

Appendices

Appendix 1. Member List of the Study Team

(1) Preparatory Survey (1) Team

Mr. Shigeyuki MATSUMOTO	Leader	Director, Disaster Management Division 2, Water Resources and Disaster Management Group, Global Environment Department, Japan International Cooperation Agency (JICA)
Mr. Shiro OMORI	Technical Advisor	Scientific Officer, Observation Division, Observations Department, Japan Meteorological Agency (JMA)
Mr. Shoji HASEGAWA	Project Coordinator	Special Advisor, Disaster Management Division 2, Water Resources and Disaster Management Group, Global Environment Department, Japan International Cooperation Agency (JICA)
Mr. Yoshihisa UCHIDA	Project Manager/Meteorological Radar System Planning	Japan Weather Association (JWA)
Mr. Soshi IWATA	Meteorological Observation, Communication, Forecasting & Warning System Planning/Equipment Planning	Japan Weather Association (JWA)
Mr. Hiroyuki INOMATA	Facility Planning / Natural Conditions Survey	International Meteorological Consultant Inc. (IMC)
Mr. Kenji MORI	Construction Planning/Procurement Planning/Cost Estimate	Japan Weather Association (JWA)
Ms. Motoko KANOME	Operation & Maintenance Planning	International Meteorological Consultant Inc. (IMC)

(2) Preparatory Survey (2) Team

Mr. Yoshihisa UCHIDA	Project Manager/Meteorological Radar System Planning	Japan Weather Association (JWA)
Mr. Hiroyuki INOMATA	Facility Planning / Natural Conditions Survey	International Meteorological Consultant Inc. (IMC)

(3) Preparatory Survey (3) Team

Mr. Norihito YONEBAYASHI	Leader	Director, Disaster Management Division 2, Water Resources and Disaster Management Group, Global Environment Department, Japan International Cooperation Agency (JICA)
Mr. Shoji HASEGAWA	Project Coordinator	Special Advisor, Disaster Management Division 2, Water Resources and Disaster Management Group, Global Environment Department, Japan International Cooperation Agency (JICA)
Mr. Yoshihisa UCHIDA	Project Manager/Meteorological Radar System Planning	Japan Weather Association (JWA)
Mr. Soshi IWATA	Meteorological Observation, Communication, Forecasting & Warning System Planning/Equipment Planning	Japan Weather Association (JWA)
Mr. Kenji MORI	Construction Planning/Procurement Planning/Cost Estimate	Japan Weather Association (JWA)

Appendix 2. Study Schedule

Preparatory Survey (1)

Schedule	Governmental Member		Consultant Member	
	Mr. Shigehiko MATSUDOMOTO Leader	Mr. Shoji HASEGAWA Project Coordinator	Mr. Yoshitaka UCHIDA Project Manager/Meteorological Radar System Planning	Mr. Hiroaki INOMATA Facility Planning / Natural Conditions Survey
2011				
3 Nov		Technical Advisor Tokyo → Amsterdam → Geneva	Mr. Sohei IWATA Meteorological Observations, Forecasting & Warning System Planning/Equipment Planning Tokyo → Paris → Geneva	Mr. Kenji MORI Construction Planning/Prevention Planning/Out Estimate Tokyo → Paris → Mauritius
4 Nov				
5 Nov		Country call on and Discussion with World Meteorological Organization WMO Geneva → Paris		
6 Nov		Paris → Antananarivo		
7 Nov		Discussion with JICA Madagascar Office Antananarivo → Mauritius		
8 Nov		Courtesy call on Prime Minister's Office, Discussion with Mauritius Meteorological Services MMS, Site Survey at Existing Radar Tower Building (Toussaint)	Courtesy call on Prime Minister's Office, Discussion with Mauritius Meteorological Services MMS, Site Survey at Existing Radar Tower Building (Toussaint)	
9 Nov		Discussion with MMS, Courtesy call on and Discussion with Indian Ocean Commission, Discussion with Ministry of Finance and Economic Development, Discussion with MMS	Discussion with MMS, Courtesy call on and Discussion with Indian Ocean Commission, Discussion with Ministry of Finance and Economic Development, Discussion with MMS	
10 Nov		Confirmation of Minutes of Discussions, Signing on Minutes of Discussions	Confirmation of Minutes of Discussions, Signing on Minutes of Discussions	
11 Nov				
12 Nov				
13 Nov		Internal Meeting, Data Collection Radar Tower Building	Internal Meeting, Data Collection Radar Tower Building	
14 Nov		Site Survey at Existing Radar Tower Building, Discussion with MMS	Site Survey at Existing Radar Tower Building, Discussion with MMS, Survey at Existing Radar Tower Building	
15 Nov		Discussion with MMS, Discussion with Ministry of Public Infrastructure, Land Transport and Shipping, Discussion with Information & Communication Technologies Authority (ICTA)	Discussion with MMS, Discussion with Ministry of Public Infrastructure, Land Transport and Shipping	
16 Nov		Discussion with Information & Communication Technologies Authority (ICTA), Discussion with Water Authority, Discussion with Ministry of Policy and Logistics, Discussion with Mauritius Broadcasting Corporation (MBS)	Discussion with Mauritius Standards Bureau (MSB), Data Collection	
17 Nov		Discussion with Department of Civil Aviation, Discussion with MMS, Survey at Existing Radar Tower Building	Discussion with Mauritius Standards Bureau (MSB), Data Collection	
18 Nov		Internal Meeting, Data Collection Mauritius → Reunion	Internal Meeting, Data Collection Mauritius → Reunion	
19 Nov		Discussion with Metro France, Reunion, Reunion → Mauritius Discussion with MMS	Discussion with Metro France, Reunion, Reunion → Mauritius Discussion with MMS	
20 Nov				
21 Nov				
22 Nov		Discussion with Mauritius Broadcasting Corporation (MBS), Discussion with Mauritius Sugar Industry Research Institute (MRSI), Discussion with Information & Communication Technologies Authority (ICTA), Mauritius Telecom, Land Ltd. and Les Reunis Ltd.	Discussion with Mauritius Broadcasting Corporation (MBS), Discussion with Mauritius Sugar Industry Research Institute (MRSI), Discussion with Information & Communication Technologies Authority (ICTA), Mauritius Telecom, Land Ltd. and Les Reunis Ltd.	
23 Nov		Discussion with MMS, Survey at MMS Head Office (Forecast Office)	Discussion with MMS, Survey at MMS Head Office (Forecast Office)	
24 Nov		Internal Meeting, Data Collection	Internal Meeting, Data Collection	
25 Nov		Internal Meeting, Data Collection	Internal Meeting, Data Collection	
26 Nov		Internal Meeting, Data Collection	Internal Meeting, Data Collection	
27 Nov		Discussion with Municipal Council of Gorgee, Discussion with MMS	Discussion with Municipal Council of Gorgee, Discussion with MMS	
28 Nov		Discussion with MMS, Survey at MMS Head Office (Forecast Office)	Discussion with MMS, Survey at MMS Head Office (Forecast Office)	
29 Nov		Discussion with MMS, Survey at MMS Head Office (Forecast Office)	Discussion with MMS, Survey at MMS Head Office (Forecast Office)	
30 Nov		Discussion with MMS, Survey at MMS Head Office (Forecast Office)	Discussion with MMS, Survey at MMS Head Office (Forecast Office)	
1 Dec		Discussion with MMS, Survey at MMS Head Office (Forecast Office)	Discussion with MMS, Survey at MMS Head Office (Forecast Office)	
2 Dec		Topographic and Geotechnical Survey	Topographic and Geotechnical Survey	
3 Dec		Topographic and Geotechnical Survey, Internal Meeting, Data Collection	Topographic and Geotechnical Survey, Internal Meeting, Data Collection	
4 Dec		Mauritius → Antananarivo	Mauritius → Antananarivo	
5 Dec		Report to JICA Madagascar Office, Discussion with Metro Madagascar	Report to JICA Madagascar Office, Discussion with Metro Madagascar	
6 Dec		Antananarivo → Paris → Tokyo	Antananarivo → Paris → Tokyo	
7 Dec				
8 Dec				

Preparatory Survey (2)

Schedule 2012		Consultant Member	
		Mr. Yoshihisa UCHIDA	Mr. Hiroyuki INOMATA
		Project Manager/Meteorological Radar System Planning	Facility Planning / Natural Conditions Survey
8 Feb.	Wed	Tokyo → Bangkok	
9 Feb.	Thu	Bangkok → Dubai → Mauritius	
10 Feb.	Fri	Discussion with MMS	
11 Feb.	Sat	Internal Meeting, Data Collection, Site Survey at Existing Radar Tower Building	
12 Feb.	Sun	Internal Meeting, Data Collection, Preparation for Study	
13 Feb.	Mon	Discussion with MMS	
14 Feb.	Tue	Discussion with Multi Carrier (Mauritius) Limited, Discussion with MMS	Discussion with Local Topographic and Geotechnical Survey Company, Study for Construction Materials and Methods
15 Feb.	Wed	Discussion with MMS	Quantity Survey, Study for Unit Price of Construction Materials
16 Feb.	Thu	Discussion with MMS	Quantity Survey, Study for Unit Price of Construction Materials
17 Feb.	Fri	Discussion with MMS	Quantity Survey, Study for Unit Price of Construction Materials
18 Feb.	Sat	Internal Meeting, Data Collection	
19 Feb.	Sun	Internal Meeting, Data Collection	
20 Feb.	Mon	Study for Construction Materials and Methods	Study for Construction Materials and Methods
21 Feb.	Tue	Quantity Survey, Study for Unit Price of Construction Materials	Discussion with Local Topographic and Geotechnical Survey Company, Study for Construction Materials and Methods
22 Feb.	Wed	Discussion with Emtel Ltd., Discussion with MMS	Quantity Survey, Study for Unit Price of Construction Materials, Site Survey at Existing Radar Tower Building
23 Feb.	Thu	Discussion with MMS, Discussion with Information & Communication Technologies Authority (ICTA)	Quantity Survey, Study for Unit Price of Construction Materials
		Mauritius → Antananarivo	
24 Feb.	Fri	Report to JICA Madagascar Office, Discussion with Meteo Madagascar	
25 Feb.	Sat	Antananarivo → Bangkok → Tokyo	

(3) Explanation of Draft Final Report

Schedule	Governmental Member		Consultant Member	
	Mr. Norihito YONEBAYASHI Leader	Mr. Shoji HASEGAWA Project Coordinator	Mr. Yoshihisa UCHIDA Project Manager/Meteorological Radar System Planning	Mr. Soshi IWATA Meteorological Observation, Communication, Forecasting & Warning System Planning/Equipment Planning
19 Aug. (Fri)	Tokyo → Dubai	Tokyo → Singapore → Mauritius	Tokyo → Bankok → Dubai	Tokyo → Bankok → Dubai
18 Aug. (Sat)	Dubai → Mauritius			
19 Aug. (Sun)	Site Survey at Existing Radar Tower Building (Trou-aux-cerfs), Site Survey at Landslide Management and Coastal Protection Site		Dubai → Mauritius	Dubai → Mauritius
20 Aug. (Mon)	Courtesy call on and Discussion with Mauritius Meteorological Services: MMS, Explanation of Draft Final Report to MMS		Courtesy call on and Discussion with Mauritius Meteorological Services: MMS, Explanation of Draft Final Report to MMS	Courtesy call on and Discussion with Mauritius Meteorological Services: MMS, Explanation of Draft Final Report to MMS
21 Aug. (Tue)	Discussion with MMS, Explanation of Draft Final Report to MMS		Discussion with MMS, Explanation of Draft Final Report to MMS	Discussion with MMS, Discussion with Ministry of Public Infrastructure, Land Transport and Shipping, Data Collection, Quantity Survey, Study for Unit Price of Construction Materials
22 Aug. (Wed)	Discussion with Ministry of Finance and Economic Development and Mauritius Revenue Authority (MRA), Discussion with Information & Communication Technologies Authority (ICTA), Discussion about the Minutes of Discussions of Discussions with MMS, Preparation of Minutes of Discussions		Discussion with Ministry of Finance and Economic Development and Mauritius Revenue Authority (MRA), (MRA), Discussion with Information & Communication Technologies Authority (ICTA), Discussion about the Minutes of Discussions with MMS, Preparation of Minutes of Discussions	Discussion with MMS, Data Collection
23 Aug. (Thu)	Courtesy call on Prime Minister's Office and Explanation of Minutes of Discussions, Signing on Minutes of Discussions Mauritius → Antananarivo		Confirmation of Minutes of Discussions, Signing on Minutes of Discussions, Signing on Minutes of Discussions Office and Explanation of Minutes of Discussions, Signing on Minutes of Discussions Mauritius → Antananarivo	Discussion with MMS, Data Collection, Quantity Survey, Study for Unit Price of Construction Materials
24 Aug. (Fri)	Report to JICA Madagascar Office, Discussion with Météorologie de Madagascar, Courtesy call on and Discussion with Embassy of Japan in Madagascar		Report to JICA Madagascar Office, Discussion with Météorologie de Madagascar, Courtesy call on and Discussion with Embassy of Japan in Madagascar	Discussion with MMS, Data Collection, Quantity Survey, Study for Unit Price of Construction Materials
25 Aug. (Sat)	Antananarivo → Paris → → Tokyo		Antananarivo → Mauritius Internal Meeting, Data Collection	Discussion with MMS, Data Collection, Quantity Survey, Study for Unit Price of Construction Materials
26 Aug. (Sun)			Internal Meeting, Data Collection	
27 Aug. (Mon)			Discussion with MMS, Data Collection, Quantity Survey, Study for Unit Price of Construction Materials	
28 Aug. (Tue)			Discussion with MMS, Data Collection, Quantity Survey, Study for Unit Price of Construction Materials	
29 Aug. (Wed)			Discussion with MMS, Discussion with Ministry of Public Infrastructure, Land Transport and Shipping, Data Collection, Quantity Survey, Study for Unit Price of Construction Materials	Discussion with MMS, Discussion with Ministry of Public Infrastructure, Land Transport and Shipping, Data Collection, Quantity Survey, Study for Unit Price of Construction Materials
30 Aug. (Thu)			Discussion with MMS, Data Collection, Quantity Survey, Study for Unit Price of Construction Materials	
31 Aug. (Fri)			Discussion with MMS Mauritius → Dubai	Discussion with MMS Mauritius → Dubai
1 Sep. (Sat)			Dubai → Bankok → Tokyo	Dubai → Bankok → Tokyo
2 Sep. (Sun)			Dubai → Bankok → Tokyo	

Appendix 3. List of Parties Concerned in the Recipient Country

- **World Meteorological Organization (WMO)**

Ms. Mary Power	Director, Resource Mobilization Office
Mr. Wayne Elliott	Resource Mobilization Office
Mr. Koji Kuroiwa	Chief, Tropical Cyclone Programme Division, WDS Department
Mr. Makoto Suwa	Junior Professional Officer, Development and Regional Activities Department
Dr. Tokiyoshi Toya	Director, Regional Office for Asia and the South-West Pacific

- **Mauritius Prime Minister's Office**

Mr. Suresh Chundre Seeballuck	Secretary to Cabinet & Head of the Civil Service
Mr. Anirood Pursunon	Principal Assistant Secretary

- **Ministry of Finance and Economic Development**

Mr. Vishnu D. Bassant	Director
Mr. M. Bheelcher	Lead Analyst
Ms. Rojoa Parweez	Analyst
Mr. M. N. Mungroo	Analyst
Mr. Rohan Kumar Ramayad	Analyst
Mr. Riad Fuzurally	Analyst
Ms. S. Dowlut	STM
Mr. Anoop Raggoo	STM

- **Mauritius Meteorological Services: MMS**

Mr. Balraj H.J. Dunpath	Director
Mr. Rajan Mungra	Deputy Director
Mr. Premchand Goolaup	Divisional Meteorologist
Mr. Muslim Bhye Heetun	Divisional Meteorologist
Mr. Prithviraj Booneedy	Divisional Meteorologist
Mr. Ram Kumar Dhurmea	Meteorologist
Mr. Renganaden Virasami	Meteorologist
Ms. Surekha Ramessur	Meteorologist
Mr. Gopalkishan Beegoo	Meteorologist
Ms. Devi Sandhya Dindyal	Meteorologist

Mr. Philippe Veerabadren	Meteorologist
Mr. Dookharansing Seetohul	Meteorologist
Mr. Krisna Bucha	Meteorologist
Mr. Ramnath Premnarain Pathak	Meteorologist
Ms. Pahladi Tanooja	Financial Operations Officer
Mr. Vishwamitra Kariman	Chief Electronic Technician
Mr. Jayerez Doorgah	Principal Electronic Technician
Mr. Indrakumar Gopee	Principal Electronic Technician
Mr. Mohunchandra Woomed	Principal Electronic Technician
Mr. Gassen Curpanen	Principal Electronic Technician
Mr. Louis Mahomodally	Chief Meteorological Technician
Mr. Kumar Anil Ramburn	Principal Meteorological Technician
Mr. Soondiren Deva Ramen	Principal Meteorological Technician
Mr. Vedanand Torul	Principal Meteorological Technician

- **Indian Ocean Committee**

Ms. Gina Bonne	Officer in Charge
Mr. Brice Montfraix	Chief of Project
Mr. Rajendranath Mohabeer	Officer in Charge

- **Central Electrical Board (CEB)**

Mr. Daniel Lo	Customer Service Office
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- **Ministry of Public Infrastructure, Land Transport and Shipping**

Mr. Hirendranath Rambhojun	Chief Architect
Mr. Shailesh K. M Padya	Principal Architect

- **Information & Communication Technologies Authority (ICTA)**

Mr. Jerome Louis	Director Engineering
Mr. Yuann Boodhoo	Engineer Officer
Mr. Yashvir Seetohul	Senior Engineer/Licensing Officer
Mr. A. N. Muduray	Engineer/Licensing Officer
Mr. Rennysha Sookdeb	Trainee Engineer

- **Ministry of Environment & Sustainable Development**

Mr. P. Kallee	Deputy Director, Department of Environment
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Ms. R. Sadayen Environment Officer, Environment Impact Assessment Division

- **Department of Civil Aviation**

Mr. Rajbushan Dhanush Servansingh Divisional Head, Air Traffic Management
Mr. Annauth Rajendrasingh Divisional Head, Communication and Navigation System
Mr. Baurhoo Yanish Chief Officer
Mr. A. D. Sookdeb Senior Aeronautical Information Officer, Department of Civil Aviation

- **Waste Water Authority**

Mr. Shameen Meethoo Senior Engineer/Operation & Maintenance

- **Ministry of Fishery & Rodrigues**

Mr. Sunil Panray Beeharry Divisional Scientific Officer, Licensing Unit/Import & Export
Mr. A. Sheik Mamode Scientific Officer, Divisional Scientific Officer, Licensing Unit/Import & Export

- **Mauritius Revenue Authority (MRA)**

Mr. Mario Hannelas Director, Medium & Small Taxpayer
Ms. Lourdes Wade Section Head, Registration & Information of Operation Service Department
Ms. N. Y. Yeung Sik Yuen Section Head, Medium & Small Taxpayer
Mr. Maurice Marie Team Leader, Registration & Information of Operation Service Department
Mr. Dinathsing Mungla Team Leader, Customs Department
Mr. Malen Gauopt Team Leader, Customs Department
Ms. Darsy Athaw Team Leader

- **Mauritius Standards Bureau (MSB)**

Mr. Donald L. Dhondee Head of Unit, Engineering, Quality Infrastructure

- **Mauritius Broadcasting Corporation (MBC)**

Mr. DattaRamyeed Director of News
Mr. Harold Essoo Chief News Editor
Mr. Gopuul Suraj Systems Analyst/Administrator, Broadcast IT

- **Mauritius Telecom**

Mr. Shabeel Maudarbaccus	Engineer
Mr. Soudev Codoychum	Engineer
Mr. Amal Ankiah	Engineer
Mr. Marvin Poonomballum	AO

- **Les Relais Ltd.**

Mr. Rarjeet Jhurry	Executive, Business Development
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- **Emtel Ltd.**

Dr. Ben Oodit	Network Planning & Optimization Manager
Mr. Vishal Dussoye	Oxm Coordinator
Mr. Hansraj Boyonooth	Engineer
Mr. Kamal Gokool	Engineer
Mr. Vikram Ramgolam	Transmission Coordinator

- **Mauritius Sugar Industry Research Institute**

Mr. Rasack Nayamuth	Research Manager
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- **Municipal Council of Curepipe**

Mr. D. Seebaluck	Chief Engineer
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- **Mauritius Ports Authority**

Mr. H. Kallee	Director, Port Operations
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- **Multi Carrier (Mauritius) Limited**

Mr. Kishan Oogarah	Manager (Operation)
Mr. Pravinchand Heeramun	Manager (Transmission)

- **Météo-France, Direction Interrégionale de La Réunion**

Mr. Yves Grégoris	Directeur Interrégional
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- **Météorologie de Madagascar**

Mr. Nimbol Raelinera	Directeur General
Mr. Sahondrarilala Raveloarisoa	Directeur des Exploitations Meteorologiques
Mr. Victor Ratovoharison	Directeur de la Me'te'orologie Applique'e

Appendix 4. Minutes of Discussions

MINUTES OF DISCUSSIONS ON THE PREPARATORY SURVEY ON THE MAURITIUS METEOROLOGICAL SERVICES PROJECT

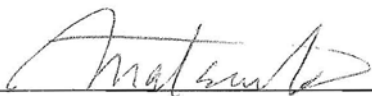
In response to the request from the Government of Mauritius (hereinafter referred to as "Mauritius", the Government of Japan decided to conduct a Preparatory Survey on the Mauritius Meteorological Services Project (hereinafter referred to as "the Project") and entrusted the survey to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to Mauritius the Preparatory Survey Team (hereinafter referred to as "the Team"), which is headed by Mr. Shigeyuki Matsumoto, Director, Disaster Management Division 2, Water Resources and Disaster Management Group, Global Environment Department, JICA, and is scheduled to stay in the country from November 7 to December 5, 2011.

The Team held discussions with the officials concerned of the Government of Mauritius and conducted a field survey at the survey area.

In the course of discussions and field survey, both parties confirmed the main items described in the attached sheets. The Team will proceed to further works and prepare the Preparatory Survey Report.

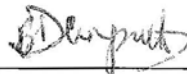
Port Louis, November 11, 2011



Shigeyuki Matsumoto
Leader
Preparatory Survey Team
Japan International Cooperation Agency
Japan



Suresh Chundre Seeballuck
Secretary to Cabinet and the Head of Civil Service
Prime Minister's Office
Mauritius



Balraj H.J. Dunputh
Director
Mauritius Meteorological Services
Mauritius

ATTACHMENT

1. Objective of the Project

The objective of the Project is to provide more accurate information to Mauritius Meteorological Services (hereinafter referred to as "MMS") and contribute to improve forecasts of MMS for the "Cyclones and other disasters scheme."

2. Project site

The sites of the Project are MMS in Vacoas and the existing radar facility site in *Trou aux Cerfs* as shown in **Annex-1**.

3. Responsible and Implementing Agency

3-1. The Responsible Agency is the Prime Minister's Office.

3-2. The Implementing Agency is MMS. The organization chart of the MMS is shown in **Annex-2**.

4. Items requested by the Government of Mauritius

After discussions between the Mauritian side and the Team (hereinafter referred to as "the both sides"), the items described in **Annex-3** were finally requested by the Mauritian side.

The both sides confirmed that the appropriateness of the request would be examined in accordance with the further studies and analysis, and the final components of the Project would be decided by the Japanese side.

5. Japan's Grant Aid Scheme

5-1 The Mauritian side understands the Japan's Grant Aid Scheme explained by the Team, as described in **Annex-4**.

5-2 The Mauritian side will take the necessary measures, as described in **Annex-5**, for smooth implementation of the Project, as a condition for the Japanese Grant Aid to be implemented.

6. Schedule of the Survey

6-1 The consultant members of the Team will proceed to further studies in Mauritius until December 5, 2011.

6-2 JICA will prepare the draft preparatory survey report in English and dispatch a mission in order to explain its contents to the Mauritian side around May 2012.

6-3 In case that the contents of the report are accepted in principle by the Mauritian side, JICA will finalize the report and send it to the Mauritian side around July 2012.

6-4 The Mauritian side understands that execution of the Preparatory Survey (hereinafter referred to as "the Survey") does not necessarily imply the Japanese Government's commitment of the project implementation.

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7. Other relevant issues

The following issues were discussed and confirmed by both sides.

7-1. Improvement of Weather Forecast Services and Management

The Team explained that the following improvement of weather forecast services and management would be important to enhance effectiveness and ensure sustainability of the Project:

- (a) Improvement of weather forecast services in Mauritius using the facilities and equipment to be procured by the Project,
- (b) Improvement of financial management to generate fiscal resources for future maintenance, rehabilitation and expansion of weather forecast services, and
- (c) Enhancement of weather forecast information business to public and/or private sectors for generation of fiscal income.

7-2. Undertakings of the Mauritian Side

The Team requested the following undertakings by the Mauritian side:

- (a) To secure land for preparation and installation of the weather Doppler-radar facility and other related equipment to be procured by the Project,
- (b) To ensure the required electricity supply for the Equipment to be procured and installed under the Project,
- (c) To obtain necessary permission from competent authorities for rehabilitation works for facilities which shall be borne by the Mauritian side including building certificate,
- (d) To clear necessary procedures for social and environmental considerations including Environmental Impact Assessment (EIA) if required,
- (e) To allocate and/or recruit necessary staff and budget for operation and maintenance of the facilities and equipment to be procured by the Project,
- (f) To obtain the required radio frequencies for practical use of the Doppler-radar system and Meteorological Data Communication System, and
- (g) To improve weather forecast services and management as mentioned above.

7-3. Technical Assistance

- 1) The Team explained that the soft component (technical assistance) and operational guidance for operation and maintenance of the equipment and facilities on-site could be included in the Project to support smooth operation. Necessity and contents of the support will be examined during the Survey.
- 2) In addition to above-mentioned on-site trainings in the Project, the Mauritian side and the Team confirmed that it would be important for the newly allocated and/or recruited staffs of MMS to have technical trainings in Japan by the following two types of training:
 - (a) Group course training on general meteorological services by participating in the Training and Dialogue Program "Reinforcement of Meteorological Services" provided by JICA, and

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(b) A country-specific and tailored training on mechanism and assembly of a radar system through factory inspection in the course of the manufacturing process of the radar to be installed by the Project.

The Team explained that the acceptance of such training would require an official request to be submitted to the Japanese Government based on close consultation with the JICA Madagascar Office. Necessity and contents of the training (b) above will be examined during the Survey.

7-4. Existing Radar Tower Building

The existing Radar tower building shall be examined by the Team for the renovation/extension and for the installation of weather Doppler-radar. The renovation/extension cost shall be borne by the Mauritian side. However, if the existing radar tower building is not appropriate for the renovation through the survey by the Team, the Team shall consider an alternative measure including reconstruction of a new radar tower building. In that case, the demolition cost of the existing building shall be borne by the Mauritian side.

7-5. Tax Exemption

The tax exemption including Value Added Tax (VAT), custom duty, and any other taxes and fiscal levies in Mauritius which is to be arisen from the Project activities will be ensured by the Prime Minister's Office and MMS. The Prime Minister's Office and MMS will take any procedures necessary for tax exemption with the Ministry of Finance of Mauritius at their responsibility.

7-6. Overlapping with Other Projects

The Mauritian side explained that the Project would not be overlapped with any other project supported by other donor agencies, NGO, and Mauritian official organization(s).

7-7. Visibility of the Project

The Team explained that the visibility of the Project should be ensured as a token of cooperation from the Japanese people if the Project was realized. The following ideas could be considered to enhance publicity of the Project:

- (a) To display commemoration panels and/or stickers at weather Doppler-radar facility and other related equipment,
- (b) To organize visits to weather Doppler-radar facility by students and citizens periodically,
- (c) To prepare brochures, and
- (d) To publicize the Project in the mass media after the Project is approved by the both governments

7-8. Confidentiality of the Survey Report

The Team explained that the preparatory survey report to be prepared at the end of the Survey would be disclosed to the public in principle in Japan. However the Team also explained that a

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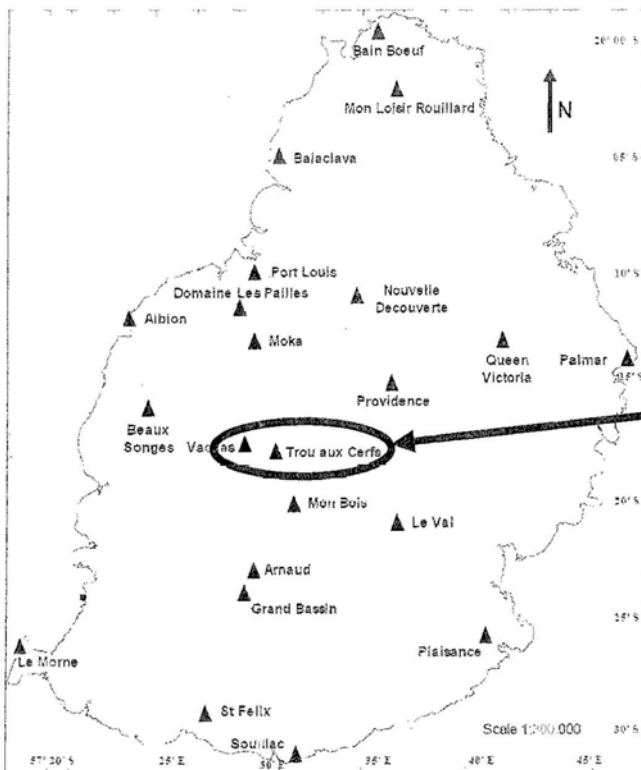
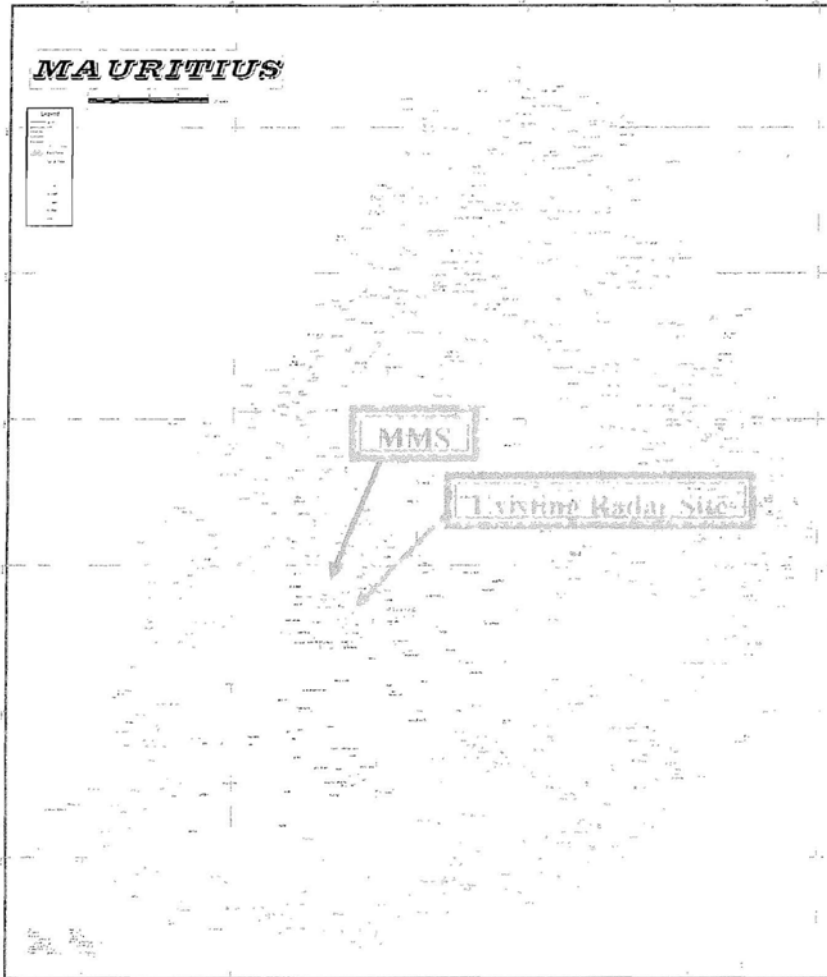
confidential part which might affect bidding process such as cost estimation should be kept undisclosed until the bidding has completed.

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- Annex-1 Project Sites Map
- Annex-2 Organization Charts
(Mauritius Meteorological Services : MMS)
- Annex-3 Items Requested by the Mauritius Side
- Annex-4 Japan's Grant Aid Scheme
- Annex-5 Major Undertakings to be taken by Each Government

JA BT (M)

Annex-1: Project Sites Map

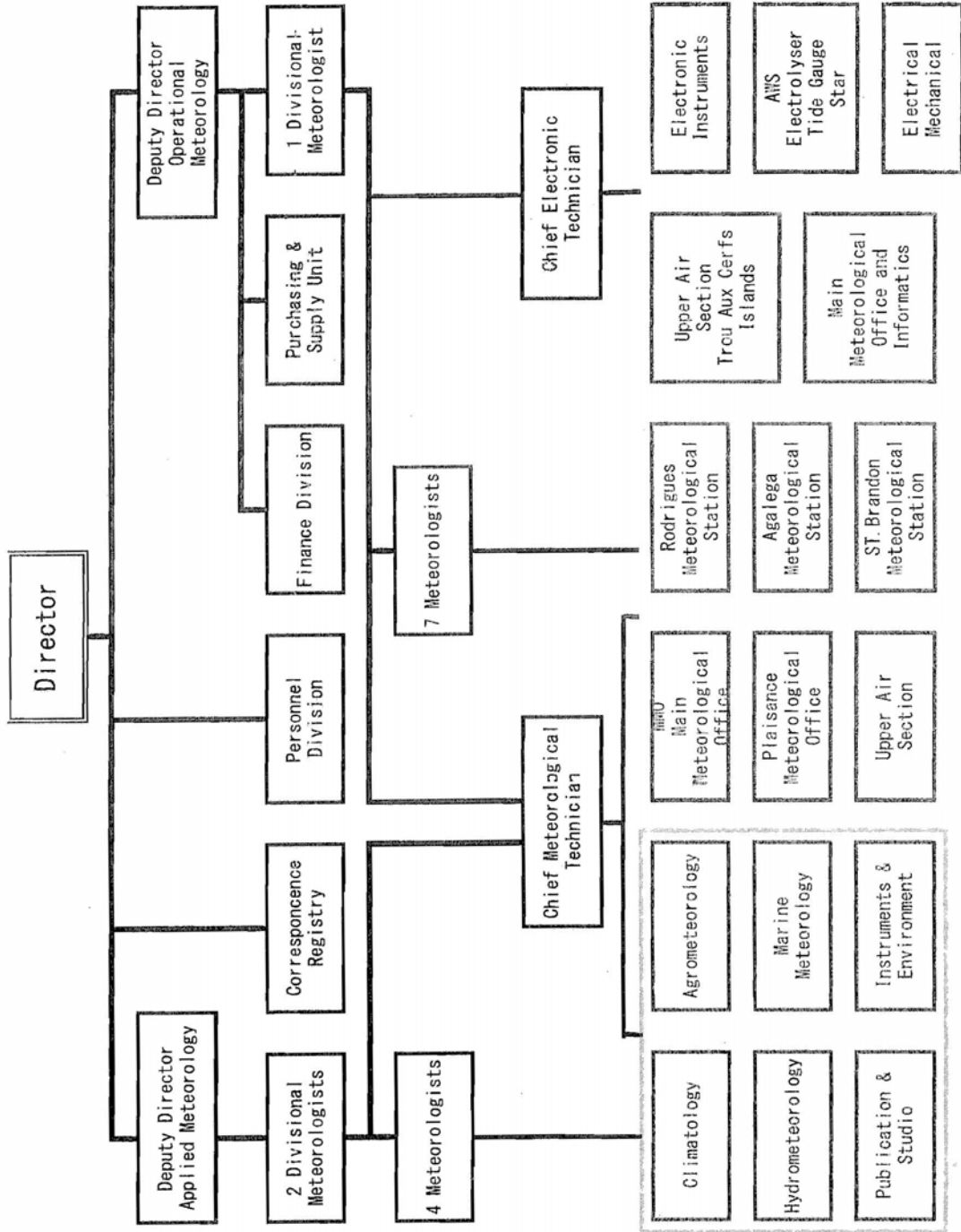


▲ The Locations of AWS (Automatic Weather Stations)

The Project Sites Vacoas and Trou aux Cerfs

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Annex-2: Organization Charts
(Mauritius Meteorological Services : MMS)



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Annex-3: Items Requested by the Mauritius Side

1. Provision and installation of a weather Doppler-radar with other necessary accessories
2. Operational guidance for proper operation and maintenance of the radar
3. Soft component (technical assistance) for appropriate radar utilization

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Annex-4: JAPAN'S GRANT AID SCHEME

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 (Attachment 1)

Japanese 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 an outline 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 Outline 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

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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 consultant firm(s) which conducted the Survey will be recommended by JICA to the recipient country to continue work on the Project's implementation after the E/N and the G/A.

(3) Eligible source country

Under the Japanese 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". (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

(4) Necessity of "Verification"

The Government of recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by 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 Attachment 1.

(6) Proper Use

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The Government of 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)

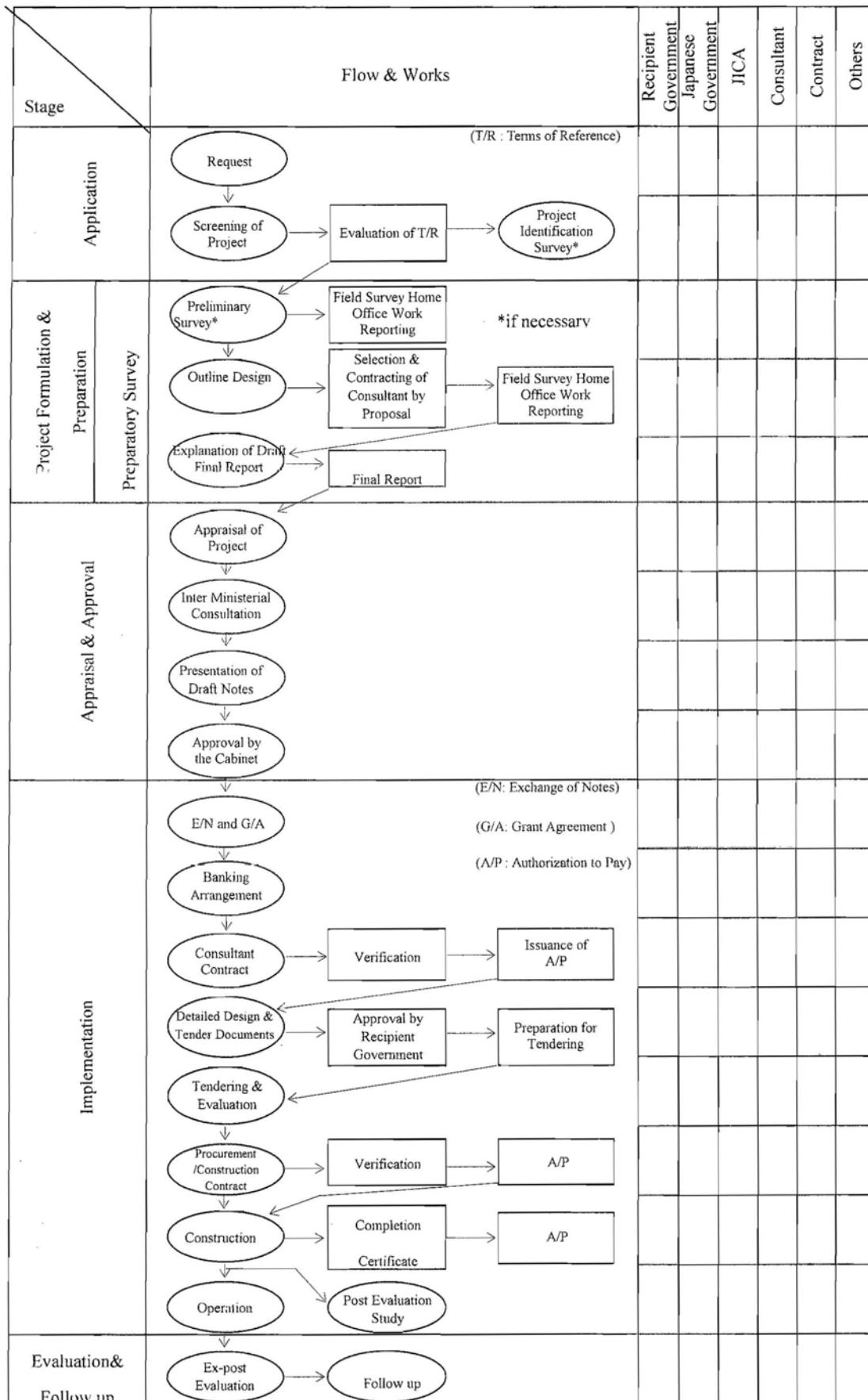
The Government of the recipient country should bear an advising commission of an Authorization to Pay and payment commissions paid to the Bank.

(10) Social and Environmental Considerations

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

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FLOW CHART OF JAPAN'S GRANT AID PROCEDURES



Handwritten initials and a circled 'm'.

Annex-5: 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 [a lot] / [lots] of land necessary for the implementation of the Project and to clear the site;		●
2	To construct the following facilities		
	1) The building	●	
	2) The gates and fences in and around the site		●
	3) The parking lot	●	
	4) The road within the site	●	
	5) The road outside the site		●
3	To provide facilities for distribution of electricity, water supply and drainage and other incidental facilities necessary for the implementation of the Project outside the site		
	1) Electricity		
	a. The distributing power line to the site		●
	b. The drop wiring and internal wiring within the site	●	
	c. The main circuit breaker and transformer	●	
	2) Water Supply		
	a. The city water distribution main to the site		●
	b. The supply system within the site (receiving and elevated tanks)	●	
	3) Drainage		
	a. The city drainage main (for storm sewer and others to the site)		●
	b. The drainage system (for toilet sewer, common waste, storm drainage and others) within the site	●	
	4) Gas Supply		
	a. The city gas main to the site		●
	b. The gas supply system within the site	●	
	5) Telephone System		
	a. The telephone trunk line to the main distribution frame/panel (MDF) of the building		●
	b. The MDF and the extension after the frame/panel	●	
	6) Furniture and Equipment		
	a. General furniture		●
	b. Project equipment	●	
4	To ensure prompt unloading and customs clearance of the products at ports of disembarkation in the recipient country and to assist internal transportation of the products		
	1) Marine (Air) transportation of the Products from Japan to the recipient country	●	
	2) Tax exemption and custom clearance of the Products at the port of disembarkation		●
	3) Internal transportation from the port of disembarkation to the project site	(●)	(●)
5	To ensure that customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the purchase of the products and the services be exempted or be borne by the Authority without using the Grant		●
6	To accord Japanese nationals whose services may be required in connection with the supply of the products and the services such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work		●
7	To ensure that the Facilities and the products be maintained and used properly and effectively for the implementation of the Project		●
8	To bear all the expenses, other than those covered by the Grant, necessary for the implementation of the Project		●
9	To bear the following commissions paid to the Japanese bank for banking services based upon the B/A		
	1) Advising commission of A/P		●
	2) Payment commission		●
10	To give due environmental and social consideration in the implementation of the Project.		●

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

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MINUTES OF DISCUSSIONS
ON THE PREPARATORY SURVEY
ON THE MAURITIUS METEOROLOGICAL SERVICES PROJECT
(EXPLANATION OF DRAFT REPORT)

From November to December 2011, and in February 2012, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the preparatory survey team on the Mauritius Meteorological Services Project (hereinafter referred to as "the Project") to the Republic of Mauritius (hereinafter referred to as "Mauritius"), and through discussions, field survey, and technical examination of the results in Japan, JICA prepared the Draft Final Report of the survey.

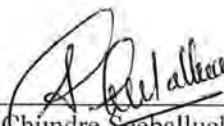
In order to explain and to consult the officials concerned of the Government of Mauritius (hereinafter referred to as "the GOM") on the components of the Draft Final Report, JICA sent to Mauritius the Draft Report Explanation Team (hereinafter referred to as "the Team"), which is headed by Mr. Norihito Yonebayashi, Director, Disaster Management Division 2, Water Resources and Disaster Management Group, Global Environment Department, JICA, and is scheduled to stay in the country from August 20 to August 30, 2012.

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

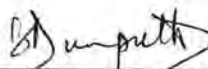
Port Louis, August 23, 2012



Norihito Yonebayashi
Leader
Preparatory Survey Team
Japan International Cooperation Agency
Japan



Suresh Chundre Seeballuck
Secretary to Cabinet and Head of the Civil Service
Prime Minister's Office
Mauritius



Balraj H.J. Dunpath
Director
Mauritius Meteorological Services,
Mauritius

ATTACHMENT

1. Components of the Draft Final Report

The Mauritian side agreed and accepted in principle the components of the Draft Final Report explained by the Team.

2. Japan's Grant Aid Scheme

2-1. The Mauritian side understood Japan's Grant Aid Scheme and will take the necessary measures and allocate the required budget for smooth implementation of the Project, as the conditions for the Japanese Grant Aid to be implemented. The Grant Aid Scheme and necessary measures to be taken by the GOM were described in Annex-4 & 5 of the Minutes of Discussions signed by both sides on 11th November, 2011 (hereinafter referred to as "the Previous M/D").

2-2. Measures for some items and matters which are described in "Other Relevant Issues" in the Minutes of Discussions (hereinafter referred to as "the M/D"), should be undertaken timely and properly since these are indispensable to the whole Project Design. If the measures will not be taken properly by the GOM, the Team explained that the procedure for approval of the Project would be reconsidered by the Government of Japan (hereinafter referred to as "the GOJ").

3. Tentative Schedule of the Project and the Survey

The tentative Project implementation schedule is shown in Annex-2.

JICA will complete the final report in accordance with the confirmed items and send it to the GOM by the end of November 2012 at the earliest.

4. Confidentiality of the Project

4-1 Detailed Specifications

Both sides confirmed all the information related to the Project including detailed specifications of the facilities, equipment and other technical information shall not be released to any other party(ies) before the signing of all the Contract(s) for the Project.

4-2 Project Cost Estimate

The Team explained to the Mauritian side the estimated project cost to be borne by the GOJ and the GOM as attached in Annex-3. Both sides agreed that the Project Cost Estimate should never be duplicated in any form nor disclosed to any other party(ies) before the signing of all the Contract(s) for the Project, this confidentiality of the estimated project cost is necessary to ensure fairness of the tender procedure.

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5. Other relevant issues

The following issues were discussed and confirmed by both sides.

5-1. Improvement of Weather Forecast & Information Services and Management

The Team explained that the following improvement of weather forecast services and management of the Mauritius Meteorological Services (hereinafter referred to as "the MMS") would be important to enhance effectiveness and ensure sustainability of the Project:

- (1) Improvement of weather forecast services in Mauritius using the facilities and equipment to be procured by the Project,
- (2) Improvement of financial management to generate fiscal resources for future maintenance, rehabilitation and expansion of weather forecast services, and
- (3) Enhancement of weather forecast & information services to public and/or private sectors for generation of fiscal income.

The Mauritian side promised to utilize the facilities and equipment to get maximum benefit.

5-2. Undertakings of the Mauritian Side

Both sides confirmed that the GOM would carry out the issues shown in Annex-4 in accordance with the implementation schedule of the Project in addition to Annex-5 of the Previous M/D:

5-3. Technical Assistance and Technical Cooperation for the Strengthening of Operation & Maintenance

(1) Strengthening of Operation and Maintenance

According to the result of Preparatory Survey, the Team requested the Mauritian side to take necessary actions which were proposed in the Draft Final Report such as allocation of adequate budget and qualified personnel for proper, effective and sustainable operation and maintenance of the facilities and equipment, even after the Project completion.

The Team also requested that the necessary actions for recruitment of staffs should be taken in time, since the training for the personnel as Technical Assistance would be implemented at the time of the equipment installation.

The Team particularly pointed out the lack of younger staffs for the future operation and maintenance of the systems and the Mauritian side agreed that.

The Mauritian side explained the effort and current progress of actions for strengthening the Operation & Maintenance as follows.

- a) Recruitment of an engineer has been initiated
- b) The MMS is requesting to GOM of ten (10) electric technicians

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(2) Technical Assistance

The Team explained that the contents of the technical assistance as “Soft Component” would focus on the subjects as follows.

The Mauritian side agreed with the following contents:

Soft Component		
No.	Item	Outputs
1	Meteorological Doppler Radar Operation, Maintenance, Fault Finding, Remedy and Recovery	Implementation of operation, maintenance, fault finding, remedy and recovery appropriately by the MMS 1) Routine maintenance using measuring instruments and tools 2) Practice of replacement of spare parts to actual system and confirmation of system operation 3) Practice of countermeasures, fault finding, remedy and recovery
2	Prompt and Appropriate Meteorological Doppler Radar Operation and Maintenance utilizing Meteorological Radar System Manual Summary and Meteorological Radar System Maintenance & Management Record Book	Implementation of prompt and appropriate meteorological Doppler radar operation and maintenance utilizing meteorological radar system manual summary and meteorological radar system maintenance & management record book
3	Meteorological Radar Observation in accordance with Sequence & Schedule for Intensity Mode and Doppler Mode	Implementation of meteorological radar observation in accordance with the sequence & schedule for Intensity Mode and Doppler Mode in order to appropriately understand weather phenomena and to utilize the observed radar data for forecast operation.

The Mauritian side also agreed and committed to assign responsible staff before the Soft Component starts, according to the target personnel described in the Draft Final Report as follows:

Target Personnel in MMS for Soft Component

Soft Component of No. 1 & 2		Soft Component of No. 3	
Electronic Technician Section: Position	Number	Forecasting Section: Position	Number
System Engineer to be recruited	1	Meteorologist	12
Communication Engineer to be recruited	1	System Engineer to be recruited	1
Electronic Technician to be recruited	10	Communication Engineer to be recruited	1
Chief Electronic Technician	1	Chief Electronic Technician	1
Principal Electronic Technician	4		
Senior Electronic Technician	4		
Trainee Electronic Technician	4		

(3) Technical Cooperation

In order to strengthen the operation and maintenance capability of the MMS, the Mauritian side requested Technical Cooperation in addition to Technical Assistance.

The Mauritian side explained that they had already submitted the official request of GOM to JICA Madagascar Office.

The Team understood the situation and promised to convey their request to Japanese relevant authorities and relevant JICA department. The Team also explained that request would be considered after JICA received it through official channel.

5-4. Tax Exemption

The Team explained the scope and estimates of the Project and requested to secure the appropriate and necessary amount of budget to exempt and/or reimburse the Value Added Tax (hereinafter referred to as "VAT"), custom duties and any other taxes and fiscal levy charges in the Mauritius arising from the Project activities and shall be borne by the GOM in accordance with the implementation schedule.

The Prime Minister's Office and the MMS promised to take necessary measures for getting the additional and proper amount in time.

The Mauritian side also promised to arrange the budget for the Mauritian fiscal year 2013 to be allocated for fiscal year 2014 and the same procedure for fiscal year 2015 in accordance with the Project cost and schedule.

The Team will provide the Mauritian side with the detailed information of amount of the equipment, construction and schedule of implementation for the Mauritian side to arrange the budget properly.

The Mauritian side explained the tentative information on reimbursement procedure as Annex-5 and detail procedure would be considered in due course.

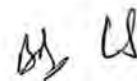
5-5. Environmental Impact Assessment Clearance

The MMS explained that an Environmental Impact Assessment (hereinafter referred to as "the EIA") would not be required to implement the Project; however, the EIA Clearance would be required by the Ministry of Environment & Sustainable Development.

The MMS promised to conduct the EIA Clearance in due process and to obtain the statement from the Ministry of Environment & Sustainable Development in due form during the Detailed Design Study.

5-6. Visibility of the Project

The Team explained that the visibility of the Project should be ensured as a token of cooperation from the Japanese people as well as to enhance the awareness and strengthen the preparedness for the disaster within the Mauritian society. The MMS promised to make maximum effort to realize it by following actions:



- (1) To organize more visits for students and citizens at the MMS and to open the Exhibition Hall for the public at Radar Station,
- (2) To prepare brochures, which includes that the Project is supported by Japanese Government and People,
- (3) To publicize the Project through the mass media occasionally after the Project is approved, and,
- (4) To install the billboard of Radar Observation Station nearby the Crater Observation Place.

5-7. Frequencies for Data Transmission:

The Team strongly requested to secure the required frequencies, i.e. 7.5GHz Band and Radar in designated time since they are essential to the Project and one of the important prerequisite conditions of the Project for achieving its objectives.

The Mauritian side explained the progress of assignment of the frequencies for the Project and it had duly been received the consent to utilize the frequency band of 7.5GHz and Radar by the Information and Communication Technologies Authority (hereinafter referred to as "the ICTA") as shown in Annex-6.

The Mauritian side will secure the frequencies and inform the Team of the final approval of frequencies assignment before the Detailed Design Study starts.

If they are not secured within the designated time, the Mauritian side will submit an official letter endorsed by the ICTA, which clearly proves that the approval of the assignment of frequencies is conclusive. In this case, the Team explained that deadline would be before the Tender Notice.

5-8. Cost for Demolition of Existing Facility

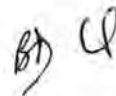
The Team explained that the Radar Tower and Building would be constructed at the existing Radar Observation Station in Trou-aux-cerfs.

Hence the Team requested to complete the demolition of existing facility before the Tender at the latest.

The Mauritian side agreed to demolish it according to the schedule of the Project. In addition, the Mauritian side explained that the necessary cost had already been secured in Mauritian fiscal year 2013. Since the sites are the GOM's property and the budget for construction has already been secured, the Mauritian side expressed confidence and optimism that the demolition would be implemented in accordance with the designated time.

The Mauritian side also promised to report the progress of demolition to the Team through JICA Madagascar Office.

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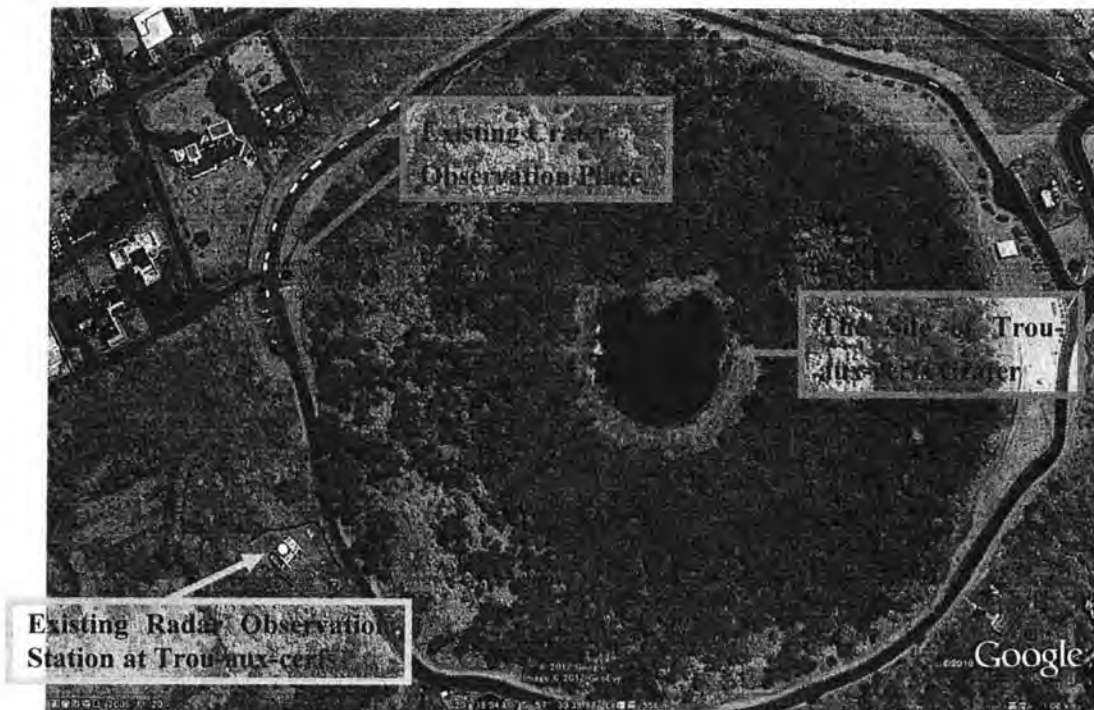
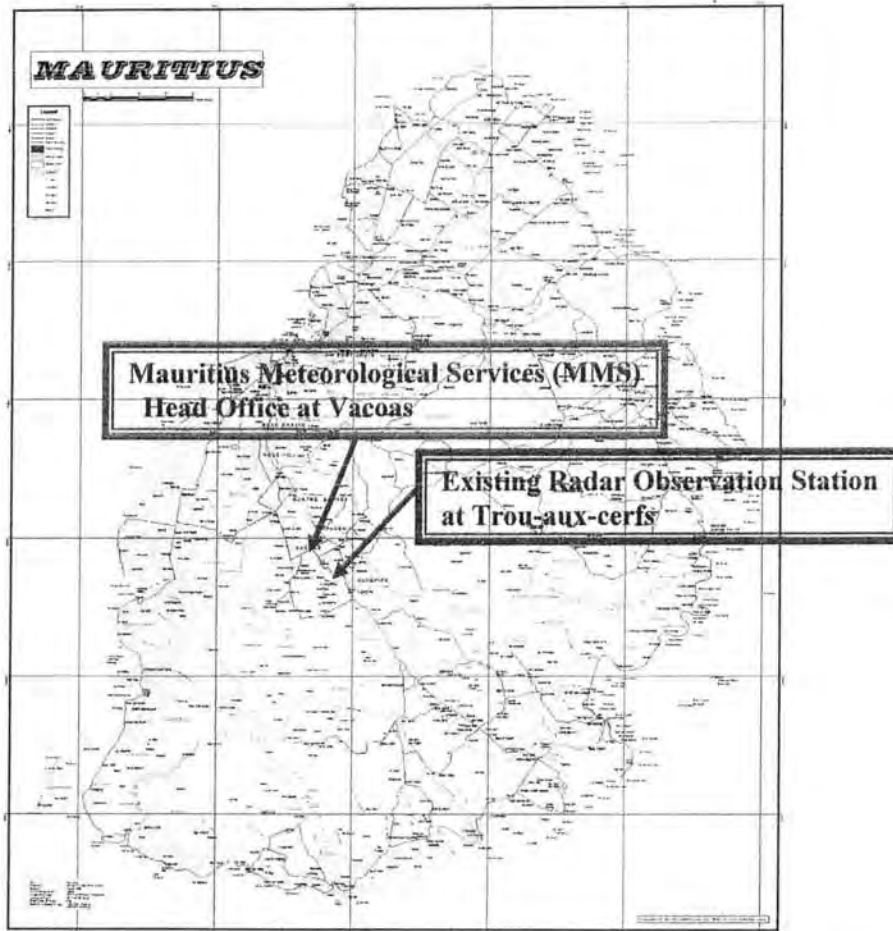


- Annex-1: Project Sites Map
- Annex-2: Tentative Project Implementation Schedule
- Annex-3: Project Cost Estimate
- Annex-4: Undertakings of the Mauritian Side
- Annex-5: VAT Reimbursement Procedures
- Annex-6.1: Letter of Consent by ICTA for utilization of Frequencies of 7.5 GHz Band
- Annex-6.2: Letter of Consent by ICTA for utilization of Frequencies of Radar System

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Annex-1: Project Sites Map



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Annex-2: Tentative Project Implementation Schedule

Month	1	2	3	4	5	6
Detailed Design		█				
Internal Work in Japan			▒			
Tendering Procedures					█	

Total: 5.0 months

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
Construction of Trou- aux-cerf Meteorological Radar Tower Building																			
Preparation Work	█																		
Temporary/Piling/Earth Works		█																	
Structure Work					█														
Finishing Works						█													
Building Equipment				█															
External Work										█									
Equipment Manufacturing											█								
Equipment Transportation												█							
Equipment Installation/Adjustment													█						
Project Completion																			△
Soft Component (Technology Transfer 1)																			█ 1.3MM
Soft Component (Technology Transfer 2)																			█ 1.3MM
Soft Component (Technology Transfer 3)																			█ 1.0MM

Total: 17.6 months

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Annex-3: Project Cost Estimate

This Page is closed due to the confidentiality.

Annex-4: Undertakings of the Mauritian Side

Major Undertakings to be done by MMS under Implementation of the Project

No	Items
General Items	
1	To undertake all necessary institutional and juridical procedures in Mauritius.
2	To conduct Environmental Impact Assessment Clearance.
3	To facilitate duty (Tax) exemption and/or reimbursement procedures and to take necessary measures as well as provide requisite legal and/or administrative documentations for customs clearance to customs broker/forwarder to be employed by Contractor at the port of disembarkation for the materials and equipment imported for the Project.
4	To provide necessary working spaces at the MMS Head Office for the Consultant and the Contractor for the implementation of the Project, if required.
5	To support Japanese and other foreign nationals, whose services may be required in connection with the supply of products and services under the signed contracts, such facilities as may be necessary for their entry into Mauritius and stay therein for the performance of their work.
6	To exempt Japanese and other foreign 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 signed contracts.
7	To bear all the expenses, other than those to be borne by the Japan's Grant Aid, necessary for the implementation of the Project.
8	To ensure the security of the project sites prior to the commencement of the Project implementation.
For Construction of Radar Tower Building at Trou-aux-cerfs Existing Radar Observation Station	
9	To clear, level and reclaim the land prior to the commencement of the construction.
10	To provide spaces at the Project site for temporary facilities such as a contractor's office, workshop, building materials storage, etc. for the construction work.
11	To obtain Access Permission of Trou-aux-cerfs for Radar Tower Building Construction Work
12	To obtain necessary permissions/approvals for construction of Radar Tower Building; such as Demolishment of the existing Radar Tower Building, Building Height Clearance, Clearance for Waste Water on Site Treatment, Approval for Radar Tower Building Construction, etc.
13	To provide the commercial power (400V, 3-phase, 4-wire, 50Hz) supply (capacity: 100kVA) and other incidental facilities such as water supply and telephone line for Radar Tower Building.
14	To install the required step-down transformers for the commercial power supply for Radar Tower Building.
15	To demolish the existing Radar Tower Buildings at Trou aux Cerfs Radar Observation Station and clear the site according to the implementation schedule.
16	To provide temporary facilities for distribution of electricity, water and for the construction work.
17	To construct buildings other than Radar Tower Building, if required
18	To undertake incidental outdoor works such as gardening, fencing, gates, boundary walls and exterior lighting in and around the site, if necessary.
19	To procure furniture for other purpose of radar observation, if required
For Installation Work of the Equipment	
20	To obtain Access Permission of Trou-aux-cerfs for Radar System Installation Work
21	To remove and relocate the existing facilities if available for the installation of the Equipment, if necessary.
22	To obtain the required frequency(s) for the requested meteorological radar system and meteorological data communication system.

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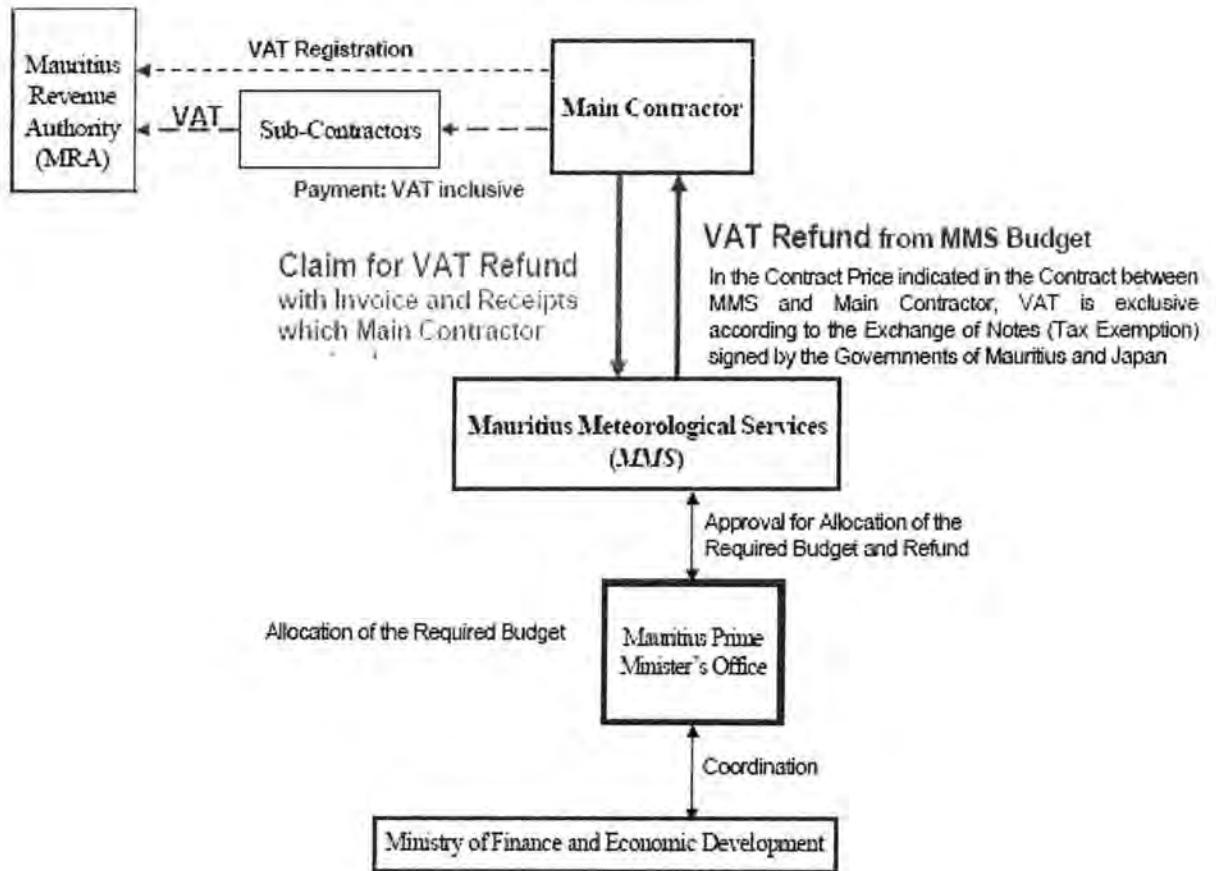
23	To secure effective space at the MMS Head Office for installation of the Equipment to be supplied.
24	To install 2 air-conditioning systems in the Main Meteorological Office (MMO).
After the completion of the Project	
25	To assign staff necessary for smooth operation and maintenance of the Equipment.
26	To procure the required spare parts and consumables for smooth operation and maintenance of the Equipment.
27	To provide adequate maintenance of Radar Tower Building(s) constructed under the Project, so as to ensure that they can function effectively.
28	To operate, maintain, and properly and effectively utilize the facilities constructed and the Equipment procured under the Project.
29	To allocate the necessary budget and personnel for appropriate meteorological radar observation and forecasting works.

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Annex-5: VAT Reimbursement Procedure

Value Added Tax (VAT) imposed in Mauritius in accordance with the Project under the Japan's Grant Aid Scheme shall be reimbursed by MMS with the following procedures advised by the Mauritius Revenue Authority (MRA).



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Annex-6.1: Letter of Consent by ICTA for utilization of Frequencies of 7.5 GHz Band



Information & Communication Technologies Authority (ICTA)

Level 12, The Colonnade - 03, Sir Colonnade Antoinette Street, Port Louis, Republic of Mauritius
Tel: (230) 211 5333/4 - Fax: (230) 211 9444 E-mail: icta@intnet.mu - Website: www.icta.mu

LICENCE ISSUED UNDER SECTION 24 OF THE INFORMATION AND COMMUNICATION TECHNOLOGIES ACT 2001 (AS AMENDED)

Licence No. (Refer to table 1 annexed herewith)

The Information and Communication Technologies Authority, in exercise of the powers conferred upon it under Section 24 of the Information and Communication Technologies Act 2001 (as amended) and of all other powers exercisable by this Authority for that purpose, hereby grants a

FIXED RADIO SPECTRUM LICENCE- SPL29 Licence [as per the Information and Communication Technologies (Amendment of Schedule) Regulations 2003]

to

METEOROLOGICAL SERVICES MAURITIUS

of St. Paul Road, Vaocas, Mauritius, to operate a point-to-point radio relay link, subject to the terms and conditions set out in the Schedule hereto.

Effective Date: 03 April 2012

Validity Period: Until 3rd April 2027

Issued by the Information and Communication Technologies Authority on the 4th day of April in the year 2012 in two originals.


.....
For Executive Director
Information and Communication Technologies Authority

A circular stamp from the Information & Communication Technologies Authority. The text inside the stamp reads: 'Information & Communication Technologies Authority', 'ICTA', 'Level 12, The Colonnade', '03, Sir Colonnade Antoinette St.', 'Port Louis'.

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Annex-6.2: Letter of Consent by ICTA for utilization of Frequencies of Radar System



Information & Communication Technologies Authority (ICTA)

Level 12, The Colicourt - 6, Sir Celicourt Antelma Street, Port Louis, Republic of Mauritius
Tel: (230) 211 5333/4 - Fax: (230) 211 9444 E-mail: icta@intnet.mu - Website: www.icta.mu

**LICENCE ISSUED UNDER SECTION 24 OF THE INFORMATION AND
COMMUNICATION TECHNOLOGIES ACT 2001 (AS AMENDED)**

Licence No. 335026

The Information and Communication Technologies Authority, in exercise of the powers conferred upon it under Section 24 of the Information and Communication Technologies Act 2001 (as amended) and of all other powers exercisable by this Authority for that purpose, hereby issues a

**RADIOLOCATION/RADIODETERMINATION– RA15 [as per
the Information and Communication Technologies (Amendment of Schedule)
Regulations 2003]**

to

MAURITIUS METEOROLOGICAL SERVICES.

having its registered office at St Paul Road, Vacoas, intended for the operation of a radiolocation station for meteorological purposes, subject to the terms and conditions set out in the Licence.

Effective Date: 03 April 2012

Validity Period: 15 years

Issued by the Information and Communication Technologies Authority on the 16th day of April in the year 2012 in two originals


For Executive Director
Information and Communication Technologies Authority


Information & Communication
ICTA
Level 12,
The Colicourt
& Sir Celicourt Antelma St,
Port Louis
Technologies Authority







Appendix 5. Soft Component Plan

Soft Component Plan

<Background of Soft Component Plan>

The existing meteorological radar system of Mauritius, which had played the most important role in monitoring tropical cyclones generated in the Southwest Indian Ocean, completely stopped in 2005 due to aging deterioration. As a consequence, the meteorological radar system of La Réunion is the only functioning radar system for monitoring tropical cyclones in the region of the Southwest Indian Ocean as of present time. However, since most tropical cyclones come from the north-northeast/northeast/east-northeast, the radar system of La Réunion located at a point of 230 km west-southwest from Mauritius is not sufficient and/or inadequately encompassing to monitor in advance the tropical cyclones which invade/attack this area. The fact that the radar system of Mauritius is out of order results in the deterioration and/or insufficient ability to monitor/detect natural calamities and, consequently, makes it unable to conduct effective countermeasures towards disaster prevention and mitigation in the entire region. In essence, it is akin to losing one precious eye to monitor tropical cyclones.

Seven (7) years passed since the existing meteorological radar system of Mauritius operationally stopped. And only 2 technicians having practical experience to operate the existing meteorological radar system currently remains with MMS. It is good to note that the MMS's technicians are proficient in the use of computers and computerized meteorological observation equipment. However, no technician in MMS has practical experience to operate a digital meteorological radar system which is planned to be procured under the Project. For smooth operation and maintenance of the digital meteorological radar system and assurance of the required sustainability of the Project outcomes, implementation of the following technology transfers in the soft component (soft component schedule is indicated in the Implementation Schedule attached hereunder) is required.

<Soft Component Target>

The Soft Component Targets are as follows.

- Operation, maintenance, fault finding, remedy and recovery to be appropriately carried out by the MMS
- Prompt and appropriate meteorological radar operation and maintenance utilizing the meteorological radar system manual summary and the meteorological radar system maintenance & management record book

- Meteorological radar observation in accordance with the sequence & schedule for Intensity Mode and Doppler Mode in order to appropriately understand weather phenomena and to utilize the observed radar data for forecasting

<Soft Component Outputs>

Soft Component Outputs are as follows.

Table: Soft Component Outputs

No.	Item	Output
1	Meteorological Doppler Radar Operation, Maintenance, Fault Finding, Remedy and Recovery	Implementation of operation, maintenance, fault finding, remedy and recovery appropriately by the MMS 1) Routine maintenance using measuring instruments and tools 2) Practice of replacement of spare parts to actual system and confirmation of system operation 3) Practice of countermeasures, fault finding, remedy and recovery
2	Prompt and Appropriate Meteorological Doppler Radar Operation and Maintenance utilizing Meteorological Radar System Manual Summary and Meteorological Radar System Maintenance & Management Record Book	Implementation of prompt and appropriate meteorological Doppler radar operation and maintenance utilizing meteorological radar system manual summary and meteorological radar system maintenance & management record book
3	Meteorological Radar Observation in accordance with Sequence & Schedule for Intensity Mode and Doppler Mode	Implementation of meteorological radar observation in accordance with the sequence & schedule for Intensity Mode and Doppler Mode in order to appropriately understand weather phenomena and to utilize the observed radar data for forecast operation.

<Means of Verification for Outputs Achievement>

Means of verification for outputs achievement of Soft Component are as follows.

Table: Soft Component Indicators

No.	Item	Objectively Verifiable Indicators	Means of Verification
1	Meteorological Doppler Radar Operation, Maintenance, Fault Finding, Remedy and Recovery	Operation, maintenance, fault finding, remedy and recovery are carried out appropriately by the MMS	Confirmation of proficiency through 1) routine maintenance using measuring instruments and tools, 2) practice of replacement of spare parts to actual system and confirmation of system operation, and 3) practice of countermeasures, fault finding, remedy and recovery
2	Prompt and Appropriate Meteorological Doppler Radar Operation and Maintenance utilizing Meteorological Radar System Manual Summary and Meteorological Radar System Maintenance & Management Record Book	Meteorological Doppler radar operation and maintenance utilizing meteorological radar system manual summary and meteorological radar system maintenance & management record book are implemented promptly and appropriately.	<ul style="list-style-type: none"> · Evaluation of frequency of usage of the meteorological radar system manual summary · Confirmation of indication (daily, weekly, monthly) in the meteorological radar system maintenance & management record book
3	Meteorological Radar Observation in accordance with Sequence & Schedule for Intensity Mode and Doppler Mode Sequence & Schedule	Meteorological radar observation is implemented according to radar observation sequence & schedule for Intensity Mode and Doppler Mode	Confirmation of meteorological radar observation in accordance with the sequence & schedule for Intensity Mode and Doppler Mode in order to appropriately understand weather phenomena and to utilize the observed radar data for forecast operation.

<Scheduled Activities of Soft Component>

Scheduled Activities of Soft Component are as follows.

Table: Scheduled Activities of Soft Component

Output	Required Technique and Field	Current Technique and Required Technique Level	Target Group	Means of Implementation	Source of Implementation	Product
1. Meteorological Doppler Radar Operation, Maintenance, Fault Finding, Remedy and Recover	Engineer who has a meteorological radar adjustment and fault finding technique	Since technicians in the MMS have no practical experience of adjustment and fault finding of a digital meteorological radar system, it is required that the MMS technicians should obtain meteorological radar adjustment and fault finding technique.	Indicated in the table below	Routine maintenance using measuring instruments and tools	Expert Consultant on meteorological radar adjustment and fault finding: 1.3 Man-Months. (Period of Technology Transfer in Mauritius: 35 days) Direct Support	Manual of routine maintenance using measuring instruments and tools
				Practice of replacement of spare parts to actual system and confirmation of system operation		Manual of replacement of spare parts to actual system and confirmation of system operation
				Practice of countermeasures, fault finding, remedy and recovery		Manual of fault finding, remedy and recovery
				Production of operation and maintenance manual		
2. Meteorological Doppler Radar System Manual Summary and Meteorological Radar System Maintenance & Management Record Book	Engineer who has a meteorological radar operation and maintenance technique	Since technicians in the MMS have no practical experience of operation and maintenance of a digital meteorological radar system, it is required that the MMS technicians should obtain meteorological radar operation and maintenance technique utilizing meteorological Doppler radar system manual summary and meteorological radar system maintenance & management record book.	Indicated in the table below	Discussion with the MMS technicians	Expert Consultant on meteorological radar operation and maintenance: 1.3 Man-Months (Period of Technology Transfer in Mauritius: 35 days) Direct Support	Meteorological Doppler radar system manual summary
				Selection of the most important points from meteorological Doppler radar system manual		Meteorological radar system maintenance & management record book
				Production of meteorological Doppler radar system manual summary		<ul style="list-style-type: none"> ✦ Date and time of occurrence of system failure/trouble ✦ Cause/s of system failure/trouble (abnormal noise, part degradation, etc.) ✦ Repair procedures implemented ✦ Name and quantity of replaced parts ✦ Name of engineer/s who perform the repair /troubleshooting
				Production of meteorological radar system maintenance & management record book		
3. Preparation of Sequence & Schedule for Intensity Mode and Doppler Mode	Engineer who can identify Sea Clutter and Blind Area by radar observation data and prepare sequence & schedule for meteorological radar observation which is suitable to	Since technicians in the MMS have no practical experience of CAPPI observation using digital meteorological Doppler radar system and has no technique of sequence & schedule for Intensity Mode and Doppler Mode, it is required that the MMS technicians	Indicated in the table below	Discussion with the MMS technicians and lecture	Expert Consultant on meteorological radar observation: 1.0 Man-Month (Period of Technology Transfer in Mauritius: 26 days) Direct Support	Sequence & Schedule for Intensity Mode and Doppler Mode
				Identification of Sea Clutter of meteorological radar system and Blind Area at antenna elevation angle (0.5 interval degree, between 1-3 degree)		
				Preparation of Blind Area at antenna elevation angle (0.5 interval degree, between 1-3 degree)		

weather phenomena in Mauritius	should obtain preparation technique of sequence & schedule for meteorological radar observation with awareness of its importance.		Preparation of Sequence & Schedule for Intensity Mode and Doppler Mode Implementation of radar observation using Sequence & Schedule for Intensity Mode and Doppler Mode		
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Table: Target Personnel in MMS for Technology Transfer in Soft Component

Technology Transfer of No. 1 & 2		Technology Transfer of No. 3	
Electronic Technician Section: Position	Number	Forecasting Section: Position	Number
System Engineer to be recruited	1	Meteorologist	12
Communication Engineer to be recruited	1	System Engineer to be recruited	1
Electronic Technician to be recruited	10	Communication Engineer to be recruited	1
Chief Electronic Technician	1	Chief Electronic Technician	1
Principal Electronic Technician	4		
Senior Electronic Technician	4		
Trainee Electronic Technician	4		

Details of each activity schedule are as follows.

	Activity No.1	Activity No.2	Activity No.3
Date	Meteorological Doppler Radar Operation, Maintenance, Fault Finding, Remedy and Recover	Meteorological Doppler Radar System Manual Summary and Meteorological Radar System Maintenance & Management Record Book	Preparation of Sequence & Schedule for Intensity Mode and Doppler Mode
1	Departure from Japan	Departure from Japan	Departure from Japan
2	Arrival in Mauritius	Arrival in Mauritius	Arrival in Mauritius
3	Preparatory Work at Trou-aux-cerfs	Meteorological Radar Tower Building	Discussion with the MMS technicians and lecture
4			
5	Practice of routine maintenance using measuring instruments and tools	Discussion with the MMS technicians	Identification of Sea Clutter of meteorological radar system and Blind Area at antenna elevation angle (0.5 interval degree, between 1-3 degree)
6	Production of operation and maintenance manual	Selection of the most important points from meteorological Doppler radar system manual	
7			
8	Sat.(Holiday)	Sat.(Holiday)	Sat.(Holiday)
9	Sun.(Holiday)	Sun.(Holiday)	Sun.(Holiday)
10	Production of operation and maintenance manual		Preparation of Blind Area at antenna elevation angle (0.5 interval degree, between 1-3 degrees)
11		Production of meteorological Doppler radar system manual summary (Draft)	Preparation of Sequence & Schedule for Intensity Mode and Doppler Mode (Draft)
12	Practice of replacement of spare parts to actual system and confirmation of system operation	Production of meteorological radar system maintenance & management record book (Draft)	
13	Production of operation and maintenance manual		Discussion with the MMS technicians
14			
15	Sat.(Holiday)	Sat.(Holiday)	Sat.(Holiday)
16	Sun.(Holiday)	Sun.(Holiday)	Sun.(Holiday)
17	Production of operation and maintenance manual	Production of meteorological Doppler radar system manual summary (Draft)	Review of Sequence & Schedule for Intensity Mode and Doppler Mode (Draft)
18			
19	Practice of countermeasures, fault finding, remedy and recovery	Utilization of meteorological Doppler radar system manual (Draft) and meteorological radar system maintenance & management record book (Draft) by the MMS technicians	Implementation of radar observation using Sequence & Schedule for Intensity Mode and Doppler Mode
20	Production of operation and maintenance manual		
21			

22	Sat.(Holiday)	Sat.(Holiday)	Sat.(Holiday)
23	Sun.(Holiday)	Sun.(Holiday)	Sun.(Holiday)
24	Production of operation and maintenance manual	Review of Meteorological Doppler radar system manual summary (Draft) and Meteorological radar system maintenance & management record book (Draft)	Completion of Radar observation using Sequence & Schedule for Intensity Mode and Doppler Mode
25	Review of Training by the MMS Production of operation and maintenance manual	Utilization of meteorological Doppler radar system manual and meteorological radar system maintenance & management record book by the MMS technicians	Production of Soft Component Completion Report
26			
27			
28	Production of Soft Component Completion Report	Production of Soft Component Completion Report	Technical discussion with the MMS
29	Sat.(Holiday)	Sat.(Holiday)	Departure from Mauritius
30	Sun.(Holiday)	Sun.(Holiday)	Arrival in Japan
31	Production of Soft Component	Production of Soft Component	
32	Completion Report	Completion Report	
33	Technical discussion with the MMS	Technical discussion with the MMS	
34	Departure from Mauritius	Departure from Mauritius	
35	Arrival in Japan	Arrival in Japan	

*Rental car on-site: three in one car

<Procurement Method of Soft Component Implementation Resource>

Implementation Resource is procured based on the direct support by Japanese consultants who are in charge of equipment procurement of the Project. The reasons are as follows.

- Regarding technology transfer, personnel with advanced technique and knowledge of weather services and meteorological radar system is necessary.
- Personnel as indicated above usually belongs to the weather organizations which actually conduct weather services.
- Personnel who has similar experience to the proposed technology transfer is required.

<Implementation Schedule>

The implementation schedule of the whole Project and soft component is indicated in the following table. Soft component is planned to be implemented in the adjustment stage after the installation of the meteorological radar system and before the completion of the Project.

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
Construction of Trou-aux-cerf Meteorological Radar Tower Building	Total: 17.6 months																		
Preparation Work	■																		
Temporary/Piling/Earth Works	■	■	■	■	■	■													
Structure Work					■	■	■	■	■	■	■	■	■	■					
Finishing Works								■	■	■	■	■	■	■	■				
Building Equipment			■	■	■	■	■	■	■	■	■	■	■	■	■				
External Work											■	■	■	■	■				
Equipment Manufacturing			■	■	■	■	■	■	■	■	■	■	■	■					
Equipment Transportation											■	■	■						
Equipment Installation/Adjustment													■	■	■	■	■	■	■
Project Completion																			△
Soft Component (Technology Transfer 1)																			■ 1.3MM
Soft Component (Technology Transfer 2)																			■ 1.3MM
Soft Component (Technology Transfer 3)																			■ 1.0MM

<Soft Component Product>

Soft Component Products are as follows.

Table: Soft Component Products in Technology Transfer

Product Name	Submission Time	No. of Pages	
Implementation report on 1) routine maintenance using measuring instruments and tools, 2) practice of replacement of spare parts to actual system and confirmation of system operation, and 3) practice of countermeasures, fault finding, remedy and recovery	After Technology Transfer	20	
Meteorological radar system manual summary		30	
Meteorological radar system maintenance and management record book		10	
Radar observation sequence & schedule for Intensity Mode and Doppler Mode		10	
Output Name	Content	Submission Time	No. of Pages
Soft Component Completion Report	<ul style="list-style-type: none"> Scheduled Activities and Actual Achievement Scheduled Outputs and Achievement Factors which influence Achievement of Outputs Recommendation Outputs 	Completion of Soft Component	50

<Obligation of Recipient Country>

Obligations of the MMS for the implementation of Soft Component are as follows.

- 1) Manpower Development
 - a) Continuous recruitment of human resources for the next generation
 - b) Development of more qualified technical personnel through training and other related manpower development programs
- 2) Longer Life Span of the Equipment procured and the Radar Tower Building constructed under the Project
 - a) Regularly secure the necessary budget for the efficient operation and maintenance of the systems and building equipment, and the procurement of requisite spare parts and consumables for all the equipment to be supplied under the Project
 - b) Ensure protection of the building, equipment and facilities against theft and vandalism

The MMS will be able to implement the above obligations by its organizational and personnel capabilities. Most especially, the “Continuous recruitment of human resources for the next generation” is of vital concern. It is imperative for the MMS to become self-reliant in technical areas such as the operation and maintenance of radar systems. Hence, it is essential that it makes continued efforts to recruit and fill vacancies thereby promoting technology transfer for all staff levels, from training electrical technicians to engineer(s). The MMS fully recognizes the need to strengthen the technical section/s. For staff recruitment, the Prime Minister’s Office is the supervising organization of the MMS and should give its effective cooperation and special attention on this matter.

Appendix 6. References

No	Name of References	Original/Copy	Publisher	Data of Publication
1	Report on Tropical Cyclone Gamede	Original	Mauritius Meteorological Services	2007
2	Annual Digest of Statistics 2009	Original	Ministry of Finance and Economic Development	2010
3	Digest of Agricultural Statistics 2009	Original	Ministry of Finance and Economic Development	2010
4	Mauritian Standard	Copy	Mauritius Standards Bureau	2009