェクト全体計画の事後評価に係る提案</b></p> <p>(1) プロジェクト全体計画の目標達成を示す指標</p> <table border="1"> <thead> <tr> <th>項目</th> <th>現状(2009年)</th> <th>実施後3年後(2015年)</th> </tr> </thead> <tbody> <tr> <td>ラジオ放送状況</td> <td>短波ラジオ放送は機材の故障のため夜間用のみ稼動している。</td> <td>短波ラジオ放送が復旧し、ホニアラから直接「ソ」国国土へ24時間ラジオ放送が可能となる。</td> </tr> </tbody> </table> <p>(2) その他の成果指標</p> <p>特になし</p> <p>(3) 評価のタイミング</p> <p>2015年以降(実施後3年後)</p>	項目	現状(2009年)	実施後3年後(2015年)	ラジオ放送状況	短波ラジオ放送は機材の故障のため夜間用のみ稼動している。	短波ラジオ放送が復旧し、ホニアラから直接「ソ」国国土へ24時間ラジオ放送が可能となる。
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## 資料 - 6 フィールドレポート

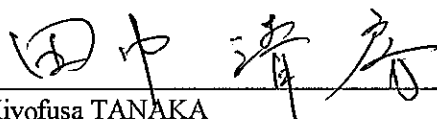
**PREPARATORY SURVEY (FOR BASIC DESIGN)  
ON  
THE PROJECT  
FOR  
THE IMPROVEMENT OF RADIO BROADCASTING NETWORK  
FOR  
ADMINISTRATION OF DISASTER PREVENTION  
IN  
SOLOMON ISLANDS**

**FIELD REPORT**

**15th October, 2009**

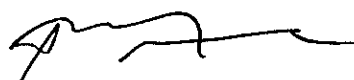
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**Table of Contents**

**1. Introduction ..... 3**

**2. Present Situation of the Project site ..... 3**

    2-1 SIBC’s SW Radio Transmitter and Radio Transmitting Building ..... 3

    2-2 SW Antenna Site ..... 4

**3. Basic Design Concept..... 4**

    3-1 Climatic Conditions ..... 4

    3-2 Applicable Design Standards..... 5

    3-3 Other Issues for Design ..... 5

**4. Equipment Plan ..... 5**

    4-1 List of the Planned Equipment Component ..... 6

    4-2 Key Specifications of the Equipment..... 8

**5. Results of the Other Studies ..... 14**

**6. The Work Demarcation of the Project..... 15**

    6-1 Principle ..... 15

    6-2 Renovation Work of Transmitting Building (Henderson Transmitter Site)..... 16

    6-3 Tax Exemption Procedure ..... 18

**7. Budget Estimation of the Undertakings by SIBC (the Solomon Islands side)..... 19**

**8. Implementation Schedule of the Project (Tentative)..... 20**

**9. Operation and Maintenance and Financial Plans for SIBC..... 21**

    9-1 Budget Estimation of Operation and Maintenance..... 21

    9-2 Training Cost for SIBC’s Staffs ..... 22

    9-3 Financial Plan for SIBC ..... 23

**10. Benefit of the Project..... 25**

**11. Drawings for Basic Design..... 25**

**Annex-1: Letter of arrangement land secure by Ministry of Lands, House and Survey**

**Annex-2: MOU (draft) on Disaster Broadcasting**

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## 1. Introduction

This Field Report is to establish mutual understandings between JICA Study Team (hereinafter referred to as “the Team”) for the project for the Improvement of Radio Broadcasting Network for Administration of Disaster Prevention (hereinafter referred to as “the Project”) and the Solomon Islands side such as Solomon Islands Broadcasting Corporation (hereinafter referred as “SIBC”) and relevant organizations of the Government of Solomon Islands on the technical and engineering aspects for the Project. This has been also prepared by the Team based on the results of the field survey and discussions with the Solomon Islands side.

Through the field survey, the Team confirmed the present condition of the existing radio broadcasting facilities in SIBC which services has been damaged due to technical problems, those facilities force reduce power. Instead SIBC started MW Radio broadcasting services to the three islands in the country. However the existing MW transmitters in some islands have stopped due to mechanical trouble and no radio service can reach to those islands. The existing transmitting building has become superannuated and the Project is desired for the country to recover SW radio broadcasting services by replacing to new facilities.

The Project aims to provide radio broadcasting services reliably to all the islands in the country by establishing SW radio broadcasting system. Both the Solomon Islands and the Japanese sides have recognized to proceed the plans of the equipment component, specifications and undertakings by the both sides under the Project as described in this report.

**It is also noted that all the information as described in this report will be decided after further studies in Japan and consultations with JICA and relevant organizations of the Government of Japan. JICA will submit the draft final report, which describes the final component of the Project, to the Solomon Islands side in February 2010 as stated in the Minutes of Discussions (M/D) signed by both parties on 8th October 2009.**

## 2. Present Situation of the Project site

### 2-1 SIBC’s SW Radio Transmitter and Radio Transmitting Building

The existing Radio Transmitting Building was constructed in 1982. At present, there can be seen serious damage due to rain in the house as well as missing of air-cooling in the room. This situation is disturbing proper operating radio transmitter, renovation or repairing of the building shall be required for new SW Transmitter

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2-2 SW Antenna Site

The proposed site for the new SW Antenna is located direction of west the SIBC's existing transmitter house. There is a possibility that unexploded bombs are buried in the ground, which will be removed by the Solomon Islands side if the Project is approved for implementation. Those bushes shall be removed by the Solomon Islands side before foundation work of the new SW Antenna by the Japanese side. The Land Certificate for the project site is shown in Annex 1.

3. Basic Design Concept

In order to design the buildings and plan the equipment component of the Project, the following technical design concept shall be considered.

3-1 Climatic Conditions

(1) Altitude of the Site

- Radio Transmitter House: 25 meter (above sea level)
- SW Antenna: 19 meter (above sea level)

(2) Temperature

- Minimum: 19.9 °C in 2008
- Maximum: 32.8 °C in 2008

(3) Humidity: Max. 99 % in 2008

(4) Maximum Sustained Wind 39.0 m/s in 2008

(5) Seasons

- Rainy season: January to April
- Dry season: May to December

(6) Annual Rainfall: 2,726 mm in 2008

(7) Earthquake: Many earthquakes have been recorded

(8) Thunderstorms: 20days thunderstorms per year (SIEA regulation)

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## 3-2 Applicable Design Standards

Table 3-2-1. Applicable Design Standards

	Name of Standards	Application
(a)	International Electrotechnical Commission (IEC)	Main functions of electrical goods in general
(b)	International Standardization Organization (ISO)	Performance of industrial products in general
(c)	Japanese Industrial Standards (JIS)	Industrial products in general
(d)	Japanese Electrotechnical Commission (JEC)	Electrical goods in general
(e)	The Standard of Japan Electrical Manufacturer's Association (JEM)	Same as above
(f)	Japan Electric Association Code (JEAC)	Same as above
(g)	Japan Cable Maker's Association Standard (JCS)	Electrical wires and cable
(h)	Electrical Industrial Association of Japan (EIAJ)	Electrical goods in general
(i)	International Telecommunication Union (ITU)	Electrical goods in general
(j)	Society of Motion Picture and Television Engineers (SMPTE)	Broadcasting equipment in general
(k)	Other related Japanese and International standards such as AES/EBU (Audio Engineering Society/ European Broadcast Union)	Industrial products in general
(l)	International Civil Aviation Organization (ICAO)	Antenna Mast
(m)	Electronic Industries Alliance of the U.S.A (EIA)	Same as above
(n)	Japanese building code and standards	Building design

## 3-3 Other Issues for Design

- (1) AC Power Supply: 415 V (3 phase) or 240 V (single phase), 50Hz
- (2) Soil Bearing Capacity: 150 kN/m<sup>2</sup> for the Antenna site

## 4. Equipment Plan

The Team and SIBC have agreed to the following contents of the equipment plan (hereinafter referred to as "the Equipment") as a draft schedule for further studies by the Team in Japan, such as project cost estimation, preparations of the detail equipment specification and the draft final report, etc.

## 4-1 List of the Planned Equipment Component

Category	No.	Description	Q'ty
A	1	<b>Short Wave Transmitter System (Henderson Transmitter Site)</b>	1 lot
	1.1	10kW AM Short Wave Transmitter (Day/Night 2 Frequency Changeover Type)	1 set
	1.2	Coaxial Patch Panel	1 set
	1.3	Directional Coupler	1 set
	1.4	Dummy Load	1 set
	1.5	Program Input Equipment (PIE)	1 lot
	(1)	Control Clock	1 set
	(2)	Line Input Select Switch and Monitor Panel	1 set
	(3)	Audio Processor Amplifier	1 set
	(4)	Audio Distribution Amplifier	1 set
	(5)	Monitor Speaker and Monitor Amplifier	1 set
	(6)	AM Monitor Receiver with Receiving Antenna	1 set
	(7)	FM Monitor Receiver with Receiving Antenna	1 set
	(8)	VHF Audio Program Transmission Link Receiver (for SW Broadcasting)	1 set
	(9)	Audio Jack Panel	1 set
(10)	NFB Panel	1 set	
(11)	Rack	1 set	
A	2	<b>Short Wave Antenna System (Wide Band Dipole Antenna) (Henderson Transmitter Site)</b>	1 lot
	2.1	Antenna Mast	1 set
	2.2	Antenna Element	1 set
	2.3	Antenna Feeder	1 set
	2.4	Balun	1 set
2.5	Earth Ground Mat	1 set	
A	3	<b>Power Supply Equipment for Transmitter (Henderson Transmitter Site)</b>	1 lot
	3.1	Isolation and Lightning Protection Transformer	1 set
	3.2	Automatic Voltage Regulator	1 set
	3.3	Primary Distribution Board (PDB)	1 set
B	4*	<b>Disaster Prevention Broadcasting Communications Radio System</b>	1 lot
	4.1	VHF Radio Transceiver	5 sets
	4.2	VHF Radio Repeater	1 set
	4.3	Power Supply for VHF Radio Transceiver	4 sets
	4.4	VHF Radio Antenna	3 sets
	4.5	Antenna Pole	1 set
4.6	Mobile VHF Transceiver	14 sets	
B	5*	<b>SIBC Emergency Broadcasting Equipment</b>	1 lot
	5.1	VHF Audio Program Transmission Link Receiver with Antenna (for EMG)	1 set
	5.2	FM Monitor Receiver with Antenna	1 set
	5.3	Emergency Break in Detector Equipment	1 set
	5.4	VHF Audio Program Transmission Link Transmitter (for SW Broadcasting)	1 set
	5.5	Automatic Voltage Regulator	1 set



Category	No.	Description	Q'ty
B	6*	<b>Basic Studio Equipment in NDMO (Honiara)</b>	1 lot
	6.1	Audio Mixer	1 set
	6.2	Microphone and Stand	1 set
	6.3	Headphone	1 set
	6.4	VHF Audio Program Transmission Link Transmitter with Antenna (for EMG)	1 set
	6.5	FM Monitor Receiver with Antenna	1 set
	6.6	Audio Distribution Amplifier	1 set
	6.7	Emergency Break in Encoder Equipment	1 set
	6.8	FM Broadcasting Transmitter (100W) with Antenna	1 set
	6.9	Automatic Voltage Regulator	1 set
	6.10	Equipment Rack	1 set
A	7	<b>Maintenance Equipment and Tools</b>	1 lot
	7.1	Oscilloscope	1 set
	7.2	Spectrum Analyzer	1 set
	7.3	Circuit Tester	1 set
	7.4	High Voltage Probe	1 set
	7.5	Liner Detector	1 set
	7.6	Distortion Meter/Oscillator	1 set
	7.7	Audio Attenuator	1 set
	7.8	Tool Kit	1 set
7.9	Safety Belt	2 sets	
A	8	<b>Spare Parts</b>	1 lot
	8.1	Spare Parts for Short Wave Transmitter	1 set
	8.2	Spare Parts for FM Transmitter	1 set
	8.3	Maintenance Kit for Antenna System	1 set
A	9	<b>Consumable Parts</b>	1 lot
	9.1	Fan unit for Transmitter	5 sets
	9.2	Air Filter for Transmitter	5 sets
	9.3	Fuse for Transmitter	5 sets
	9.4	Surge Absorber for Isolation Transformer	5 sets
	9.5	Fuse for PIE	5 sets
A	10	<b>Installation Materials</b>	1 lot
	10.1	Installation Materials for Short Wave Transmitter	1 set
	10.2	Earth Ground System for Short Wave Transmitter (Henderson Site)	1 set
	10.3	Installation Materials for NDMO and SIBC studio	1 set
B	11	<b>Renovation Work of Transmitting Building (Henderson Transmitter Site)</b>	1 lot
	11.1	Renovation Work of Transmitting Building	1 set
	11.2	Air Conditioning System	1 set

\* Item 4, 5, and 6 designed from MOU (draft) on Disaster Broadcasting (Annex-2)

A: Confirmed at M/D

B: Expected equipment that will be requested by SIBC

## 4-2 Key Specifications of the Equipment

### 4-2-1. Short Wave Transmitter System (Henderson Transmitter Site)

#### (1) 10 kW Short Wave Transmitter

Frequency:	9545 kHz/ 6080 kHz
Output Power:	10 kW
Transmitting System	Single
Type:	Fully Solid State
Modulation:	Digital AM modulation
Output Impedance:	50 $\Omega$
Audio Input Level:	0 ~ +10 dBm
Cooling System:	Forced Air Cooling
Power Supply:	AC 415 V, 3 $\phi$ , 50 Hz

#### (2) Coaxial Patch Panel

Type:	U-link Type
-------	-------------

#### (3) Directional Coupler

This is used for measurement of the output system of the transmitter.

#### (4) Dummy Load

Capacity:	10 kW
Impedance:	50 $\Omega$
Cooling System:	Forced Air Cooling

#### (5) Program Input Equipment (PIE) Rack

This is the rack system consisting of the following equipment, which shall be installed in the existing control room.

- Control Clock

This is equipment which changes the frequency of the transmitter of daytime and nighttime by clock.

- Line Input Select Switch and Monitor Panel

It shall include meter panel and line input select and monitor select switch.

- Audio Processor Amplifier

A Multi-band compression shall maintain a high level of average modulation and increase sideband power.

- Audio Distribution Amplifier

Input: 1 x Output 4 or more

- Monitor speaker and amplifier
  - Monitor Amplifier: 20 W or more
  - Panel type monitor speaker
- AM monitor receiver with receiving antenna
  - Receiving range: 150 kHz to 32 MHz
- FM monitor receiver with receiving antenna
  - Receiving range: FM Broadcasting Band
- VHF Audio Program Transmission Link Receiver (for SW Broadcasting)
  - Frequency 170MHz Band
  - Antenna 6 Element or more YAGI Type
- Audio Jack Panel: 20 pairs or more
- NFB Panel Include Main NFB
- Rack 19 inch Rack (EIA Type)

4-2-2. Short Wave Antenna System (Wide Band Dipole Antenna)  
(Henderson Transmitter Site)

It shall be horizontal polarization type short wave wide band dipole antenna.

- (1) Antenna Mast: 15m height two tower
- (2) Antenna Element: Horizontal polarization dipole antenna
- (3) Antenna Impedance 300Ω
- (4) Environmental Performance EIA Specification RS-222
- (5) Earth mat: 30m x 55m Area
- (6) Balun: 50Ω/300Ω
- (7) Antenna Feeder: 300Ω Parallel 2 wire line

4-2-3. Power Supply Equipment for Transmitter  
(Henderson Transmitter Site)

The Isolation & Lightning Transformer, AVR and PDB shall cover the range of voltage fluctuations in consideration with the site condition.

(1) Isolation and Lightning Protection Transform

- Input: AC 415 V, 3 phase 4 wires
- Output: AC 415-240 V

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- Capacity 35 kVA or more
- (2) Automatic Voltage Regulator
  - Capacity: 35 kVA or more
- (3) Primary Distribution Board (PDB)
  - Capacity: 35 kVA or more

4-2-4. Disaster Prevention Broadcasting Communications Radio System

- (1) VHF Radio Transceiver: 140MHz to 170MHz (10W) (\*note 1)
  - Location of the sites SIBC, MET Service (Headquarter),  
Henderson Weather Centre,  
Police Communication Centre,  
Ministry of Mines, Energy and Rural  
Electrification,
- (2) VHF Radio Repeater: 150MHz to 170MHz (10W) (\*note 1)
  - (Two frequency)
  - Location of the sites NDMO Office
- (3) Power Supply for VHF Radio Transceiver:
  - Type Battery with charger
- (4) VHF Radio Antenna: Non-directional Groundplane Type
- (5) Antenna Pole: 10m Height Panzamast
- (6) Mobile VHF Transceiver 140MHz to 170MHz (3W) (\*note 1)
  - Location
 

SIBC	3 set
NDMO	2 set
MET Service	2 set
Police	2 set
Ministry of Mines, Energy and Rural Electrification	4 set
Hospital emergency	1 set

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4-2-5. SIBC Studio Equipment

(1) VHF Audio Program Transmission Link Receiver with Antenna (for EMG):

- Frequency 170MHz Band (\*note 2)
- Antenna 6 Element or more YAGI Type

(2) FM Monitor Receiver with Antenna:

- Receiving range: FM Broadcasting Band

(3) Emergency Break in Detector Equipment:

This equipment switches the audio line to the emergency line by control signal sent from the encoder installed in NDMO.

(4) VHF Audio Program Transmission Link Transmitter (for SW Broadcasting):

- Frequency 170MHz Band
- Output Power 20W or More
- Antenna 6 Element or more YAGI Type

(5) Automatic Voltage Regulator: 500VA or more

4-2-6. Basic Studio Equipment in NDMO

The following measuring equipment shall be provided for maintenance of the Equipment:

- (1) Audio Mixer: 4ch or more
- (2) Microphone and Stand: Dynamic type with Table Stand
- (3) Headphone: Dynamic type
- (4) VHF Audio Program Transmission Link Transmitter with Antenna (for EMG):

- Frequency 170MHz Band (\*note 2)
- Output Power 20W or More
- Antenna 6 Element or more YAGI Type

(5) FM Monitor Receiver with Antenna:

(6) Audio Distribution Amplifier: 1input / 4output more

(7) Emergency Break in Encoder Equipment:

This equipment is sent coded signal to the detector which installs in the SIBC studio through radio link. the control signal changes the audio line to the emergency line.

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(8) FM Broadcasting Transmitter (100W) with Antenna:

Frequency 80MHz Band (\*note 3)  
Output Power 100W or more  
Antenna Non-directional Groundplane Type

(9) Automatic Voltage Regulator: 1kVA or more

(10) Equipment Rack: Small Rack (EIA Type)

(\* Note: SIBC shall inform to the Study Team regarding necessary frequencies by 30<sup>th</sup> October.)

4-2-7. Maintenance Equipment and Tools

The following measuring equipment shall be provided for maintenance of the Equipment:

- Oscilloscope  
Frequency range: DC to 100 MHz
- Spectrum Analyzer  
Frequency range:
- Circuit Tester
- High Voltage Probe  
Attenuation: x 1,000
- Liner Detector:
  
- Distortion Meter/Oscillator  
It shall be provided to measure automatically various audio signal parameters such as Distortion, S/N, etc.
- Audio Attenuator: 4 dial type
- Tool Kit  
It shall be designed for daily and periodical maintenance of broadcasting equipment with a carrying case.
- Safety Belt and Safety Belt (Long type)  
It shall be provided for safety during maintenance work of the antenna tower, etc.
- Storage Rack  
It shall be provided to protect and save the precision equipment and spare parts, such as a microphone and measuring instrument, from damage, salt and humidity.



\* SIBC shall inform the result of discussion with SOLMAS regarding measuring equipment by 30<sup>th</sup> of October.

4-2-8. Spare Parts

The following spare parts shall be provided for repairing work in a short time at a failure:

- Spare Parts for Short Wave Transmitter

(The following contents are included, but not limited to)

PA Module for Transmitter (1 pc each type)

RF Driver Unit for Transmitter

Power Supply Module for Transmitter (1 pc each type)

Control Board for Transmitter

Monitor Board for Transmitter

Power FET for PA Module

Printed Board for AVR Control

- Spare Parts for FM Transmitter
- Maintenance Kit for Antenna System

4-2-9. Consumable Parts

The following consumable parts shall be provided for periodical maintenance works and daily regular works:

- Fan unit for Transmitter
- Air Filter for Transmitter
- Fuse for Transmitter
- Surge Absorber for Isolation Transformer
- Fuse for PIE
- Fuse for AVR

4-2-10. Installation Materials

The following materials shall be provided for the Installation Work of the Equipment (but not limited to):

- Installation Materials for Short Wave Transmitter
- Earth Ground System for Short Wave Transmitter (Henderson Site)
- Installation Materials for NDMO and SIBC studio

## **5. Results of the Other Studies**

The Team carried out the following study(ies) to confirm availability of the Project site for safe operation of the broadcasting equipment.

<Measurement of Voltage Stability>

SIBC has 2 different route of power supply; 1 by public city power operated by Solomon Islands Electricity Corporation (SIEC), another by a stand-by diesel engine generator operated by SIBC to be switched on during power interruption of the public city power. The Team measured a voltage at a location in the existing SIBC's Radio Station Building. The result of the measurement is shown as follows:

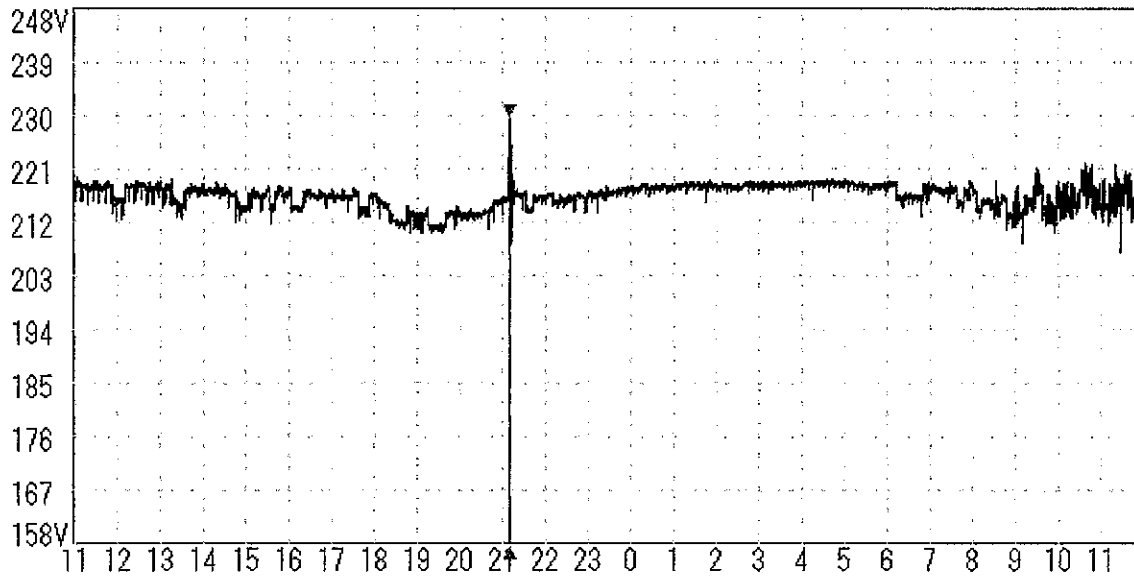
Location: The existing production studio

Period: From "10:56 on 11th Oct. 2009" until "11:53 on 12th Oct. 2009"

Result: See Fig. 7-1.

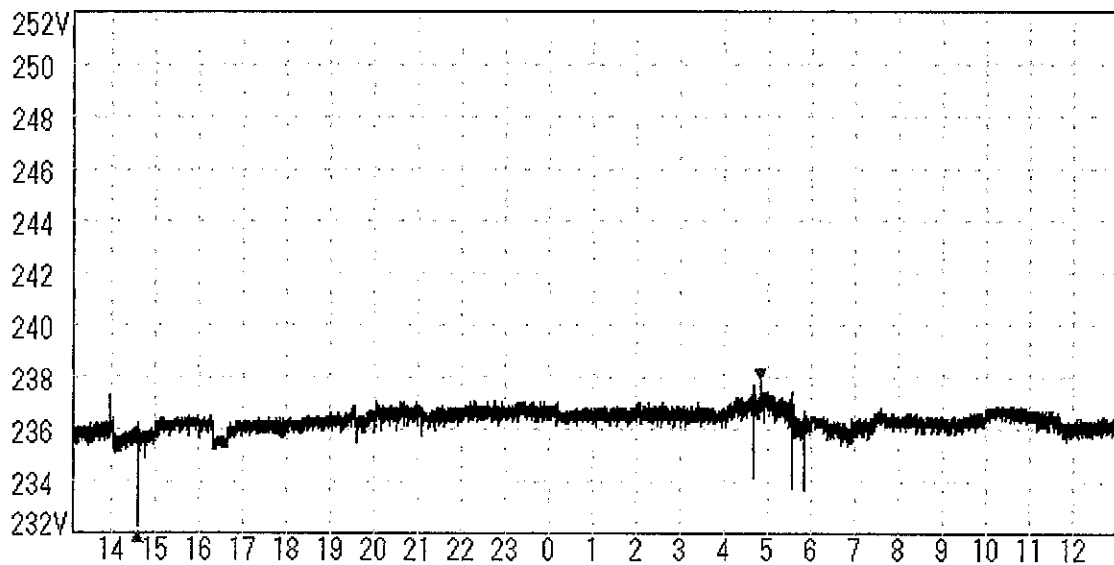
The rated voltage in Solomon Islands is 240V. According to the result, voltage values at the location were measured average of 215V. Although the average of voltage at Transmitting Building was almost satisfied for proper operation, there were sometimes voltage drops lower than permissible level that is -10% (216V) of the rated voltage in the existing production studio. Moreover, lack of power supply is expected in future.

Therefore, the Team plans to equip with UPS and/or AVR with the Equipment to protect from such striking voltage drop for safe operation of the Equipment.



1. Period: From "10:56 on 11th Oct. 2009" until "11:53 on 12th Oct. 2009"
2. Location: Production Studio
3. Max. value: 229.5V at 21:10 on 11th Oct. 2009
4. Min. value: 158.0V at 21:10 on 11th Oct. 2009

Fig. 7-1: Result of Voltage Measuring in the Existing SIBC's Radio Station Building



1. Period: From "13:06 on 1<sup>st</sup> Oct. 2009" until "13:04 on 2<sup>nd</sup> Oct. 2009"
2. Location: Transmitting Building
3. Max. value: 237.8V at 04:50 on 2<sup>nd</sup> Oct. 2009
4. Min. value: 232.2.V at 14:36 on 1<sup>st</sup> Oct. 2009

Fig. 7-2: Result of Voltage Measuring in the Transmitting Building

## 6. The Work Demarcation of the Project

### 6-1 Principle

The work demarcation between the Japanese side and the Solomon Islands side (SIBC and relevant organizations of the Government of Solomon Islands) shall be as shown below.



Table 6-1. The Work Demarcation of the Project

Work Item	Responsibilities		Remarks
	Japanese	Solomon Islands	
(1) Procurement of the Equipment	○		"The Equipment" is defined in the Equipment Plan of Chapter 4.
(2) Transportation of the Equipment to the Project site including insurance	○		Delivery Point: Store yard near the Project site
(3) Tax exemption and custom clearance of the Equipment at the port of disembarkation		○	
(4) Securing store yard for unloading containers of the Equipment near the Project site		○	
(5) Renovation of Transmitting Building in the Project site	*	○	
(6) Installation, Adjustment and Testing of the Equipment	○		
(7) Initial operation & Total system trainings of the Equipment including equipment for the trainings	○		
(8) Bush clearing and Removal of Obstacles in the Project site for the new Antenna		○	Preparatory work including bush clearing and unexploded bomb disposal will be completed before starting foundation work of the new Antenna by the Japanese side.
(9) Securing of yard for rubbish		○	
(10) Test Broadcasting (On Air)	(Advice)	○	
(11) Construction of Fences and Gates around the new Antenna		○	
(12) 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		○	

Note: ○ indicates the side responsible for the work.

\* If SOLMAS will not carry out the Renovation Work, there will be a possibility to include the project. The possibility will be decided after further studies in Japan based on an official request by SIBC mentioning on the M/D.

## 6-2 Renovation Work of Transmitting Building (Henderson Transmitter Site)

SIBC shall carry out renovation work of Transmitting Building

### (1) Layout for SW transmitter equipment.

The Equipment Dimension for new SW Antenna is as follows:



Existing Equipment Location Plan



Repair Equipment Location Plan

(2) Renovation Items are as follows

- a. Removal and Construction of Concrete Block Wall
- b. Mortar with paint external and internal
- c. Sealing board
- d. Floor vinyl tile
- e. Steel sheet roofing

(3) Air Conditioning System

Air Conditioning System shall be prepared for the equipments. Power loss of the equipment is shown Table 6-2.

Table 6-2. Equipment Dimension and Power Loss

Equipment	Width (mm)	Depth (mm)	Power Loss (kW)
SW Transmitter	1,140	810	12.5 (note-1)
PIE Rack	570	650	1.0
AVR	750	650	2.5 (note-2)
Isolation Transformer	1,200	800	1.5 (note-3)
Coaxial Patch Panel	600	450	—
Dummy Road	500	500	—

(note-1)

- 10kW Transmission Power
- 100% DSB modulation
- Efficiency: 55%

(note-2)

*Handwritten signature and initials*

Efficiency: 93%

(note-3)

Efficiency: 95%

### 6-3 Tax Exemption Procedure

The following procedure shows steps necessary to exempt from taxes and custom duty of the Equipment to be procured under the Project. The Solomon Islands side shall undertake arrangement necessary for the exemption of the Equipment without delaying.

- ① Before shipment of the Equipment, the Japanese Contractor shall submit "the Master List of the Equipment" to the Office of the Prime Minister and its copy to SIBC.
- ② The Office of the Prime Minister will submit applications for Tax Exemption of the Equipment to Revenue Office, Ministry of Finance and Treasury with the Master List of the Equipment.
- ③ The approval will be notified from Revenue Office to the Japanese Contractor through Office of the Prime Minister / SIBC.

## 7. Budget Estimation of the Undertakings by SIBC (the Solomon Islands side)

For the undertakings to be done by the Solomon Islands side (SIBC and relevant organizations of the Government of Solomon Islands) as shown in Chapter 7 above, The Team estimated the budget necessary for the undertakings to be secured by the Solomon Islands side as follows:

Table 7-1. Budget Estimation of the Undertakings by the Solomon Islands side

Item	Estimated Cost (SBD)	Remarks
(1) Securing store yard for unloading containers of the Equipment near the Project site	0	SIBC will utilize the existing store yard near the Project site.
(2) Bush clearing and Removal of Obstacles in the Project site for the new Antenna	800	
(3) Removal work of the existing equipment and cables including Shifting work of the existing Transmitter	2,520	
(4) Securing of yard for rubbish	0	
(5) Provision of new license acquisition of required frequency, and annual rental fee. (New frequency) 1) STL NDMO to ISBC - Frequency : 170MHz Band - Power : 20W 2) FM Radio from NDMO - Frequency : 80MHz band - Power : 100W 3) Communications Radio - Frequency : 140MHz to 170MHz (2 frequency) - Power : 20W	4,000	1 frequency @ SBD 1,000 x 4 = 4,000/ year
(6) Construction of Fences and Gates around the new Radio Station Building	116,000	
(7) Renovation Work of Transmitting Building (Henderson Transmitting Site)	300,000	
<b>Total amount:</b>	<b>423,320</b>	

\* Bank commission for AP shall be need 0.1% of the Project Budget

### 8. Implementation Schedule of the Project (Tentative)

The project for Improvement of Radio Broadcasting Network for Administration of Disaster Prevention in Solomon Islands

**Implementation Schedule (Tentative)**

Item	2010												2011											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
1. Approval by Cabinet, Exchange of Notes (E/N) and Grant Agreement (G/A)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼												
2. The Consulting Services Agreement between TMD and the Consultant and Preparation of the Tender Documents																								
3. Tender Notice, Tender Opening and Evaluation																								
4. The Contract between SIBC and Japanese Supplier																								
5. Procurement and Installation of the Equipment ★ <b>Hand-over</b>																								
Group-1: Materials for SW Antenna Foundation																								
Group-2: SW Antenna System																								
Group-3: SW Transmitter System, SIBC Studio Equipment, NDMO Equipment, Maintenance Equipment and Tools, Spare Parts and Consumable Parts																								
Group-4: <i>Option</i> Extension Work of SW Transmitter Room																								
6. Undertakings by the Solomon Islands side																								
(1) Securing of Store Yard and Rebuild Yard																								
(2) Bush clearing and Removal of Obstacles in the Project site (including unexploded bombs if any)																								
(3) Removal work of the existing equipment and cables (if any) including shifting work of the existing facilities																								
(4) Provision of the New Transmitter Compartment																								
(5) Provision of Power Supply from the existing installation to the new Transmitter Compartment																								
(6) Connection to the New System and Test Broadcasting																								

\* Renovation work shall not be done without an official request by SIBC anytime.

*Handwritten signatures and initials: a large signature and the letters 'CR'.*

**9. Operation and Maintenance and Financial Plans for SIBC**

9-1 Budget Estimation of Operation and Maintenance

The Team estimated budget to be secured by the Solomon Islands side necessary for proper operation and maintenance of the facilities after the completion of the Project in the following categories:

(1) Staffing

The Team advises the Solomon Islands side that

1) SIBC should modify the contract of existing security guard for disaster prevention for 24 hours from 2010 (SBD 16,900/year).

2) SIBC should employ additionally one (5) person on duty for 24 hours disaster prevention from 2011 (SBD 130,000/year).

(2) Building

Item	Unit Cost	Every Year	
		Q'ty	Amount
Maintenance of Air Conditioning	1,000	1	1,000
Repairing Electrical Facility	1,400	1	1,400
Painting Antenna Mast	11,400	1	11,400
<b>Total</b>			<b>13,800</b>
SBD Rate			92,000

(3) Spare Parts

Item	Unit Cost	Every Year		Every 3 Years		Every 5 Years	
		Q'ty	Amount	Q'ty	Amount	Q'ty	Amount
Cables	140	3	420				
Microphone(Communication for NDMO)	290	1	290				
Headphone(Communication for NDMO)	290	1	290				
Switches, Connectors, etc.	710	1	710				
Fan Unit for TX	710	1	710				
Air Filter for TX	710	2	1,420				
Various Fuses	290	5	1,450				
Surge Absorber for Iso. Tr. (for Existing)	1,430	1	1,430				
PA Module for TX	1,430		0	3	4,290		
RF Driver Unit for TX	1,430		0	3	4,290		
Power Supply Module for TX	1,430		0	3	4,290		
Various Printed Board	2,860		0	3	8,580		
FET for PA Module	1,430		0	3	4,290		
AVR	7,140		0			1	7,140
UPS	2,860		0			3	8,580
<b>Total</b>			<b>6,720</b>		<b>25,740</b>		<b>15,720</b>
SBD Rate			44,800		171,600		104,800

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## (4) Consumables

Item	Unit Cost	2nd year		3rd year		4th year and after	
		Q'ty	Amount	Q'ty	Amount	Q'ty	Amount
CD-R (Media)	1	3,000	3,000	3,000	3,000	2,000	2,000
Total			3,000		3,000		2,000

The above quantities of consumables are estimated on the basis of:

- Consumables to be used in the 1st year after the completion of the Project are 3,000 pcs of CD-R which will be provided under the Project for the initial operation of the new facility.
- The Solomon Islands side shall secure a budget for consumables to be used in the 2nd year and afterwards.
- 3,000 pcs of CD-R per year until the 3rd year will be required for converting the SIBC's existing archives to different format of the new media.
- After the 4th year, 2,000 pcs of CD-R per year will be used for regular works.

## (5) Reserve Fund for Replacing to the New Facilities (For 10 years)

Item	Unit Price	Q'ty	Amount
Transmitter	714,000	1	714,000
Guy wires and Insulators	143,000	1	143,000
Studio Equipment	571,000	1	571,000
Air Conditioning	43,000	1	43,000
Back up Generator	43,000	1	43,000
Total			1,514,000

SBD Rate 10,093,333

## 9-2 Training Cost for SIBC's Staffs

The Team estimated budget to be secured by the Solomon Islands side necessary for training programmes plan in the following table, necessary for SIBC's management to achieve the benefits of the Project below-mentioned in Chapter II.

Training Plan (1): Number of person	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1. Overseer Training for the Radio Broadcasting by own fund (1)	10,000		10,000		10,000		10,000		10,000		10,000	
2. Workshop and Training in country(4)	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
3. Overseer Training for the Radio Broadcasting by ODA (1)	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Total Cost	16,000	6,000	16,000	6,000	16,000	6,000	16,000	6,000	16,000	6,000	16,000	6,000
SBD Rate	106,667	40,000	106,667	40,000	106,667	40,000	106,667	40,000	106,667	40,000	106,667	40,000

Note: Cost of the above Trainings

- 1. 10,000 AS One (1) month training for broadcasting on the school by the Government of Solomon Islands
- 2. 2,000 AS Workshop for Media in Country
- 3. 2,000 AS One (1) month training for broadcasting on the school by ODA scholarship

9-3 Financial Plan for SIBC

The Team advises the Solomon Islands side a financial plan for SIBC by the following table, basing on the financial record of SIBC as of 2008 and 2009 and foreseeing costs through the above-mentioned budget estimation of operation and maintenance and training cost for SIBC's staffs.

The plan also shows that SIBC can renew the MW radio broadcasting equipment to be expected after ten (10) years of the completion of the Project by reserving fund every year.

*Wof CR*



## 10. Benefit of the Project

The Team and SIBC confirmed the benefit of the Project which is to be achieved after three (3) years from the completion of the Project in 2011, as follows.

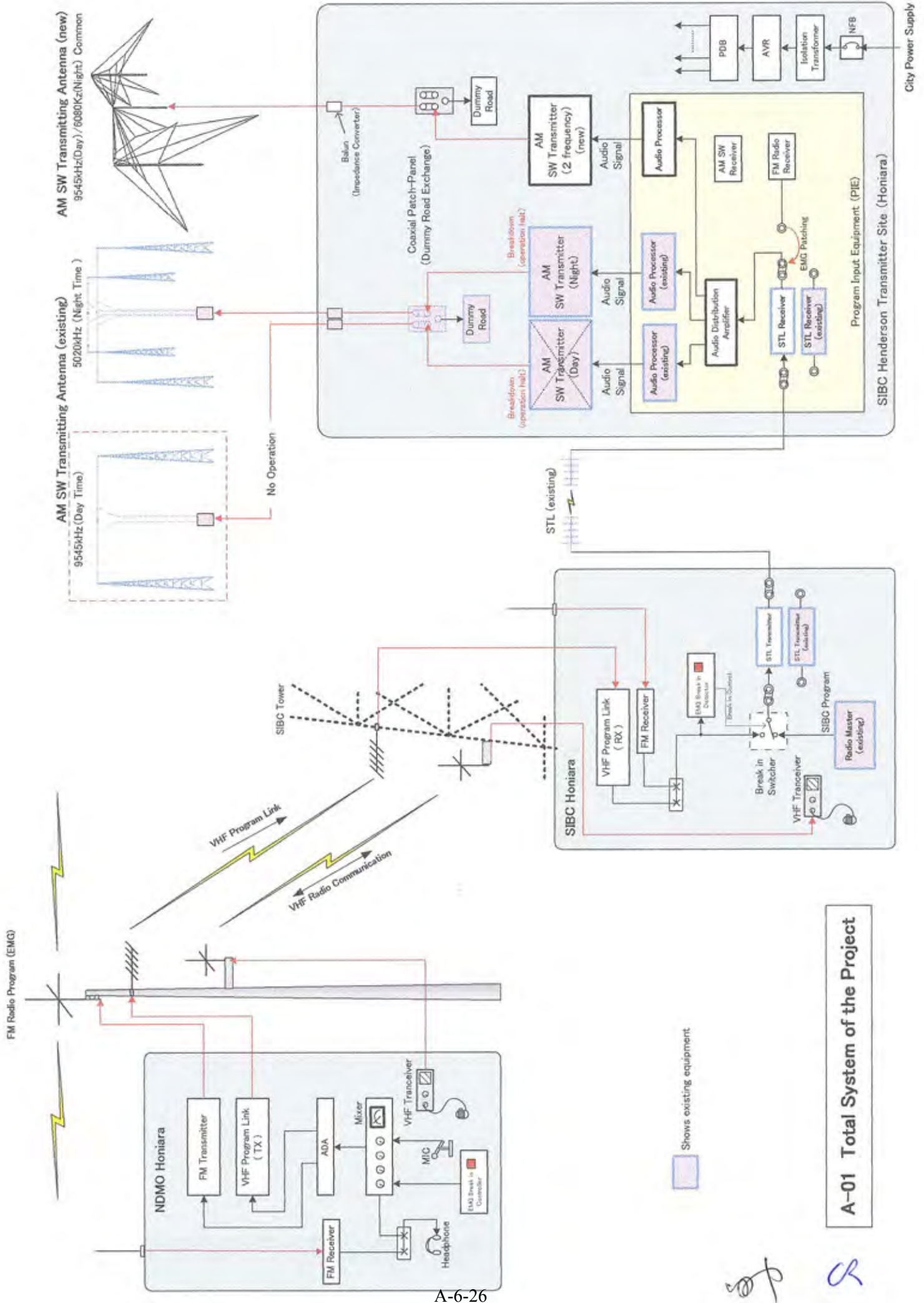
- **To increase the coverage of population of SW approximately 99% of all over the Solomon Islands, and to improve and provide disaster information to the people in Solomon Islands.**
- **To provide reliable and stable 24 hours national SW radio services to the people living in all the islands in Solomon Islands**
- **To increase the programs to cope disaster prevention and mitigation including awareness and preparedness by relevant agencies on disasters.**

## 11. Drawings for Basic Design

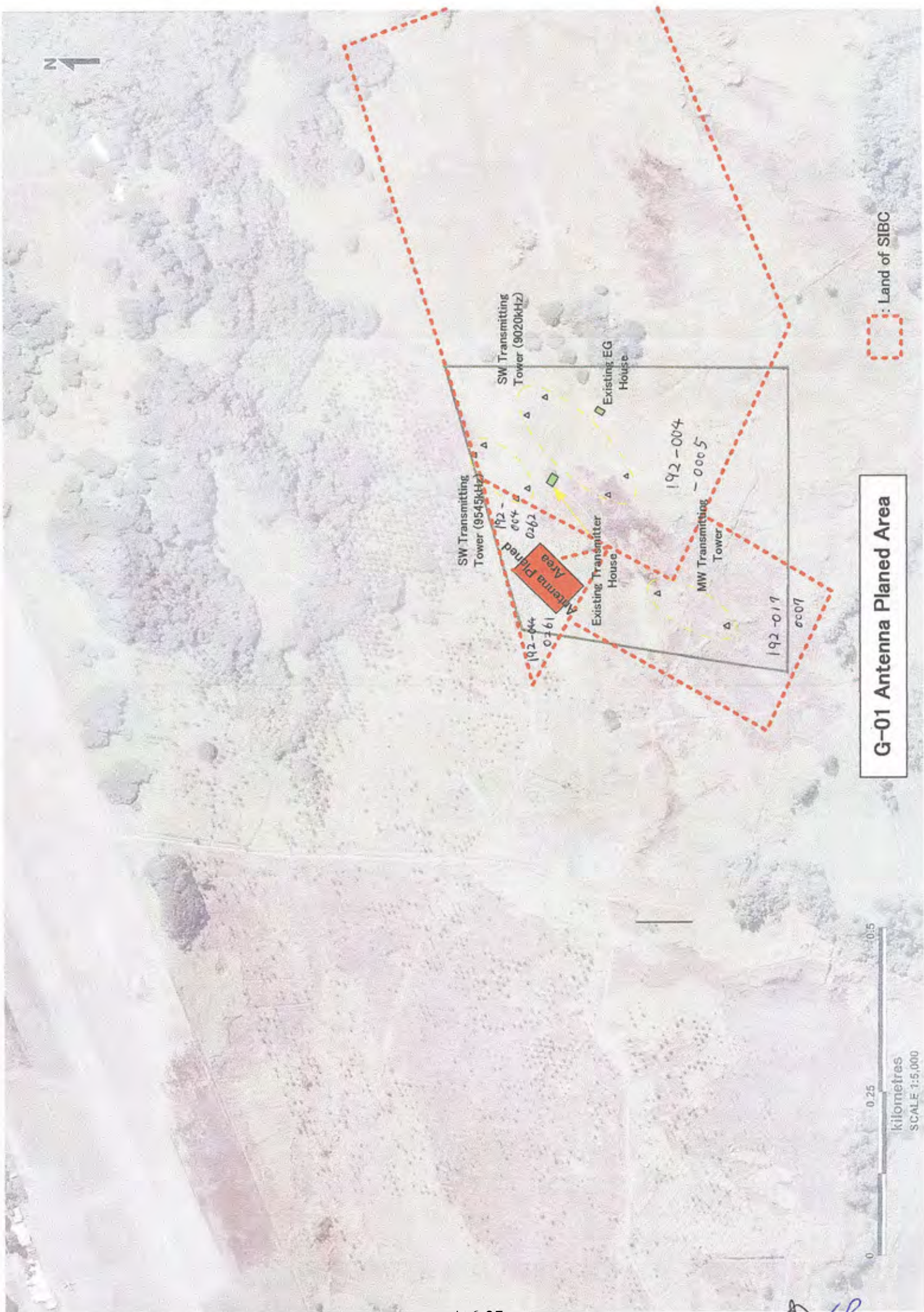
<u>Dwg. No.</u>	<u>Title</u>
A-01	Total System of the Project
G-01	Antenna Planed Area
G-02	SW Service Area (after rehabilitation)
G-03	Proposed Site Plan of Antenna pole in NDMO
G-04	External view of SW Antenna (proposed plan)

(End)









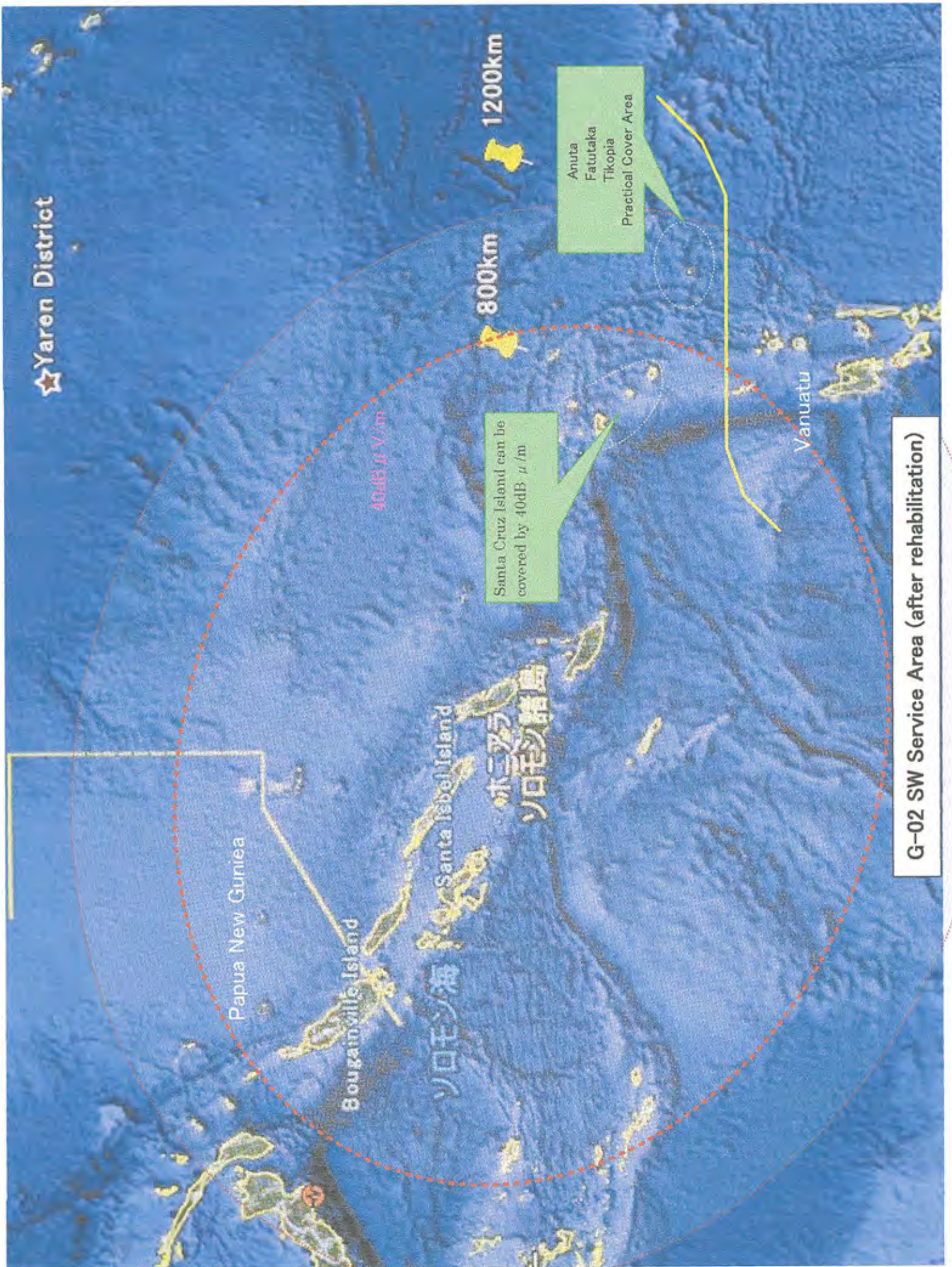
Land of SIBC

### G-01 Antenna Planned Area

0 0.25 0.5  
kilometres  
SCALE 1:5,000

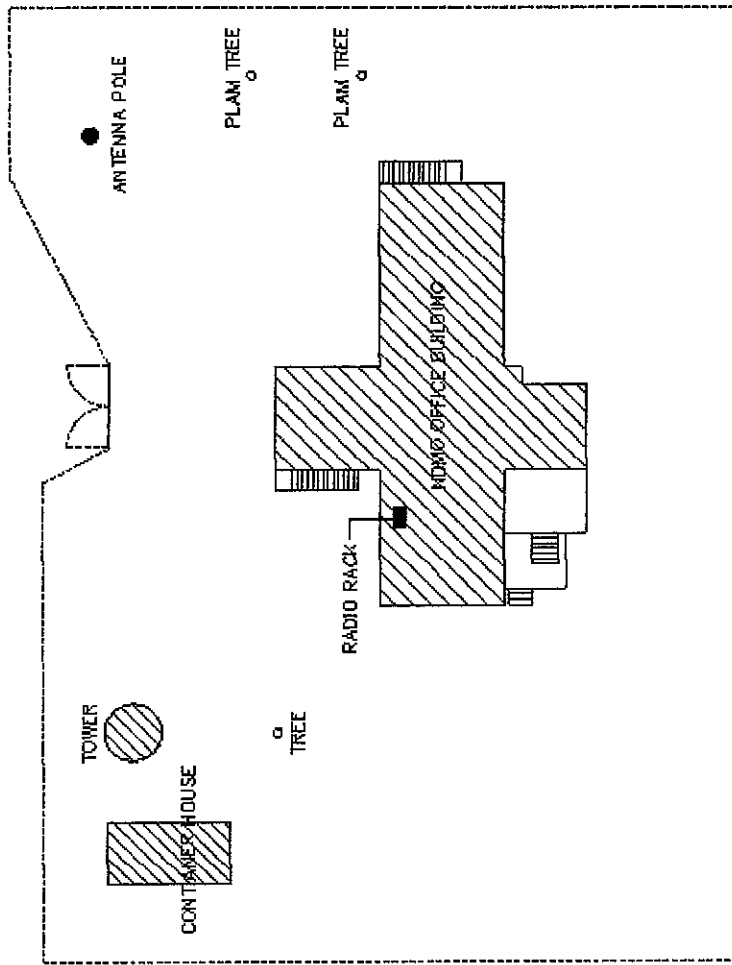
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G-02 SW Service Area (after rehabilitation)

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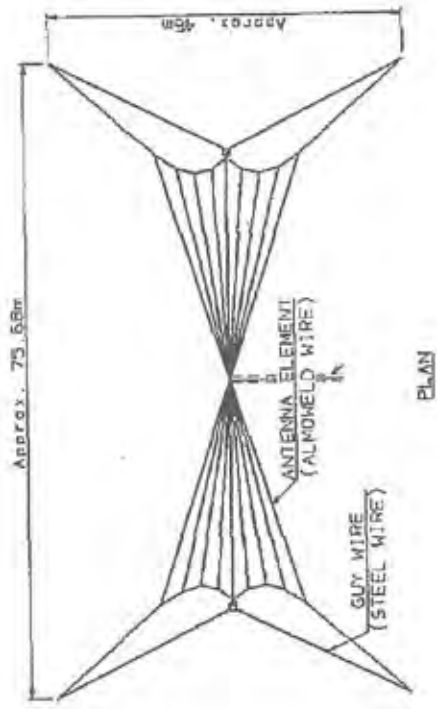
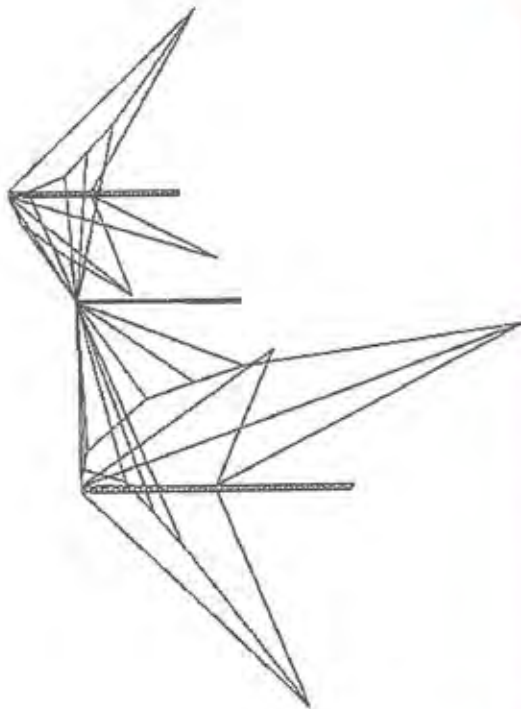
NDMO SITE PLAN

**G-03 Proposed Site Plan of Antenna pole in NDMO**

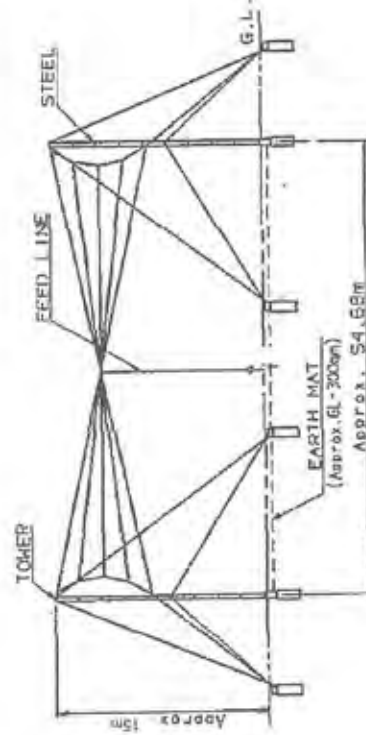
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©	Approximately 80m x Approximately 50m (3496 m <sup>2</sup> )
©	Height : Approximately 15m
©	Reasonable Cost
©	Compatible 2 frequency
○	Frequency : 3MHz ~ 30MHz
	Directivity : Non
	VSWR : Approximately 2.5 max
	Gain : Approximately 8dBi max



**G-04** External view of SW Antenna (proposed plan)

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**Annex-1: Letter of arrangement land secure by Ministry of Lands, House and Survey**

JICA Study Team indicated the location of the Project Site of Henderson Transmitting Station. SIBC shall obtain the Land Certificate for the Project Site of Henderson Transmitting Station from Ministry of Lands, House and Survey, and submit the Certificate to JICA by 15<sup>th</sup> November.

15/10/09.

TO JICA STUDY TEAM.

ATTN. KIYOFUSA TANAKA.

SUBJECT: SIBC ARIEL / ANTENNA PLANT AREA.

The map of Antenna Plant for SIBC future Plan area has been received.

The ministry of Lands and Survey would like to advise that the site identified, covered about 4 private properties in which the office of Commissioner of Lands will work with the tenants to acquire the properties to allow the project to develop.

We would also like to assure your organization that will try our best to assist in securing the site, which we hope to do within a month.

So as government can secure the sites,

we will inform you to begin work on site.

Yours faithfully,

Er

Joseph Pinita

Deputy Comm. of Lands

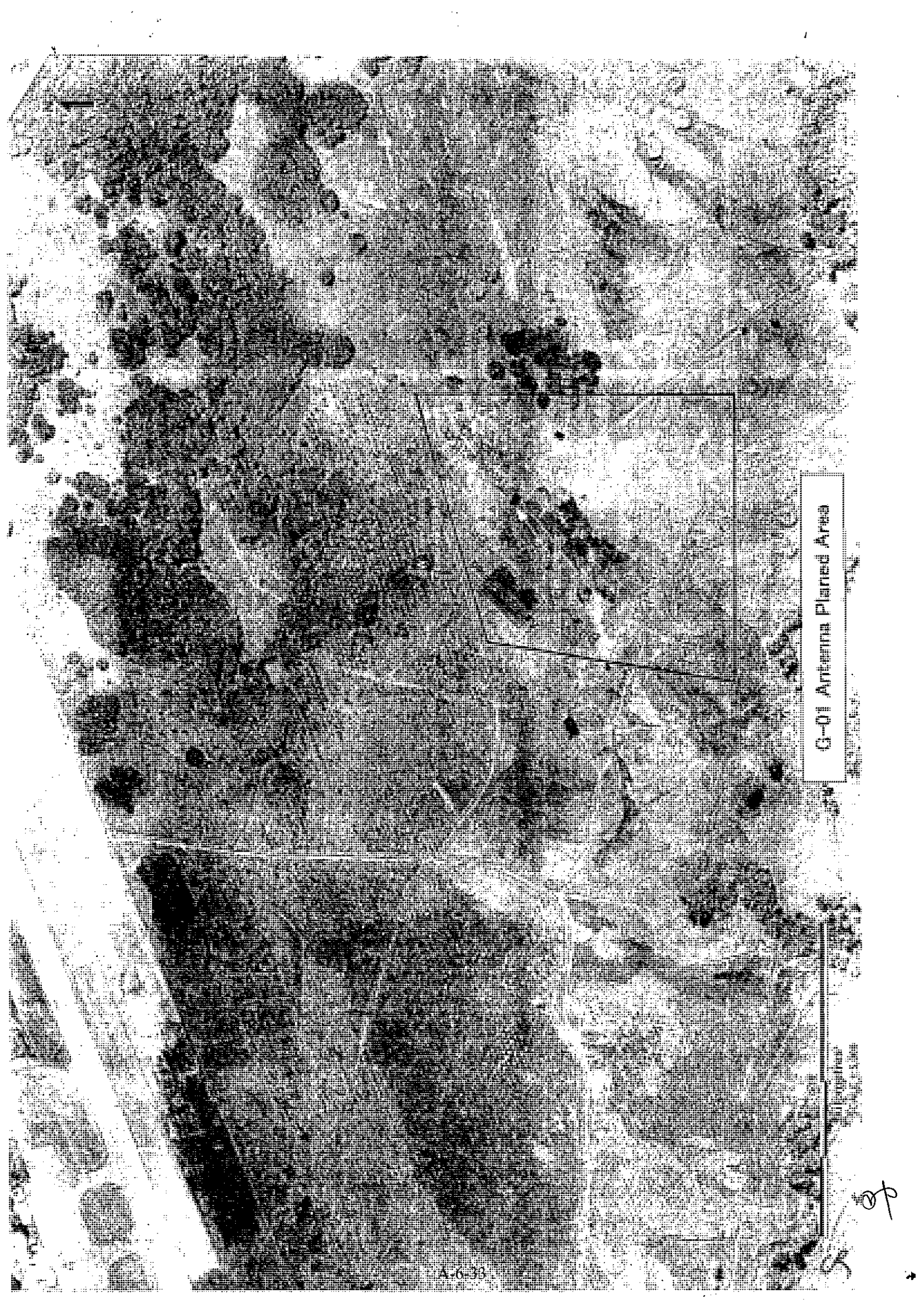
Min. of Lands, Housing & Survey

WOP CR

attached

1. G-01 Antenna Plant Area

2. Antenna Plant Area Site Survey



G-01 Antenna Planned Area

1/1/1978  
1/1/1978

87

*Antenna Planned Area Site Survey*  
Honiarā - Radio Transmission  
Site Survey

Surveyed 23 September 2009

Datum: WGS 1984

Grid: UTM Zone 57 (South)

Elevations above Mean Sea Level

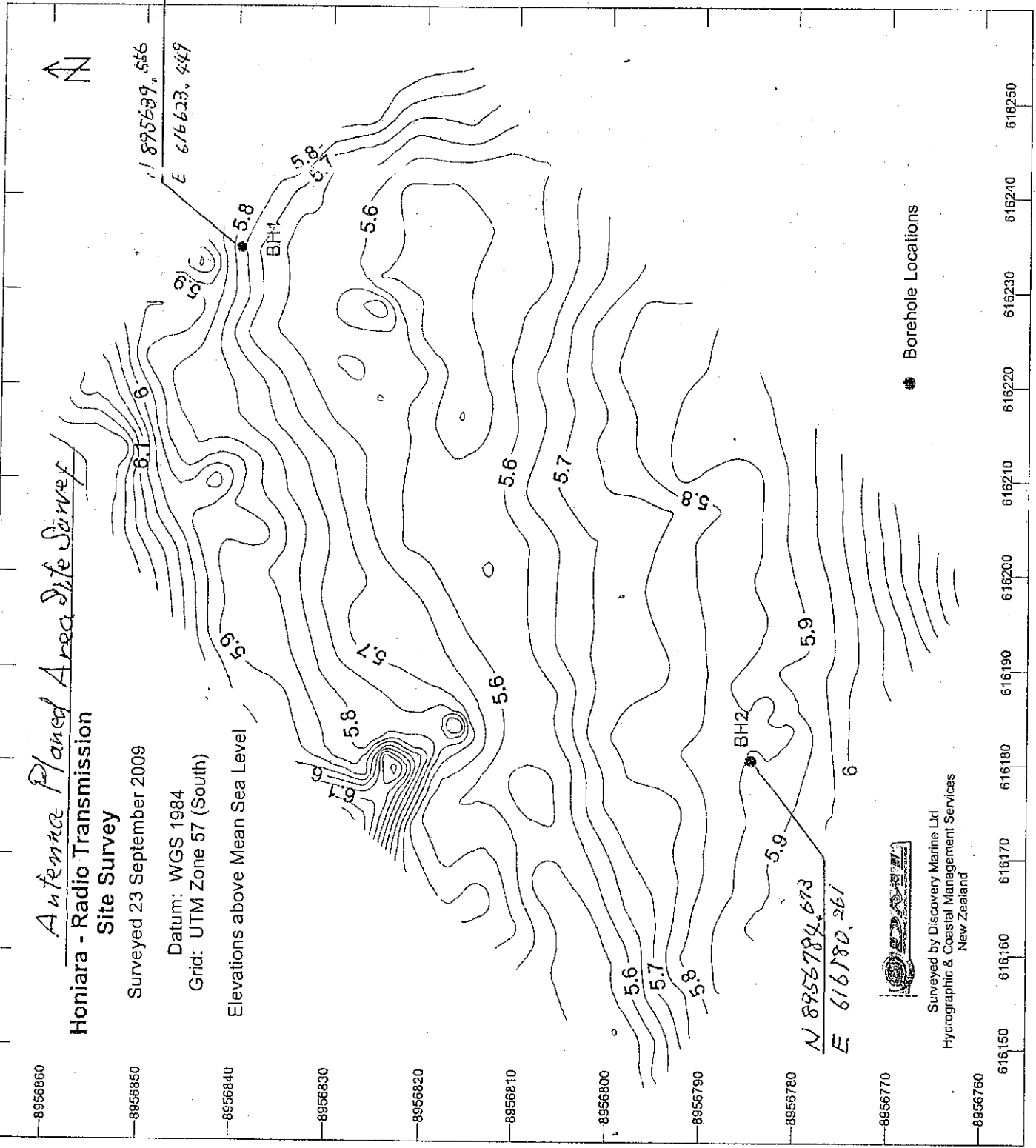
*N 895639, 556*  
*E 616623, 449*

*N 8956784, 673*  
*E 616780, 261*



Surveyed by Discovery Marine Ltd  
Hydrographic & Coastal Management Services  
New Zealand

● Borehole Locations



*map*

*CR*



**Memorandum of Understanding  
(MOU)**

on

**Disaster Broadcasting**

between

Solomon Islands Broadcasting Corporation  
**(SIBC)**

and

National Disaster Council  
**(NDC)**

and

Ministry of Environment, Conservation and Meteorology  
**(MECM)**

**October 2009**

**Honiara  
Solomon Islands**

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# Signatory Page

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Fred Fakari'i  
Chairman  
National Disaster Council  
Ministry of Home Affairs

Date:

A large, stylized signature consisting of a grid of dots forming the letter 'R'.

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Augustine Taneko  
Chairman  
Solomon Islands Broadcasting Corporation

Date:

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Rence Sore  
Permanent Secretary  
Meteorology Division  
Ministry of Environment,  
Conservation and Meteorology

Date:

A large, stylized signature consisting of a grid of dots forming the letter 'T'.

A handwritten mark consisting of the number '109' with a stylized flourish.

A handwritten mark consisting of the letters 'CR' in a cursive style.

**CONTENTS**

Article 1: Introduction . . . . . 4

Article 2: Purposes of Disaster Broadcasting . . . . . 4

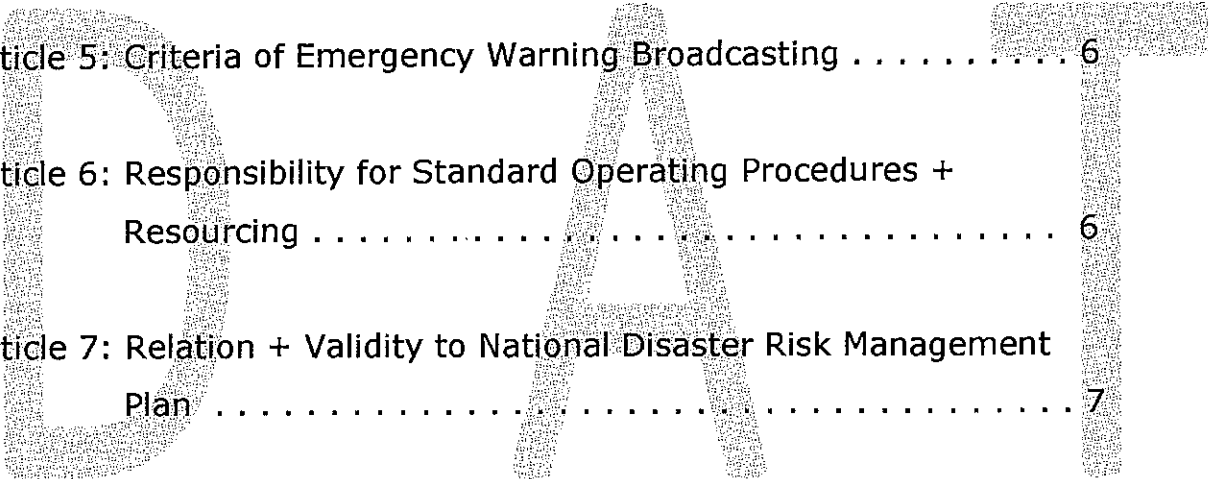
Article 3: Disaster Risk Management System . . . . . 5

Article 4: Responsibility of Disaster Broadcasting . . . . . 6

Article 5: Criteria of Emergency Warning Broadcasting . . . . . 6

Article 6: Responsibility for Standard Operating Procedures +  
Resourcing . . . . . 6

Article 7: Relation + Validity to National Disaster Risk Management  
Plan . . . . . 7



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## Article 1: Introduction

1. This MOU provides for a common understanding on Disaster Broadcasting through radio broadcasting services by Solomon Islands Broadcasting Corporation (SIBC) between National Disaster Management Office (NDMO), Ministry of Environment, Conservation and Meteorology (MECM), and Solomon Islands Broadcasting Corporation.
2. This MOU is for supporting the services of SIBC related to disaster reporting and not intended to place any constraints on the journalistic roles, such as reporting news, fulfilled by SIBC.

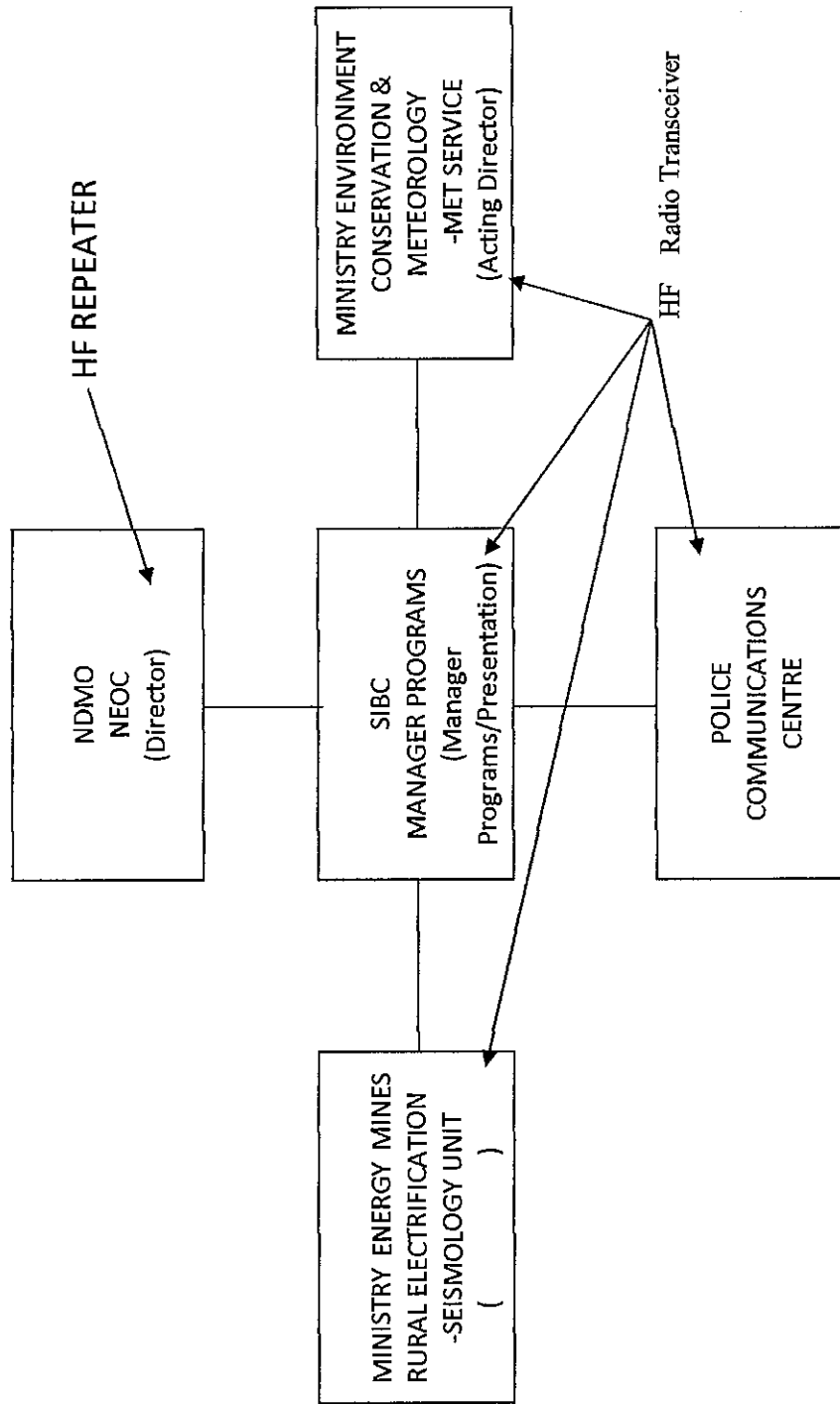
## Article 2: Purposes of Disaster Broadcasting

3. The purposes of Disaster Broadcasting are:
  - To provide for early warning and information to the public on a potential or impending disaster in order to allow steps to be taken to reduce the impacts and prepare for assistance of people with special needs.
  - To provide an evacuation order or other instructions to the public under the National Disaster Council Act or the National Disaster Risk Management Plan, or other relevant plans.
  - To distribute information during disasters and on assistance available from the central government, local governments, medical facilities, Donors, NGOs and the other relevant organisations.
  - To provide public education broadcasts from time to time on measures to prepare for and manage disasters and reduce risk.
  - To provide forecasting and warning of disaster risks before any disaster occurs or to provide disaster information during and following a disaster.
4. The possible threats to be announced to citizens by Disaster Broadcasting are:

Tropical Cyclones + Wind Storms	Ministry Environment, Conservation and Met
Floods	Hydrology Department (Ministry of Mines, Energy and Rural Electrification) +MECM
Earthquakes	Seismology Department (MMERE)
Landslides	Geology Department (MMERE)
Volcanic Eruptions	Vulcanology Department (MMERE)
Tsunamis + Wave Surges	MECM
Droughts	Agriculture Ministry + MECM
Pandemics	Health Ministry
Agricultural Pests + Diseases	Agriculture Ministry
Aviation + Maritime Disasters	Aviation Ministry + Marine Division (Ministry of Infrastructure Devt)
Fires	Fire Service + Police
Industrial Accidents	Fire Service + Police
Marine Pollution	SI Ports Authority + Environment Dept
Other man-made threats including the civil impacts of conflict	Police + National Security

*VP*      *CR*

### DISASTER COORDINATION COMMUNICATIONS

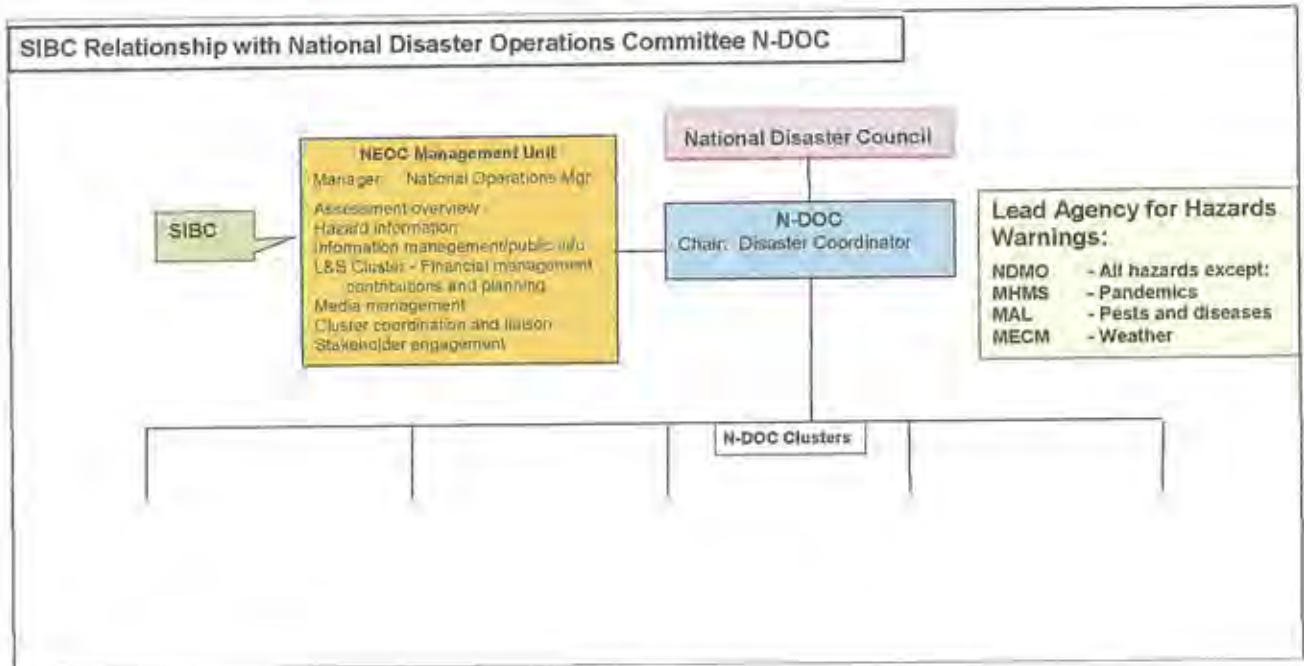


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**Article 3: Disaster Risk Management System**

5. The disaster risk management system in Solomon Islands addresses all of the disaster phases of disaster risk reductions, preparedness, and response as well as recovery and rehabilitation. With clear roles and responsibilities of the national and local governments, the relevant stakeholders of the public and private sectors cooperate in implementing various disaster countermeasures.
6. The organisational arrangement of the disaster risk management system for Disaster Broadcasting is:-



- ◆ N-DOC The National Disaster Operations Committee co-ordinates warnings and disaster response and is informed by the relevant Lead Agency for hazard warnings. The N-DOC is chaired by the Disaster Coordinator. This is the Director of NDMO.
- ◆ NEOC The National Emergency Operations Centre services the N-DOC through the National Operations Manager.
- ◆ SIBC Provides a Disaster Broadcasting Service through the NEOC Management Unit to the Disaster Coordinator or the relevant Lead Agency. For weather warnings, the service is provided directly to the Solomon Islands Meteorological Service.

*Handwritten initials and a signature.*

**Article 4: Responsibility for Disaster Broadcasting**

- 7. SIBC has responsibility for providing for Disaster Broadcasting as a designated public corporation and as a critical infrastructure agency under the National Disaster Risk Management Plan. Broadcasts shall be made in an accurate and timely manner according to the criteria set out in Article 5.
- 8. Disaster Broadcasting shall be requested by National Disaster Coordinator or Director Meteorology Service, or relevant Technical Agency for the hazard (listed in Article 2 Item 4).

**Article 5: Criteria for Disaster Broadcasting**

- 9. Disaster Broadcasting shall be requested by NDMO and Ministry of Environment, Conservation and Meteorology according to the criteria as shown in the following Table 1.

10. Table 1: Criteria of Emergency Warning Broadcasting

PURPOSE	HAZARD	TIME FRAME FOR BROADCAST
Warning	Weather	Guideline issued by Ministry of Environment, Conservation & Meteorology.
	All other hazards	Within 5 minutes of receipt of request and material.
Evacuation Order or Instruction	All hazards	Within 5 minutes of receipt of request and material or as requested.
Information during a disaster	All hazards	As information bulletin within one hour or as requested.
Public Education	All hazards	As information bulletins to an agreed time table.

- 11. a) Disaster Broadcasts for the purposes of Warnings and Evacuation Orders or Instructions shall not be charged to the organization which requested it.
- b) Disaster Broadcasts for the purpose of Information (normal awareness/education) and Public Education shall be charged to the Lead Agency.

**Article 6: Responsibility for Standard Operating Procedures + Resourcing**

- 12. All Departments and Agencies, noted under Section 4, will be required to develop their own Standard Operating Procedures (SOPs) to provide information about disasters to SIBC for broadcast. SIBC will be required to develop its own SOPs to broadcast information about disasters.
- 13. The Departments and Agencies named in this document are responsible for resourcing their own activities connected with Disaster Broadcasting.

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**Article 7: Relation, Validity to the National Disaster Risk Management Plan**

- 14. This MOU shall be defined on the National Disaster Risk Management Plan, which will be finalised by the Government.
- 15. Before establishment of the National Disaster Risk Management Plan, this MOU has validity by itself.
- 16. Validity of this MOU shall belong to the National Disaster Risk Management Plan automatically after establishment of the plan.

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