Annex-5

Check List of VSAT System transferred from the Department of Agriculture (DOA)

Item	Conditions
Antenna	Availability of Antenna Unit - Antenna Dish - Support Arm of Feeder - Pedestal
	No damage on the face of an antenna dish
	Feasibility of Antenna modification against 250kph Wind velocity
	Feasibility of installation on the roof of a Radar Tower Building to be constructed
ODU	Availability of ODU - BUC - LNB - Feeder - Wave Guide - Cables between ODU-Antenna and ODU-IDU - Arrester Unit between ODU and IDU
IDU	Availability of IDU - Modem - Power Supply Unit for ODU - Installation Rack
	The all modems for each Radar Observation Station and PAGASA WFFC must be the same model or the manufacturer's guarantee (PAGASA existing VSAT systems) on connecting all the modems through a telecommunication satellite must be available.
	Required Ethernet port: 1 (+1 spare) or more
	Required Ethernet Router Function <Data Routing (Control Plane)> Setup Range of Routing Table: 2 hops or more (PAGASA WFFC), 1 hop or more (each Radar Observation Station) *hop: Nos. of forwarding router <Gateway (Forwarding Plane)> Discarding the date transmitted from unknown IP address
Minimum requirement of data transmission speed between each Radar Observation Station and PAGASA WFFC: 64kbps	
Availability of the required technical countermeasure of TDMA (Time Division Multiple Access) for VSAT system failure or transmission time delay which hamper whole VSAT network communication.	

* The PAGASA VSAT System transferred from the Department of Agriculture (DOA) must be satisfied all the conditions indicated in the above table for utilizing in the Project

Annex-6

Responsibility Classification for Implementation of the Project in case that the Project has been approved by the Government of Japan

Table: Scope of Works for Modernization of the Meteorological Radar Observation Station

	By PAGASA	By the Japan's Grant Aid
Required Facilities for the Meteorological Radar Observation Station		
Partial demolishment and renovation of the existing buildings for establishing a new Staff Quarter	○	—
Construction of a new Radar Tower Building for installation of a new Radar System	—	○
Required items for implementation of the Project		
Demolishment of the existing facilities to be obstructed for the Project	○	—
Shifting the existing facilities and equipment such as observation filed, flag pole, radar system, etc.	○	—
Repairing the existing boundary wall or fence and gate	○	—
Re-wiring for power cable	○	—
Construction of an access road	○	—
Repairing the existing pavement	○	—
Construction of pavements for the Staff Quarter	○	—
Construction of pavements for the Radar Tower Building	—	○
Furniture for the Staff Quarter	○	—
Furniture for the Radar Tower Building	—	○
Installation of step-down transformer(s) for 150kVA power supply for the Radar Tower Building	○	—
Required Equipment		
Equipment such as PC terminal(s), printers, PC peripherals SSB, etc. required for the routine works at the Staff Quarter	○	—
Radar System including power regulating and supply equipment, 2 engine generators, PC terminals, printers, PC peripherals for the Radar Tower Building	—	○
Repairing/brushing up the existing engine generators for the Staff Quarter	○	—

Table: Rooms to be established in the following buildings

Staff Quarter	Radar Tower Building
• Routine work office(s) • Bed rooms • Kitchen with electrical and firewood cookers • Dining room • Toilets • Bath rooms • Engine generator room for power back-up (utilization of the existing engine generators) • Storage, etc.	• Technical rooms required for installation of the radar system, the radar operation (observation) and the radar system maintenance • Toilets, tea kitchen and shower room for 24 hours operation

Annex-7

Schedule for obtaining ICC approval

Items \ Year and month	2008							2009
	6	7	8	9	10	11	12	1
Assistance for preparation of ICC Form by the Team								
Explanation of draft report in the Philippines by the Team								
Provision of all the required information for preparation of ICC Form by the Team								
Submission of ICC Form to NEDA by PAGASA								
Dead Line of Approval of ICC for the Project (must be before Christmas) by PAGASA								

MINUTES OF DISCUSSIONS ON THE BASIC DESIGN STUDY ON "THE PROJECT FOR IMPROVEMENT OF THE METEOROLOGICAL RADAR SYSTEM IN THE PHILIPPINES" (EXPLANATION OF DRAFT REPORT)

From June to August 2008, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Basic Design Study Team on the Project for Improvement of the Meteorological Radar System in the Philippines (hereinafter referred to as "the Project") to the Republic of the Philippines (hereinafter referred to as "the Philippines"), and through discussion, field survey, and 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 Government of the Philippines (hereinafter referred to as "the GOP") on the components of the draft report, JICA sent the Draft Report Explanation Team (hereinafter referred to as "the Team"), headed by Mr. Satoru MIMURA, Director of Disaster Management Division I, Water Resources and Disaster Management Group, Global Environment Department JICA, from 28th October to 5th November 2008.

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

Quezon City, 4th November 2008

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Mr. Satoru MIMURA
Team Leader
Draft Report Explanation Team
Japan International Cooperation Agency

Dr. Graciano P. YUMUL, Jr.
Undersecretary for Research and Development
Department of Science and Technology (DOST)
Republic of the Philippines

Dr. Prisco D. NILO
Director
Philippine Atmospheric, Geophysical and
Astronomical Services Administration
(DOST-PAGASA)

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ATTACHMENT

1. Components of the Draft Report

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

2. Japan's Grant Aid scheme

The Philippine side understands Japan's Grant Aid Scheme and the necessary measures to be taken by the GOP as explained by the Team and described in Annex 4-1 and Annex 4-2 of the Minutes of Discussions signed by both sides on 9th July, 2008 (hereinafter referred to as "the Previous M/D").

3. Schedule of the Study

JICA will complete the final report in accordance with the confirmed items and send it to the GOP by the end of December 2008.

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 Philippine side the estimated project cost to be borne by the Government of Japan (hereinafter referred to as "the GOJ") as attached in Annex -1(A). 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 tender procedure.

5. Other relevant issues

5.1 Components of the Project

The Philippine side agreed that the components of the Project will be determined by the GOJ based on the result of the study after the discussion with the GOP.

5.2 Procurement of VSAT

The Philippine side explained that due to the budgetary procedures of the GOP, they cannot assure the provision of VSAT in FY2010 until late 2009. They also expressed their anxiety about compatibility and suitability of VSAT with Radar System if it is procured and installed independently.

Therefore, they strongly requested the GOJ for the inclusion of VSAT in the Project.

The Team replied that they will consult the situation of the GOP with the relevant officials of the GOJ and reply the result accordingly.

5.3 Approval of the Investment Coordination Committee (ICC)

DOST-PAGASA shall obtain ICC approval for the implementation of the Project. The GOP is fully aware that the approval of ICC is a precondition for the Exchange of Notes.

5.4 Operation and Maintenance Arrangement

The Team explained the estimated cost for management, operation and maintenance of the facilities as described in Annex -2. The Philippine side is requested to allocate sufficient budget and qualified staff for proper and effective operation and maintenance of the equipment procured under the Project.

5.5 Training

The Philippine side requested to carry out technical trainings in relation to the Grant Aid Project. The Team replied that the GOP should submit requests for training under technical cooperation.

5.6 Undertakings of the Philippines side

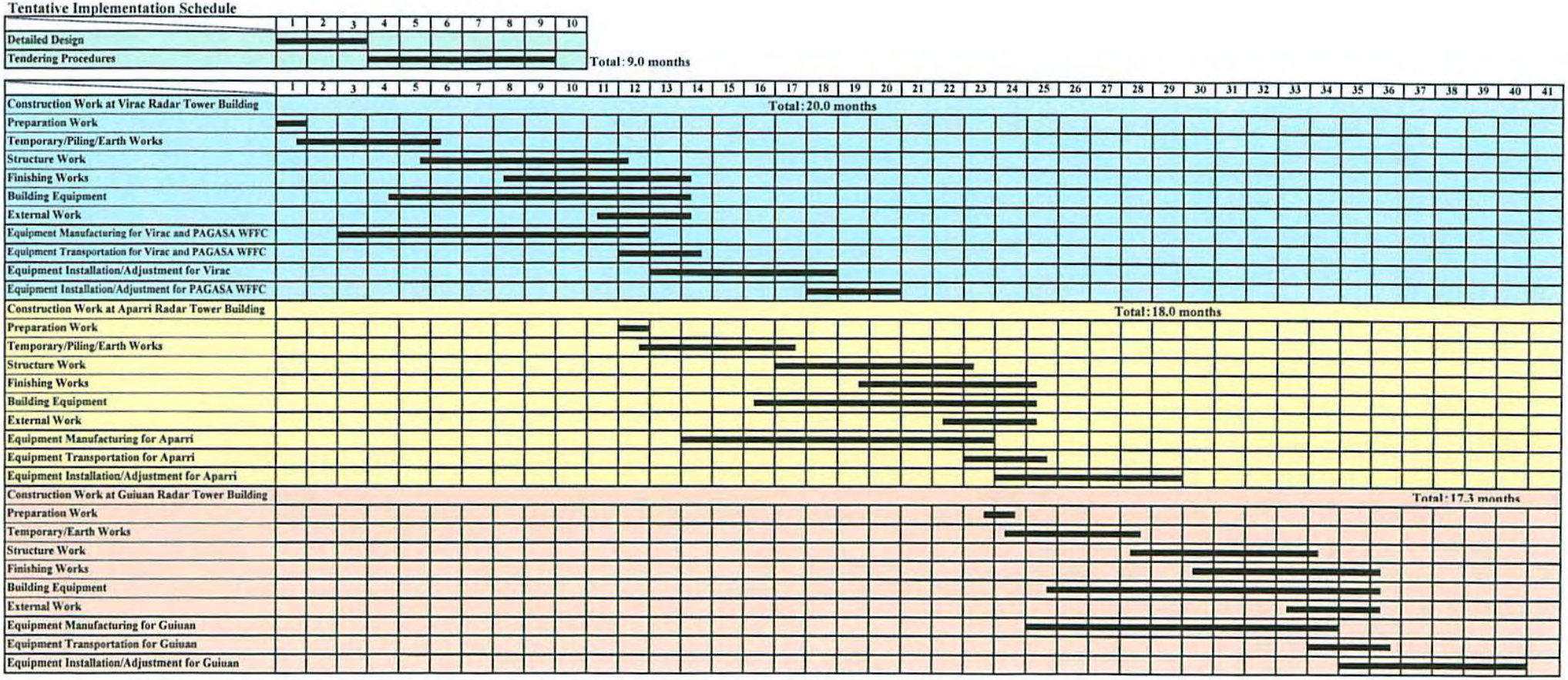
Both sides confirmed that the GOP will carry out the following in accordance with the implementation schedule of the Project:

- Improvement of the access road for Guiuan radar station prior to commencement of the Project implementation at the site
- Partial demolition and renovation of the existing radar tower buildings according to the construction schedule
- Secure written confirmation of non-interference between radar system and the mobile phone communication facility at Virac radar station during the detailed design stage
- Operation of two radar systems during implementation of the Project
- Secure the required budget for Value Added Tax (VAT) and Customs duties
- Provision of adequate security for the equipment at the proposed project sites
- Secure the required permits and clearances as described in Annex -4

Annex -1	Tentative Implementation Schedule
Annex -2	Estimate of Project Cost and Capital Cost
Annex -3	Required Items for Investment Coordinating Council (ICC) Approval
Annex -4	Required Permits and Clearances for the Project

Annex -1

Tentative Implementation Schedule



Annex -2

Estimate of Project Cost and Capital Cost

The Project cost to be financed by the Japan's Grant Aid Assistance and the required capital cost for the Project to be borne by PAGASA have been estimated and are shown in the following tables. However, the Project cost estimates are provisional and would be further examined by the Government of Japan for the approval of the Grant.

Project Cost to be borne by the GOP

Total Project Cost: 251,604,000 Peso +3 Million JP Yen (approx. 656 Million JP Yen)

Estimated Capital Cost: 21,721,000 Peso x 1.12 (VAT) = 24,328,000 Peso (approx. 63 Million JP Yen)
Estimated VAT for Construction Works: 65,452,000 Peso (approx. 170 Million JP Yen)
Estimated VAT & Import Tax for Equipment: 115,117,000 Peso (approx. 299 Million JP Yen)
Estimated Equipment Procurement and Installation Work Cost for the Meteorological Data Satellite Communication System (VSAT): 46,657,000 Peso (approx. 121 Million JP Yen)*
Banking Arrangement: 3 Million JP Yen

*Inclusion of VSAT in the Grant is requested by the GOP.

Estimated Capital Cost to be borne by PAGASA

Table2 : Estimated Capital Cost to be borne by PAGASA

Estimated Capital Cost of PAGASA for Virac Radar Observation Station for 2010 (Philippine Peso)

Items	Capital Cost
Partial demolition of the existing building including disposal of debris material 4,800 Peso/m^2 x (3.3 x 3.3 x 3.14 x 3) x 1.2 =	590,000
Renovation of the existing buildings for establishing a new Staff Quarter 8,000 Peso/m^2 x (8.7 x 8.7 x 3.14 x 2 + 288) x 1.1 =	6,717,000
Removal of the existing radar system Heavy Equipment: 360,000 Peso + Scaffolding: 65,000 Peso + Wooden Box: 30,000 Peso + Manpower: 179,000 Peso + Accommodation & Transportation for Manpower: 53,000 Peso=	687,000
Shifting the existing observation field and instruments	20,000
Repairing the existing boundary wall or fence and gate	140,000
Repairing the existing concrete pavement	50,000
Furniture for the Staff Quarter	120,000
Installation of step-down transformer(s) for 150kVA power supply for the Radar Tower Building	420,000
Procurement of a 25kVA engine generator for the Staff Quarter	550,000
Total	9,294,000

Estimated Capital Cost of PAGASA for Aparri Radar Observation Station for 2011 (Philippine Peso)

Items	Capital Cost
Demolition of the existing facilities which may obstruct during construction of the new Radar Tower Building 3,500 Peso/m^2 x (60 + 5.5 + 2) x 1.2 =	284,000
Renovation of the existing building for the Staff Quarter 8,000 Peso/m^2 x (49 x 4 + 10) x 1.1 =	1,813,000
Removal of the existing radar system Heavy Equipment: 360,000 Peso + Scaffolding: 65,000 Peso + Wooden Box: 30,000 Peso + Manpower: 179,000 Peso + Accommodation & Transportation for Manpower: 53,000 Peso=	687,000
Shifting the existing observation field and instruments	20,000
Repair of the existing boundary wall or fence and gate	350,000
Repair of the existing concrete pavement	40,000
Furniture for the Staff Quarter	120,000
Installation of step-down transformer(s) for 150kVA power supply for the Radar Tower Building	420,000
Procurement of a 25kVA engine generator for the Staff Quarter	550,000
Total	4,284,000

Estimated Capital Cost of PAGASA for Guiuan Radar Observation Station for 2012 (Philippine Peso)

Items	Capital Cost
Renovation of the existing building for the Staff Quarter 8,000 Peso/m^2 x (65 x 2) x 1.1 =	1,144,000
Removal of the existing radar system Heavy Equipment: 360,000 Peso + Scaffolding: 65,000 Peso + Wooden Box: 30,000 Peso + Manpower: 179,000 Peso + Accommodation & Transportation for Manpower: 53,000 Peso=	687,000
Shifting the existing observation field and instruments (steel pole for anemometer)	50,000
Repair of the existing boundary wall or fence and gate	70,000
Construction of an access road 2,900 Peso/m^2 x 856.9 m^2 x 1.2 =	2,982,000
Repair of the existing concrete pavement	20,000
Furniture for the Staff Quarter	120,000
Installation of step-down transformer(s) for 150kVA power supply for the Radar Tower Building	420,000
Cabling for 3 Phase Commercial Power Supply for the Radar Tower Building	2,100,000
Procurement of a 25kVA engine generator for the Staff Quarter	550,000
Total	8,143,000
Ground Total *VAT is excluded in the Capital Costs indicated in the above table	21,721,000

Banking Arrangement	(Japanese Yen)
Bank Commissions (0.1% of the Project Cost to be granted)	3,295,000

Table3: Estimated VAT for Construction Works to be paid by PAGASA (Peso)

Construction Work	VAT (12%)
Construction of Virac Meteorological Radar Tower Building	22,618,000
Construction of Aparri Meteorological Radar Tower Building	22,064,000
Construction of Guiuan Meteorological Radar Tower Building	20,770,000
VAT Total	65,452,000

Table4: Estimated VAT & Import Tax for Equipment to be paid by PAGASA (Peso)

Equipment	Import Tax (10%)	VAT (12%)
Virac Meteorological Radar Observation Station	16,908,000	20,289,000
Aparri Meteorological Radar Observation Station	16,908,000	20,289,000
Guiuan Meteorological Radar Observation Station	16,908,000	20,289,000
PAGASA Head Office, WFFC	1,603,000	1,923,000
VAT & Import Tax Total	52,327,000	62,790,000

Table5: Estimated Equipment Procurement and Installation Work Cost for the Meteorological Data Satellite Communication System (VSAT)* to be paid by PAGASA (Peso)

Equipment	Equipment Procurement and Cost (including Import Tax and VAT)	Installation Work Cost	Sub Total
Virac Meteorological Radar Observation Station	5,726,000	1,204,000	6,930,000
Aparri Meteorological Radar Observation Station	5,726,000	1,216,000	6,942,000
Guiuan Meteorological Radar Observation Station	5,726,000	1,215,000	6,941,000
PAGASA Head Office, WFFC	24,330,000	1,514,000	25,844,000
Total	41,508,000	5,149,000	46,657,000

Applied Exchange Rate: US$ 1 = 105.80 JP Yen, 1 Peso = 2.60 JP Yen

*Inclusion of VSAT in the Grant is requested by the GOP.

Annex -3 Required Items for Investment Coordinating Council (ICC) Approval

	Required Items	Remarks
1	Feasibility Study Report	Instead of the Feasibility Study Report, the Draft Basic Design Study Report will be provided. The Report must highlight the following; 1) Historical Background 2) Sectoral Program Context 3) Regional Spatial Context 4) Objectives 5) Description 6) Cost and Financing 7) Institutional Arrangement 8) Implementation Schedule 9) Technical/Market/Environmental Analysis 10) Financial Analysis 11) Economic Analysis 12) Social Analysis 13) Issues 14) Recommendations
2	Accomplished ICC PE Forms	The Form must be prepared according to NEDA's instructions/format.
3	Regional Development Council (RDC) endorsements for regional, municipal and local projects	Virac, Aparri and Guiuan
4	Endorsement from other concerned agencies	Endorsement of the Department of Science and Technology (DOST) for submission of the ICC PE Form
5	Local map	-
6	DBM certification of budget cover availability for the project	DBM certification of budget strategy covering the whole project implementation period
7	EIS/ECC/CNC	Certificate of Non-Coverage (CNC) issued on May 26, 2008

Annex -4 Required Permits and Clearances for the Project

Table 1: Before start of the Detailed Design

Requirements	Concerned Agencies	Weather and Flood Forecasting Center (WFFC)	Virac Meteorological Radar Observation Station	Aparri Meteorological Radar Observation Station	Guiuan Meteorological Radar Observation Station
Certificate of Non-Coverage (CNC)	Environmental Management Bureau (EMB)	-	Certificate issued on May 26, 2008	Certificate issued on May 26, 2008	Certificate issued on May 26, 2008
Certificate of the Meteorological Radar Frequency (2,850MHz ±10Mhz)	National Telecommunications Commission (NTC)	-	O	O	O
Radiation Influence Permit	Department of Health (DOH)	-	O	O	O
Height Clearance Permit	Civil Aviation Authority of the Philippines (CAAP)	-	O (Virac Airport)	O (Tuguegarao Airport)	O (Guiuan Airport)

Table 2: During the Project Implementation

Requirements	Concerned Agencies	Weather and Flood Forecasting Center (WFFC)	Virac Meteorological Radar Observation Station	Aparri Meteorological Radar Observation Station	Guiuan Meteorological Radar Observation Station
VSAT User License	National Telecommunications Commission (NTC)	O	O	O	O
Transponder Lease Agreement with the Satellite Operator	MEASAT III	O	O	O	O
Building Permit (for Construction of a new Radar Tower Building)	Municipality (Municipal Planning and Development Office)	-	O (Bato Municipality)	O (Aparri Municipality)	O (Guiuan Municipality)

Appendix 5. References

No	Name of References	Original/Copy	Publisher	Data of Publication
1	P.C.G.S. 2516 LEGAZPI CITY 1:250,000	Original	National Mapping and Resource Information Authority	1954
2	P.C.G.S. 2525 ORMOC CITY 1:250,000	Original	National Mapping and Resource Information Authority	1954
3	Sheet 4153 III GUIUAN 1:50,000	Original	National Mapping and Resource Information Authority	1956
4	Sheet 2504 APARRI 1:250,000	Original	National Mapping and Resource Information Authority	1982
5	Sheet 7379 IV APARRI 1:50,000	Original	National Mapping and Resource Information Authority	1990
6	Sheet 3860 I NAGUMBUAYA POINT 1:50,000	Original	National Mapping and Resource Information Authority	2006
7	National Structural Code of the Philippines 2001	Original	Association of Structural Engineers of the Philippines	2001
8	Strategy Planning Matrices for the Medium-Term Philippine Development Plan 2004 - 2010	Original	National Economic and Development Authority	2004
9	Atlas of the Philippines and the World for Home and Office	Original	National Book Store	2006
10	2006 Philippine Statistical Yearbook	Original	National Statistical Coordination Board	2006
11	The National Building Code	Original	Vicente B. Foz	2007
12	Fire Code of the Philippines	Original	A.V.B. Printing Press	2008