THE REPUBLIC OF UZBEKISTAN

MINISTRY OF HEALTH

PREPARATORY SURVEY REPORT FOR THE PROJECT FOR IMPROVEMENT OF MEDICAL SERVICE AT NUKUS UNIVERSITY HOSPITAL

FEBRUARY 2022

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

INTEM CONSULTING, INC.

PREFACE

Japan International Cooperation Agency (JICA) decided to conduct the preparatory survey and entrust the survey to INTEM Consulting, Inc.

The survey team held a series of discussions with the officials concerned of the Government of Uzbekistan, and conducted field investigations. As a result of further studies in Japan, the present report was finalized.

I hope that this report will contribute to the promotion of the project and to the enhancement of friendly relations between our two countries.

Finally, I wish to express my sincere appreciation to the officials concerned of the Government of Uzbekistan for their close cooperation extended to the survey team.

February, 2022

Jun Sakuma
Director General
Human Development Department
Japan International Cooperation Agency

SUMMARY

SUMMARY

① Overview of the Country

In The Republic of Uzbekistan (hereinafter referred to as "Uzbekistan"), the estimated average life expectancy was 73.6 years, which is short compared to Japan (84.2 years) and European countries (80.8 years) (WHO, 2015). The disease structure has been changing, and Non-Communicable Diseases (hereinafter referred to as "NCDs") currently account for 84% of all causes of deaths; thus, the health system in Uzbekistan will be reconstructed with a focus on NCDs. Considering this background, Japan International Cooperation Agency (hereinafter referred to as "JICA") has taken strong measures against NCDs, not only at the primary level but also the tertiary level across the country through the projects such as Yen Loan Health and Medical Service Improvement Project (preparatory survey for cooperation ongoing) and Technical Cooperation Project for Prevention and Control of Non-Communicable Diseases.

The Republic of Karakalpakstan (hereinafter referred to as "Karakalpakstan") is located in Northwest Uzbekistan. The development of Karakalpakstan was delayed due to negative impacts on the environment and the local economy because of the shrinking of the Aral Sea due to over-irrigation for cotton. In Karakalpakstan, due to contaminated water, soil and air in the surrounding area of Aral Sea, the negative impacts on health are a big concern; the average morbidity rates of respiratory-related diseases and renal function disorders are higher than those of Uzbekistan overall, and the mortality rates due to maternal and child health-related issues and infections also remain high. Insufficient medical equipment, poor access to medical institutions, a shortage of doctors, insufficient experience levels of doctors, and the quality of the emergency medical service should be improved in Karakalpakstan; the quality of the medical service is therefore an urgent challenge.

② Background, History and Outline of the Project

In Karakalpakstan, medical services have been provided mainly by national hospitals in the capital city, Nukus City. However, the quality of medical services provided there is insufficient due to lack of medical infrastructure and staffs who can receive modern medical education. Nukus branch of the Tashkent Pediatric Medical Institute (the name was changed in February 2020, hereafter referred to as "The Karakalpakustan Medical Institute") has contributed to the development of human resources who will be responsible for the regional health system as the only medical educational institution in the area. However, The Karakalpakstan Medical Institute did not own its teaching hospital, and clinical trainings by using latest medical equipment were not possible. To improve the medical service of the area and to develop the medical human resources who will be responsible for sustaining its regional health system, the Government of Uzbekistan newly constructed a clinic of The Medical Institute of Karakalpakstan with 120 beds as an attached hospital of The Karakalpakstan Medical Institute in February 2020. Construction of the hospital building has been already completed,

but it is difficult to procure all necessary equipment because of the limited budget from Ministry of Health (hereinafter referred to as “MoH”). Hence, it is necessary to additionally procure high-quality medical equipment and medical educational equipment to improve the function of the hospital as a core hospital as well as a core medical education institution in the area.

The Government of Uzbekistan specified the development of Karakalpakstan as the highest priority of the county in a presidential decree. In addition, the Concept for Health System Strengthening 2019-2025 presented policies on improvement of the health system, development of health personnel, and strengthening their specialties, with the purpose of widely providing a high quality of medical service to achieve world-class medical service in performing preventive medicine, diagnosis, and treatment.

Through procurement of medical equipment and medical educational equipment, The Project for Improvement of Medical Service at Nukus University Hospital (hereinafter referred to as “the Project”) improves the standard of the medical service system and medical education of The Karakalpakstan Medical Institute, which will be the core of medical service provision and medical personnel development in Karakalpakstan; this will result in improvement of the health of the residents in the area. The overall goal of the Project is to contribute to improvement of the medical service system, which the Government of Uzbekistan is aiming for.

③ Outline of the Survey Results and Description of the Project

For a preparatory survey of the Project, the survey team was dispatched to Uzbekistan from the 9th of April to 2021 to the 30th of April, 2021 and had discussions with the Uzbekistan Government and related institutions, and the team conducted the survey on the situation in the targeted area. After the review and analysis in Japan, the explanatory mission of the Preparatory Survey Report (draft) was conducted remotely on 27th of September, 2021 though online meetings. After that, the Preparatory Survey report was compiled.

< Targeted Area >

In the Project, medical and medical educational equipment are procured at The Karakalpakstan Medical Institute and its clinic in the Nukus City of Karakalpakstan Autonomous Republic, Uzbekistan.

< Equipment >

The equipment procured under this Project is outlined below.

Table 2-1 Outline of the Project

Category	Main Department and Equipment
Medical Equipment	Target Department: Diagnostic Imaging Department, Surgery Department, Clinical Laboratory Department, Central Sterilization Room, Outpatient Department
	Equipment: CT scanner, Stationary ultrasound scanner, C-arm, Endoscope for laparoscopic surgery, Endoscope for hysteroscopic surgery, Endoscope for arthroscopic surgery, Ventilator, Electrosurgical coagulator, Bacteriological analyzer, Automated immune-analyzer, Plasma sterilizer, Mobile clinic etc.
Educational Equipment	Target Department: Simulation center (Tentative name)
	Equipment: Endoscopic simulator for laparoscopic surgery, Simulator for flexible videoendoscopy, Simulator for neonatology, Virtual patient for therapy, Resuscitation patient simulator (adult and child), 3D virtual dissection table, Simulator for physical assessment etc.

< Soft Component/Technical Assistance >

Though the clinic of The Karakalpakstan Medical Institute has a plan to establish the department of equipment maintenance, the skills and management system are not yet firmly established. Considering the current situation, the technical assistance, so-called "Soft Component", will be provided to provide technical training for maintenance.

In this Soft Component, not only the engineers of the maintenance department, but also the medical personnel in each department who will actually use the equipment will be targeted. Soft-Component includes trainings for daily inspection and maintenance methods, and the participants will learn how to deal with alarms when they occur and develop communication system for a request of repairment.

< Maintenance Service of the Equipment >

In the Project, maintenance services shall cover the periodic inspection and on-call service with spare parts for 2 additional years after a 1-year manufacturer warranty period for the equipment that could impacts on examination and training of the patients and hospital function when failure occurs and for the equipment that requires long-term maintenance (including repair parts and periodic replacement parts). The users of the equipment will be responsible for repair parts that are broken by errors of the user side and all consumables such as reagents and disposable parts.

④ Project Schedule and Cost Estimation

The implementation schedule of the Project will be about 6 months for detailed design and about 12 months for procurement and installation of equipment. The first Soft Component will be carried out for about 1.7 months after the installation of the equipment, and three months after the first Soft Component; the second Soft Component will be implemented for about 1.2 months. The total amount to be borne by Uzbekistan for the Project is estimated as 348.1 million yen.

⑤ Project Evaluation

<Relevance>

(1) Beneficiaries of the project

The targeted area of the Project is the whole area of Karakalpakstan, mainly Nukus City. The target population is approximately 1,920,000, which is the whole population of Karakalpakstan[1]. The targeted hospital of this Project, The Karakalpakstan Medical Institute, is the tertiary hospital of pediatric area in Karakalpakstan for 650,000 of the targeted age population (0 to under 18 years old) in Karakalpakstan.

(2) From the viewpoint of improvement in geographical access to high level medical services

Once the The Karakalpakstan Medical Institute starts functioning as a tertiary hospital of pediatric area, the patients who have been referred to Tashkent in the current situation will be diagnosed, examined, and treated earlier in Karakalpakstan.

In addition, the procurement of medical equipment improves the quality of medical education, which enables the cultivation of higher quality medical personnel.

Thus, the procurement of medical and educational equipment by this Project is highly expected to improve medical service access in the pediatric area.

(3) Consistency with Uzbekistan's development plans

The Government of Uzbekistan specified the development of Karakalpakstan as the highest priority of the county in a presidential decree. In addition, the Concept for Health System Strengthening 2019-2025 presented policies on improvement of the health system, development of health personnel and strengthening of their specialties with the purpose of widely providing high-quality medical service. Through the procurement of medical and educational equipment, the Project aims to improve the standard of medical service system and medical education of The

[1] THE STATE COMMITTEE OF THE REPUBLIC OF UZBEKISTAN ON STATISTICS (2021),” Population by age groups-Regions” available at: https://stat.uz/en/official-statistics/demography (accessed 11 August 2021).

Karakalpakstan Medical Institute, which is the core of medical service provision and human resource development in Karakalpakstan. The purpose of the Project is to improve the health of the residents of Karakalpakstan, which matches the policy of the Government of Uzbekistan.

(4) Consistency with Japan's Aid Policy

According to Country Development Cooperation Policy for Uzbekistan by the Ministry of Foreign Affairs of Japan (March 2017), it was described as follows: “In response to the challenges of the widening inequalities between urban and rural areas in Uzbekistan, the support shall be provided with the main focuses on the agricultural sector which is a major industry in rural areas, and health care, and it aims to provide direct benefit particularly for poor and vulnerable people”. The Project was planned based on Business Development Plan (April 2019) that includes a health reform program including medical equipment procurement by grant aid projects.

<Effectiveness>

(1) Quantitative Effects

The following are expected project outputs and the quantitative indicators for measuring the outputs. The target year is set in 2026, about three years after starting the use of equipment.

Table 3-1 Output indicators of the Project

Outcome	Base value (Actual value in 2021)	Target (by 2026) 【3 years after the project completion】
The number of CT examination (per year)	0	1,500 people
The number of test cases of bacteriological analysis/automated immune-analysis (per year)	0	21,000 cases
The number of students who use the simulation center (tentative name) (per year)	0	4,800 people

(2) Qualitative effects

1）The quality of pediatric services in Karakalpakstan will be improved, and confidence in The Karakalpakstan Medical Institute will be further increased.

2）The quality of clinical training for medical personnel will be improved.

3）Contribution will be made to the improvement of the health status of the residents of Karakalpakstan and neighboring areas.

In conclusion, as described above, the relevance of the Project as well as its expected effectiveness is high.

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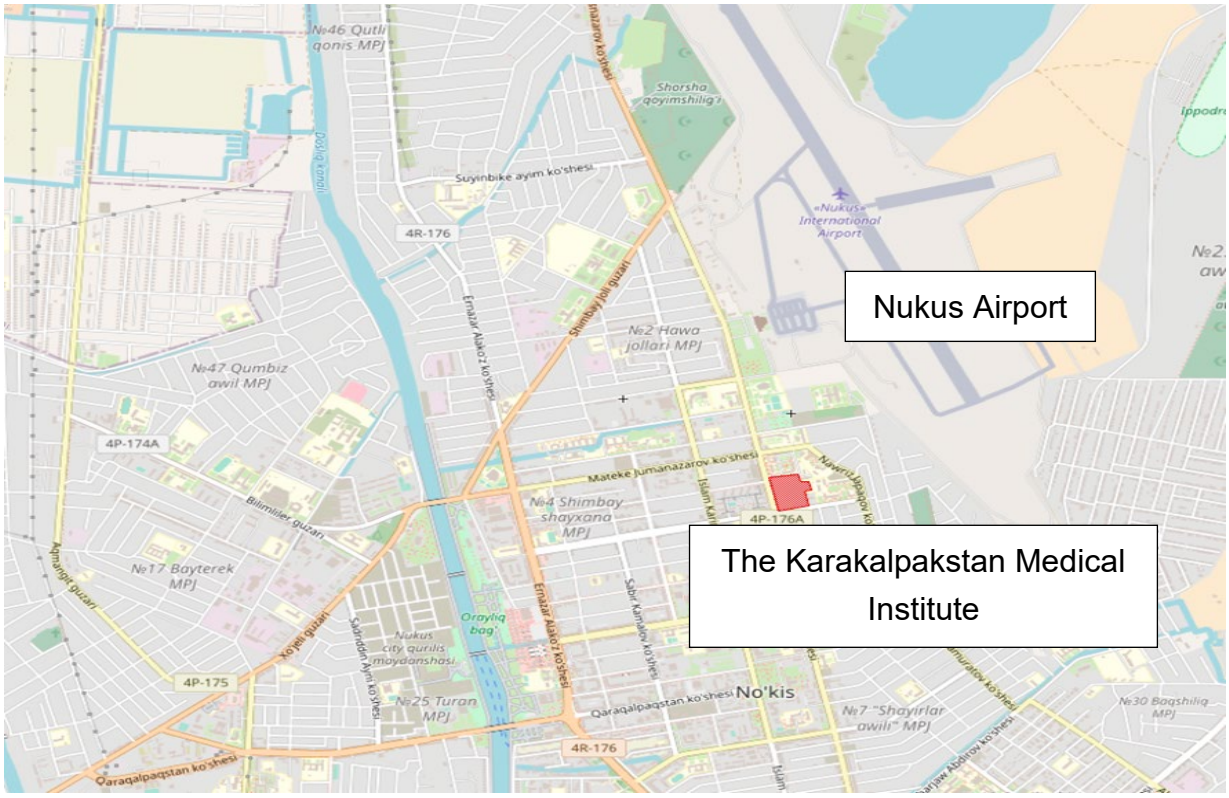
MAP

Sited from：Google Map (https://www.google.com/maps/?hl=ja)



Hospital Location Map Sited from： OpenStreetMap

(https://www.openstreetmap.org/search?query=Nukus#map=11/42.4452/59.6499)

LIST OF FIGURES AND TABLES

ABBREVIATIONS

Abbreviations	English
AED	Automatic External Defibrillator
A/P	Authorization to Pay
AVR	Automatic Voltage Regulator
B/A	Banking Arrangement
CT	Computed Tomography
CVD	Cardiovascular disease
DAC	Development Assistance Committee
ECG	Electrocardiogram
E/N	Exchange of Notes
G/A	Grant Agreement
GDP	Gross Domestic Product
ICU	Intensive Care Unit
IMR	Infant Mortality Rate
JICA	Japan International Cooperation Agency
MDGs	Millennium Development Goals
MIFT	Ministry of Investment and Foreign Trade
MMR	Maternal Mortality Rate
MOH	Ministry of Health
MRI	Magnetic Resonance Imaging
NCDs	Non-Communicable Diseases
OECD	Organisation for Economic Co-operation and Development
PMR	Project Monitoring Report
SDGs	Sustainable Development Goals
U5MR	Under 5 Mortality Rate
UHC	Universal Health Coverage
UPS	Uninterruptible Power Supply
UZS	Uzbekistan Sum
VAT	Value Added Tax
WHO	World Health Organization

CHAPTER 1 BACKGROUND OF THE PROJECT

CHAPTER 1 Background of the Project

1-1 Background, History and Outline of the Requested Japanese Grant Aid Project

In the Republic of Uzbekistan (hereinafter referred to as "Uzbekistan"), in the same manner as the world trend, the disease structure has been changing, and the increase of Non-Communicable Diseases (hereinafter referred to as "NCDs") became an issue. Currently, NCDs account for 84% of all causes of deaths; thus, the health system in Uzbekistan will be reconstructed with a special focus on NCDs.

Due to the environmental factors, in The Republic of Karakalpakstan (hereinafter referred to as "Karakalpakstan") which is located in northwestern Uzbekistan, the average morbidity rates of respiratory-related diseases and renal function disorders are higher than the average rates of Uzbekistan, and the mortality rates due to maternal and child health-related issues and infections also remain high. The mobility rates of under 15 years-old patients with cardiovascular diseases are more than 2 times higher than the average of Uzbekistan; environmental destruction in the surrounding area of the Aral sea has given significant impacts on human health of the area. However, inadequate medical equipment, poor access to medical facilities, insufficient numbers of doctors, inadequate experience of doctors and low quality of emergency medical services are highlighted as issues in Karakalpakstan, and there are no pediatric hospitals there that can provide advanced medical services. Therefore, the quality of medical services needs to be improved, and regional disparities in Uzbekistan are urgently reduced.

In Karakalpakstan, medical services have been provided mainly by national hospitals in the capital city, Nukus City. However, the quality of medical services provided there is insufficient due to lack of medical infrastructure and staffs who can receive modern medical education, and the patients are required to travel to the cities such as Tashkent to receive diagnosis and treatment. Taking this situation into account, to improve the medical service of the area and to develop the medical human resources who will be responsible for sustaining its regional health system, the Government of Uzbekistan newly constructed a clinic of The Medical Institute of Karakalpakstan (hereinafter referred to as "The Medical Institute Hospital") with 120 beds as an attached hospital of Nukus branch of the Tashkent Pediatric Medical Institute (the name was changed in February 2020, hereinafter referred to as "The Karakalpakustan Medical Institute") in February 2020.

The Project is designed to procure additional medical equipment and medical educational equipment to make The Karakalpakstan Medical Institute functioning as the center of medical service provision and medical personnel development in Karakalpakstan. The Project is highly expected to contribute to improvement of the medical service system in Karakalpakstan, which is aim of the Government of Uzbekistan.

1-2 Natural Conditions

The area of Karakalpakstan has a desert climate, the temperature varies widely throughout the year, and the climate is dry with little rainfall. The summer season is from June to October with sunny days, and temperatures often exceed 35 degrees Celsius. The winter season is from November to May with cold days and relatively frequent rain and snow, but not in large amounts.

Table 1-1 Average temperature and precipitation in Nukus City

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
Average maximum temperature (°C)	0.7	4.0	11.7	21.7	28.7	34.5	36.2	34.3	27.9	19.4	10.0	3.1
Average minimum temperature (°C)	-7.5	-6.0	-0.1	8.2	14.2	19.1	21.3	18.9	12.0	4.9	-0.8	-5.5
Rainfall(mm)	10.9	7.9	17.7	15.3	12.6	4.0	1.4	1.7	2.6	7.5	10.8	12.1

1-3 Environmental and Social Considerations

The Project is categorized as Category C (a project likely to have minimal or no adverse environmental impacts) according to the "JICA Guidelines for Environmental and Social Considerations" (April 2010), based on the following considerations: it is not located in a sensitive area, does not have sensitive characteristics or fall into sensitive sectors under the Guidelines, and its potential adverse impacts on the environment are not likely to be significant.

CHAPTER 2 CONTENTS OF THE PROJECT

CHAPTER 2 Contents of the Project

2-1 Basic Concept of the Project

2-1-1 Outline of the Project

In order to achieve the goals noted above, the Project will procure medical and educational equipment for the improvement of medical services at The Karakalpakstan Medical Institute.

The equipment procured under this Project is outlined below.

< Equipment >

Table 2-1 Outline of the Project

Category	Main Department and Equipment
Medical Equipment	Target Department: Diagnostic Imaging Department, Surgery Department, Clinical Laboratory Department, Central Sterilization Room, Outpatient Department
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< Soft Component/Technical Assistance >

The Project will provide the technical assistance, the so-called “Soft Component” for the engineers in the maintenance department and the medical personnel in each department regarding daily inspection and maintenance.

< Maintenance Service of the Equipment >

In the Project, maintenance services shall cover the periodic inspection and on-call service with spare parts for 2 additional years after a 1-year manufacturer warranty period for the equipment that could impact on diagnosis and treatment of patients and hospital functions and for the equipment that requires long-term maintenance (including repair parts and periodic replacement parts). The users of the equipment will be responsible for repair parts that are broken by errors of the user side and all consumables such as reagents and disposable parts.

2-2. Outline Design of the Japanese Assistance

2-2-1 Design Policy

(1) Basic Principles

The Project aims to improve the quality of health service and medical education in Karakalpakstan through procurement of high-quality medical equipment and medical educational equipment at The Karakalpakstan Medical Institute, which is the center of medical service provision and human resource development in Karakalpakstan, and the project is expected to contribute to improvement of the health status of the area. The equipment plan should be based on this assumption.

(2) Policy on Natural Conditions

Nukus City has a desert climate with large temperature differences throughout the year, and it has severe weather conditions with freezing temperatures in winter. As the equipment procured under the Project is mainly used inside the hospital, the environment will have little impact on the equipment. On the other hand, the mobile clinic will be used outdoors regardless of the season, so the vehicle body will be insulated, and the air-conditioning system will be installed inside the vehicle to prevent the medical equipment from being affected by the outside air temperature.

(3) Policy on Social and Economic Conditions

In Nukus City, power outages occur approximately 10 times in a year. The power supply to the hospital comes from two substations in the city, so power outages at the hospital are less frequent than other places in Nukus City. However, in the cases where the power consumption becomes higher than the power supply capacity of substations and a power outage occurs due to the failure of substation facility, the hospital also experiences power outages.

Considering the power outages and sudden voltage fluctuations, an Automatic Voltage Regulator (AVR) and Uninterruptible Power Supply (UPS) will be planned in this Project in order to avoid interruption of medical activities due to power outages and equipment failure due to voltage fluctuations as much as possible.

(4) Policy on Procurement Conditions

If the limitation allowing only Japanese products is set up in the Project, the number of manufacturers of the planned equipment will be limited, which can lead unfair bidding. Considering the facts, the condition to allow the procurement of products from third countries will be applicable. Hence, under this Project, only Japanese and third countries products for which local agents can provide after-sales service will be accepted.

Regarding the equipment that allows use of the products of the third countries, the products should be procured within the Uzbekistan market. Also, the system for after-sales service by the local agents is considered important, and the products should be widely used at hospitals in Uzbekistan. Also, the headquarters of the manufacturers of the products will be located in DAC countries and/or OECD countries, and the products shall not be selected only because of the prices. Thus, restrictions shall be set to secure the quality of the equipment.

The local distributors in Tashkent have experience of procurement for most of the equipment planned under this Project and have engineers who can provide repair services. Regarding the inventory status, the spare parts frequently replaced are in stock. Though some parts need to be ordered from the manufacturers, it is possible to obtain them within a week or two weeks.

(5) Policy on Utilization of Local Agent

In Tashkent, there are many local distributors handling targeted equipment of the Project, and they have engineers with sufficient skills and experience in the operation and installation of the equipment. The distributors can provide spare parts as well as after-sales services, and it is considered that they are able to handle the equipment procured under this Project. Hence, by limiting selection to the manufacturers which have local distributors in Uzbekistan, repair after handing over of the equipment and procurement of spare parts will be easy even though the equipment is procured from Japan or third countries.

In order to secure appropriate operation and maintenance of the equipment procured under this Project, for the equipment that is considered necessary to receive after-sales services such as diagnostic imaging equipment and endoscopes (20 items), 2 years of maintenance services shall be provided by the Japanese side using local agents after the 1-year manufacturer warranty expired.

(6) Policy on Operation and Maintenance Capacity

In Ministry of Health (hereinafter referred to as “MOH”), there is a department (Republic Center for Medical Equipment Maintenance) in charge of maintenance of medical equipment at public hospitals, and this department will also provide maintenance service for The Karakalpakstan Medical Institute. On the other hand, at the meetings with The Karakalpakstan Medical Institute, the hospital also confirmed that there is a plan to assign its own medical engineer for medical equipment maintenance at the hospital. Currently, only one medical engineer is allocated to the facility and medical equipment maintenance of the hospital, but the director of the hospital is planning to increase the number of engineers when the hospital and outpatient clinic are opened.

Regarding the educational equipment, it is not necessary to assign special engineers to take care of the medical educational equipment. However, because some equipment: particularly

virtual simulators, are expensive and sensitive, they require daily and periodical maintenance. Therefore, the engineer for medical equipment should also receive trainings for maintenance services of educational equipment to provide basic services.

The medical equipment procured under this Project is new, so there is no end-user who is familiar with the equipment in the hospital. Therefore, the initial operation training and operational guidance shall be provided by the engineers of the local agents and/or distributors when handing over of the equipment.

Also, with the purposes of standardizing daily and periodical maintenance and equipment management, the Project will provide technical assistance (Soft Component), which is necessary for improving the operation and maintenance skills for procured equipment.

(7) Policy on Grade Setting for Equipment

1) Medical equipment

Considering the current medical activities and the level of anticipated medical care at a university hospital as well as the existing equipment at other similar level of medical facilities, the grades of the equipment will be decided. The maintenance system and skill levels of the hospital's newly established maintenance department, and local distributors and procurement channels for spare parts and consumables will be carefully considered to confirm that the equipment will be used properly and sustainably.

2) Educational equipment

Regarding educational equipment, to improve the diagnostic and treatment skill levels of the medical university students and medical staff of the hospital, it is mainly planned to procure simulation equipment that is needed for acquisition of endoscopic surgery skills as well as prompt and appropriate medical treatment skills required for emergency patients. The basic policy for the medical equipment is also applied to the grade of educational equipment. In addition, based on the education curriculum that the hospital established for healthcare professionals, training equipment for the top priority medical subjects will be introduced. Also, on maintenance of the educational equipment, it should be planned to secure sustainable and trouble-free use of procured equipment. Therefore, it is important to carefully examine the usage status of the equipment that is already installed in similar training facilities for medical personnel as well as the maintenance status, including the usage status of local agencies.

The University of Karakalpakstan Medical Institute has an education curriculum for development of medical personnel such as doctors and nurses who are important for the institute to function as a national tertiary hospital in Karakalpakstan. The educational curriculum is designed to improve patient diagnosis, examination and treatment techniques, especially in the following areas

(1) Surgery, (2) Traumatology and Orthopedics, (3) Urology, (4) Pediatrics, (5) Ophthalmology, (6) Hematology, (7) Obstetrics and Gynecology, (8) Otolaryngology, (9) Dentistry, (10) Oncology and Pediatric Oncology, (11) Internal Medicine, (12) Endocrinology, (13) Neurosurgery, (14) Anesthesiology and Resuscitation, etc.

Of the above specialties, after discussion with the teaching staff of the University of Karakalpakstan Medical Institute, the improvement and strengthening of the practical skills of diagnosis and treatment of medical students and health care professionals who will be working at the hospital in the following fields were identified as top priorities: Surgery, traumatology and orthopedics, pediatrics, gynecology, and anesthesiology and resuscitation. The curriculum also highlights the improvement of practical skills as a key issue and emphasizes the need for educational equipment.

The following is a summary of the alignment between the policies in the curriculum and the selected educational equipment in the areas of practice identified.

Table 2-2 The curriculum of the University of Karakalpakstan Medical Institute and related targeted educational equipment

Area of medical care	Notes from the curriculum particularly mentioned	Targeted educational equipment
Surgery	As part of minimally invasive treatment, practical skills are to be acquired to improve the techniques of laparoscopic examination and surgery. In addition, techniques for reliable diagnosis and treatment of the digestive system (stomach, duodenum, colon, etc.) will be strengthened. To acquire these practical skills, repeated practice shall be conducted using simulators, phantoms, and mannequins.	● Endoscopic simulator for laparoscopic surgery ● Simulator for flexible videoendoscopy
Traumatology and Orthopedics	To acquire practical skills to improve the manual techniques of diagnosis, examination and treatment in trauma and orthopedics, especially in joint injuries of the hips and knees, tibia and fibers, and general musculoskeletal injuries. The use of simulators, phantoms, and mannequins is recommended for this purpose.	● Endoscopic simulator for arthroscopic surgery ● Patient simulator for thoracic trauma
Pediatrics	In order to acquire techniques for the proper diagnosis and examination of pediatric patients, especially measuring basic vital signs such as heartbeat, pulse, rectal temperature, etc., in hands-on training using simulations with mannequins, etc. will be provided.	● Patient simulator (child)
Obstetrics and Gynecology	In gynecology, practical training using tools such as simulators and mannequins will be provided to acquire practical skills in diagnosis, treatment and prevention, especially for the uterus and ovaries.	● Endoscopic simulator for gynecology

Anesthesiology and Resuscitation	In anesthesiology, simulation practice will be conducted to acquire basic knowledge of anesthesia methods, types, and principles, as well as skills necessary for handling anesthesia equipment. In resuscitation, simulators and mannequins will be used to learn emergency response procedures such as securing airway, dealing with poisoned patients, acute respiratory failure, use of ambu bag and cardiac massage.	● Patient simulator (child and adult) ● Resuscitation patient simulator (child and adult)
Internal medicine and General physiology	In order to acquire practical skills in human anatomy, biology, and pathological physiology for the purpose of improving the basic practical skills of medical professionals, the program states that students will be given hands-on training through discussions with instructors, using tools such as video images and educational manuals.	● Virtual patient for therapy ● 3D virtual dissection table ● Simulator for physical assessment

(8) Policy on Procurement Method and Schedule

The planned equipment in this Project is sensitive and delicate. Thus, the quality and its precision of the equipment procured by the Project will be ensured for normal use at selection, and installation and adjustment will be done by experts who have knowledge and skills for each type of equipment. Also, for implementation of the Project, procurement will be done by a Supplier with rich experience in medical equipment procurement of Japanese grant aid projects. In addition, it is necessary to secure the space for equipment installation and to conduct pre-installation work, and the schedule needs to be carefully made according to the progress of the preparatory work by the Uzbekistan side and pre-installation work mentioned earlier.

(9) Policy on Gender

The task force of the hospital side of the Project has a well-balanced gender composition, which can result in reflection of both gender opinions. As the hospital of The Karakalpakstan Medical Institute targets patients between the age of 1 and 18, it is important to secure spaces/rooms for breast feeding and adolescent patients. It will be recommended to secure spaces/rooms and put in partitions and separate the rooms for the patients above certain ages in the polyclinics and inpatient wards in order to provide comfortable environments for the patients.

2-2-2 Basic Plan (Equipment Plan)

(1) Overall Plan

The basic medical equipment will be provided by MOH, whereas essential high level medical equipment and simulators with computers necessary for a high-level medical institute will be procured under this Project. The equipment to be procured under this Project is crucial medical and educational equipment for pediatric medical services, and it will enable the institute to function as the tertiary hospital in Karakalpakstan.

(2) Equipment Plan

1) Examination of Requested Equipment

The equipment listed in the final equipment list has been carefully discussed regarding the equipment and their quantity, installation space and priority for the doctors of each department, so the validity of the equipment was confirmed high. The existing equipment and its usage status was well studied during the site survey. During the analysis in Japan, the validity of each type of equipment procured under this Project will be verified by taking account into the maintenance and usage status of existing equipment and the floor plan (draft) obtained in the field survey, and it will be reflected in the equipment plan.

The equipment has been studied and examined by following selection criteria below.

○: Conforms/conforms well
△: Although there are some concerns, generally conforms/mostly conforms
×: Does not conform

It was evaluated with the 3 grades. (Please refer to Appendix 3 for details of the evaluation)

Table 2-3 Evaluation Criteria of Equipment Selection

Evaluation Criteria of Equipment Selection
For all equipment
① Equipment is compatible with the hospital financial situation, clinical skills and maintenance ability
② Equipment that does not require excessive budgetary burden for operation
③ Equipment for which spare parts and consumables are easily accessible in the local market
④ Rooms and spaces are prepared for equipment installation
Medical equipment
② Equipment for clinical use (exclude research equipment)
② Equipment expected to be used for a sufficient number of patients
③ Equipment that accords with current and future plan of medical services (positioning, function, etc.) of hospitals (or, decide by confirming concrete implementation plan for the future)
④ Equipment is not intended for the production of various types of implants to be placed in the patient body
Educational equipment
① Equipment for educational use
② Equipment must be consistent with the curriculum and the medical activities of the departments.
③ Equipment is expected to be used by a sufficient number of doctors and students.

2) Examination of Equipment Quantity

For the planned equipment selected based on the above criteria, the quantity of each type of equipment was drafted with consideration on the frequency of use, future medical and educational activities, and the size of main rooms.

3) Planned Equipment

The list shows planned equipment which is decided based on the result of the discussions explained above.

Table 2-4 Planned equipment list (Medical equipment)

No.	Name of Equipment	Quantity
1	CT scanner, 128 slices	1
2	Stationary ultrasound scanner	3
3	Mobile clinic	1
4	C-arm	1
5	Bacteriological analyzer	1
6	Automated immune-analyzer	1
7	Endoscope for otolaryngological surgery	1
8	Endoscope for laparoscopic surgery	1
9	Endoscope for hysteroscopic surgery	1
10	Colposcope	1
11	Endoscope for arthroscopic surgery	1
12	Ventilator	1
13	ENT unit with microscope	1
14	Plasma sterilizer	1
15	Washer disinfector set	1
16	Electrosurgical coagulator	3
17	Universal operating microscope	1
18	Bone surgery unit	1

Table 2-5 Planned equipment list (Educational equipment)

No.	Name of Equipment	Quantity
19	Endoscopic simulator for laparoscopic surgery	1
20	Simulator for flexible videoendoscopy	1
21	Simulator for neonatology	1
22	Endoscopic simulator for gynecology	1
23	Virtual patient for therapy	1
24	Patient simulator (child and adult)	1
25	Resuscitation patient simulator (child and adult)	1
26	Endoscopic simulator for arthroscopic surgery	1
27	3D virtual dissection table	1
28	Patient simulator for thoracic trauma	1
29	Simulator for physical assessment	1

4) Maintenance Contracts after Expiration of the Warranty Period

In order to prevent the situation that the equipment is left unattended due to equipment failure relatively early after delivery, maintenance service for 3 years in total after delivery of the equipment is included under this Project. The maintenance services of this Project shall ensure the periodic inspection and on-call service for 2 additional years in addition to the 1-year guarantee period for equipment. During these periods, the repair parts and replacement parts will be included in this service without any charges.

The criteria for selecting equipment for maintenance service contracts are;

1) Equipment whose failure has a major impact on medical care in the hospitals,

2) Equipment that can only be repaired by the technicians at local agents.

The contents of maintenance service per year are summarized as follows.

Table 2-6 Target Equipment for Maintenance Service Contract

No.	Equipment Name	Q'ty	Regular Service (times)	On-call Service (times)	Extended manufacturer warranty/year
1	CT scanner, 128 slices	1	4	Unlimited	-
2	Stationary ultrasound scanner	3	2	Unlimited	-
3	Mobile clinic	1	1	-	-
3-1	Mobile X-ray machine for mobile clinic	1	-	-	1
3-2	Mobile ultrasound scanner for mobile clinic	1	2	Unlimited	-
3-3	Mobile ECG for mobile clinic	1	2	Unlimited	-
3-4	Patient monitor for mobile clinic	1	2	Unlimited	-
4	C-arm	1	2	Unlimited	-
5	Bacteriological analyzer	1	2	Unlimited	-
6	Automated immune-analyzer	1	2	Unlimited	-
7	Endoscope for otolaryngological surgery	1	1	Unlimited	-
8	Endoscope for laparoscopic surgery	1	1	Unlimited	-
9	Endoscope for hysteroscopic surgery	1	1	Unlimited	-
11	Endoscope for arthroscopic surgery	1	1	Unlimited	-
12	Ventilator	1	2	Unlimited	-
14	Plasma sterilizer	1	2	Unlimited	-
15	Washer disinfector set	1	2	Unlimited	-
16	Electrosurgical coagulator	4	1	Unlimited	-
17	Universal operating microscope	1	1	Unlimited	-
18	Bone surgery unit	1	1	Unlimited	-

2-2-3 Outline Design Drawing

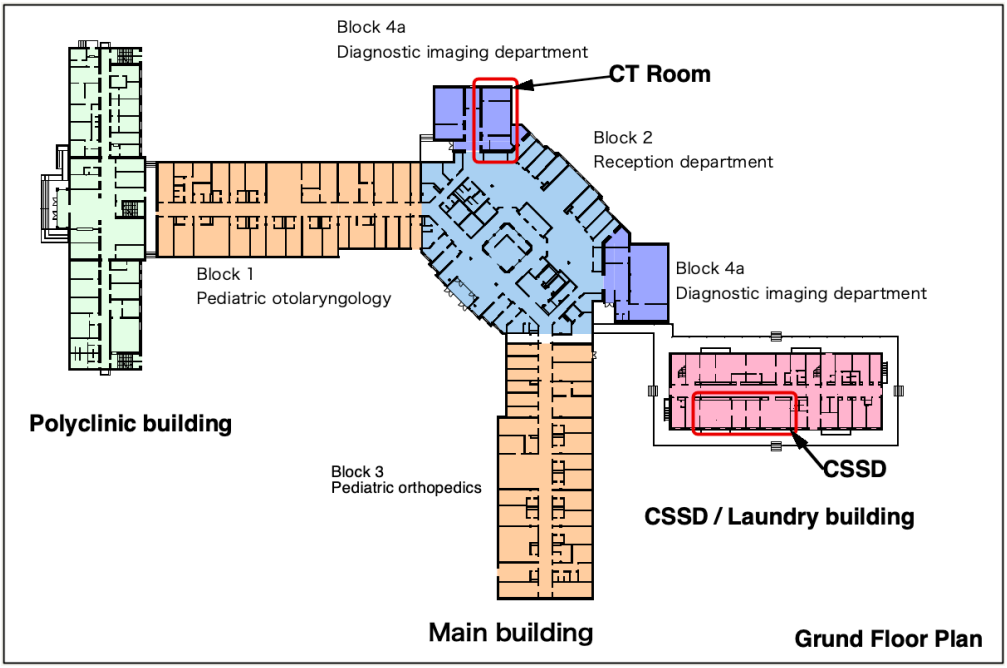


Figure 2-1 Main installation equipment location plan

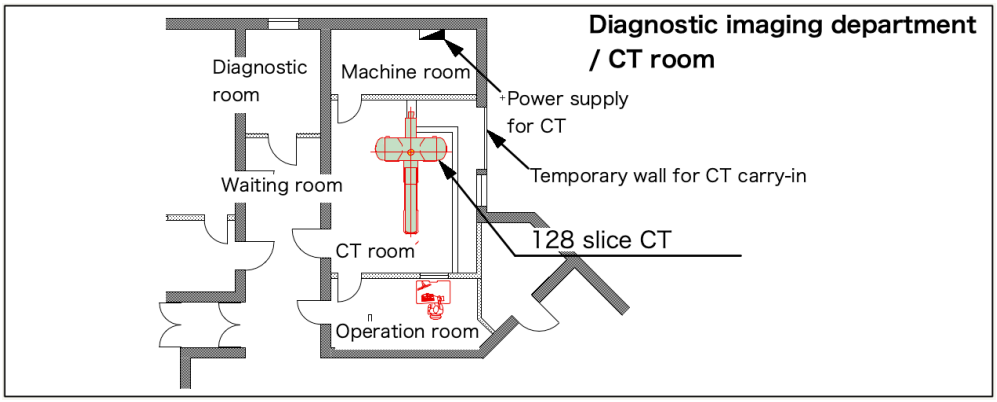


Figure 2-2 128 slice CT layout

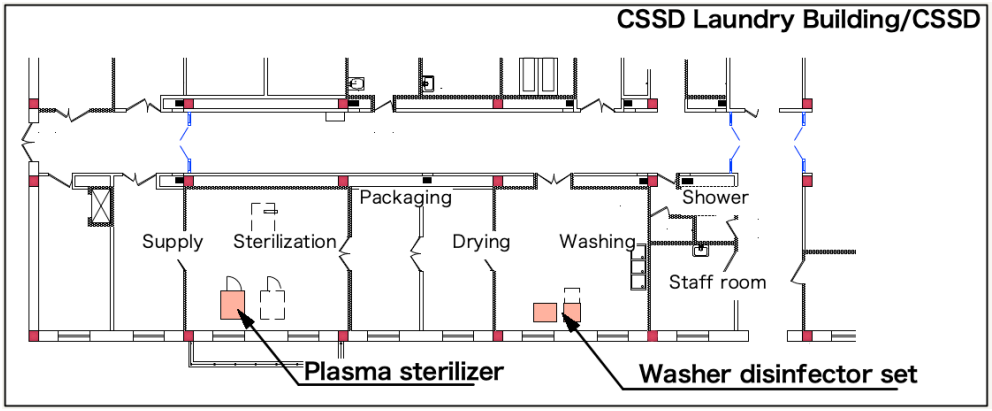


Figure 2-3 Plasma sterilizer, Washer disinfector set layout

2-2-4 Implementation Plan

2-2-4-1 Implementation Policy

Implementation of the Project shall be initiated officially only after approval at the cabinet by the Governments, and after the exchange of notes (E/N) and the grant agreement (G/A) are signed. Immediately after signing of the E/N and the G/A, the Uzbekistan organization that is responsible for implementation of the Project and the Japanese consultant firms shall enter into an agreement and initiate the detailed design work of the Project. When the detail design is completed, the Japanese companies for equipment procurement participate in the tender for their works. The successful tenderer and Uzbekistan organization shall enter a contract and proceed for supply and installation of the equipment.

(1) Implementing Organizations

1) Executing Agency

The Executing Agency for this Project is MOH of Uzbekistan and a contracting party. Under the supervision by MOH, The Karakalpakstan Medical Institute will conduct the work borne by the Uzbekistan side.

2) Japan International Cooperation Agency (JICA)

JICA will sign G/A with the Government of Uzbekistan and will review and monitor the Project for proper implementation in accordance with the Japanese Grant schemes.

3) Consultant

After signing of E/N and G/A for the Project, the Executing Agency of the Project and a Consultant in Japan will sign an agreement for the consulting services according to the processes of the Japanese Grant schemes. The Consultant will carry out the following works;

① Detailed Design Stage

Final confirmation of the Project, preparation of design documents (specifications and technical reference materials on the medical equipment included in the Project)

② Bidding Stage

Assistance to the Executing Agency in the bidding and contractual procedures (including preparation of bidding documents, bid openings, bid evaluation, contracts with Contractor and the Supplier)

③ Procurement Supervision

Supervisory works for equipment procurement, delivery, installation, operational guidance and maintenance guidance of equipment

④ Inspection before expiration of manufacturer's warranty

Inspection before expiration of manufacturer's warranty of 1 year for supplied equipment

⑤ Inspection of maintenance services

Inspection of implementation status of additional 2-year maintenance service and equipment conditions

The detailed design involves determining the details of the equipment plans according to the Preparatory Survey Report, to compile the tender documents that will include the specifications, tender conditions, draft conditions of contracts for supply and installation of medical equipment, and to estimate equipment costs. The tender and contract assistance includes attendance at the tendering for the selection of the medical equipment supplier, assistance in the procedures for concluding a contract and reporting to JICA, etc.

The supervision of the equipment work involves ensuring that the supplier has effectively carried out the medical equipment supply and installation work in accordance with the contractual terms, and confirming that they have properly met their contractual obligations. For the successful completion of the Project, the Consultant will: from a true and fair perspective, extend advice and instructions and coordinate the persons concerned. Specifically, the supervisory services of the Consultant include the following:

i) Review and approval of the work program, equipment specifications and other documents prepared and submitted by the medical equipment supplier.

ii) Inspection and approval of the pre-shipment inspection and approval of the quality, quantity, and performance of medical equipment.

iii) Confirmation of the delivery and installation of equipment for the medical equipment, and their operation manuals.

iv) Supervision of the work progress and reporting.

v) Final inspections of the medical equipment, and attendance during the handover.

In addition to the aforementioned services, the Consultant will report to the Japanese authorities regarding the progress of the Project, payment procedures, completion of the Project and handing-over, etc.

4) Equipment Supplier

The work orders pertaining to the Japanese assistance will be limited to Japanese companies satisfying the eligibility requirements. Supplier will be selected by public tender with restricted eligibility.

Based on the contract, the selected equipment supplier will procure, supply and install medical equipment. The supplier will also give technical instructions to the Uzbekistan side concerning the operation and maintenance of the supplied equipment. Once the equipment is handed over, in cooperation with the agency of the equipment manufacturers, the equipment supplier will support the continuous supply of spare parts and consumables for the equipment during the guarantee period, either free of charge or on a chargeable basis.

(2) Project Implementation Diagram

The Consultant will form a project team to conduct the above-mentioned services in Japan and Uzbekistan.

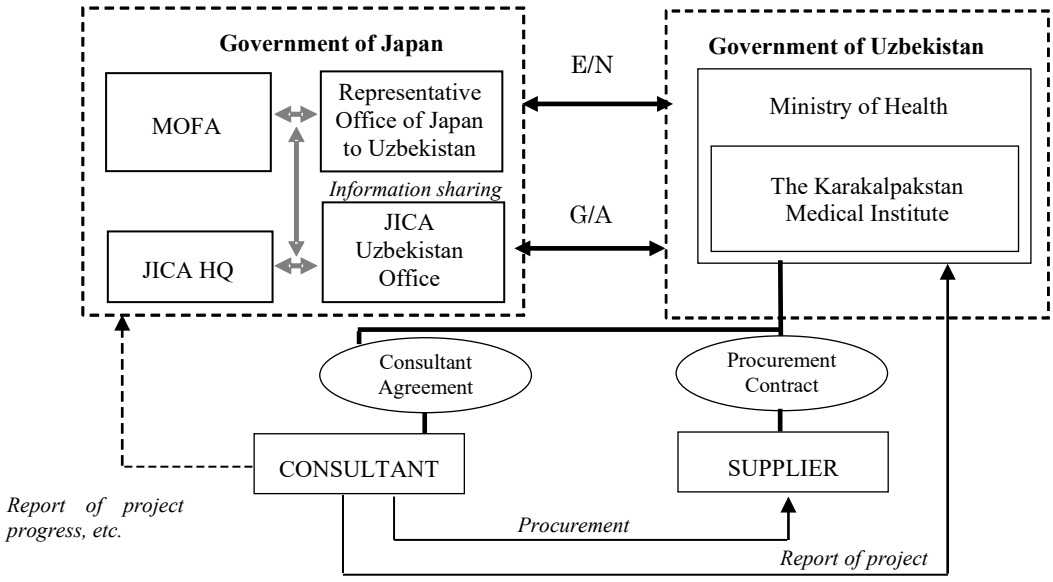


Figure 2-4 Project Implementation Diagram

(3) Monitoring on implementation of maintenance services by the Supplier after handing over of the equipment

The Consultant who is in charge of equipment will visit The Medical Institute of Karakalpakstan and the distributors of equipment once a year and confirm the situation of maintenance services that are included in the procurement contract. It will be reported to MoH, The Medical Institute of Karakalpakstan, and to JICA as well.

2-2-4-2 Implementation Conditions

(1) Schedule Management

The equipment procured under this Project is installed in the newly established hospital by the Uzbekistan side, and basic equipment is procured by MOH budget. Therefore, it is important to conduct the Project without any duplications of the equipment. The hospital has been already built, so the Uzbekistan side strongly requested shortening the duration for procurement, installation and handover of the equipment for the earliest possible operations. On the other hand, the preparatory survey team explained the processes and time that is unavoidable for implementation of a grant aid scheme and agreed to shorten the schedule as much as possible. In Nukus City, since the local distributors and engineers who can work for the installation of the equipment are limited, the engineers shall be dispatched from Tashkent. The schedule management for equipment import, transportation, installation and operation instructions will be done carefully.

(2) Dispatch of Technicians for Equipment Installation

It is extremely important to impart knowledge and skills regarding appropriate operation and maintenance of the equipment so as to contribute to medical services and educational activities through continuous and proper operation of the procured equipment after implementation of the Project. That being the case, technicians who are thoroughly familiar with the operation of each type of equipment will be selected. Enough time for explanation of equipment handling (operation techniques, simple repair techniques, inspection methods, etc.) shall be taken, and the level of comprehension of the participants shall be confirmed carefully during training.

(3) Tax Exemption

Tax exemption can be implemented based on the Presidential Decree approved at the cabinet on 15th of November in 2005: No.251 (Measures to improve mechanisms for approval and monitoring of investment projects, accounting and control of humanitarian aid and technical assistance funds) and the Presidential Decree issued on 10th of October in 2019: P-5848 (Measures to improve mechanisms for attracting external nonrepayable assistance funds and interaction with donors). In Uzbekistan, the custom duty will be charged for imported products if the goods have been stored in a warehouse for longer than 6 months. Therefore, it is necessary to promptly proceed with tax exemption processes to avoid the above charges.

1) Import duty

< Where to apply >

Uzbekistan custom office（Via Ministry of Investments and Foreign Trade (hereinafter referred to as “MIFT”)

<Process>

1. MOH submits an application letter for tax exemption to MIFT (with E/N, G/A, Shipping documents, Equipment invoice, and Contract between MOH and the Japanese trading company)
2. MOH submits required documents attaching the letter from MIFT to the custom office and presidential decree on tax exemption shall be issued.
3. Import duty is exempted

< Time Needed >

It takes 3 to 5 days from the submission of the documents to the issuance of the letter, and about 2 days for the Customs Department to grant the tax exemption.

2) Value Added Tax

In the current situation, the companies registered in Uzbekistan can apply for reimbursement of VAT through the portal site. However, the detailed process for companies with no registration in Uzbekistan is not yet established. Therefore, in the case that the Japanese Supplier buys equipment from local distributors in Uzbekistan, the local distributors need to newly import the equipment for the Project. It was confirmed that this process also applies to VAT exemption, but the contract between the Japanese supplier and local distributors is required in addition to the documents mentioned earlier. Most of the local distributors do not store the medical equipment in their warehouses, so they usually import the equipment from the headquarters of manufacturers only when needed. Hence, it was confirmed that they have no problems in importing new equipment only for the Project to receive VAT exemption.

2-2-4-3 Scope of Works

It is mutual cooperation between Japan and Uzbekistan, that makes implementation of the Project successful. As the Project is implemented under the Japan's grant aid, the scope of works undertaken by the Governments of both countries shall be as described below.

Table 2-7 Scope of Works

Items	Japan	Uzbekistan
Equipment work		
- Procurement	○	
- Installation work (including CT floor work)	○	
- Trial run and adjustment	○	
- Operation guidance	○	
- Legal procedures and inspections concerning installation		○
Utility work		
- Utility systems work in the building		○
- Connection of power, etc. to the procured equipment	○	
Securing space for equipment storage		○
Transportation and customs clearance		
- Transportation of equipment to the site	○	
- Customs clearance	○	○
- Tax exemption		○
Procedures for B/A and payment of commission fees		○
Provision of convenience to the Japanese and/or physical persons of third countries concerned with the Project necessary for their embarkation, disembarkation and stay in Uzbekistan		○
Effective use and management of the procured equipment		○
Application for and acquisition of permits necessary for the Project implementation		○
Payment of all the costs of related tasks that are not covered by the Japanese Grant Aid		○

2-2-4-4 Consultant Supervision

(1) Procurement Supervision Policy

Under the grant aid policy of the Government of Japan, based on the concept of the outline design, the consultant forms a team that is consistently responsible to execute the project, including preparation of the detail design to achieve smooth and successful implementation. The procurement supervision policy for the Project is outlined below.

① To keep close contact with those who are in charge of the Project and represent related organizations of both countries so that installation of equipment will be completed without delay.
② To provide quick and appropriate advice and suggestions from a neutral standpoint to the Supplier(s) and others concerned.
③ To provide appropriate guidance and suggestions regarding operation and management after handing over.
④ To confirm that procurement work has been completed and the terms of contract are fulfilled and to observe handing over the equipment and obtain an approval of receipt from the Uzbekistan side.

(2) Procurement Supervision Plan

The countries of procurement of this Project are Japan, Uzbekistan and third countries. When the equipment is shipped from Japan or third countries, the pre-shipment inspection(s) shall be conducted by the third-party inspection agent at the port of embarkation. The consultant shall confirm the contents of the inspection certificate submitted by the inspection agent in writing. The consultant shall issue the inspection report and report to MOH of Uzbekistan right after the completion of pre-shipment inspection(s). The person in charge of MOH, The Karakalpakstan Medical Institute, Supplier and Consultant shall conduct the acceptance inspection for all procured equipment after installation and initial operation training and hand them over. Model name, country of origin, manufacturer name, ODA sticker, and appearance of the equipment shall be checked during the acceptance inspection(s).

2-2-4-5 Quality Control Plan

Under this Project, in addition to Japanese manufacturers, the scope of procurement will be expanded to third countries, but it is necessary to avoid having the equipment selected only because of its price; the quality of equipment will be ensured by putting in place certain restrictions, such as limiting products to only those from DAC or OECD member countries and/or designated countries, and requiring equipment complying with JIS, CE, IEC, ISO and other international standards.

As ready-made medical equipment will be procured for this Project, the quality control of procured equipment will be also secured through factory acceptance inspections and pre-shipment inspections. The factory acceptance inspections will be carried out on the equipment that requires

specific packaging, precision machines and large/heavy machines that cannot be checked for quality only at the pre-shipment inspections. The pre-shipment inspection will be conducted at designated warehouses at the seaport (or airport) for equipment procured in Japan and the third countries.

2-2-4-6 Procurement Plan

The medical equipment and educational equipment to be procured under this Project are not made in Uzbekistan, and the equipment will be procured from Japan or the third countries. On the other hand, there are many local agencies who distribute that equipment in Tashkent. In the local distributor survey, it was confirmed that the distributors have sufficient experience in procurement of the equipment requested for the Project so that spare parts can be obtained without any problems. After-sales services can also be conducted in Uzbekistan directly by local distributors or manufacturers though requests made by the distributors.

Regarding the transportation plan, the equipment procured from Japan or the third countries will be transported to Tashkent in Uzbekistan by marine transportation and land transportation. From Tashkent to Nukus, where The Karakalpakstan Medical Institute is located, the equipment is delivered by truck. As the delivery involves various transportation methods, the local special circumstances shall be carefully considered to achieve a smooth and safe method.

2-2-4-7 Operation Guidance Plan

Under this Project, the medical and educational equipment is planned, and care concerning operation and maintenance of the equipment will be taken as much as possible for safe and continuous use of the equipment. Therefore, it is essential to provide adequate instruction and training of operation and maintenance concerning the equipment by sending a skillful engineer from the equipment manufacturer or its local agent at the time of delivery. The Consultant will check if the guidance is properly performed. The Consultant will also confirm if the persons in charge at the hospital understand the equipment sufficiently through the guidance.

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

In the current situation of The Karakalpakstan Medical Institute, although the setup of the equipment maintenance section is planned, the necessary skills and management system for equipment maintenance are not yet established. Considering this situation, acquisition of skills on equipment operation and maintenance at the initial operation trainings may not be sufficient, and the needs for further trainings through the Soft Component was mutually confirmed.

Not only the engineers of the maintenance section but also medical professionals of each department who use the procured equipment will be involved in the trainings. The trainings will include developing checklist formats for recording on inspection before/after-use and daily maintenance and instructions on maintenance methods with practical trainings.

At the same time, simplified manuals will be created, and trainings on technical skills will be provided in order to check operation skills and trouble shooting. The periodical maintenance for most equipment is done by engineers of the manufacturer's distributors, and it is important not to exceed the boundaries of what the hospital side can do in terms of maintenance and repair. Otherwise, the repair work will not be covered by the repair service of the maintenance contract under the Project. Therefore, at Soft Component, trainings shall be given regarding the right timing of making repair requests and the boundaries of what the hospital can do and what should be done by the distributor engineers as trouble shooting, and a communication system with the distributor engineers shall be established at Soft Component. Also, this assistance will support the establish of a reporting framework from each department to the hospital manager (such as the Hospital Director and/or Head Nurse) concerning the current equipment utilization and maintenance conditions on a regular basis in order to estimate the budget for maintenance and procurement of necessary consumables for the next year.

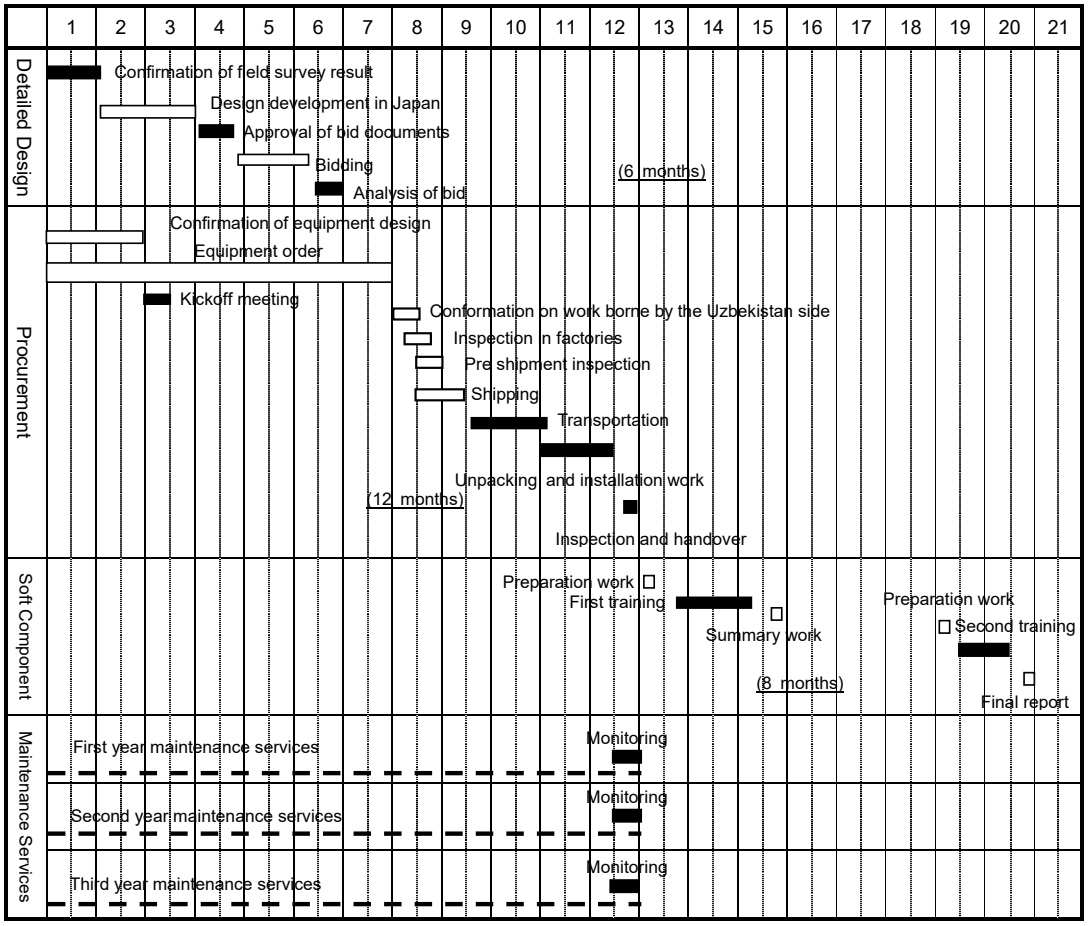
Targeted types of equipment are monitor, ventilator, endoscope, ultrasound scanner, CT, washer disinfector, etc.

The detailed plan is attached as an appendix of this report.

2-2-4-9 Implementation Schedule

The period needed for the detailed design (from the filed survey to the approval and concurrence of the bidding documents) is estimated as 4 months, and the bidding (from the bid notice to the contract with the Supplier) is 3 months, and the procurement after the contract with the Supplier is 7 months. The provisional Project implementation schedule is shown below.

Table 2-8 Project Implementation Schedule



2-3 Obligations of the Recipient Country

(1) Work Borne by the Uzbekistan Side

Specific obligations of the Uzbekistan side which are confirmed during the site survey are described below.

Table 2-9 Work Borne by the Uzbekistan side

Before Bidding	▪ To open bank account (B/A) ▪ To issue A/P to a bank in Japan (the Agent Bank) for the payment to the Consultant. ▪ To bear the following commissions to a bank in Japan for the banking services based upon the B/A. ➢ Advising commission of A/P ➢ Payment commission for A/P
During the Project Implementation until handing-over	▪ To issue A/P to a bank in Japan (the Agent Bank) for the payment to the Supplier(s). ▪ To bear the following commissions to a bank in Japan for the banking services based upon the B/A. ➢ Advising commission of A/P ➢ Payment commission for A/P ▪ To ensure prompt unloading and customs clearance at ports of disembarkation and to assist the Supplier(s) with internal transportation therein. ▪ To accord Japanese nationals and/or physical persons of third countries whose services may be required in connection with the supply of the products and the services such facilities as may be necessary for their entry into the country of the Recipient and stay therein for the performance of their work. ▪ To ensure that customs duties, internal taxes and other fiscal levies which may be imposed in the country of the Recipient with respect to the purchase of the products and/or the services be exempted. ▪ To bear all the expenses, other than those covered by the Grant, necessary for the implementation of the Project, such as tables and chairs for general use, etc. ▪ To remove existing equipment and to rehabilitate facilities and utilities (electricity, water supply and drainage system and LAN network). ▪ To prepare and submit Project Monitoring Report (PMR). ▪ To prepare and submit the final PMR at the completion of the works. ▪ To allocate necessary medical staff.
After the Project	▪ To secure maintenance cost for proper use and management of procured equipment. ▪ To organize the operation and maintenance structure. ▪ To implement daily check and regular inspection of procured equipment.

2-4 Project Operation Plan

(1) Operation Structure and Organization

Although MOH of Uzbekistan is the supervisory and executing body of the Project, The Karakalpakstan Medical Institute is responsible for its operation and maintenance after delivery. The purpose of the Project is to procure medical and educational equipment essential for pediatric medical service and medical education in Karakalpakstan, for the purpose of enhancement of medical services and improvement of medical education. The Medical Institute of Karakalpakstan is planning to increase the number of medical and educational personnel and to train the existing staffs, in order to smoothly operate the hospital after handing over the equipment.

(2) Personnel Plan

In MOH, there is a department which in charge of maintenance of medical equipment at public hospitals (Republic Center for Medical Equipment Maintenance), and this department will provide maintenance service for The Karakalpakstan Medical Institute. On the other hand, at the meetings with The Karakalpakstan Medical Institute, the hospital side stated that it planned to assign its own engineers for medical equipment maintenance in the hospital. Currently, only one engineer is allocated for the facility and medical equipment maintenance of the hospital, but the hospital is planning to increase the number of engineers when the hospital and outpatient clinic are opened.

Regarding the educational equipment, it is not necessary to assign engineers who are specialized in the medical education equipment. However, since some equipment, particularly virtual simulators, are expensive and sensitive and require daily and periodical maintenance, the said engineers also will take care of educational equipment by learning necessary basic maintenance trainings for educational equipment.

(3) Maintenance Management Plan

Through the Soft Component and maintenance service contract by Japanese side for a total of three years, an appropriate operation and maintenance system for the equipment procured in The Project shall be developed. In order to effectively and continuously use the procured equipment, The Karakalpakstan Medical Institute shall allocate necessary budget and secure human resources for equipment maintenance based on the budget plan of the institute.

The maintenance of the procured equipment will be mainly done by the maintenance department. The department should observe the equipment installation location and equipment use-status and provide periodical inspection. The department will use the communication system with local distributors, which is established through the maintenance service contract, and repairment requests and procurements of reagents and consumables will be done without any delay. In addition, to make a next-year budget plan for maintenance, the maintenance department

will provide the information to the director of the hospital. Also, it is an important role of the maintenance department are to check if the daily maintenance is performed properly by the medical personnel and to provide advice and in-hospital training.

2-5 Project Cost Estimation

2-5-1 Initial Cost Estimation

With the conditions of expenditure projection in (3) below, breakdowns of the expenditures borne by Japan and Uzbekistan under the said classification can be estimated as follows. This cost estimation is provisional.

(1) Costs to be borne by the Uzbekistan Side

Table 2-10 Maintenance cost for medical equipment

Item	USD (in 1000)	JPY Equivalent (in million)
1) Medical Equipment expanse for purchase (procurement by MOH)	3,200	342.7
2) Expenses for facility renovation	43	4.6
3) Banking Commissions, etc.	7	0.8
Total	**3,250**	**348.1**

(2) Calculation Conditions

- Time of Estimation : As of April, 2021
- Conversion Rate : US$1.00 = JPY 107.08
- Procurement Period : As shown the Project Implementation Schedule
- Others : Project implementation intended to be in compliance with the Grant Aid scheme of the GOJ.

2-5-2 Operation and Maintenance Cost

(1) Annual operation and maintenance costs

The equipment maintenance cost consists of repair fee and the costs of the spare-parts and consumables. Although the cost of consumables is required right after handing-over of the equipment, the repair fee is covered by a 1-year guarantee of the manufacturers. The cost for repair of the equipment will be covered for the second and third year with a maintenance contract. From the 4th year and thereafter, all equipment requires maintenance cost, and the hospital needs to renew the contract or request the manufacturer's distributors to conduct repairs.

Table 2-11 Maintenance cost for medical equipment

(Unit: USD)

	Initial fiscal year	2nd and 3rd year	4th year and after
Repair fee	0	1,540	130,240
Spare parts and consumables	72,432	72,432	72,432
Total	72,432	73,972	202,672

Table 2-12 Maintenance cost for educational equipment

(Unit: USD)

	Initial fiscal year	2nd and 3rd year	4th year and after
Repair fee	0	0	0
Spare parts and consumables	16,823	16,823	16,823
Total	16,823	16,823	16,823

Cost for consumables is expected to be as shown below.

Table 2-13 Annual cost for consumables of medical equipment

No.	Name of Equipment	Q'ty	Consumables and Replacements	Unit price (USD)	Annual Require-ment	Unit	Subtotal (USD)
2	Stationary ultrasound scanner	3	Gel	7	15	bottle	105
			Recording paper	7	60	roll	420
3	Mobile clinic	1	Engine oil	38	1	unit	38
			Engine filter	19	1	box	19
3-1	Mobile X-ray machine for mobile clinic	1	X-ray film	65	6	box	390
3-2	Mobile ultrasound scanner for mobile clinic	1	Gel	7	6	bottle	42
			Recording paper	7	30	roll	210
3-3	Mobile ECG for mobile clinic	1	Gel	7	4	bottle	28
			Recording paper	7	20	roll	140
3-4	Patient monitor for mobile clinic	1	Infant probe	214	18	unit	3,852
			Pediatric probe	214	18	unit	3,852
			Adult probe	214	18	unit	3,852
			Electrode	1	1800	unit	1,800
			Recording paper	7	270	roll	1,890
			Battery	100	9	unit	900

3-5	Weighing scales for mobile clinic	1	Battery	3	8	unit	24
	Infant scale for mobile clinic	1	Battery	3	8	unit	24
	Otoscope and ophthalmoscope set for mobile clinic	1	Lithium rechargeable battery	275	2	unit	550
	Pulse oximeter for mobile clinic	1	Battery	3	16	unit	48
	Spirometer for mobile clinic	1	Mouth filter	34	5	unit	170
			Mouthpiece	19	3	unit	57
			Recording paper	38	10	roll	380
	Examination stand light for mobile clinic	1	LED bulb	9	9	unit	81
	AED for mobile clinic	1	Adult pad	165	1	unit	165
			Pediatric pad	165	1	unit	165
	Sphygmomanometer for mobile clinic	1	Battery	3	8	unit	24
	Penlight for mobile clinic	1	Halogen bulb	83	2	unit	166
	Thermometers for mobile clinic	1	Battery	3	8	unit	24
12	Ventilator	1	Infant Respirator Set	412	36	set	14,832
			Pediatric Respirator Set	412	36	set	14,832
			Adult Respirator Set	412	36	set	14,832
			Bacteria Filter	11	36	unit	396
13	ENT unit with microscope	1	Halogen Lamp	7	1	unit	7
			Fuse	1	5	unit	5
			Spray Set	97	1	set	97
			Lamp	8	1	unit	8
			Filter	11	1	unit	11
			Compressor hose	13	1	unit	13
			Suction hose	13	1	unit	13
15	Washer disinfector set	1	Drain hose	40	1	set	40
			Hose for detergent (main unit and tank)	40	2	set	80
			Raw salt	29	12	bag	348
16	Electrosurgical coagulator	3	Handpiece	421	4	unit	1,684
			Blade	84	20	unit	1,680
17	Universal operating microscope	1	Halogen lamp	33	2	unit	66
18	Bone surgery unit	1	Tip	197	5	unit	985
Medical Equipment Total							72,432

Table 2-14 Annual cost for consumables of educational equipment

No.	Name of Equipment	Q'ty	Consumables and Replacements	Unit price (USD)	Annual Require-ment	Unit	Subtotal (USD)
16	Endoscopic simulator for laparoscopic surgery	1	Virtual forceps (3 sets)	9979	0.3	set	2,994
			Pedal	753	0.3	unit	226
17	Simulator for flexible videoendoscopy	1	Virtual fiber scope (colon)	6334	0.3	unit	1,900
			Virtual fiber scope (stomach)	6789	0.3	unit	2,037
			Virtual fiber scope (bronchial)	3300	0.3	unit	990
			Syringe	626	0.3	unit	188
			Pedal	753	0.3	unit	226
			Biopsy syringe	1085	0.3	unit	326
19	Endoscopic simulator for gynecology	1	Virtual forceps	8538	0.3	unit	2,561
			Pedal	753	0.3	unit	226
21	Patient simulator (child)	1	Lithium-ion battery	240	0.5	set	120
			Chest skin	417	0.5	set	209
			Pediatric IO Legs	227	0.5	set	114
			Replacement vein & skin IV arms	262	0.5	set	131
21	Patient simulator (adult)	1	Battery for Mannequin	747	0.5	set	374
			Tibial IO Pads (10 pieces)	432	0.5	set	216
			Tibial IO leg band (5 pieces)	267	0.5	set	134
			Neck skin (6 pieces)	427	0.5	set	214
			Pneumothorax balloon (2 pieces)	293	0.5	set	147
			Chest drain sleeve (20 pieces)	67	0.5	set	34
			Replacement IV pads (10 pads)	809	0.5	set	405
			IM pads (4 pcs)	453	0.5	set	227
22	Resuscitation patient simulator (adult)	1	Disposable airways (24 sheets)	357	0.5	set	179
			Mannequin face eyelets (6 sheets)	205	0.5	set	103
			Outside chest cover	187	0.5	unit	94
			Chest cover inside	387	0.5	unit	194
			Maintenance Kit	112	0.5	unit	56
	Resuscitation patient simulator (children)	1	Replacement leg pads (5 pcs)	427	0.5	set	214
			Baby Face (6 sheets)	92	0.5	set	46

			Baby QCPR Lung Bag (10pcs)	50	0.5	set	25
			Baby QCPR Airway (5 pieces)	53	0.5	set	27
			Body Skin	129	0.5	unit	65
28	Patient simulator for thoracic trauma	1	Thoracic puncture pad (left chest) (2 sets)	308	1	set	308
			Thoracentesis pads (right back) (2 sets)	308	1	set	308
			Thoracentesis simulated lung (2 sets)	121	1	set	121
			Pericardiocentesis pads (2 sets)	336	1	set	336
29	Simulator for physical assessment	1	Battery for mannequin	747	0.5	unit	374
			Deltoid IM pads (bilateral)	66	0.5	set	33
			Ventral IM pads (both sides)	66	0.5	set	33
			Gluteal IM pads (both sides)	56	0.5	set	28
			Silicone Dressing Kit	560	0.5	set	280
Educational Equipment Total							16,823

CHAPTER 3 PROJECT EVALUATION

CHAPTER 3 Project Evaluation

3-1 Preconditions

For the appropriate implementation of this plan, the Uzbekistan side needs to conduct management of tax exemptions, provision of convenience for imported materials and equipment, issuance of bank arrangement and payment authorization to pay, arrangement of infrastructure for provided equipment, renovation and expansion of existing buildings, renovation of existing utilities, removal of existing equipment and furniture, etc. as explained in "2-3 Obligations of the Recipient Country". It is assumed that the necessary procedures and works by the Uzbekistan side will be carried out without delay. In addition, securing necessary budget and human resources for the medical facility maintenance is also highlighted as the preconditions.

3-2 Necessary Inputs by the Recipient Country

Issues the Uzbekistan side should tackle for the realization and continuation of effects of the Project are listed below.

(1) Recruit and allocate appropriate human resources

In order to properly operate and maintain the equipment newly provided in the Project, new staff will be required. MoH and The Karakalpakstan Medical Institute need to assign these staff before starting the installation of equipment to participate in initial operation training and Soft Component. It is necessary to formulate a recruitment plan including a budgetary plan in advance and to proceed with systematic recruitment, allocation and training.

(2) Securing a budget for facility operation and equipment maintenance

In order to achieve the effects of the Project, MoH and The Karakalpakstan Medical Institute need to secure the increased amount of budget as is described in "2-5-2 Operation and Maintenance Cost" and operate and maintain the provided equipment appropriately. In particular, Nukus City where the hospital is located, is far from Tashkent, where the medical distributors are, and there are limitations on obtaining spare parts and consumables. Therefore, it is important to prepare a procurement plan (budget plan, etc.) taking consideration of these situations and take care not to delay the procurement.

(3) Capacity improvement of human resources

In order for the hospital to continue appropriate maintenance management, it is necessary to improve the maintenance management skills of the engineers in the maintenance department and the healthcare professionals, for which Soft Component, etc. is planned to improve maintenance techniques. It is important for the hospital to implement appropriate maintenance management using

the skills learned through the Soft Component and technical cooperation (to be implemented). In addition, some measures are needed to sustain the effects, such as in-hospital training and regional training to transfer technique to medical staffs in other hospitals.

3-3 Important Assumptions

The External conditions: the spread of Coronavirus infection (COVID-19) in 2020, the spread of new infectious diseases and the deterioration of public security, will not seriously hinder the procurement of equipment and traveling to the site, and the travel and stay of project personnel in Uzbekistan will be ensured.

3-4 Project Evaluations

3-4-1 Relevance

(1) Beneficiaries of the project

The targeted area of the Project is the whole area of Karakalpakstan, mainly Nukus City. The total population of Karakalpakstan in 2021 is estimated as 1,920,000 approximately[1]. The targeted hospital of this Project, The Karakalpakstan Medical Institute, is the tertiary hospital of the pediatric area in Karakalpakstan for 650,000 of the targeted age population (0 to under 18 years old) in Karakalpakstan.

(2) In a view of improvement in geographical access to high level medical services

Once The Karakalpakstan Medical Institute functions as the tertiary hospital of the pediatric area, the patients who were previously referred to Tashkent for medical treatment will be able to be diagnosed, examined and treated earlier in Karakalpakstan, which results in reduction of patients' physical burden as well as the financial burden of the patients' families.

In addition, the procurement of medical equipment will make it possible to produce higher quality medical personnel and to provide post-graduate educational trainings, and it is expected to improve medical services in Karakalpakstan.

Thus, the procurement of medical and educational equipment by this Project is highly expected to improve medical service access of the pediatric area and to reduce patient financial burden.

(3) Consistency with Uzbekistan's development plans

The Government of Uzbekistan specified the development of Karakalpakstan as the highest priority of the county in a presidential decree. In addition, to achieve the world-class medical service in performing preventive medicine, diagnosis and treatment, the Concept for Health System Strengthening 2019-2025 presented policies on improvement of the health system,

development of health personnel and strengthening their specialties with the purpose of widely providing high quality medical service. Through the procurement of medical and educational equipment, the Project aims to improve the standard of the medical service system and medical education of The Karakalpakstan Medical Institute which will be the center of medical service provision and human resource development in Karakalpakstan; this will result in improving health service delivery to the residents in the area. Thus, the Project matches the policy of the Government of Uzbekistan. Furthermore, the president of Uzbekistan directly requested the hospital director to strengthen medical service in the whole area of Karakalpakstan including surrounding rural areas. Thus, the expectation of the Government of Uzbekistan concerning the Project and contribution of the Project are considered to be quite high.

(4) Consistency with Japan's Aid Policy

According to Country Development Cooperation Policy for Uzbekistan by the Ministry of Foreign Affairs of Japan (March 2017), 3 priority areas were identified as important areas of the medium-term cooperation target, and the third area was “Support for restructuring of social sectors (agriculture and community development, health care)”. Explanation was added as follows: “In response to the challenges of the widening inequalities between urban and rural areas in Uzbekistan, the support shall be provided with the main focuses on the agricultural sector which is a major industry in rural areas and health care, and it aims to provide direct benefit particularly for the poor and vulnerable people”. In addition, Development Issue 3-2 (Sub-Objective): Health Care, in Business Development Plan (April 2019) implements a health reform program including medical equipment procurement by grant aid projects. The Project was planned based on the program.

3-4-2 Effectiveness

The output expected from the implementation of the Project are as follows.

Table 3-1 Output indicators of the Project

Outcome	Base value (Actual value in 2021)	Target value (by 2026) 【3 years after the project completion】
The number of CT examination (per year)	0	1,500 people
The number of test cases of bacteriological analysis/automated immune-analysis (per year)	0	21,000 cases
The number of students who use simulation center (tentative name) (per year)	0	4,800 people

1) The base line numbers

Since The Karakalpakstan Medical Institute has not yet opened as of the survey, the base value was set up as 0.

2) The target numbers

① The target value for the number of CT examinations was calculated by assuming that five CT examinations would be performed per day (two in the morning and three in the afternoon) and multiplying this number by 300, which represents the days of annual operation (25 days/month, 12 months).

② The target number of tests for the bacteriological analyzer/automated immune-analyzer is 70 tests per day by assuming that 10 specimens are tested per hour and that the hospital is open for 8 hours (including 1 hour for lunch break). The total number of tests was calculated by multiplying the total number of tests by 300, which is the number of annual operating days.

③ The target number of students using the simulation center (tentative name) was calculated based on the number of students using the simulation center at the Tashkent Medical Academy (50 students/day), which has the same educational equipment as the Project. Assuming that the same percentage of students will use the simulation center at The Karakalpakstan Medical Institute, 20 students will use the center per day. A total of 4,800 students will use the center during 240 days of annual operation (20 days/month, 12 months), assuming that the center is not available on Saturdays and Sundays.

(2) Qualitative effects

1） The quality of pediatric services in Karakalpakstan will be improved and confidence concerning The Karakalpakstan Medical Institute will be further increased.

By procuring medical equipment for The Karakalpakstan Medical Institute, the pediatric patients who would be referred to large hospitals in Tashkent such as other national university pediatric hospitals or other tertiary hospitals in Tashkent, would be able to receive the same level of treatment in Karakalpakstan. This will result in improvement of access for pediatric medical services and increase of patient satisfaction, along with reduction of traveling distance and patient costs due to referrals; consequently, confidence concerning the Medical Institute of Karakalpakstan will be further increased.

2） Improve the quality of clinical training for medical personnel.

The university students are able to learn medical skills in a way that is closer to actual clinical situations during the school years, which will increase the number of high-quality medical personnel. In addition, by conducting post-graduate education and training using simulation equipment such as VR, it will be possible to improve and maintain the medical skills of active medical personnel and support their return to work. Hence, it is expected to contribute to the improvement of medical services in Karakalpakstan.

3） To contribute to the improvement of the health status of the residents of Karakalpakstan and neighboring areas.

Through the provision of advanced medical diagnostic and treatment equipment, it will be possible to examine, diagnose, and treat patients at an early stage, and this is expected to contribute to the improvement of the health status of residents. In addition, the educational equipment will be used for training not only at the hospital of The Karakalpakstan Medical Institute, but also by medical personnel from neighboring hospitals, which is expected to improve the quality of medical services and the health of the residents in a wider area in the long run.

3-4-3 Conclusion

Based on the above, it is concluded that the Project is highly appropriate and is expected to be significantly effective.

APPENDICES

1. Member List of Survey Team
2. Survey Schedule
3. List of Parties Concerned in the Recipient Country
4. Minutes of Discussions
5. Evaluation Chart of Requested Equipment
6. Soft Component (Technical Assistance) Plan

Appendix 1　Member List of Survey Team

1-1　Field Survey 1 (April 4 – April 30, 2021)

Name	Sociality	Title, Organization
Tatsuya Ashida	Team Leader	Advisor, Health Team4, Health Group2, Human Development Department, JICA
Rei Kansaku	Technical Advisor	Senior Advisor, JICA
Midori Kurasawa	Cooperation Planning	Health Team4, Health Group2, Human Development Department, JICA
Takashi Morita	Chief Consultant/ Equipment Planning 1	INTEM Consulting, Inc
Kazushiro Suzuki	Equipment Planning 2	Estrella INC.
Kyo Hanada	Health Planning	Estrella INC.
Kyoko Arita	Procurement Planning/ Cost Estimation	INTEM Consulting, Inc
Mitsuhiro Nasu	Facility Planning	Japan Development Service Co., Ltd.

1-2　Draft Outline Design Explanatory Mission (September 27, 2021) *This was conducted online

Name	Sociality	Title, Organization
Tatsuya Ashida	Team Leader	Advisor, Health Team4, Health Group2, Human Development Department, JICA
Rei Kansaku	Technical Advisor	Senior Advisor, JICA
Midori Kurasawa	Cooperation Planning	Health Team4, Health Group2, Human Development Department, JICA
Takashi Morita	Chief Consultant/ Equipment Planning 1	INTEM Consulting, Inc
Kazushiro Suzuki	Equipment Planning 2	Estrella INC.
Kyo Hanada	Health Planning	Estrella INC.
Kyoko Arita	Procurement Planning/ Cost Estimation	INTEM Consulting, Inc

Appendix 2　Survey Schedule

2-1. Field Survey 1 (April 4 – April 30, 2021)

Schedule of Preliminary Survey
(In Tashkent)

Date		JICA member	Stay	Project Manager/ Equipment Planning 1 (MORITA)	Stay	Equipment Planning 2 (SUZUKI)	Stay	Procurement Planning/ Cost Estimation (ARITA)	Stay	Facility Planning (NASU)	Stay
		8	7	22	18	15	11	22	18	15	11
9-Apr	Fri			Japan→				Japan→		Japan→	
10-Apr	Sat			→Istanbul →				→Istanbul →		→Istanbul →	
11-Apr	Sun			Tashkent	Tashkent			Tashkent	Tashkent	Tashkent	Tashkent
12-Apr	Mon			JICA, MoH, Tashkent Pediatric Medical institute (medical),Tashkent state Dental Institute (medical)	Tashkent			JICA, MoH, Tashkent Pediatric Medical institute (medical),Tashkent state Dental Institute (medical)	Tashkent	JICA, MoH, Tashkent Pediatric Medical institute (medical),Tashkent state Dental Institute (medical)	Tashkent
13-Apr	Tue			Discussion on medical equipment and facility/utility	Tashkent			Discussion on medical equipment and facility/utility	Tashkent	Facility/utility discussion	Tashkent
14-Apr	Wed			Discussion on medical equipment and facility/utility	Tashkent			Discussion on medical equipment and facility/utility	Tashkent	Facility/utility discussion	Tashkent
15-Apr	Thu			Discussion on medical equipment and facility/utility	Tashkent			Discussion on medical equipment and facility/utility	Tashkent	Procurement survey (materials)	Tashkent
16-Apr	Fri			Customs survey and survey on import approval applications (VAT)	Tashkent	Japan→		Customs survey and survey on import approval applications (VAT)	Tashkent	Procurement survey (materials)	Tashkent
17-Apr	Sat			Team meeting	Tashkent	→Istanbul →		Team meeting	Tashkent	Team meeting	Tashkent
18-Apr	Sun			Team meeting	Tashkent	Tashkent	Tashkent	Team meeting	Tashkent	Team meeting	Tashkent
19-Apr	Mon			JICA, MoH, Tashkent Pediatric Medical Institute (education)/health and medical statistics survey	Tashkent	JICA, MoH, Tashkent Pediatric Medical Institute (education)/health and medical statistics survey	Tashkent	JICA, MoH, Tashkent Pediatric Medical Institute (education)/health and medical statistics survey	Tashkent	Procurement survey (materials)	Tashkent
20-Apr	Tue			Discussion on educational equipment	Tashkent	Discussion on educational equipment	Tashkent	Procurement survey (medical and educational equipment)	Tashkent	Additional survey	Tashkent
21-Apr	Wed			Discussion on educational equipment	Tashkent	Discussion on educational equipment	Tashkent	Procurement survey (medical and educational equipment)	Tashkent	Additional survey	Tashkent
22-Apr	Thu	Japan→Tashkent	Tashkent	Procurement survey (medical and educational equipment) JICA, MoH	Tashkent	Discussion on educational equipment/Procurement survey (educational equipment)	Tashkent	Procurement survey (medical and educational equipment)	Tashkent	Tashkent→Istanbul →	
23-Apr	Fri	MoH, Tashkent Pediatric Medical institute	Tashkent	MoH, Tashkent Pediatric Medical institute	Tashkent	MoH, Tashkent Pediatric Medical institute	Tashkent	MoH, Tashkent Pediatric Medical institute	Tashkent	Japan	
24-Apr	Sat	Team meeting	Tashkent	Team meeting	Tashkent	Team meeting	Tashkent	Team meeting	Tashkent		
25-Apr	Sun	Team meeting	Tashkent	Team meeting	Tashkent	Team meeting	Tashkent	Team meeting	Tashkent		
26-Apr	Mon	M/M discussion	Tashkent	M/M (technical notes) discussion	Tashkent	M/M (technical notes) discussion／Additional survey	Tashkent	Additional survey (Tax exemption)	Tashkent		
27-Apr	Tue	M/M discussion	Tashkent	M/M (technical notes) discussion	Tashkent	M/M (technical notes) discussion／Additional survey	Tashkent	Additional survey (Tax exemption)	Tashkent		
28-Apr	Wed	Signing M/M, reporting to Embassy and JICA Tashkent	Tashkent	Signing M/M and technical notes, reporting to Embassy and JICA	Tashkent	Additional survey (equipment/health statistics)	Tashkent	Additional survey (Tax exemption)	Tashkent		
29-Apr	Thu	→Japan		Tashkent→Istanbul →		Tashkent→Istanbul →		Tashkent→Istanbul →			
30-Apr	Fri			Japan		Japan		Japan			

Appendix 3　List of Parties Concerned in the Recipient Country

Institution	Name	Department, Position
Ministry of Health	Abdulla Azizov	Deputy Minister
	Botir Holmuradov	Head of investment department
	Sarvar Mirakhmedov	Chief Specialist
	Bakhrom Durmanov	Head of Health Statistics Department
	Mirazim MirtalipovI	Department of Finance
Karakalpakustan Medical Institute	Ataniyazova Oral	Hospital Director
	Xamidullaev Dawlet	Vice President/Neurosurgeon
	Seytnazarova Ayparsha	Director of Polyclinic
	Sabirov Ruslan	Surgeon
	Nurmahova Murshida	Head of Education Division
	Babashev Mir-pulat	Director of Management and Technology
	Reymov Timur	Head of Clinical Division
Ministry of Investments and Foreign Trade	Olimjon Djumabaev	Head of Department for cooperation with Japan
	Azamat Abduganiev	Chef Officer of Department for cooperation with international financial institutions
Tashkent Pedicatric Medical Institute	Khaitov Kakhramon	President of the institution
Department of Education	Ashurova Dilfuza	Department of Pediatrics
	Abdullaeva Umida	Department of International Affairs
Department of Hospital	Jalilov Abdumalik	Hospital Director
	Usmonova Naina	Vice President
	Nosirov Ravshan	Vice President
National Pediatrics Center	Adham Mamatkulov	Vice President
	Davron Kadyrov	Department of Neurosurgery
	Doctor	Department of Surgery
Tashkent Medical Academy	Khikmat Boltaboev	Head of Training center

Minutes of Discussions

on the Preparatory Survey

for the Project

for Improvement of Medical Service

at the Karakalpakstan Medical Institute

In response to the request from the Government of the Republic of Uzbekistan (hereinafter referred to as "Uzbekistan"), Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Preparatory Survey Team for the Outline Design (hereinafter referred to as "the Team") of the Project for the Project for Improvement of Medical Service at the Medical Institute of Karakalpakstan (hereinafter referred to as "the Project") to Uzbekistan. The Team held a series of discussions with the officials of the Government of Uzbekistan and conducted a field survey. In the course of the discussions, both sides have confirmed the main items described in the attached sheets.

Tashkent, 28th, April, 2021

Mr. Tatsuya ASHIDA
Leader, Preparatory Survey Team
Japan International Cooperation Agency
Japan

Mr. Abdulla AZIZOV
Deputy Minister
Ministry of Health of the Republic of Uzbekistan
Uzbekistan

ATTACHMENT

1. Objective of the Project

The objective of the Project is to improve the quality of regional health care service and medical education through providing quality medical equipment to Clinic of the Karakalpakstan Medical Institutewhich is a base of medical service provision and human resources development in the Republic of Karakalpakstan, thereby contributing to improve the health status of the people who live in this region.

2. Title of the Project

The name of the Institute was renamed from the Nukus branch of Tashkent Pediatrics Medical Institute to the Karakalpakstan Medical Institute in 2020 by President Order. Both sides confirmed it and this change will be reflected to the Project title such as the Project for Improvement of Medical Service at the Karakalpakstan Medical Institute. The title will be decided by Government of Japan through the official approval process.

3. Project site

Both sides confirmed that the site of the Project is in city of Nukus, Republic of Karakalpakstan, which is shown in Annex1.

4. Responsible authority for the Project

Both sides confirmed the authorities responsible for the Project are as follows:

4-1. The Ministry of Health of Uzbekistan will be the executing agency for the Project (hereinafter referred to as "the Executing Agency"). The Executing Agency shall coordinate with all the relevant authorities to ensure smooth implementation of the Project. The undertakings for the Project shall be managed by relevant authorities properly and timely manner. The organization charts are shown in Annex2.

5. Items requested by the Government of Uzbekistan

5-1. As a result of discussions, both sides confirmed that the items requested by the Government of Uzbekistan are as shown in Annex 4

5-2. JICA will assess the feasibility of the above requested items through the survey and will report the findings to the Government of Japan. The final scope of the

Project will be decided by the Government of Japan.

5-3. Both sides confirmed that the Equipment covered by the Japanese Grant (hereinafter "the Grant") will be selected from the Equipment List shown in Annex 4 according to their priorities.

5-4. The Team explained that the equipment covered by the Grant will be finalized after the further analysis and will explain at the survey for the explanation of the Draft Preparatory Survey Report.

5-5 The Team also explained that the modification of the design of the Project including equipment covered by the Grant will be assessed based on the Procurement Guidelines for the Japanese Grants (Type I) and, therefore, replacement of the Equipment after the agreement of the Equipment list shown in Annex 4 will be imposed certain limit due to inconsistency with original plan.

6. Procedures and Basic Principles of the Grant

6-1. The Uzbekistan side agreed that the procedures and basic principles of the Grant as described in Annex3 shall be applied to the Project.

As for the monitoring of the implementation of the Project, JICA requires Uzbekistan side to submit the Project Monitoring Report, the form of which is attached as Annex5.

6-2. The Uzbekistan side agreed to take the necessary measures, as described in Annex6, for smooth implementation of the Project. The contents of the Annex6 will be elaborated and refined during the Preparatory Survey and be agreed in the mission dispatched for explanation of the Draft Preparatory Survey Report.

The contents of Annex6 will be updated as the Preparatory Survey progresses, and eventually, will be used as an attachment to the Grant Agreement.

7. Schedule of the Survey

7-1. JICA will prepare a draft Preparatory Survey Report in Russian and dispatch a mission to Uzbekistan in order to explain its contents around September 2021.

7-2. If the contents of the draft Preparatory Survey Report is accepted and the undertakings for the Project are fully agreed by the Uzbekistan side, JICA will finalize the Preparatory Survey Report and send it to Uzbekistan around February 2022.

7-3. The above schedule is tentative and subject to change.

8. Environmental and Social Considerations

8-1. The Uzbekistan side confirmed to give due environmental and social considerations before and during implementation, and after completion of the Project, in accordance with the JICA Guidelines for Environmental and Social Considerations (April, 2010).

8-2. The Project is categorized as "C" from the following considerations:
Not located in a sensitive area, nor has it sensitive characteristics, nor falls it into sensitive sectors under the Guidelines, and its potential adverse impacts on the environment are not likely to be significant.

9. Other Relevant Issues

9-1. Equipment/Facilities not to be covered by the Grant.
Uzbekistan side agreed to procure following items by its own expenses after the discussion. They are installed before all equipment are delivered to the hospital.

- Oxygen station with compressed air station
- Necessary construction work for installing CT such as reinforcing the floor, install the door, protection from radiation and etc.

9-2 Maintenance on the Equipment to be procured

(1)Allocation of Budget and Human Recourses

Uzbekistan side agreed to secure and allocate the necessary staff and budget to operate and maintain the medical equipment procured under the Project properly and effectively.

Uzbekistan side will coordinate possibility of ensuring necessary budget from income created by using provided equipment.by the Grant.

(2)Maintenance Services

The Team explained that the importance of the routine maintenance and periodical maintenance service of some major medical equipment. Keeping this in view, both sides agreed to consider inclusion of three years maintenance service contract to the major medical equipment that need frequent maintenance into the Project.

Uzbekistan side also agreed to secure maintenance cost after expiring maintenance contract and/or manufacture guarantee to be covered by the Grant. The period of the maintenance contract and/or manufacture guarantee depends on the equipment, therefore, JICA will inform the result of the maintenance service of each Equipment to be covered by the Grant at the mission

dispatched for explanation of the Draft Preparatory Survey Report.

9-3 The Registration of Equipment

Uzbekistan side agreed to take necessary measure for ensuring prompt custom clearance including unloading imported equipment from a bonded warehouse within 6 (six) months Uzbekistan side took note that the extra charges cannot be covered by the Grant nor be charged to the Supplier in case of exceeding 6 (six) months storage at the warehouse.

9-4 The system of maintenance in the clinic

Uzbekistan side took note of the importance of equipment maintenance and agreed to assign a person who takes charge of the maintenance of the Equipment in Clinic of the Karakalpakstan Medical Institute.

9-5 Soft Components

Uzbekistan side took note of the importance of operational trainings for equipment and requested to consider incorporating soft components into the Project. The team agreed to plan to include operational trainings as soft components. The concrete content would be considered continuously.

9-6 Gender Mainstreaming

Both sides confirmed that following gender elements shall be duly reflected in the scope of Preparatory Survey.

(1) Collection of information and gender disaggregated data for assessment of gender needs. Especially, there might be a gender differences regarding disease burden, medical examination rate or training situation, for example, so conduct the survey of the needs specific to women.

(2) Suggestion on gender strategy regarding equipment.

Annex 1 Project Site

Annex 2 Organization Chart

Annex 3 Japanese Grant

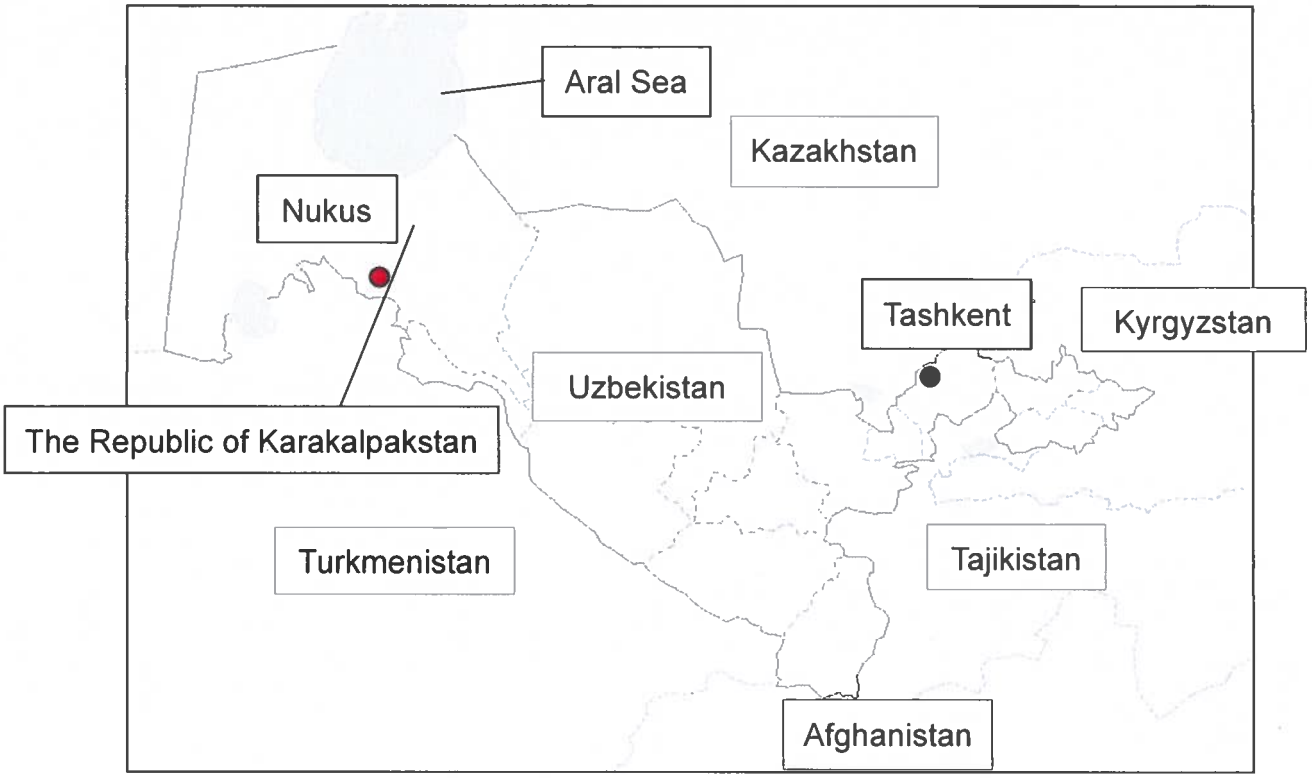
Annex 4 Equipment List

Annex 5 Project Monitoring Report (template)

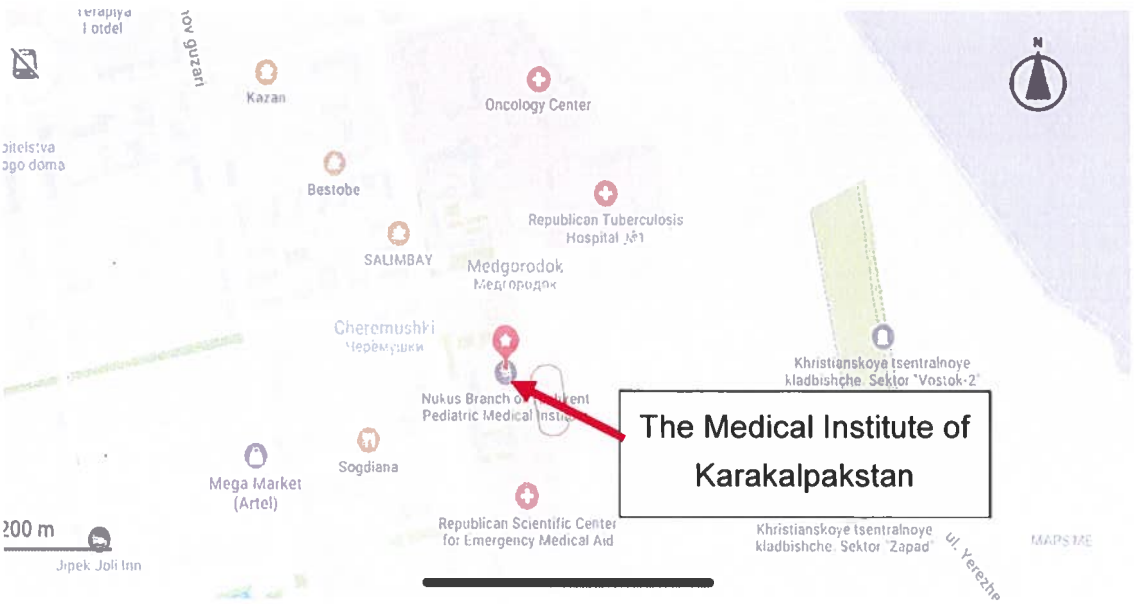
Annex 6 Major Undertakings to be taken by the Government of Uzbekistan

Annex1

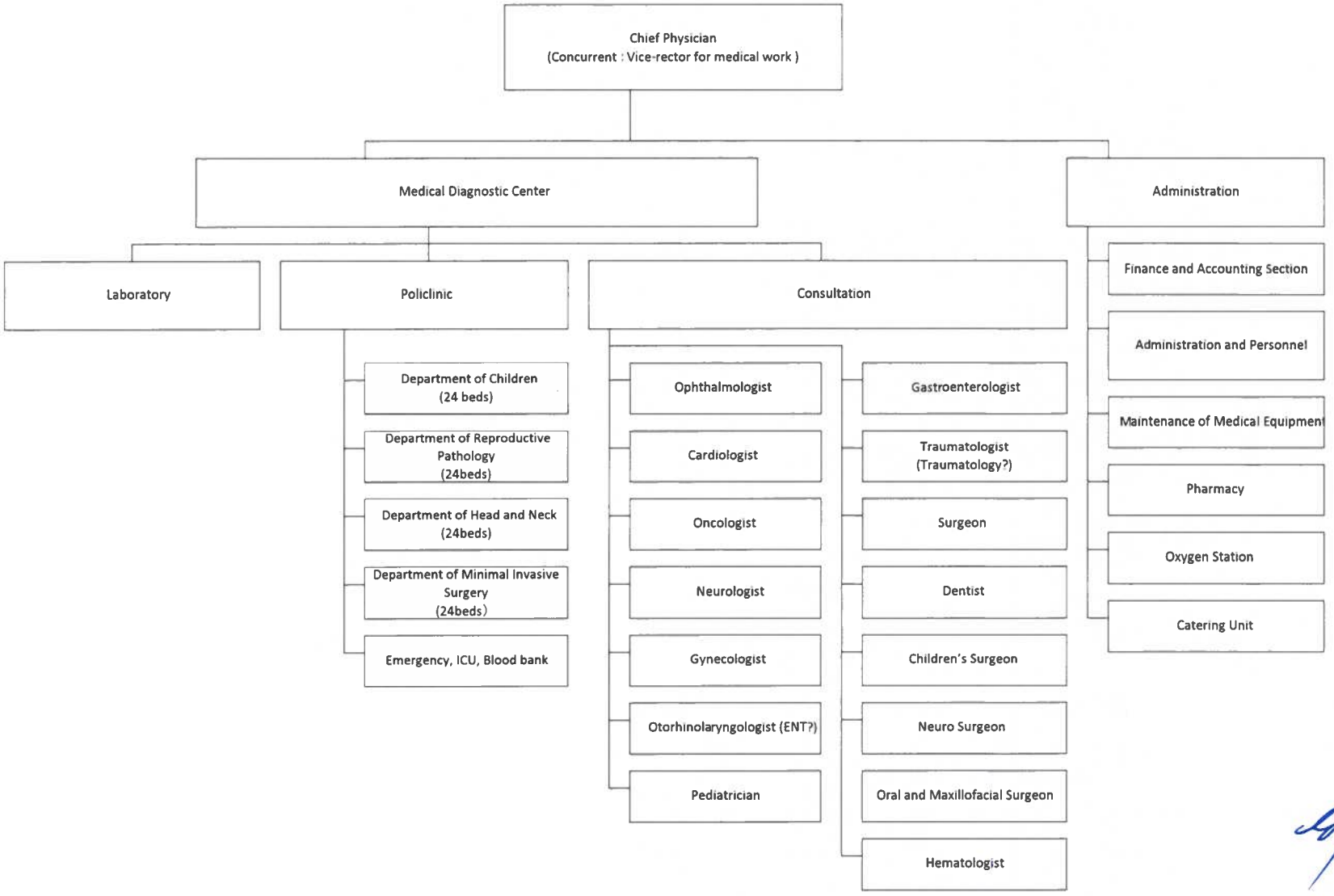
Project Site



source : JICA

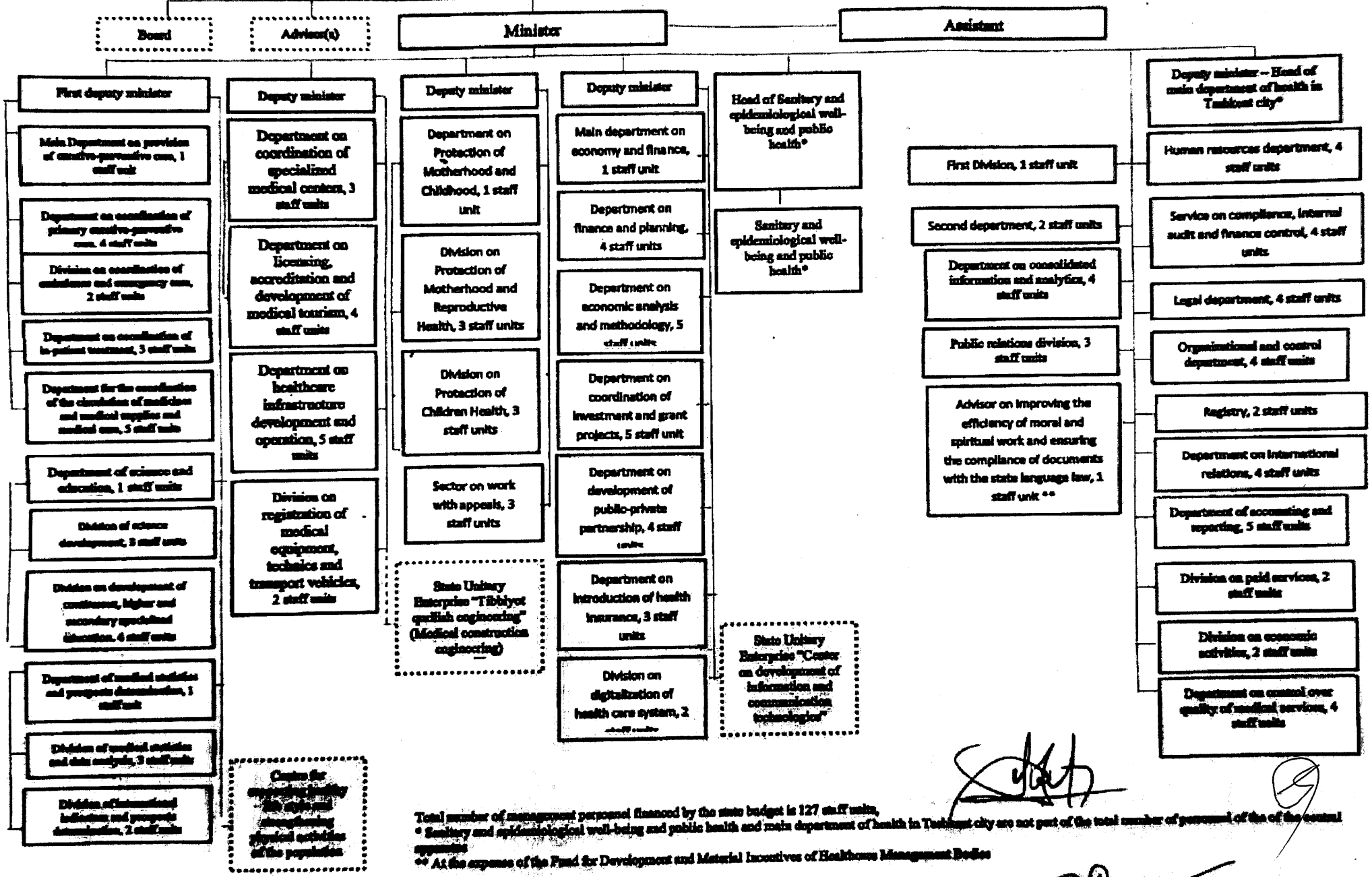


source : Open Street Map


Chief Physician
(Concurrent : Vice-rector for medical work)
Medical Diagnostic Center
Administration
Laboratory
Policlinic
Consultation
Finance and Accounting Section
Administration and Personnel
Maintenance of Medical Equipment
Pharmacy
Oxygen Station
Catering Unit
Department of Children
(24 beds)
Department of Reproductive
Pathology
(24beds)
Department of Head and Neck
(24beds)
Department of Minimal Invasive
Surgery
(24beds)
Emergency, ICU, Blood bank
Ophthalmologist
Cardiologist
Oncologist
Neurologist
Gynecologist
Otorhinolaryngologist (ENT?)
Pediatrician
Gastroenterologist
Traumatologist
(Traumatology?)
Surgeon
Dentist
Children's Surgeon
Neuro Surgeon
Oral and Maxillofacial Surgeon
Hematologist

A10

Organizational structure of the central apparatus of the Ministry of Health of the Republic of Uzbekistan



Total number of management personnel financed by the state budget is 127 staff units,

* Sanitary and epidemiological well-being and public health and main department of health in Tashkent city are not part of the total number of personnel of the of the central apparatus

** At the expense of the Fund for Development and Material Incentives of Healthcare Management Bodies

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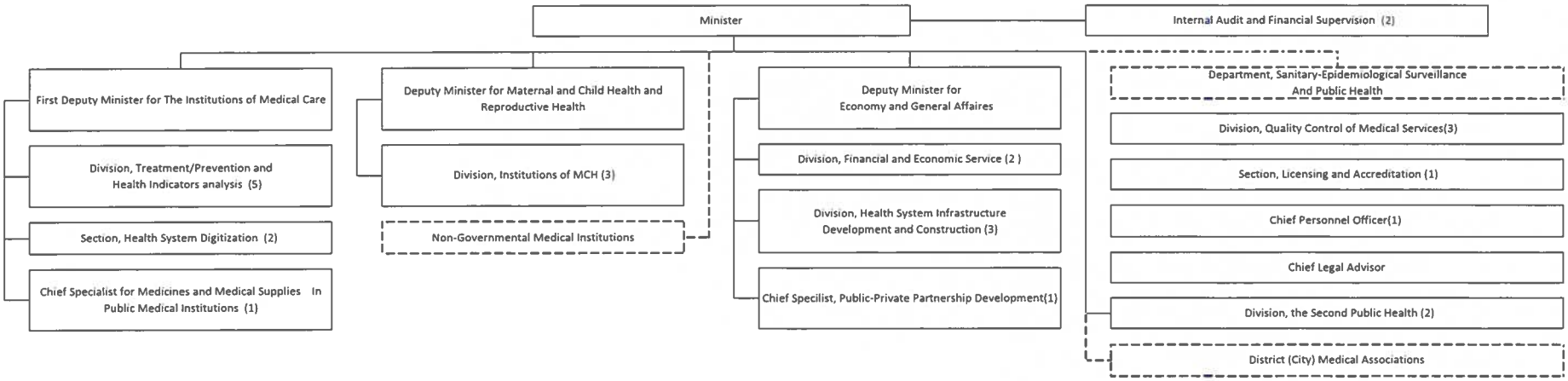

***
注 ***

Maximum number of management Personnel -31 管理職定員の上限は31名

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JAPANESE GRANT

The Japanese Grant is non-reimbursable fund provided to a recipient country (hereinafter referred to as "the Recipient") to purchase the products and/or services (engineering services and transportation of the products, etc.) for its economic and social development in accordance with the relevant laws and regulations of Japan. Followings are the basic features of the project grants operated by JICA (hereinafter referred to as "Project Grants").

1. Procedures of Project Grants

Project Grants are conducted through following procedures (See "PROCEDURES OF JAPANESE GRANT" for details):

(1) Preparation

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

(2) Appraisal

-Appraisal by the government of Japan (hereinafter referred to as "GOJ") and JICA, and Approval by the Japanese Cabinet

(3) Implementation

Exchange of Notes

-The Notes exchanged between the GOJ and the government of the Recipient

Grant Agreement (hereinafter referred to as "the G/A")

-Agreement concluded between JICA and the Recipient

Banking Arrangement (hereinafter referred to as "the B/A")

-Opening of bank account by the Recipient in a bank in Japan (hereinafter referred to as "the Bank") to receive the grant

Construction works/procurement

-Implementation of the project (hereinafter referred to as "the Project") on the basis of the G/A

(4) Ex-post Monitoring and Evaluation

-Monitoring and evaluation at post-implementation stage

2. Preparatory Survey

(1) Contents of the Survey

The aim of the Survey is to provide basic documents necessary for the appraisal of the the Project made by the GOJ and JICA. The contents of the Survey are as follows:

- Confirmation of the background, objectives, and benefits of the Project and also institutional capacity of

relevant agencies of the Recipient necessary for the implementation of the Project.

- Evaluation of the feasibility of the Project to be implemented under the Japanese Grant from a technical, financial, social and economic point of view.
- Confirmation of items agreed between both parties concerning the basic concept of the Project.
- Preparation of an outline design of the Project.
- Estimation of costs of the Project.
- Confirmation of Environmental and Social Considerations

The contents of the original request by the Recipient are not necessarily approved in their initial form. The Outline Design of the Project is confirmed based on the guidelines of the Japanese Grant.

JICA requests the Recipient to take measures necessary to achieve 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 executing agency of the Project. Therefore, the contents of the Project are confirmed by all relevant organizations of the Recipient based on the Minutes of Discussions.

(2) Selection of Consultants

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

(3) Result of the Survey

JICA reviews the report on the results of the Survey and recommends the GOJ to appraise the implementation of the Project after confirming the feasibility of the Project.

3. Basic Principles of Project Grants

(1) Implementation Stage

1) The E/N and the G/A

After the Project is approved by the Cabinet of Japan, the Exchange of Notes (hereinafter referred to as "the E/N") will be singed between the GOJ and the Government of the Recipient to make a pledge for assistance, which is followed by the conclusion of the G/A between JICA and the Recipient to define the necessary articles, in accordance with the E/N, to implement the Project, such as conditions of disbursement, responsibilities of the Recipient, and procurement conditions. The terms and conditions generally applicable to the Japanese Grant are stipulated in the "General Terms and Conditions for Japanese Grant (January 2016)."

2) Banking Arrangements (B/A) (See "Financial Flow of Japanese Grant (A/P Type)" for details)

a) The Recipient shall open an account or shall cause its designated authority to open an account under the name of the Recipient in the Bank, in principle. JICA will disburse the Japanese Grant in Japanese yen for the Recipient to cover the obligations incurred by the Recipient under the verified contracts.

b) The Japanese Grant will be disbursed when payment requests are submitted by the Bank to JICA under an Authorization to Pay (A/P) issued by the Recipient.

3) Procurement Procedure

The products and/or services necessary for the implementation of the Project shall be procured in accordance with JICA's procurement guidelines as stipulated in the G/A.

4) Selection of Consultants

In order to maintain technical consistency, the consulting firm(s) which conducted the Survey will be recommended by JICA to the Recipient to continue to work on the Project's implementation after the E/N and G/A.

5) Eligible source country

In using the Japanese Grant disbursed by JICA for the purchase of products and/or services, the eligible source countries of such products and/or services shall be Japan and/or the Recipient. The Japanese Grant may be used for the purchase of the products and/or services of a third country as eligible, if necessary, taking into account the quality, competitiveness and economic rationality of products and/or services necessary for achieving the objective of the Project. However, the prime contractors, namely, constructing and procurement firms, and the prime consulting firm, which enter into contracts with the Recipient, are limited to "Japanese nationals", in principle.

6) Contracts and Concurrence by JICA

The Recipient will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be concurred by JICA in order to be verified as eligible for using the Japanese Grant.

7) Monitoring

The Recipient is required to take their initiative to carefully monitor the progress of the Project in order to ensure its smooth implementation as part of their responsibility in the G/A, and to regularly report to JICA about its status by using the Project Monitoring Report (PMR).

8) Safety Measures

The Recipient must ensure that the safety is highly observed during the implementation of the Project.

9) Construction Quality Control Meeting

Construction Quality Control Meeting (hereinafter referred to as the "Meeting") will be held for quality assurance and smooth implementation of the Works at each stage of the Works. The member of the Meeting will be composed by the

Recipient (or executing agency), the Consultant, the Contractor and JICA. The functions of the Meeting are as followings:

a) Sharing information on the objective, concept and conditions of design from the Contractor, before start of construction.

b) Discussing the issues affecting the Works such as modification of the design, test, inspection, safety control and the Client's obligation, during of construction.

(2) Ex-post Monitoring and Evaluation Stage

1) After the project completion, JICA will continue to keep in close contact with the Recipient in order to monitor that the outputs of the Project is used and maintained properly to attain its expected outcomes.

2) In principle, JICA will conduct ex-post evaluation of the Project after three years from the completion. It is required for the Recipient to furnish any necessary information as JICA may reasonably request.

(3) Others

1) Environmental and Social Considerations

The Recipient shall carefully consider environmental and social impacts by the Project and must comply with the environmental regulations of the Recipient and JICA Guidelines for Environmental and Social Considerations (April, 2010).

2) Major undertakings to be taken by the Government of the Recipient

For the smooth and proper implementation of the Project, the Recipient is required to undertake necessary measures including land acquisition, and bear an advising commission of the A/P and payment commissions paid to the Bank as agreed with the GOJ and/or JICA. The Government of the Recipient shall ensure that customs duties, internal taxes and other fiscal levies which may be imposed in the Recipient with respect to the purchase of the Products and/or the Services be exempted or be borne by its designated authority without using the Grant and its accrued interest, since the grant fund comes from the Japanese taxpayers.

3) Proper Use

The Recipient is required to maintain and use properly and effectively the products and/or services under the Project (including the facilities constructed and the equipment purchased), to assign staff necessary for this operation and maintenance and to bear all the expenses other than those covered by the Japanese Grant.

4) Export and Re-export

The products purchased under the Japanese Grant should not be exported or re-exported from the Recipient.

Requested equipment list Ann

No.	Title	Quantity	Priority
1	CT scanner, 128 slices	1	A+
2	Stationary ultrasound scanner	3	A+ (2), A(1)
3	Mobile clinic	1	A+
4	C-arm	1	A
5	Bacteriological analyzer	1	A+
6	Automated immune-analyzer	1	A+
7	Endoscope for otolaryngological surgery	1	A+
8	Endoscope for laparoscopic surgery	1	A+
9	Endoscope for hysteroscopic surgery	1	A+
10	Colposcope	1	A+
11	Endoscope for arthroscopic surgery	1	A
12	Ventilator	1	A+
13	ENT unit with microscope	1	A+
14	Plasma sterilizer	1	A+
15	Washer disinfector set	1	A+
16	Endoscopic simulator for laparoscopic surgery	1	A+
17	Simulator for flexible videoendoscopy	1	A+
18	Endoscopic simulator for pediatric	1	A+
19	Endoscopic simulator for gynecology	1	A+
20	Virtual patient for therapy	1	A+
21	Patient simulator (child and adult)	1	A+
22	Resuscitation patient simulator (child and adult)	1	A+
23	Endoscopic simulator for arthroscopic surgery	1	A-
24	Electrosurgical coagulator	3	A+
25	Universal operating microscope	1	A+
26	Bone surgery unit	1	A+
27	3D virtual dissection table	1	A+
28	Patient simulator for thoracic trauma	1	A+
29	Simulator for physical assessment	1	A+

Project Monitoring Report
on
Project Name
Grant Agreement No. XXXXXXX

20XX, Month

Organizational Information

Signer of the G/A (Recipient)	Person in Charge (Designation) _____ Contacts Address: _____ Phone/FAX: _____ Email: _____
Executing Agency	Person in Charge (Designation) _____ Contacts Address: _____ Phone/FAX: _____ Email: _____
Line Ministry	Person in Charge (Designation) _____ Contacts Address: _____ Phone/FAX: _____ Email: _____

General Information:

Project Title	
E/N	Signed date: Duration:
G/A	Signed date: Duration:
Source of Finance	Government of Japan: Not exceeding JPY _____ mil. Government of (_____): _____

1: Project Description

1-1 Project Objective

1-2 Project Rationale

- Higher-level objectives to which the project contributes (national/regional/sectoral policies and strategies)
- Situation of the target groups to which the project addresses

1-3 Indicators for measurement of "Effectiveness"

Quantitative indicators to measure the attainment of project objectives		
Indicators	Original (Yr)	Target (Yr)
Qualitative indicators to measure the attainment of project objectives		

2: Details of the Project

2-1 Location

Components	Original *(proposed in the outline design)*	Actual
1.		

2-2 Scope of the work

Components	Original* *(proposed in the outline design)*	Actual*
1.		

Reasons for modification of scope (if any).

(PMR)

2-3 Implementation Schedule

Items	Original		Actual
	(proposed in the outline design)	*(at the time of signing the Grant Agreement)*	

Reasons for any changes of the schedule, and their effects on the project (if any)

2-4 Obligations by the Recipient

2-4-1 Progress of Specific Obligations

See Attachment 2.

2-4-2 Activities

See Attachment 3.

2-4-3 Report on RD

See Attachment 11.

2-5 Project Cost

2-5-1 Cost borne by the Grant(Confidential until the Bidding)

Components			Cost (Million Yen)	
	Original *(proposed in the outline design)*	Actual *(in case of any modification)*	Original[1),2)] *(proposed in the outline design)*	Actual
	1.			
Total				

Note: 1) Date of estimation:
2) Exchange rate: 1 US Dollar = Yen

2-5-2 Cost borne by the Recipient

Components			Cost (1,000 Taka)	
	Original *(proposed in the outline design)*	Actual *(in case of any modification)*	Original[1),2)] *(proposed in the outline design)*	Actual
	1.			

Note: 1) Date of estimation:
2) Exchange rate: 1 US Dollar =

Reasons for the remarkable gaps between the original and actual cost, and the countermeasures (if any)

(PMR)

2-6 Executing Agency

- Organization's role, financial position, capacity, cost recovery etc,
- Organization Chart including the unit in charge of the implementation and number of employees.

Original *(at the time of outline design)* name: role: financial situation: institutional and organizational arrangement (organogram): human resources (number and ability of staff):
Actual *(PMR)*

2-7 Environmental and Social Impacts

- The results of environmental monitoring based on Attachment 5 (in accordance with Schedule 4 of the Grant Agreement).
- The results of social monitoring based on in Attachment 5 (in accordance with Schedule 4 of the Grant Agreement).
- Disclosed information related to results of environmental and social monitoring to local stakeholders (whenever applicable).

3: Operation and Maintenance (O&M)

3-1 Physical Arrangement

- Plan for O&M (number and skills of the staff in the responsible division or section, availability of manuals and guidelines, availability of spareparts, etc.)

Original *(at the time of outline design)*
Actual *(PMR)*

3-2 Budgetary Arrangement

- Required O&M cost and actual budget allocation for O&M

Original *(at the time of outline design)*

Actual *(PMR)*

4: Potential Risks and Mitigation Measures

- Potential risks which may affect the project implementation, attainment of objectives, sustainability
- Mitigation measures corresponding to the potential risks

Assessment of Potential Risks *(at the time of outline design)*

Potential Risks	Assessment
1. (Description of Risk)	Probability: High/Moderate/Low
	Impact: High/Moderate/Low
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action required during the implementation stage:
	Contingency Plan (if applicable):
2. (Description of Risk)	Probability: High/Moderate/Low
	Impact: High/Moderate/Low
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action required during the implementation stage:
	Contingency Plan (if applicable):
3. (Description of Risk)	Probability: High/Moderate/Low
	Impact: High/Moderate/Low
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action required during the implementation stage:

	Contingency Plan (if applicable):
Actual Situation and Countermeasures	
(PMR)	

5: Evaluation and Monitoring Plan (after the work completion)

5-1 Overall evaluation

Please describe your overall evaluation on the project.

5-2 Lessons Learnt and Recommendations

Please raise any lessons learned from the project experience, which might be valuable for the future assistance or similar type of projects, as well as any recommendations, which might be beneficial for better realization of the project effect, impact and assurance of sustainability.

5-3 Monitoring Plan of the Indicators for Post-Evaluation

Please describe monitoring methods, section(s)/department(s) in charge of monitoring, frequency, the term to monitor the indicators stipulated in 1-3.

Attachment

1. Project Location Map
2. Specific obligations of the Recipient which will not be funded with the Grant
3. Monthly Report submitted by the Consultant

Appendix - Photocopy of Contractor's Progress Report (if any)
- Consultant Member List
- Contractor's Main Staff List

4. Check list for the Contract (including Record of Amendment of the Contract/ Agreement and Schedule of Payment)
5. Environmental Monitoring Form / Social Monitoring Form
6. Monitoring sheet on price of specified materials (Quarterly)
7. Report on Proportion of Procurement (Recipient Country, Japan and Third Countries) (PMR (final)only)
8. Pictures (by JPEG style by CD-R) (PMR (final)only)
9. Equipment List (PMR (final)only)
10. Drawing (PMR (final)only)
11. Report on RD (After project)

Attachment 6

Monitoring sheet on price of specified materials

1. Initial Conditions (Confirmed)

	Items of Specified Materials	Initial Volume A	Initial Unit Price (¥) B	Initial total Price C=A×B	1% of Contract Price D	Condition of payment	
						Price (Decreased) E=C－D	Price (Increased) F=C＋D
1	Item 1	●●t	●	●	●	●	●
2	Item 2	●●t	●	●	●		
3	Item 3						
4	Item 4						
5	Item 5						

2. Monitoring of the Unit Price of Specified Materials

(1) Method of Monitoring : ●●

(2) Result of the Monitoring Survey on Unit Price for each specified materials

	Items of Specified Materials	1st ●month, 2015	2nd ●month, 2015	3rd ●month, 2015	4th	5th	6th
1	Item 1						
2	Item 2						
3	Item 3						
4	Item 4						
5	Item 5						

(3) Summary of Discussion with Contractor (if necessary)

-
-
-

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Report on Proportion of Procurement (Recipient Country, Japan and Third Countries)
(Actual Expenditure by Construction and Equipment each)

		Domestic Procurement (Recipient Country) A	Foreign Procurement (Japan) B	Foreign Procurement (Third Countries) C	Total D
Construction Cost		(A/D%)	(B/D%)	(C/D%)	
	Direct Construction Cost	(A/D%)	(B/D%)	(C/D%)	
	others	(A/D%)	(B/D%)	(C/D%)	
Equipment Cost		(A/D%)	(B/D%)	(C/D%)	
Design and Supervision Cost		(A/D%)	(B/D%)	(C/D%)	
Total		(A/D%)	(B/D%)	(C/D%)	

Annex 6

Major Undertakings to be taken by the Government of Uzbekistan

1. Specific obligations of the Government of Uzbekistan which will not be funded with the Grant

(1) Before the Bidding

NO	Items	Deadline	In charge	Estimated Cost	Ref.
1	To sign the banking arrangement (B/A) with a bank in Japan (the Agent Bank) to open bank account for the Grant	within 1 month after the signing of the G/A	MOF		
2	To issue A/P to the Agent Bank for the payment to the consultant	within 1 month after the signing of the contract	MOH		
3	To bear the following commissions to the Agent Bank for the banking services based upon B/A				
	1) Advising commission of A/P	within 1 month after the signing of the contract	MOH		
	2) Payment commission for A/P	every payment	MOH		
4	To submit Project Monitoring Report (with the result of Detailed Design)	before preparation of the bidding documents	MOH		

(2) During the Project Implementation

NO	Items	Deadline	In charge	Estimated Cost	Ref.
1	To issue A/P to the Agent Bankfor the payment to the supplier and the contractor	within 1 month after the signing of the contract	MOH		
2	To bear the following commissions to the Agent Bank for the banking services based upon the B/A				
	1) Advising commission of A/P	within 1 month after the signing of the contract	MOH		
	2) Payment commission for A/P	every payment	MOH		
3	To ensure prompt customs clearance and to assist the Supplier(s) with internal transportation in the country of the Recipient	during the Project	MOH		
4	To accord Japanese physical persons and/or physical persons of third countries whose services may be required in connection with the supply of the products and the services such facilities as may be necessary for their entry into the country of the Recipient and stay therein for the performance of their work	during the Project	MOH		
5	To ensure that customs duties, internal taxes and other fiscal levies which may be imposed in the country of the Recipient with respect to the purchase of the products and/or the services be exempted.	during the Project	MOH		
6	To bear all the expenses, other than those covered by the Grant, necessary for the implementation of the Project	during the Project	MOH		
7	To notify JICA promptly of any incident or accident, which has, or is likely to have, a significant adverse effect on the environment, the affected communities, the public or workers.	during the Project	MOH		
8	To submit Project Monitoring Report after each work under the contract(s) such as shipping, hand over, installation and operational training	within 1 month after completion of each work	MOH		
	To submit Project Monitoring Report (final) (including as-built drawings, equipment list, photographs, etc.)	within 1 month after issuance of Certificate of Completion for the works under the contract(s)	MOH		
9	To submit a report concerning completion of the Project	within 6 months after completion of the Project	MOH		
10	To assign a person who takes charge of the maintenance of the Equipment	during the Project	MOH/KMI		
11	Training for personnel who use the Equipment	before the handover of the Equipment	KMI[1]		
12	To provide facilities for distribution of electricity, water supply and drainage and other incidental facilities necessary for the implementation of the Project outside the site				
	1) Electricity The distributing line to the site Procurign the devices for stabilize electricity.	before the instaration of all equipment	MOH/KMI		
	2) Water Supply The city water distribution main to the site Installation of water filter		MOH/KMI		
	3) Drainage The city drainage main (for storm, sewer and others) to the site	6 months before completion of the instration	MOH/KMI		
13	To provide equipment, furniture for medicl and laboratory equipment , facilities necessary for the implementation of the Project in the site				
	1) Oxygen station with compressed air station 2) Necessary construction work for installing CT such as reinforcing,the flour, install the door, protection from radiation and etc.	before start of the instration of all equipment	MOH/KMI		
14	To ensure the safety of persons engaged in the implementation of the Project .	during the Project	MOH		

[1] TheKarakalpakstan Medical Institute (hereinafter 'KMI')

(3) After the Project

NO	Items	Deadline	In charge	Estimated Cost	Ref.
1	To maintain and use properly and effectively the equipment provided under the Grant Aid 1) Allocation of maintenance cost 2) Operation and maintenance structure 3) Routine check/Periodic inspection	After completion of the project	KMI		

2. Other obligations of the Government of Uzbekistan funded with the Grant

NO	Items	Deadline	Amount (Million Japanese Yen)*
1	To provide equipment 1) To conduct the following transportation a) Marin (Air) transportation of the products from Japan to the country of the Recipient b) Internal transportation from the port of disembarkation to the project site.		
	2) To provide equipment with installation and commissioning.		
2	To implement detailed design, bidding support and procurement supervision (Consulting Service)		
	Total		XXX

* The Amount is provisional. This is subject to the approval of the Government of Japan.

Minutes of Discussions
on the Preparatory Survey
for the Project
for Improvement of Medical Service
at the Karakalpakstan Medical Institute

(Explanation on Draft Preparatory Survey Report)

With reference to the minutes of discussions signed between Ministry of Health of the Republic of Uzbekistan and the Japan International Cooperation Agency (hereinafter referred to as "JICA") on 28th April 2021 and in response to the request from the Government of the Republic of Uzbekistan (hereinafter referred to as "Uzbekistan") dated 14th June 2021, JICA dispatched the Preparatory Survey Team (hereinafter referred to as "the Team") for the explanation of Draft Preparatory Survey Report (hereinafter referred to as "the Draft Report") for the Project for Improvement of Medical Service at the Karakalpakstan Medical Institute (hereinafter referred to as "the Project").

As a result of the discussions, both sides agreed on the main items described in the attached sheets.

Tashkent, 27, September, 2021

Mr. Tatsuya ASHIDA
Leader, Preparatory Survey Team
Japan International Cooperation Agency
Japan

Mr. Abdulla AZIZOV
Deputy Minister
Ministry of Health of the Republic of Uzbekistan
Uzbekistan

ATTACHEMENT

1. Objective of the Project

   The objective of the Project is to improve the quality of regional health care service and medical education through providing high quality medical equipment to Clinic of the Karakalpakstan Medical Institute, which is a base of medical service provision and human resources development in the Republic of Karakalpakstan, thereby contributing to improve the health status of the people who live in this region.

2. Title of the Preparatory Survey

   The name of the Institute was renamed from the Nukus branch of Tashkent Pediatrics Medical Institute to the Karakalpakstan Medical Institute in 2020 by President Order. Both sides confirmed it and this change will be reflected to the Project title such as the Project for Improvement of Medical Service at the Karakalpakstan Medical Institute". The title will be decided by Government of Japan through the official approval process.

3. Project site

   Both sides confirmed that the site of the Project is in city of Nukus, Republic of Karakalpakstan, which is shown in Annex 1.

4. Responsible authority for the Project

   Both sides confirmed the authorities responsible for the Project are as follows:

   4-1. The Ministry of Health of Uzbekistan will be the executing agency for the Project (hereinafter referred to as "the Executing Agency"). The Executing Agency shall coordinate with all the relevant authorities to ensure smooth implementation of the Project and ensure that the undertakings for the Project shall be taken care by relevant authorities properly and on time. The organization charts are shown in Annex 2.

5. Contents of the Draft Report

   After the explanation of the contents of the Draft Report by the Team, the Uzbekistan side agreed to its contents. JICA will finalize the Preparatory Survey Report based on the confirmed items. The report will be sent to the Uzbekistan side around January.

6. Cost estimate

Both sides confirmed that the cost estimate explained by the Team is provisional and will be examined further by the Government of Japan for its approval.

7. Confidentiality of the cost estimate and technical specifications

Both sides confirmed that the cost estimate and technical specifications of the Project should never be disclosed to any third parties until all the contracts under the Project are concluded.

8. Procedures and Basic Principles of Japanese Grant

The Uzbekistan side agreed that the procedures and basic principles of Japanese Grant (hereinafter referred to as "the Grant") as described in Annex 3 shall be applied to the Project. In addition, the Uzbekistan side agreed to take necessary measures according to the procedures.

9. Timeline for the project implementation

The Team explained to the Uzbekistan side that the expected timeline for the project implementation is as attached in Annex 5. Both sides agreed that it is provisional and the site inspection by the Japanese Consultant is necessary to confirm the actual condition in the field.

10. Expected outcomes and indicators

Both sides agreed that key indicators for expected outcomes are as follows. The Uzbekistan side will be responsible for the achievement of agreed key indicators targeted in year 2026 and shall monitor the progress for Ex-Post Evaluation based on those indicators.

[Quantitative indicators]

Index (per year)	Baseline (2021)	Target (2026)
Number of examination of CT	0	1,500
Number of examination of Immunological Analyzer	0	21,000
Number of students who use simulation center	0	4,800

[Qualitative indicators]

① To improve the quality of pediatric medical service in the Republic of Karakalpakstan and bring lots of credibility to the Karakalpakstan Medical Institute.
② To improve the quality of medical education toward medical worker.
③ To contribute to the health status of people who live around or in this region.

11. Ex-Post Evaluation

JICA will conduct ex-post evaluation after three (3) years from the project completion, in principle, with respect to five evaluation criteria (Relevance, Effectiveness, Efficiency, Impact, and Sustainability). The result of the evaluation will be publicized. The Uzbekistan side is required to provide necessary support for the data collection.

12. Technical assistance ("Soft Component" of the Project)

Considering the sustainable operation and maintenance of the products and services granted through the Project, following technical assistance is planned under the Project. The Uzbekistan side confirmed to deploy necessary number of counterparts who are appropriate and competent in terms of its purpose of the technical assistance as described in the Draft Report.

13. Undertakings of the Project

Both sides confirmed the undertakings of the Project as described in Annex 6. With regard to exemption of customs duties, internal taxes and other fiscal levies as stipulated in 1. (2) No.5 of Annex 6, both sides confirmed that such customs duties, internal taxes and other fiscal levies, which shall be clarified in the bid documents by the Ministry of Health of Uzbekistan during the implementation stage of the Project. The Uzbekistan side assured to take the necessary measures and coordination including allocation of the necessary budget which are preconditions of implementation of the Project. It is further agreed that the costs are indicative, i.e. at Draft Outline Design level. More accurate costs will be calculated at the Detailed Design stage.

Both sides also confirmed that the Annex 6 will be used as an attachment of G/A.

14. Monitoring during the implementation

The Project will be monitored by the Executing Agency and reported to JICA by using the form of Project Monitoring Report (PMR) attached as Annex 7. The timing of submission of the PMR is described in Annex 6.

15. Project completion

Both sides confirmed that the project completes when all equipment procured by the Grant are in operation. The completion of the Project will be reported to JICA promptly by the Executing Agency, but in any event not later than six months after completion of the Project.

16-1. General Issues

16-1-1. Environmental Guidelines and Environmental Category

The Team explained that 'JICA Guidelines for Environmental and Social Considerations (April 2010)' (hereinafter referred to as "the Guidelines") is applicable for the Project. The Project is categorized as C because the Project is likely to have minimal adverse impact on the environment under the Guidelines.

17. Other Relevant Issues

17-1. Disclosure of Information

Both sides confirmed that the Preparatory Survey Report from which project cost is excluded will be disclosed to the public after completion of the Preparatory Survey. The comprehensive report including the project cost will be disclosed to the public after all the contracts under the Project are concluded.

17-2. Equipment/Facilities not to be covered by the Grant

Uzbekistan side agreed to procure following items by its own expenses after the discussion. They are installed before all equipment are delivered to the Clinic.

- Oxygen station with compressed in station
- Necessary construction work for installing CT such as install the door, protection from radiation and etc.

17-3. Maintenance on the Equipment to be procured

(1) Allocation of Budget and Human Resources

Uzbekistan side agreed to secure and allocate the necessary staff and budget to operate and maintain the medical equipment procured under the Project properly and effectively.

Uzbekistan side will coordinate possibility of ensuring necessary budget from income created by using provided equipment by the Grant.

(2) Maintenance Services

The team explained that the importance of the routine maintenance and periodical maintenance service of some major medical equipment. Keeping this in view, both sides agreed to consider inclusion of three years maintenance service contract to the major medical equipment that need frequent maintenance into the Project.

Uzbekistan side also agreed to secure the maintenance cost based on the explanation by the team after expiring maintenance contract and/or manufacture guarantee to be covered by the Grant.

(3) The maintenance system in the Clinic

Uzbekistan side took note of the importance of equipment maintenance and agreed to assign a person who takes charge of the maintenance of the Equipment in the Clinic.

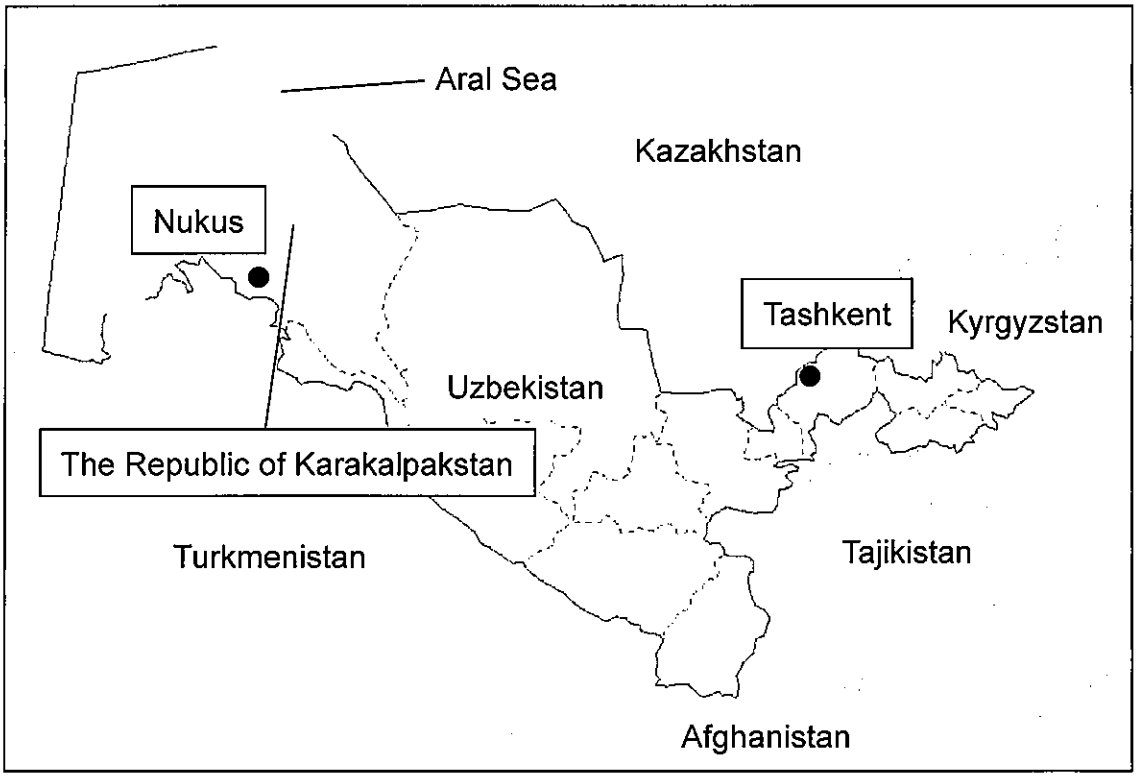
17-4. The Registration of Equipment

Uzbekistan side agreed to take necessary measure for ensuring prompt custom clearance including unloading imported equipment from a bonded warehouse within 6(six) months. Uzbekistan side took note that the extra charges cannot be covered by the Grant nor be charged to the Supplier in case of exceeding 6(six) months storage at the warehouse.

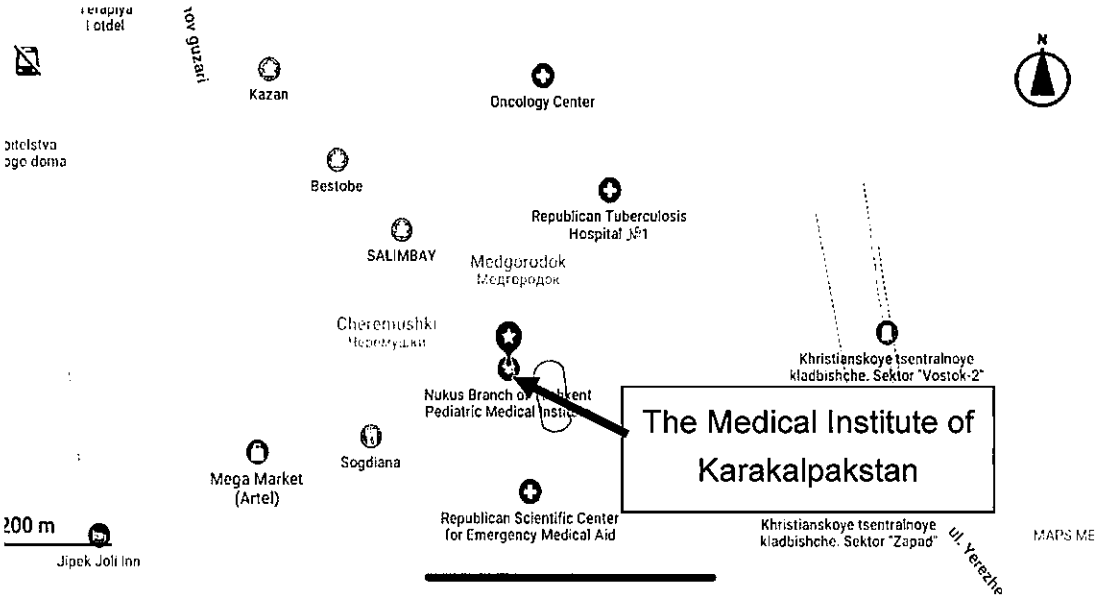
Annex 1 Project Site
Annex 2 Organization Chart
Annex 3 Japanese Grant
Annex 4 Equipment List
Annex 5 Project Implementation Schedule (tentative)
Annex 6 Major Undertakings to be taken by the Government of Uzbekistan
Annex 7 Project Monitoring Report (template)

Annex1

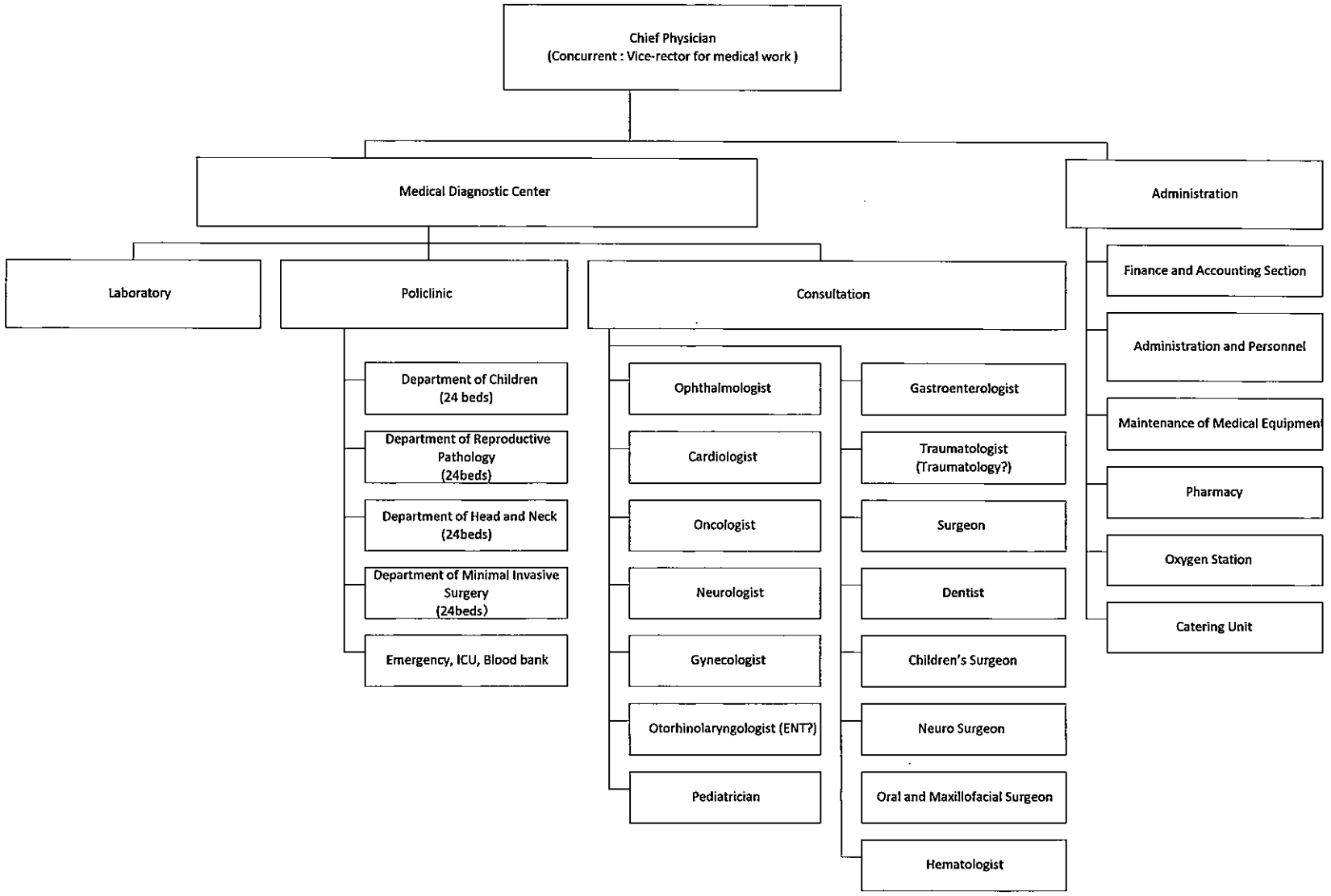
Project Site



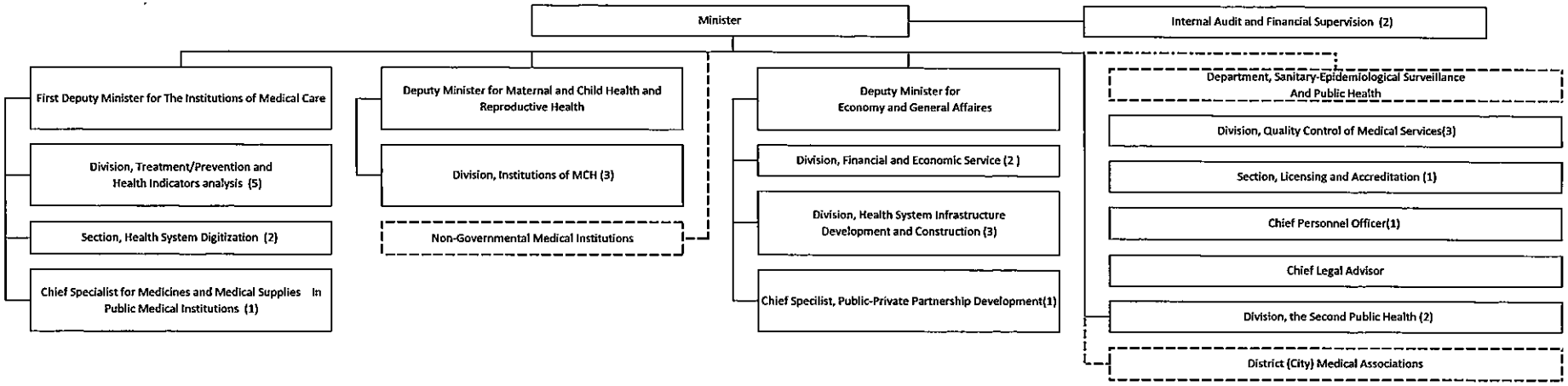
source : JICA



source : Open Street Map


Chief Physician
(Concurrent : Vice-rector for medical work)
Medical Diagnostic Center
Administration
Laboratory
Policlinic
Consultation
Finance and Accounting Section
Administration and Personnel
Maintenance of Medical Equipment
Pharmacy
Oxygen Station
Catering Unit
Department of Children
(24 beds)
Department of Reproductive Pathology
(24beds)
Department of Head and Neck
(24beds)
Department of Minimal Invasive Surgery
(24beds)
Emergency, ICU, Blood bank
Ophthalmologist
Cardiologist
Oncologist
Neurologist
Gynecologist
Otorhinolaryngologist (ENT?)
Pediatrician
Gastroenterologist
Traumatologist
(Traumatology?)
Surgeon
Dentist
Children's Surgeon
Neuro Surgeon
Oral and Maxillofacial Surgeon
Hematologist

A38

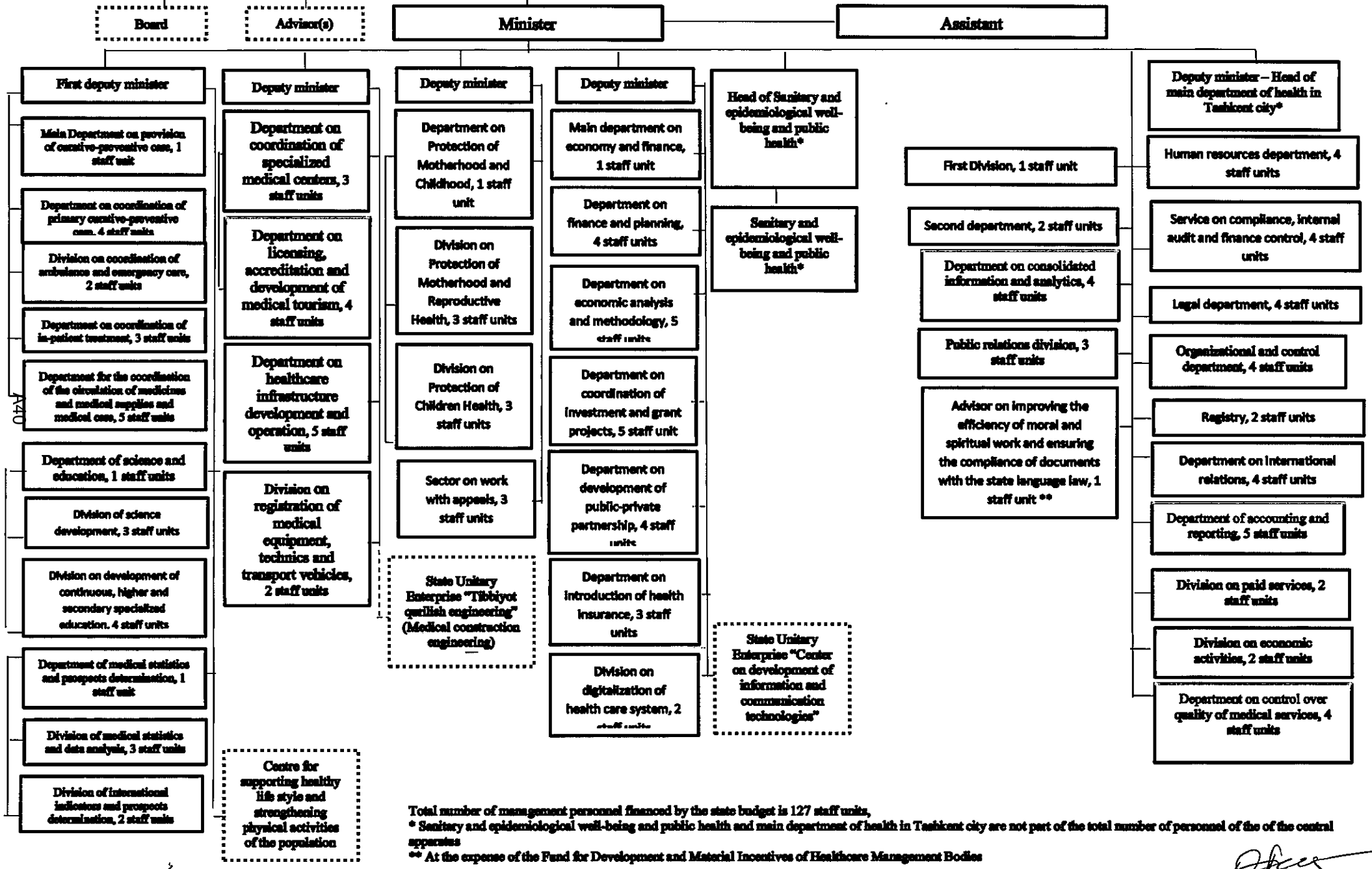


***

注 ***

Maximum number of management Personnel -31 管理職定員の上限は31名

Organizational structure of the central apparatus of the Ministry of Health of the Republic of Uzbekistan



Total number of management personnel financed by the state budget is 127 staff units,

* Sanitary and epidemiological well-being and public health and main department of health in Tashkent city are not part of the total number of personnel of the of the central apparatus

** At the expense of the Fund for Development and Material Incentives of Healthcare Management Bodies

JAPANESE GRANT

The Japanese Grant is non-reimbursable fund provided to a recipient country (hereinafter referred to as "the Recipient") to purchase the products and/or services (engineering services and transportation of the products, etc.) for its economic and social development in accordance with the relevant laws and regulations of Japan. Followings are the basic features of the project grants operated by JICA (hereinafter referred to as "Project Grants").

1. Procedures of Project Grants

Project Grants are conducted through following procedures (See "PROCEDURES OF JAPANESE GRANT" for details):

(1) Preparation

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

(2) Appraisal

-Appraisal by the government of Japan (hereinafter referred to as "GOJ") and JICA, and Approval by the Japanese Cabinet

(3) Implementation

Exchange of Notes

-The Notes exchanged between the GOJ and the government of the Recipient

Grant Agreement (hereinafter referred to as "the G/A")

-Agreement concluded between JICA and the Recipient

Banking Arrangement (hereinafter referred to as "the B/A")

-Opening of bank account by the Recipient in a bank in Japan (hereinafter referred to as "the Bank") to receive the grant

Construction works/procurement

-Implementation of the project (hereinafter referred to as "the Project") on the basis of the G/A

(4) Ex-post Monitoring and Evaluation

-Monitoring and evaluation at post-implementation stage

2. Preparatory Survey

(1) Contents of the Survey

The aim of the Survey is to provide basic documents necessary for the appraisal of the the Project made by the GOJ and JICA. The contents of the Survey are as follows:

- Confirmation of the background, objectives, and benefits of the Project and also institutional capacity of relevant agencies of the Recipient necessary for the implementation of the Project.
- Evaluation of the feasibility of the Project to be implemented under the Japanese Grant from a technical,

financial, social and economic point of view.

- Confirmation of items agreed between both parties concerning the basic concept of the Project.
- Preparation of an outline design of the Project.
- Estimation of costs of the Project.
- Confirmation of Environmental and Social Considerations

The contents of the original request by the Recipient are not necessarily approved in their initial form. The Outline Design of the Project is confirmed based on the guidelines of the Japanese Grant.

JICA requests the Recipient to take measures necessary to achieve 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 executing agency of the Project. Therefore, the contents of the Project are confirmed by all relevant organizations of the Recipient based on the Minutes of Discussions.

(2) Selection of Consultants

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

(3) Result of the Survey

JICA reviews the report on the results of the Survey and recommends the GOJ to appraise the implementation of the Project after confirming the feasibility of the Project.

3. Basic Principles of Project Grants

(1) Implementation Stage

1) The E/N and the G/A

After the Project is approved by the Cabinet of Japan, the Exchange of Notes (hereinafter referred to as "the E/N") will be singed between the GOJ and the Government of the Recipient to make a pledge for assistance, which is followed by the conclusion of the G/A between JICA and the Recipient to define the necessary articles, in accordance with the E/N, to implement the Project, such as conditions of disbursement, responsibilities of the Recipient, and procurement conditions. The terms and conditions generally applicable to the Japanese Grant are stipulated in the "General Terms and Conditions for Japanese Grant (January 2016)."

2) Banking Arrangements (B/A) (See "Financial Flow of Japanese Grant (A/P Type)" for details)

a) The Recipient shall open an account or shall cause its designated authority to open an account under the name of the Recipient in the Bank, in principle. JICA will disburse the Japanese Grant in Japanese yen for the Recipient to cover the obligations incurred by the Recipient under the verified contracts.

b) The Japanese Grant will be disbursed when payment requests are submitted by the Bank to JICA under an

Authorization to Pay (A/P) issued by the Recipient.

3) Procurement Procedure

The products and/or services necessary for the implementation of the Project shall be procured in accordance with JICA's procurement guidelines as stipulated in the G/A.

4) Selection of Consultants

In order to maintain technical consistency, the consulting firm(s) which conducted the Survey will be recommended by JICA to the Recipient to continue to work on the Project's implementation after the E/N and G/A.

5) Eligible source country

In using the Japanese Grant disbursed by JICA for the purchase of products and/or services, the eligible source countries of such products and/or services shall be Japan and/or the Recipient. The Japanese Grant may be used for the purchase of the products and/or services of a third country as eligible, if necessary, taking into account the quality, competitiveness and economic rationality of products and/or services necessary for achieving the objective of the Project. However, the prime contractors, namely, constructing and procurement firms, and the prime consulting firm, which enter into contracts with the Recipient, are limited to "Japanese nationals", in principle.

6) Contracts and Concurrence by JICA

The Recipient will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be concurred by JICA in order to be verified as eligible for using the Japanese Grant.

7) Monitoring

The Recipient is required to take their initiative to carefully monitor the progress of the Project in order to ensure its smooth implementation as part of their responsibility in the G/A, and to regularly report to JICA about its status by using the Project Monitoring Report (PMR).

8) Safety Measures

The Recipient must ensure that the safety is highly observed during the implementation of the Project.

9) Construction Quality Control Meeting

Construction Quality Control Meeting (hereinafter referred to as the "Meeting") will be held for quality assurance and smooth implementation of the Works at each stage of the Works. The member of the Meeting will be composed by the Recipient (or executing agency), the Consultant, the Contractor and JICA. The functions of the Meeting are as followings:

a) Sharing information on the objective, concept and conditions of design from the Contractor, before start of construction.

b) Discussing the issues affecting the Works such as modification of the design, test, inspection, safety control

and the Client's obligation, during of construction.

(2) Ex-post Monitoring and Evaluation Stage

1) After the project completion, JICA will continue to keep in close contact with the Recipient in order to monitor that the outputs of the Project is used and maintained properly to attain its expected outcomes.

2) In principle, JICA will conduct ex-post evaluation of the Project after three years from the completion. It is required for the Recipient to furnish any necessary information as JICA may reasonably request.

(3) Others

1) Environmental and Social Considerations

The Recipient shall carefully consider environmental and social impacts by the Project and must comply with the environmental regulations of the Recipient and JICA Guidelines for Environmental and Social Considerations (April, 2010).

2) Major undertakings to be taken by the Government of the Recipient

For the smooth and proper implementation of the Project, the Recipient is required to undertake necessary measures including land acquisition, and bear an advising commission of the A/P and payment commissions paid to the Bank as agreed with the GOJ and/or JICA. The Government of the Recipient shall ensure that customs duties, internal taxes and other fiscal levies which may be imposed in the Recipient with respect to the purchase of the Products and/or the Services be exempted or be borne by its designated authority without using the Grant and its accrued interest, since the grant fund comes from the Japanese taxpayers.

3) Proper Use

The Recipient is required to maintain and use properly and effectively the products and/or services under the Project (including the facilities constructed and the equipment purchased), to assign staff necessary for this operation and maintenance and to bear all the expenses other than those covered by the Japanese Grant.

4) Export and Re-export

The products purchased under the Japanese Grant should not be exported or re-exported from the Recipient.

No.	Name of Equipment	Quantity
1	CT scanner, 128 slices	1
2	Stationary ultrasound scanner	3
3	Mobile clinic	1
4	C-arm	1
5	Bacteriological analyzer	1
6	Automated immune-analyzer	1
7	Endoscope for otolaryngological surgery	1
8	Endoscope for laparoscopic surgery	1
9	Endoscope for hysteroscopic surgery	1
10	Colposcope	1
11	Endoscope for arthroscopic surgery	1
12	Ventilator	1
13	ENT unit with microscope	1
14	Plasma sterilizer	1
15	Washer disinfector set	1
16	Electrosurgical coagulator	3
17	Universal operating microscope	1
18	Bone surgery unit	1
19	Endoscopic simulator for laparoscopic surgery	1
20	Simulator for flexible videoendoscopy	1
21	Simulator for neonatology	1
22	Endoscopic simulator for gynecology	1
23	Virtual patient for therapy	1
24	Patient simulator (child and adult)	1
25	Resuscitation patient simulator (child and adult)	1
26	Endoscopic simulator for arthroscopic surgery	1
27	3D virtual dissection table	1
28	Patient simulator for thoracic trauma	1
29	Simulator for physical assessment	1

Annex5

Project Implementation Schedule (Tentative)

Year	2022	2023	2024	2025	2026
① International Agreement	★ Jan E.N, G/A				
② Detail Design	May				
③ Procurement	April	▲ Aug.			
④ Soft Component		Aug. ■ ■			
⑤ Defect Inspection			■ Aug.		
⑥ Maintenance Contract		Aug.			July

▲…Inspection and hand over

Annex 6

Major Undertakings to be taken by the Government of Uzbekistan

1. Specific obligations of the Government of Uzbekistan which will not be funded with the Grant

(1) Before the Bidding

NO	Items	Deadline	In charge	Estimated Cost (USD)	Ref.
1	To sign the banking arrangement (B/A) with a bank in Japan (the Agent Bank) to open bank account for the Grant	within 1 month after the signing of the G/A	MOF		
2	To issue A/P to the Agent Bank for the payment to the consultant	within 1 month after the signing of the contract	MOH		
3	To bear the following commissions to the Agent Bank for the banking services based upon B/A	—	—	—	
	1) Advising commission of A/P	within 1 month after the signing of the contract	MOH	approx. JPY6,000	
	2) Payment commission for A/P	every payment	MOH	approx. 0.1% of the payment amount	
4	To submit Project Monitoring Report (with the result of Detailed Design)	before preparation of the bidding documents	MOH	—	

(2) During the Project Implementation

NO	Items	Deadline	In charge	Estimated Cost (USD)	Ref.
1	To issue A/P to the Agent Bank for the payment to the supplier and the contractor	within 1 month after the signing of the contract	MOH		
2	To bear the following commissions to the Agent Bank for the banking services based upon the B/A	—	—	—	
	1) Advising commission of A/P	within 1 month after the signing of the contract	MOH	approx. JPY6,000	
	2) Payment commission for A/P	every payment	MOH	approx. 0.1% of the payment amount	
3	To ensure prompt customs clearance and to assist the Supplier(s) with internal transportation in the country of the Recipient	during the Project	MOH	—	
4	To accord Japanese physical persons and/or physical persons of third countries whose services may be required in connection with the supply of the products and the services such facilities as may be necessary for their entry into the country of the Recipient and stay there for the performance of their work	during the Project	MOH	—	
5	To ensure that customs duties, internal taxes and other fiscal levies which may be imposed in the country of the Recipient with respect to the purchase of the products and/or the services be exempted.	during the Project	MOH	—	
6	To bear all the expenses, other than those covered by the Grant, necessary for the implementation of the Project	during the Project	MOH		
7	To notify JICA promptly of any incident or accident, which has, or is likely to have, a significant adverse effect on the environment, the affected communities, the public or workers.	during the Project	MOH	—	
8	To submit Project Monitoring Report	—	—	—	
	1) To submit Project Monitoring Report after each work under the contract(s) such as shipping, hand over, installation and operational training	within 1 month after completion of each work	MOH	—	
	2) To submit Project Monitoring Report (final) (including as-built drawings, equipment list, photographs, etc.)	within 1 month after issuance of Certificate of Completion for the works under the contract(s)	MOH	—	
9	To submit a report concerning completion of the Project	within 6 months after completion of the Project	MOH	—	
10	To assign a person who takes charge of the maintenance of the Equipment	during the Project	MOH/KMI	—	
11	Training for personnel who use the Equipment	before the handover of the Equipment	KMI[1]	—	
12	To provide facilities for distribution of electricity, water supply and drainage and other incidental facilities necessary for the implementation of the Project outside the site	—	—	—	
	1) Electricity The distributing line to the site Procurign the devices for stabilize electricity.	before the installation of all equipment	MOH/KMI		
	2) Water Supply The city water distribution main to the site Installation of water filter		MOH/KMI		
	3) Drainage The city drainage main (for storm, sewer and others) to the site	6 months before completion of the installation	MOH/KMI		
13	To provide equipment, furniture for medicl and laboratory equipment, facilities necessary for the implementation of the Project in the site	—	—	—	
	1) Oxygen station with compressed air station 2) Necessary construction work for installing CT such as install the door, protection from radiation and etc.	before start of the installation of all equipment	MOH/KMI	2) 43,000	
14	To ensure the safety of persons engaged in the implementation of the Project	during the Project	MOH	—	

[1] The Karakalpakstan Medical Institute (hereinafter 'KMI')

(3) After the Project

NO	Items	Deadline	In charge	Estimated Cost (USD)	Ref.
I	To maintain and use properly and effectively the equipment provided under the Grant Aid 1) Allocation of maintenance cost 2) Operation and maintenance structure 3) Routine check/Periodic inspection	After completion of the project	KMI	89,255 for first year 90,795 for second /third year 219,495 for forth year and after	

2. Other obligations of the Government of Uzbekistan funded with the Grant

NO	Items	Deadline	Amount (Million Japanese Yen)*
1	To provide equipment 1) To conduct the following transportation a) Marin (Air) transportation of the products from Japan to the country of the Recipient b) Internal transportation from the port of disembarkation to the project site.	This page is closed due to the confidentiality	
	2) To provide equipment with installation and commissioning.		
2	To implement detailed design, bidding support and procurement supervision (Consulting Service)		
	Total		

* The Amount is provisional. This is subject to the approval of the Government of Japan.

Project Monitoring Report
on
Project Name
Grant Agreement No. XXXXXXX

20XX, Month

Organizational Information

Signer of the G/A (Recipient)	Person in Charge (Designation) Contacts Address: Phone/FAX: Email:
Executing Agency	Person in Charge (Designation) Contacts Address: Phone/FAX: Email:
Line Ministry	Person in Charge (Designation) Contacts Address: Phone/FAX: Email:

General Information:

Project Title	
E/N	Signed date: Duration:
G/A	Signed date: Duration:
Source of Finance	Government of Japan: Not exceeding JPY _____ mil. Government of (_____): _____

1: Project Description

1-1 Project Objective

1-2 Project Rationale

- Higher-level objectives to which the project contributes (national/regional/sectoral policies and strategies)
- Situation of the target groups to which the project addresses

1-3 Indicators for measurement of "Effectiveness"

Quantitative indicators to measure the attainment of project objectives		
Indicators	Original (Yr)	Target (Yr)
Qualitative indicators to measure the attainment of project objectives		

2: Details of the Project

2-1 Location

Components	Original *(proposed in the outline design)*	Actual
1.		

2-2 Scope of the work

Components	Original* *(proposed in the outline design)*	Actual*
1.		

Reasons for modification of scope (if any).

(PMR)

2-3 Implementation Schedule

Items	Original		Actual
	(proposed in the outline design)	*(at the time of signing the Grant Agreement)*	

Reasons for any changes of the schedule, and their effects on the project (if any)

2-4 Obligations by the Recipient

2-4-1 Progress of Specific Obligations

See Attachment 2.

2-4-2 Activities

See Attachment 3.

2-4-3 Report on RD

See Attachment 11.

2-5 Project Cost

2-5-1 Cost borne by the Grant(Confidential until the Bidding)

Components			Cost (Million Yen)	
	Original *(proposed in the outline design)*	Actual *(in case of any modification)*	Original[1),2)] *(proposed in the outline design)*	Actual
	1.			
Total				

Note: 1) Date of estimation:
2) Exchange rate: 1 US Dollar = Yen

2-5-2 Cost borne by the Recipient

Components			Cost (1,000 Taka)	
	Original *(proposed in the outline design)*	Actual *(in case of any modification)*	Original[1),2)] *(proposed in the outline design)*	Actual
	1.			

Note: 1) Date of estimation:
2) Exchange rate: 1 US Dollar =

Reasons for the remarkable gaps between the original and actual cost, and the countermeasures (if any)

(PMR)

2-6 Executing Agency

- Organization's role, financial position, capacity, cost recovery etc,
- Organization Chart including the unit in charge of the implementation and number of employees.

Original *(at the time of outline design)* name: role: financial situation: institutional and organizational arrangement (organogram): human resources (number and ability of staff):
Actual *(PMR)*

2-7 Environmental and Social Impacts

- The results of environmental monitoring based on Attachment 5 (in accordance with Schedule 4 of the Grant Agreement).
- The results of social monitoring based on in Attachment 5 (in accordance with Schedule 4 of the Grant Agreement).
- Disclosed information related to results of environmental and social monitoring to local stakeholders (whenever applicable).

3: Operation and Maintenance (O&M)

3-1 Physical Arrangement

- Plan for O&M (number and skills of the staff in the responsible division or section, availability of manuals and guidelines, availability of spareparts, etc.)

Original *(at the time of outline design)*
Actual *(PMR)*

3-2 Budgetary Arrangement

- Required O&M cost and actual budget allocation for O&M

Original *(at the time of outline design)*

Actual *(PMR)*

4: Potential Risks and Mitigation Measures

- Potential risks which may affect the project implementation, attainment of objectives, sustainability
- Mitigation measures corresponding to the potential risks

Assessment of Potential Risks *(at the time of outline design)*

Potential Risks	Assessment
1. (Description of Risk)	Probability: High/Moderate/Low
	Impact: High/Moderate/Low
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action required during the implementation stage:
	Contingency Plan (if applicable):
2. (Description of Risk)	Probability: High/Moderate/Low
	Impact: High/Moderate/Low
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action required during the implementation stage:
	Contingency Plan (if applicable):
3. (Description of Risk)	Probability: High/Moderate/Low
	Impact: High/Moderate/Low
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action required during the implementation stage:

	Contingency Plan (if applicable):
Actual Situation and Countermeasures	
(PMR)	

5: Evaluation and Monitoring Plan (after the work completion)

5-1 Overall evaluation

Please describe your overall evaluation on the project.

5-2 Lessons Learnt and Recommendations

Please raise any lessons learned from the project experience, which might be valuable for the future assistance or similar type of projects, as well as any recommendations, which might be beneficial for better realization of the project effect, impact and assurance of sustainability.

5-3 Monitoring Plan of the Indicators for Post-Evaluation

Please describe monitoring methods, section(s)/department(s) in charge of monitoring, frequency, the term to monitor the indicators stipulated in 1-3.

Attachment

1. Project Location Map
2. Specific obligations of the Recipient which will not be funded with the Grant
3. Monthly Report submitted by the Consultant

Appendix - Photocopy of Contractor's Progress Report (if any)
- Consultant Member List
- Contractor's Main Staff List

4. Check list for the Contract (including Record of Amendment of the Contract/Agreement and Schedule of Payment)
5. Environmental Monitoring Form / Social Monitoring Form
6. Monitoring sheet on price of specified materials (Quarterly)
7. Report on Proportion of Procurement (Recipient Country, Japan and Third Countries) (PMR (final)only)
8. Pictures (by JPEG style by CD-R) (PMR (final)only)
9. Equipment List (PMR (final)only)
10. Drawing (PMR (final)only)
11. Report on RD (After project)

Attachment 6

Monitoring sheet on price of specified materials

1. Initial Conditions (Confirmed)

	Items of Specified Materials	Initial Volume A	Initial Unit Price (¥) B	Initial total Price C=A×B	1% of Contract Price D	Condition of payment	
						Price (Decreased) E=C−D	Price (Increased) F=C+D
1	Item 1	●●t	●	●	●	●	●
2	Item 2	●●t	●	●	●		
3	Item 3						
4	Item 4						
5	Item 5						

2. Monitoring of the Unit Price of Specified Materials

(1) Method of Monitoring : ●●

(2) Result of the Monitoring Survey on Unit Price for each specified materials

	Items of Specified Materials	1st ○month, 2015	2nd ○month, 2015	3rd ○month, 2015	4th	5th	6th
1	Item 1						
2	Item 2						
3	Item 3						
4	Item 4						
5	Item 5						

(3) Summary of Discussion with Contractor (if necessary)

-

-

-

Report on Proportion of Procurement (Recipient Country, Japan and Third Countries)
(Actual Expenditure by Construction and Equipment each)

	Domestic Procurement (Recipient Country) A	Foreign Procurement (Japan) B	Foreign Procurement (Third Countries) C	Total D
Construction Cost	(A/D%)	(B/D%)	(C/D%)	
Direct Construction Cost	(A/D%)	(B/D%)	(C/D%)	
others	(A/D%)	(B/D%)	(C/D%)	
Equipment Cost	(A/D%)	(B/D%)	(C/D%)	
Design and Supervision Cost	(A/D%)	(B/D%)	(C/D%)	
Total	(A/D%)	(B/D%)	(C/D%)	

Appendix 5　Evaluation Chart of Requested Equipment

No.	Requested Equipment	Quantity	Priority	Criteria for selection											Total	Special Notes	Planned quantity
				For All				For Medical equipment				For Educational equipment					
				①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪			
1	CT scanner, 128 slices	1	A+	○	○	○	○	○	○	○	○	–	–	–	○	Planned to be installed in the CT room.	1
2	MRI	1	A+	–	–	–	–	–	–	–	–	–	–	–	–	To be procured by MOH. Deleted due to duplication.	0
3	Stationary ultrasound scanner	3	A+	○	○	○	○	○	○	○	○	–	–	–	○	Planned to be installed in the outpatient department, obstetrics and gynecology department, and the laboratory.	3
4	Angiography	1	A-	△	△	△	×	○	○	○	○	–	–	–	×	Deleted because a room for installation could not be confirmed.	0
5	3D othopantomography with CT function	1	A	○	△	△	×	○	○	○	×	–	–	–	×	Deleted due to unconfirmed installation room and the purpose of implant production.	0
6	C-arm	1	A	○	○	○	○	○	○	○	○	–	–	–	○	Planned to be installed in surgery rooms because of the needs for surgical operations.	1
7	Bacteriological analyzer	1	A+	○	△	○	○	○	○	○	○	–	–	–	○	Planned to be installed in the laboratory room.	1
8	Automated immunology analyzer	1	A+	○	△	○	○	○	○	○	○	–	–	–	○	Planned to be installed in the laboratory room.	1
9	Endocrinology analyzer	1	A-	○	△	○	○	○	○	○	○	–	–	–	○	Deleted due to low priority and budget constraints.	0
10	Endoscope for otolaryngological surgery	1	A+	○	○	○	○	○	○	○	○	–	–	–	○	Planned to be installed in the surgery rooms.	1
11	Endoscope for laparoscopic surgery	1	A+	○	○	○	○	○	○	○	○	–	–	–	○	Planned to be installed in the surgery rooms.	1
12	Endoscope for hysteroscopic surgery	1	A+	○	○	○	○	○	○	○	○	–	–	–	○	Planned to be installed in the surgery rooms.	1
13	Endoscope for arthroscopic surgery	1	A+	○	○	○	○	○	○	○	○	–	–	–	○	Planned to be installed in the surgery rooms.	1
14	Patient monitor	40	A+	○	○	○	○	○	○	○	○	–	–	–	○	Planned to be installed in ICU, recovery room, etc.	1
15	Cavitron ultrasonic surgical aspirator (CUSA)	1	A	○	○	△	○	○	○	○	○	–	–	–	○	Deleted due to low priority and budget constraints.	0
16	Portable ultrasound scanner	3	A	○	○	○	○	○	○	○	○	–	–	–	○	Planned to be equipped to the mobile clinic.	1
17	Anaesthetic machine	4	A	–	–	–	–	–	–	–	–	–	–	–	–	To be procured by MOH. Deleted due to duplication.	0
18	Surgical stance for minimally invasive spinal surgery	1	A	○	○	△	○	○	○	○	○	–	–	–	○	Deleted due to low priority and budget constraints.	0
19	Mobile X-ray apparatus	2	A	○	○	○	○	○	○	○	○	–	–	–	○	Planned to be equipped to the mobile clinic.	1
20	Ventilator	16	A+	○	○	○	○	○	○	○	○	–	–	–	○	Planned to be installed in ICU, recovery room, etc.	1
21	Ventilator for transportation	1	A+	–	–	–	–	–	–	–	–	–	–	–	–	Planned as ventilator.	0
22	Exoskeleton for rehabilitation	1	A-	○	○	×	△	○	○	○	○	–	–	–	×	Deleted due to low priority and budget constraints.	0
23	ENT unit with microscope	2	A+	○	○	○	○	○	○	○	○	–	–	–	○	Planned to be installed in the outpatient department.	1
24	Hysteroscopy	1	A+	–	–	–	–	–	–	–	–	–	–	–	–	Planned as endoscope for hysteroscopic surgery	0
25	Colposcope	2	A+	○	○	○	○	○	○	○	○	–	–	–	○	Plan to be installed in gynecology department.	1
26	ENT workstation	1	A+	–	–	–	–	–	–	–	–	–	–	–	–	Planned as ENT unit with microscope	0
27	Dentist workplace	1	A+	–	–	–	–	–	–	–	–	–	–	–	–	Other donor support available. Deleted due to duplication.	0
28	Video gastroscope, colonoscope	1	A	–	–	–	–	–	–	–	–	–	–	–	–	To be procured by MOH. Deleted due to duplication.	0
29	Slit-lamp	1	A	○	○	○	○	○	○	○	○	–	–	–	○	Deleted due to low priority and budget constraints.	0
30	Autorefractometer	1	A	○	○	○	○	○	○	○	○	–	–	–	○	Deleted due to low priority and budget constraints.	0
31	General X-ray apparatus	1	A-	–	–	–	–	–	–	–	–	–	–	–	–	To be procured by MOH. Deleted due to duplication.	0
32	Mammography	1	A	–	–	–	–	–	–	–	–	–	–	–	–	To be procured by MOH. Deleted due to duplication.	0
33	Laboratory water treatment system	3	A+	–	–	–	–	–	–	–	–	–	–	–	–	To be procured by MOH. Deleted due to duplication.	0
34	Oxygen station	1	A	–	–	–	–	–	–	–	–	–	–	–	–	Support available from Tashkent Pediatric Medical Institute. Deleted.	0
35	Plasma sterilizer	1	A+	○	○	○	○	○	○	○	○	–	–	–	○	Planned to be installed in CSSD.	1
36	Washer disinfector set	1	A+	○	○	○	○	○	○	○	○	–	–	–	○	Planned to be installed in CSSD.	1
37	Equipment for washing flexible endoscopes	1	A	–	–	–	–	–	–	–	–	–	–	–	–	To be procured by MOH. Deleted due to duplication.	0
38	Mobile clinic	1	A+	○	△	○	○	○	○	○	○	–	–	–	○	Planned for outreach activities.	1
39	Ambulance car	1	A	–	–	–	–	–	–	–	–	–	–	–	–	Other donor support available. Deleted due to duplication.	0
40	Water purification system	1	A	–	–	–	–	–	–	–	–	–	–	–	–	To be procured by MOH. Deleted due to duplication.	0
41	Integrated security system	1	A-	–	–	–	–	–	–	–	–	–	–	–	–	To be procured by MOH. Deleted due to duplication.	0
42	Integrated Clinic Management System	1	A	–	–	–	–	–	–	–	–	–	–	–	–	To be procured by MOH. Deleted due to duplication.	0
43	Simulation module for endoscopic surgery	1	A+	○	○	○	○	–	–	–	–	○	○	○	○	Planned as endoscopic simulator for laparoscopic surgery	1

44	Simulation module for bronchoscopy	2	A+	O	O	O	O	–	–	–	–	O	O	O	O	Planned as flexible videoendoscopy	1
45	Simulation module for video endoscopic surgery for gynecology	1	A+	O	O	O	O	–	–	–	–	O	O	O	O	Planned to be installed in the simulation center (tentative name).	1
46	Virtual patient for therapy	1	A+	O	O	O	O	–	–	–	–	O	O	O	O	Planned to be installed in the simulation center (tentative name).	1
47	Simulation module for video endoscopic operations in ophthalmology	1	A	O	O	O	O	–	–	–	–	O	O	O	O	Deleted due to low priority and budget constraints.	0
48	Simulation module for video endoscopy surgery in maxillaface	1	A	O	O	O	O	–	–	–	–	O	O	O	O	Deleted due to low priority and budget constraints.	0
49	Simulation module for video endoscopic operations in otolaryngology	1	A	O	O	O	O	–	–	–	–	O	O	O	O	Deleted due to low priority and budget constraints.	0
50	Patient simulator (child and adult)	1	A+	O	O	O	O	–	–	–	–	O	O	O	O	Planned to be installed in the simulation center (tentative name) for anesthesia practice.	1
51	Endoscopic simulator for pediatric	1	A	O	O	O	O	–	–	–	–	O	O	O	O	Planned as simulator for neonatology for vital sign measurement.	1
52	Simulation module for ultrasound	1	A	O	O	O	O	–	–	–	–	O	O	O	O	Deleted due to low priority and budget constraints.	0
53	3D virtual dissection table	2	A+	O	O	O	O	–	–	–	–	O	O	O	O	Planned to be installed in the simulation center (tentative name).	1
54	Simulation module for dentistry	1	A	O	O	O	O	–	–	–	–	O	O	O	O	Deleted due to low priority and budget constraints.	0
55	Simulation module in resuscitation (child and adult)	1	A+	O	O	O	O	–	–	–	–	O	O	O	O	Planned to be installed in the simulation center (tentative name).	1
56	Endoscopic simulator for arthroscopic surgery	1	A+	O	O	O	O	–	–	–	–	O	O	O	O	Planned to be installed in the simulation center (tentative name).	1
57	Virtual simulator of orthopedic surgery	1	A	O	O	O	O	–	–	–	–	O	O	O	O	Deleted due to low priority and budget constraints.	0
58	Simulator for physical assessment	1	A+	O	O	O	O	–	–	–	–	O	O	O	O	Planned to be installed in the simulation center (tentative name).	1
59	Simulation module for MRI	1	A	O	O	O	O	–	–	–	–	O	O	O	O	Deleted due to low priority and budget constraints.	0
60	Virtual simulator for neurosurgery	1	A	O	O	O	O	–	–	–	–	O	O	O	O	Deleted due to low priority and budget constraints.	0
61	Electrosurgical coagulator	4	A+	O	O	O	O	O	O	O	O	–	–	–	O	Planned to be installed in the surgery rooms.	3
62	Universal operating microscope	1	A+	O	O	O	O	O	O	O	O	–	–	–	O	Planned to be installed in the surgery rooms.	1
63	Implanthology system	1	A-	O	O	O	×	O	O	O	×	–	–	–	O	Deleted due to low priority and budget constraints.	0
64	Intraoral scanner	1	A-	O	O	O	O	O	O	O	O	–	–	–	O	Deleted due to low priority and budget constraints.	0
65	born surgery unit	1	A+	O	O	O	O	O	O	O	O	–	–	–	O	Planned to be installed in the surgery rooms.	1
66	Simulation module for face surgery	1	A	O	O	O	O	–	–	–	–	O	O	O	O	Deleted due to low priority and budget constraints.	0
67	Simulation module for rinoplastic	1	A	O	O	O	O	–	–	–	–	O	O	O	O	Deleted due to low priority and budget constraints.	0
68	Training module for emergency	1	A	O	O	O	O	–	–	–	–	O	O	O	O	Deleted due to low priority and budget constraints.	0
69	Patient simulator for thoracis trauma	1	A+	O	O	O	O	–	–	–	–	O	O	O	O	Planned to be installed in the simulation center (tentative name).	1
70	Training module for spinal punction	5	A	O	O	O	O	–	–	–	–	O	O	O	O	Deleted due to low priority and budget constraints.	0
71	Endoscopic clip-applicators	2	A-	–	–	–	–	–	–	–	–	–	–	–	–	To be procured by MOH. Deleted due to duplication.	0
72	Endoscopic apparatus for anastomosus	3	A-	–	–	–	–	–	–	–	–	–	–	–	–	To be procured by MOH. Deleted due to duplication.	0
73	Endoscopic containers for retraction	6	A-	–	–	–	–	–	–	–	–	–	–	–	–	To be procured by MOH. Deleted due to duplication.	0
74	Endoscopic clip set	1	A-	–	–	–	–	–	–	–	–	–	–	–	–	To be procured by MOH. Deleted due to duplication.	0
75	E-auditorium	5	A+	–	–	–	–	–	–	–	–	–	–	–	–	To be procured by MOH. Deleted due to duplication.	0

PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF MEDICAL SERVICE AT NUKUS UNIVERSITY HOSPITAL

SOFT COMPONENT (TECHNICAL ASSISTANCE) PLAN

September 2021

INTEM Consulting, Inc.

Contents

1. Background of Soft Component

"Preparatory Survey Report for The Project for Improvement of Medical Service at Nukus University Hospital[1]" (hereinafter referred to as "the Project") is a project which procures medical and educational equipment to the newly built hospital attached to The Karakalpakstan Medical Institute in Nukus, Karakalpakstan. Through the procurement, the Project aims for improvement of the medical service system and the standard of medical education, resulting in improvements of the health conditions of the residents in Karakalpakstan.

The target of the Project is an attached newly built hospital (outpatient building and inpatient building). The equipment procured under the Project is medical and educational equipment and stable and safety operations are required, especially for the CT scan, endoscopic equipment, CSSD related equipment, etc. It is important for users of medical equipment (doctors, nurses, and medical technicians) and engineers of the maintenance and management section (to be newly established) to detect and deal with problems and abnormalities in medical equipment at an early stage. Therefore, it is necessary to develop the system to make a budget plan for reagents, consumables and replacements for the cases where the necessary parts are required. If these responses are able to be taken quickly and accurately, medical equipment will continue to be used, and stable and high-quality medical services can be provided.

The medical equipment to be provided under the Project is the equipment introduced for the first time in The Karakalpakstan Medical Institute. It is acknowledged that the users of the equipment (end users) and the engineers in the maintenance section have knowledge of basic operation techniques and maintenance experience, but they do not have knowledge or experience concerning the medical equipment to be installed by the Project. In addition, since the maintenance and management section is a newly established organization, and currently there is no standardized inspection format and no opportunities for training sessions to learn daily inspections and repair skills. Therefore, it is necessary to provide the supports on introduction of inspection formats and development of medical device management ledgers, as well as technical trainings required for daily inspection work of the end users and for building the inspection and repair skills of the maintenance section engineers, in order to ensure the quality of medical services of the entire hospital.

The Karakalpakstan Medical Institute also believes that it is necessary to acquire and standardize formats for the operation and maintenance techniques of the equipment to be installed under the Project, and the hospital requested technical assistance ('Soft Component') for the operation and maintenance techniques during the field survey conducted in April and May 2021.

The Soft Component of the Project has been planned with a primary focus on acquisition of maintenance and management skills for the equipment newly installed under the Project. From the point of view on development of independence and effective learning, participatory workshops are held in

[1] Previously known as Nukus branch of the Tashkent Pediatric Medical Institute. The name was changed to The Karakalpakustan Medical Institute in February 2020.

this Soft Component. Not only engineers of the hospital maintenance section, but also end-uses of each department who use the equipment are involved so that motivation to establish a system for maintaining and managing medical equipment will be obtained. The consultant will pay attention when conducting the workshop to avoid making unilateral input at implementation. Also, the second technical guidance will be conducted to fix the skills after a certain period of time has passed from the first technical guidance that is held immediately after the installation of equipment.

In the first session, not only engineers in the maintenance section but also equipment users in each medical department (obstetrics and gynecology, pediatrics and pediatric surgery) who use the equipment will be included to motivate them regarding establishment of a maintenance and management system of medical equipment. Standardized inspection manuals and check sheets shall be made under mutual understanding among the participants to standardize daily inspection items such as operation check before & after use, cleaning, washing and disinfection and periodical inspection items for the equipment that requires check of equipment performance and replacement of consumables, which helps to shorten the time required for inspection work.

In the second session, it will be checked whether the inspection skills are acquired correctly, whether management and reporting have been done by using the formats correctly, etc., and, if necessary, retraining regarding the inspection skills and modifications of the formats will be conducted. Furthermore, the guidance will be given to create the daily inspection records, medical equipment management ledgers, medical device maintenance and management plan proposals (including budget plan for maintenance and management costs for the following year), etc. Also, along with the hospital director, the Consultant will assist in formulating the reporting and discussion structure among the staff for the current status of the equipment and the budget plan of the operation and maintenance of the equipment for the next year.

2. Objectives of Soft Component

The achievement of the following objectives can be expected after implementation of the Soft Component in the case where the effectiveness in continued after the implementation.

1. The capacity for operation and maintenance of equipment is improved and the planned inspection work can be carried out.
2. The status of all equipment can be grasped in one inventory list by regular inspection reports from the maintenance and management section and the daily check records from each department of the hospital.
3. An annual maintenance management plan is prepared, and the outline of inspection timing, replacement timing and costs of spare parts and cost of operation and maintenance can be grasped.

3. Output of Soft Component

The outputs to be achieved at the completion of Soft Component are as follows.

Contents	Direct Output
Training in strengthening equipment maintenance and management capacity	・ Daily check skills will be acquired through training for end users. ・ Contents and records of daily check conducted by the end users will be unified, which makes it easier to grasp the status of equipment. ・ Engineers of the maintenance section will acquire regular maintenance and inspection skills, and an appropriate cooperation system with the local agency will be established.
Formulation of maintenance management plan and budget plan with equipment data management	・ It will be possible to make and manage inspection records of equipment (usage history, replacement history of spare parts/consumables, daily check/regular inspection/repair records, etc.). ・ The names, quantities and costs of spare parts/consumables necessary for the next inspection and reagents necessary for next financial year will be grasped. ・ Annual equipment maintenance management plan will be prepared, and a budget plan including maintenance contracts with local agents and costs necessary for operation and maintenance of equipment will be prepared.

4. Method for Confirming the Degrees of Achievement of Outputs

Achievement of the Soft Component will be confirmed in the following manner.

Contents	Method of confirming achievements	Items of confirming achievements
Training in strengthening equipment maintenance and management capacity	・ Confirm the work flowchart related to equipment maintenance. ・ Confirm the record contents of daily check for the end users and development process of those record contents. ・ Confirm the regular inspection plan and regular inspection report compiled by the maintenance section and the development processes of the plan and report. ・ Confirm the equipment inventory list made by the maintenance section and its development processes.	・ Work flowchart ・ Maintenance inspection plan ・ Daily check sheet ・ Daily check record book * [1] ・ Regular inspection plan ・ Regular inspection sheet ・ Regular inspection report * [2] ・ Equipment inventory list
Formulation of maintenance management plan and budget plan with equipment data management	・ Confirm the management system for procurement of consumables, spare parts and reagents necessary for maintenance. ・ Confirm the equipment maintenance plan for the next financial year, including maintenance contracts with local agents and its development processes.	・ Spare parts, consumables, reagent storage history (stock management) ・ Records of repair history ・ Procurement plan for spare parts and consumables

*[1]: A record book of check sheets after daily inspections.
*[2]: A record book of check sheets after periodic inspections.

5. Activities of Soft Component (Input Plan)

Activities to achieve each output (Input Plan) are as follows.

（1） Implementation human resource

1) Consultant for operation and maintenance technique: Japanese expert, 1 person

2) Local consultant (translator: English and Uzbek): Uzbek, 1 person

（2） Activity plan

Activities: Activities: ①Preparation works in Japan, ②First training in Uzbekistan, ③Interim works in Japan, ④Second training in Uzbekistan, ⑤Post works in Japan.

Details are as follows.

① Preparation works in Japan

The consultant for operation and maintenance technique will prepare materials, each format, work flowcharts, etc. necessary for the training in the preparation works in Japan, and the documents as samples will be sent before the first training in Uzbekistan. Prior to the implementation of training, the Japanese consultant and local consultant will arrange the implementation schedules, training places, training groups of candidates and participant grouping, in coordination with the hospital director, maintenance sections and end-users such as doctors, nurses, engineers. Also, assistance for preparation and management of each document used at the first training in Uzbekistan will be provided. The number of days required for these domestic preparations is 5 days.

The target equipment of the training will be the following equipment installed by the Project. Based on the similarity of the equipment and end-users who are expected to use the equipment, the participants will be divided to A, B, C, D groups, and the training schedule will be planned.

	Name of Equipment
Diagnostic imaging equipment	CT scanner, Stationary ultrasound scanner, C-arm
Endoscopic equipment	Endoscope for otolaryngological surgery, Endoscope for laparoscopic surgery, Endoscope for hysteroscopic surgery, Endoscope for arthroscopic surgery
laboratory equipment	Bacteriological analyzer, Automated immune-analyzer
CSSD equipment	Plasma sterilizer, Washer disinfector set
Equipment for gynecology	Colposcope

Surgical equipment	Ventilator, Electrosurgical coagulator, Universal operating microscope, Bone surgery unit
Equipment for mobile clinic	Mobile clinic, Mobile clinic, Mobile X-ray machine for mobile clinic, Mobile ultrasound scanner for mobile clinic, Mobile ECG for mobile clinic, Patient monitor for mobile clinic, Spirometer
Other medical equipment	ENT unit with microscope
Endoscopic simulators	Endoscopic simulator for laparoscopic surgery, Simulator for flexible video endoscope, Endoscopic simulator for gynecology, Endoscopic simulator for arthroscopic surgery
Mannequin simulators	Simulator for neonatology, Patient simulator (child and adult), Resuscitation patient simulator (child and adult), Patient simulator for thoracic trauma, Simulator for physical assessment
Virtual simulators	Virtual patient for therapy, 3D virtual dissection table

② First training in Uzbekistan

For the end-users who use the equipment and persons from the maintenance section, trainings on the maintenance management system development will be given through workshops. At the workshops, the consultant will teach how to make the equipment maintenance inspection plan, inspection check sheet for daily and periodical inspection and manuals, and also instruct how to maintain the equipment by using these formats with practical trainings. In addition, the consultant will provide training on preparation of inspection reports and equipment inventory lists and preparation of equipment maintenance management plans. The equipment maintenance section will be the main player at the workshops for preparation of those documents. These trainings are carried out by the consultant for operation and maintenance technique dispatched from Japan. The documents used in the workshop and the inspection sheet will be stored in the cloud due to concerns of PC data loss.

Target candidates are medical staffs such as doctors, nurses, and engineers of the maintenance section. Therefore, in addition to making sure that their normal work is not hindered, the consultant will consider the shift of hospital staff participating in each training and create an environment where staffs can participate easily. Considering ease of coordination and teaching efficiency, the number of participants is limited to approximately 10 persons for each workshop. The participants shall join the workshop: arranging the schedule by sections and medical departments where the equipment is used, to avoid disturbing medical activities. Persons from the maintenance section shall join all workshops through the training in Uzbekistan as members of the responsible department of the medical equipment maintenance in the hospital.

The formats and manuals for daily and periodical maintenance will be made for each unit of equipment, and the range covered by daily maintenance and that covered by periodical maintenance will be decided under mutual understanding of all participants, including the equipment uses at the workshops of format development. The equipment users will be also involved in the inspection trainings of periodical maintenance in order to obtain understanding of the related staffs of the

hospital and to convince them regarding what is needed to use the equipment for the long-term. Focusing on the equipment maintenance section, encouraging the hospital side to discuss and decide the inspection methods is expected to lead to the development of the best methods and system for the hospital. The hospital staffs are encouraged to start performing daily inspection etc., using each format by the time of the second training in Uzbekistan.

The first training in Uzbekistan (Participatory workshop)

No		Contents of training	Target department	No. of candidates *3
1	Fri	Travel from Tokyo to Istanbul		
2	Sat	Travel from Istanbul		
3	Sun	Travel from Istanbul to Tashkent		
4	Mon	Visit to JICA Uzbekistan office, Travel from Tashkent to Nukus		
5	Tue	・Seminar on the importance of equipment maintenance management ・About schedule and contents of Soft Component	Director/ Deputy director, Director of each department, End-users (representatives only), the maintenance section etc.	Approx. 15
6	Wed	・Creation of equipment maintenance system flow ・Preparation of maintenance inspection plan	End-users (Group A), the maintenance section	Approx. 10
7	Thu		End-users (Group B), the maintenance section	Approx. 10
8	Fri		End-users (Group C), the maintenance section	Approx. 10
9	Sat		End-users (Group D), the maintenance section	Approx. 10
10	Sun	Document works		
11	Mon	・Preparation of daily inspection check sheet ・Organization of daily inspection manual (including self-made) ・Demonstration training for daily inspection ・Preparation of daily inspection record book	End-users (Group A), the maintenance section	Approx. 10
12	Tue		End-users (Group A), the maintenance section	Approx. 10
13	Wed		End-users (Group A), the maintenance section	Approx. 10
14	Thu		End-users (Group B), the maintenance section	Approx. 10
15	Fri		End-users (Group B), the maintenance section	Approx. 10
16	Sat		End-users (Group B), the maintenance section	Approx. 10
17	Sun	Document works		
18	Mon	・Preparation of daily inspection check sheet ・Organization of daily inspection manual (including self-made) ・Demonstration training for daily inspection ・Preparation of daily inspection record book	End-users (Group C), the maintenance section	Approx. 10
19	Tue		End-users (Group C), the maintenance section	Approx. 10
20	Wed		End-users (Group C), the maintenance section	Approx. 10
21	Thu		End-users (Group D), the maintenance section	Approx. 10
22	Fri		End-users (Group D), the maintenance section	Approx. 10
23	Sat		End-users (Group D), the maintenance section	Approx. 10
24	Sun	Document works		

No		Contents of training	Target department	No. of candidates *3
25	Mon	・Preparation of periodic inspection plan (including check sheet) ・Preparation of periodic inspection report ・Demonstration training for periodic inspections ・Creation of equipment inventory list	End-users (Group A), the maintenance section	Approx. 10
26	Tue		End-users (Group A), the maintenance section	Approx. 10
27	Wed		End-users (Group B), the maintenance section	Approx. 10
28	Thu		End-users (Group B), the maintenance section	Approx. 10
29	Fri		End-users (Group C), the maintenance section	Approx. 10
30	Sat		End-users (Group D), the maintenance section	Approx. 10
31	Sun	Document works		
32	Mon	・Drafting equipment maintenance plan ・Establishing a system for reporting to the hospital director using an equipment inventory list and equipment maintenance plan ・Discussion on the sharing and transfer methods of the training contents of each department ・Report and discussion about schedule for next training (questionnaire, Q & A, etc.)	End-users (Group A), the maintenance section	Approx. 10
33	Tue		End-users (Group B), the maintenance section	Approx. 10
34	Wed		End-users (Group C), the maintenance section	Approx. 10
35	Thu		End-users (Group D), the maintenance section	Approx. 10
36	Fri		Director/ Deputy director, Director of each department, End-users (representatives only), the maintenance section etc.	Approx. 15
37	Sat		Director/ Deputy director, Director of each department, End-users (representatives only), the maintenance section etc.	Approx. 15
38	Sun	Travel from Nukus to Tashkent		
39	Mon	Reporting to Ministry of Health, JICA Uzbekistan office		
40	Tue	Travel from Tashkent to Istanbul		
41	Wed	Travel from Istanbul to Tokyo		

Group A：Diagnostic imaging equipment/Equipment for mobile clinic
Group B：Endoscopic equipment/Surgical equipment
Group C：laboratory equipment/CSSD equipment/Other medical equipment
Group D：Educational equipment

③ Interim works in Japan

・Summarize the result of first trainings (1 day).

・Prepare for the second training (2 days).

Before the second technical training, the consultant confirms the equipment operation status and the status of manual use, reviews comments and evaluations from end-users and engineers in the maintenance section and prepares and arrange the training materials.

④ Second training in Uzbekistan

In the second on-site guidance, the consultant will check the maintenance management status of the equipment actually performed by the hospital staff based on the first training. If inappropriate

points are found in their skills of daily inspection and periodic inspection, refresh technical training will be implemented. Monitoring of actual inspection, checking the contents of the inspection check sheet and interviews at the workshop will be conducted for evaluation, and the participants centered around the maintenance section will discuss problems and points that they felt unclear using the checklist and make necessary corrections. This process is expected to improve the independent equipment maintenance system of the hospital and to strengthen sustainability through repeated trial and error actions.

In addition, various data compilation method based on the inspection records and reports: as well as the medical equipment maintenance and management draft plan, will be finalized, and instruction will be provided if needed.

The second training will aim to instill inspection technique, maintenance technique, and knowledge on how to draft equipment maintenance management plan. Since the first training has already been conducted for all staff, the direct training by the consultant shall be minimized, and the hospital staffs will be encouraged to check and review the maintenance methods between themselves, centered around the engineers of the maintenance section. The consultant shall provide supplemental explanations and conduct corrections and modifications if the hospital staffs have incorrect knowledge or inspection skills. Through this process, the hospital staffs will recognize the importance of skill transfer among the hospital staffs and of check sheet and manual review in the future. The consultant will report the completion of this Soft Component to MOH, the hospital director and other related staffs and departments.

The second training in Uzbekistan (Participatory workshop)

No		Contents of training	Target department	No. of candidates *3
1	Fri	Travel from Tokyo to Istanbul		
2	Sat	Travel from Istanbul		
3	Sun	Travel from Istanbul to Tashkent		
4	Mon	Visit to JICA Uzbekistan office, Travel from Tashkent to Nukus		
5	Tue	・About schedule and contents of Soft Component ・Discussion on revision of maintenance inspection plan	Director/ Deputy director, Director of each department, End-users (representatives only), the maintenance section etc.	Approx. 15
6	Wed	・Consultation on revision of daily inspection check sheet and manual ・Technical confirmation and re-instruction for daily inspection ・Discussion on revision of daily inspection record book	End-users (Group A), the maintenance section	Approx. 10
7	Thu		End-users (Group B), the maintenance section	Approx. 10
8	Fri		End-users (Group C), the maintenance section	Approx. 10
9	Sat		End-users (Group D), the maintenance section	Approx. 10
10	Sun	Document works		

No		Contents of training	Target department	No. of candidates *3
11	Mon	・Discussion on revision of periodic inspection plan (including check sheet) ・Discussion on revision of periodic inspection report ・Technical confirmation and re-instruction for periodic inspection	End-users (Group A), the maintenance section	Approx. 10
12	Tue		End-users (Group B), the maintenance section	Approx. 10
13	Wed		End-users (Group C), the maintenance section	Approx. 10
14	Thu		End-users (Group D), the maintenance section	Approx. 10
15	Fri	・Discussion on revision of equipment inventory list ・Discussion on revision of equipment maintenance plan	End-users (Group A), the maintenance section	Approx. 10
16	Sat		End-users (Group B), the maintenance section	Approx. 10
17	Sun	Document works		
18	Mon	・Discussion on revision of equipment inventory list ・Discussion on revision of equipment maintenance plan	End-users (Group C), the maintenance section	Approx. 10
19	Tue		End-users (Group D), the maintenance section	Approx. 10
20	Wed	・Revision of reporting system to hospital director using equipment inventory list and equipment maintenance plan ・General discussion (Q & A, etc.)	Director/ Deputy director, Director of each department, End-users (1 group per day), the maintenance section etc.	Approx. 15
21	Thu			Approx. 15
22	Fri			Approx. 15
23	Sat			Approx. 15
24	Sun	Travel from Nukus to Tashkent		
25	Mon	Reporting to MOH and JICA Uzbekistan office		
26	Tue	Travel from Tashkent to Istanbul		
27	Wed	Travel to Tokyo		

Group A：Diagnostic imaging equipment/Equipment for mobile clinic
Group B：Endoscopic equipment/Surgical equipment
Group C：laboratory equipment/CSSD equipment/Other medical equipment
Group D：Educational equipment

The period of dispatch for each training session is as shown below.

1) Consultant for operation and maintenance technique: Japanese expert, 1 person

Training in Uzbekistan: First session: 1.37MM (Traveling x 7days, Training x 33 days, Report and Discussion on schedule x 1day)

Second session: 0.90MM (Traveling x 7days, Training x 19 days, Report and Discussion on schedule x 1day)

2) Local consultant (Translator*: English-Uzbek, and schedule coordination): Uzbek, 1 person

Training in Uzbekistan: First session: 1.23MM (Translation work x 37day)

Second session: 0.77 MM (Translation work x 23 day)

*Translator works is divided from the interpreter works.

⑤ **Post works in Japan**

The consultant summarizes the result of trainings and make the final Soft Component report. (3days)

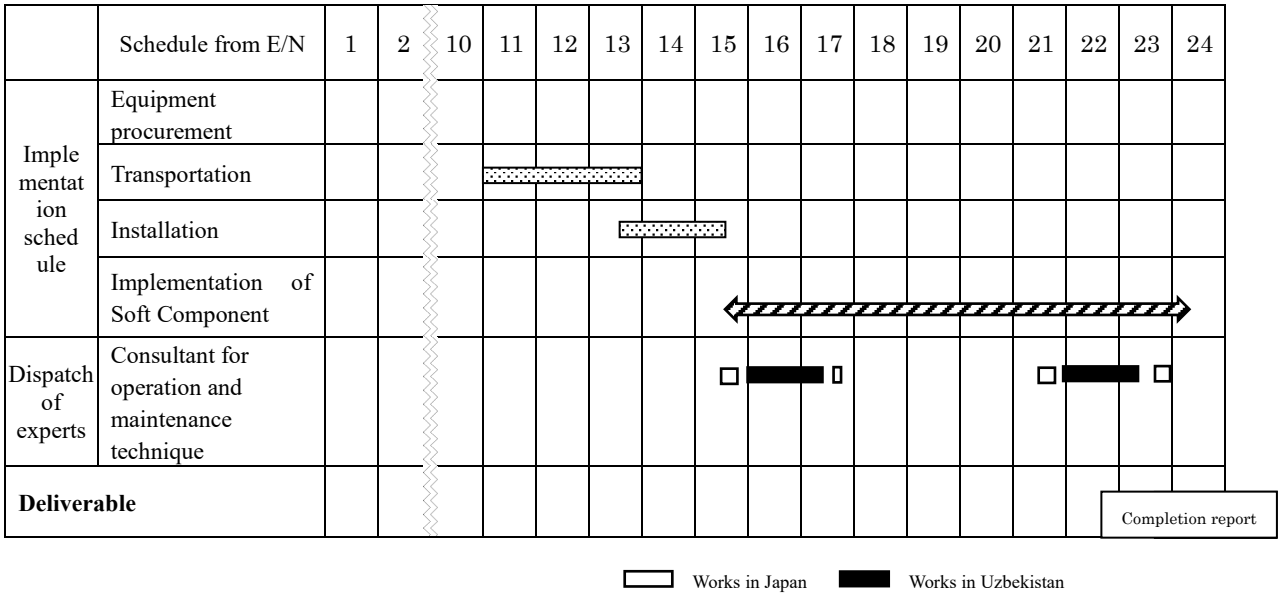
6. Method for Procuring Resources for the Implementation of Soft Component

This Soft Component will be implemented by a consultant who has specialized knowledge of the installed equipment in general and can provide training on the maintenance and management of equipment. In Uzbekistan, it is difficult to hire a local engineer who is familiar with the operation and maintenance of procured equipment. Therefore, a Japanese consultant will be sent to the target hospital and implement technical trainings.

7. Implementing Schedule of Soft Component

The implementation schedule (draft) at the present is as follows. For implementation, the final implementation schedule will be finalized based on discussions between The Karakalpakstan Medical Institute, the maintenance section and the Consultant.

Implementation schedule (Draft)



8. Deliverable of Soft Component

Other than the completion reports of the client and Japanese side, the following documents will be the deliverables of the Soft Component.

① Work flow chart
② Maintenance inspection plan
③ Daily inspection check sheet
④ Periodic inspection check sheet
⑤ Daily inspection record book
⑥ Periodic inspection report
⑦ Equipment inventory list
⑧ Equipment maintenance plan
⑨ Soft component completion report

9. Responsibilities of Implementing Agencies of Recipient Country

This Soft Component will be implemented to improve the operation and maintenance system and ensure safety and sustainability of equipment to be installed in The Karakalpakstan Medical Institute. For this reason, each training will use a method that encourages voluntary activities by the hospital.

Prior to the implementation of the Soft Component, The Karakalpakstan Medical Institute selects the candidates while actively coordinating with the Japanese consultant and local consultant. Each department is responsible for staffs to participate in trainings during the implementation of the workshops.

Additionally, the hospital director shall oversee the work of equipment maintenance section in order to ingrain the skills trained in this Soft Component and routinize the maintenance work and she shall perform the leadership to make the position of maintenance work important in the medical facility management.

Furthermore, it is important that each department manager who supervises the end-users to instruct and oversees their department to ensure that daily inspection work is carried out properly for safe medical service to be continuously provided.

The equipment targeted by this Soft Component is limited to the equipment provided under this Project, but the techniques and methods acquired here are sufficiently applicable to other equipment and clinical departments. If inspection works are introduced in all other departments and the maintenance and management system for equipment is strengthened, the medical services in The Karakalpakstan Medical Institute will be improved. Using this Soft Component as a model case, the leadership of the hospital director and deputy director is expected to spread the systems and techniques throughout the hospital.

Furthermore, it is very important to secure the budget for consumables and replacements purchase for sustainable use of the equipment procured in the Project; the hospital director, deputy director, and

the director of maintenance section are responsible for comprehending the equipment operation status and the inventory of consumables and replacements and securing the budget for the next financial year.