TRAINING AND DIALOGUE PROGRAMS

GENERAL INFORMATION ON

DIGITAL TV BROADCAST ENGINEERING AND EQUIPMENT MAINTENANCE MANAGEMENT
集団研修「デジタルTV放送技術と機器保守管理」

JFY 2010

<Type: Solution Creation / 類型：課題解決促進型>

NO. J1000642　ID: 1080775

From June 2010 to October 2010

Phase in Japan: From July 6, 2010 to September 11, 2010

This information pertains to one of the Training and Dialogue Programs of the Japan International Cooperation Agency (JICA), which shall be implemented as part of the Official Development Assistance of the Government of Japan based on bilateral agreement between both Governments..

I. Concept

Background

TV broadcasting is one of the efficient and inexpensive communication means, which can convey information equally to all across the world. TV broadcasting enables developing countries in particular to efficiently promote knowledge dissemination and public awareness in the field of education, health service, environment, peace building and democratization. Its potency is very much expected as a transmission means of information where literacy rate is low.

And digitalization in TV broadcasting has become a global trend and some thirty countries have already started digital broadcasting. ITU, International Telecommunication Union, and Broadcasting Union have proposed full transition to terrestrial digital broadcasting by 2015. Posed by this transition, manufacturing and distribution of analog broadcasting equipments in developed countries will come to an end. Supply of analog equipment to developing countries will be eventually stopped. Therefore, developing countries will virtually face the problem of sustaining analog broadcasting in the future and have to cope with the issue of digitalization unavoidably.

On the other hand, developing countries with diversified culture (languages, races) can take advantage of features of digital broadcasting. Provision of finely-textured broadcasting program such as multilingual broadcasting and teletext broadcasting (multi-channel service and etc.) can contribute to the improvement of the quality of life and level of education. Disaster information through data broadcasting and mobile broadcasting can mitigate impact of natural disasters on their inhabitants.

Reinforcement of periodic maintenance system for stable operation of broadcasting is a common challenge for developing countries. Together with the introduction of digital broadcasting and equipment, personnel concerned should acquire rational operation and maintenance skills including maintenance of equipments and failure countermeasures.

In this context, in order for developing countries to realize efficient digitalization and sustain the stable operation, it is extremely useful for them to systematically learn Japanese successful experience in digitalization, know-how of equipment operation techniques and practices.

For what?

This program aims to solve the problems TV stations are facing to by improving their management techniques for operation and maintenance of digital broadcasting equipments.

For whom?

This program is offered to broadcasting organizations and its related governmental

organizations.

II. Description

1. **Title (J-No.):** DIGITAL TV BROADCAST ENGINEERING AND EQUIPMENT MAINTENANCE MANAGEMENT (J10-00642)

2. **Period of program:**

Duration of whole program:	June 2010 to October 2010
Preliminary Phase: (in a participant's home country)	June 6, 2010 to July 5, 2010
Core Phase in Japan:	July 6, 2010 to September 11, 2010

3. **Target Countries:** Afghanistan, Bolivia, Botswana, Djibouti , Gambia, Malawi, Oman, Palestine, Peru, Thailand, Tunisia, and Yemen

4. **Overall Goal**
   To contribute to the improvement in living standard and spread of education in developing countries by large variety of multifunctional services provided stably through digital broadcasting.

5. **Objective**
   The broadcasting digitalization and the maintenance management of digital broadcasting equipments are implemented effectively in the TV broadcasting station in the developing countries.

   I To achieve this program objective, participants are expected in Japan ;

   (1) To be able to explain the outline of digital technology and the broadcasting system which makes use of advantages of digital broadcasting,
   (2) To be able to explain the high quality and efficient program production techniques which are applied digital technology,
   (3) To acquire practical skills of periodic maintenance for broadcasting equipments, especially VCR's by using relevant service manuals, and
   (4) To understand the effective operation method of digital broadcasting and relational maintenance management method of digital broadcasting equipments.

   II In participants' home country, it is also expected that the proposal (Action Plan) made by participant is shared in the organization and discussed towards the realization and implementation.

6. **Eligible / Target Organization**
   This program is offered to broadcasting organizations and its related governmental organizations.

7. **Total Number of Participants:** 12

8. Language to be used in this project: English

9. Contents

The program consists of the following components:

(1)Preliminary Phase in a participant's home country
(June 6, 2010 to July 5, 2010)
Participants make required preparation for the Program in the respective countries.

Modules	Activities
Inception Report	Formulation and submission of Inception Report.

(2)Core Phase in Japan
(July 6, 2010 to September 11, 2010)
Participants attend the Program implemented in Japan.

Module

Output	**Program/Details**	**Method of Guidance**
1) To be able to explain the outline of digital technology and the broadcasting system which makes use of advantages of digital broadcasting	Outline and Trend of Digital Broadcast Case Study in Japan World Trend	Lecture, Observation
	Theory of Digital Engineering	Lecture
	High Definition Signal Standard and SDI Signal	Lecture, Practice
	Digital Transmitter Theory and Measurement	Lecture, Practice, Observation
	Planning for Digital Terrestrial Television Broadcast (DTTB) Case Study in Japan Channel Planning	Lecture, Observation
	Digital Broadcasting Services Multi-Channel Service, Multi-Language Service, Data Broadcast and One-Segment System for Mobile Receiver	Lecture, Observation
	Server System	Lecture, Observation
	Archives	Observation
	Disaster Newscast Case Study in Japan	Lecture, Observation

	Digital Radio System and Services	Lecture, Observation
2) To be able to explain the high quality and efficient program production techniques which are applied digital technology.	Camera Adjustment	Lecture, Practice
	Non Linear Editing System	Lecture, Practice
	DV, HDV System	Lecture
	Digital Audio Signal	Lecture
	Digital Transmission(IP, Fly Away)	Lecture, Observation
	Latest Applications of Digital Techniques for Broadcast	Lecture, Observation
	Observations at Broadcast Equipment Manufacturers	Observation
3) To acquire practical skills of periodic maintenance for broadcasting equipments, especially VCR's by using relevant service manuals	Advantage of periodic maintenance; lecture using actual machines, visiting Japanese service centers.	Lecture, Observation
	Basic configuration of typical equipment which requires maintenance: overall analysis of major VCR format, basic circuits theory, construction of mechanical part.	Lecture
	Jigs, tools and measurement equipment: lecture and hands-on how to use special tools such as VCR maintenance	Lecture, Practice
	Overall hands-on training for maintenance: Using DSR-1800, DSR-1 …etc to learn small size VCR using service manuals and achieve basic technique to be ready for other VCR formants.	Practice
4) To understand t the effective operation method of digital broadcasting and relational maintenance management method of digital broadcasting equipments.	Analyzing workflow of participant’s organization	Report Presentation and Discussion
	Introduction of the software for the management who has responsible for equipment maintenance.	Lecture
	Practice of the MMP（Maintenance Management Program） software operation	Practice
	Joint study how to apply the MMP to the participant's organization.	Practice

To make a proposal (Action Plan) to participant's organization based on the training (output 1)-4)).	Making Interim Report（Action Plan） individually and its presentation / discussion	Report Presentation and Discussion

Note: The contents may be subject to minor changes.

(3)Finalization Phase in a participant's home country
(September, 2010　to October, 2010)
Participating organizations produce final outputs by making use of results brought back by participants. This phase marks the end of the Program.

Output	Program/Details	
Implementation of the Interim Report (Action Plan)	Interim Report (Action Plan) made by participant is shared in the organization and discussed towards the realization and implementation. Making a Final Report and Submission to JICA Tokyo are required.	

III. Conditions and Procedures for Application

1. Expectations for the Participating Organizations

(1)This program is designed primarily for organizations that intend to address specific issues or problems identified in their operation. Participating organizations are expected to use the project for those specific purposes.

(2) This program is enriched with contents and facilitation schemes specially developed in collaboration with relevant prominent organizations in Japan These special features enable the project to meet specific requirements of applying organizations and effectively facilitate them toward solutions for the issues and problems.

(3) As this program is designed to facilitate organizations to come up with concrete solutions for their issues, participating organizations are expected to make due preparation before dispatching their participants to Japan by carrying out the activities of the Preliminary Phase described in section Ⅱ-9

(4) Participating organizations are also expected to make the best use of the results achieved by their participants in Japan by carrying out the activities of the Finalization Phase described in section Ⅱ-9

2. Nominee Qualifications

Applying Organizations are expected to select nominees who meet the following qualifications.

(1) Present position, assignment:
Engineers, working at Governmental or Government-related TV broadcasting organizations, who are in a position of leader of section or equivalent rank,

(2) Occupational Background:
Have practical experience in TV engineering,
Note: Those who have experience only in radio engineering are not qualified.

(3) Academic Record:
College or university graduates or have an equivalent technical knowledge of electronic engineering and fundamental knowledge about digital engineering theory.

(4) Computer skill:
Have basic skill of PC operation using Word, Excel, and other software.

(5) Age: Under forty (40) years of age, in principle

(6) Language: Proficiency in spoken and written English

(7) Health:
Be in good health, both physically and mentally, to undergo the training. As the schedule of this course includes many (or frequent) fieldworks (trips) that would be too demanding for pregnant women, pregnancy is regarded as a disqualifying condition for participation in this training course

(8) Other prerequisites:
Must not be serving in any form of military services

3. Required Documents for Application

(1) **Nomination Form (Application Form)**

(2) **Job Report (Annex 1)**

(3) **Nominee's English Score Sheet:** to be submitted with the application form. If you have any official documentation of English ability (e.g., TOEFL, TOEIC, IELTS), please attach it (or a copy) to the application form.

4. Procedure for Application and Selection

(1) Submitting the Application Documents

Closing date for application to the JICA Center in JAPAN: **May 24, 2010**

Note: Please confirm the closing date set by the respective countries' JICA office or Embassy of Japan of your countries to meet the final date in Japan.

(2) Selection

After receiving the document(s) through due administrative procedures in the respective government, the respective countries' JICA offices (or Japanese Embassy) shall conduct screenings, and send the documents to JICA TOKYO, which organizes this project. Selection shall be made by JICA TOKYO in consultation with the organizations concerned in Japan based on submitted documents according to qualifications. The organization with intention to utilize the opportunity of this program will be highly valued in the selection.

(3) Notice of Acceptance

Notification of results shall be made by the respective countries' JICA offices (or Embassy of Japan) to the respective Governments by **not later than June 4, 2010.**

5. Document(s) to be submitted by selected participants:

Before coming to Japan, only selected participants are required;

(1) To prepare Inception Report (Annex 2). The Report should be sent **to the following address by June 24, 2010** preferably by e-mail to takasawa-akiko@jica.go.jp

6.Conditions for Attendance:

(1) to observe the schedule of the program,

(2) not to change the program subjects or extend the period of stay in Japan,

(3) not to bring any members of their family,

(4) to return to their home countries at the end of the program in Japan according to the travel schedule designated by JICA,

(5) to refrain from engaging in political activities, or any form of employment for

profit or gain,

(6) to observe the rules and regulations of their place of accommodation and not to change the accommodation designated by JICA, and

(7) to participate the whole program including a Preliminary Phase prior to the program in Japan. Applying organizations, after receiving notice of acceptance for their nominees, are expected to carry out the actions described in section II-9.

IV. Administrative Arrangements

1. Organizer: JICA Tokyo International Center (JICA TOKYO)

Implementing Partner:

NHK Communications Training Institute (NHK-CTI)
Address: 1-10-11 Kinuta, Setagaya-ku, Tokyo 157-8520, Japan
TEL: 81-3-3415-7111 FAX: 81-3-3415-1388
(81: country code for Japan, 3: area code)

Sony Corporation
Address: 1-7-1 Konan, Minato-ku, Tokyo 108-0075, Japan
TEL: 81-3-5435-3210 FAX: 81-3-5435-3404
(81: country code for Japan, 3: area code)

2. Travel to Japan

(1) Air Ticket

The cost of a round-trip ticket between an international airport designated by JICA and Japan will be borne by JICA.

(2) Travel Insurance

Term of Insurance: From arrival to departure in Japan *the traveling time outside Japan shall not be covered

3. Accommodation in Japan

JICA will arrange the following accommodations for the participants in Japan:

JICA Tokyo International Center (JICA TOKYO) Address: 2-49-5 Nishihara, Shibuya-ku, Tokyo 151-0066, Japan TEL: 81-3-3485-7051 FAX: 81-3-3485-7904 (where “81” is the country code for Japan, and “3” is the local area code)

If there is no vacancy at JICA TOKYO, JICA will arrange alternative accommodations for the participants. Please refer to facility guide of TIC at its URL, http://www.jica.go.jp/english/contact/domestic/pdf/welcome.pdf

4. Expenses

The following expenses will be provided for the participants by JICA:

(1) Allowances for accommodation, living expenses, outfit, and shipping
(2) Expenses for study tours (basically in the form of train tickets.
(3) Free medical care for participants who become ill after arriving in Japan (costs related to pre-existing illness, pregnancy, or dental treatment are not included)
(4) Expenses for program implementation, including materials

For more details, please see p. 8-16 of the brochure for participants titled "KENSHU-IN GUIDE BOOK," which will be given to the selected participants before (or at the time of) the pre-departure orientation.

5. Pre-departure Orientation

A pre-departure orientation will be held at the respective countries' JICA office (or Japanese Embassy), to provide participants with details on travel to Japan, conditions of the program, and other matters.

V. Annexes

Annex 1 Job Report
Annex 2 Inception Report

Annex 1

Format of Job Report (1/2)

Job Report

(Name:_____ /Country: _____)

E-mail address:_____

Notice: This report contains very important information and will be used at the selection of the participants for the course. Therefore, those forms must be submitted with the Nomination Forms.

A. Applicant's Scope of Engineering Work

A-a. Please explain your present job. (Explain it in detail, i.e. your position, how many years in the position and what kind of program do you work at, etc.) and what particular engineering field are you interested in?

Please indicate to whom you report in general, mentioning the title in the total organization.

A-b. Applicant's Own Job Record: Please check or fill in each applicable column.

	Job Record			What kind of equipment do you usually operate? Please name the models.
	Operation (Yes/No)	Maintenance (Yes/No)	Years	
TV Camera				
Microphone Arrangement, Audio Mixing, DAW				
Lighting Arrangement				
VCR				
Camcorder (ENG/EFP)				
Other Recording Media (Server, Disk, Flash Memory, etc)				
Editing(Linear/Non-Linear)				
Video Location				
FPU				
Fly Away				
Master Control				
Transmission				
Others( )				

Format of Job Report (2/2)

A-c Computer experience

(1) What kind of computer system have you used?

Operation System (OS)	Years
windows	**( )**
Macintosh	**( )**
Others( )	**( )**

(2) What kind of software have you used?

Software	Years
Word	**( )**
Excel	**( )**
Power Point	**( )**
Others ( )	**( )**

B. Applicant's Scope of Managerial Work

B-a. Are you responsible in planning/designing Engineering facilities in your station? Or are you joining a group of such functions?
If so, please describe your role in detail, ex. selection of facility, designing network, budget management and so on. How long do you serve in such a role?

B-b. Do you have a role to educate/train your junior staff members?
If so, please describe how your education is done, ex. On the Job Training, seminars and so on. How long and how often do you serve in such a role?

B-c. Is there any project/working group for planning Digital Terrestrial Television Broadcast (DTTB) in your station? Are you a member of the group?

Inception Report

1. Name of applicant/ Organization of Applicant/ County

2. Current Situations of Broadcasting in Applicant's Country

2.1 How many nationwide TV networks and Radio networks are there in applicant's country, including both state-owned broadcaster and private broadcaster? Please name them and describe the major purpose of each network.（i.e. general, educational, sports, ・・・）

ex. NHK: TV Terrestrial(1 general and 1 educational channel both in analog and digital), Satellite(1 general and 1 educational both in analog and digital, 1 digital HD), Radio (1 general, 1 educational, 1 entertainment)

2.2 Number of viewers and audiences/coverage rate of each network: terrestrial, satellite and cable network.

2.3 Please describe the broadcasting system in applicant's country, such as act, regulation, license, broadcasting administration and supervising ministry.

2.4 Current trend in the broadcasting field and so forth.

3. Applicant's Organization

3.1 Organization chart of applicant's broadcasting station including number of the personnel

3.2 Facilities of applicant's organization

TV studio and post-production

3.2.1 Number of studio including usage (i.e. news, drama, etc.)

3.2.2 Current equipment list of the Applicant's Organization (Studio, Post-Production)
(＊please fill the form on following page)

3.2.3 Any other problems or issues about maintenance you are facing at the current organization
For example, budget issue, how to allocate budget to maintenance purpose, availability of needed spare parts, where to buy parts, technical supports or advices, appropriate skills to repair……etc

3.2.4 Equipment data for practice of Maintenance Management software .
(＊ please fill the form on following page with Studio, Post-Production and/or Control Room of the Applicant's Organization)

TV Transmission

3.2.5 Current equipment list of the Applicant's Organization (Network & Transmission)
(＊please fill the form on following page)

3.3 Broadcasting Programs of Applicant's Organization:
Service hours, type of program, timetable, in-house or local production rate, etc. of each network.

3.4 Broadcasting History of Applicant's Organization

4. Plan for Digital Terrestrial Television Broadcasting (DTTB) at Applicant's Organization.

4.1 Future plan for DTTB or other plan

4.2 What disturbs to launch DTTB or other future plan; ex. human resources, technical level, finance, priority of business?

3.2.2 Current equipment list of the Applicant's Organization (Studio, Post-Production)

	Model Name (Number of set) including manufacturer's name and model	**Major troubles you experienced in the past and today.**
VCR		
Camcorder （ENG/EFP)		
Other Recording Equipment (Disk, Server, Flash Memory, etc.)		
TV Camera		
Editing System (Linear, Non-linear)		
Audio System (Audio Mixer, Digital Audio Workstation)		
Other Equipment		

3.2.5 Current equipment list of the Applicant's Organization (Network & Transmission)

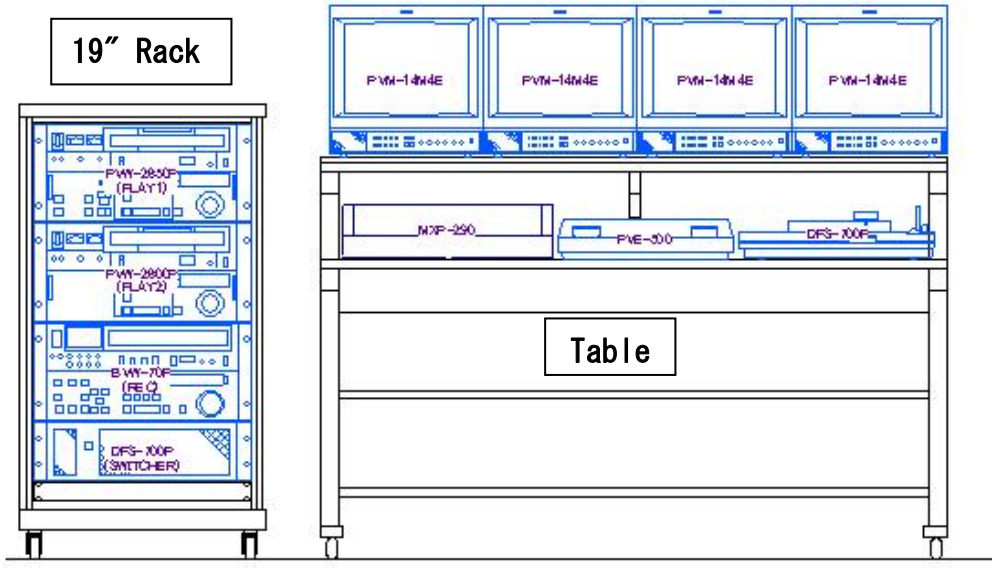
Network Name	**Number of Main Station**	**Number of Relay Station**
(Ex.) GTV	10	30

TV TX Station Name	**Model Name, Type(Vacuum Tube, Solid-state)**	**Channel Number**

3.2.4 Sample of Equipment data for practice of Maintenance Management software

Sample

Editing room A



Editing room A

Location 1	Location 2	Location 3	ID	Maker	Model	Serial #	Description	Note
Edit A	19″ Rack		A9502013	Sony	PVW-2650P	10639	Betacam Player with DT	P1 VTR
Edit A	19″ Rack		A9502014	Sony	PVW-2600P	10524	Betacam Player	P2 VTR
Edit A	19″ Rack		A9202035	Sony	BVW-70P	273645	Betacam VTR	Rec VTR
Edit A	19″ Rack		A9502021	Sony	DFS-500P	41214	DME	
Edit A	19″ Rack		A9502022	Sony	BKDF-501P	40234	Trail and lighting board for DFS-500P	
Edit A	19″ Rack		A9502023	Sony	BKDF-502P	40221	DSK board for DFS-500P	
Edit A	Table		A9205043	Sony	MXP-290	7630402	Audio Mixer	
Edit A	Table		A9205044	Sony	PVE-500	8104347	Editing Control Unit	
Edit A	Table		A9310035	Sony	PVM-14M4E	2003696	CRT Monitor	P1 Monitor
Edit A	Table		A9310036	Sony	PVM-14M4E	2068436	CRT Monitor	P2 Monitor
Edit A	Table		A9310037	Sony	PVM-14M4E	2078190	CRT Monitor	Rec Monitor
Edit A	Table		A9310038	Sony	PVM-14M4E	2083586	CRT Monitor	Program Out Monitor

3.2.4 Format of equipment data for practice of Maintenance Management software

Please make format using Excel and fill out the equipment data.

Location 1	Location 2	Location 3	ID	Maker	Model	Serial #	Description	Note

For Your Reference

JICA and Capacity Development

The key concept underpinning JICA operations since its establishment in 1974 has been the conviction that "capacity development" is central to the socioeconomic development of any country, regardless of the specific operational scheme one may be undertaking, i.e. expert assignments, development projects, development study projects, training programs, JOCV programs, etc.

Within this wide range of programs, Training Programs have long occupied an important place in JICA operations. Conducted in Japan, they provide partner countries with opportunities to acquire practical knowledge accumulated in Japanese society. Participants dispatched by partner countries might find useful knowledge and re-create their own knowledge for enhancement of their own capacity or that of the organization and society to which they belong.

About 460 pre-organized programs cover a wide range of professional fields, ranging from education, health, infrastructure, energy, trade and finance, to agriculture, rural development, gender mainstreaming, and environmental protection. A variety of programs are being customized to address the specific needs of different target organizations, such as policy-making organizations, service provision organizations, as well as research and academic institutions. Some programs are organized to target a certain group of countries with similar developmental challenges.

Japanese Development Experience

Japan was the first non-Western country to successfully modernize its society and industrialize its economy. At the core of this process, which started more than 140 years ago, was the *"adopt and adapt"* concept by which a wide range of appropriate skills and knowledge have been imported from developed countries; these skills and knowledge have been adapted and/or improved using local skills, knowledge and initiatives. They finally became internalized in Japanese society to suit its local needs and conditions.

From engineering technology to production management methods, most of the know-how that has enabled Japan to become what it is today has emanated from this "*adoption and adaptation*" process, which, of course, has been accompanied by countless failures and errors behind the success stories. We presume that such experiences, both successful and unsuccessful, will be useful to our partners who are trying to address the challenges currently faced by developing countries.

However, it is rather challenging to share with our partners this whole body of Japan's developmental experience. This difficulty has to do, in part, with the challenge of explaining a body of "tacit knowledge," a type of knowledge that cannot fully be expressed in words or numbers. Adding to this difficulty are the social and cultural systems of Japan that vastly differ from those of other Western industrialized countries, and hence still remain unfamiliar to many partner countries. Simply stated, coming to Japan might be one way of overcoming such a cultural gap.

JICA, therefore, would like to invite as many leaders of partner countries as possible to come and visit us, to mingle with the Japanese people, and witness the advantages as well as the disadvantages of Japanese systems, so that integration of their findings might help them reach their developmental objectives.

CORRESPONDENCE

For enquiries and further information, please contact the JICA office or the Embassy of Japan. Further, address correspondence to:

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