



Knowledge Co-Creation Program (Group & Region Focus)

GENERAL INFORMATION ON

Digital Terrestrial TV Broadcast (DTTB) Engineering
課題別研修「地上デジタル TV 放送技術」
JFY 2016

NO. J1604079 / ID. 1684581

Course Period in Japan: From June 19, 2016 to July 30 2016

This information pertains to one of the JICA Knowledge Co-Creation Program (Group & Region Focus) 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.

‘JICA Knowledge Co-Creation (KCC) Program’ as a New Start

In the Development Cooperation Charter which is released from the Japanese Cabinet on February 2015, it is clearly pointed out that *“In its development cooperation, Japan has maintained the spirit of jointly creating things that suit partner countries while respecting ownership, intentions and intrinsic characteristics of the country concerned based on a field-oriented approach through dialogue and collaboration. It has also maintained the approach of building reciprocal relationships with developing countries in which both sides learn from each other and grow and develop together.”* We believe that this ‘Knowledge Co-Creation Program’ will serve as a center of mutual learning process.

I. Concept

Background

TV broadcasting is one of the most efficient and inexpensive methods of communication, which can convey information equally to all across the world. TV broadcasting enables to promote efficient knowledge dissemination and public awareness in the field of education, health service, environment, peace-building, and consolidation of democracy. Its potency is very much expected as a means of transmitting information where other information media are inefficient or unavailable, such as isolated areas.

The digitization of TV broadcasting has become a global trend, and many developed and developing countries have already started digital broadcasting. Developing countries with diversified cultures (languages, ethnicities) can take advantage of the features of digital broadcasting: Attractive and convenient services available with digital broadcasting, such as multilingual broadcasting, text broadcasting, multi-channel services etc. can contribute to the improvement of citizens' quality of life and level of education. Prompt provision of disaster information through data broadcasting and mobile broadcasting can mitigate the impact of natural disasters on their inhabitants.

For what?

This program aims to provide hints and solutions for effective digitization of TV broadcasting; Learning not only digital broadcasting technology and theory, but also actions and solutions applied to successfully complete switchover from analog to digital TV broadcasting in Japan: these lessons will serve as guidelines for the engineers of each country engaged in digitization of TV broadcasting.

For whom?

This program is offered to broadcasting organizations and its related governmental organizations of those countries which have adopted or are considering ISDB-T as their digital terrestrial TV broadcasting system.

II. Description

- 1. Title (J-No.):** Digital Terrestrial TV Broadcast (DTTB) Engineering (J1604079)
- 2. Course Period in JAPAN**
June 19 to July 30, 2016
- 3. Target Regions or Countries**
Argentina, Bolivia, Botswana, Honduras, Maldives, Peru, Philippines, Sri Lanka, Uruguay
- 4. Eligible / Target Organization**
This program is offered to broadcasting organizations and related governmental organizations.
- 5. Course Capacity (Upper limit of Participants)**
13 participants
- 6. Language to be used in this program:** English
- 7. Course Objective:**
To understand the advantages of digital broadcasting system, promoting the systematical and logical digitization process of the broadcasting in participants' organizations.
- 8. Overall Goal**
To contribute to the spread of education and efficient information sharing, which is essential to the improvement of living standards, by introducing a variety of multifunctional services provided stably through digital broadcasting.

9. Expected Module Output and Contents:

This program consists of the following components. Details on each component are given below:

(1) Preliminary Phase in a participants' home country (May 23, 2016 to June 18, 2016) <i>Participants make required preparation for the Program in the respective countries.</i>	
Modules	Activities
Inception Report	Formulation and submission of Inception Report. (Please see Annex 2)

(2) Core Phase in Japan (June 19, 2016 to July 30, 2016) <i>Participants attend the program implemented in Japan.</i>		
Module		
Expected Module Output	Subjects/Agendas	Methodology
(1) To be able to explain the outline of digital broadcasting technology.	Fundamentals of Digital Theory (sampling, quantization, coding, transmission, modulation)	Lecture
	MPEG multiplex	Lecture
	Digital Broadcast Services/Digital Transmitter	Lecture, practice, observation
	Digital Terrestrial Broadcasting	Lecture, observation
	Trends of Digital Broadcasting	Lecture, observation
(2) To be able to explain the advantages of digital broadcasting system and make use of the knowledge for the planning and implementation of digitization.	Digital Transmission System (Analog/Digital Simulcasting)	Lecture, observation
	Challenges for Introducing DTTB (case study of channel planning, designing of transmitting station), Measurement of DTTB signal	Lecture, practice
	Disaster Newscasts EWBS	Lecture
	Digital Broadcasting Service for Educational Programs	Lecture

To compile a report on findings and plans to utilize the training course for participants' organization (Output (1)-(2))	-Compile and present a report individually. -Discuss among the participants to deepen understandings	Report, presentation
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Note: The content may be subject to minor changes.

(3) Finalization Phase in a participants' home country

(August 1, 2016 to September 30, 2016)

Participating organizations produce final output by making use of the results brought back by participants. This phase marks the end of the program.

Output	Program/Details	
(3) To share the knowledge and techniques of digital broadcasting planning/operation in participants' organizations after returning	<p>Report compiled by participant is shared in the organization and discussed from the standpoint of realization and implementation</p> <p>The compilation of a Final Report and its submission to JICA Tokyo are required by September 30, 2016.</p>	

III. Conditions and Procedures for Application

1. Expectations from 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.

2. Nominee Qualifications:

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

(1) Present position, assignment:

Engineers, working at TV broadcasting organizations or Government-related organizations, who are in a position of leadership over a section, or individual of an equivalent rank

(2) Occupational background:

Have practical experience in TV **transmission** engineering,
Be in charge of planning /implementation of digitization of the broadcast.
Be a transmission engineer, NOT a studio engineer.

Note: Those who have experience only in Radio Stations are not qualified.

(3) Academic record:

College or university graduates, or those who have the equivalent in technical knowledge of electronic engineering and fundamental knowledge about digital engineering theory.

(4) Computer skill:

Have basic skills 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:

Health: must be in good health, both physically and mentally, to participate in the Program in Japan. Pregnant applicants are not recommended to apply due to the potential risk of health and life issues of mother and fetus.

3. Required Documents for Application

(1) **Application Form:** The Application Form is available at **the JICA office (or the Embassy of Japan)**.

(2) **Photocopy of passport:** to be submitted with the application form, if you possess your passport which you will carry when entering Japan for this program. If not, you are requested to submit its photocopy as soon as you obtain it.

*Photocopy should include the followings:

Name, Date of birth, Nationality, Sex, Passport number and Expire date.

(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)

(4) **JOB Report (Annex 1):** submitted with the application form. Fill in Attachment-1 of this General Information.

4. Procedures for Application and Selection :

(1) Submission of the Application Documents:

Closing date for applications to the JICA Center in JAPAN: **April 22, 2016**

(After receiving applications, the JICA office (or the Embassy of Japan) will send them to **the JICA Center in JAPAN** by April 22, 2016)

(2) Selection:

After receiving the documents through proper channels from your government, the JICA office (or the embassy of Japan) will conduct screenings, and then forward the documents to the JICA Center in Japan. Selection will be made by the JICA Center in consultation with concerned organizations in Japan. *The applying organization with the best intention to utilize the opportunity of this program will be highly valued in the selection.* Qualifications of applicants who belong to the military or other military-related organizations and/or who are enlisted in the military will be examined by the Government of Japan on a case-by-case basis, consistent with the Development Cooperation Charter of Japan, taking into consideration their duties, positions in the organization, and other relevant information in a comprehensive manner.

(3) Notice of Acceptance

Notification of results will be made by the JICA office (or the Embassy of Japan) **not later than May 20, 2016**.

5. Document(s) to be submitted by accepted candidates:

Inception Report -- to be submitted **by June 10, 2016:**

Before coming to Japan, only accepted candidates are required to prepare an **Inception Report (Annex 2)**. The Inception Report should be sent to JICA by June 10, 2016, preferably by e-mail to **tictree@jica.go.jp**

6. Conditions for Attendance:

- (1) to strictly adhere to the program schedule.
- (2) not to change the program topics.
- (3) not to extend the period of stay in Japan.
- (4) not to be accompanied by family members during the program.
- (5) to return to home countries at the end of the program in accordance with the travel schedule designated by JICA.
- (6) to refrain from engaging in any political activities, or any form of employment for profit or gain.
- (7) to observe Japanese laws and ordinances. If there is any violation of said laws and ordinances, participants may be required to return part or all of the training expenditure depending on the severity of said violation.
- (8) to observe the rules and regulations of the accommodation and not to change the accommodation designated by JICA.

IV. Administrative Arrangements

1. Organizer:

(1) **Name:** JICA Tokyo International Center (JICA TOKYO)

2. Implementing Partner:

(1) **Name:** NHK Communications Training Institute

3. 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:** Coverage is from time of arrival up to departure in Japan. Thus traveling time outside Japan will not be covered.

4. 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 and service guide of TIC at its URL,

http://www.jica.go.jp/english/about/organization/domestic/c8h0vm0000023sgf-att/tokyo_facilities.pdf

http://www.jica.go.jp/english/about/organization/domestic/c8h0vm0000023sgf-att/tokyo_service.pdf

5. Expenses:

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

- (1) Allowances for accommodation, meals, 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 “III. ALLOWANCES” of the brochure for participants titled “KENSU-IN GUIDE BOOK,” which will be given before departure for Japan.

6. Pre-departure Orientation:

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

V. Annexes

Annex 1 Job Report

Annex 2 Inception Report

Job Report

(Name: _____ /Country: _____)
E-mail address: _____

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

A. Applicant's Scope of Engineering Work

A-a. Please explain your present job in detail (i.e., your position, how many years you have been in the position, and your daily work, etc.), and what particular engineering field are you interested in?

B. Applicant's Scope of Managerial Work

B-a. Are you in charge of planning/designing engineering facilities in your station? Or are you joining a group with such functions?
If so, please describe your role in detail (ex., selection of facility, designing network, budget management and so on). How long have you served in such a role?

B-b. Do you have the responsibility of educating/training your junior staff members?
If so, please describe how your education program is carried out (ex. on the job training, seminars and so on). How long and how often do you serve in the role of a trainer?

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

Annex 2

Inception Report

Selected participants are required to prepare an **Inception Report**. The report should be sent to the following email address (tictree@jica.go.jp) by **June 10, 2016**:

During the first week of the training course, participants are also requested to make an Inception Report presentation (about 20 minutes per person), including job description mentioned in the Job Report (Annex 1). Therefore, we would like to encourage you to also prepare MS PowerPoint presentation sheets. We can run MS PowerPoint to assist your presentation.

1. Name of applicant/ Organization of Applicant/ Country

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 broadcasters and private broadcasters?

ex. TV Terrestrial(1 general and 1 educational channel both in analog and digital), Satellite(TV1 and TV2), Radio (AM1, AM2, and FM)

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

2.3 Name of the supervising ministry or other government bureau that regulates broadcasting in your country

3. Applicant's Organization

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

3.2 Network & Transmission:

• **Number of transmitters which power is more than 1kw.**

Please list, two or three, major models of 1kw transmitter, Including their brand names and types (vacuum tube, solid-state)

• **Number of transmitters less than 1kw.**

Note: For those countries which have already started Digital Transmission, please list up the DIGITAL TRANSMITTERS ONLY.

*** Please fill the following form**

Network Name	Number of Major Stations	Number of Relay Stations
(Ex.) GTV	10	30

3.3 Inquiry address and website of your Organization

4. Plan for Digital Terrestrial Television Broadcasting (DTTB), or Analogue Switch Off (ASO) at Applicant's Organization.

4.1 Outline of DTTB/ASO schedule in your country

4.2 What is hindering the launch DTTB or other future plans (ex., problems with human resources, technical level, finance, business priorities)?

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:

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