2-2-4 Implementation Plan

2-2-4-1 Implementation Policy

(1) Implementation Setup

1) Implementation Procedure

The Project will be implemented according to the framework of the grant aid scheme of the Government of Japan (GOJ). After the Project is approved by the cabinet of Japan, the Exchange of Notes (E/N) will be signed between GOJ and the Government of India (GOI). Following the E/N, the Grant Agreement (G/A) will be concluded between GOI and Japan International Cooperation Agency (JICA) to define the necessary provisions for implementation of the Project, such as payment conditions, responsibilities of GOI, and procurement conditions. Following the G/A, the project implementing agency shall conclude an agreement with the consultant, which shall then enter into the detailed design for the project components and draw up tender documents.

After approval for the tender documents prepared by the consultant has been obtained from the project implementing agency and the JICA, tender will be announced. Then, the tender documents will be distributed to prospective tenderers and the tender will be made for procurement of the equipment. The tender works for the Project up to the signing of the contract shall be implemented in Japan. Meanwhile, the consultant agreement is normally concluded in India.

The contractor selected by the tender shall manufacture, ship and install the equipment. Until the total completion of these works, IGNOU/EMPC shall consolidate the operation and maintenance setup, and secure the necessary operating budget and manpower.

2) Role of Each Organization in Project Implementation

The roles and important duties of each organization concerned with the project implementation are summarized as follows:

① Project Implementing Agency

The project implementing agency is IGNOU/EMPC under the supervision of the Ministry of Human Resources Development (MHRD). On execution of the Project, IGNOU/EMPC shall fully understand the grant aid system in order to ensure the smooth implementation of the Project. IGNOU/EMPC shall also maintain close communications with all related agencies on the India and Japanese sides and appropriately coordinate works in all stages of the Project.

MHRD and IGNOU/EMPC should place emphasis on implementing the following items:

- Formulation of the schedule and implementation of the scope of works to be carried out by India side that complies with the overall project schedule;
- Identification and handling of all the procedures that need to be followed on the India side during the project period; and
- Understanding and arrangement of permits and authorizations connected with the Project, and provision and coordination of relevant information with the consultant

② Consultant

Following the conclusion of the G/A, IGNOU/EMPC shall conclude a consulting service agreement for detailed design and supervision works with the Japanese consultant, and the JICA shall verify this agreement. Following the verification, the consultant shall implement survey and discussions concerning the contents of the detailed design with IGNOU/EMPC, and then shall commence the detailed design according to this preparatory survey report. The consultant shall compile the findings of the detailed design into the design drawings and specifications, and shall also prepare tender documents including the instructions to tenderers, a draft contract, general contract conditions and other tender related documents, and obtain approval thereof from IGNOU/EMPC and JICA.

In the tender stage, the consultant shall act on behalf of IGNOU/EMPC in carrying out all tender affairs up to the signing of contract between IGNOU/EMPC and the contractor including announcement of tender, distribution of tender documents, response to inquiries, opening of tender, contract negotiations, and so on. Moreover, in the supervision stage of the Project, the consultant shall implement all supervisory service from the procurement of the equipment through to installation, adjustment of the equipment and handing over. In the Project, one of the most important tasks of the consultant is to act as a coordinator on the interface and work schedule between the works done by India side and the equipment installation work done by Japanese contractor.

③ Contractor

The contractor shall be selected from among Japanese general trading companies or manufacturers that possess ample experiences in this field. These conditions of tenderers' qualifications shall be stipulated in the tender announcement. The contractor shall be decided by the open tender. The contractor shall complete procurement and installation of the equipment that comply with the specifications prepared by the consultant within the contract periods. When handing over the

equipment, the contractor shall submit completion drawings and adequate maintenance manuals, and furthermore shall be responsible for after-sales service such as supply of spare parts for 10 years, appropriate response in case of equipment failure, etc.

(2) Need for Dispatching Technical Personnel From the Manufacturers

The equipment components of the video program production system to be introduced in the Project will be procured in Japan or a third country, and temporarily assembled in Japan as the system. These components will be dismantled, if necessary, and then transported to the project site. After arrival at the project site, it will be necessary to reintegrate the equipment to its original condition through assembly work and then undertake installation and adjustment work. For these works, dispatching of technical personnel from the manufacturers is indispensable, in view of the fact that such dismantling and reassembly work is based on the equipment manufacturer's special know-how, that a high technical level is required for adjustment and testing after installation and that there is a whole series of steps that have to be taken after the installation and adjustment works before the equipment can be accepted, including explaining of the operation method of the different equipment, training and quantity inspection. The technical personnel that have to be dispatched, their number and the time for which they are dispatched are to be set as the minimum that is necessary, and in the installation and adjustment works they are also to strive for accomplishment of technology transfer to the technical staff of EMPC and other local technical personnel.

Since the technical personnel of EMPC already have fundamental operation and maintenance techniques of the equipment, there are no technical problems regarding maintenance and upkeep. However, in view of the fact that they are not familiar with operation and maintenance of the latest equipment based on digital technology, after completion of the installation and adjustment works the following trainings in operation methods will be carried out to the technical personnel of EMPC by specialists who are dispatched for that purpose by the contractor.

- Operation Training for overall Video Program Production System: 30 days
- Operation Training for Virtual Studio System: 15 days
- Practical Training for Production Method of Computer Graphics: 15 days
- Operation Training for Non-linear Editing System: 15 days

2-2-4-2 Implementation Conditions

(1) Points of Note Regarding Materials and Equipment Procurement

As the equipment procured under the Project is manufactured in Japan, the United States and Europe, quality and delivery deadlines can be ensured, and a high level of confidence can be

placed in the equipment procurement schedule as established by the contractor. In addition, as these manufacturers have agents in New Delhi, along with a support system, there should be no difficulty in accommodating malfunctions that may occur during the installation work period. However, it is necessary to pay particular attention to the packaging and transport of the equipment as it can be negatively affected by strong shocks, high humidity and high temperatures. For the Project, inland transport passes through a 1,400 km tropical area with high temperatures and humidity, and multiple loading and unloading operations are predicted. Therefore, cases (wooden, moisture-proof packaging) will be used as packaging to prevent damages during equipment transport.

(2) Points of Note Regarding EMPC's Activities

At EMPC, every day between the hours from 10:00 a.m. to 8:00 p.m., Video Program Production Studio-2 is used for live broadcasts of the teleconference lessons for academic courses. For the Project, as there are no plans for installation work in Video Program Production Studio-2, there will be no direct affect on the lessons being held. However, in order to prevent noise, etc. during the installation work performed in other rooms from affecting the teleconference lessons, the contractor should make the installation work plan such as installation methods (including curing methods) and scheduling after meeting and reaching an agreement with the EMPC side.

In addition, when the dimmer racks that are part of the lighting equipment for Video Program Production Studio-1 are carried into the dimmer room for the installation, the racks are suspended six meters above the studio floor up to the room. As the weight of dimmer racks is more than two tons, extreme caution is necessary for ensuring safety when performing high-place work and heavy equipment suspension methods.

(3) Ensuring Safety During The Installation Work Period

The contractor performing the installation work and the consultant supervising its implementation shall obtain the newest information regarding law and order around the project site and endeavor to ensure safety throughout the entire implementation period. Should it be determined that safety cannot be ensured, discussions shall be held with Japanese government agencies (e.g., Embassy of Japan in India, JICA India Office, Ministry of Foreign Affairs, JICA Headquarters) and Indian government agencies (e.g., Ministry of Finance (MOF), Ministry of Human Resources Development (MHRD), IGNOU) to decide appropriate measures.

2-2-4-3 Scope of Works

The scope of works to be done by GOI and GOJ respectively are shown in Table 2-8 below, in case of implementation of the Project on the basis of Japan's Grant Aid.

Table 2-8 Major Undertakings to be taken by Each Government

Items of responsibility	Japan	India
To procure the video program production equipment	●	
To transport (including inland transportation) the video program production equipment to the project site	●	
To Install and adjust the video program production equipment	●	
To conduct operation training of video program production equipment after the installation work	●	
To remove the existing equipment to be renewed		●
To operate and maintain the existing air conditioning system and power supply system		●
To obtain all permits and authorizations required by law in India		●
To bear customs duties of the equipment imported under the Project		●
To bear the advising commission of Authorizations to Pay (A/P) and bank commission fee to a bank of Japan for the banking service based upon the banking arrangement (B/A)		●
To maintain and use properly and effectively the equipment procured under the Project		●
To execute any other obligations on the part of the recipient country that are specified in the Exchange of Notes (E/N)		●

2-2-4-4 Consultant Supervision

(1) Basic Concept of Supervision

To ensure the smooth execution of the Project, the consultant shall organize a project team to manage the implementation of detailed design and supervision works based on the purport of the outline design. The basic concept of the supervision work shall be as follows:

1) Carry out fine-tuned adjustments to ensure that no discrepancies arise on the equipment installation work, and make the utmost effort to ensure completion of the works on schedule.

2) Appropriately report on work progress to related organizations in both countries to ensure there are no discrepancies in their understanding of work status. Moreover, give prompt responses and advice to inquiries from the contractor.

3) Be prepared to offer technical transfer to officials on India side in order to realize greater effects of Japan's Grant Aid. Moreover, always be ready to offer adequate and appropriate explanations concerning not only the design concept of the equipment but also installation methods and technology, etc.

(2) Contents of Supervision

The contents of the supervision work to be carried out by the consultant are as follows:

1) Work related to the contract

The consultant shall implement the tender works including preparation of tender documents and responding to tenderers' inquiries from announcement to opening of the tender. The consultant shall also evaluate the tender, recommend the appropriate contractor, and attend contract negotiations and conclusion of the contract, etc. The details and results of these proceedings shall be appropriately reported to IGNOU/EMPC.

2) Supervision of quality and work volume performed (inspection/examination)

The equipment manufacturing/procurement plan, installation work schedule, installation and production drawings/figures, technical documents and samples submitted by the contractor shall be examined. They will be approved upon confirmation of conformity with design drawings and equipment specifications, etc. prepared by the consultant. In addition, the consultant shall perform as the witness for factory inspections at the factory and pre-shipment inspections before loading ship for sea transport for equipment as well as various testing at the project site and acceptance inspections. The consultant will provide supervision regarding quality and volume done. If the inspection results comply with design drawings and specifications, the consultant will grant the approvals. If compliance is not met, the consultant shall request corrections, modifications and revisions to the contractor. After completion of the work, the consultant shall compile a completion report, as well as examine and approve items received from the contractor including spare parts, operation manuals for each type of equipment items, maintenance manuals, etc. The consultant will also provide the project implementing organization, IGNOU/EMPC, with appropriate advice regarding proper maintenance and operation methods of the equipment.

3) Supervision of work progress

In order to adhere to the deadline for completion of the Project, the consultant will continually and closely scrutinize progress of the Project including equipment procurement, transport and installation work. In particular, if there is a fear of delay in the implementation schedule, the contractor should be cautioned and asked to submit a proposal regarding countermeasures. During the installation work period, appropriate supervisory personnel will be dispatched to the project site to ensure that work is performed appropriately according to design drawings and specifications. The consultant will monitor the work by the contractor and give instruction when needed. A monthly report is to be prepared regarding the status of installation work progress so that relevant parties will

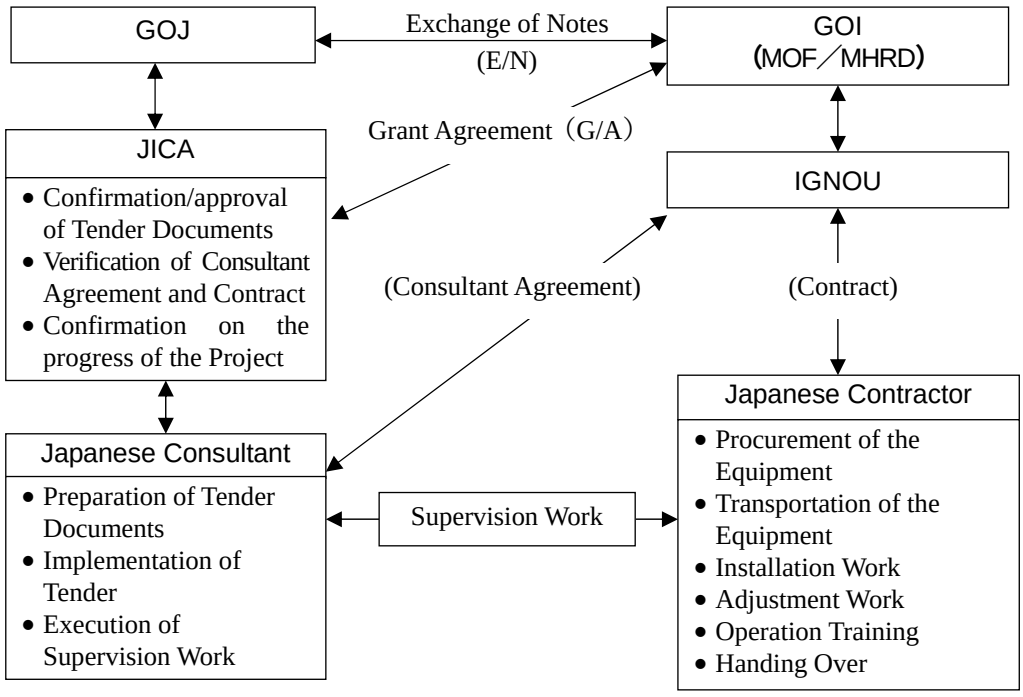
be kept abreast of this status.

4) Safety management

Safety management guidelines shall be established and adequately discussed with the personnel in charge of safety management appointed by the contractor in order to prevent work accidents, third-party injuries and any other accidents.

(3) Supervisory Personnel Assignment Plan

As mentioned above, the supervisory work by the consultant must be accomplished with constant awareness of the overall situation of the work and in close liaison with the India governmental organizations concerned and the contractor so as to be able to ensure observance of the work schedule. Particularly for supervision of on-site equipment installation, testing and adjustment works, specialized experts shall be dispatched according to the status of work progress, and provide supervision and guidance to the contractor. It also necessary for the experts to manage the implementation schedule and perform quality and safety management based on the implementation plan. Therefore, one person to supervise equipment installation work and one person to attend testing, adjustment and training will be assigned and dispatched for the required time period respectively. These assigned supervisory personnel should have extensive experience and an appropriate technical sense, in addition to a broad outlook and coordination capabilities.



2-2-4-5 Quality Control Plan

The consultant shall carry out quality control during the project execution stage based on the purport of the basic design. The JIS definition of quality control, i.e. 'the structure of means for economically producing goods or services of quality that complies with customer requirements', shall be adopted as the basic line of the project execution. The consultant will provide the contractor with appropriate guidance to entirely assure the quality of the equipment procured in the Project, by carrying out detailed surveillance on all the stages of the Project from the tender, installation, adjustment and inspection, and completion and handover. Among all the processes, the following are five important points in terms of quality control:

- Tendering
- Manufacturing of Equipment
- Shipping and Transportation
- Installation Work in India
- Adjustment, Acceptance Inspection and Handover of the Equipment

The important issues at each of the above five points are summarized below.

1) Tendering

   At the tendering stage, the consultant will examine in detail if the systems proposed by tenderers comply with the specifications provided for under the tender documents.

2) Manufacturing of equipment

   At the manufacturing stage, the consultant will review the technical information materials, manufacturing drawings, samples, etc. submitted by the contractor, and confirm in detail conformity with the specifications in the tender documents. The consultant will also inspect the functions and electric characteristics of the system, and confirm if the performance characteristics satisfy in comparison with the specifications at the time of factory inspection.

3) Shipping and transportation

   The consultant entrust the following verifications to a reliable, third-party inspection organization, in prior to shipment of the equipment.

   - Comparison of the contract equipment list with the shipping documents
   - Comparison of the shipping documents with the equipment

   Furthermore, in the aspect of transportation, the consultant will confirm if packaging is appropriate for transportation method, if the transportation route is appropriate, and if necessary measures are in place for minimizing a possibility of accident during

transportation. In the process, the consultant may provide a strong recommendation to the contractor on rerouting, etc. as necessary.

4) Installation work in India

During the installation work stage, it is no exaggeration to say that execution of safe, accident-free works is the ultimate key to successful installation work of the equipment. The consultant will provide guidance from this standpoint after prior confirmation of the details of work plan proposed by the contractor, such as planning a feasible schedule, allocating appropriate staff, work procedures, etc., so that the works will be smoothly carried out without any accident.

5) Adjustment, acceptance inspection and handover of the equipment

After the installation, adjustment and inspection of the equipment are completed, the consultant will confirm if the original functions and electric characteristics of the equipment are reproduced, by comparing the test data taken at the sites and at the factory before shipment. Further, the consultant will provide the contractor with sufficient guidance on the handover of the equipment, suggesting, for example, that the contractor confirm the numbers on the contract equipment list and prepare a detailed spare parts list, so as to transfer adequate technical information to the India side.

2-2-4-6 Procurement Plan

(1) Equipment Procurement Plan

The eligible countries for procurement of the equipment in the Japan's Grant Aid are, in principle, Japan and the recipient country. However, the equipment introduced in the Project is not manufactured in India. The existing equipment at EMPC consists mainly of Japanese products, but some products from the United States and Europe are also used. Therefore, for the selection of the equipment procurement country for the Project, it will not be limited to Japanese products only. It should be considered with the view points of performance/specifications, operational record, cost performance, and supply of spare parts to select the most appropriate country from OECD member countries including Japan, the United States and countries in Europe. The main equipment that is anticipated for procurement for the Project is shown in the procurement source list in Table 2-9.

Table 2-9 Procurement Source List of the Equipment

Equipment	Country of Manufacture			Reasons for Choice and Remarks
	India	Japan	Other countries	
Video Program Production Studio-1 (Virtual Studio)				
SD/HD Digital Color Camera		○		Track record of use in broadcasting operations of SD/HD applicable specifications and assured quality/performance.
HD Digital Disc Recorder		○		Track record of use in broadcasting operations of SD/HD applicable specifications and assured quality/performance.
HD Digital Video Switcher		○		Assured quality/performance in HD signal processing.
HD Character Generator			○	Track record of use in broadcasting operations and assured quality/performance.
Digital Audio Mixer		○		Widespread global use as a professional-use instrument and certainty of supply
Video Sync System			○	Track record of use in broadcasting operations and assured quality/performance.
Monitor System		○	○	Widespread global use as a broadcast-use system.
Intercom System			○	Widespread global use as a broadcast-use system.
On-Air Light and Tally System		○		Consistency with existing system.
Virtual Set		○		Widespread global use as a broadcast-use system.
Lighting Equipment		○		Assured quality and performance as a virtual studio system.
Field Recording（ENG) System				
SD/HD Portable Digital Camera		○		Track record of use in broadcasting operations of SD/HD applicable specifications and assured quality/performance.
9-inch Video Monitor		○		Track record of use in broadcasting operations of SD/HD applicable specifications and assured quality/performance.
UHF Synthesizer Transmitter			○	Track record of use in broadcasting operations and assured quality/performance.
UHF Synthesizer Tuner			○	Track record of use in broadcasting operations and assured quality/performance.
Microphones			○	Track record of use in broadcasting operations and assured quality/performance.
Microphone Cable		○		Track record of use in broadcasting operations and assured quality/performance.
Stereo Headphone		○		Track record of use in broadcasting operations and assured quality/performance.
Portable Lighting Equipment		○		Track record of professional and broadcasting use, and assured quality/performance.
Portable Audio Mixer		○		Track record of field recording and assured quality/performance.
Mini DV/HDV Camcorder		○		Track record of professional use and certainty of supply.
Digital Still Camera		○		Track record of professional use and certainty of supply.

Equipment	Country of Manufacture			Reasons for Choice and Remarks
	India	Japan	Other countries	
Routing Switcher System				
Routing Switcher		○		Track record of use in broadcasting operations and assured quality/performance.
Video Sync System			○	Track record of use in broadcasting operations and assured quality/performance.
A/D Converter, D/A Converter		○		Track record of broadcasting operations, assured quality and compatibility with existing system.
Video Server System		○		Track record of use in professional and broadcasting operation, integration ability with products from other companies.
DVD Duplication System		○		Reliability of duplication operation and certain track record of supply.
Computer Graphics			○	Track record of use in broadcasting operations and assured quality/performance.
Measuring Equipment		○	○	Reliability and assured accuracy as broadcast-use measuring equipment.
Analog/Digital Format Conversion System		○		Track record of use in broadcasting operations and assured quality/performance.
SD/HD Preview System		○		Track record of use in professional and broadcasting operations, diversity of signal processing and assured quality/performance.

Prior to shipment of the equipment, the contractor will assemble the procured equipment into the video program production system and confirm function of the system in Japan.

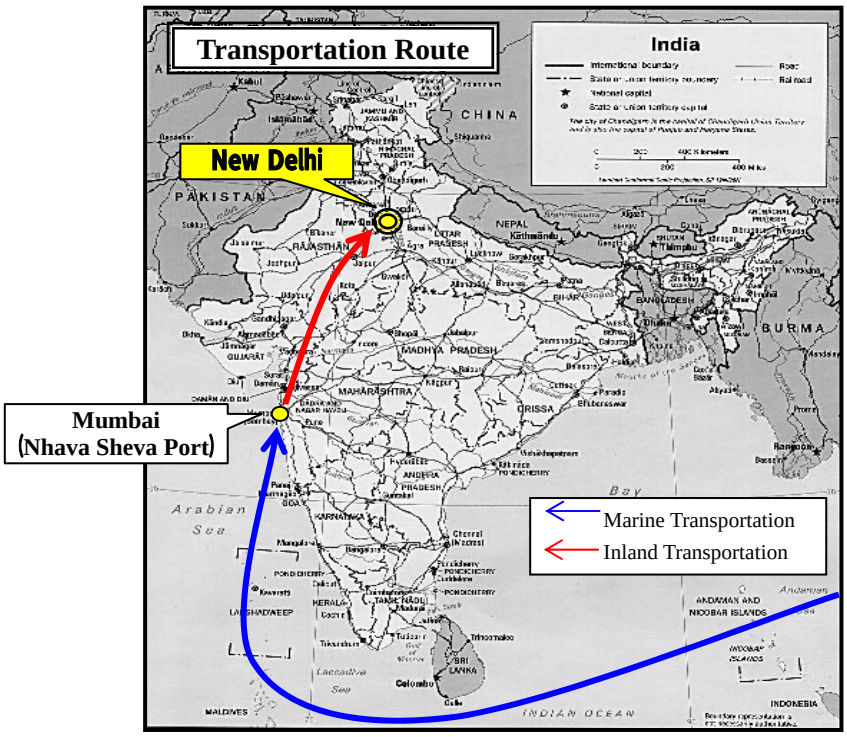
(2) Equipment Transport Plan

1) Transport route and days required for transport

The equipment from Japan will land at Nhava Sheva Port in Mumbai, India. From Nhava Sheva, it will be transported inland to an Inland Container Depot (ICD) in New Delhi. Transport to New Delhi can be carried out by railways or trucks. However, road maintenance conditions from Mumbai to New Delhi (approx. 1,400 km) are poor, and transport costs using trucks are more expensive than those for rail transport. Thus, railways are being used as the primary means of transport.

There are four ICDs in New Delhi, and the railway cargo will arrive at the ICD closest to the project site. At the ICD, the railway tracks run inside the depot where a large crane is provided. This crane has no difficulty in unloading container cargo. After clearing customs at the ICD, a truck will transport the cargo to the site.

Details of the transportation route and the period required for equipment transport are as shown below. It will take approximately 60 days from Japan to the project site.



Days Required for Equipment Transport

Zone	Required Days	Means of Transportation
Japan to Nhava Sheva Port（Mumbai）	Approx.30days	Sea Transportation
Nhava Sheva Port to ICD at New Delhi	Approx.20days	Railroad Transportation
ICD at New Delhi to Project site	Approx.10days	Customs Clearance/Trucking
Japan to Project site	Approx.60days	—

2) Transport authorization procedures

① Tax exemption and procedures

Grant aid projects are essentially tax-exempt in India, however, it is necessary for tax-exempt to be written in the E/N of the Project.

The tax exemption procedures for the equipment procured under the Project are done with the following protocol.

a) After the equipment is loaded on the ship, the contractor for the Project requests IGNOU to apply for tax exemption.

b) IGNOU applies to the customs office at the ministry of finance of GOI for tax exemption.

c) The customs office in the ministry of finance authorizes tax exemption.

Additionally, since customs duties will be levied on the importer on the India side (Equipment CIP price + Landing fee (CIP price × 1.5%) × 9.35%), budgetary

provisions should be made for this by the importer (IGNOU/EMPC).

② Customs clearance

For customs clearance of imported equipment, the following documents must be submitted to the customs office by the contractor prior to the equipment arrival in Nhava Sheva Port at Mumbai.

B/L (original)	3 sets
B/L (copy)	3 sets
Commercial invoice (copy)	3 sets
Packing list (copy)	3 sets
Certificate of origin (original)	3 sets

③ Value added tax (VAT)

On April 1st 2005, a value added tax (VAT) was introduced to replace the state sales tax that had previously been in place. For the value added tax, the contractor for the Project will tentatively make payment, then file a refund claim after completion of the Project. This procedure is the same as the tax exemption procedure.

2-2-4-7 Operational Guidance Plan

EMPC technical staff has acquired general technical expertise in equipment operation and maintenance, and there are no technical problems in operation and maintenance management. However, they are not accustomed to working with the latest equipment adopting the digital technology that will be introduced in the Project. Therefore, initial guidance and training for operation of the equipment will be implemented so that EMPC staff will be able to operate the equipment after completion of the Project.

- Plan for initial guidance

  For initial guidance, such basic matters as methods of starting and stopping each procured equipment, and measurement methods for various characteristics, etc. will be covered. This will be implemented as on-the-job training during the period of equipment installation and adjustment works.

- Plan for operation training

  After completion of the installation work, the following operation training (practical training) as shown in Table 2-10 will be given using the equipment procured under the Project. This operation training will be implemented by dispatched engineers of the contractor.

Operation Training for overall Video Program Production 30 days

System

Operation Training for Virtual Studio System	15 days
Practical Training for Computer Graphics creation	15 days
Operation Training for Non-Linear Editing equipment	15 days

Operation training will be implemented using the instruction manuals that come with the equipment procured under the Project as teaching materials. Additionally, basic instruction on theoretical explanations or systems will be given using a white board to provide training that is easy to understand. On the first day and last day of operation training, the comprehension tests will be given to gauge the level of the participants' understanding.

Table 2-10 Operation Training Plan

Lecture details \ Schedule	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1. Operation Training for Overall Video Program Production System (30 days) ☆: Comprehension level test	☆																													☆
(Overview)																														
[Lecture items] ① Explanation of Training Content and Schedule, ② Overview of HD Signal Transmission, ③ Overview of Overall Video Program Production System																														
(1) Operational Instruction of the equipment in the Video Program Production Studio-1																														
[Lecture items] ①Instruction for operation of Studio Floor Camera and its Functions, ② Instruction for Operation of Remote Camera and its Functions, ③ Pedestal Adjustment, ④Overview of Virtual System, ⑤ Instruction for Operation of HD Digital Disc Recorder and its functions, ⑥ Instruction for Operation of Production Switcher and its Functions, ⑦ Instruction for Operation of Character Generator and its functions, ⑧ Instruction for Operation of Master Video Monitor and its functions, ⑨ Instruction for Operation of Waveform Monitor and Elevation of Waveform , ⑩ Instruction for Operation of Digital Audio Mixer and its functions, ⑪Instruction for Operation of Wireless Microphone and its functions, ⑫ Instruction for Operation of Intercommunication System and its functions, ⑬ Instruction for Operation of Sync Generator, ⑭ Instruction for Operation of Lighting Control Panel and its functions																														
(2) Operational Instruction for Video Program Production Studio-1																														
[Lecture items] ① Power Distribution Board System, ② Method of Power On and Off, ③ Instruction for Operation of On-Air Light and Tally System and its functions, ④ Overview of Camera Adjustment Method using Test Chart, ⑤ Overview of Camera Adjustment Method using Master Setup Unit, ⑥ Adjustment Method of Virtual Studio System, ⑦ Video Input Sources, ⑧ System Adjustment Method centre on Digital Video Production Switcher, ⑨ System Adjustment Method centre on Digital Audio Mixer, ⑩ Adjustment of Overall System, ⑪ Overview of Peripheral Equipment, ⑫ Connection among System and Patch Panel, ⑬ Signal Monitoring (Virtual Line), ⑭ Recording Practice (Direct Recording to the Video Server), ⑮ Countermeasures to deal with emergencies such as equipment failures																														
1-2 Operational Instruction of Field Recording (ENG) System																														
[Lecture items] ①Instruction for Operation of Digital Camcorder and its functions, ② Instruction for Operation of HDV Camera and its functions, ③ Instruction for Operation of Digital Still Camera and its functions, ④ Outdoor Recording Practice																														
1-3 Operational Instruction of Routing Switcher System																														
[Lecture items] ① Manipulation of Routing Switcher System, ② Connection among System and Patch Panel, ③ Connecting with Analog Equipment, ④Signal Monitoring and Measurement																														
1-4 Operational Instruction of Video Common Sharing Network (1) to (3)																														
[Lecture items] (1) ① Overview of Video Server System, ② Operation of Ingest Terminals (SD, HD, HDV), ③ System Administration Methods, ④ Recording of Video Programs from Video Program Production Studio-1 & 2, ⑤ Demonstration of Editing Method using Non-Linear Editing Equipment, (2) ① Overview of DVD Duplication System (Signal Connection with A/D Format Conversion System), ② Instruction for Operation of Master DVD Capturing System and its functions, ③ Practice in Operation of Master DVD Capturing, ④ Practice in Operation of DVD Duplication System, (3) Overview of Computer Graphics System																														

Lecture details \ Schedule	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1.5 Operational Instruction of Measuring Equipment																														
［Lecture items］ Instruction and Practice for Operation of Video Analyzer and 8ch Audio Analyzer																														
1.6 Operational Instruction of Analog/Digital Format Conversion System																														
［Lecture items］ Instruction and practice for Operation of A/D Format Conversion																														
1.7 Operational Instruction of SD/HD Preview System																														
［Lecture items］ ①Overview of Overall System ,② Instruction and practice for Operation of A/V Switcher with Audio Mixer, ③ Practice in Preview																														
2. Operation Training for Operation of Virtual Studio System **【Total of 15 days】** ☆: Comprehension level test	☆														☆															
［Lecture items］ ①Overview of Hardware comprising the System and its function, ②Overview of Software comprising the System, ③Demonstration of basic operation, ④Lens calibration, ⑤ Camera Position calibration, ⑥Importing Graphics Data, ⑦Utilization of Library, ⑧Operation Support Software manipulation, ⑨Alignment Problems for Live-Action Images and CG Screen, ⑩System Operation practice, ⑪Manipulation And Operation Practice With Real Recording, ⑫Supplementary lessons based on practice results, ⑬Q & A																														
3. Practical Training for Creation of Computer Graphics (CG) **【15 days】** ☆: Comprehension level test	☆														☆															
［Lecture items］ ① Overview of Computer Graphics System, ② Basic operation of Computer Graphics System, ③ Demonstration for Basic Operation of Virtual Studio, ④ Conversion method of Data File, ⑤ Necessity of Optimization of CG Display, ⑥ CG creation Know-How for Virtual Studio, ⑦ Utilization of Library, ⑧ CG Creation Practice, ⑨ Operation Practice using Created CG, ⑩ Q & A																														
4. Operation Training for Operation of Non-Linear Editing System **【15 days】** ☆: Comprehension level test	☆														☆															
4-1 Overview																														
［Lecture items］ ① Non-Linear Editing Equipment and peripherals, ② Overview of Non-Linear Editing System, ③ Concept of Video Common sharing Network, ④ Practice in Video Recording from Video Program Production Studios																														
4-2 Software																														
［Lecture items］ ① Software for Non-Linear Editing Equipment, ② Menu and GUI, ③ File Management, ④ Server Mount, ⑤ Extract of Materials, ⑥Basic instruction of Editing Functions, ⑦ Transitions, ⑧ Adjustment Methods including Trimming Functions, ⑨ Audio Editing, ⑩ Instruction of Speed Alteration Method, ⑪ Practical Instruction of Multiple Timeline, ⑫ Filter Manipulation, ⑬ Title Input Method, ⑭ Title Creation Practice, ⑮ Rendering and File Generation, ⑯ Streaming, ⑰ Export to the Recorder, ⑱ Comprehensive Practice with Assigned Tasks, ⑲Q & A																														

2-2-4-8 Soft Component (Technical Assistance) Plan

For operation and maintenance of the Video Program Production Equipment procured under the Project, initial guidance and operation training are to be implemented for approximately one month as shown above. Taking into account the technical abilities of EMPC staff members, the initial guidance and operation and training will be sufficient enough. Therefore, the implementation of Soft Components is not necessary.

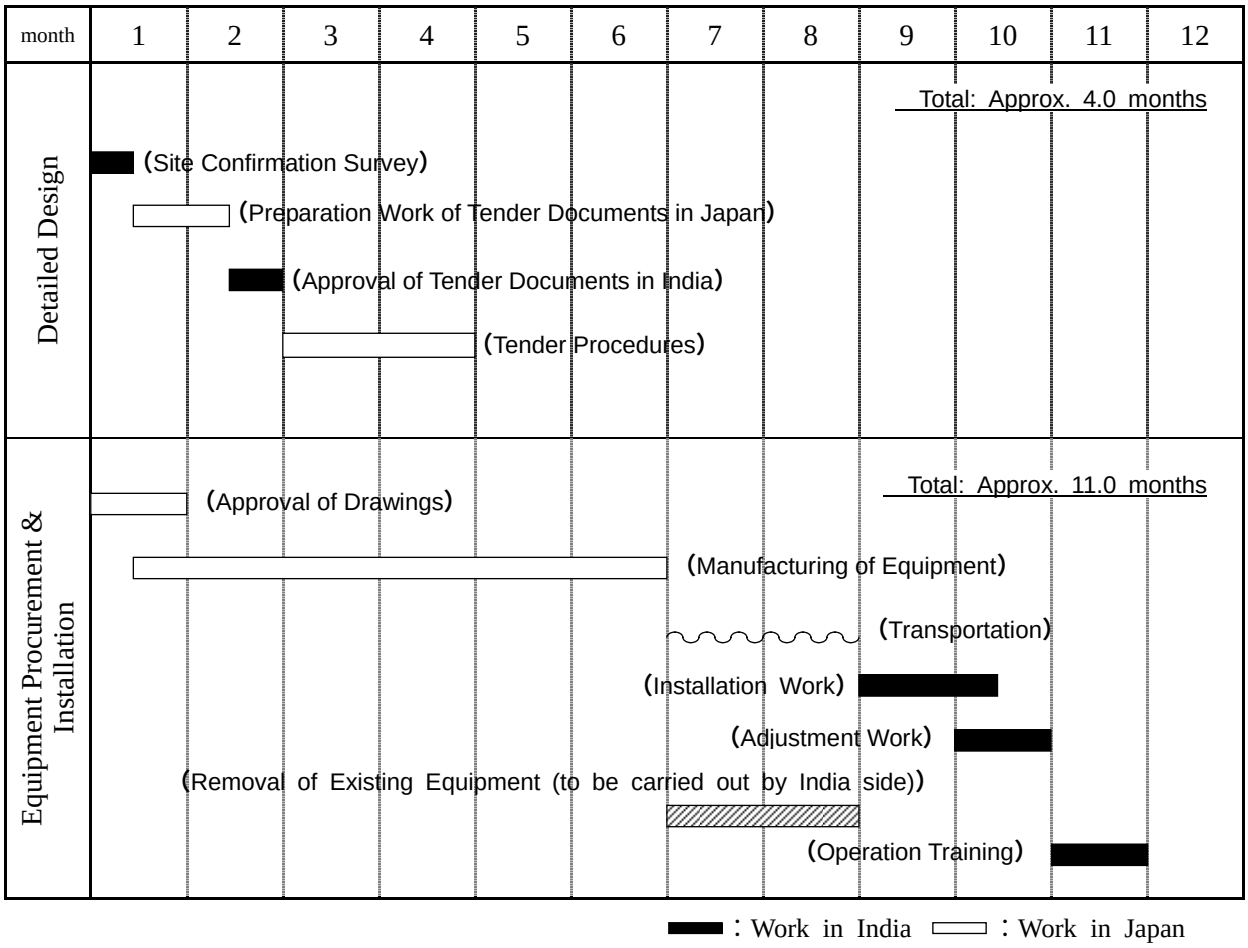
2-2-4-9 Implementation Schedule

The implementation schedule of the Project is shown in Table 2-11. The total implementation period of the Project will be approx. 15.0 months.

1) Detailed design and tendering : Approx. 4.0 months

2) Equipment procurement / installation works : Approx. 11.0 months

Table 2-11 Implementation Schedule



2-3 Obligations of Recipient Country

The obligations of India side in the event that the Project is implemented under Japan's Grant Aid are as follows:

(1) Removal of the existing equipment

It is necessary to remove the existing equipment (including dimmer racks in Video Program Production Studio-1) at each room where the equipment procured under the Project is to be installed, as well as to bear those removal costs (approx. 50,000Rp.). In order to minimize the period of program production suspension due to this equipment transfer, the removal work shall begin after confirming the start of sea transportation by the contractor taking into consideration of time and method of removal work.

(2) Banking Arrangement: B/A

GOI or IGNOU should open an account in the name of GOI in a bank in Japan. JICA will execute the Grant Aid by making payments in Japanese Yen to reimburse the consultant and the contractor for the contract prices by GOI or IGNOU under the verified contracts.

(3) Responsibility for payment of the advising (issuance) fee of Authorization to Pay (A/P) and bank commission fees necessary for the Project

The bank with which the Banking Agreement was entered into will issue the A/P necessary for payment to consultant and the contractor. GOI shall be responsible for payment of the A/P issuance fee and bank commission fees to be paid according to the A/P. Consequently, it should prepare the applicable funds as a part of their reimburse the consultant and the contractor for the contract prices, and depending on the total amount of Japan's Grant Aid, these charges will certainly not be of a small amount. Therefore, it is necessary to pay sufficient attention to the preparation of that budget.

(Case example of Bank of Tokyo-Mitsubishi UFJ)

Authorization to Pay (A/P) issuance fee: 3,150 yen per A/P

Bank commission fees: approx. 0.06% of the grant aid total (approx. 235,000Rp.)

If a bank other than the Bank of Tokyo-Mitsubishi UFJ such as the Bank of India, the State Bank of India, etc. is used, EMPC is responsible for confirming the necessary fund with the Indian Ministry of Finance or other organization concerned.

(4) Responsibility for customs duties of the imported equipment

It is necessary to bear the customs duties levied on imported equipment procured under the Project (approx. 32,000,000Rp.).

Import duty amount: Equivalent of 9.35% of (equipment CIP price + Landing Fee (1.5% of CIP price))

As this will be a larger amount than the bank commission fees noted above, it will be necessary to sufficiently examine concrete measures to ensure that the budget is secured.

(5) Execution of obligations of recipient country as specified in the Exchange of Notes (E/N) and Grant Agreement (G/A)

The obligations of the recipient country described in the E/N and G/A should be sufficiently understood and executed without fail.

2-4 Project Operation Plan

2-4-1 Operation and Maintenance System

The organization of EMPC is as shown in Fig. 2-43. It is comprised of four units viz. Production Unit (49 people), Engineering Unit (38 people), Graphics & Design Unit (9 people) and the Administration Unit (14 people) under the Director. There are total 110 staff members against the sanctioned employment capacity set at 173 staff members. (There are also additional 39 temporary staff members.)

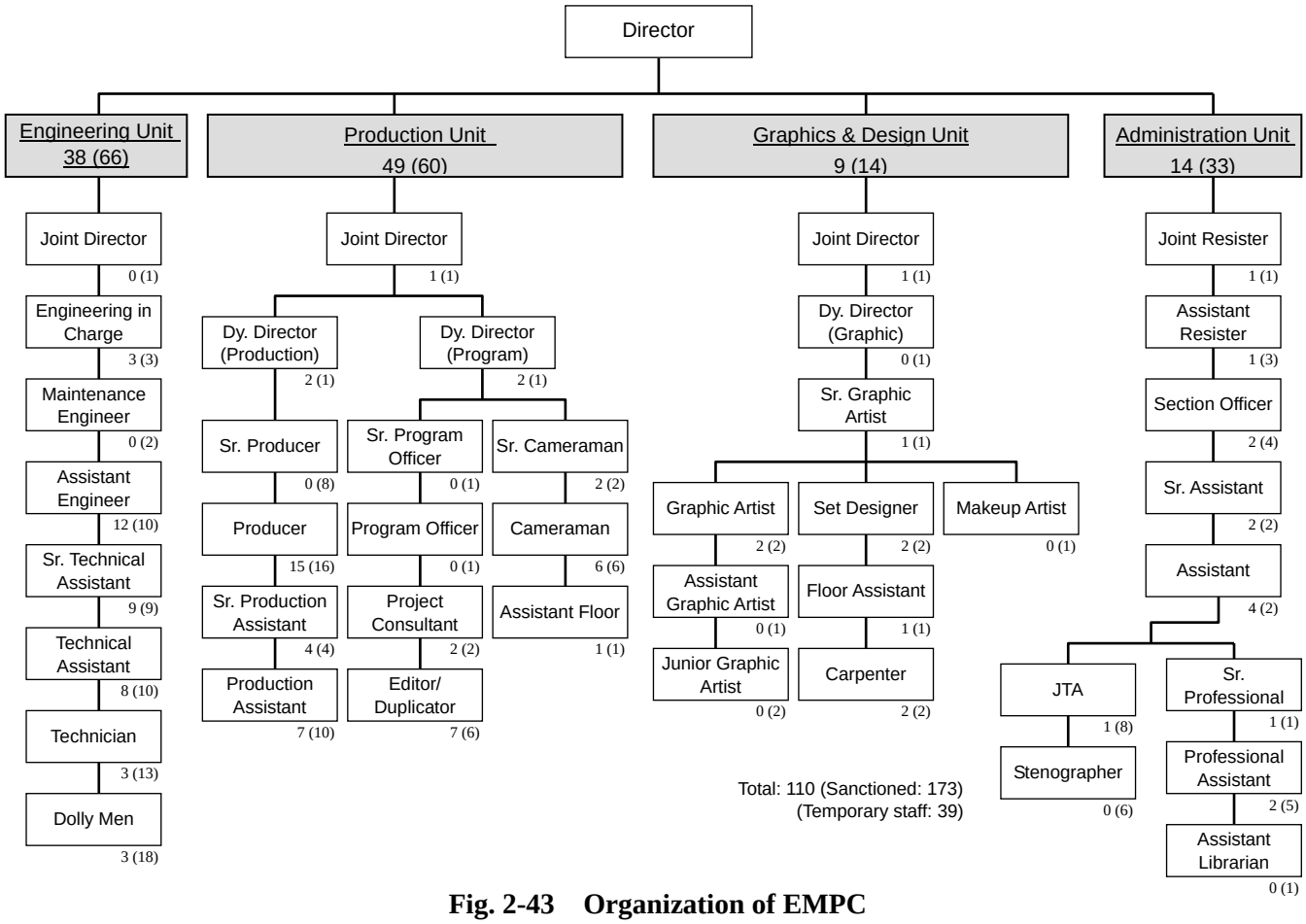


Fig. 2-43 Organization of EMPC

If the Project is implemented, the core operation force will be the staff members of Engineering Unit and Production Unit. The Engineering Unit is in charge of the operation and maintenance of audio/video program production and broadcasting/transmission equipment. The Production Unit is in charge of deciding audio/video program content in collaboration with each school, and also in charge of program production and broadcasting together with Engineering Unit staff members. The Engineering Unit runs on a team of 38 staffers, of which 20 engineers have participated in training at BBC in England, DW in Germany, and NHK (through JICA training programs, etc.). For the maintenance work of the equipment, EMPC has had a yearly maintenance contract with an outside

agent for the past 15 years, with an employee stationed at EMPC on a full time basis who works together with three staff members of the Engineering Unit for daily maintenance work. In addition to a maintenance log, a record of studio occupancy and equipment usage is kept and saved in a log book. Where digital technology is concerned, operation of the digital equipment to be procured under the Project will not pose a problem, considering the facts that digital equipment has been partly introduced and the engineering staff constantly strive for improving their knowledge on digital technology through exchange with engineers working at DD. There are 15 producers in the Production Unit, of which 11 have participated in training at BBC in England and NHK in Japan in the area of program production methods. All of the producers are producing programs employing their own unique methods by adding a sense of originality to the know-how they gained through the training. Production progress charts and scripts based on project protocol are also solidly created, and their program production capabilities are judged to be high. In this way, audio/video program production activities are being implemented by staff members with solid program production and technical capabilities developed through over 20 years of extensive experience. Therefore, as the current operation and maintenance management system will be sufficient even after implementing the Project, it is not necessary to increase the number of personnel.

2-4-2 Project Maintenance Plan

(1) Maintenance of Audio/Video Program Production Equipment

The service life of the equipment procured under the Project is set at 10 years. Generally, the rate of trouble of the equipment during its service life is thought to follow the time line shown in Fig. 2-44. This tendency is the same for the digitalized equipment.

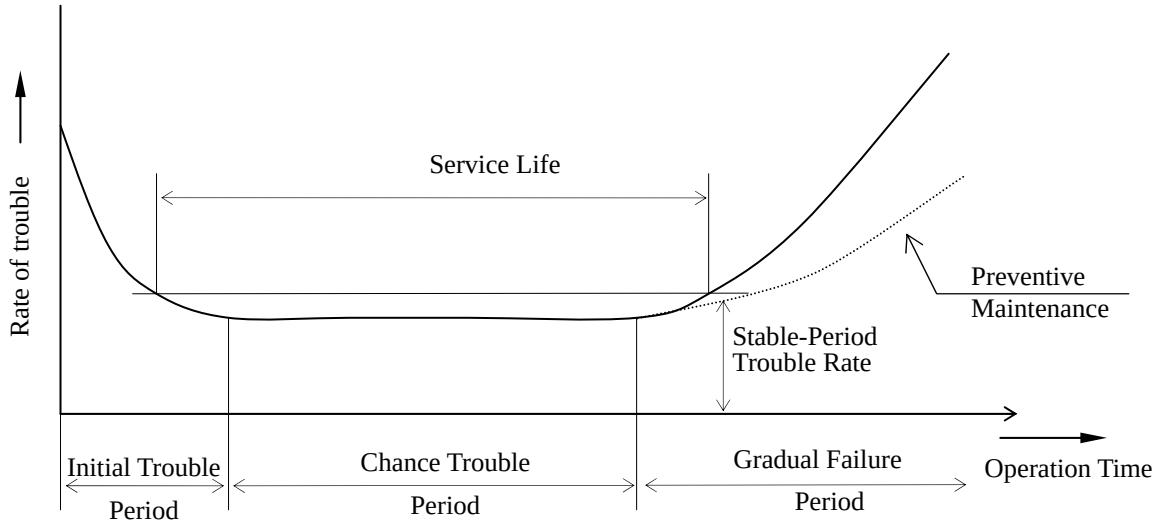


Fig. 2-44 Operation Time and Rate of Trouble of the Equipment

I Initial trouble period

The trouble in this period is caused by initial defects due to bad lots, etc., and it is considered important to identify the reasons for the trouble as quick as possible and take steps to eliminate it.

II Chance trouble period

After eliminating the problems of the initial trouble period, the trouble rate stays just about constant at a low level. The time before the beginning of the following period (the gradual failure period), during which the trouble rate is below a certain level, is called the service life.

III Gradual failure period

After the service life of parts, units of the equipment or system, i.e. after the chance trouble period, the trouble rate rises again. Since trouble in this period occurs because of deterioration of the equipment or parts constituting the system, it is considered that appropriate preventive maintenance can reduce trouble and extend the service life of the equipment or system.

However, dramatic improvements in reliability and durability for the digital equipment have come with the advancement of technology. Additionally, as there are almost no moveable mechanical components in the digital equipment, the rate of mechanical failures decreases, unlike the analog equipment in which wear on moveable mechanical components causes malfunction. Therefore, the rate of trouble in the digital equipment decreases markedly during its service life. Furthermore, most digital equipment has a self-diagnostic function and is set up so that the part of the malfunction is displayed when it occurs.

The major difference in services for handling malfunctions and inspections between digital and analog equipment is that for the analog equipment, services are handled by the user's own technical staff (or manufacturer staff), while the digital equipment is repaired and inspected basically by the manufacturer.

For example, video tapes have been an important media in the field of video program production so far. When a video tape comes in contact with the metal rotating head of the VTR, a video signal is recorded or played. Consequently, as the head of the VTR is moving in a continual state of contact, it wears out with continued recording and playing. The bearings, etc. of the motors used in the mechanism for forwarding the tape and rotating the drum (with attached rotating head) are also prone to wear. The user's technical staff or manufacturer would perform periodic maintenance works such as replacement of the head of the VTR, etc. in order to maintain operating reliability.

On the other hand, the digital disc recorder, one of the digital equipment, to be adopted in the

Project uses far less components within the mechanical structure than the VTR mentioned above. Compared to the VTR, maintenance methods are also simplified.

In particular, as discs are non-contact media, the parts prone to mechanical wear in the digital disc recorder are limited to the rotating portion of the motor and the elements of the mechanism for loading discs. Therefore, the rate of trouble in digital disc recorder is remarkably decreased compared to the VTR that records or reproduces audio/video signals by means of direct contact of tapes. However, malfunctions can occur and output strength may be decreased at the end of the service life of the optical pickup device in the digital disc recorder used for reading discs, in which a laser writes and reads data. In addition, sensitivity may be reduced if oil or dust in the air adheres to the lens used for focusing the laser. Therefore, the maintenance work is essential even for the digital equipment. However, routine periodic inspections and maintenance/adjustment inspections for overhauls executed by the manufacturers are sufficient for maintenance of the digital equipment. As for the reference, typical maintenance items of the digital equipment are shown in Table 2-12, and maintenance items of digital disc recorder and digital disc camcorder are shown in Table 2-13 and Table 2-14 respectively.

Table 2-12 Periodic Maintenance for the Digital Equipment

Inspection	Cycle	Objective
Routine inspection	At every 1,000 laser parameters or 1 year	Periodic inspection to maintain condition and ensure long-term use of components prone to wear.
Maintenance and adjustment inspection	At laser parameters 6,000 and 12,000	Periodic replacement of important components that deteriorate with operation.
Other	As needed	Periodic inspection of external parts and switches, etc. which are prone to wear depending on frequency of use.

(Notes)
- Inspections will be carried out using the equipment's internal laser parameter values as a basis for inspection cycle.
- Laser parameter: Numerical value of counter accumulated in the optical output of the optical head. Its progression changes with operation condition, ambient temperature, etc.

Table 2-13 Maintenance Items for Digital Disc Recorder (implemented by manufacturer)

No.	Work item	Maintenance at every 1,000 laser parameters or 1 year	Maintenance at 6,000 and 12,000 laser parameters
1.	Check at beginning of inspection		
	• Status of recorder	Check	Check
	• Internal cleaning, lubrication	Cleaning, lubrication	Cleaning, lubrication
2.	Parts		
	• Replacing parts according to guideline for manufacturer-designated replacement parts	—	Replace parts

No.	Work item	Maintenance at every 1,000 laser parameters or 1 year	Maintenance at 6,000 and 12,000 laser parameters
3.	Mechanisms, servo system		
	• Movement of rotors and guide system	Check	Replace parts
	• Spindle motor movement	Check	Replace parts
	• Seek motor movement	Check	Replace parts
	• Abnormal mechanism sounds	Check	Cleaning, lubrication
4.	Optical system		
	• Skew	—	Cleaning, lubrication
	• Optical block	—	Replace parts
5.	Electrical system		
	• Video system	Check	Cleaning
	• Audio system	Check	Cleaning
	• Power system	Check	Check
6.	Check at end of inspection		
	• Overall movement	Check	Check

Table 2-14 Maintenance Items for Digital Disc Camcorder (implemented by manufacturer)

No.	Work item	Maintenance at every 1,000 laser parameters or 1 year	Maintenance at 6,000 and 12,000 laser parameters
1.	Check at beginning of inspection		
	• Status of camcorder	Check	Check
	• Internal cleaning, lubrication	Cleaning, lubrication	Cleaning, lubrication
2.	Parts		
	• Replacing parts according to guideline for manufacturer-designated replacement parts.	—	Replace parts
3.	Mechanisms, servo system		
	• Movement of rotors and guide system	Check	Cleaning, lubrication
	• Spindle motor movement	Check	Cleaning, lubrication
	• Seek motor movement	Check	Cleaning, lubrication
	• Abnormal mechanism sounds	Check	Cleaning, lubrication
4.	Deck optical system		
	• Skew	—	Cleaning, lubrication
	• Optical block	—	Cleaning, lubrication
5.	Deck electrical system		
	• Video system	Check	Cleaning
	• Audio system	Check	Cleaning
6.	Camera electrical system		
	• Video system	Check	Cleaning, lubrication
	• Viewfinder system	Check	Cleaning, lubrication
	• Power system (including deck)	Check	Cleaning
7.	Check at end of inspection		
	• Overall movement	Check	Check

Consequently, after getting a grasp of the maintenance/inspection periods and items for the following digital equipment procured under the Project which require the periodic maintenance by the manufacturers, it will be necessary to commission maintenance services through the equipment agent at the appropriate time.

- 3CCD SD/HD Digital Camera (including Camera Adaptor, Pedestal, etc.)
- Portable Zoom Controller
- HD Multi-Purpose Remote Camera (including Control Unit)
- Virtual Processor
- HD Digital Disc Recorder
- HD Digital Video Switcher
- Video Monitor Switcher
- DVD Recorder
- HD Character Generator
- Digital Audio Mixer
- Memory Recorder
- CD Player
- Multi Cable (8pairs with CN Box & Reel)
- Digital Multi-Format Waveform Monitor
- 14-inch Multi-Format Master Video Monitor
- Virtual Set
- Dimmer Control Unit
- HD Digital Portable Camcorder
- MiniDV/HDV Camcorder
- Digital Routing Switcher
- Digital Multi-Format Waveform Monitor (Comb. Unit)
- Computer Workstation
- Ingest Terminal
- Administration Terminal
- Non-Linear Editing System
- Multi-Format Video Server
- Master DVD Capturing System
- DVD High Speed Duplication System
- Video Analyzer
- Oscilloscope
- 8ch Audio Analyzer

- HD Routing Switcher for Analog/Digital Format Conversion System
- Monitor Switcher
- HD Video Projector

Maintenance works for individual pieces of digital equipment should be done following the above. However, for effective long-term operation of the overall video program production system updated under the Project, it is necessary to implement daily and periodic inspections for each system using measuring instruments procured under the Project. Inspection and maintenance items for each system are as shown in Table 2-15 below. With the digitalization of the system, HD-SDI signals are to be transmitted among systems. If a problem occurs in the connection among systems, the quality of transmission signals become deteriorate dramatically and affect on program production. It is absolutely necessary to implement checks of the connection status among systems.

Table 2-15 Periodic Maintenance Items for Video Program Production System

Cycle	Maintenance Item
Daily	• Cleaning • Visual check of alarm lamp • Metering • Visual check of connectors
Half year (Measurement of Characteristics)	• Measurement of level diagram • Measurement of frequency response • Measurement of signal to noise ratio • Measurement of distortion • Measurement of power voltage • Checking of the quality of transmission signal (HD-SDI) among systems • Checking of each function

2-5 Project Cost Estimation

2-5-1 Initial Cost Estimation

In case the Project is implemented under Japan's Grant Aid, the total project cost to be born by India side is approx. 32,285,000Rp. The following are details of project cost to be born by India side and the estimation conditions:

(1) The project cost to be born by India side: Approx. 32,285,000Rp. (approx. 64 million Yen)

- Removal of existing equipment : 50,000Rp.
- Advising commission of Authorization to Pay (A/P) and bank commission fees to a bank of Japan : 235,000Rp.
- Customs duties of imported equipment : 32,000,000Rp.

(Equipment price (CIP) + Landing Fee (Equipment price (CIP) × 1.5%) × 9.35%

Total : 32,285,000Rp.

(2) Estimation conditions

1) Date of cost estimation: November, 2009

2) Exchange rate: 1 US$ ＝ 95.03 Japanese Yen
1 US$ = 48.06 Rp.
1Rp. = 1.97 Japanese Yen

3) Implementation Period: As per Implementation Schedule (Table 2-11)

4) Others: The project cost shall be estimated in accordance with the system of Japan's Grant Aid.

2-5-2 Operation and Maintenance Cost

The main operation and maintenance costs of video program production activities required to EMPC for the 10 years after implementation of the Project are as follows:

(1) Personnel expenses

As mentioned previously, there is no need to increase the number of technical staff members or program production staff for producing audio/video programs after the implementation of the Project. Thus, approx. 30,000,000Rp. equivalent to the total personnel expenses of EMPC staff at 2007/08, is earmarked for the personnel expenses for a year. (Note: fluctuation of salary is not taken account.)

(2) Video program production and duplication costs

The procurement costs for discs for video program production and digitalization of existing analog video programs, as well as DVDs for duplication of video programs to be distributed are earmarked as video program production and duplication cost. (Although fluctuations in disc prices are not taken into account, it is predicted that the price will decrease every year, as is the case in video tape prices.)

1) Discs for video program production

The annual production number of video programs is approx. 200. For this, the number of discs required per year has been set at 700 and the necessary procurement cost of discs is earmarked. The breakdown of the necessary number of discs is as follows:

① For video program production: 400 for use during studio recording (2 discs per 1 program production)

② For field recordings: 100 (calculated based on the number of EMPC's annual field recordings)

③ For completed video programs: 200 (to be stored in the library)

Procurement cost of discs for program production per year: 700 × 2,600Rp. = 1,820,000Rp. However, as the discs for completed video programs and field recording for the first fiscal year are procured under the Project, the procurement cost of discs for the first fiscal year is calculated with only 400 discs for studio recording use (400 × 2,600Rp. = 1,040,000Rp.).
(The price of 2,600Rp. per one disc is adopted from the pricing of an agent in New Delhi.)

2) Discs for digitalization of existing video programs

For the digitalization of the 3000 existing video programs (video tape) stored in the library, 1000 video programs produced before the year 2000 (storage period exceeds 10 years) will be converted in the first fiscal year by using 1000 discs to be procured under the Project. The conversion of the remaining 2000 video programs will be executed in a 5-year plan with 500 converted per year from the second to fifth fiscal years. Consequently, 500 discs per year are needed after the second fiscal year to digitalize the existing video programs. Thus, procurement cost of 500 discs is earmarked each for the second, third, fourth and fifth fiscal years.

For digitalization of existing video programs:

500 discs per year

Procurement cost for discs for digitalization of existing video programs:

500 × 2,600Rp. = 1,300,000Rp. per year

3) DVDs for duplication

The duplication number of produced video programs to be distributed to Regional Centres, Study Centres and to students who wish to purchase them is set at 3000, based on past numbers. The 3000 duplicates for the first fiscal year will be made by using 3000 DVDs procured under the Project. Thus, the procurement cost for DVDs is earmarked from the second fiscal year.

Number of DVDs for duplication of video program: 3000 per year

Procurement cost of DVDs for duplication of video program: 3000 × 20Rp. = 60,000Rp. per year

(The price of 20Rp. for one DVD is adopted from the market price in New Delhi.)

(3) Electrical power costs

The annual electrical power costs necessary for operating the systems introduced by the Project are estimated at approx. 480,000Rp. based on the following.

System		Power consumption	Hours of operation /day	Days of operation /year	Hours of operation /year	Annual power consumption	Power cost /kVA	Power cost
Video Program Production Studio-1 System	Program production equipment	15kVA	8	210	1,680	25,200kVA	4.3Rp.	108,360Rp.
	Lighting equipment	15kVA	3	210	630	9,450kVA	4.3Rp.	40,635Rp.
Video Common Share Network		17kVA	8	210	1,680	28,560kVA	4.3Rp.	122,808Rp.
Computer Graphics System		3kVA	8	210	1,680	5,040kVA	4.3Rp.	21,672Rp.
Multi-Format Video Server		1.5kVA	24	365	8,760	13,140kVA	4.3Rp.	56,502Rp.
Routing Switcher System		3kVA	24	365	8,760	26,280kVA	4.3Rp.	11,300Rp.
Duplication System		1.5kVA	5	100	500	750kVA	4.3Rp.	3,225Rp.
A/D Format Conversion System (FY1 - FY5)		1.8kVA	5	210	1,050	1,890kVA	4.3Rp.	8,127Rp.
A/D Format Conversion System (FY6 – FY10)		1.8kVA	3	100	300	540kVA	4.3Rp.	2,322Rp.
Preview System		2.5kVA	3	100	300	750kVA	4.3Rp.	3,225Rp.

The electrical power unit price is 4.3Rp./kVA, which is the unit price of the power company (BSES Rajadhani Power Limited) that is contracted by IGNOU. (Base charges are not included and variation of the unit price for charges in 10 years is not taken into account.)

(4) Equipment maintenance costs

As there is a possibility of equipment malfunction during everyday operations, it is necessary to allocate servicing and maintenance costs. Here, the case of a digitalized Japanese broadcasting organization shall be applied as a reference in calculating maintenance costs. In the era of the analog equipment, approximately 1 to 1.5% of the equipment price was required annually as maintenance costs. However, with digitalization in recent years, there are no longer many parts prone to wear in the equipment. With this, most everyday maintenance work has become unnecessary, thus reducing maintenance fees as well. However, as mentioned before, the inspection and maintenance of the digital equipment is implemented by commissioning to the manufacturer. Therefore, although it is necessary to incorporate these costs in the calculations, they can be sufficiently estimated at an annual 0.5% of the equipment price, including the replacement of worn parts as the record of digitalized Japanese broadcasting organization. Since the first fiscal year is within the warranty period, the maintenance costs from the second year are earmarked for an annual total of approximately 800,000Rp.

(5) Reserve funds for equipment renewal

The operational life of the equipment introduced by the Project is set at 10 years. Consequently, it will be necessary to renewal the equipment in 10 years time, making it necessary to reserve budget yearly for this cost. The amount of annual reserve budget will be 31,000,000Rp. equivalent of one-tenth of the total price of the equipment to be procured under the Project. (The operation life time of lighting equipment at Video Program Production Studio-1 is set at 15 years and the above amount is calculated, based on such life time.)

(6) Others

In addition to the above, the miscellaneous expenses are necessary for video production activities such as outsourcing of experts, travel expenses, etc. 1,200,000Rp. is allocated for the miscellaneous expenses per year, based on the past records.

According to the items above, the projection of the major operation and maintenance costs of video program production required to EMPC for 10 years after project implementation is summarized as follows:

Fiscal year	FY 1	FY 2	FY 3	FY 4	FY 5
1. Personnel Expenses (Rp.)	30,000,000	30,000,000	30,000,000	30,000,000	30,000,000
2. Program production cost (Rp.)	1,040,000	3,180,000	3,180,000	3,180,000	3,180,000
① Procurement cost for program production discs (Rp.)	1,040,000	1,820,000	1,820,000	1,820,000	1,820,000
② Procurement cost for existing program digitalization discs (Rp.)	—	1,300,000	1,300,000	1,300,000	1,300,000
③ Procurement cost for duplication DVDs (Rp.)	—	60,000	60,000	60,000	60,000
3. Electrical power cost (Rp.)	480,000	480,000	480,000	480,000	480,000
4. Equipment maintenance cost (Rp.)	—	800,000	800,000	800,000	800,000
5. Equipment renewal reserve fund (Rp.)	31,000,000	31,000,000	31,000,000	31,000,000	31,000,000
6. Others (Rp.)	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000
Total (Rp.)	63,720,000	66,660,000	66,660,000	66,660,000	66,660,000
Proportion of Non-Plan Budget at IGNOU in 2007/08 (2,94 0millionRp.)	2.16%	2.26%	2.26%	2.26%	2.26%
Proportion of Non-Plan Expenditure at IGNOU in 2007/08 (2,310 million Rp.)	2.75%	2.88%	2.88%	2.88%	2.88%

Fiscal year	FY 6	FY 7	FY 8	FY 9	FY 10
1. Personnel Expenses (Rp.)	30,000,000	30,000,000	30,000,000	30,000,000	30,000,000
2. Program production cost (Rp.)	1,880,000	1,880,000	1,880,000	1,880,000	1,880,000
① Procurement cost for program production discs (Rp.)	1,820,000	1,820,000	1,820,000	1,820,000	1,820,000
② Procurement cost for existing program digitalization discs (Rp.)	—	—	—	—	—
③ Procurement cost for duplication DVDs (Rp.)	60,000	60,000	60,000	60,000	60,000
3. Electrical power cost (Rp.)	480,000	480,000	480,000	480,000	480,000
4. Equipment maintenance cost (Rp.)	800,000	800,000	800,000	800,000	800,000
5. Equipment renewal reserve fund (Rp.)	31,000,000	31,000,000	31,000,000	31,000,000	31,000,000
6. Others (Rp.)	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000
Total (Rp.)	65,360,000	65,360,000	65,360,000	65,360,000	65,360,000
Proportion of Non-Plan Budget at IGNOU in 2007/08 (2,94 0million Rp.)	2.22%	2.22%	2.22%	2.22%	2.22%
Proportion of Non-Plan Expenditure at IGNOU in 2007/08 (2,310 million Rp.)	2.82%	2.82%	2.82%	2.82%	2.82%

Video programs will be recorded on disks but at present there is approx. 1,400Rp. difference in price between video tape (approx. 1,200Rp.) and disk (approx. 2,600Rp.), which increases by approx. 980,000Rp. to 1,680,000Rp. annually for acquisition cost of disks compared with video tapes. On the other hand, digitalization of equipment decreases electric power consumption by half compared with present system, which decreases by approx. 500,000Rp. per year in electric power cost. Moreover, digital equipment requires no periodical maintenance, which drastically reduces by about 1/3 the annual equipment maintenance cost compared with present system. The reduction corresponds to approx. 1,600,000Rp. per year.

Accordingly, part of decrease of electric power cost and equipment maintenance cost by digitalization is compensated for the cost increase by procurement of disks. It is anticipated that the annual operation and maintenance cost for video production activities will be decreased by approx. 500,000Rp. to 1,200,000Rp. including above reduction compared with costs required for the existing

system.

Besides, disk will be widely used as a recording media, replaced with video tape. Presumably, the price of disk will become about the same as video tape in future. (The current price of video tape in India has become about half from the time of starting its sale.)

These operation and maintenance costs will be covered in the IGNOU budget, as they have been in the past. The proportion of operation and maintenance costs for each year to Non-Plan Budget at IGNOU is only from 2.16% to 2.26% and that to Non-Plan Expenditure at IGNOU is also only from 2.75% to 2.88%. Considering the past records, it has been judged that there will be no particular problem in the funding for operation and maintenance costs for video program production at EMPC after completion of the Project.

Chapter 3 Project Evaluation and Recommendations

Chapter 3 Project Effect and Recommendations

3-1 Project Effect

The effect that can be expected of implementation of the Project is as follows:

Present situation and problems	Measures in the Project (work included in the grant aid)	Project effect and extent of improvement
EMPC produces the video programs used to supplement textbooks of course lessons in IGNOU, the core of open distance education system in India, by using two video program production studios improved by Japan's Grant Aid in 1993. However, since GD-2 was started, one of the video program production studios has been used exclusively as the transmission studio for the GD-2 teleconference lessons, making it impossible to use for the production of video programs. Consequently, current production of video programs is made in the remaining video program production studio. However, the equipment used at present has already exceeded its service life and obtaining spare parts is getting difficult. The equipment becomes obviously superannuated, and malfunctions are a frequent occurrence. If the current situation is left as it is, video program production will become impossible within the next few years, thus negatively affecting the education of over two million students of IGNOU. Furthermore, the production output of 200 video programs per year is barely sustained by long and hard work of EMPC production staff who work 365 days throughout the year without holidays, much beyond the normal working days (210 days).	Improvement of video program production system with digital technology at EMPC. ① Video Program Production -1 System ② Field Recording (ENG) System ③ Routing Switcher System ④ Video Common Sharing Network (Video Server System) ⑤ DVD Duplication System ⑥ Computer Graphics System ⑦ Measuring Equipment ⑧ Analog to Digital Format Conversion System ⑨ SD/HD Preview System ⑩ Spare Parts	① System for continuous video program production will be put in place. ② Efficiency of video program production will be advanced by introduction of digitalized video program production system. ③ Stability of video program production will be achieved through elimination of trouble due to equipment malfunction. ④ Video program production cost will be reduced. ⑤ IGNOU will be able to fulfill its missions as a core of open distance study in India.

3-1-1 Direct Effect

① EMPC will be able to continuously and stably produce the average 200 video programs per year required by courses in IGNOU's various schools. In the 10 years after the Project, approximately 2000 video programs can be produced and offered to approx. 2 million students of IGNOU throughout India and 33 countries where the Oversea Centres of IGNOU exist.

② The new digital video program production system will possess a capability of producing 200 video programs annually with 210 working days from the capability of the current system requiring 365 working days to produce the same number of video programs, and thus much improve production efficiency.

③ The digital (HD) video programs with high quality images can be produced by using digital equipment in place of existing analog equipment and can be continuously broadcast through educational satellite television broadcasting channels and India's national television network.

3-1-2 Indirect Effect

① By advancing program production efficiency, in addition to production of video programs for each school, production of video programs will also be possible for the science education broadcast channel that is planned for implementation.

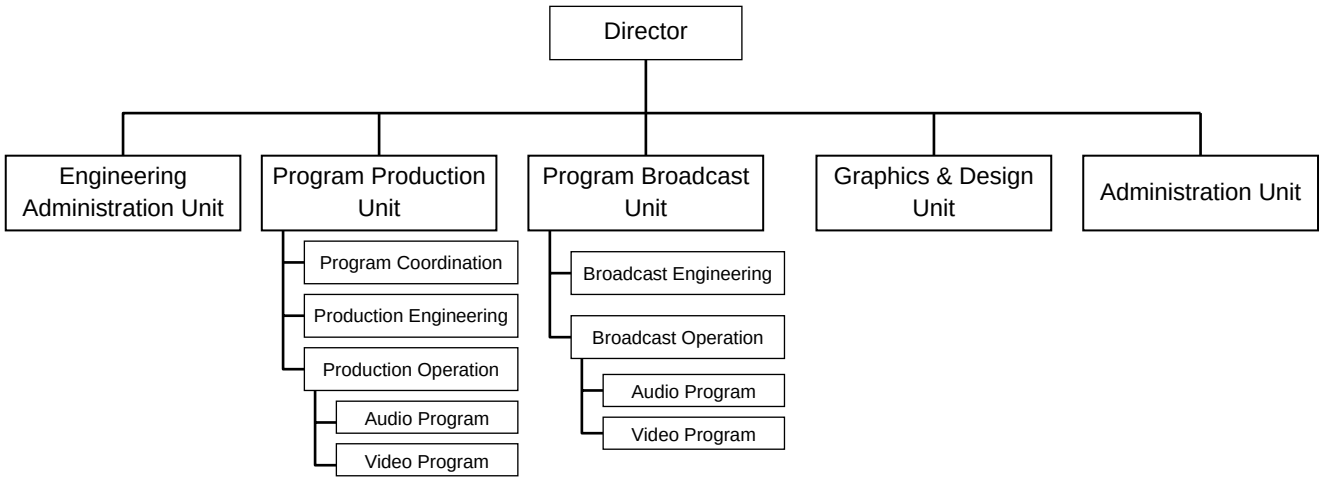
② The content of the produced video programs will be enhanced by the use of various visual effects, computer graphics, etc., and the video quality will also be greatly upgraded. In combination with DVD usage at the Regional Centres and the Study Centres, it will further enhance the level of students' understanding as well as learning efficiency.

③ Enhancement of the distance education system will contribute to achieving one of the objectives of the 11th 5-year plan, which is to "elevate the rate of entrance into higher education". Eventually, it will eliminate educational disparities among regions in India, and contribute to socioeconomic development and eradication of poverty in India.

3-2 Recommendations

(1) Clarification of audio/video program production operation and audio/video program broadcasting operation

Main operations of EMPC had been the production, duplication, and distribution of audio/video programs as the supplement to textbook of courses implemented by IGNOU. In 2000, broadcasting operation for these audio/video programs was added. However, a revision of the organization of EMPC to accompany this was not performed, and therefore as it stands now, production, duplication, distribution, and broadcasting operations for audio/video programs are implemented by staff members of the Production Unit and Engineering Unit of EMPC. As a result, the duties for staff members of both units are confused and it is unclear where responsibility lies for each of the operations, leading to misunderstandings in operational directives. Cases in which this problem created confusion resulting from executing operations were seen frequently during the period of this preparatory survey. Therefore, in order to implement each operation both systematically and smoothly, it is necessary to reorganize the current structure of EMPC and to clarify the status of and personnel in charge for audio/video program production operation and audio/video program broadcasting operation. As a reference, a proposal for a reorganized structure of EMPC based on the current status of both operations is shown below.



Besides, in case the operations of EMPC are further diversified in the future, it is recommended that EMPC shall divide into two organizations such as the organization for production of audio/video programs (for example, establishment of an Audio/Video Program Production Center) and the organization for broadcasting audio/video programs (for example, establishment of an Audio/Video Program Broadcasting Center) in order to improve efficiency in operations by clarifying the lines of responsibility.

(2) Packaging textbooks with audio/video programs

The educational materials used by IGNOU students taking courses are textbooks (paper materials) in principle. These textbooks are sent to students following their application for the courses. Audio/video programs, which are supplementary materials, are distributed separately to Regional Centres and Study Centres, as well as to students who wish to purchase them. Meanwhile, as a global trend in recent years, paper materials such as textbooks and reference books are being sold packaged together with audio/video programs on CD or DVD with the prevalence of home-use CD and DVD players. With the rapidly increasing popularity of home-use CD and DVD players in India as well, by packaging textbooks and audio/video programs together to send to students for use as IGNOU educational materials, an improvement in learning efficiency can be expected. Using textbooks and audio/video programs together in the home is very effective, and for students who do not own CD or DVD players, materials can be brought to a Regional Centre or Study Centre making study through simultaneous use of textbooks and audio/video programs possible.

(3) Technical cooperation and association with other donors

Although EMPC has the same operational function as a broadcasting station, there are currently no employees with relevant experience in broadcasting station management. Therefore, it is essential for EMPC management personnel to participate in broadcasting management training offered in, for example, Japan (NHK) or England (BBC) that is targeted at broadcasting station management-level personnel. It is recommended that the revision of the organization of EMPC shall be proceeded consultation with the personnel who received the training of management methods and operational procedures at a broadcasting station. At NHK, a broadcasting management course is held for management-level personnel from broadcasting stations in various countries every year. There is high possibility that EMPC's personnel can participate in the training course. It is recommendable that EMPC applies for and secure a place in this broadcasting management training through the Embassy of Japan or JICA India Office as a part of technical cooperation.

Appendices

1. Member List of the Survey Team

(1) Preparatory Survey

Name	Assignment	Present Post
Mr. Yuki ARATSU	Team Leader	Senior Advisor to Director General, Human Development Department, JICA
Mr. Kenichi SHIROUZU	Project Coordinator	Technical and Higher Education Division, Higher Education and Social Security Group, Human Development Department, JICA
Mr. Akira NAGASE	Chief Consultant / Distance Education	NHK Integrated Technology Inc.
Mr. Masayuki HAYASHI	Equipment Planner	NHK Integrated Technology Inc.
Mr. Hiromu KAMIJO	Facility Planner	NHK Integrated Technology Inc.
Mr. Hiroshi SONODA	Cost Estimate / Procurement Condition	NHK Integrated Technology Inc.

(2) Explanation of Draft Outline Design Report

Name	Assignment	Present Post
Mr. Mitsunori SAITO	Team Leader	JICA India Office
Mr. Kenichi SHIROUZU	Project Coordinator	Technical and Higher Education Division, Higher Education and Social Security Group, Human Development Department, JICA
Mr. Akira NAGASE	Chief Consultant / Distance Education	NHK Integrated Technology Inc.
Mr. Masayuki HAYASHI	Equipment Planner	NHK Integrated Technology Inc.

2. Survey Schedule

(1) Preparatory Survey

<table>
<tr><th>Date</th><th>Team Leader
(Yuki ARATSU)</th><th>Project Coordinator
(Kenichi SHIROUZU)</th><th>Chief Consultant/
Distance Education
(Akira NAGASE)</th><th>Equipment Planner
(Masayuki HAYASHI)</th><th>Facility Planner
(Hiromu KAMIJO)</th><th>Cost Estimate/
Procurement Condition
(Hiroshi SONODA)</th></tr>
<tr><td>25 Oct.
(Sun.)</td><td colspan="2"></td><td colspan="4">Lv. Narita → Ar. New Delhi</td></tr>
<tr><td>26 Oct.
(Mon.)</td><td colspan="2" rowspan="2"></td><td colspan="4">• Meeting with IGNOU (discussion of survey schedule, assignment of counterparts, confirmation of site layout, etc.)
• Discussion with EOJ and JICA India Office</td></tr>
<tr><td>27 Oct.
(Tue.)</td><td colspan="2"></td><td colspan="3">• Meeting with IGNOU (explanation of Grant Aid System, reconfirmation of contents of the request and their priority, adoption of digitalization)
• Site survey (existing equipment and facilities)</td><td rowspan="3">• Survey of procurement method (local, third country, Japan)</td></tr>
<tr><td>28 Oct.
(Wed.)</td><td colspan="2" rowspan="2"></td><td rowspan="2">• Detailed survey of IGNOU
- position of the Project in 11th 5-year plan, etc.
- trend/intention of other donor organizations (Japan Foundation, UNESCO, etc.)
- progress of Pan-African e-network project
- the works to be carried out by Indian side</td><td rowspan="2">• Detailed site survey
- site condition
- present status of existing equipment (specifications, manufacturers, manufactured date, operations conditions)
- equipment layout and installation condition of the equipment at each room
- wiring among respective rooms</td><td>• Collection of drawings on existing buildings and facilities</td></tr>
<tr><td>29 Oct.
(Thu.)</td><td rowspan="3">• Detailed site survey
- present status of air conditioning facilities</td></tr>
<tr><td>30 Oct.
(Fri.)</td><td colspan="2"></td><td colspan="2">• Visiting of regional center</td><td rowspan="3">• Data collection for cost estimation such as labor unit price, etc.</td></tr>
<tr><td>31 Oct.
(Sat.)</td><td colspan="2"></td><td rowspan="3">• Detailed survey of IGNOU
- past record of similar projects
- organization, budget, staff assignment
- cost for program production, operation and maintenance, etc.
- operation and maintenance system and technical level
- program production method and capability of program production
- necessity of technical assistance
- environmental and social consideration
- impact and effect of the Project, etc.</td><td rowspan="2">• Detailed site survey
- site condition
- present status of existing equipment (specifications, manufacturers, manufactured date, operations conditions)
- equipment layout and installation condition of the equipment at each room
- wiring among respective rooms</td></tr>
<tr><td>01 Nov.
(Sun.)</td><td colspan="2"></td><td rowspan="3">• Detailed site survey
- present status of electric facilities (UPS, E/G, etc.)
- frequency of power failure, fluctuation of power, etc.</td></tr>
<tr><td>02 Nov.
(Mon.)</td><td colspan="2"></td><td>• Survey of customs clearance, tax and public imposition, etc.</td></tr>
<tr><td>03 Nov.
(Tue.)</td><td colspan="2"></td><td>• Survey of DD and AIR</td><td>• Survey of DD and AIR</td><td></td></tr>
<tr><td>04 Nov.
(Wed.)</td><td colspan="2"></td><td rowspan="5">• Detailed survey of IGNOU
- past record of similar projects
- organization, budget, staff assignment
- cost for program production, operation and maintenance, etc.
- operation and maintenance system and technical level
- program production method and capability of program production
- necessity of technical assistance
- environmental and social consideration
- impact and effect of the Project, etc.</td><td rowspan="5">• Detailed site survey
- library
- set scene
- Recording media in use
- adopted recording media
- equipment installation method
- selection of the existing equipment to be used
- selection of the equipment to be newly procured</td><td rowspan="3">• Detailed site survey
- present condition of interior and sound proof at each room</td><td rowspan="2">• Survey of transportation method and cost</td></tr>
<tr><td>Nov.05
(Thu.)</td><td colspan="2"></td></tr>
<tr><td>06 Nov.
(Fri.)</td><td colspan="2"></td><td rowspan="3">• Survey of local company, local agent, distributer, etc.
• Market research
• Survey of the project cost of other donor organizations</td></tr>
<tr><td>07 Nov.
(Sat.)</td><td colspan="2">Lv. Narita →
Ar. New Delhi</td></tr>
<tr><td>08 Nov.
(Sun.)</td><td colspan="2">• Meeting within the Team (interim meeting of the survey)</td><td rowspan="2">• Detailed site survey
- present condition of studio lighting equipment</td></tr>
<tr><td>09 Nov.
(Mon.)</td><td colspan="3">• Discussion with EOJ and JICA India Office
• Discussion with MHRD, MOF and IGNOU</td></tr>
<tr><td>10 Nov.
(Tue.)</td><td colspan="3">• Inspection of project site</td><td colspan="2"></td></tr>
</table>

Date	*Team Leader (Yuki ARATSU)*	*Project Coordinator (Kenichi SHIROUZU)*	*Chief Consultant/ Distance Education (Akira NAGASE)*	*Equipment Planner (Masayuki HAYASHI)*	*Facility Planner (Hiromu KAMIJO)*	*Cost Estimate/ Procurement Condition (Hiroshi SONODA)*
11 Nov. (Wed.)	• Discussion with IGNOU • Preparation of Minutes of Discussion			• Survey of AIR		• Survey of natural condition (meteorological data, etc.) and infrastructures
12 Nov. (Thu.)	• Discussion on Minutes of Discussion		• Survey of Jamia Milia University	• Survey of Jamia Milia University	• Confirmation on contents of rehabilitation and repair works of facilities	
13 Nov. (Fri.)	• Signing of Minutes of Discussion • Report to EOJ and JICA India Office			• Continuation of detailed site survey	*Lv. New Delhi → Ar. Narita*	• Collection of data necessary for Project cost estimation
14 Nov. (Sat.)	*Lv. New Delhi → Ar. Narita*		• Additional survey of operation and maintenance system after the Project • Additional survey of technical assistance • Collection of data for evaluation of project effects, etc.			
15 Nov. (Sun.)						
16 Nov. (Mon.)						
17 Nov. (Tue.)						
18 Nov. (Wed.)			• Wrap-up of the result of the survey			
19 Nov. (Thu.)			• Meeting with IGNOU(explanation of the result of survey, confirmation of request items to Indian side) • Report to JICA India Office			• Meeting with IGNOU • Collection of additional data
20 Nov. (Fri.)			*Lv. New Delhi → Ar. Narita*			*Lv. New Delhi → Ar. Narita*

(2) Explanation of Draft Outline Design Report

Date	Team Leader (Mitsunori SAITO)	Project Coordinator (Kenichi SHIROUZU)	Chief Consultant/ Distant Education (Akira NAGASE)	Equipment Planner (Masayuki HAYASHI)
07 Mar. (Sun.)		Lv. Narita → Ar. New Delhi		
08 Mar. (Mon.)	• Explanation of Draft Final Report to IGNOU • Supplemental Survey			
09 Mar. (Tue.)	• Meeting with Embassy of Japan • Explanation of Draft Final Report to IGNOU • Discussion of Minutes of Discussions with IGNOU • Supplemental Survey			
10 Mar. (Wed.)	• Explanation of Draft Final Report to IGNOU • Discussion of Minutes of Discussions with IGNOU & MHRD • Supplemental Survey			
11 Mar. (Thu.)	• Meeting with MHRD • Signing of Minutes of Discussions			
12 Mar. (Fri.)	• Meeting with Ministry of Financial • Meeting with JICA India Office			
13 Mar. (Sat.)		Lv. New Delhi → Ar. Narita		

3. List of Parties Concerned in India

Ministry of Finance

Mr. Surendrakumar Bagde	Director, Department of Economic Affairs
Mr. Subodh Kumar GhildiyalUnder	Secretary, Department of Economic Affairs

Ministry of Human Resource Development

Dr. Dinesh K. Paliwal	Deputy Educational Advisor, Department of Higher Education
Mr. Pradeep Kaul	Joint Director (H), Consortium for Educational Communication

IGNOU

Prof. V.N. Rajasekharan Pillai	Vice-Chancellor
Prof. Parvin Sinclair	Pro-Vice-Chancellor

[School of Jounalism & New Media Studies]

Mr. Subhash Dhuliya	Professor

[Staff Training &Research Institute of Distance Education (STRIDE)]

Prof. Santosh Panda	Professor of Distance Education Council

[Academic Coordination Division]

Mr. R. Sivaraj	Assistant Registrar

[Planning & Development Division]

Mr. Pankaj Khanna	Deputy Director

[Finance and Accounts Division]

Mr. Cherian Thomas	Finance Officer
Ms. Mangla Verma	Joint Registrar
Mr. Aseem Kumar	Assistant Registrar

[Administration Division]

Mr. R. Thyagarajan	Deputy Registrar

[Campus Construction Maintenance Division]

Mr. Vasant Padi	Assistant Engineer, Air Conditioning & Electrical Equipment in charge
Mr. Sanjay Kumar	Air Conditioning Plant incharge
Mr. Ved Parkash	Air Conditioning Plant incharge

[EMPC］

Mr. K. Ravi Kanth	Director

(Engineering Unit)

Mr. Vinod Mago	Engineer in charge
Mr. Rakesh Shprma	Engineer in charge
Mr. S.V.C. Prasant	Engineer in charge
Mr. Rakesh Jain	Assistant Engineer (Senior Scale)
Mr. Rakesh Chauhan	Assistant Engineer
Ms. Neena Jain	Assistant Engineer (EduSAT)
Mr. Sushil Jain	Senior Technical Assistant
Mr. Rajender Pal	Senior Technical Assistant
Mr. Rajender Bist	Senior Technical Assistant
Mr. Satish Kumar	Senior Technical Assistant
Mr. Jai Parkash	Technical Assistant
Mr. Priethvie P. Sharma	Technical Assistant
Mr. Susheel Kumar Jain	Technical Assistant
Mr. Sumit Dagar	Consultant (EduSAT)
Mr. Mukul Bharwaj	Project Engineer
Mr. Kamal Sharma	Project Engineer
Mr. Ramesh Chaud	Server Operator

(Graphics & Design Unit)

Mr. Anil Saxena	Joint Director (Graphics)

(Production Unit)

Dr. Zeba Khan	Deputy Director
Mr. Sunil Kumar Das	Producer (Selection Grade)
Mr. Ashok Nisuesh	Producer (Selection Grade)
Mr. Binod Prasad	Producer (Senior Scale)
Mr. Anurag Tiwarj	Senior Production Assistant
Mr. P. Santosh Kumar	Senior Production Assistant
Mr. Manoj Kumar Singh	Production Assistant
Mr. R. Sekhar	Senior Cameraman

Mr. Govindan Prasad	Senior Cameraman
Mr. Abhinav Alok	Cameraman
Mr. Ravi Sharma	Coodinator, Gyan Darshan
Mr. Ravi Shankar S	Coodinator, Gyan Darshan
Mr. Anurang Shankar	CMS Computers
Mr. Anurag Mishra	CMS Computers
Mr. Mohd. Sajjad Rizvi	Station Manager, Gyan Vani-Delhi

(Marketing Unit)

Mr. Lekh Raj Verma	Section Officer

(Administration Unit)

Mr. G. P. Singh	Assistant Register
Mr. Satyapal	Professional Assistant, Library

[Regional Center, NCT of Delhi-2]

Dr. Sanjeev Pandey	Regional Director

[Regional Center, Noida]

Dr. Gulab Jha	Regional Director

Telecommunications Consultants India Limited (TCIL)

Mr. Anshul	Pan African e-network Project Engineer
Mr. Pratap	Pan African e-network Project Engineer

Doordarshan TV

Mr. B. B. Sharma	Superintending Engineer
Mr. K. Subramanian	Director (Engineer)
Mr. P. S. Srivastava	Deputy Director (Engineering)
Mr. Gautam Jaggi	Joint Manager-Broadcast Engineering (AGIV:HD OB-Van System Integrator)

All India Radio

Mr. R. K. Saksena	Director (Engineering) & General Manager (Comm.) AIR Resources
Mr. Ashok Kr. Jain	IBES, Superintending Engineer
Mr. Yogendra Trehan	Station Engineer

Jamia Millia Islamia University

Mr. Najeeb Jung	Vice Chancellor
Prof. Asghar Wajahat	Officiating Director, AJK Mass Communication Research Centre

India Meteorological Department

Mr. V. K. Handoo	Technical Officer

Embassy of Japan

Mr. Yukihiro Fukuda	Counsellor
Mr. Mamoru Fukada	First Secretary

JICA India Office

Mr. Shinichi Yamanaka	Chief Representative
Ms. Yumiko Asakuma	Senior Representative
Mr. Mitsunori Saito	Representative
Ms. Aditi Puri	Development Specialist

4. Minutes of Discussions

MINUTES OF DISCUSSIONS
ON
THE PREPARATORY SURVEY (BASIC DESIGN)
ON
THE PROJECT FOR STRENGTHENING
OF
ELECTRONIC MEDIA PRODUCTION CENTRE
IN
INDIRA GANDHI NATIONAL OPEN UNIVERSITY
(EXPLANATION OF THE DRAFT REPORT)

In November 2009, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Preparatory Survey Team on the Project for Strengthening of Electric Media Production Centre in Indira Gandhi National Open University (hereinafter referred to as "the Project") to the India. Based on the discussions, field survey, and technical examination of the findings, JICA prepared a draft report of the survey.

In order to explain and to consult the Government of India (hereinafter referred to as "GOI") on the components of the draft report, JICA sent to India the Draft Report Explanation Team (hereinafter referred to as "the Team"), which is headed by Mr. Saito Mitsunori, JICA India Office, from 7 March to 13 March, 2010.

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

New Delhi, March 11, 2010

Prof. V. N. Rajasekharan Pillai
Vice-Chancellor
Indira Gandhi National Open University

Saito Mitsunori
Leader
Draft Report Explanation Team
Japan International Cooperation Agency

Surendrakumar Bagde
Director
Department of Economic Affairs
Ministry of Finance
GOI

Pradeep Kaul
Jt. Director (H)
Consortium for Educational Communication
for Ministry of Human Resource Development
GOI

/

ATTACHMENT

1. Objective of the Project

The objective of the Project is to enhance the audio/video program production capability of Electronic Media Production Centre (EMPC) at Indira Gandhi National Open University (IGNOU) through digitalization of production equipment in order to meet the increasing demand for audio/video program production and to strongly support learners of distance education as the leader of distance learning system in India

2. Modification on the title of the Project

Both parties agreed to modify the Project title from "Enhancement of International Collaboration in Open and Distance Learning through ICT at Electronic Media Production Centre" to "Strengthening of Electronic Media Production Centre in Indira Gandhi National Open University" as discussed between the India side and Preparatory Survey Team in November 2009 and agreed by the Government of Japan.

3. Project site

The site of the Project is Electronic Media Production Centre of Indira Gandhi National Open University.

4. Responsible and Implementing Agency

4.1 The Responsible Agency is Ministry of Human Resource Development.

4.2 The Implementing Agency is Electronic Media Production Centre of Indira Gandhi National Open University

5. Components of the Draft Final Report

GOI has agreed and accepted in principle the contents of the draft final report explained by the Team and the list of items of the Project described in Annex-1.

6. Japan's Grand Aid Scheme

6-1. GOI understood the Japan's Grant Aid Scheme explained by the Team and described in Annex-2 and Annex-3.

6-2. GOI will take the necessary measures as described in Annex-4 for smooth implementation of the Project, as a condition for the Japanese Grant Aid to be implemented.

6-3. GOI understands that the signing of this Minutes of Discussions between India side and Japanese side will be the condition for the realization of the Project. GOI understood that this Minutes of Discussions will be officially signed by Ministry of Finance and Ministry of Human Resource Development through internal approval procedure and further understood that the Japanese side will go through further procedure after completion of signing of this Minutes of Discussions by the India side.

7. Schedule of the Study

JICA will complete a final report based upon the findings of this mission and send it to GOI by around June, 2010.

8. Confidentiality of the Project

Both side agreed that the contents of the draft report would be kept confidential, be dealt with carefully and will no to be disclosed to any third parties.

9. Other relevant issues

1) Basic Concept of the Project

GOI understood and accepted the basic concept of the Project components, as described in Annex-6, proposed and explained by Japanese side which was made after careful review of the contents of the original request from GOI taking into consideration of the present issues in program production at IGNOU and their solutions, and trend of the digitalization of the production equipment in the world.

2) Component of requested equipment and its priority

GOI agreed that the equipment to be procured under this Project, following the basic concept of the Project, shall be SD/HD applicable type in principle, to make up the new system where the existing equipment also can be effectively used during the transition period of shifting the format from SD to HD, in parallel with the viewpoint of efficient program production.

GOI understood the items, quantity and specifications of the equipment to be procured under the Project shall be minimum and appropriate for the achievement of the Project objective, and the need to optimize the components of the equipment in accordance with the priority order from the view point of budget.

3) Removal of the Equipment

GOI promised to remove the existing equipment (including dimmer racks in Video Program Production Studio-1) at each room where the equipment procured under the Project is to be installed shown in Chapter 2, 2-2-3, Fig. 2-2 of the draft final report. In order to minimize the period of program production suspension due to the equipment-removal, GOI shall begin the removal work after confirming the start of sea transport of the procured equipment by the Contractor(s) taking into consideration of the time and method of removal work.

4) Operation Training of the Equipment

For operation and maintenance of the equipment procured under the Project, Initial Guidance and Operation Training will be implemented for approximately one month by the Contractor as shown in Chapter 2, 2-4-7 Plan for Initial Guidance and Operation Training of the draft final report so that EMPC staff will be able to operate the equipment after completion of the Project. GOI promised to assign EMPC staff to participate in Initial Guidance and Operation Training.

5) Allocation of Staff

GOI promised to allocate qualified staff to proper and effective operation/maintenance of the equipment.

6) Allocation of Budget for Operation and Maintenance

GOI promised to allocate sufficient operation and maintenance such as Personnel expenses, Video program production and duplication costs (procurement of discs and DVDs), Electrical power costs, Equipment maintenance costs, Reserve funds for equipment renewal, etc. required to EMPC for the 10 years after implementation of the Project. Details of operation and maintenance costs are shown in Chapter 5, 5-2 Operation and Maintenance Cost of draft final report.

7) Confidentiality of the Project Cost Estimation

Both sides agreed that the Project Cost Estimation should never be duplicated or released to any outside parties before signing of all the Contracts for the Project. India side understood that the Project Cost Estimation attached as Annex-5 is not final and is subject to change.

8) Technical Assistance

GOI requested the technical assistance such as short term experts of program production, a long-term expert of digital technology engineering, etc. as a technical cooperation by JICA, GOI understands that another official request will be necessary to be submitted by GOI to Japanese side through the Embassy of Japan in India.

Annex-1: Equipment List
Annex-2: Japan's Grant Aid Scheme
Annex-3: Flow Chart of Japan's Grant Aid Procedure
Annex-4: Major Undertakings by each Government
Annex-5: Project Cost Estimation
Annex-6: Basic Concept of the Project

Annex-1

Equipment List

Item	Equipment	Q'ty
1	**Video Program Production Studio-1 (Virtual Video System)**	
1.1	Digital SD/HD Color Camera	
(1)	3-Chip CCD SD/HD Color Camera	3 Nos.
(2)	Tripod Attachment with Fluid head for Virtual Application	1 No.
(3)	Camera Adaptor	3 Nos.
(4)	HD Remote Camera	1 No.
(5)	Camera Remote Control Unit for 1.1.(4)	1 No.
(6)	6-inch Color HD View Finder	3 Nos.
(7)	Zoom Lens	
(a)	Portable Zoom Lens	2 Nos.
(b)	Portable Zoom Controller	2 Nos.
(8)	Portable Zoom Lens for Virtual Application	1 No.
(9)	Potable Zoom Controller for Virtual Application	1 No.
(10)	Camera Control Unit for 1.1 (1)	3 Nos.
(11)	Camera Remote Control Panel	3 Nos.
(12)	Pedestal	3 Nos.
(13)	Camhead (Included in Pedestal)	3 Nos.
(14)	Script Holder	3 Nos.
(15)	Camera Cable	
(a)	Cable for CCU to Camera Connector (CN) Plate	3 Nos.
(b)	Cable for Camera CN Plate to Camera	3 Nos.
(16)	Camera CN Plate	1 No.
(17)	Test Chart	
(a)	Test Chart Set	2 Nos.
(b)	Test Chart Stand	1 No.
(18)	Video Selector	2 Nos.
(19)	Camera Command Network Unit	
(a)	Master Setup Unit	1 No.
(b)	Command Cable	1 Set
(20)	Cyclorama for the Virtual Set	1 Set
(21)	Virtual Processor with Software (1 camera virtual)	
(a)	Computer Workstation (with 1.5kVA UPS)	2 Nos.
(b)	19-inch LCD Display	2 Nos.
(c)	Calibration Software	2 Nos.
(d)	Virtual Reality (VR)-Basic Software License	1 No.
(e)	3D Real-time Graphics Software License	1 No.
(f)	VR Camera Software	2 Nos.
(g)	VR Camera Control Software	1 No.
(h)	Computer Graphics (CG) Processor with Setup Library	2 Nos.

Item	Equipment	Q'ty
1.2	Digital Disc Recorder	
(1)	UP-Converter (for existing SD-VTR)	1 No.
(2)	HD Digital Disc Recorder	3 Nos.
(3)	Rack Mount Kit	3 Nos.
(4)	Video Monitor (Rack Mount Type)	4 Nos.
(5)	Audio Monitor Speaker (Rack Mount Type)	4 Nos.
(6)	TBC Remote Control Unit	
(a)	TBC Remote	3 Nos.
(b)	Remote Control Panel	3 Nos.
(c)	Remote Control Unit	3 Nos.
(7)	Rack Mount Kit (Slide Rail Kit)	2 Nos.
1.3	Digital Video System	
(1)	HD Digital Production Switcher & Effecter (2D, 3D)	
(a)	HD Digital Video Switcher (16ch Input)	1 No.
(b)	Input/Output Connector Board	1 Set
(c)	Control Panel	1 Set
(d)	Device Control Unit	1 Set
(e)	Frame Memory Board	1 Set
(f)	DME Board	1 Set
(2)	Video Distribution Amplifier (VDA), Digital Distribution Amplifier (DDA), VJ, Patch Cable	
(a)	Interface Unit	1 Set
(b)	Digital Video Distribution Board	1 Set
(c)	Audio/Video Interface Board (Included in Audio/Video MXP Board)	1 Set
(d)	Patch Panel	1 Set
(e)	Patch Cable (30cm)	1 Set
(f)	Patch Cable (50cm)	1 Set
(g)	Patch Cable (100cm)	1 Set
(3)	Rack & Accessories	
(a)	System Rack with Channel Base	1 Set
(b)	Input/Output (I/O) Connecting Plate	1 Set
(c)	Mini Rack for Lighting Director (LD)/Video Engineer (VE) Switcher Panel	2 Nos.
(4)	Console	1 Set
(5)	Video Monitor Switcher	
(a)	Video Monitor Switcher Shelf	1 No.
(b)	Select Panel for VE	1 No.
(c)	Select Panel for LD	1 No.
(6)	UP/Down Converter	
(a)	Video Interface Unit	1 No.
(b)	625→HD Up-Converter	2 Nos.
(c)	HD→625 Down Converter	4 Nos.

Item	Equipment	Q'ty
(d)	DVD Recorder	2 Nos.
1.4	Character Generator	
(1)	HD Character Generator	1 No.
(2)	14-inch HD Video Monitor	1 No.
(3)	17-inch Multi-scan Display	1 No.
(4)	Table	1 No.
(5)	Take Switch Panel	1 No.
(6)	Digital Scan Converter with Genlock	3 Nos.
(7)	Uninterrupted Power Supply (UPS)	1 No.
1.5	Digital Audio System	
(1)	Digital Audio Mixer (20 inputs)	1 No.
(2)	A/D Converter	1 Set
(3)	D/A Converter	1 Set
(4)	Memory Recorder	3 Nos.
(5)	CD Player	2 Nos.
(6)	Audio Monitor Speaker	1 Pair
(7)	Audio Effecter	2 Nos.
(8)	Digital Telephone Hybrid	1 No.
(9)	Rack	1 Set
(10)	Audio Sync Generator (Word Sync)	1 No.
(11)	Microphone	
(a)	Lavaliere Microphone	8 Nos.
(b)	Dynamic Microphone	4 Nos.
(c)	Condenser Microphone	6 Nos.
(d)	Gun Microphone	1 No.
(12)	Wireless Microphone System	
(a)	Wireless Microphone Transmitter	
a)	Handy Microphone Transmitter	3 Nos.
b)	Lavaliere Microphone Type Transmitter	1 No.
(b)	UHF Synthesized Tuner	
a)	Synthesized Tuner Base Unit	1 No.
b)	Synthesized Tuner Unit	4 Nos.
c)	Antenna Divider	1 No.
d)	Antenna	1 No.
(13)	Microphone Stand	
(a)	Boom Stand (Large size, for Gun Microphone)	1 No.
(b)	Floor Stand	3 Nos.
(c)	Table Stand	6 Nos.
(14)	Microphone Cable	
(a)	Microphone Cable (20m)	10 Nos.

Item	Equipment	Q'ty
(b)	Microphone Cable (10m)	10 Nos.
(c)	Microphone Cable (5m)	10 Nos.
(d)	Multi Cable (30m, 8 pairs with CN-Box & Reel)	1 No.
(15)	Microphone Connector Plate	1 No.
1.6	Video Sync System	
(1)	Digital Video Sync Generator	2 No.
(2)	Sync Distribution Amplifier for HD	1 No.
(3)	Changeover Unit for 1.6 (1)	1 No.
1.7	Monitoring System (Audio/Video)	
(1)	14-inch HD Video Monitor	24 Nos.
(2)	20-inch HD Video Monitor (HD-SDI input)	4 Nos.
(3)	50-inch Studio Monitor with Accessories (wall mount & stand)	2 Nos.
(4)	Digital Multi-Format Waveform Monitor with Accessories	
(a)	Digital Multi-Format Waveform Monitor	5 Nos.
(b)	Rack Mount Kit	1 Set
(c)	1/2EIA Blank Panel	1 Set
(5)	Audio Monitor Speaker with Amplifier for Mixer (Stereo)	1 Pair
(6)	Audio Monitor Speaker for VE & LD (Stereo)	2 Pairs
(7)	Audition Monitor Speaker (Stereo)	1 Pair
(8)	Studio Audio Monitor Speaker with Amplifier & Stand (Stereo)	1 Pair
(9)	Studio Talk Back Speaker	1 Set
(10)	Multi-Format Master Video Monitor	
(a)	Multi-Format Master Video Monitor (14-inch)	1 No.
(b)	NTSC/PAL Input Adaptor	1 No.
(11)	Air Monitor	1 No.
(12)	Monitor Shelf	1 Set
(13)	A/V Monitor Connector Panel	1 Set
(14)	Stereo Headphone	7 Nos.
1.8	Intercommunication System	
(1)	Studio Intercommunication System (including UPS)	1 No.
(2)	Head Set	
(a)	Wired Head Set	7 Nos.
(b)	Wireless Head Set	5 Nos.
(c)	2.4GHz Base Station with Antenna	1 No.
(d)	2.4GHz Beltpack with Battery	5 Nos.
(e)	Battery Charger	1 No.
(3)	Microphone	9 Nos.
1.9	On-Air Light and Tally System	
(1)	On-Air Tally Logic	1 No.

Item	Equipment	Q'ty
(2)	On-Air Tally Light	27 Nos.
(3)	On-Air Light for Studio Floor and Entrance	7 Nos.
1.10	Virtual Set with Accessories	
(1)	Remote Control Computer Workstation with Software & UPS	1 No.
(2)	Switching Hub	1 No.
(3)	SD/HD Chroma Keyer System	1 No.
(4)	SD/HD Video Delay (with rear connector, power supply)	4 Nos.
(5)	Table, VR Panel and Power Distributor	3 Nos.
1.11	Lighting Equipment	
(1)	Fluorescent Light with Barn Doors (2 Tubes, more than 80W)	30 Nos.
(2)	Fluorescent Light with Barn Doors (4 Tubes, more than 160W)	40 Nos.
(3)	Fluorescent Light with Barn Doors (6 Tubes, more than 240W)	20 Nos.
(4)	Dimmer Control Unit (including Dimmer Control Panel)	1 Set
(5)	Fluorescent Light Spare Tube (more than 40W)	340 Pcs.
(6)	Accessories	1 Set
2	**Field Recording (ENG) System**	
2.1	HD Digital Camera System	
(1)	HD Portable Digital Camcorder	
(a)	HD Portable Digital Camcorder	3 Nos.
(b)	Ethernet Adaptor	3 Nos.
(c)	SDI Output Function	3 Nos.
(d)	Pull-down (24P shooting) Function	3 Nos.
(e)	Color View Finder	3 Nos.
(f)	Tripod Attachment	3 Nos.
(g)	Elect ret Condenser Microphone	3 Nos.
(h)	Microphone Cable	3 Nos.
(2)	27×Zoom Lens (with ×2 extender)	3 Nos.
(3)	UV Filter	3 Nos.
(4)	Rechargeable Battery Pack	18 Nos.
(5)	Battery Charger	6 Nos.
(6)	Power Adaptor	
(a)	AC Power Adaptor	3 Nos.
(b)	DC Power Cable	3 Nos.
(7)	Carrying Case (for Camcorder)	3 Nos.
(8)	Tripod/Head/Dolly/Adaptor with Portable Case	3 Nos.
(9)	Field Cover and Rain Jacket	
(a)	Field Cover	3 Nos.
(b)	Rain Jacket	3 Nos.

Item	Equipment	Q'ty
2.2	9-inch Video Monitor	
(1)	9-inch Video Monitor	3 Nos.
(2)	ENG Kit	3 Nos.
(3)	Rechargeable Battery Pack	6 Nos.
(4)	Battery Adaptor	2 Nos.
2.3	UHF Synthesizer Transmitter	3 Nos.
2.4	UHF Synthesizer Tuner	3 Nos.
2.5	Microphone	
(1)	Dynamic Microphone	
(2)	Gun Microphone with Carrying Case	
(a)	Gun Microphone	3 Nos.
(b)	Carrying Case	3 Nos.
(3)	Hand Grip	3 Nos.
(4)	Window-shield for Gun Microphone	3 Nos.
(5)	Fishpole	
(a)	Fishpole	3 Nos.
(b)	Fishpole Adaptor	3 Nos.
(6)	Wireless Microphone	
(a)	Wireless Transmitter	3 Nos.
(b)	Lavaliere Microphone	3 Nos.
2.6	Microphone Cable	
(1)	Microphone Cable (10m)	3 Nos.
(2)	Microphone Cable (5m)	3 Nos.
(3)	Microphone Cable (3m)	3 Nos.
(4)	Microphone Cable (1.5m)	3 Nos.
2.7	Stereo Headphone	3 Nos.
2.8	Lighting Equipment	
(1)	AC Operated Cool Light	3 Nos.
(2)	Spare Lamp	18 Pcs.
(3)	Accessories	3 Sets
2.9	Portable Audio Mixer	
(1)	Portable Audio Mixer	1 No.
(2)	AC Power Adaptor	1 No.
(3)	Battery Case	1 No.
(4)	Rechargeable Battery	3 Nos.

Item	Equipment	Q'ty
(5)	Battery Charger	1 No.
2.10	Mini DV/HDV Camcorder with Accessories	3 Nos.
2.11	Digital Still Camera with Zoom Lens	3 Nos.
3	**Routing Switcher System**	
3.1	Routing Equipment	
(1)	Digital Routing Switcher (64-input×64-output)	1 No.
(2)	20-inch Digital Video Monitor	2 Nos.
(3)	Digital Multi-Format Waveform Monitor	1 No.
(4)	Rack	1 No.
3.2	Video Sync System	
(1)	HD Digital Sync Signal Generator	5 Nos.
(2)	Sync Signal Distribution Amplifier	1 Set
3.3	Patch Panel, A/D Converter, D/A Converter	
(1)	Patch Panel	7 Nos.
(2)	Patch Cable	1 Set
(3)	Interface Unit	1 Set
(4)	A/D and HD-SDI Up-Converter	2 Nos.
(5)	HD-SDI Down Converter and D/A	2 Nos.
(6)	HD-SDI →SDI (for PAL) Converter	2 Nos.
4	**Video Common sharing Network (Video Server System)**	
(1)	SD Ingest Terminal with 17-inch Video Monitor (2sets)	
(a)	17-inch LCD Computer Display	2 Nos.
(b)	17-inch LCD Video Monitor	2 Nos.
(c)	Up-Converter	2 Nos.
(d)	Computer Workstation	2 Nos.
(e)	UPS	2 Nos.
(2)	HD Ingest Terminal with HD Digital Disc Recorder and 17-inch Monitor (2 sets)	
(a)	17-inch LCD Computer Display	2 Nos.
(b)	17-inch LCD Video Monitor	2 Nos.
(c)	HD Digital Disc Recorder	2 Nos.
(d)	Computer Workstation	2 Nos.
(e)	UPS	2 Nos.
(3)	HDV Ingest Terminal with HDV-VTR and 17-inch Video Monitor (2 sets)	
(a)	17-inch LCD Computer Display	2 Nos.
(b)	17-inch LCD Video Monitor	2 Nos.
(c)	HDV-VTR	2 Nos.
(d)	Computer Workstation	2 Nos.
(e)	UPS	2 Nos.

Item	Equipment	Q'ty
(4)	Browsing Terminal (including 1.5kVA UPS)	4 Nos.
(5)	Administration Terminal (including 1.5kVA UPS)	1 No.
(6)	Non-Linear Editing System with HD Digital Disc Recorder and 17-inch Video Monitor (4 sets)	
(a)	17-inch LCD Computer Display	8 Nos.
(b)	17-inch LCD Video Monitor	4 Nos.
(c)	HD Digital Disc Recorder	4 Nos.
(d)	Computer Workstation	4 Nos.
(e)	Non-Linear Editing Software	4 Nos.
(f)	UPS	4 Nos.
(7)	Multi-Format Video Server	
(a)	Multi-Format Video Server (150hours for 50Mbps)	1 No.
(b)	Switching HUB	1 No.
(c)	UPS	1 No.
(8)	HD-SDI Input Board	2 Nos.
(9)	Network Management Application Software	1 Set
5	**DVD Duplication System**	
(1)	Master DVD Production System (including 1.5kVA UPS)	2 Sets
(2)	DVD Recorder	2 Nos.
(3)	Digital Color Monitor	2 Nos.
(4)	DVD Duplication System	1 No.
6	**Computer Graphics System**	
(1)	Graphics Workstation	2 Nos.
(2)	19-inch LCD Monitor	4 Nos.
(3)	Software for Graphic System	2 Sets
(4)	Flat Bead Scanner	2 Nos.
(5)	UPS	2 Nos.
7	**Measuring Equipment**	
(1)	Digital Video Analyzer	1 No.
(2)	Digital Multi-Format Waveform Monitor	1 No.
(3)	Oscilloscope	1 No.
(4)	8ch Audio Analyzer	1 No.
(5)	Reference Audio Monitor with HD-SDI Option	1 No.
(6)	Clump Meter	1 No.
(7)	Digital Multi Meter	1 No.
(8)	Video Signal Generator	1 No.
(9)	Tool Set (including Coaxial Connector Clump Tool)	1 Set
8	**Analog/Digital Format Conversion System**	
(1)	Up-Converter (SDI to HD-SDI) for existing SD-VTR	3 Nos.
(2)	HD Digital Disc Recorder	3 Nos.
(3)	HD Routing Switcher	1 No.
(4)	Monitor Switcher	1 No.
(5)	Monitor Speaker	1 No.
(6)	HD Multi-Format Monitor	1 No.

Item	Equipment	Q'ty
(7)	Digital Multi-Format Waveform Monitor	1 No.
9	**SD/HD Preview System**	
(1)	HD Video Projector (including 150-inch (16:9) Screen)	1 No.
(2)	HD Digital Disc Recorder	1 No.
(3)	HDV-VTR	1 No.
(4)	DVD Player	1 No.
(5)	9-inch Multi-Format Monitor	1 No.
(6)	A/V Switcher with Audio Mixer	1 No.
(7)	Graphic Equalizer	2 Nos.
(8)	Condenser Microphone	2 Nos.
(9)	Microphone Stand	2 Nos.
(10)	Power Amplifier	2 Nos.
(11)	Audio Speaker	2 Pairs
(12)	Rack	1 No.
(13)	UPS	1 No.
10	**Spare Parts**	
(1)	For 3CCD SD/HD Color Camera	
(a)	Optical Filter Unit	1 No.
(b)	Grip	1 No.
(c)	Inside Cover Assembly	1 No.
(d)	Sholder Pad Assembly	1 No.
(e)	Service Manual	1 No.
(2)	Redundant Power Supply for HD Digital Video Switcher	1 No.
(3)	Redundant Power Supply for Digital Routing Switcher	1 No.
(4)	Spare Lamp for HD Video Projector	5 Nos.
(5)	Fader Knob for Digital Audio Mixer	20 Nos.
(6)	For Intercom	
(a)	AC Adaptor for User Panel	2 Nos.
(b)	Headset	2 Nos.
(7)	Alignment Disc for HD Digital Disc Recorder	1 No.
(8)	For HDV/MiniDV Recorder	
(a)	Tape Guide Adjustment Driver	1 No.
(b)	Tape Path Adjustment Board	1 No.
(c)	Power Supply Cable for Tape Path Tool	1 No.
(d)	Small Mirror for Adjustment	1 No.
(e)	Cleaning Cloth	1 No.
(f)	DC Regulated Power Supply	1 No.
(g)	HDV Alignment Tape	1 No.
(h)	MiniDV Alignment Tape	1 No.
(9)	Recording Media	
(a)	Disc for Video Program	1300 Pcs.
(b)	Memory Card for Still Camera (4GB)	6 Pcs.
(c)	Cassette for Mini DV	100 Pcs.
(d)	DVD Disc	3000 Pcs.
11	**Installation Materials**	**1 Lot**

13

JAPAN'S GRANT AID

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

The Grant Aid is non-reimbursable fund to a recipient country to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for economic and social development of the country under principles in accordance with the relevant laws and regulations of Japan. The Grant Aid is not supplied through the donation of materials as such.

1. Grant Aid Procedures

The Japanese Grant Aid is conducted as follows-

・Preparatory Survey (hereinafter referred to as "the Survey")
- The Survey conducted by JICA

・Appraisal &Approval
-Appraisal by the GOJ and JICA, and Approval by the Japanese Cabinet

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

- Confirmation of the background, objectives, and benefits of the Project and also institutional capacity of agencies concerned 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 on by both parties concerning the basic concept of the Project.
- Preparation of a basic design of the Project.
- Estimation of costs of the Project.

The contents of the original request by the recipient country are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design of the Project is confirmed considering the guidelines of the Japan's Grant Aid scheme.

JICA requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

(2) Selection of Consultants

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

(3) Result of the Survey

The Report on the Survey is reviewed by JICA, and after the appropriateness of the Project is confirmed, JICA recommends the GOJ to appraise the implementation 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 E/N will be signed between the GOJ and the Government of the recipient country to make a plead 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

The consultant firm(s) used for the Survey Will be recommended by JICA to the recipient country to also work on the Project's implementation after the E/N and the G/A, in order to maintain technical consistency.

(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

15

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 secure accountability to Japanese taxpayers.

(5) Major undertakings to be taken by the Government of the Recipient Country

In the implementation of the Grant Aid Project, the recipient country is required to undertake such necessary measures as Annex.

(6) "Proper Use"

The Government of recipient country is required to maintain and use the facilities constructed and the equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for this operation and maintenance as well as 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 in 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 to the Bank.

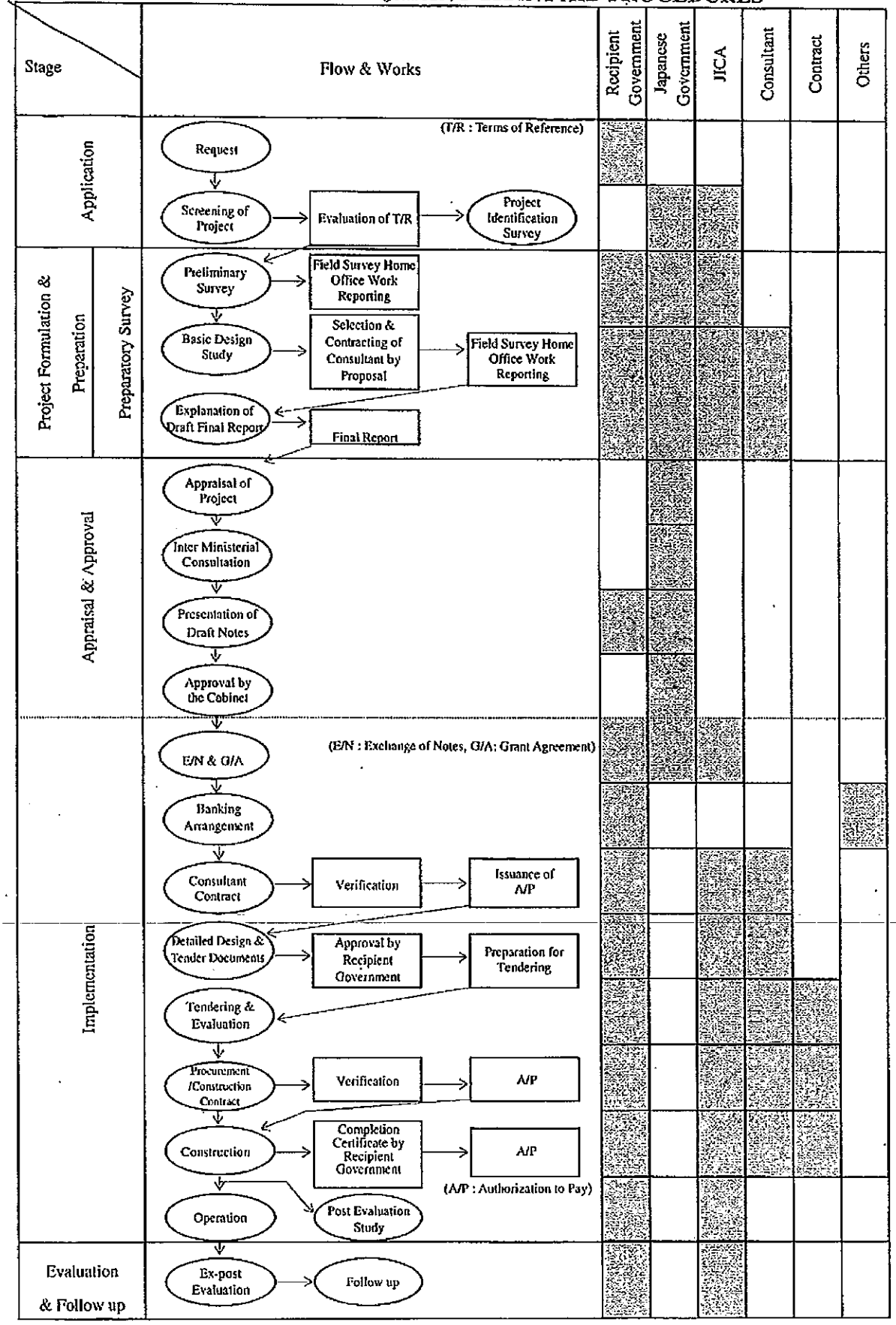
(10) Social and Environmental Considerations

A recipient country must ensure the social and environmental considerations for the Project and

must follow the environmental regulation of the recipient country and JICA socio-environmental guidelines.

(End)

FLOW CHART OF JAPAN's GRANT AID PROCEDURES



Annex-4

Major Undertakings to be taken by Each Government

NO	Items	To be covered by the Grant	To be covered by Recipient side
1	To bear the following commissions to a bank in Japan for the banking services based upon the B/A		
	1) Advising commission of A/P		●
	2) Payment commission		●
2	To ensure prompt unloading and customs clearance at the port of disembarkation in recipient country		
	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	●	
3	To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contract such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work		●
4	To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contract		●
5	To maintain and use properly and effectively the equipment provided under the Grant Aid		●
6	To bear all the expenses, other than those to be borne by the Grant Aid, necessary for the transportation and installation of the equipment		●

(B/A: Banking Arrangement, A/P: Authorization to pay, N/A: Not Applicable)

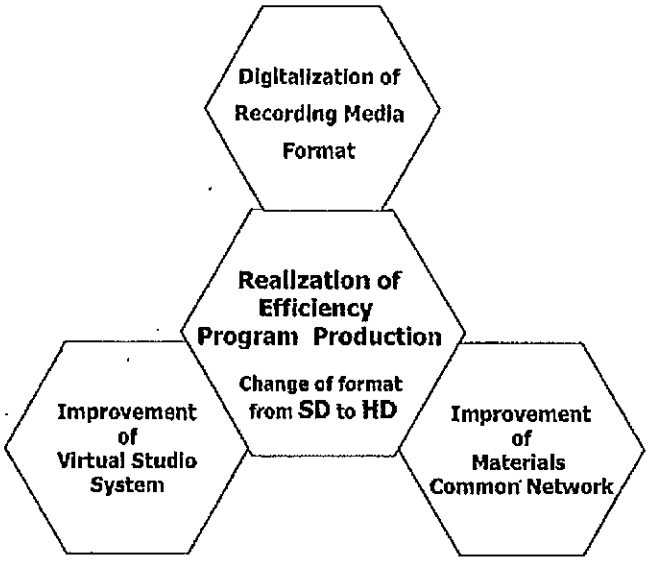
19

BASIC CONCEPT OF THE PROJECT COMPONENTS PROPOSED BY JAPANESE SIDE

Annex - 6

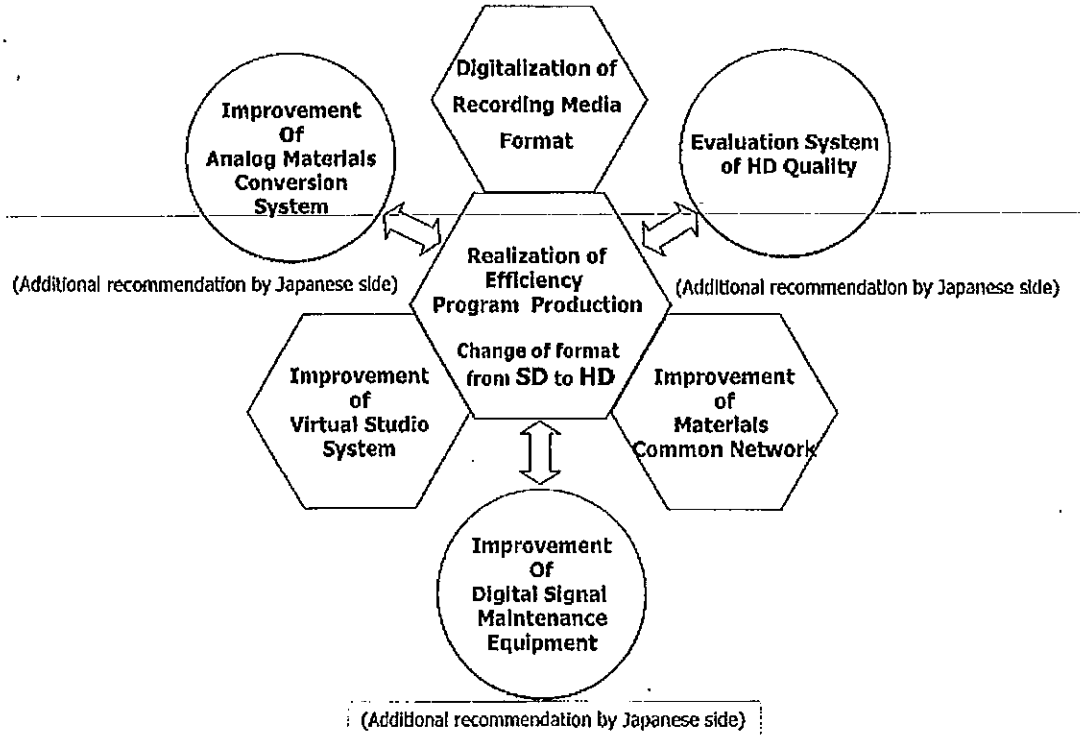
Concept against the original request from India side taking into

- Consideration of the present issues in program production at IGNOU and their solutions.
- Consideration of the Present trend of digitalization of program production equipment.



Basic Concept of the Project Components with newly proposed essential functions

- to realize program production more properly and effectively.



21