


## 2. Scope of Work



SCOPE OF WORK  
FOR  
THE STUDY  
ON  
INSPECTION AND MAINTENANCE SYSTEM FOR THE EXPRESSWAY  
IN  
THE KINGDOM OF THAILAND

AGREED UPON BETWEEN  
THE EXPRESSWAY AND RAPID TRANSIT AUTHORITY OF THAILAND  
AND  
JAPAN INTERNATIONAL COOPERATION AGENCY

Bangkok, November 26, 1992

  
*Charan Burapharat* 石川 慎一  
Mr. CHARAN BURAPHARAT Mr. SHINICHI ISHIKAWA  
Governor Leader of  
The Expressway and the Preparatory Study Team  
Rapid Transit Authority Japan International  
of Thailand Cooperation Agency

## I. Introduction

In response to the request of the Government of the Kingdom of Thailand, the Government of Japan has decided to conduct the Study on Inspection and Maintenance System for the Expressway in the Kingdom of Thailand (hereinafter referred to as "the Study"), within the general framework of technical cooperation between Japan and Thailand, which is set forth in the Agreement on Technical Cooperation between the Government of Japan and the Government of the Kingdom of Thailand signed on November 5, 1981.

Accordingly, the Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation programs of the Government of Japan, will undertake the Study in close cooperation with the authorities concerned of the Kingdom of Thailand.

The Expressway and Rapid Transit Authority of Thailand (hereinafter referred to as "ETA") shall act as counterpart agency to the Japanese Study Team and also act as coordinating body in relation with other relevant organizations for the smooth implementation of the Study.

The present document sets forth the scope of work with regard to the Study.

## II. Objectives of the Study

The objectives of this Study are as follows;

- (1) To formulate a system of inspection and maintenance for expressway under control of ETA.
- (2) To formulate an expressway inventory system consistent with the above system.

*Oliver*  
(1)

### III. Scope of the Study

In order to achieve the objectives, the Study shall cover the following items;

1. Review and analysis of the existing data and information
  - (1) To collect, review and analyze available data, information, reports and plans relevant to the study.
2. Field survey
  - (1) To conduct field survey for evaluating the present condition of the expressway, the existing inspection and maintenance system and the present organization.
3. Formulation of a basic strategy
  - (1) To formulate a basic concept of the systems.
  - (2) To formulate a basic strategy for implementation programs of the proposed system.
4. Formulation of the expressway inventory system
5. Preparation of inspection and maintenance guideline and manuals
6. Formulation of the system for inspection and maintenance
7. Application of the system to pilot section
  - (1) To select a pilot project section.
  - (2) To evaluate performance of the developed systems at the pilot projects.
8. Recommendation for the organization of inspection and maintenance
9. Formulation of the future expansion of inspection and maintenance system

*Shaw*  
(1)

#### IV. Study Schedule

The whole work shall be carried out in accordance with the attached tentative study schedule (APPENDIX-1).

#### V. Reports

JICA shall prepare and submit the following reports in English to the Government of the Kingdom of Thailand.

1. Inception Report  
Twenty (20) copies.  
At the beginning of the Study in Thailand.
2. Progress Report  
Twenty (20) copies.  
Within nine (9) months after submission of the Inception Report.
3. Interim Report  
Twenty (20) copies.  
Within eight (8) months after submission of the Progress Report.
4. Draft Final Report  
Fifty (50) copies.  
Within five (5) months after submission of the Interim Report.  
  
The Government of the Kingdom of Thailand will provide JICA with its comments within one (1) month after the receipt of the Draft Final Report.
5. Final Report  
Fifty (50) copies.  
within two (2) months after the receipt of the comments on the Draft Final Report.



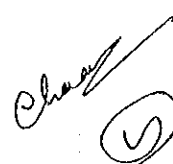
VI. Undertaking of the Government of the Kingdom of Thailand

1. In accordance with the Agreement on Technical Cooperation between the Government of Japan and the Government of the Kingdom of Thailand dated November 5, 1981, the Government of the Kingdom of Thailand shall accord benefits to the Japanese Study Team as follows;

- (1) to permit the members of Japanese Study Team to enter, leave and sojourn in Thailand for duration of their assignment therein and exempt them from foreign registration requirements and consular fees,
- (2) to exempt the members of the Japanese Study Team from taxes and duties and any other charges on equipment, machinery and other materials brought into Thailand for conduct of the Study,
- (3) to exempt the members of the Japanese Study Team from income taxes and charges of any kind imposed on or on connection with any emolument or allowance paid to the members of the Japanese Study Team for their services in connection with implementation of the Study, and
- (4) to bear claims, if any arise, against the members of the Japanese Study Team resulting from, occurring in the course of, or otherwise connected with, the discharge of their duties in implementation of the Study, except when such claims arise from gross negligence or willful misconduct on the part of the members of the Japanese Study Team.

2. To facilitate smooth conduct of the Study, the Government of the Kingdom of Thailand shall take necessary measures;

- (1) to secure permission for entry into private properties or restricted areas for the conduct of the Study,
- (2) to secure permission for the Team to take all data and documents (including photographs) related to the Study out of Thailand to Japan,
- (3) to provide the medical service as needed (its expense will be chargeable on the members of the Japanese Study Team), and
- (4) to ensure the safety of the members of the Japanese Study Team, when and as it is required in the course of the Study.



3. ETA shall, at its own expense, provide the Japanese Study Team with the following, in cooperation with other relevant organization;

- (1) available data and information, related to the Study including aerial photographs and maps,
- (2) counterpart personnel,
- (3) suitable office space with necessary equipments in Bangkok,
- (4) credentials or identification cards, and
- (5) appropriate number of vehicles with drivers.

#### VII. Undertaking of JICA

For the implementation of the Study, JICA shall take the following measures:

- (1) to dispatch, as its own expense, the Japanese Study Team to the Kingdom of Thailand,
- (2) to pursue technology transfer to the Thai counterpart personnel in the course of the Study.

#### VIII. Others

JICA and ETA shall consult with each other in respect of any matter that may arise from or in connection with the Study.

*Cherry*  
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TENTATIVE SCHEDULE

MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
STUDY IN THAILAND	—————																								
STUDY IN JAPAN	—						—									—								—	
SUBMISSION OF REPORTS	Δ							Δ								Δ								Δ	
								P/R								IT/R								DF/R	F/R

IC/R : Inception Report  
 P/R : Progress Report  
 IT/R : Interim Report  
 DF/R : Draft Final Report  
 F/R : Final Report




### 3. Minutes of Meeting



MINUTES OF MEETING  
ON  
THE SCOPE OF WORK  
FOR  
THE STUDY ON INSPECTION AND MAINTENANCE SYSTEM FOR THE EXPRESSWAY  
IN  
THE KINGDOM OF THAILAND

AGREED UPON BETWEEN  
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AND  
JAPAN INTERNATIONAL COOPERATION AGENCY

BANGKOK, NOVEMBER 26, 1992

  
*Charan Burapharat*      石川 慎一  
Mr. CHARAN BURAPHARAT      Mr. SHINICHI ISHIKAWA  
Governor      Leader of  
The Expressway and Rapid Transit      the Preparatory Study Team,  
Authority of Thailand      Japan International Cooperation  
Agency

*Charan*

5. The road inventory system and the pilot section will cover the existing expressway (27.1km) under the full cooperation from ETA.
6. Every report will be prepared in English.
7. ETA requested that manuals and guidelines of inspection and maintenance will be prepared in Thai. The Team replied that they would convey the above request to the Japanese authorities concerned.
8. The computer system will basically be formulated on the personal computer basis. This computer system should be capable to store the drawing data, which will be prepared in the form of Auto-Cad by ETA.
9. ETA will provide a suitable office space and appropriate number of vehicles with drivers for the study team. JICA will inform the requirements to ETA one month prior to the commencement of the Study.
10. ETA earnestly requested to the Japanese side the followings;
  - (1) To accept as many ETA counterpart personnel as possible to Japan for facilitating technical transfer in the course of the Study.
  - (2) To take consideration to transfer of technology, by providing necessary equipments, such as an optical disk unit or a micro-film producing/re-producing machine for conducting the Study.The Team replied that they would convey the above requests to the Japanese authorities concerned.

*Shimizu*  
①

The Japanese Preparatory Study Team (hereinafter referred to as "the Team"), organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Mr. Shinichi Ishikawa visited Thailand from November 19 to November 28, 1992, in connection with the Study on Inspection and Maintenance System for the Expressway (hereinafter referred to as "the Study").

The Team had a series of discussions with the authorities concerned of the Government of the Kingdom of Thailand and carried out field surveys of the study area.

The final meeting was held on November 23, 1992, with attendants listed in Annex.

The meetings resulted as follows.

1. "System" (in the Scope of Work signed on November 26, 1992, between the Government of the Kingdom of Thailand and the Team) is defined as the total system including the organization and the computer system, etc. for the inspection and maintenance for the Expressway.
2. The "System" will cover super structures, sub-structures, pavements, traffic safety devices and a part of street lighting facilities, which can be visually inspected.
3. ETA shall take the responsibility for the utilization and maintenance of the computer system that will be formulated in the Study.
4. The system will be formulated for the existing expressway (27.1km). However, this system will be designed to be applied to the Ramindra - Atnarong section (18.7km).



## ANNEX

## LIST OF ATTENDANTS

## 1. THAI SIDE

Mr. Pridi Chantaravitoon : Director  
Expressway Management Department

Mr. Sutas Sutanchinont : Director  
Expressway System Project Office

Mr. Somchai Jarukasemratana : Director  
Technical Department

Mr. Nopakun Leungvititgoon : Director  
Expressway Maintenance Division

Mr. Boonying Yaitavorn : Director  
Expressway Network Division

Mr. Khamron Khanjanapis : Director  
Equipment Maintenance Division

Mr. Prapat Chongsanguan : Director  
Legal Counsel Division

Mr. Sombat Paneiam : Head of Bridge Maintenance Section

Mr. Vichit Dilokvilas : Head of General Property  
Maintenance Section

Mr. Withawat Sirichanya : Head of Roadway Maintenance  
Section

Miss Sattabusya Makvichai : Technical Official

Mr. Chakkrit Ruamsilpa : Engineer 5 Roadway Maintenance  
Section

Miss Thainstha Mangrak : Secretary

Mr. Hiroshi KOJIMA : JICA Expert to ETA

## 2. JAPANESE SIDE

Mr. Shinichi ISHIKAWA : Leader of Preparatory Study Team

Mr. Yasuhiro ABE : Member of Preparatory Study Team

Mr. Fukashi KOGURE : Member of Preparatory Study Team

Mr. Hikaru NISHIMURA : Member of Preparatory Study Team

Mr. Yuichi SUGANO : Member of Preparatory Study Team

Mr. Hidetaka NISHIWAKI : Staff of JICA Thailand Office

*Chun*

(11)



タイ国高速道路点検・維持システム整備計画事前調査

収集資料リスト

資料名	発行者	入手先	資料形態
1. ETA Annuual Report 1991	ETA	ETA	オリジナル
2. State Enterprise Plan (タイ語)	ETA	ETA	オリジナル
3. ETA Operation Plan 1993 (タイ語)	ETA	ETA	オリジナル
4. 既存高速道路地形図	ETA	ETA	コピー
5. 既存高速道路キロポスト図	ETA	ETA	コピー
6. Role, Function and Project Concerned	ETA	ETA	オリジナル
7. Statistical Report 1991	ETA	ETA	オリジナル
8. Inspection and Maintenance System of the Expressway	ETA	ETA	オリジナル
9. タイのコンサルタント一覧	CEAT	CEAT	オリジナル

CEAT : The Consulting Engineers Association of Thailand

JICA

