

**BASIC DESIGN STUDY REPORT  
ON  
THE PROJECT  
FOR  
UPGRADING THE EMERGENCY SYSTEM  
IN  
SYRIAN ARAB REPUBLIC**

**March 2008**

**JAPAN INTERNATIONAL COOPERATION AGENCY**

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**INTERNATIONAL TECHNO CENTER CO., LTD.**

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## Preface

In response to a request from the Government of the Syrian Arab Republic, the Government of Japan decided to conduct a basic design study on the Project for Upgrading the Emergency System and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to Syria a study team from October 27 to November 21, 2007.

The team held discussions with the officials concerned of the Government of Syria, and conducted a field study at the study area. After the team returned to Japan, further studies were made. Then, a mission was sent to Syria in order to discuss a draft basic design, and as this result, 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.

I wish to express my sincere appreciation to the officials concerned of the Government of the Syrian Arab Republic for their close cooperation extended to the teams.

March 2008

Masafumi Kuroki  
Vice-President  
Japan International Cooperation Agency

March 2008

## Letter of Transmittal

We are pleased to submit to you the basic design study report on the Project for Upgrading the Emergency System in the Syrian Arab Republic.

This study was conducted by International Techno Center Co., Ltd., under a contract to JICA, during the period from September 10, 2007 to March 28, 2008. In conducting the study, we have examined the feasibility and rationale of the project with due consideration to the present situation of Syria and formulated the most appropriate basic design for the project under Japan's Grant Aid scheme.

Finally, we hope that this report will contribute to further promotion of the project.

Very truly yours,

Shigetaka Tojo  
Project Manager,  
Basic design study team on  
The Project for Upgrading the Emergency  
System in Syrian Arab Republic  
International Techno Center Co., Ltd.

Summary

## Summary

### **Overview of the Country**

Syrian Arab Republic (hereinafter referred to as “Syria”) is located in the Middle East. The area of its national territory is approximately 185,000 km<sup>2</sup>, which is about half the size of Japan. Syria shares common borders with Turkey in the north, Iraq in the east, Jordan in the south and Lebanon and Palestine in the southwest. The population is approximately 18.36 million (estimate by the Syrian Bureau of Statistics in 2006), which makes it the most densely populated country in the Middle East region. More than half of the population is concentrated within urban areas, with one third living in the urban area of the capital city of Damascus and the second largest city, Aleppo. Although the national average population density is 92 people/km<sup>2</sup>, there are huge variations among individual areas. There are no big cities in the southeast area and the population density here is as low as 2 people/ km<sup>2</sup>.

Its main industries are services (52.3%), mining and manufacturing (23.8%), and agriculture (23.9%). Since the agriculture and mining/manufacturing sectors, including the petroleum sector, represent large proportions of the overall industry, weather and international petroleum market conditions have great impact on the country's economic growth. For this reason, Syria aims to break away from the current industry structure, which relies on primary industry, and is instead working on activation of the textile industry and creation of new industries via introduction of foreign investments. Its efforts to achieve this aim include improvement of its general investment environment, financial/securities markets, and various administrative reforms.

According to the official statistics, the domestic unemployment ratio exceeds 12%. There are many other issues as well, such as diminishing the poverty group and regional gaps and reversing the current decline of social service levels.

### **Background of the Project**

For the last several years, the number of cases where emergency medical services are required in Syria has been increasing steadily. This is partly because of the rapid population growth occurring in the country combined with a general change in the disease distribution, which has resulted in increase of patients with noninfectious diseases such as heart diseases, and partly because of the ongoing development of transportation networks and urbanization, which has resulted in a rash of traffic accidents. This trend is more significant in urban areas and particularly severe in highly populated urban areas. Since the demand for ambulance usage is growing rapidly, the shortage of ambulances required to transport patients is growing into a serious problem. Syria has thus laid down a policy aiming at making more ambulances available through various measures, such as taking steps to increase ambulance distribution in its 9th five-year plan. The majority of the currently

available ambulances were put into service as a consequence of the Japanese Grant Aid “Emergency Medical Treatment Framework Improvement Plan” (1992 and 1993). Effectively, these vehicles are used throughout the entire Syria and will be usable in the future as well. However, the vehicles have been used for 10 years and more and some of them have been driving more than 200,000 km. Excessive use and insufficiency of safety of these ambulances are beginning to cause concerns, as there are no substitute ambulances. It is thus becoming an important issue to alleviate this condition by reinforcing the framework with new ambulances and so on.

Recognizing the situation outlined above, in order to improve and reinforce the nation-wide emergency medical service framework, the Ministry of Health decided to select areas where the shortage of ambulances is becoming a serious problem along with national emergency medical treatment bases, and urgently procure and distribute ambulances placing priority on those selected areas and bases. In 2004, it formulated “the Project for Upgrading Emergency System” for the purpose of introducing and improving equipment related to ambulances, targeting the Governorates of Damascus, Rural Damascus, Aleppo, Homs, Latakia and Deir ez-Zor, which are all densely populated and have serious shortages of ambulances, and university hospitals that provide national bases of emergency medical treatment. It thus requested Japan to provide grant aid in order to secure fund required to procure equipment. In response, Japan dispatched a basic design study team of the Project for Upgrading Emergency System to the local sites from October 26 to November 22, 2007. Once various post-visit tasks were processed within Japan, the outlines of the basic design were explained at the local sites from February 23 to March 1, 2008. This project aims to procure ambulances with accompanying equipment and radio systems for the 6 governorates above in order to reinforce the emergency medical services in Syria, based on the results of the basic design study.

## **Results of Basic Design Study and Contents of the Project**

### **1) Results of Basic Design Study**

The original request was coming from the calculation that based on the allocation of one ambulance per 40,000 people and the national population of about 17,600,000 people. The target figure for allocation became 440 ambulances, from which 243 existing ambulances were subtracted, and the number of ambulances resulted in a figure of 197. This figure was calculated based on the national population, and was in contradiction to the request targeting the six governorates. In addition, as to the 15 ambulances that were scheduled to be allocated at university hospitals under the authority of the Ministry of Higher Education, these 15 ambulances were deleted from the request because university hospitals are not directly involved in emergency medical services system, with the approval of the State Planning Commission (SPC) to let Syria procure these through its own efforts. Finally Target areas were decided as six governorates.

Because the ambulances for the Ministry of Higher Education were deleted, a request was put in to the Ministry of Health for the number of ambulances they were planning on. They then submitted a request list for a total of 193 ambulances for the six target governorates. However, because the health offices of the governorates were most aware of the details regarding the distribution locations, meetings were held with persons responsible for emergency services in each governorate to confirm the emergency medical service expansion plans, the appropriateness of distribution plan, priorities of the sites, and maintenance abilities within each governorate. As a result, both sides reached to an agreement to use existing ambulances based on the idea of the original request and plan to fulfill the number of ambulances that would be required to expand emergency medical service systems. The objective of this project is to provide ambulances and radio equipment in order to expand and improve emergency patient transport services in six governorates: the Governorates of Damascus, Rural Damascus, Aleppo, Homs, Dier-Al-Zor, and Lattakia.

## 2) Contents of the Project

The target areas of this project are communities in the six Governorates of Damascus, Rural Damascus, Aleppo, Homs, Dier-Al-Zor, and Lattakia that have no ambulances stationed and that have not been able to provide emergency patient transport services. This project aims to distribute ambulances to: 1) health centers in communities strategically selected and prioritized based on population densities and the availability of medical facilities within each governorate, 2) key points on major arterial roads to respond to the rapid rise in traffic accidents, and 3) hospitals that have been opened as new medical centers in each governorate, in order to improve and expand systems for transporting emergency patients in the six target governorates, systems that currently have only limited areas of coverage. In addition, in order to expand the coverage of radio communications networks currently available only in urban areas within the respective governorates, this project aims to establish base and repeater stations in five areas respectively (one set per governorate), which will secure communications with existing ambulances as well as those to be supplied in this project and form a radio communications network felt to be the bare minimum necessary to enable rapid response services.

As a result of the discussions with health offices of each governorate, it was decided that a total of 160 ambulances would be allocated. The breakdown is shown in the following table.

Location	Damascus	Rural Damascus	Aleppo	Dier-Al-Zor	Homs	Lattakia	Total
Health Center	18	14	32	12	5	19	100
Major Arterial Roads		15	10	6	8	4	43
Hospital		2		3	10	2	17
Total	18	31	42	21	23	25	160



This project would provide one base station and one repeater station for target governorates to cover areas where the new ambulances would be distributed. The sites of allocation of radio stations are as follows.

Governorate	Exist Base station	Planned Base station	Planned repeater station	In charge of repeater station
Damascus	Damascus Hospital	Tadmor road Junction (Police station)	Mt.Kasion TV tower	Ministry of Information
Rural Damascus	Duma Hospital			
Aleppo	Ibn.Rashid Hospital	Manbej Hospital	Mt. Ain Al Arab TV tower	Ministry of Information
Dier-Al-Zor	Al Watani Hospital	Al Mayadien Hospital	Mt. Bukamal TV tower	Ministry of Information
Homs	Al Watani Hospital	Tal Karak Hospital	Mt. Zen Al Abadyeen	Ministry of Health
Lattakia	Al Watani Hospital	Gable Hospital	Mt. Slonfe TV tower	Ministry of Information

The contents of equipment to be procured in this project and the equipment list are shown in the following Tables.

No.	Item	Main Specification	Objective of Use	Q'ty
01	Ambulance	One box type, left handle, Gasoline engine	Transport emergency patients	160
02	Radio set for ambulance	VHF, FM, 50W	Communication with emergency center	160
03	Patient handling instrument set	Min stretcher, Stair chair, Scoop stretcher, Neck collar, Back board	Transport emergency patients	160
04	Defibrillator	Bi fasic or mono phasic, AED function	Remove atrial fibrillation	117
05	Pulse oximeter	SpO <sub>2</sub> , pulse rate	Measure oxygen thickness in blood and judge whether oxygen inhalation is possible	160
06	Portable suction apparatus	220VAC/12VDC/with rechargeable battery operation	Remove dirt and incretion	160
07	Resuscitator set	2 Cylinder, Pressure reducer, Mask Tubes	Use for oxygen inhalation	160
08	Treatment instrument set	Sphygmomanometer, Stethoscope, Laryngoscope, Portable resuscitator, suter set	Diagnose patient condition and simple surgical treatment	160
09	Radio set for base station	VHF, FM, 50W	Use for communication with emergency center and ambulance	5
10	Repeater set	VHF, FM, 50W	For area expansion of radio communication	5

Item No.		01	02	03	04	05	06	07	08	09	10
Description		Ambulance	Radio set for ambulance	Patient handling instrument set	Defibrillator	Pulse oximeter	Portable suction apparatus	Resuscitator set	Treatment instrument set	Radio set for base station	Repeater set
Damascus	Health center	18	18	18	18	18	18	18	18		
Rural Damascus	Health center	14	14	14	14	14	14	14	14		
	Road	15	15	15		15	15	15	15		
	Hospital	2	2	2	2	2	2	2	2		
	Base station									1	
	Repeater station										1
Lattakia	Health center	19	19	19	19	19	19	19	19		
	Road	4	4	4		4	4	4	4		
	Hospital	2	2	2	2	2	2	2	2		
	Base station									1	
	Repeater station										1
Aleppo	Health center	32	32	32	32	32	32	32	32		
	Road	10	10	10		10	10	10	10		
	Base station									1	
	Repeater station										1
Dier-Al-Zor	Health center	12	12	12	12	12	12	12	12		
	Road	6	6	6		6	6	6	6		
	Hospital	3	3	3	3	3	3	3	3		
	Base station									1	
	Repeater station										1
Homs	Health center	5	5	5	5	5	5	5	5		
	Road	8	8	8		8	8	8	8		
	Hospital	10	10	10	10	10	10	10	10		
	Base station									1	
	Repeater station										1
Total		160	160	160	117	160	160	160	160	5	5

### Period and Estimated Cost of the Project

The expected period for completing this project is 12 months and its estimated cost borne by the Syria side is about 2 million Japanese yen.

### Examination of the Validity of the Project

As a result of the implementation of this project, the following effects can be expected.

- 1) The beneficiary of this project is about 11.23 million people in the Governorates of Damascus, Rural Damascus, Aleppo, Homs, Dier-Al-Zor, and Lattakia, which accounts for 60% of the total population (18.60 million).
- 2) Local people could live without anxiety after allocating ambulances to health centers and hospitals in the regions where those were not available before.

- 3) Emergency medical services would be improved because injured of traffic accident, which is increasing drastically, could be transferred to hospitals more rapidly by allocating ambulances to the major arterial road. Emergency treatment for heart failure would be also improved because defibrillators would be procured for ambulances for hospitals and health centers.
- 4) Syrian side could utilize and maintain the planned ambulances, medical equipment and radio systems because those are similar to the existing ones.

The table below shows the effects and improvement level of the issue expected if this project is executed.

Current condition and issue	Countermeasure in cooperation target project	Direct effect/improvement level	Indirect effect/improvement level
Due to shortage of the current ambulance fleet, sufficient emergency patient transportation services cannot be provided.	<ul style="list-style-type: none"> <li>• Procurement of 160 ambulances</li> <li>• Procurement of wireless equipment for 5 wireless bases and 5 relay stations</li> </ul>	<ul style="list-style-type: none"> <li>• The number of patients transported increases in the target 6 governorates.</li> <li>• The area where an ambulance can arrive at emergency point within 15 minutes expands in the target 6 governorates.</li> </ul>	<ul style="list-style-type: none"> <li>• Citizen trust in the emergency patient transportation services is improved.</li> <li>• Hospitalization period can be shorten and early return to society can be possible</li> <li>• Ambulances can be operated efficiently.</li> </ul>

The Syrian Ministry of Health is making efforts to expand, maintain and secure the emergency patient transportation services system. In order to improve the service system in the future, the following issues must be addressed.

#### Updating and Increasing Ambulances

This project reinforces and improves the emergency patient transportation services by procuring ambulances that are lacking in the target 6 governorates, assuming the existing ambulances continue to be used. However, as shown in the next table, some of the existing ambulances will most likely have to be replaced due to their long usage time. Moreover, the project only covers the 6 most populated of the 14 governorates in the country, including Damascus, but the shortage of ambulances are posing problems in the remaining 8 governorates as well.

The Ministry of Health aims to achieve a service level target of 1 ambulance per 40,000 people, which means that the target number of ambulances is 450 in total for the entire population of 18 million people. It is important to continue working towards achieving this target value as well as replacing the 194 ambulances that have been used for more than 14 years.

	Peugeot	Chevrolet	Isuzu	Others	Total
Introduction year	2003	2003	1994	1990 or earlier	
Number of ambulances	37	39	166	28	270
Vehicle comparison	13.7%	14.4%	61.5%	10.3%	100%

#### Expansion of communication network

According to this project, maintenance will be performed on the communication networks in the 6 most populated governorates, but it is mandatory to maintain the communication networks in the neighboring governorates that were not covered in this project as well in order to expand and improve the communication networks nation-wide. The Ministry of Health must work methodically on expansion and improvement of the wireless networks in parallel with the replacement/reinforcement of ambulances.

#### Fostering human resources

The Ministry of Health is making active efforts to raise the emergency medical treatment level of the emergency medical teams and conduct training programs in cooperation with WHO and other organizations. In today's emergency medical treatment activities, emergency treatment methods for cardiac diseases and traffic accidents are becoming more and more advanced and specialized. It is thus necessary to organize improved technical training programs, so that highly trained emergency medical teams including emergency care physicians can operate within the ambulance service system.

## Contents

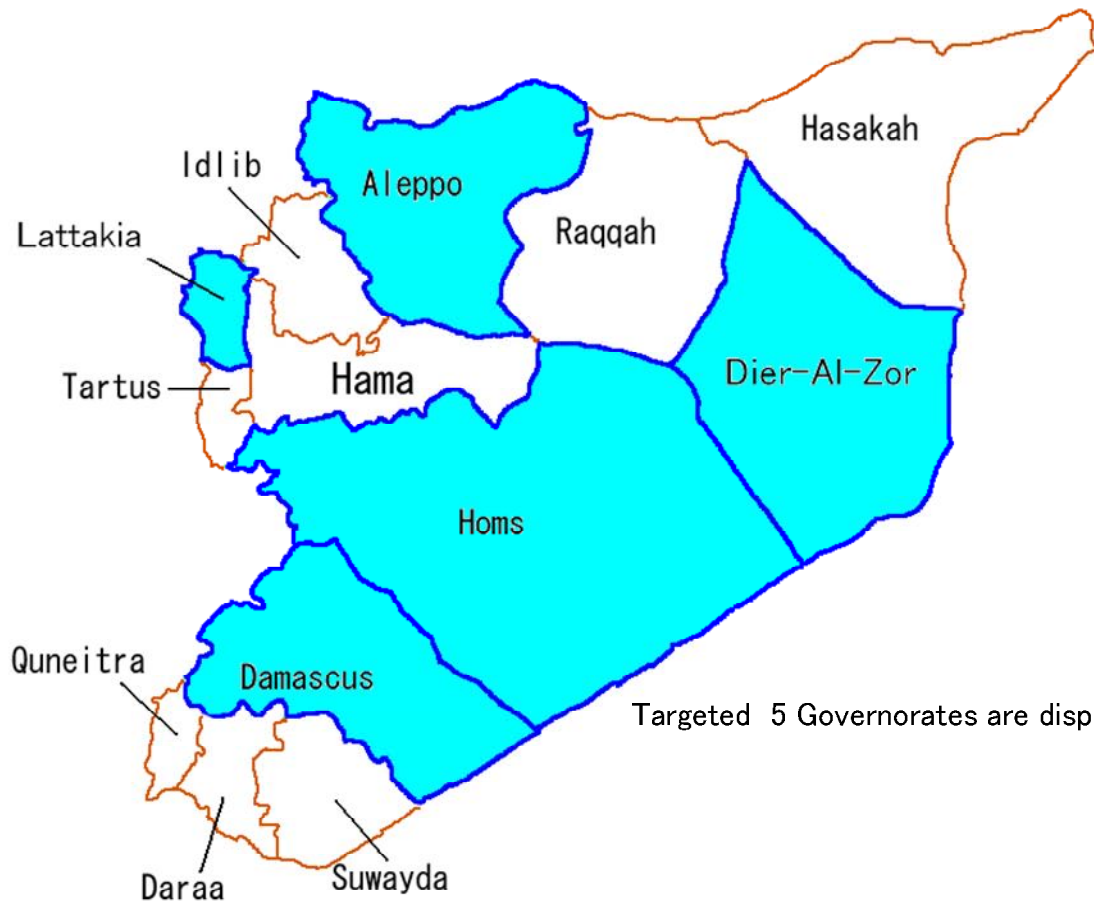
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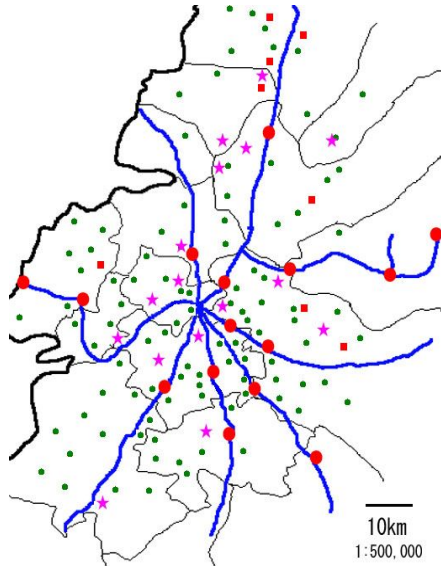
1. Member List of the Study Team
2. Study Schedule
3. List of Parties Concerned in the Recipient Country
4. Minutes of Discussions
5. References

# Location map

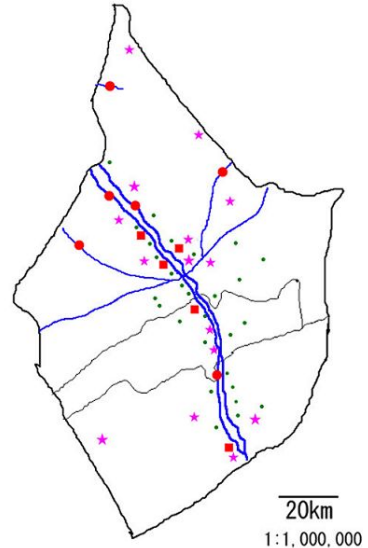


Targeted 5 Governorates are displayed in blue

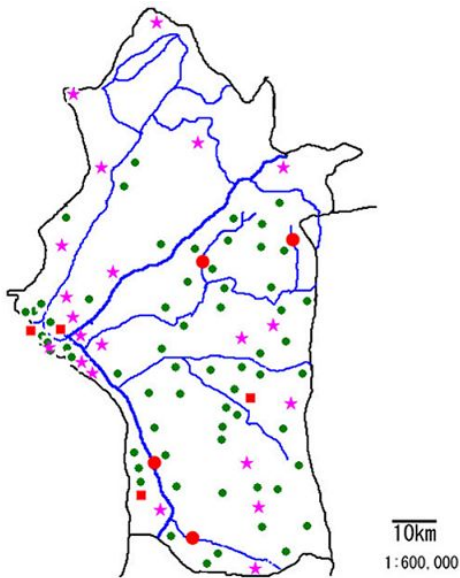
# Location of project sites



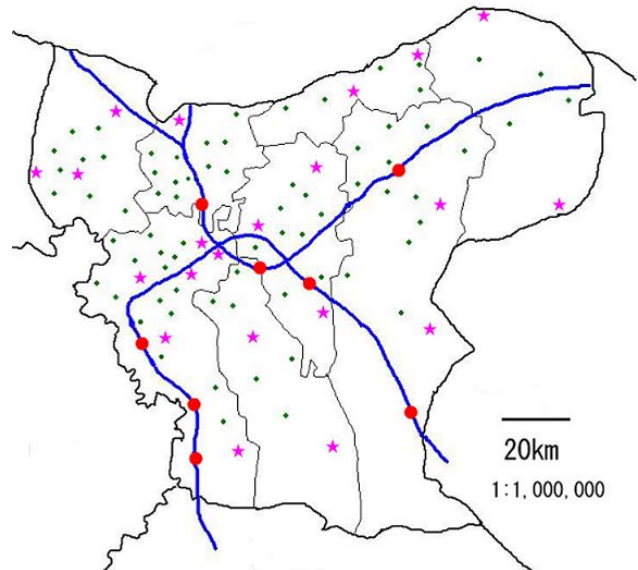
Rural Damascus



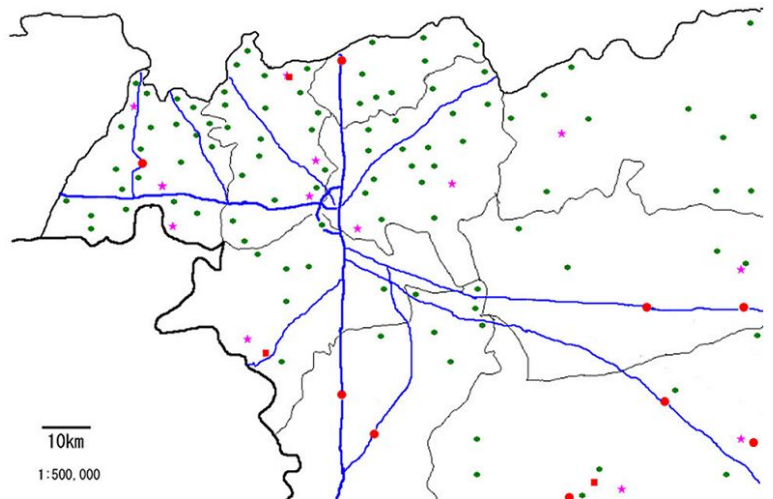
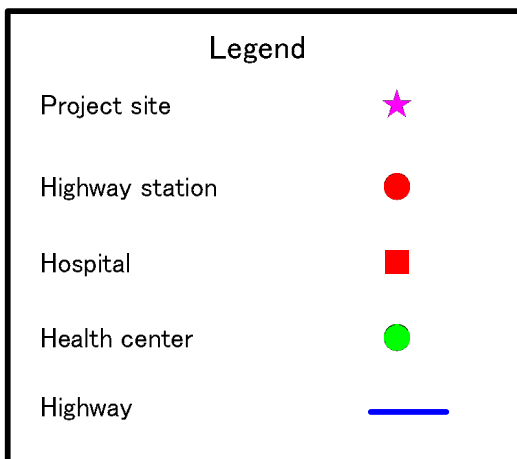
Dier-Al-zor



Lattakia



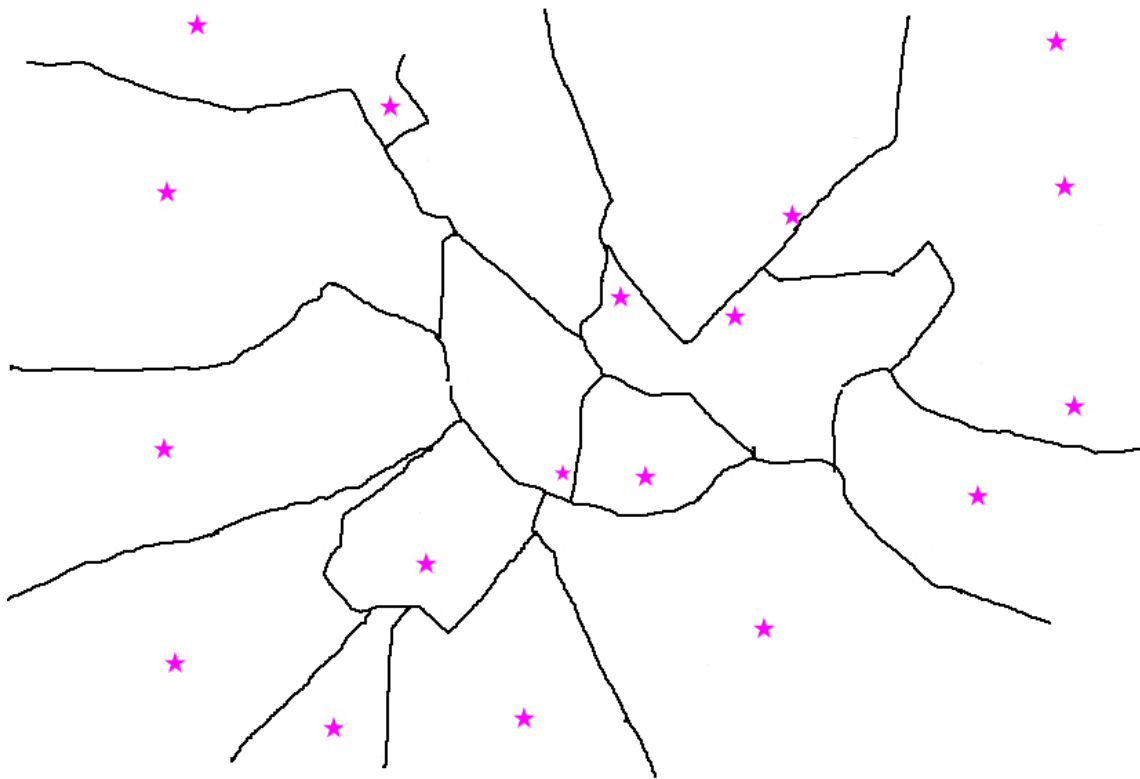
Aleppo



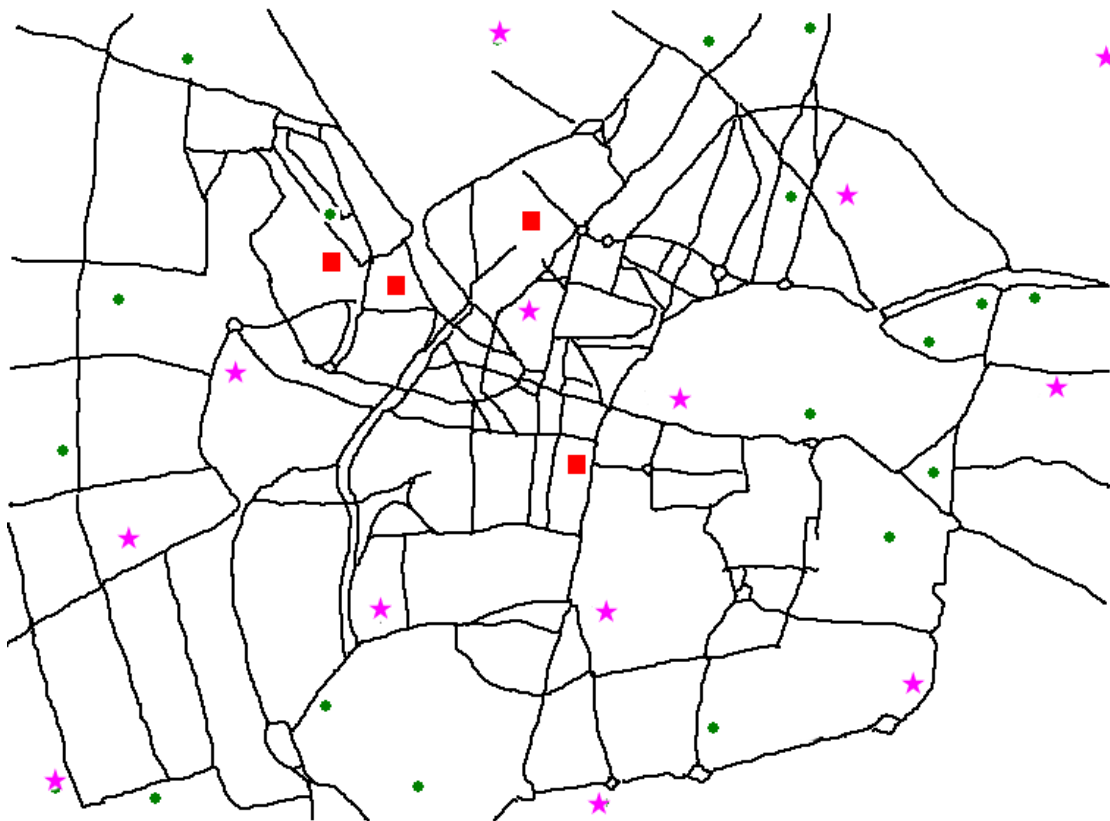
Homs



# Location of project sites



Damascus



Aleppo City

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## Abbreviations

A/P	Authorization to Pay
AED	Automated External Defibrillator
B/A	Banking Arrangement
BHN	Basic Human Needs
BS	British Standards
DIN	Deutsche Industrie Normen
EIB	European Investment Bank
E/N	Exchange of Notes
GDP	Gross Domestic Product
GNP	Gross National Product
ICT	Information and Communications Technology
ICU	Intensive Care Unit
ISO	International Organization for Standardization
JICA	Japan International Cooperation Agency
JIS	Japan Industrial Standards
MDG	Millennium Development Goals
ODA	Official Development Assistance
SFPA	Syria Family Planning Association
UNICEF	United Nations International Children's Fund
UNFPA	United Nations Population Fund
UNDP	United Nations Development Programme
WHO	World Health Organization

## Chapter 1 Background of the Project

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For the last several years, the number of cases where emergency medical services are required in Syria has been increasing steadily. This is partly because of the rapid population growth occurring in the country combined with a general change in the disease distribution, which has resulted in increase of patients with noninfectious diseases such as heart diseases, and partly because of the ongoing development of transportation networks and urbanization, which has resulted in a rash of traffic accidents. This trend is more significant in urban areas and particularly severe in highly populated urban areas where there is heavy population inflow from suburban and/or rural areas, i.e., the Governorates of Damascus, Rural Damascus, Aleppo, Homs, Lattakia, and Dier-Al-Zor (these 6 governorates command 60% of the total population).

Currently, since the demand for ambulance usage is growing rapidly, the shortage of ambulances required to transport patients is growing into a serious problem. Syria has thus laid down a policy aiming at making more ambulances available through various measures, such as taking steps to increase ambulance distribution in its 9th five-year plan. Although the Ministry of Health is purchasing and distributing ambulances, it is unable to keep pace with the growing demand for ambulance services, and the number of ambulances is still only around half of what Syria has set as the desired ambulance distribution standard. The citizens' level of trust in emergency services has been dropping. Unsafe passenger vehicles are often used for patient transportation in order to compensate for the lack of ambulances, and many people die before they reach a hospital, seriously impacting the overall efficiency of the current emergency medical care activities. The majority of the currently available ambulances were put into service as a consequence of the Japanese Grant Aid "the Project for the Upgrading of Emergency Services" (1992 and 1993). Effectively, these vehicles are used throughout the entire Syria and will be usable in the future as well. However, the vehicles have been used for 10 years and more and some of them have been driving more than 200,000 km. Excessive use and insufficiency of safety of these ambulances are beginning to cause concerns, as there are no substitute ambulances. It is thus becoming an important issue to alleviate this condition by reinforcing the framework with new ambulances and so on.

Recognizing the situation outlined above, in order to improve and reinforce the nation-wide emergency medical service framework, the Ministry of Health decided to select areas where the shortage of ambulances is becoming a serious problem along with national emergency medical treatment bases, and urgently procure and distribute ambulances placing priority on those selected areas and bases. In 2004, it formulated "the Project for Upgrading Emergency System" for the purpose of introducing and improving equipment related to ambulances, targeting the Governorates of Damascus, Rural Damascus, Aleppo, Homs, Lattakia and Dier-Al-Zor, which are all densely populated and have serious shortages of ambulances, and university hospitals that provide national

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#### (1) Natural Conditions

Syria is situated at a latitude of 32 to 37 degrees north on the east coast of the Mediterranean Sea. The land varies widely within the national borders. The Mediterranean region and the mountain terrain closing toward the Sea and its southern river basin of Orontes are green and lush, and the rich terrain stretching throughout the southern area bears most of the domestic agriculture. Cities are mainly situated in the western area and the Syrian Desert expands from the center to the eastern and southeastern areas.

November to March is the wet season, during which extensive periods of rain are common, just like in the Japanese rainy season. In other periods, however, it seldom rains, and dry and clear weather prevails. The temperature varies greatly between day and night, as well as among seasons. In summer, the highest temperature exceeds 40 degrees Celsius during the day, while the temperature drops down to approximately 20 degrees Celsius at night. In winter, the temperature may drop down as much as to 3 to 4 degrees Celsius below zero, and it may snow. The temperature in the capital city of Damascus is similar to that of Tokyo, but the annual precipitation is much lower, approximately 160 mm.

#### (2) Consideration for the Environment and Local Community

One of the issues to consider in the effort to increase the ambulance distribution concerns reducing emission of harmful gases. Although there are no legal regulations in Syria, the awareness of air pollution is becoming higher as the number of cars grows. Thus, in this project, the Ministry of Health has requested gasoline engines rather than diesel engines in order to keep harmful gas emissions as low as possible, and thus only vehicles mounted with gasoline engines are planned.

## Chapter 2 Contents of the Project



## Chapter 2 Contents of the Project

### 2-1 Basic Concept of the Project

Syria has formed a policy to expand the emergency medical services through purchasing and distributing ambulances as described in its 9<sup>th</sup> five-year plan, but in spite of the effort of the Ministry of Health, the number of ambulances is still around half of the figure comparing with its distribution plan of ambulances. There have not been enough ambulances to meet the rising demand for transportation of emergency patients, and as a result people tend to use other methods of transportation comparatively more available to them than ambulances such as their own vehicles, taxis or buses, which lead the dissatisfaction of people who need emergency transportation.

Although, it is targeted to shorten the time between the emergency call and the arrival of ambulance to 15 minutes in the section of emergency medicine of 10<sup>th</sup> five-year plan of Syria, most people not living in urban areas still can not make use of emergency patient transfer services. Therefore, it is necessary for the government of Syria to expand its emergency medical system immediately.

The objective of this project is to provide ambulances and radio equipment in order to expand and improve emergency patient transport services in six governorates: the Governorates of Damascus, Rural Damascus, Aleppo, Homs, Dier-Al-Zor, and Lattakia, where there are numerous heavily populated cities due to migration from suburban and rural areas to urban areas and rapid increase of traffic accidents.

### 2-2 Basic Design of the Requested Japanese Assistance

#### 2-2-1 Design Policy

##### (1) Basic Policy

The target areas of this project are communities in the six Governorates of Damascus, Rural Damascus, Aleppo, Homs, Dier-Al-Zor, and Lattakia that have no ambulances stationed and that have not been able to provide emergency patient transport services. The project aims to distribute ambulances to: 1) health centers in communities strategically selected and prioritized based on population densities and the availability of medical facilities within each governorate, 2) key points on major arterial roads to respond to the rapid rise in traffic accidents, and 3) hospitals that have been opened as new medical centers in each governorate, in order to improve and expand systems for transporting emergency patients in the six target governorates, which currently have only limited areas of coverage. In addition, in order to expand the coverage of radio communications networks currently available only in urban areas within the respective governorates, the project establishes base and repeater stations in five areas respectively (one set per governorate), which will secure communications with existing ambulances as well as those to be supplied in this project and form a radio communications network for rapid response emergency services.

## (2) Policy on Natural Environment

Because temperatures in the target areas drop to -3° to -4° in the winter and elevate to over 40° in the summer, the ambulances are to have air conditioners to keep the air inside at a constant temperature.

## (3) Policy of Socio-Economic Conditions

There are no requirements that need special consideration in terms of socioeconomic conditions in this project.

## (4) Policy on Procurement and Construction

Ambulances, medical equipment for the ambulances and radios are not currently manufactured in Syria. For that reason, in accordance with the Grant Aid Scheme, products made in Japan or other countries adopted by Syria, are to be procured with the following conditions.

### Ambulance

- Since the base vehicles for the ambulances are “line-produced”, those which are reliably procurable within a limited time frame are selected, and those which have spare parts and consumable procurable from a distribution agent in Syria.
- It is from a manufacturer that sells vehicles in Syria and that has a service center in Syria capable of supplying spare parts and repairing service.

### Medical Equipment for Ambulance and Radio Communication Equipment

- They shall be products manufactured in Japan or Europe which does not violate U.S. re-exports restrictions.

## (5) Policy on the Operation and Maintenance

Since major repair works to vehicles are currently being outsourced, and defibrillators and pulse oxymeters require consumable and replacement parts, there must be distributors in Syria capable of servicing and maintaining them. Because there are no official agents in Syria for radio equipment, the manufacturers must have agents in Jordan, United Arab Emirates, or other neighboring countries.

## (6) Policy on Determining the Grade and Specification of Equipment

The grades and specifications of equipment to be procured as part of this project shall be compliant with ambulances and medical equipment aboard ambulances in use in Syria. Radio equipment shall be capable of communications with existing radio equipment.

## (7) Policy on Schedule of Project

The schedule of this project is such that it will be completed within a single fiscal year and

is expected to last 12 months from the conclusion of the Exchange of Notes (E/N).

#### (8) Policy on Consumables and Spare Parts

Spare parts are not included in this project. However, consumables necessary for six-month operation in total are borne by Japanese side. The six months breaks down into four months of blank period from the completion date of installation of equipment (September, 2009) to the end of Syrian fiscal year (December, 2009), and two months of receiving period of consumables which would be ordered at the beginning of 2010.

#### (9) Policy on Training after Installation

Training for basic operation, daily maintenance, trouble shooting and how to use consumables are carried out in this project.

### 2-2-2 Basic Plan (Equipment Plan)

#### (1) Total Plan

Taking account of the intention of the Ministry of Health, target areas are decided as six governorates as the Governorates of Damascus, Rural Damascus, Aleppo, Homs, Dier-Al-Zor, and Lattakia. As a result of discussion about the allocation of ambulances with the Ministry of Health and the Health Offices of each governorate, 160 ambulances will be procured to satisfy the appropriateness judgment of nomination requirements among health centers, major roads, and hospitals in each governorate, while using existing ambulances as well. The 15 ambulances for university hospitals under the authority of the Ministry of Higher Education, which were initially requested, are to be procured by Syria, and therefore have been deleted from this project. In addition, radio communications equipment for base stations and repeater stations shall be set up in the five targeted areas to expand communications networks.

#### (2) Confirmation of Contents of Request

The original request was coming from the calculation that based on the allocation of one ambulance per 40,000 people and the national population of about 17,600,000 people. The target figure for allocation became 440 ambulances, from which 243 existing ambulances were subtracted, and the number of ambulances resulted in a figure of 197. This figure was calculated based on the national population, and was in contradiction to the request targeting the six governorates. In addition, as to the 15 ambulances that were scheduled to be allocated at university hospitals under the authority of the Ministry of Higher Education, these 15 ambulances were deleted from the request because university hospitals are not directly involved in emergency medical services system, with the approval of the State Planning Commission (SPC) to let Syria procure these through its own efforts. Finally target areas were decided as six governorates.

Because the ambulances for the Ministry of Higher Education were deleted, a request was put in to the Ministry of Health for the number of ambulances they were planning on. They

then submitted a request list for a total of 193 ambulances for the six target governorates. However, because the Health Offices of the governorates were most aware of the details regarding the distribution locations, meetings were held with persons responsible for emergency services in each governorate to confirm the emergency medical service expansion plans, the appropriateness of distribution plan, priorities of the sites, and maintenance abilities within each governorate. As a result, both sides reached an agreement to use existing ambulances based on the idea of the original request and plan to fulfill the number of ambulances that would be required to expand emergency medical service systems.

### (3) Study on Sites of Allocation of Ambulances

A survey revealed the existing total number of ambulances was insufficient for emergency medical service and the area of radio communications was a quite narrow radius of 50 km, so it became clear that areas in which effective operation of ambulance was limited. As a result of the survey, it was decided to distribute ambulances to the points that had no ambulances and were unable to transport emergency patients.

- 1) Health centers that should be given priority in allocation of ambulances due to population density and distance from hospitals
- 2) Key points on major arterial roads that need ambulances to respond to the rapid rise in traffic accidents
- 3) Hospitals that needs ambulances as centers of emergency medical services

### (4) Results of Study of Ambulance Allocations for Each Governorate

#### (4)-1 Damascus /Rural Damascus

Damascus : 1,669,000 people / Rural Damascus : 2,487,000 people

Total : 3,156,000 people

Table 2-1 Health Centers in Damascus and Rural Damascus

No.	Place	Estimated Population	Damascus	Rural Damascus
D-1	Adra Industrial City	120,000		1
D-2	Ain Al Fiegheh	39,960		1
D-3	Koudsiaa (New)	101,780		1
D-4	Koura Al Assad (New)	44,750		1
D-5	Kousweh	136,430		1
D-6	Beit Jin	78,900		1
D-7	Soumariah	73,300	1	
D-8	Midaan	41,200	1	
D-9	Tadamoun	91,000	1	
D-10	Moukiam	120,800	1	
D-11	Doummar Mashrouu	140,000	1	
D-12	Doummar Albalad	62,000	1	
D-13	Kafar Sousaa	113,800	1	
D-14	Kaddam	140,000	1	
D-15	Tabbale/Dweilaa	49,276	1	
D-16	Joubar	63,490	1	
D-17	7-Apr	43,700	1	

No.	Place	Estimated Population	Damascus	Rural Damascus
D-18	Saroujah	41,550	1	
D-19	Shaghour	85,800	1	
D-20	Kaboum	63,680	1	
D-21	Old Barzeh	92,270	1	
D-22	Oush Alwarwar	63,000	1	
D-23	Zahiraa	57,000	1	
D-27	Maloula	38,600		1
D-28	Saidnaiah	42,600		1
D-29	AlNashabieh	65,437		1
D-30	Assal Al Ward	39,500		1
-	Sports Area		1	
D-65	Daria	256,443		1
D-66	Yabroud	49,104		1
D-67	Harasta	103,594		1
D-68	Al-Tal	111,137		1
			18	14

Table 2-2 Major Arterial Roads in Rural Damascus

No.	Name of Road	Place	Q'ty
D-31	Damascus – Darra Highway	Kouseh Station	1
D-32	Damascus – Darra Highway	Ghabab Station	1
D-35	Damascus - Sweidaa Highway	Zaynab Station	1
D-36	Damascus - Sweidaa Highway	Hazem Station	1
D-39	Damascus - Beirut Road	Zabadani Station	1
D-41	Damascus - Beirut Road	Jdaidet Yabous Station	1
D-42	Damascus - Homs Highway	New Douma Station	1
D-45	Damascus - Homs Highway	Maloula Station (New)	1
D-49	Damascus – Tahef Highway	Aldumair Station	1
D-50	Damascus – Tahef Highway	Almafrag Station	1
D-51	Damascus – Tahef Highway	Tanef Station	1
D-52	Damascus - Qunietrah Highway	Jadidet Artouz Station	1
D-55	Damascus - Marabaa Highway	Marabaa Station	1
D-56	Damascus - Airport Highway	Third Bridge Station (New)	1
D-57	Damascus - Airport Highway	Fifth Bridge Station (New)	1
			15

Table 2-3 Hospital in Rural Damascus

No.	Hospital name	Q'ty
D-62	Jairoud	1
D-64	Rankous	1
		2

Table 2-4 Planned Quantity in Damascus and Rural Damascus

Location	Damascus	Rural Damascus	Q'ty
Health Center	18	14	32
Major Arterial Roads		15	15
Hospital		2	2
Total	18	31	49

(4)-2 Aleppo : 4,393,000 people

Table 2-5 Health Centers in Aleppo

No.	Place	Estimated Population	City area	Rural area
A-01	Azzaz	140,000		1
A-02	Atareb	82,000		1
A-03	Ifreen	80,720		1
A-04	Maidan Key	43,500		1
A-05	Sheikh Al Hadid	40,457		1
A-06	Ain Al Arab	57,200		1
A-07	Al Gassanieh	42,300		1
A-08	Jarablous	45,000		1
A-09	Tal AlHajjar (New)	40,600		1
A-10	Manbej Abou Klkoul (New)	49,000		1
A-11	Manbej Masskanieh	53,500		1
A-12	Hafer	50,800		1
A-13	Alarimah	42,000		1
A-14	AlSfiraa	163,880		1
A-15	Khanasair	43,800		1
A-16	Tal Al Daman	46,102		1
A-17	Al Misalmiah	49,000		1
A-18	Al eiess	58,000		1
A-19	Al douihii	61,200		1
A-20	Specilized Clinics	60,000	1	
A-21	Hamdanieh	55,000	1	
A-22	Bad Al Nyrabb	47,000	1	
A-23	Al Ashrafieh	93,165	1	
A-24	Al Sheik Maksoud	116,330	1	
A-25	Souk AlHal Fire Station	57,000	1	
A-26	Slimanieh Fire Station	47,000	1	
A-27	AlKarmiek Fire Station	40,800	1	
A-28	Industrial City Sheikh Najjar	60,000	1	
A-29	Industrial City Bleiramoun	47,000	1	
A-30	Industrial City Alsoukieh	54,000	1	
A-31	Al Ramousseh	71,000	1	
A-32	Hananou	69,000	1	
			13	19

Table 2-6 Major Arterial Roads in Aleppo

No.	Name of Road	Place	Q'ty
A-33	Aleppo - Idleb Highway	Khan Sheikhoun Station	1
A-34	Aleppo - Idleb Highway	Zarba Station (New)	1
A-35	Aleppo - Idleb Highway	Sarakeb Bridge Station (New)	1
A-36	Aleppo - Rakkah Highway	Maskaneh Station	1
A-37	Aleppo - Rakkah Highway	Tadef Station	1
A-38	Aleppo - Rakkah Highway	Kouiress Station	1
A-39	Aleppo - Manbej Highway	Manbej Police Station	1
A-40	Aleppo - Manbej Highway	Souraan Station (New)	1
A-41	Aleppo - Izzaz Highway	Hyan Station New	1
	Aleppo - Idleb Highway	Zedo Station	1
			10

Table 2-7 Planned Quantity in Aleppo

Location	City area	Rural area	Total Q'ty
Health Center	13	19	32
Major Arterial Roads	-	10	10
Hospital	-	-	
Total	13	29	42

(4)-3 Dier-Al-Zor, : 1,094,000 people

Table 2-8 Health Centers in Dier-Al-Zor

No.	Place	Estimated Population	Q'ty
Z-1	Albou Kamai	54,620	1
Z-2	Alsouar	43,000	1
Z-3	AlTabnieh	53,280	1
Z-4	Basiraa	82,000	1
Z-5	Sbyhaam	58,000	1
Z-6	Alkouriaa	45,000	1
Z-7	Aljallaa	48,000	1
Z-8	Abu Khasab (boudain)	53,000	1
Z-9	Jarawaan (boudain)	41,000	1
Z-10	Kbajeb (boudain)	47,000	1
Z-11	Specialized Clinin Center	280,000	1
Z-12	Al Housaninieh (New)	45,000	1
			12

Table 2-9 Major Arterial Roads in Dier-Al-Zor

No.	Name of Road	Place	Q'ty
Z-13	Deir Al Zor - Alhasakeh Highway	Housein Station (New)	1
Z-15	Deir Al Zor - Al Rakkah Highway	Jebli Station	1
Z-16	Deir Al Zor - Al Rakkah Highway	Sabkhaa Station (New)	1
Z-17	Deir Al Zor - Al Rakkah Highway	Alkassra (New)	1
Z-18	Deir Al Zor - Al Rakkah Highway	AlJazra (New)	1
Z-20	Deir Al Zor - Albou Kamal Highway	Hajeim Station (New)	1
			6

Table 2-10 Hospitals in Dier-Al-Zor

No.	Hospital name	Q'ty
Z-23	Cardiac	1
Z-24	Alkassra	1
Z-25	Hajin	1
		3

Table 2-11 Planned Quantity in Dier-Al-Zor

Location	Q'ty
Health Center	12
Major Arterial Roads	6
Hospital	3
Total	21

(4)-4 Homs : 1,647,000 people

Table 2-12 Health Centers in Homs

No.	Place	Estimated Population	Q'ty
H-2	Ouyoun Alwadi	42,610	1
H-3	Moukharam	58,000	1
H-5	Ghouta (New)	60,000	1
H-8	Misherfeh	44,000	1
H-9	Zaydal	46,715	1
			5

Table 2-13 Major Arterial Roads in Homs

No.	Name of Road	Place	Q'ty
H-11	Homs - Damascus Highway	Breig Station (New)	1
H-12	Homs - Damascus Highway	Hisiah Station	1
H-14	Homs - Tartous Highway	Houash (New)	1
H-16	Homs - Tadmour Highway	Fourth Station	1
H-17	Homs - Tadmour Highway	Third Station	1
H-20	Homs - Hama Highway	Rastan Station	1
H-21	Homs- Deri Al Zor Highway	Alsoukhneh Station	1
H-22	Tadmour - Rural Damas Highway	Kouniefeess Station	1
			8

Table 2-14 Hospitals in Homs

No.	Hospital name	Q'ty
H-23	Karayatein (New)	1
H-24	Al Kousare	1
H-25	Altawieed (New)	1
H-26	Al Watani	1
H-27	Tadmour	1
H-28	Al Shkna	1
H-29	Moukharam	1
H-30	Tel kalak	1
H-31	Al Harath	1
H-32	Tel Do	1
		10

Homs is the largest governorate in Syria and hospitals are strategically located at the places most requiring health services. Homs Health Office has put priority to locate more ambulances to hospitals than to health centers because those hospitals cover areas which are covered by several health centers, and those hospitals received emergency patients from health centers as a referral health facility.

Table 2-15 Planned Quantity in Homs

Location	Q'ty
Health Center	5
Major Arterial Roads	8
Hospital	10
Total	23



(4)-5 Lattakia : 943,000 persons

Table 2-16 Health Centers in Lattakia

No.	Place	Estimated Population	Q'ty
L-1	Ain Altinah	15,000	1
L-2	Kasab (Tourist Area)	15,000	1
L-3	Daliah	47,000	1
L-4	Qtalbiah	43,000	1
L-5	Ain Alsharkiah	40,900	1
L-6	Heref Almsytraa (New)	14,000	1
L-7	Alfakouraa (New)	25,000	1
L-8	Kansebaa	44,800	1
L-9	Mziraa	41,000	1
L-10	Fedia	42,000	1
L-11	Aysharf Al Shamiah	47,200	1
L-12	Ain Allaban	25,400	1
L-13	Rabiala	14,000	1
L-14	Albassiet (Tourist Area)	45,000	1
L-15	Zaghreen	22,100	1
L-16	Shateeh Beach	65,000	1
L-17	Besnadah	51,000	1
L-18	Railway Station	60,000	1
L-19	Sport Town (Main Sport Town)	60,000	1
			19

Table 2-17 Major Arterial Roads in Lattakia

No.	Name of Road	Place	Q'ty
L-21	Lattakia - Tartous Highway	Jablleh Station	1
L-22	Lattakia - Tartous Highway	Banias Station	1
L-24	Lattakia - Aleppo Highway	Zouranieh Station	1
L-28	Lattakia - Slounfeh Highway	Hafeh Station	1
			4

Table 2-18 Hospitals in Lattakia

No.	Hospital name	Q'ty
L-32	Tawleed & children (New)	1
L-33	Cardia (New)	1
		2

Table 2-19 Planned Quantity in Lattakia

Location	Q'ty
Health Center	19
Major Arterial Roads	4
Hospital	2
Total	25

As a result of the discussions with the Health Offices of each governorate, it was decided that a total of 160 ambulances would be allocated. The breakdown is shown in the following table.

Table 2-20 Summary of ambulance allocation

Location	Damascus	Rural Damascus	Aleppo	Dier-Al-Zor	Homs	Lattakia	Total
Health Center	18	14	32	12	5	19	100
Major Arterial Roads		15	10	6	8	4	43
Hospital		2		3	10	2	17
Total	18	31	42	21	23	25	160

#### (5) Sites of Allocation of Radio Communication Equipment

Because the existing radios have a range of around 50 km in radius from one base station in each governorate, and none of the governorates are able to cover their entire areas, it has been an obstacle for efficient emergency services with ambulances. The expansion of the communications networks in each governorate and nationwide communications networks would be carried out by the Ministry of Health and this project would therefore provide one base station and one repeater station for target governorate to cover areas where the new ambulances would be distributed. The sites of allocation of radio stations are as follows.

Table 2-21 Sites of Allocation of Radio Communications Equipment

Governorate	Exist Base station	Planned Base station	Planned repeater station	Jurisdiction of tower for repeater
Damascus	Damascus Hospital	Tadmor road Junction (Police station)	Mt.Kasion TV tower	Ministry of Information
Rural Damascus	Duma Hospital			
Aleppo	Ibn.Rashid Hospital	Manbej Hospital	Mt. Ain Al Arab TV tower	Ministry of Information
Dier-Al-Zor	Al Watani Hospital	Al Mayadien Hospital	Mt. Bukamal TV tower	Ministry of Information
Homs	Al Watani Hospital	Tal Karak Hospital	Mt. Zen Al Abadyeen	Ministry of Health
Lattakia	Al Watani Hospital	Gable Hospital	Mt. Slonfe TV tower	Ministry of Information

The Ministry of Health must acquire permissions to install radio equipment on TV broadcasting towers under the authority of the Ministry of Information. In addition, the Ministry of Health must construct a 15 m to 20 m height tower on Mt. Zen Al Abadyeen.

#### (6) Equipment Plan

The considerations of requested equipment were carried out using the following criteria.

##### Consideration criteria

##### 1) Considerations of purpose

- : Equipment deemed necessary for patient transport services
- ×: Equipment unnecessary for patient transport services

##### 2) Considerations of technical abilities

- : Equipment suited to the activities and technical abilities of emergency personnel
- ×: Equipment not suited to the activities and technical abilities of emergency personnel

3) Considerations of maintenance costs

- : Equipment whose operation and maintenance costs can sufficiently be covered by Syria
- ×: Equipment whose operation and maintenance costs are expensive and difficult to cover over the long term

4) Decision

- : Equipment deemed reasonable and therefore included in the project
- ×: Equipment not included in the project
- : Equipment whose allocation is achieved through inclusion in equipment sets, etc.

Table 2-22 Selection of the Request Equipment

Requested Items	Q'ty	1)	2)	3)	Comments	4)	Planned Q'ty
Ambulance	197	○	○	○	Arranged allocation sites	○	160
Emergency coat for medical staff	197	○	○	○	Consumables, deleted, Purchased by MOH	×	0
Centralized Oxygen and Suction Equipment							
1 : Two pressure reducers	197	○	○	○	Include in as a Resuscitator set	□	0
2 : Two Oxygen outlets	197	○	○	○	Include in as a Resuscitator set	□	0
3 : One Oxygen flow meter with humidifier	197	○	○	○	Include in as a Resuscitator set	□	0
4 : One Oxy-vacuum aspirator with 1000cc collecting bottle	197	○	○	○	Include in as a Resuscitator set	□	0
5 : One catheter holder bottle	197	○	○	○	Obscure, Deleted	□	0
6 : Oxygen masks	197	○	○	○	Include in as a Resuscitator set	□	0
7 : Nasal suction catheters	197	○	○	○	Include in as a composition of Vacuum pump	□	0
Cots and Stretcher							
1 : Main Stretcher	197	○	○	○	Include in as a composition of Patient transportation equipment set	□	160
2 : Combination stretcher / stair chair	197	○	○	○	Include in as a composition of Patient transportation equipment set	□	160
3 : Scoop stretcher	197	○	○	○	Include in as a composition of Patient transportation equipment set	□	160
4 : Vacuum mattress	197	○	○	○	Low usage, Deleted, If necessary, Purchased by MOH	×	0
Extrication and Immobilization							
1 : K.E.D.	197	○	○	○	Low usage, Deleted, If necessary, Purchased by MOH	×	0
2 : Traction sprint kit	197	○	○	○	Low usage, Deleted, If necessary, Purchased by MOH	×	0
3 : Air sprint kit	197	○	○	○	Low usage and consumables, Deleted, If necessary, Purchased by MOH	×	0
4 : Fixtrication Collar set	197	○	○	○	Include in as a composition of Patient transportation equipment set	□	160
5 : Spring Board short and long	197	○	○	○	Include in as a composition of Patient transportation equipment set, only long size planned	□	160

Requested Items	Q'ty	1)	2)	3)	Comments	4)	Planned Q'ty
Emergency Boxes							
1 : Basic Medical and adjunctive supplies kit (Paramedic Box)	197	○	○	○	Consumables, Deleted, Purchased by MOH	×	0
2 : Standard First aid kit	197	○	○	○	Consumables, Deleted, Purchased by MOH	×	0
Portable Oxygen unit and Manual IFN Device	197	○	○	○	Include in as a composition of Resuscitation set	□	160
Manual Bag-Valve-Mask resuscitator	197	○	○	○	Include in as a composition of Resuscitation se	□	160
Portable Electric Aspirator	197	○	○	○	Only for planned ambulance	○	160
Portable Defibrillator	197	○	○	○	Only ambulance for Health center and Hospital	○	117
Pulse Oxymeter	197	○	○	○	Only for planned ambulance	○	160
Intubation set							
1 : Laryngoscope with Macintosh and Miller Blades (Adult / child)	197	○	○	○	Include in as a composition of Treatment set	□	160
2 : Endotracheal tubes (6 sizes) Adult/child	197	○	○	○	Consumables, Deleted, Purchased by MOH	×	0
3 : Airways (Several sizes)	197	○	○	○	Include in as a composition of Resuscitation set	□	0
4 : Stylet	197	○	○	○	Include in as a composition of Resuscitation set	□	0
5 : Magyl forceps	197	○	○	○	Include in as a composition of Treatment set	□	0
6 : Scissors	197	○	○	○	Include in as a composition of Treatment set	□	0
Fire Blanket	197	○	○	○	Consumables, Deleted, if necessary Purchased by MOH	×	0
Portable sphygmomanometer ( Adult, child, tight cuffs and stethoscope)	197	○	○	○	Include in as a composition of Treatment set	□	0
Folding phlibo (I.V.) holders	197	○	○	○	Include in as a part of Ambulance specification	□	0
Surgical kit (Mosquito minor surgery)	197	○	○	○	Include in as a composition of Treatment set	□	0
Emergency net bag	197	○	○	○	Obscure, Deleted	×	0
Mobile station	197	○	○	○	For planned ambulance	○	160
Fixed base station	5	○	○	○	Only agreed base station	○	5
Fixed relay station	5	○	○	○	Only agreed relay station	○	5

The contents of equipment to be procured in this project and the equipment list are shown in Table 2-23 and Table 2-24 respectively.

Table 2-23 Contents of Equipment

No.	Item	Main Specification	Objective of Use	Q'ty
01	Ambulance	One box type, left handle, Gasoline engine	Transport emergency patients	160
02	Radio set for ambulance	VHF、FM、50W	Communication with emergency center	160
03	Patient handling instrument set	Min stretcher, Stair chair, Scoop stretcher, Neck collar, Back board	Transport emergency patients	160
04	Defibrillator	Bi phasic or mono phasic, AED function	Remove atrial fibrillation	117
05	Pulse oximeter	SpO <sub>2</sub> 、pulse rate	Measure oxygen thickness in blood and judge whether oxygen inhalation is possible	160
06	Portable suction apparatus	220VAC/12VDC/with rechargeable battery operation	Remove dirt and incretion	160
07	Resuscitator set	2 Cylinder, Pressure reducer, Mask Tubes	Use for oxygen inhalation	160
08	Treatment instrument set	Sphygmomanometer, Stethoscope, Laryngoscope, Portable resuscitator, suter set	Diagnose patient condition and simple surgical treatment	160
09	Radio set for base station	VHF、FM、50W	Use for communication with emergency center and ambulance	5
10	Repeater set	VHF、FM、50W	For area expansion of radio communication	5

Table 2-24 Planned Equipment List

Item No.		01	02	03	04	05	06	07	08	09	10
Description		Ambulance	Radio set for ambulance	Patient handling instrument set	Defibrillator	Pulse oximeter	Portable suction apparatus	Resuscitator set	Treatment instrument set	Radio set for base station	Repeater set
Damascus	Health center	18	18	18	18	18	18	18	18		
Rural Damascus	Health center	14	14	14	14	14	14	14	14		
	Road	15	15	15		15	15	15	15		
	Hospital	2	2	2	2	2	2	2	2		
	Base station									1	
	Repeater station										1
Lattakia	Health center	19	19	19	19	19	19	19	19		
	Road	4	4	4		4	4	4	4		
	Hospital	2	2	2	2	2	2	2	2		
	Base station									1	
	Repeater station										1
Aleppo	Health center	32	32	32	32	32	32	32	32		
	Road	10	10	10		10	10	10	10		
	Base station									1	
	Repeater station										1
Dier-Al-Zor	Health center	12	12	12	12	12	12	12	12		
	Road	6	6	6		6	6	6	6		
	Hospital	3	3	3	3	3	3	3	3		
	Base station									1	
	Repeater station										1
Homs	Health center	5	5	5	5	5	5	5	5		
	Road	8	8	8		8	8	8	8		
	Hospital	10	10	10	10	10	10	10	10		
	Base station									1	
	Repeater station										1
Total		160	160	160	117	160	160	160	160	5	5

### 2-2-3 Basic Design Drawing

The destinations for allocation of equipment are as follows.

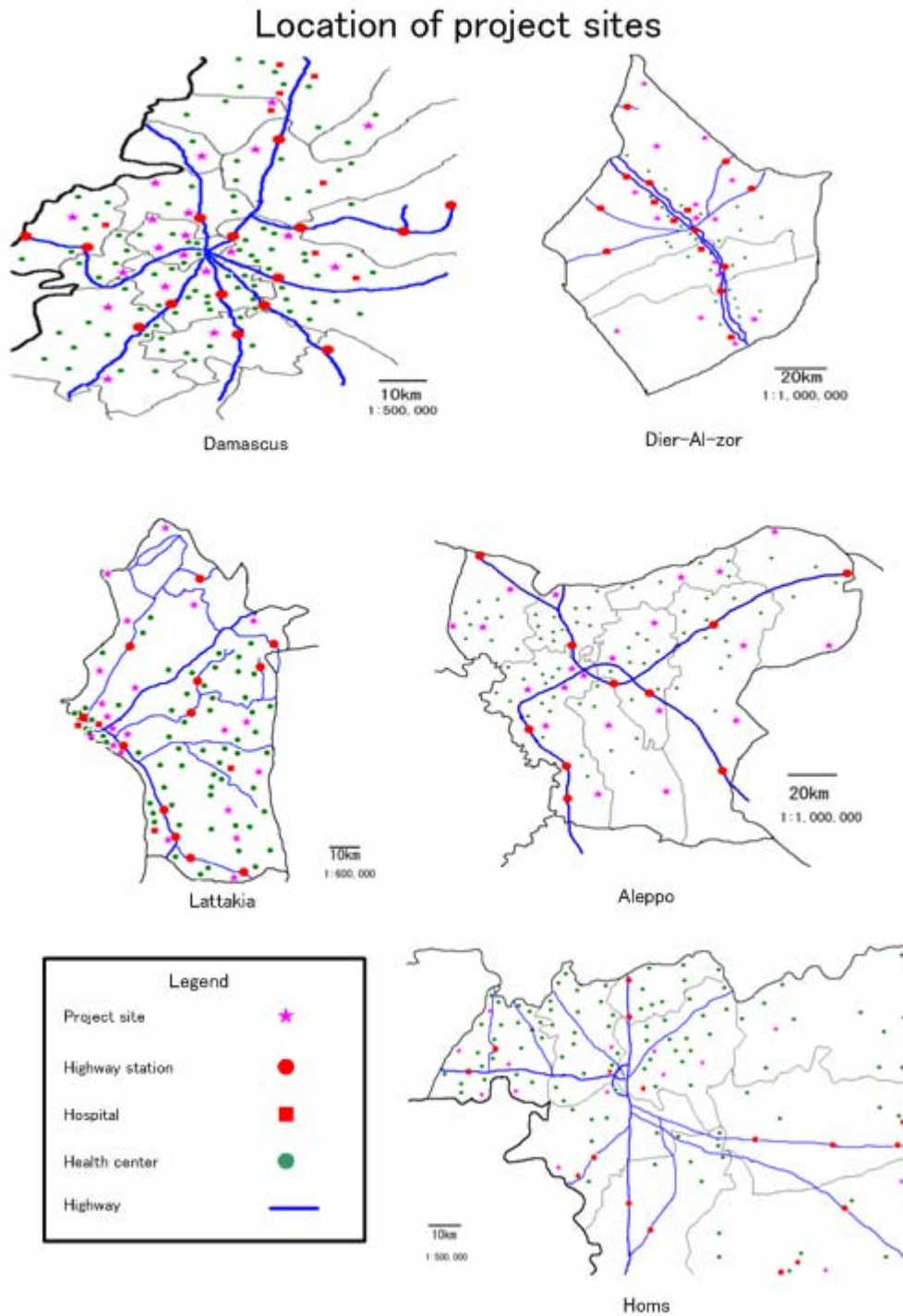


Figure 2-1 Location of Project Sites

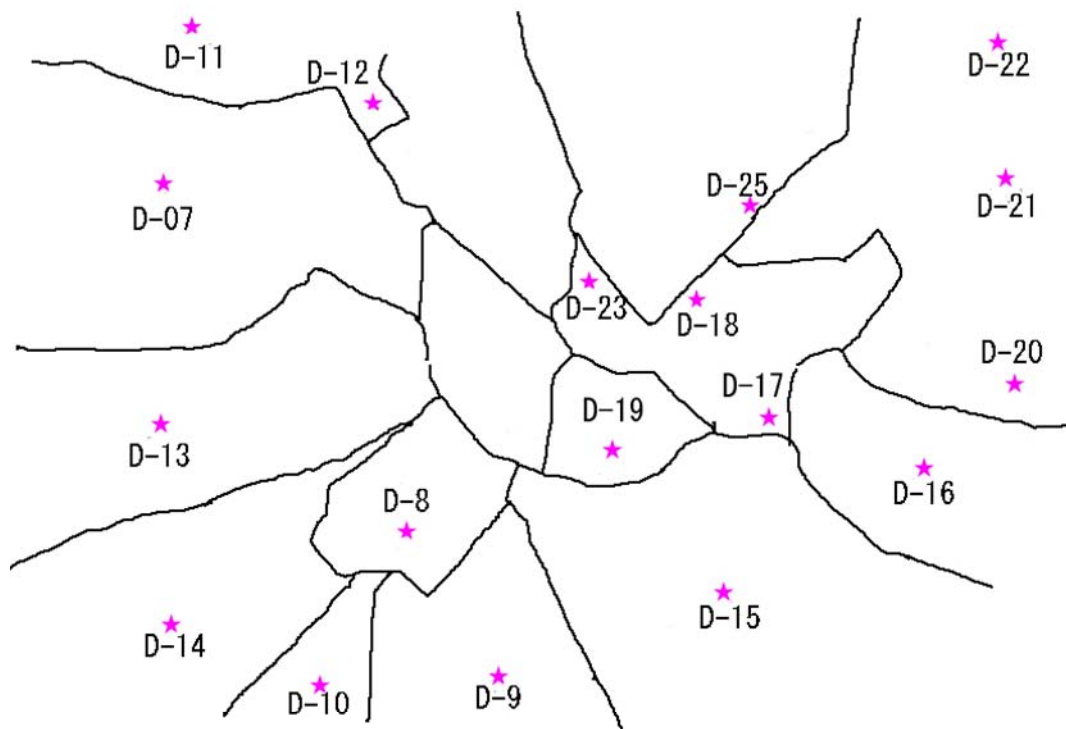


Figure 2-2 Allocation of ambulance in Damascus

Table 2-25 Allocation List of ambulance in Damascus

No.	Location
D-7	Soumariah
D-8	Midaan
D-9	Tadamoun
D-10	Moukiam
D-11	Doummar Mashrouu
D-12	Doummar Albalad
D-13	Kafar Sousaa
D-14	Kaddam
D-15	Tabbale/Dweilaa
D-16	Joubar
D-17	7-Apr
D-18	Saroujah
D-19	Shaghour
D-20	Kaboum
D-21	Old Barzeh
D-22	Oush Alwarwar
D-23	Zahiraa



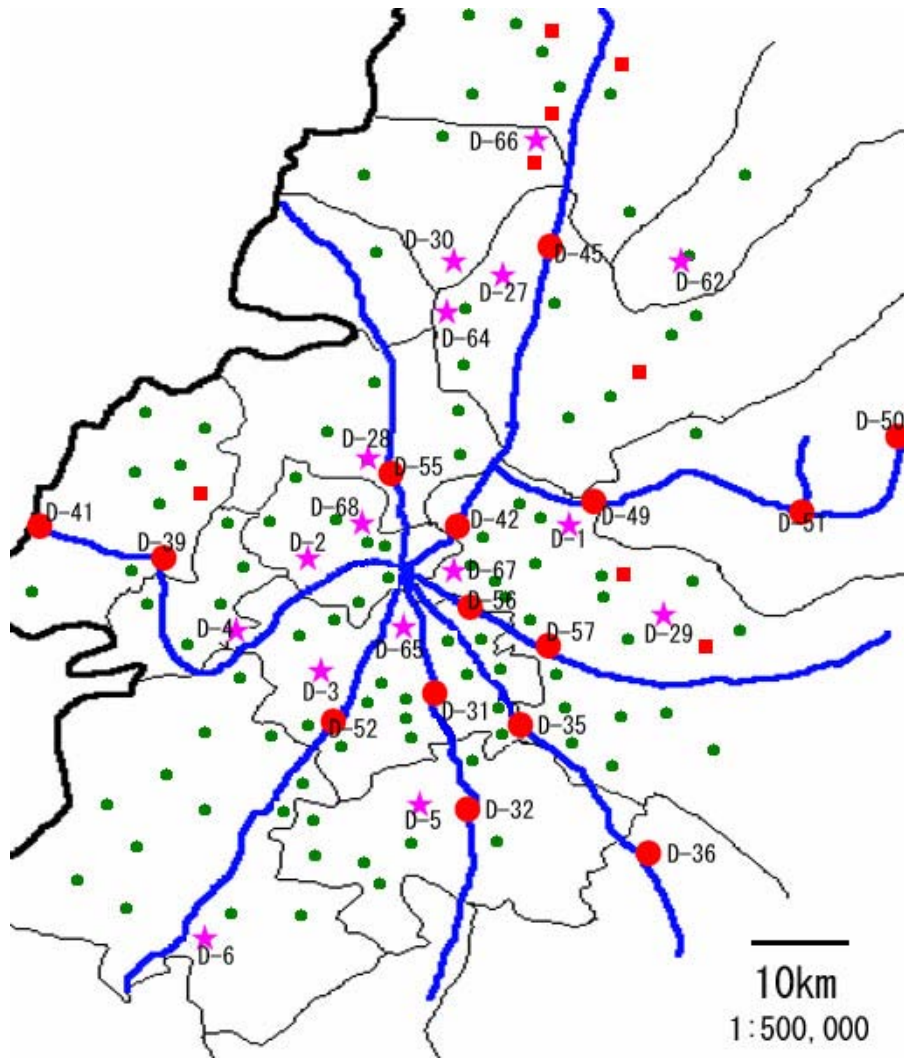


Figure 2-3 Allocation of ambulance in Rural Damascus

Table 2-26 Allocation List of ambulance in Rural Damascus

No.	Location	No.	Location
D-1	Adra Industrial City	D-42	New Douma Station
D-2	Ain Al Fiegheh	D-45	Maloula Station
D-3	Koudsiaa	D-49	Aldumair Station
D-4	Koura Al Assad	D-50	Almafrag Station
D-5	Kousweh	D-51	Tanef Station
D-6	Beit jin	D-52	Jaidet Artouz Station
D-27	Maloula	D-55	Marabaa Station
D-28	Saidnaiah	D-56	Third Bridge Station
D-29	AlNashabieh	D-57	Fifth Bridge Station
D-30	Assal Al Ward	D-62	Jairoud Hospital
D-31	Kouseh Station	D-64	Rankous Hospital
D-32	Ghabab Station	D-65	Daria
D-35	Zavnab Station	D-66	Yabroud
D-36	Hazem Station	D-67	Harasta
D-39	Zabadani Station	D-68	Al-Tal
D-41	Jdaidet Yabous Station		

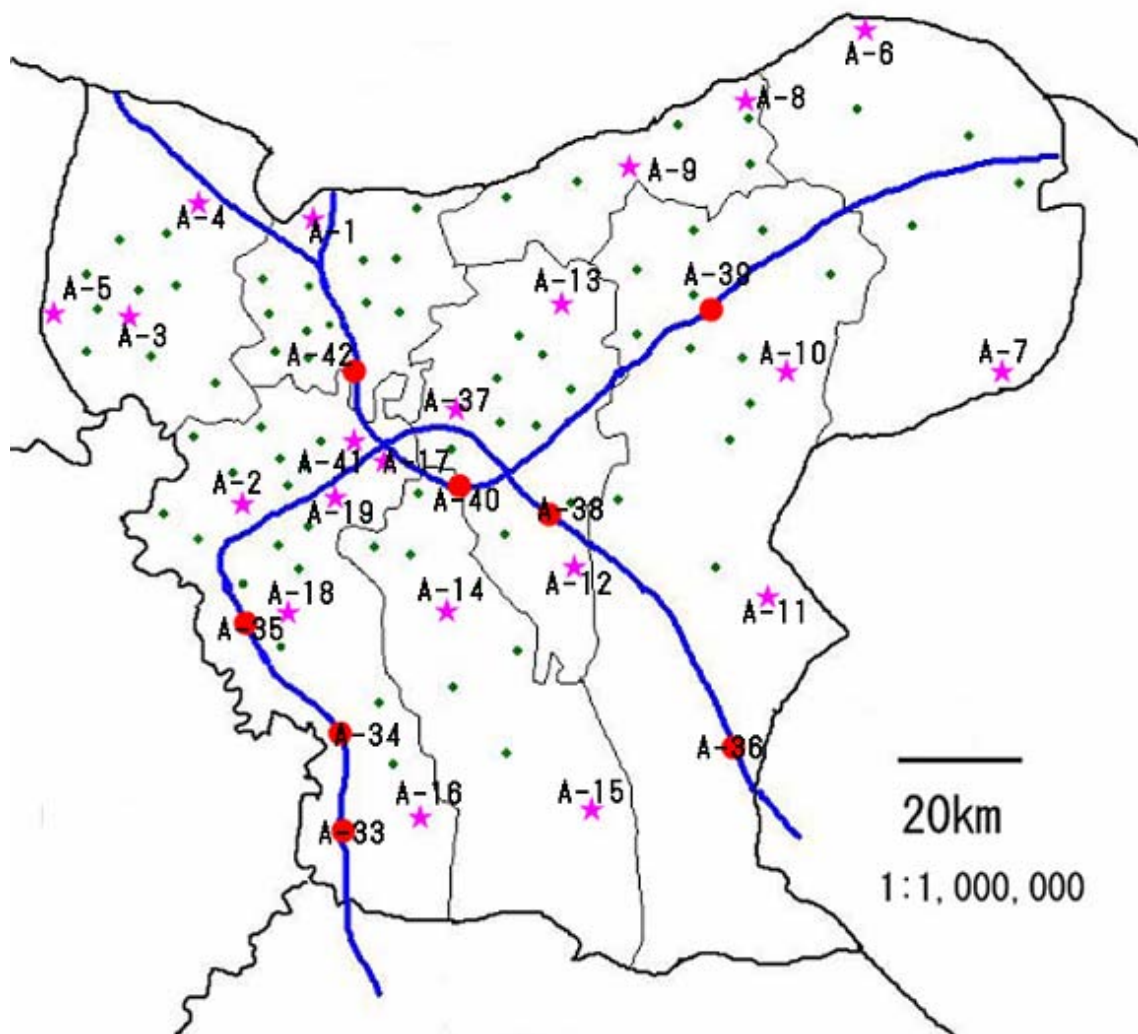


Figure 2-4 Allocation of ambulance in Aleppo

Table 2-27 Allocation List of ambulance in Aleppo

No.	Location	No.	Location
A-1	Azzaz	A-16	Tal Al Daman
A-2	Atareb	A-17	Al Misalmiah
A-3	Ifreen	A-18	Al eiess
A-4	Maidan Key	A-19	Al douihii
A-5	Sheikh Al Hadid	A-33	Khan Sheikhoun Station
A-6	Ain Al Arab	A-34	Zarba Station
A-7	Al Gassanieh	A-35	Sarakeb Bridge Station
A-8	Jarablous	A-36	Maskaneh Station
A-9	Tal AlHajjar	A-37	Tadef Station
A-10	Manbej Abou Klkoul	A-38	Kouiress Station
A-11	Manbej Masskanieh	A-39	Manbej Police Station
A-12	Hafer	A-40	Souraan Station
A-13	Alarimah	A-41	Hyan Station
A-14	AlSifraa	A-42	Zedo Station
A-15	Khanasair		

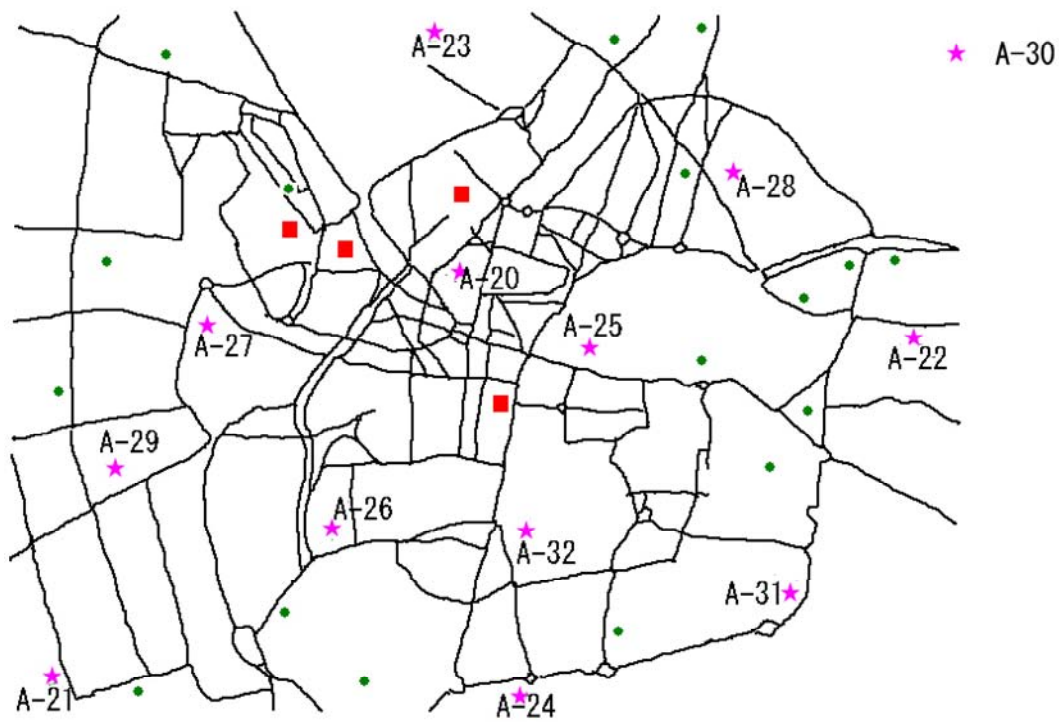


Figure 2-5 Allocation of ambulance in Aleppo city

Table 2-28 Allocation List of ambulance in Aleppo city

No.	Location
A-20	Specilized Clinics
A-21	Hamdanieh
A-22	Bad Al Nvrabb
A-23	Al Ashrafeih
A-24	Al Sheik Maksoud
A-25	Souk AlHal Fire Station
A-26	Slimanieh Fire Station
A-27	AlKarmiek Fire Station
A-28	Industrial City Sheikh Najjar
A-29	Industrial City Bleiramoun
A-30	Industrial City Alsoukieh
A-31	Al Ramusseh
A-32	Hananou

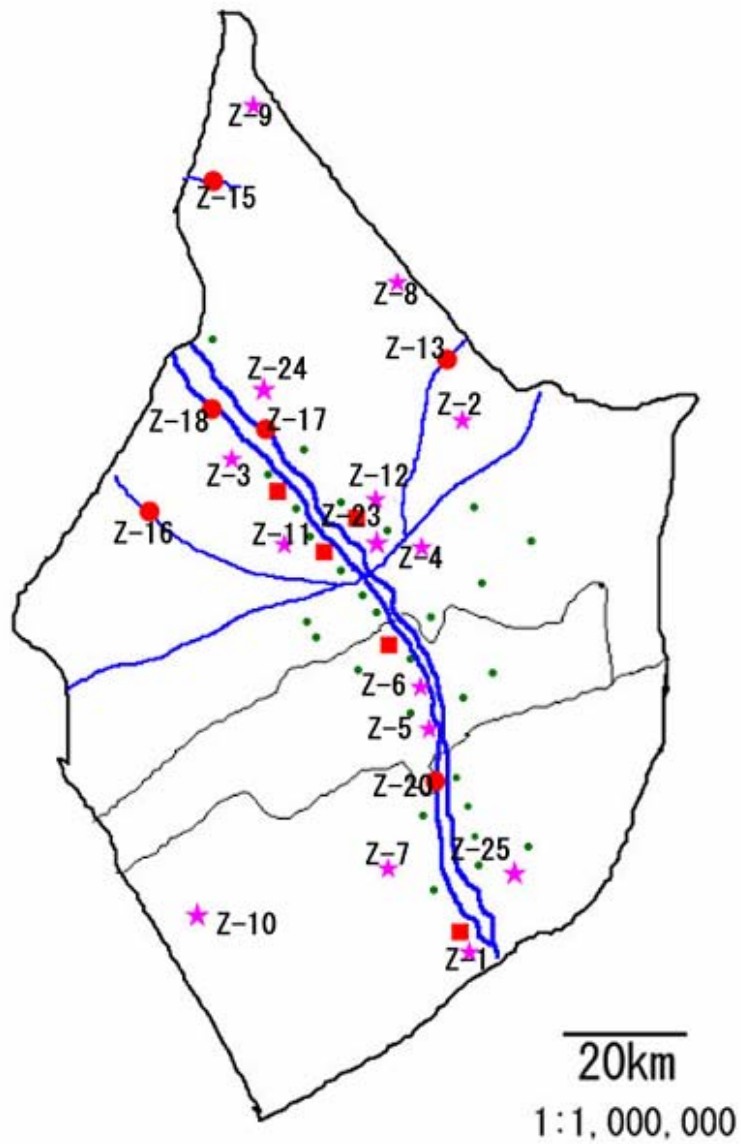


Figure 2-6 Allocation of ambulance in Dier-Al-Zor

Table 2-29 Allocation List of ambulance in Dier-Al-Zor

No.	Location	No.	Location
Z-1	Albou Kamai	Z-12	Al Housaninieh
Z-2	Alsouar	Z-13	Housein Station
Z-3	AlTabnieh	Z-15	Jebli Station
Z-4	Basiraa	Z-16	Sabkhaa Station
Z-5	Sbyhaam	Z-17	Alkassra
Z-6	Alkouriaa	Z-18	AlJazra
Z-7	Aljallaa	Z-20	Hajeim Station
Z-8	Abu Khasab	Z-23	Cardiac
Z-9	Jarawaan	Z-24	Alkassra
Z-10	Kbajeb	Z-25	Hajin
Z-11	Specialized Clinin Center		

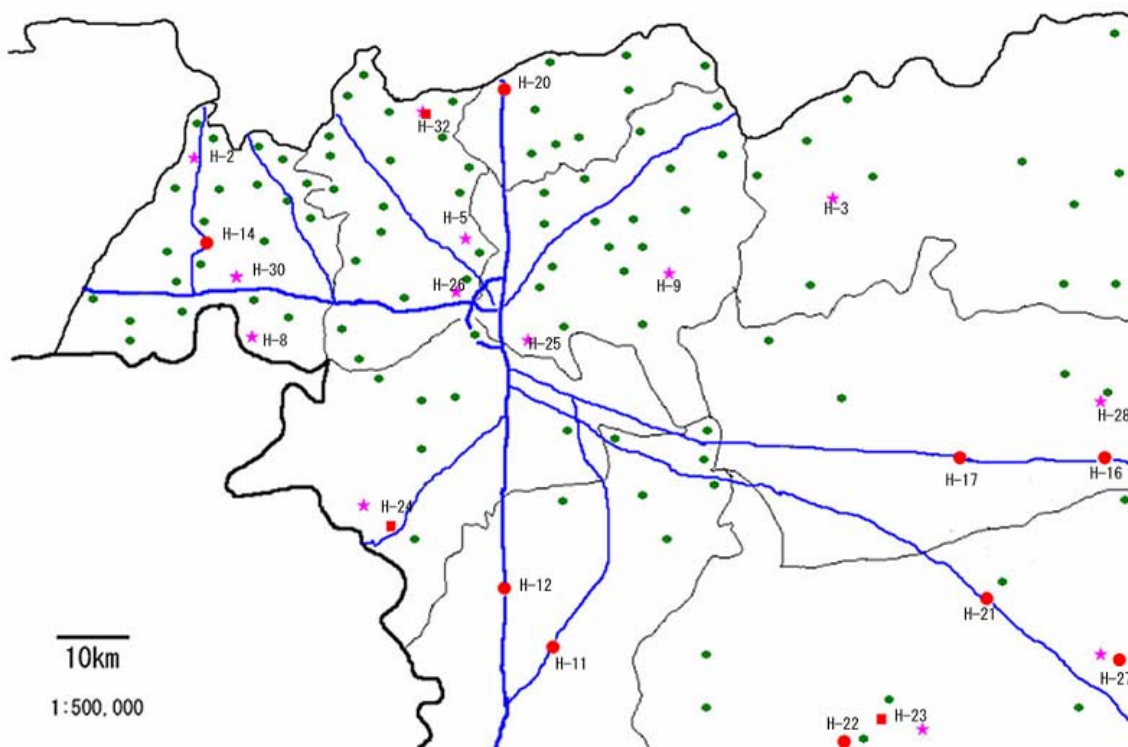


Figure 2-7 Allocation of ambulance in Homs

Table 2-30 Allocation List of ambulance in Homs

No.	Location	No.	Location
H-2	Ouyoun Alwadi	H-22	Kouniefeess Station
H-3	Moukharam	H-23	Karayatein Hospital
H-5	Ghouta	H-24	Al Kousare Hospital
H-8	Misherfeh	H-25	Altawieed Hospital
H-9	Zaydal	H-26	Al Watani Hospital
H-11	Breig Station	H-27	Tadmour Hospital
H-12	Hisiah Station	H-28	Al Shkna Hospital
H-14	Houash Station	H-29	Moukharam Hospital
H-16	Fourth Station	H-30	Tel kalak Hospital
H-17	Third Station	H-31	Al Harath Hospital
H-20	Rastan Station	H-32	Tel Do Hospital
H-21	Alsoukhneh Station		

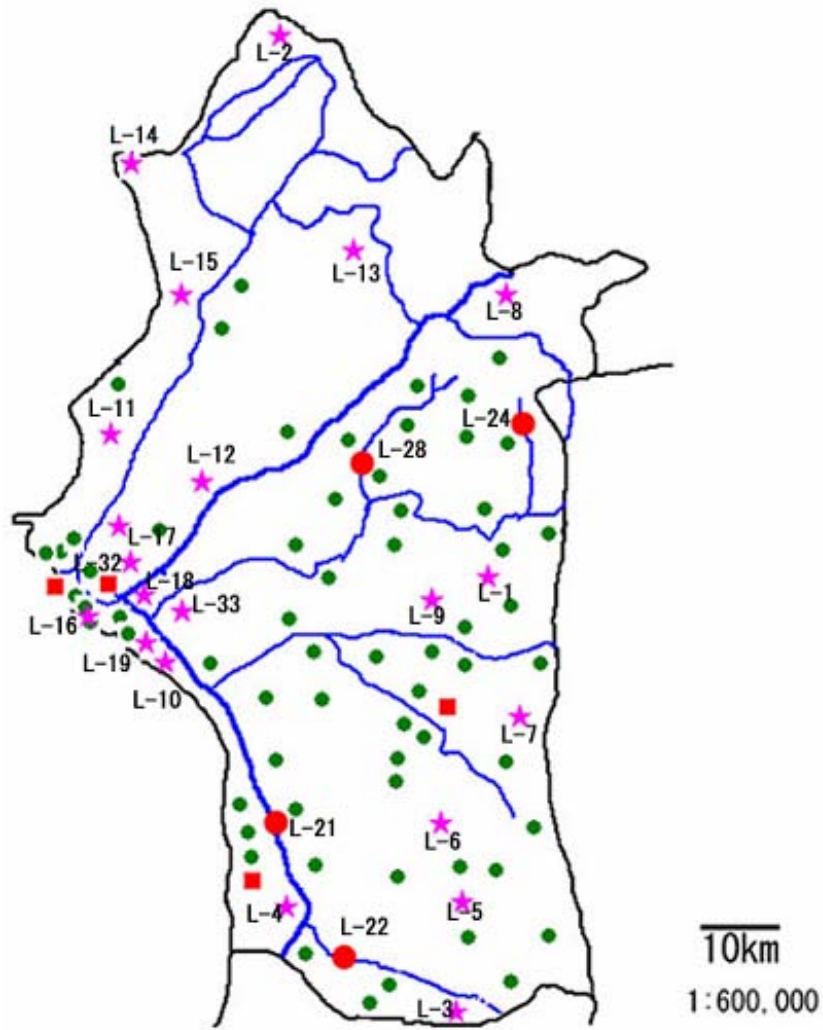


Figure 2-8 Allocation of ambulance in Lattakia

Figure 2-31 Allocation List of ambulance in Lattakia

No.	Location	No.	Location
L-1	Ain Altinah	L-14	Albassiet
L-2	Kasab	L-15	Zagheen
L-3	Daliah	L-16	Shateeh Beach
L-4	Qtalbiah	L-17	Besnadah
L-5	Ain Alsharkiah	L-18	Railway Station
L-6	Heref Almsvtraa	L-19	Sport Town
L-7	Alfakouraa	L-21	Jableh Station
L-8	Kansebaa	L-22	Banias Station
L-9	Mziraa	L-24	Zouranieh Station
L-10	Fedia	L-28	Hafeh Station
L-11	Aysharf AlShamiah	L-32	Tawleed & children Hospital
L-12	Ain Allaban	L-33	Cardia Hospital
L-13	Rabiah		

## 2-2-4 Implementation Plan

### 2-2-4-1 Implementation Policy

The project, after the Cabinet approval and the Exchange of Notes (E/N) between the governments of Japan and Syria, is to be implemented in accordance with the Japanese government's Grant Aid Scheme. After the Exchange of Notes between the governments of the two countries is concluded, a Japanese corporate consultant who has received the recommendation by the Japan International Cooperation Agency shall enter into an agreement with the Ministry of Health of Syria along the Japan's Grant Aid Scheme. This agreement shall go into effect after verification by the Japanese government. Based on this agreement, the consultant shall conduct duties related to tendering and supervision of works. Equipment procurement shall be done by a Japanese corporate equipment Supplier selected through a tender, who shall enter into Contract with the Ministry of Health of Syria. This Contract shall go into effect after verification by the Japanese government. The equipment Supplier shall procure, ship, and install necessary equipment, shall give technical guidance on the operation and maintenance of the equipment, and shall make manuals and other technical documents as well as manufacturer/local agent lists necessary for operation and maintenance of the equipment after procurement.

### 2-2-4-2 Implementation Conditions

After handing over of the equipment, the Ministry of Health shall enter into maintenance contract with the manufacturers or their agents for equipment that requires consumable/spare parts or regular inspections or repair by the manufacturers or their agents. In selecting applicable equipment, the manufacturer must have an agent in Syria or in neighboring countries. Condition of local agent must be included in the tender document.

### 2-2-4-3 Scope of Works

#### (1) The Japanese Government

- 1) Procuring the planned equipment
- 2) Shipping by sea or land to the project sites
- 3) Installation and setting up the equipment
- 4) Performing test operation and providing technical training on the operation and maintenance to procured equipment

#### (2) The Syrian Government

- 1) Providing information and materials necessary for the shipping, installation and setup of the equipment
- 2) Acquiring permits necessary for importing the equipment
- 3) Number registration for Ambulance
- 4) Construction/preparation of towers for installation of base station radio communications equipment



- 5) Acquiring installation permits for repeater station radio communications equipment to be installed at facilities under the authority of the Ministry of Information
- 6) Providing storage space for the equipment prior to installation and setup

#### 2-2-4-4 Consultant Supervision

After carrying out tendering work to select an equipment Supplier, the consultant is to supervise works to ensure that equipment procurement and other work proceeds smoothly. Importance of supervision include confirming that procured equipment matches contract specifications, Pre-shipment inspection of products, checking their sea or in-land transportation and customs clearance status, final inspections at project sites, etc. In addition, during pre-shipment inspection of products the consultant confirm no discrepancies between the products and specification, and further a third-party inspection body conduct inspections of shipping and packing of products. The consultant shall constantly work to stay aware of the progress at each stage, give appropriate advice and/or guidance to implementing organizations of Syria and to the equipment Supplier, and report as necessary on the progress of each stage to the relevant authorities of both countries. The consultant supervises via spot checks through project manager and equipment/facility planning technical specialists.

#### 2-2-4-5 Quality Control Plan

Equipment to be procured shall be selected from equipment that has sales record in other countries' emergency service organizations. Also, the respective equipment shall have been manufactured according to standards that comply with ISO, JIS, BS, DIN, FDA, and other international standards.

#### 2-2-4-6 Procurement Plan

Because equipment scheduled for procurement in this project is not manufactured within Syria, the equipment shall be procured from Japan or other countries.

If the equipment requires consumable/spare parts or regular inspections, and requires repairs that can be done by an engineer/technician of the manufacturer or its agent, the presence of such an agent in Syria or neighboring countries is a necessary condition. Concerning shipping, if the ambulances will be purchased in Japan, they shall be shipped from the Port of Yokohama to the Port of Tartus. The medical equipment will be installed into ambulance at the warehouse near the port for departure. If the radio-communication system is purchased in Japan, it shall be shipped by the container from the Port of Yokohama to the Port of Tartus. It will take approximately 40 days for shipping for both of the automobile carrier and the container. If ambulances are purchased in third country such as Italy, Germany, or France, the equipment is carried on the ambulances in the country where the ambulances are purchased. The ambulances with the equipment shall be shipped by the automobile carrier to the Port of Tartus and arrived at in about 10 or 15 days from Europe.



### 2-2-4-7 Implementation Schedule

The implementation Schedule of this project is divided into the two phases of tendering and equipment procurement/installation. Implementation Schedule from the conclusion of the Exchange of Notes to the completion of the project is as follows.

Table 2-32 Implementation Schedule

Month	1	2	3	4	5	6	7	8	9
Subject									
Tender Preparation	Final confirmation of project	(Around 4 months)							
	Works in Japan: (Tender documents)								
	Confirmation of Tender documents								
	Tender notice								
	Tender open and evaluation of tender, contract								
Supervision	Manufacturing						(Around 8 months)		
	Transportation, custom								
	Installation, Test operation								

### 2-3 Obligations of Recipient Country

The duties of the Syrian side for the implementation of this project are as indicated in the Scope of Works in 2-2-4-3.

#### (1) Vehicle/Equipment Related

- Erecting masts for radio set for base stations
- Erecting a tower for a repeater on top of Mt. Zen Al Abadyeen in Homs Governorate. The tower should be 15 to 20 meters in height.
- Providing a temporary storage place for ambulance
- Registering of vehicle numbers for ambulances

#### (2) Other

- Banking arrangement procedures and authority-to-pay service charges and other payments
- Tax exemption and customs clearance for products procured by this grant aid project
- Accommodations necessary for entry into and stay in the country for persons involved in this project
- Necessary permits, licenses, and other required steps for the implementation of this project
- Assuming all costs not included as grant aid but necessary for this project

### 2-4 Project Operation Plan

#### (1) Personnel Allocation Plan

Ambulance teams consist of two persons, i.e. a driver and a nurse, over three shifts, so a total of six staff, or three teams, will be necessary per ambulance. When 160 ambulances are

added, it will be necessary to assign 960 personnel. The breakdown of the drivers and nurses to be stationed anew in each governorate for ambulances is as follows. The Ministry of Health is planning to assign these personnel from current and new staff.

Table 2-33 Personnel allocation plan

Governorate	No. of Planed Car	No. of Driver	No. of Nurse	Total
Damascus	18	54	54	108
Rural Damascus	31	93	93	186
Aleppo	42	126	126	252
Dier-Al-Zor	21	63	63	126
Homs	23	69	69	138
Lattakia	25	75	75	150
Total	160	480	480	960

The training of nurses for teams:

After graduating from nursing schools, which are present in each governorate, nurses gain practical experience in hospitals, and those interested in emergency services join emergency medical teams. There is a course called “pre-hospital training” to educate them in emergency medical treatment, and emergency medical teams (male nurses) take special courses for four weeks.

In the future, people will be hired as employees after receiving first two years of education at the nursing schools in the various governorates and then attending an “emergency medicine school” in Dariya outside of Damascus. There are plans for this school to accept five students from each governorate every year (5 people × 14 governorates = 70 people).

## (2) Operation and Maintenance Plan

Health departments in each governorate have garages for maintenance. Mechanics maintained and repair vehicles, including ambulances. As for the maintenance of the ambulances to be procured in this project, the garage mechanics will perform oil changes and other basic works. Regular inspections and repairs will be done at contracted private garage when necessary just as they do for the existing vehicles. At present, oil will be changed every 10,000 km, regular inspections will be done about every 100,000 km, repairs will be done immediately at contracted private garage in case of breakdowns, and engines will be overhauled in 300,000 km or more in total mileage, to maintain of ambulance condition properly.

There are two engineers in the maintenance division of the Ministry of Health who have responsible for radio communications equipment maintenance. In this project, it is planned that the manufacturers of the radio equipment must have agents in Syria or neighboring countries. Once the procurement through the grant aid is realized, the Ministry of Health will be made a maintenance agreement with manufacturer or their agent within in a timeframe from the supplier has been decided upon and to the equipment is delivered.

It would be adequate to maintain equipment logs, repair logs, and manuals, and to perform daily inspections, simple repairs and adjustments by maintenance division, while repairs

requiring special measuring devices or spare parts are carried out by the manufacturer or a manufacturer-authorized agent under the maintenance agreement.

The estimation costs necessary for maintenance of the procured equipment in this project is indicated in “2-5-2 Operation and Maintenance Cost”.

## 2-5 Project Cost Estimation

### 2-5-1 Initial Cost Estimation

The Total cost of implementing the project is estimated on the conditions described in (2). The breakdown of the expenses obligations for Syrian is estimated as (1).

#### (1) Expenses borne by Syria

Table 2-34 Expenses borne by Syria (unit:Syrian pounds)

Item	Estimated Cost (million yen)
Construction of Mast for Antenna	625,000 Sp (Approx. 1.5million yen)
Bank Transaction Fee	362,500 Sp (Approx. 0.87million yen)
Total	987,500 Sp (Approx. 2.37million yen)

1 Syrian pound was 2.4 JPY approximately

#### (2) Estimation conditions

- 1) Time of estimation: December 2007
- 2) Foreign exchange rates: 1 USD = 119.83 JPY; 1 EUR = 164.55 JPY
- 3) Implementation period: 12 months
- 4) Ordering method: blanket (package) purchase order
- 5) Other: This project is to be implemented according to the Grant Aid Scheme of the Japanese government

## 2-5-2 Operation and Maintenance Cost

### (1) Personnel Costs

Since ambulance teams consist of two persons, i.e. a driver and a nurse, over three shifts, when the 160 ambulances are newly provided by additional 960 crew members will be necessary. It is stipulated that the salaries for a driver and a nurse 7,500 and 8,500 Sp, respectively. The Ministry of Health estimated annual and monthly cost for the crew members of new ambulances by each governorate show in the table below. The Ministry of Health plans to claim necessary budget for the crew members immediately after the conclusion of E/N.

Table 2-35 Personnel Costs plan (Unit: Syrian pounds)

	Damascus driver:54 Nurse:54	Rural Damascus driver:93 Nurse:93	Aleppo driver:126 Nurse:126	Homs driver:69 Nurse:69	Lattakia driver:75 Nurse:75	Dier-Al-zor driver:63 Nurse:63	Total
Driver (7500sp)	4,860,000	8,370,000	11,340,000	6,210,000	6,750,000	5,670,000	43,200,000
Nurse (8500sp)	5,508,000	9,486,000	12,852,000	7,038,000	7,650,000	6,426,000	48,960,000
Total	10,368,000	17,856,000	24,192,000	13,248,000	14,400,000	12,096,000	92,160,000
(in yen)	24,883,200	42,854,400	58,060,800	31,795,200	34,560,000	29,030,400	221,184,000

Source: MOH Statistic Dep.

## (2) Fuel and Vehicle maintenance Costs

The Ministry of Health provided fuel and maintenance fee for proper operation and maintenance of each ambulance. Those cost based on below.

Fuel fee: 360 L for one vehicle per month, 1 Liter fuel costs 35 sp

Maintenance fee: 36,000sp for one vehicle per year

The Ministry of Health estimated annual fuel and vehicle maintenance costs for 160 new ambulances by each governorate show in the table below.

Table 2-36 Fuel and Vehicle maintenance Costs plan (Unit: Syrian pounds)

	Damascus No. of Car:18	Rural Damascus No. of Car:31	Aleppo No. of Car:41	Homs No. of Car:23	Lattakia No. of Car:25	Dier-Al-zor No. of Car:21	Total
Fuel	2,721,600	4,687,200	6,350,400	3,477,600	3,780,000	3,175,200	24,192,000
Maintenance	648,000	1,116,000	1,512,000	828,000	900,000	756,000	5,760,000
Total	3,369,600	5,803,200	7,862,400	4,305,600	4,680,000	3,931,200	29,952,000
(In JYen)	8,087,040	13,927,680	18,869,760	10,333,440	11,232,000	9,434,880	71,884,800

Source : MOH Statistic Dep.

The Ministry of Health promised to allocate operation and maintenance fee for the project once the E/N is concluded.

## 2-6 Other Relevant Issues

This project would procure radio system for basic stations in order to expand the area of radio network. Since there are no masts for antenna in the planed base stations, those must be constructed by Syrian side before the installation of radio. The structure of mast is so simple that there are no technical and budgetary concerns. However, if the completion date of the construction is prolonged, it would affect the overall schedule of this project. Thus, it is necessary to confirm the schedule of the construction during the implementation stage.

## Chapter 3 Project Evaluation and Recommendations

## Chapter 3 Project Evaluation and Recommendations

### 3-1 Project Effect

In 1993, the Syrian Ministry of Health procured a number of ambulances via the Japanese Grant Aid Scheme as well as via loans from EIB (European Investment Bank) and other institutions. As of 2007, it operates 270 ambulances and has established a framework that allows providing emergency patient transportation services to some level, but the target advocated by the Ministry of Health - “1 ambulance per 40,000 people” - is far from being satisfied; the current number of ambulances is even less than half of the required number of ambulances. Recently, due to tax system revisions in Syria, the taxation involved in purchasing vehicles was lowered, which led to a rapid increase of the number of vehicles in the country and an accompanying increase in the number of traffic accidents. This development is causing a sharp growth in the demand for emergency patient transportation services, which is not possible to address sufficiently with the existing number of ambulances. Eliminating the shortage of ambulances is an urgent issue.

The table below shows the effects and improvement level of the issue expected if this plan is executed.

Table 3-1 Effects and Improvement Level Expected by Implementation of the Plan

Current condition and issue	Countermeasure in cooperation target project	Direct effect/improvement level	Indirect effect/improvement level
Due to shortage of the current ambulance fleet, sufficient emergency patient transportation services cannot be provided.	<ul style="list-style-type: none"> <li>• Procurement of 160 ambulances</li> <li>• Procurement of wireless equipment for 5 wireless bases and 5 relay stations</li> </ul>	<ul style="list-style-type: none"> <li>• The number of patients transported increases in the target 6 governorates.</li> <li>• The population of the coverage of ambulance within 15 minutes expands in the target 6 governorates.</li> </ul>	<ul style="list-style-type: none"> <li>• Citizen trust in the emergency patient transportation services is improved.</li> <li>• Hospitalization period can be shorten and early return to society can be possible</li> <li>• Ambulances can be operated efficiently.</li> </ul>

#### Direct Effects

It is considered that the following direct effects will appear as a result of the expansion of emergency services.

- 1) The number of patients transported in the target six governorates will increase.

Table 3-2 Number of Patient Transported by Ambulances

Governorates	2006	2010
Damascus	165,800	276,333
Rural Damascus	85,640	187,749
Aleppo	95,467	262,534
Homs	68,200	133,558
Latakia	36,500	76,174
Der-Al Zor	30,100	75,250

2) The population of the coverage of ambulances within 15 minutes in the target six governorates will expand.

Table 3-3 Population of Coverage of Ambulances within 15 Minutes

	2007	2010
Population of coverage of ambulance within 15 minutes	5,028,950 (41.1%)	10,474,882 (85.6%)

#### Indirect Effects

If 160 ambulances capable of handling cardiac diseases and traffic accidents are distributed to the target 6 governorates, it is expected that the quality and quantity of the emergency patient transportation services will be improved and the citizens of Syria will gain more trust in the emergency patient transportation services. Moreover, as appropriate treatment of patients can be provided during transportation, the plan will contribute to shorten duration of hospitalization and earlier rehabilitation back into the society among the patients. Moreover, the wireless communication network among ambulances, emergency wireless offices and hospitals will be expanded and the emergency wireless system improved, which allows much more effective operation of the ambulances.

#### 3-2 Recommendations

The Syrian Ministry of Health is making efforts to expand, maintain and secure the emergency patient transportation services system. In order to improve the service system in the future, the following issues must be addressed.

#### Updating and Increasing Ambulances

This plan reinforces and improves the emergency patient transportation services by procuring ambulances that are lacking in the target 6 governorates, assuming the existing ambulances continue to be used. However, as shown in the next table, some of the existing ambulances will most likely have to be replaced due to their long usage time. Moreover, the plan only covers the 6 most populated governorates among 14 in the country, including Damascus, but the shortage of ambulances are posing problems in the remaining 8 governorates as well.

The Ministry of Health aims to achieve a service level target of 1 ambulance per 40,000

people, which means that the target number of ambulances is 450 in total for the entire population of 18 million people. It is important to continue working towards achieving this target value as well as replacing the 194 ambulances that have been used for more than 14 years.

Table 3-4 Year of Implementing Existing Ambulances

	Peugeot	Chevrolet	Isuzu	Others	Total
Introduction year	2003	2003	1994	1990 or earlier	
Number of ambulances	37	39	166	28	270
Vehicle comparison	13.7%	14.4%	61.5%	10.3%	100%

#### Expansion of communication network

The radio communication networks in the 6 most populated governorates will be strengthened in this project, but it is mandatory to improve the networks in the other governorates that were not covered in this project as well in order to expand the communication networks nation-wide. The Ministry of Health must work methodically on expansion and improvement of the wireless networks in parallel with the replacement/reinforcement of ambulances.

#### Fostering human resources

The Ministry of Health is making active efforts to raise the emergency medical technique level of the emergency medical teams and conduct training programs in cooperation with WHO and other organizations. In today's emergency medical activities, emergency treatment methods for cardiac diseases and traffic accidents are becoming more and more advanced and specialized. It is thus necessary to organize improved technical training programs, so that highly trained emergency medical teams including emergency care physicians can operate within the ambulance service system.



## **【Appendices】**

1. Member List of the Study Team
2. Study Schedule
3. List of the Parties Concerned in the Recipient Country
4. Minutes of Discussions
5. References

## **1. Member List of the Study Team**

### **(1) Basic Design Study (October 26, 2007 to November 22, 2007)**

Ms. Akiko TOMITA	Team Leader Resident Representative JICA Syria Office
Dr. Seiya KATO	Technical Adviser Department of Emergency and Critical Care Medicine Jichi Medical School
Mr. Tomoya YOSHIDA	Programme Coordinator Health Team, Project Management Group 2, Grant Aid Management Department, JICA
Mr. Shigetaka TOJO	Project Manager/Equipment Planner 1 International Techno Center Co., Ltd.
Mr. Hiroshi TASEI	Equipment Planner 2 International Techno Center Co., Ltd.
Mr. Kenji YOSHIMURA	Procurement and Cost Planner International Techno Center Co., Ltd.

### **(2) Explanation of Draft Report (February 23, 2008 to March 1, 2008)**

Ms. Akiko TOMITA	Team Leader Resident Representative JICA Syria Office
Mr. Tomoya YOSHIDA	Programme Coordinator Health Team, Project Management Group 2, Grant Aid Management Department, JICA

Mr. Shigetaka TOJO

ProjectManager/Equipment  
Planner1  
International Techno Center  
Co.,Ltd.

Mr. Hiroshi TASEI

Equipment Planner2  
International Techno Center  
Co.,Ltd.

## 2. Study Schedule

### (1) Basic Design Study

Date			Officials	ProjectManager/Equipment Planner1	Equipment Planner2	Procurement and Cost Planner
				Shigetaka Tojo	Hiroshi Tasei	Kenji Yoshimura
			13days	28days	28days	18days
1	26-Oct-07	Fri		Tokyo→Nagoya Nagoya→Dubai		
2	27-Oct-07	Sat		Dubai → Damascus		
3	28-Oct-07	Sun		JICA Japanese Embassy Ministry of Health		
4	29-Oct-07	Mon		Ministry of Health EIB		
5	30-Oct-07	Tue		Damascus Hospital Ministry of Health, Vehicle Dept		
6	31-Oct-07	Wed		Damascus Emergency Station→Aleppo		
7	1-Nov-07	Thu		Aleppo Health office•Data collection Ibn Rashid Hospital		
8	2-Nov-07	Fri		Aleppo→Damascus	Aleppo→Der-Al-Zour	Dubai → Damascus
9	3-Nov-07	Sat	Tokyo→Kansai→Dubai	→Homs Health office →Damascus	Dier-Al-Zor Health office Repeater Station	Ministry of Health
10	4-Nov-07	Sun	Dubai→Damascus	Documentation	Al-Mayadeen Hospital→Damascus	Survey on Transportation agent
11	5-Nov-07	Mon	MOH EIB, Meeting with minister of MOH, EOJ			Survey on Radio equipment agent
12	6-Nov-07	Tue	10:00 SPC		Ibn-Al naffis Hospital	Survey on Vehicle agent
13	7-Nov-07	Wed	Rual Damascus Health office		→Homs National Hospital Repeater Station →Damascus	Survey on Medical equipment dealer
14	8-Nov-07	Thu	Tadmol Hospital→Damascus			Survey on Transportation agent
15	9-Nov-07	Fri	Damascus→Latakia			
16	10-Nov-07	Sat	Latakia Health office →Aleppo	Ministry of Health	Lattakia Health office →Aleppo	Homs Health office
17	11-Nov-07	Sun	Aleppo Health office →Damascus	Ministry of Health	Aleppo Health office →Damascus	Survey on Medical equipment dealer
18	12-Nov-07	Mon	Discussion of Project at MOH			Survey on Radio equipment agent
19	13-Nov-07	Tue	Discussion of Project at MOH			Survey on Vehicle agent
20	14-Nov-07	Wed	Signing of MD,Reporting to JICA and Japanese Embassy Damascus→Dubai	Signing ofMD,Reporting toJICA and Japanese Embassy		Damascus → Dubai
21	15-Nov-07	Thu	Dubai→Kansai→Tokyo	Ministry of Health		Survey on Radio equipment agent
22	16-Nov-07	Fri		Internal Meeting		Documentation
23	17-Nov-07	Sat		Ministry of Health		Survey on Radio equipment agent
24	18-Nov-07	Sun		Ministry of Health		Dubai → Kansai Kansai →Tokyo
25	19-Nov-07	Mon		Ministry of Health		
26	20-Nov-07	Tue		Ministry of Health		
27	21-Nov-07	Wed		Ministry of Health, JICA, Japanese Embassy Damascus →Dubai		
28	22-Nov-07	Thu		Dubai → Kansai Kansai → Tokyo		

**(2) Explanation of Draft Report**

			Programme Coordinator	Project Mager/Equipment planner1	Equipment Planner2
			Tomoya Yoshida	Shigetaka Tojo	Hiroshi Tasei
			6days	8days	8days
1	23-Feb-08	Sat	Leave Japan		
2	24-Feb-08	Sun	AM: Meeting with JICA		PM: Meeting with MOH
3	25-Feb-08	Mon	Meeting with MOH		
4	26-Feb-08	Tue	Meeting with MOH		
5	27-Feb-08	Wed	Meeting with MOH		
6	28-Feb-08	Thu	Signing of Minutes Report toEOJ		
			Departure from Damascus	Follow up data collection at MOH	
7	29-Feb-08	Fri	Arrive Japan	Departure from Damascus	
8	1-Mar-08	Sat		Arrive Japan	

### **3. List of the Parties Concerned in the Recipient Country**

#### **Ministry of Health**

Maher Al-Housami	Minister of Health
Deeb Hazimeh	Deputy Minister of Health
Mohamed Dashash	Director of planning & statistic
Tawfik Hasaba	Director of Emergency
Ayman Akkad	Department of Bio-Medical Engineering

#### **Damascus Hospital**

Issam Hreirati	General Director,Damascus Hospital
Samer Khouder	Director of Emergency Department

#### **Damascus**

Alla Dirani	Director of Emergency Services
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#### **Rulal-Damascus**

Hassan Jabaji	Rulal Damascus Health Director
Abdula Al-Asali	Director Duma Hospital
Mohamed Fares	Director Annabek Hospital

#### **Aleppo**

Ahmad Talas	Aleppo Health Director
Moufid Meselmine	Director of Emergency Department

**Dier-Al-Zor**

Dr. Ghasan Al-Arab	Dier-Al-Zor Health Director
Dr. Rami Al-Dulli	Director of Emergency Department
Dr. Iman Mahalhel	Director of Planning
Ahmad Al-Dakheyl	Director of Accounting
Khaled Al-Abdulla	Director of Primary Health Care
Dr. Mohamed Sayah	Manager,Assad Hospital
Dr. Zaher Shaher	Deputy Manager,Assad Hospital

**Lattakia**

Bashar Abraheem	Deputy Director,Lattakia Health Directorate
Samal Al-oush	Deputy Director,Lattakia Health Directorate
Louay Said	Director of Emergency Department

**Homs**

Bary Almin	Director of Emergency services
Mohamed Yossef	Director of Tadmor Hospital
Mahmod Nazzel	Director of Emergency Department in Tadmor Hospital

**Japanese Embassy, Syria**

Masaki Kunieda	Ambassador
Katsumi Moriyasu	Counselor
Satoru Baba	Second Secretary

**JICA Syria Office**

Takashi Hibino	Staff
Maraha Morad	Staff



MINUTES OF DISCUSSIONS  
ON THE BASIC DESIGN STUDY  
ON THE PROJECT FOR UPGRADING EMERGENCY SYSTEM  
IN THE SYRIAN ARAB REPUBLIC

In response to a request from the Government of the Syrian Arab Republic (hereinafter referred to as "Syria"), the Government of Japan decided to conduct a Basic Design Study on the Project for Upgrading Emergency System (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to Syria the Basic Design Study Team (hereinafter referred to as "the Team"), which is headed by Ms. Akiko TOMITA, Resident Representative, JICA Syria Office and is scheduled to stay in the country from October 28, 2007 to November 21, 2007.

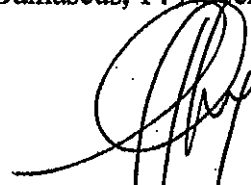
The Team held discussions with the officials concerned of the Government of Syria and conducted a field survey in the study area.

After discussions and field survey, both parties confirmed the main items described on the attached sheets. The Team will proceed to further works and prepare the Basic Design Study Report.

Damascus, 14 November 2007

富田明子

Ms. Akiko TOMITA  
Leader  
Basic Design Study Team  
Japan International Cooperation Agency



Dr. Maher Al Housami  
Minister of Health  
Syrian Arab Republic



## ATTACHMENT

### 1. Objective of the Project

The objective of the Project is to upgrade emergency system in 6 Syrian governorates.

### 2. Project site

Both sides agreed that the sites of the Project are in Damascus, Rural Damascus, Aleppo, Homs, Lattakia and Der-Al Zour. However, the final sites of the Project will be decided after further studies in Japan.

### 3. Responsible and Implementing Agency

The responsible and implementing agency is Ministry of Health (hereinafter referred to as "MOH"). The organization chart is attached as Annex-1.

### 4. Items requested by Syrian Side

After discussions with the Team, the items described in Annex-2 were requested by the Syrian side. JICA will assess the appropriateness of the request and will recommend to the Government of Japan for approval. However, the final components of the Project will be decided after further studies in Japan.

### 5. Japan's Grant Aid Scheme

5-1. The Syrian side understands the Japan's Grant Aid Scheme explained by the Team, as described in Annex-3 and Annex-4.

5-2. The Syrian side will take the necessary measures, as described in Annex-5, for smooth implementation of the Project, as a condition for the Japanese Grant Aid.

### 6. Schedule of the Study

6-1. The consultants will proceed to further studies in Syria until November 21, 2007.

6-2. JICA will prepare the draft report and the summary in English, and then dispatch the Team in order to explain its contents around February 2008.

6-3. In case that the contents of the report are accepted in principle by the Syrian side, JICA will complete the Basic Design Study Report and the summary in English, and then send them to Syria around March, 2008.

### 7. Other relevant issues

7-1. Syrian side decided to exclude 15 ambulances placed to the hospitals under Ministry of Higher Education from the list of equipment and will procure them by their own fund.

7-2 Syrian side proposed the placement of ambulances to the targeted sites in such a manner to cover more emergency patients to be reached by the ambulances in shorter time based on

the national goal of response time within 15 minutes mentioned in "The Tenth National Economic and Social Development Plan (2006-2010) "

- 7-3. The sites of placing ambulances are categorized into three categories of facility, which are hospitals, health centers in urban and rural areas and highway intersection station. The priority among the sites will be discussed and agreed by the end of the study period of the Team and the final sites of placement will be decided according to the result of the further study by the Team. MOH requested 4WD ambulances for some mountainous areas. The type of ambulance (2WD or 4WD) will be determined according to the result of further study. The medical equipment to be installed in the ambulances will be determined according to the three categories of placement.
- 7-4. Appropriate places of installment of base station and repeater station of radio communication system supplied by the Project will be proposed by Syrian side by the end of the study period of the Team according to the coverage of major population of its governorates. Both side agreed that Syrian side will install additional repeater stations, if necessary, to cover the areas that will not be covered by the radio communication system supplied by the Project.
- 7-5. Both side agreed that MOH will make necessary preparation works to install antenna of radio communication. MOH/State Planning Commission shall get necessary authorization to install the antennas to TV tower and/or mobile telephone tower in each respective area for repeaters.
- 7-6. Both side agreed that MOH will recruit necessary ambulance crews for new ambulances and train them about emergency medicine especially resuscitation and pre-hospital trauma care.
- 7-7. Both side agreed that MOH will allocate sufficient budgets for operating and maintain the new ambulances.
- 7-8. Both side agreed that MOH will make necessary agreement with related ministries/authorities in case that highway intersection stations will be established as medical points within the compound of police stations and fire stations.
- 7-9. Both side confirmed that the specification of equipment and the other technical information shall not be released before the tender to be held in the implementation stage of the Project.
- 7-10. MOH stated intention to request possible future assistance from Japanese government to establish school for emergency medicine and increase the number of ambulances to cover further remote areas and population as a part of its plan for improvement of the emergency system. The Team mentioned to take notes the subject.

Annex-1 Organization Chart

Annex-2 List of revised request of equipment

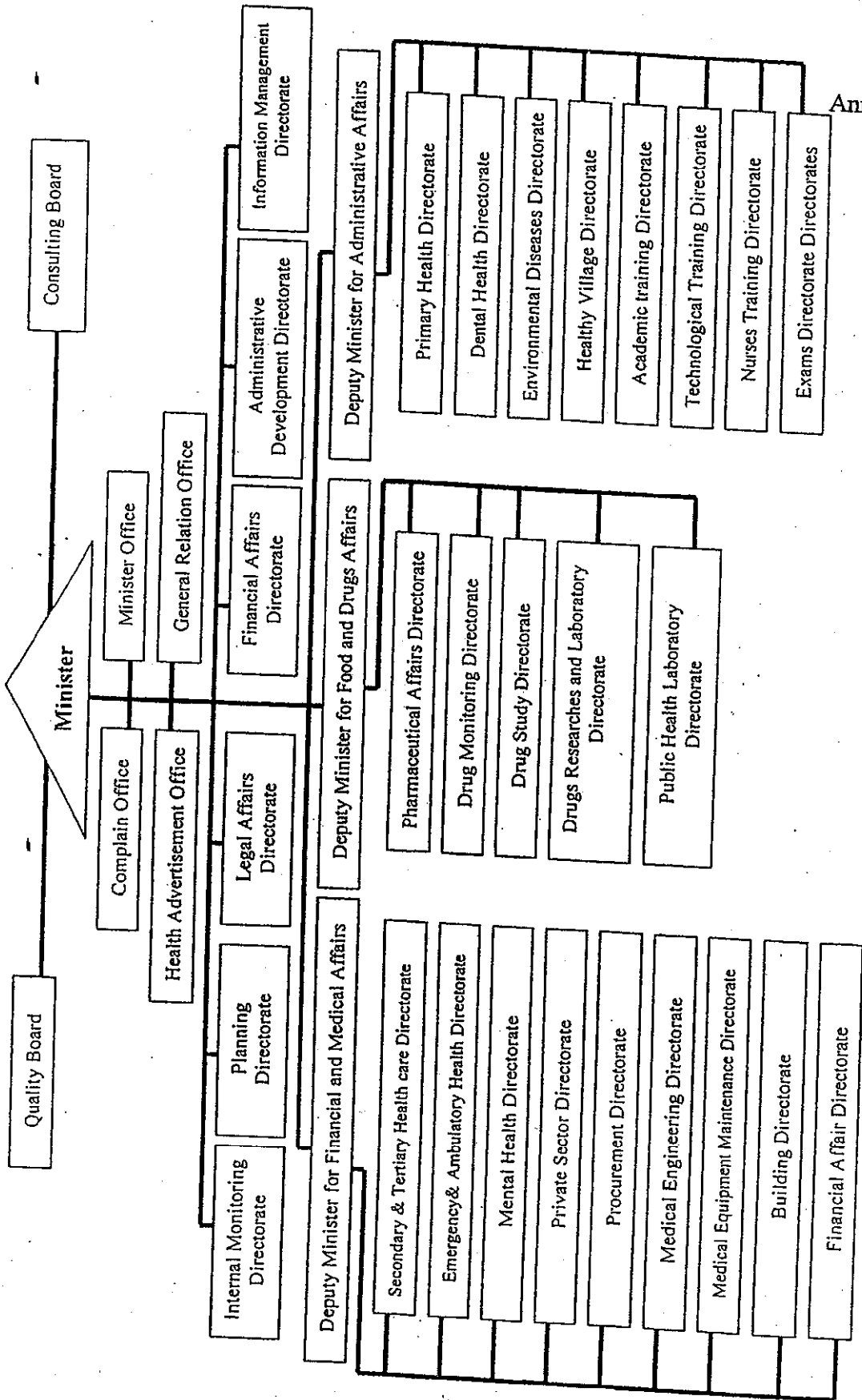
Annex-3 Japan's Grant Aid Scheme

Annex-4 Flow Chart of Japan's Grant Aid Procedures

Annex-5 Major Undertakings to be taken by Each Government

a-7.





Annex-1

a.7

## List of revised request of equipment

## 1. List of equipment

No.	Name of Equipment
1	Ambulance
2	Radio set for ambulance
3	Patient handling instrument set
4	Defibrillator
5	Pulse oximeter
6	Portable suction apparatus
7	Resuscitator set
8	Diagnostic instrument set
9	Radio set for base station
10	Repeater set

## 2. Distribution list of ambulances

## Damascus

Health Center	28
Highway intersection station	3
Hospital	-
Total	31

## Rural Damascus

Health Center	4
Highway intersection station	12
Hospital	2
Total	18

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Aleppo

	City area	Rural area
Health Center	18	17
Highway intersection station	-	7
Hospital	-	-
Total	18	24

Dier-Al-Zor

Health Center	12
Highway intersection station	6
Hospital	3
Total	21

Lattakia

Health Center	19
Highway intersection station	4
Hospital	2
Total	25

Homs

Health Center	5
Highway intersection station	8
Hospital	10
Total	23

Total

Health Center	103
Highway intersection station	40
Hospital	17
Total	160

a.7.



## Japan's Grant Aid

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

### 1. Japan's Grant Aid Procedures

(1) The Japan's Grant Aid Program is executed by the following procedures.

**Application** (request made by a recipient country)

**Study** (Basic Design Study conducted by JICA)

**Appraisal & Approval** (appraisal by the Government of Japan and approval by the Cabinet of Japan)

**Determination of Implementation** (Exchange of Notes between both Governments)

**Implementation** (implementation of the Project)

(2) Firstly, an application or a request for a Grant Aid project submitted by the recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Japan's Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA to conduct a study on the request. If necessary, JICA sends a Preliminary Study Team to the recipient country to confirm the contents of the request.

Secondly, JICA conducts the study (Basic Design Study), using (a) Japanese consulting firm(s).

Thirdly, the Government of Japan appraises the project to see whether or not it is suitable for Japan's Grant Aid Program, based on the Basic Design Study Report prepared by JICA and the results are then submitted to the cabinet for approval.

Fourthly, the project approved by the cabinet becomes official with the Exchange of Notes signed by the Government of Japan and the recipient country.

Finally, for the implementation of the Project, JICA assists the recipient country in preparing contracts and so on.

### 2. Basic Design Study

(1) Contents of the Study

The aim of the Basic Design Study (hereinafter referred to as "the Study"), conducted by JICA on a requested project (hereinafter referred to as "the Project") is to provide a basic document necessary for appraisal of the project by the Japanese Government. The contents of the Study are as follows:

a. 7

- a) Confirmation of the background, objectives, and benefits of the Project and also institutional capacity of agencies concerned of the recipient country necessary for the Project's implementation,
- b) Evaluation of the appropriateness of the Project for the Grant Aid Scheme from a technical, social and economical point of view,
- c) Confirmation of items agreed on by the both parties concerning a basic concept of the Project,
- d) Preparation of a basic design of the Project,
- e) Estimation of cost of the Project,

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

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

## (2) Selection of Consultants

For smooth implementation of the study, JICA uses (a) registered consultant firm(s). JICA selects (a) firm(s) based on proposals submitted by the interested firms. The firm(s) selected carry(ies) out a Basic Design Study and write(s) a report, based upon terms of reference set by JICA.

The consulting firm(s) used for the study is (are) recommended by JICA to a recipient country to also work in the Project's implementation after Exchange of Notes, in order to maintain technical consistency between the Basic Design and detailed Design.

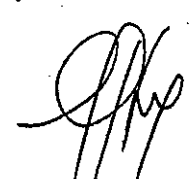
## 3. Japan's Grant Aid Scheme

### (1) Exchange of Notes (E/N)

Japan's Grant Aid is extend in accordance with the Notes exchanged by the two Government concerned, in which the objectives of the Project, period of execution, conditions and amount of the Grant Aid etc., are confirmed.

(2) "The period of the Grant Aid" means one Japanese fiscal year which the Cabinet approves the Project for. Within the fiscal year, all procedure such as exchanging of the Notes, concluding a contract with (a) consulting firm(s) and (a) contractor(s) and final payment to them must be completed.

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However, in case of delays in delivery, installation or construction due to unforeseen factors such as weather, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.

(3) Under the Grant, in principle, Japanese products and services including transport or those of the recipient country are to be purchased.

When the two Governments deem it necessary, the Grant may be used for the purchase of products or services of a third country.

However the prime contractors, namely, consulting, contractor and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

(4) Necessity of the "Verification"

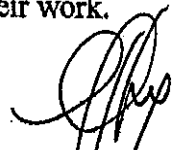
The Government of the recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability to Japanese tax payers.

(5) Undertakings Required to the Government of the Recipient Country

In the implementation of the Grant Aid project, the recipient country is required to undertake such necessary measures as the following:

- a) To secure land necessary for the sites of the project, and to clear, level and reclaim the land prior to commencement for the construction,
- b) To provide facilities for distribution of electricity, water supply and drainage and other incidental facilities in and around the sites,
- c) To secure buildings prior to the installation work in case the installation of the equipment,
- d) To ensure all the expenses and prompt execution for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid,
- e) To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts,
- f) To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the Verified Contracts, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.

a. 7



(6) Proper Use

The recipient country is required to maintain and use the facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for the operation and maintenance as well as to bear all expenses other than those covered by the Grant Aid.

(7) Re-export

The products purchased under the Grant Aid shall not be re-exported from the recipient country.

(8) Banking Arrangement (B/A)

- a) The Government of the recipient country or its designated authority should open an account in the name of the Government of the recipient country in an authorized foreign exchange bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by Government of the recipient country or its designated authority under the Verified Contracts.
- b) The payments will be made when payment requests are presented by the bank to the Government of Japan under an Authorization to Pay (A/P) issued by the Government of the recipient country or its designated authority.

(9) Authorization to Pay (A/P)

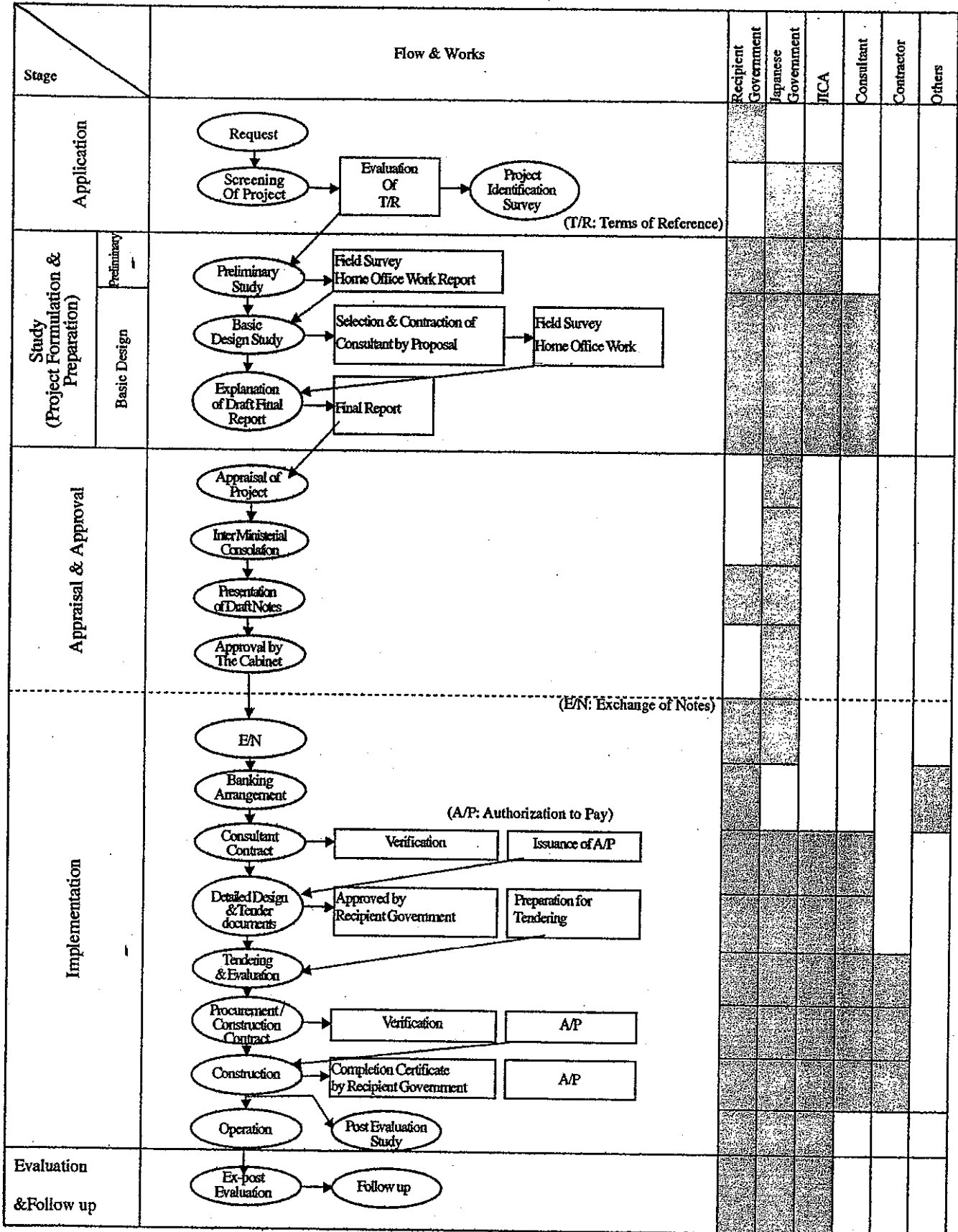
The Government of the recipient country should bear an advising commission of an Authorization to Pay and payment commissions to the Bank.

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# Flow Chart of Japan's Grant Aid Procedures

Annex-4



a.7



## Major Undertakings to be taken by Each Government

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

a. 7

MINUTES OF DISCUSSIONS  
ON THE BASIC DESIGN STUDY  
ON THE PROJECT FOR UPGRADING EMERGENCY SYSTEM  
IN THE SYRIAN ARAB REPUBLIC  
(EXPLANATION ON DRAFT REPORT)

In November 2007, Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched a Basic Design Study team on the Project for Upgrading Emergency System (hereinafter referred to as "the Project") to the Syrian Arab Republic (hereinafter referred to as "Syria"), and through discussion, field survey, and technical examination of the study results in Japan, JICA prepared a draft report of the study.

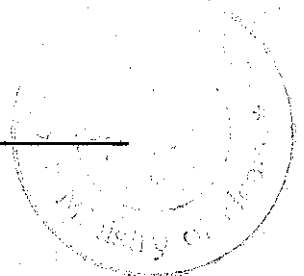
In order to explain and to consult the Syria side on the components of the draft report, JICA sent to Syria the Draft Report Explanation Team (hereinafter referred to as "Team"), which is headed by Ms. Akiko Tomita, Resident Representative, JICA Syria Office, JICA and is scheduled to stay in the country from February 24 to February 28, 2008.

Damascus, 28 February 2008

高田 明子

Ms. Akiko TOMITA  
Leader  
Draft Report Explanation Team  
Japan International Cooperation Agency

Dr. Maher Al Housami  
Minister of Health  
Syrian Arab Republic



Mr. Nader Sheikh Ali  
International Cooperation Director  
State Planning Committee

## ATTACHMENT

### 1. Components of the Draft Report

The Syria side agreed and accepted in principle the components of the draft report explained by the Team.

### 2. Japan's Grant Aid Scheme

The Syria side understands the Japan's Grant Aid Scheme and the necessary measures to be taken by the Government of Syria as explained by the Team and described in Annex-4 and 5 of the Minutes of Discussions signed by both parties on November 14, 2007.

### 3. Schedule of the Study

JICA will complete the final report in accordance with the confirmed items and send it to the Government of Syria by March 2008

### 4. Confidentiality of the Project

Both sides confirmed that all information related to the Project including detailed specifications of equipment and other technical information shall not be released to any outside party before the signing of all the Contract(s) for the Project.

### 5. Other relevant issues

#### 5-1. Confidentiality of the Project Cost Estimation

The Team explained the cost estimation of the Project as described in Annex-1. Both sides agreed that the Project Cost Estimation should never be duplicated or released to any outside parties before signing of all the Contract(s) for the Project. The Syria side understands that the Project Cost Estimation described in Annex-1 is not final and is subject to change.

#### 5-2. Undertakings by the Syria side

The Government of Syria promised to take every necessary measure to conduct the undertakings according to the tentative schedule described in Annex-3.

##### 5-2-1. Staff Assignment

The Government of Syria promised to assign necessary staff for the 160 ambulances (total 960 staff: 3 nurses and 3 drives per one ambulance) who will be trained for emergency medicines by the end of the procurement of ambulances and to allocate necessary budget for salary for the staff described in Annex-2.

##### 5-2-2. Radio network

The Government of Syria will construct an antenna mast to install repeater

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equipment at Mt. Zen Al Abadyeen in Homs before the transportation of the radio communication equipment.

The Government of Syria will make necessary arrangement such as acquiring permissions from Ministry of Information and Ministry of Internal Affairs to install repeater unit and base station to the existing facilities under the authority of the said ministries in all other sites before the transportation of the equipment.

#### 5-3. Operation and Maintenance Cost

The Government of Syria promised to secure and allocate necessary budget such as cost for maintenance/repair works and fuel as described in Annex-2 to sustain expanded emergency system with new ambulances to be procured under the Project.

#### 5-4. Improvement of Statistics

The Government of Syria promised to improve the statistics on emergency medical services as a part of its health information system by recording and reporting indicators such as the response time for each case, number of emergency patients brought to hospital by the ambulances, number of cases of death during the emergency transportation and number of cases of death and survival within 48 hours after the emergency transportation, etc., to monitor and evaluate the outcomes of the Project.

Annex-1 Project Cost Estimation

Annex-2 Operation and Maintenance Cost for the Equipment

Annex-3 Tentative Schedule of the Project

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**Operation and Maintenance Cost for the Equipment**

The Project, if implemented, will require the following expenses (per annum) for salary for the staff assigned to the ambulances, maintenance cost of ambulances/equipment and fuel.

Table. Operation and Maintenance Cost for the Equipment per year (Syria Pound)

Item	Governorate		Rural Damascus	Latakia	Aleppo	Der-Al Zour	Homs	Total
	Damascus							
Salary for the staff	Nurse	5,508,000 Sp	9,486,000 Sp	7,650,000 Sp	12,852,000 Sp	6,426,000 Sp	7,038,000 Sp	48,960,000 Sp
	Driver	4,860,000 Sp	8,370,000 Sp	6,750,000 Sp	11,340,000 Sp	5,670,000 Sp	6,210,000 Sp	43,200,000 Sp
Maintenance of ambulance		648,000 Sp	1,116,000 Sp	900,000 Sp	1,512,000 Sp	756,000 Sp	828,000 Sp	5,760,000 Sp
Fuel		2,721,600 Sp	4,687,200 Sp	3,780,000 Sp	6,350,400 Sp	3,175,200 Sp	3,477,600 Sp	24,192,000 Sp
<b>Total</b>		<b>13,737,600 Sp</b>	<b>23,659,200 Sp</b>	<b>19,080,000 Sp</b>	<b>32,054,400 Sp</b>	<b>16,027,200 Sp</b>	<b>17,553,600 Sp</b>	<b>122,112,000 Sp</b>

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**Tentative Schedule of the Project**

The sequence of works, shown in the table below, will be followed by the Project after the Exchange of Notes between the Government of Syria and the Government of Japan.

	0	1	2	3	4	5	6	7	8	9	10	11	12
<b>●Japan</b>													
Exchange of Notes	●												
Consultant Agreement		●											
Preparation of Tender document			■										
Confirmation of Tender document				■									
Tender notice					■								
Tender open and evaluation of tender contract						■							
Equipment ordering and manufacturing							■						
Transportation and custom clearance								■					
Installation and testing of equipment									■				
<b>●Syria</b>													
Construction of Antenna Mast													
Training and Assignment of staff for ambulances													

*[Handwritten signature]*  
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## 5. References

No	Title	Form	Original•Copy	Source	Year of issue
1	STATISTICAL ABSTRACT 2007 Sixty Year	Document	Original	Syrian Arab Republic Office of Prime Minister Central Bureau of Statistics	2007
2	Answer for Questionnaire	Document	Original	Ministry of Health	2007
3	10 <sup>th</sup> Five year Plan 保健分野抜粋	Electric Data	Copy	Ministry of Health	2006
4	Location Map of 5Governorates	Map	Original	Ministry of Tourism	2006
5	Health System Profile Syria 2006	Document	Copy	World Health Organization	2006
6	Statistical table of registered deaths	Electric Data	Copy	Ministry of Health	2007
7	Staff list of the ministry of health	Electric Data	Copy	Ministry of Health	2007
8	National Health accounts 2003 for Syria a graphic overview	Electric Data	Copy	Ministry of Health	2003
9	Ministry of health budget improvement and its percentage From the total state budget and the improvements of shear per capita for year 2007	Electric Data	Copy	Ministry of Health	2007