

7. ミニッツ



**THE MINUTES OF MEETING
 BETWEEN THE JAPANESE TECHNICAL GUIDANCE TEAM
 AND THE AUTHORITIES CONCERNED OF THE GOVERNMENT
 OF THE REPUBLIC OF TURKEY
 ON THE JAPANESE TECHNICAL COOPERATION
 FOR THE EARTHQUAKE DISASTER PREVENTION RESEARCH
 CENTER IN THE REPUBLIC OF TURKEY**

The Japanese Technical Guidance Team (hereinafter referred to as "the Team") organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Dr. Yutaka Ohta visited the Republic of Turkey from September 20th to October 4th for the purpose of reviewing the progress of activities as well as discussing the implementation plan for the Earthquake Disaster Prevention Research Center Project (hereinafter referred to as "the Project").

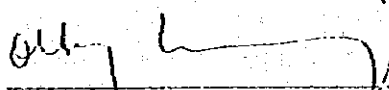
During its stay in the Republic of Turkey, the Team exchanged views and had series of discussions with the Turkish authorities concerned.

As a result of the discussions, both sides agreed to recommend to their respective Governments the matters referred to in the document attached hereto.

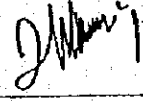
Ankara, October 4, 1995

大田 裕

Dr. Yutaka OHTA
 Leader,
 Technical Guidance
 Team,
 Japan International
 Cooperation Agency,
 Japan



Dr. Oktay ERGÜNAY
 General Director,
 General Directorate of
 Disaster Affairs,
 Ministry of Public Works
 and Settlement,
 Republic of Turkey



Dr. Nadir YAYLA for
 Dean,
 Faculty of Civil
 Engineering,
 Istanbul Technical
 University,
 Republic of Turkey

02. 太田 氏

ATTACHED DOCUMENT

1. Review of the Progress

The Team and the Turkish authorities concerned reviewed the progress of the Project activities since its commencement in April 1993, and both sides confirmed it as follows.

(1) Input by Japanese side

a. Dispatch of Experts

In accordance with the Tentative Schedule for the Implementation of the Project (hereinafter referred to as "TSI"), which is ANNEX-A of the MINUTES OF UNDERSTANDING agreed and signed between the Japanese Implementation Survey Team and the Turkish authorities concerned on March 18, 1993, the Japanese side dispatched experts as shown in ANNEX I.

b. Training of Turkish Counterparts in Japan

In accordance with TSI, the Japanese side received Turkish Counterparts for technical training in Japan as shown in ANNEX II.

c. Provision of Equipment

The list of main equipment provided by the Japanese side is shown in ANNEX III.

The provision of the Earthquake Strong Motion Observation System to the Earthquake Data Collection and Vulnerability Evaluation Subcenter (hereinafter referred to as "EDCVE Subcenter") has not been completed as agreed in TSI due to the delay of the implementation caused by the relocation, resulted from technical reasons, of the Regional Center and the Local Stations, that had been discussed by both sides and finally agreed and signed in the RECORD OF DISCUSSIONS and the MINUTES OF MEETING (hereinafter referred to as "the Previous MINUTES OF MEETING") between the Japanese Technical Consultation Team and the Turkish authorities concerned in August 8, 1994.

The provision of equipment for the Earthquake Engineering Research Subcenter (hereinafter referred to as "EER Subcenter") has been proceeded smoothly almost in accordance with TSI.

(2) Input by Turkish side

a. Assignment of Counterpart Personnel

The Turkish side assigned counterpart personnel as shown in ANNEX IV in accordance with the Previous MINUTES OF MEETING.

b. Allocation of Budget

The Turkish side allocated the budget for the Project in its fiscal year 1995 as shown in ANNEX V.

(3) Implemented Activities of the Project

The actually implemented activities of the Project are shown in ANNEX VI in comparison with their original plan agreed in the PLAN OF OPERATION, ANNEX II of the Previous MINUTES OF MEETING.

02. 太田 氏

2. Implementation Plan of the Project.

The Team and the Turkish authorities concerned discussed the implementation plan for the rest of the cooperation term of the Project (until March, 1998), and both sides confirmed it as follows.

(1) Annual Plan of Operation

The Annual Plan of Operation for the rest of the cooperation term is shown in ANNEX VII.

(2) Measures to be taken by the Japanese side

a. Dispatch of Japanese Experts for 1995

The Team explained that the Japanese side will dispatch Japanese Experts still in the Japanese Fiscal Year (hereinafter referred to as "JFY") 1995 as shown in ANNEX VIII.

b. Dispatch of Japanese Experts for 1996 and 1997

The Turkish side requested the dispatch of Japanese Experts for JFY 1996 and 1997 as shown in ANNEX IX. The Team replied that the Japanese side will make efforts to recruit and dispatch them within the budget.

c. Training of Turkish Counterpart

Both sides agreed the plan of the training of Turkish counterpart personnel in Japan for JFY 1996 and 1997 as shown in ANNEX X.

d. Provision of Equipment for 1995

The Team explained that by the budget of JFY 1995 the provision of the hardware and basic software for the Earthquake Strong Motion Observation System to EDCVE Subcenter is under way and expected to be completed by the end of 1996.

The Team also explained that the provision of Torsional Apparatus to EER Subcenter are expected to be completed by the end of 1996 as well.

e. Provision of Equipment for 1996 and 1997

The Team explained that the provision of equipment for JFY 1996 and 1997 will include the version-up of the software for the Earthquake Strong Motion Observation System. The Turkish side understood it.

(3) Measures to be taken by the Turkish side

Both sides agreed that the Turkish side will provide necessary facilities for the Central Station, Regional Station and Local Stations prior to the completion of the provision of the hardware and basic software for the Earthquake Strong Motion Observation System to EDCVE Subcenter.

Turkish side will make best effort and Japanese Expert will cooperate in their best effort to develop the Region-Specific and Knowledge Database required for the software and its version-up of the Earthquake Strong Motion Observation System.

The development of both Database is expected to be completed by the end of 1996.

3. Others

(1) Periodic Meeting

Both sides agreed that the periodic meeting between the Japanese Experts group and the Turkish counterparts group will be held monthly in the EDCVE Subcenter and trimonthly in the EER Subcenter.

(2) Dissemination Activity

Both sides agreed that in order to promote the Project effectively, intensive publicity activity should be made having seminars, publications and other available means.

02. 太田 研

02. 太田 洋

ANNEX I

DISPATCH OF JAPANESE EXPERTS

1. Long-Term Experts

FIELD	NAME	PERIOD
EDCVE Subcenter		
a. Chief Advisor	Dr. Hiromu Shima Dr. Takuo Maruyama	1993.7.7 - 1995.10.6 1995.9.8 - 1996.9.3
b. Coordinator	Mr. Hiroshi Sato Mr. Toyohiko Otsuka	1993.6.5 - 1995.6.4 1995.5.18 - 1997.5.17
c. Earthquake Strong Motion Observation System	Dr. Noritoshi Goto	1994.10.5 - 1995.10.31

2. Short-Term Experts

FIELD	NAME	PERIOD
EDCVE Subcenter (JFY 1993)		
a. Seismic Observation and Seismicity	Dr. Kazuki Koketsu Dr. Sadaomi Suzuki	1993.7.21 - 1993.8.9 1993.7.8 - 1993.8.27
b. Earthquake Strong Motion Observation System	Mr. Shiko Sugiyama Dr. Yutaka Ohta Dr. Shigeyuki Okada	1993.7.21 - 1993.8.27 1993.7.21 - 1993.8.20 1993.10.17 - 1993.11.12
c. System Installation	Dr. Kazuo Seo	1993.7.21 - 1993.8.9
(JFY 1994)		
a. Seismic Observation and Seismicity	Dr. Kazuo Matsumura Dr. Kazuki Koketsu	1994.7.22 - 1994.8.23 1994.8.2 - 1994.8.28
b. Earthquake Strong Motion Observation System	Dr. Hitomi Murakami Mr. Noboru Ikenishi	1994.7.22 - 1994.8.23 1995.3.4 - 1995.3.29
c. Seismic Source and Intensities	Dr. Hiroshi Takenaka	1994.8.2 - 1994.9.18
d. Earthquake Damage and Vulnerability	Dr. Yoshimasa Kobayashi Dr. Shigeyuki Okada	1994.7.27 - 1994.8.23 1995.2.23 - 1995.3.10

FIELD	NAME	PERIOD
(JFY 1995)		
a. Earthquake Strong Motion Records	Dr. Sadaomi Suzuki	1995.7.28 - 1995.8.23
b. Earthquake Damage and Vulnerability	Dr. Junji Kiyono	1995.7.18 - 1995.10.18
	Dr. Akenori Shibata	1995.9.9 - 1995.10.13
	Dr. Keiji Shiono	1995.9.9 - 1995.10.13
EER Subcenter (JFY 1994)		
a. Installation of Actuator System	Mr. Nobuhiro Imafuku	1995.3.1 - 1995.3.19
b. Microtremor Measurement and Analysis	Mr. Shin Koyama	1994.11.5 - 1994.11.28
c. Test of Soils	Mr. Hidetoshi Miura	1994.9.13 - 1994.10.22
(JFY 1995)		
a. Structural Test by Actuator System	Mr. Toshifumi Fukuta Mr. Nobuhiro Imafuku	1995.6.21 - 1995.7.2 1995.6.21 - 1995.7.2

Dr. 太田 隆

ANNEX II

TRAINING OF TURKISH COUNTERPARTS IN JAPAN

1. JFY 1993

FIELD	NAME	PERIOD
(EDCVE Subcenter) a. Earthquake Strong Motion Observation System and Study	Mr. Hüseyin Güler	1993.12.2 - 1994.2.25
(EER Subcenter) a. Actuator System	Mr. Ercan Yüksel	1993.8 - 1994.5
b. Structural Engineering	Dr. Faruk Karadoğan	1993.9.19 - 1993.10.23

2. JFY 1994

FIELD	NAME	PERIOD
(EDCVE Subcenter) a. Disaster Affairs Administration	Dr. Oktay Erugünay	1995.3.8 - 1995.3.18
b. Earthquake Strong Motion Observation System and Study	Mr. Engin Çoruh Mr. Fikri Öztürk	1994.11.27 - 1995.4.25 1994.11.27 - 1995.4.25
(EER Subcenter) a. Laboratory Test of Soils	Dr. Atilla Ansal	1994.11 - 1995.2

09. 太田 研

ANNEX III

MAIN EQUIPMENT PROVIDED BY THE JAPANESE SIDE

(EDCVE Subcenter)

1. SEISMIC WEAK MOTIONS OBSERVATION SYSTEM

- (1) Seismometer
- (2) Telemetry Unit
- (3) Power Source Solar System
- (4) Receiver
- (5) Data Acquisition System
- (6) Personal Computer

2. ENGINEERING WORKSTATION

3. SOFTWARE

- (1) PC ARC/INFO
- (2) Arc View
- (3) VGA ERDAS

(EER Subcenter - Structure)

1. SERVO-CONTROLLED ELECTRO HYDRAULIC ACTUATOR SYSTEM

2. HYDRAULIC JACK SYSTEM

- (1) Double Hydraulic Jack
- (2) Center Hole Jack
- (3) Electric Hydraulic Pump
- (4) Hydraulic Jack

3. MICROTREMOMETER SYSTEM

4. DATA RECORDER

5. DATA ANALYSIS SYSTEM

(EER Subcenter - Soil)

1. CONE PENETROMETER MC-CONE SYSTEM

2. SUSPENSION P-S LOGGING SYSTEM

3. BOREHOLE PICK & DATA ACQUISITION SYSTEM

4. DIRECT SHEAR TESTING APPARATUS

5. PNEUMATIC CYCLIC TRIAXIAL TEST APPARATUS

02.

太田 芳夫

ASSIGNMENT OF COUNTERPART PERSONNEL

EDCVC SUBCENTER FIELD	NAME	POSITION	QUALIFICATION
1. Chief of Subcenter	H.Hüseyin GÜLER	Director of Laboratory Division of ERD	Geophysical Engineer, Ms.
2. Seismic Observation and Seismicity	Adem SÖMER Bekir TÜZEL	Laboratory Division of ERD Laboratory Division of ERD	Geophysical Engineer Geophysical Engineer
3. Earthquake Strong Motion Observation System (3. and 6. will work jointly)	Bekir TÜZEL Ali Z. DENIZOĞLU	Laboratory Division of ERD Seismology Division of ERD	Geophysical Engineer Geophysical Engineer
4. System Installation	Engin ÇORUH	Laboratory Division of ERD	Geological Engineer, Ms.
5. Seismic Source and Intensities	Fikri ÖZTÜRK Adem SÖMER Salih KARAKISA	Laboratory Division of ERD Laboratory Division of ERD Seismology Division of ERD	Geophysical Engineer Geophysical Engineer Geophysical Engineer
6. Earthquake Strong Motion Records (3. and 6. will work jointly)	Fikri ÖZTÜRK Uğur KURAN	Laboratory Division of ERD Laboratory Division of ERD	Geophysical Engineer Geological Engineer, Ms.
7. Earthquake Damage and Vulnerability	Bülent ÖZMEN Ali HÜRATA	Laboratory Division of ERD Earthquake Engineering Division of ERD	Geological Engineer Civil Engineer
8. System Development	Murat NURLU	Laboratory Division of ERD	Geological Engineer, Ms.

02. 太田 氏

ANNEX IV-B

Assignment of Counterpart Personnel

EER SUBCENTER

Field	Name	Position	Qualification
1. Chief of Subcenter	Remzi Ülker	Director of Building and Earthquake Research Center	Prof. Dr.
2. Installation of Actuator (1) Chief Counterpart (2) Counterpart (3) Counterpart	→ F. Karadoğan	Director of Structural and Earthquake Engineering. Lab.	Prof. Dr.
3. Structural Test by Actuator System & Oil Jack System (2. and 3. will work jointly) (1) Chief Counterpart (2) Counterpart (3) Counterpart	H. Boduroğlu	Researcher	Prof. Dr.
	→ E. Yüksel	Teaching and Research Assistant	
	A. İlki	.	
	→ P. Özdemir	.	
4. Micro tremor Measurement and Analysis (1) Chief Counterpart (2) Counterpart (3) Counterpart (4) Counterpart	A. Eröz	.	
	4 Turkish & 2 Foreigner M. Sc. Students		
	H. Boduroğlu		Prof. Dr.
	F. Karadoğan		Prof. Dr.
	A. Ansal		Prof. Dr.
	E. Yüksel		Research Ass.
5. Laboratory Test of Soils (1) Chief Counterpart (2) Counterpart (3) Counterpart (4) Counterpart (5) Counterpart (6) Counterpart	A. Erkem		Associate Prof.
	A. İlki		Research Ass.
	A. Eroz		.
	P. Özdemir		.
	& Graduate Students		
6. In-Site Test of Soils (5. and 6. will work jointly) (1) Chief Counterpart (2) Counterpart (3) Counterpart (4) Counterpart (5) Counterpart (6) Counterpart	A. Ansal		Prof. Dr.
	A. Erkem		Associate Prof.
	→ H. Yıldırım		.
	R. İyisan		Ph. D
	A. Sezen		Research Ass.

ANNEX V

BUDGET ALLOCATION BY TURKISH SIDE FOR 1995

1. EDCVE Subcenter

The efforts for allocating State budget to the Project was not successful in 1995. New application has already send, requesting 12 000 000 000.TL from the State budget for the Project activities in the years of 1996, 1997, 1998 is now on process at the State Planning Office (SPO). General Directorate of Disaster Affairs has provided certain amount of money from the Special Disaster Fund to meet the urgent needs of the Project such as salaries, travel allowances and transportation. From January up to the end of September 1995 approximate budget figures for salaries and travel & transportation is shown below.

Salary: 11persons * 9 months * 17 000 000 = 1 700 000 000.TL.(¥3 400 000.)

Travel & transportation: 7 travel * 40 000 000 = 280 000 000.TL.(¥ 560 000.)

2. EER Subcenter

The Transactions related to the budget of fiscal year 1995 are listed below:

● Travel allowances	None
● Machinery and Equipment	None
● Materials	100.000.000.-TL
● Improvement of Reaction Frames	148.000.000.-TL
● Improvement of crane ways	44.000.000.-TL
● Telephone and Answering Machine	8.000.000.-TL
● Preparation of T shaped steel specimen	*
● Preparation of reinforced Masonry walls	*
● Cooling device & fans	22.000.000.-TL
● Gas & Electricity expenditure	10.000.000.-TL
● Improvement of the heating system	45.000.000.-TL
● Custom Expenses	14.000.000.-TL
● Certain Amount of office furniture	*
● Salaries of the following positions	*
3 Full Professors	
1 Associate Professor	
1 Assistant Professor	
4 Teaching & Research Assistant	
1 Technician	
● Improvement of existing testing Laboratory	*

* Can not be estimated

02. 太田 研

2. 太田 隆夫

PLAN OF OPERATION

EDCVE SUBCENTER

Subjects of Activities	1993			1994			1995			1996			1997		
	4	10	3	4	10	3	4	10	3	4	10	3	4	10	3
1. TEMPORAL SEISMIC OBSERVATION AND DATA ANALYSIS 1. Observation of seismic weak motions (signal-to-noise ratios) 2. Analyses of observed seismic records 3. Evaluation of seismic activity and environment															
2. DESIGN AND CONSTRUCTION OF EARTHQUAKE STRONG MOTION OBSERVATION SYSTEM 1. Designing and manufacturing of network system 2. Preparatory works and installations 3. Observations and experiment															
3. ANALYSIS OF SEISMIC STRONG MOTIONS AND INTENSITIES 1. Analyses of existing records 2. Data processing and analysis of observed records 3. Prediction and evaluation of seismic strong motions															
4. EARTHQUAKE DAMAGE ANALYSIS AND VULNERABILITY EVALUATION 1. Characterization of ground failures and landslides 2. Elucidation of structural vulnerability characteristics 3. Derivation of earthquake casualty equations															
5. APPLICATION STUDY OF EARTHQUAKE INFORMATION 1. Case studies of post-earthquake responses 2. Studies for intensive applications of earthquake information															
6. UPGRADING OF EARTHQUAKE STRONG MOTION OBSERVATION SYSTEM 1. Reinforcement of hardware subsystems 2. Upgrading of software subsystems 3. Total evaluation for future developments															

Planned Updated

Q. 太田 様

ANNEX VI-C

PLAN OF OPERATION

PLANNED
 PERFORMED

EER Subcenter - Soil

Items of work	1993		1994		1995		1996		1997	
	4	9	3	4	9	10	3	4	9	3
1. Transfer of equipments. In-situ test apparatus Lab. Test apparatus										
2. Preparation and preliminary tests										
3. In-situ tests for site characterization for various sites										
4. Lab. tests to determine dynamic properties of local soils										
5. Compilation of existing soil boring data										
6. Site-specific motion determination by analysis										
7. Analysis of soil liquefaction and ground failure										
8. Development of microzoning maps for major sites										

0.2. 本 田 功 夫

EDCIVE SUBCENTER ANNUAL PLAN OF OPERATION ANNEX-VIIA1

ITEMS OF WORK	REMARKS	SCHEDULE																	
		JFY1995			JFY1996			JFY1997											
		10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1. TEMPORAL SEISMIC OBSERVATION AND DATA ANALYSIS																			
1. Observation of seismic weak motions (signal-to-noise ratios)																			
2. Analysis of observed seismic records																			
3. Evaluation of seismic activity and environment																			
2. DESIGN AND CONSTRUCTION OF EARTHQUAKE STRONG MOTION OBSERVATION SYSTEM																			
1. Designing and manufacturing of network system																			
2. Preparatory works and installations																			
3. Observations and experiment																			
3. ANALYSIS OF SEISMIC STRONG MOTIONS AND INTENSITIES																			
1. Analyses of existing records																			
2. Data processing and analysis of observed records																			
3. Prediction and evaluation of seismic strong motions																			
4. EARTHQUAKE DAMAGE ANALYSIS AND VULNERABILITY EVALUATION																			
1. Characterization of ground failures and landslides																			
2. Elucidation of structural vulnerability																			
3. Derivation of earthquake casualty equations																			

Handwritten notes: *g.*, *本*, *田*, *山*

EDCVC SUBCENTER ANNUAL PLAN OF OPERATION ANNEX-VIIA2

ITEMS OF WORK	REMARKS	SCHEDULE														
		JFY1995			JFY1996			JFY1997								
		10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
5. APPLICATION STUDY OF EARTHQUAKE INFORMATION 1. Case studies of post-earthquake responses 2. Studies for intensive applications of earthquake information																
6. UPGRADING OF EARTHQUAKE STRONG MOTION OBSERVATION SYSTEM 1. Reinforcement of hardware subsystems 2. Upgrading of software subsystems 3. Total evaluation for future developments																

◎ 本 田 様

ANNUAL PLAN OF OPERATION

EER Subcenter - Soil

Items of work	Remarks	Schedule																	
		JFY1995			JFY1996			JFY1997											
		10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1. Transfer of equipments, In-situ test apparatus Lab. Test apparatus	Transfer of Torsional Apparatus. Transfer of downhole seismic source.																		
2. Preparation and preliminary tests	Not necessary for ring shear and triaxial tests. Necessary for torsional tests.																		
3. In-situ tests for site characterization for various sites	50m cased borehole at the sites of SSA-2																		
4. Lab. tests to determine dynamic properties of local soils	Erzincan sand samples for liquefaction tests																		
5. Compilation of existing soil boring data	Boring data 15 collected in old city area (Istanbul). For Istanbul the data are being compiled																		
6. Site-specific motion determination by analysis																			
7. Analysis of soil liquefaction and ground failure																			
8. Development of microzoning maps for major sites	Erzincan (4 x 6km) test case surrounding area. Adapazarı. Istanbul in pending. Ismir area in pending.																		

ANNEX VIII

PLAN OF DISPATCH OF JAPANESE EXPERTS FOR JFY 1995 AS OF OCTOBER 4, 1995

(EDCVE Subcenter)

1. Long-Term Expert

One (1) expert in the field of Hardware System Construction from October, 1995 for two (2) years

2. Short-Term Expert

One (1) expert in the field of Damage Evaluation

One (1) expert in the field of Geographic Information System

One (1) expert in the field of Regional Database

(EER Subcenter)

1. Long-Term Expert

One (1) expert in the field of Dynamic Testing of Soils from January, 1996 for one (1) year.

2. Short-Term Expert

One (1) expert in the field of Liquefaction in January 1996

One (1) expert in the field of Microtremor Measurement in Building in January 1996

伊藤 太田 藤

ANNEX IX

**JAPANESE EXPERTS REQUESTED BY THE TURKISH SIDE
FOR JFY 1996 AND 1997**

(EDC/VE Subcenter)

1. Long-Term Expert

One (1) expert in the field of Data Collection and Analysis

2. Short-Term Expert

Three (3) experts in the field of Installation

Three (3) experts in the field of Database Construction

Two (2) experts in the field of Data Collection and Analysis

(EER Subcenter)

1. Long-Term Expert

One (1) expert in the field of Structural Tests and Operation of the Testing System

2. Short-Term Expert

One (1) expert in the field of Microzonation in 1997

One (1) expert in the field of Torsional Testing in 1997

D.C.

太田 family

ANNEX X

TRAINING OF COUNTERPART IN JAPAN FOR JFY 1996 AND 1997

1. JFY 1996

Two (2) counterparts in the field of Earthquake Strong Motion Observation System and Study

One (1) counterpart in the field of Test of Soils

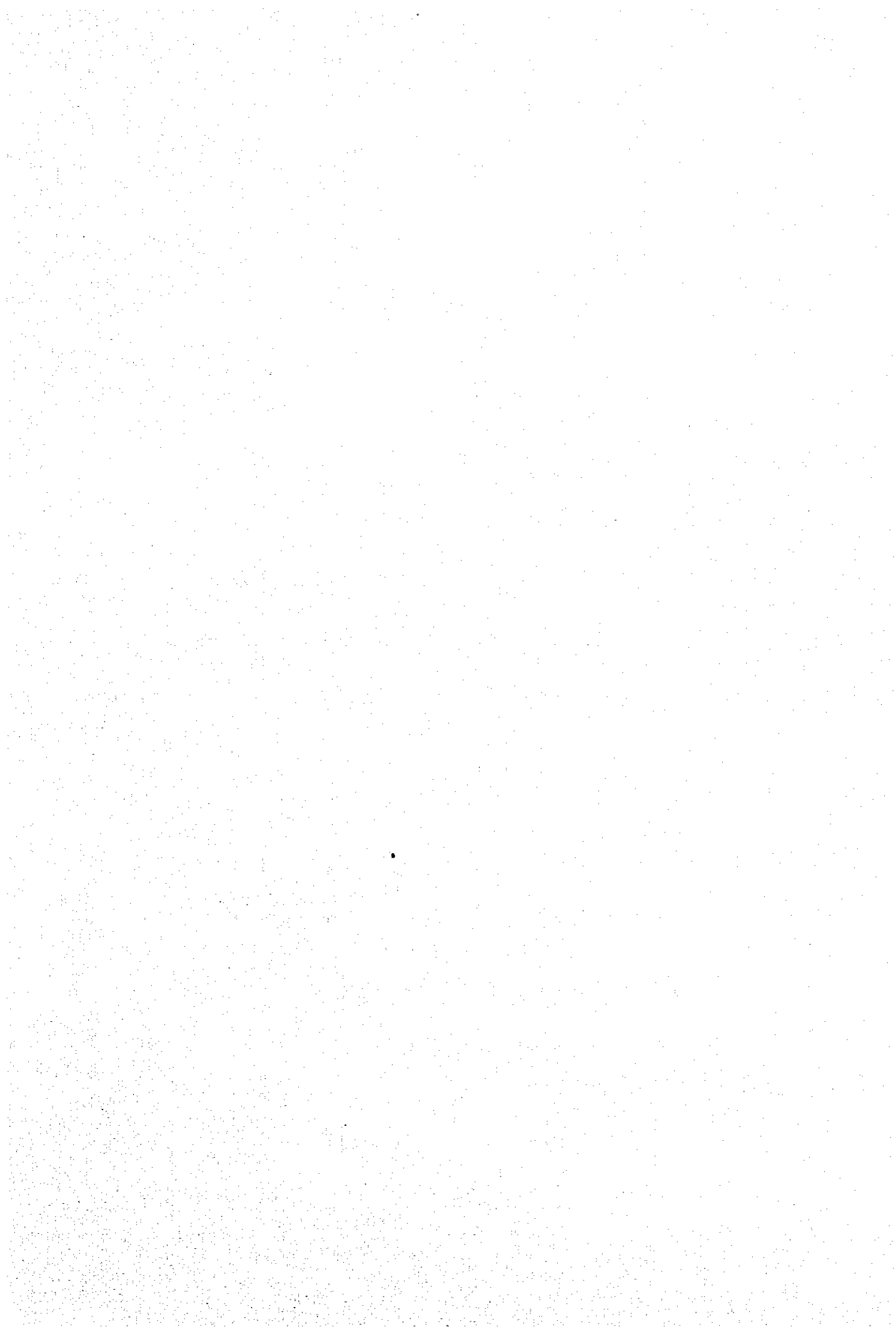
2. JFY 1997

One (1) counterpart in the field of Earthquake Strong Motion Observation System and Study

One (1) counterpart in the field of Structural Tests

One (1) counterpart in the field of Test of Soils

Dr. 太田 洋



JICA