

## 付 属 資 料

- 1．口上書及び要請書
- 2．実施細則(S/W)、協議議事録(M/M) レター方式 調査団側
- 3．実施細則(S/W)、協議議事録(M/M) レター方式 マケドニア側
- 4．質問表( Questionnaire )
- 5．主要面談者リスト
- 6．マケドニアの概要
- 7．国家測地局(SAGW)の現状
- 8．国土基本図の整備状況、仕様・精度
- 9．GIS整備、活用の状況
- 10．他ドナーの状況
- 11．収集資料リスト



1. 口上書及び要請書

РЕПУБЛИКА МАКЕДОНИЈА  
МИНИСТЕРСТВО  
ЗА НАДВОРЕШНИ РАБОТИ



REPUBLIC OF MACEDONIA  
MINISTRY  
OF FOREIGN AFFAIRS

No. 46-67742

The Ministry of Foreign Affairs of the Republic of Macedonia presents its compliments to the Embassy of Japan accredited to the Republic of Macedonia and, with reference to the Embassy's Note Verbale No. 65/2001 dated 9 May 2001, and in view of the fact that the security situation in the Republic of Macedonia is substantially improved, has the honour to enclose herewith the Project " Rapid National Topographic Mapping in the Republic of Macedonia", submitted by the State Authority for Geodetic Works.

The Ministry of Foreign Affairs of the Republic of Macedonia avails itself of this opportunity to renew to the Embassy of Japan accredited to the Republic of Macedonia the assurances of its highest consideration. *lmj*



EMBASSY OF JAPAN  
VIENNA



REPUBLIC OF MACEDONIA  
STATE AUTHORITY FOR GEODETIC WORKS

Nr. 09-3196/1

Date 27.05.2003

SKOPJE

**Re : Rapid National Topographic Mapping in Macedonia**

Dear Excellency,

The Government of Macedonia is sending you this official letter as a reminder that it is looking forward to carrying out the above-captioned Mapping Project. We recognize that you are very busy and are thankful for your time.

The Republic of Macedonia requested the project to the Government of Japan in 1997, 1998 and 2000. This undertaking is in no doubt significant to the success of the development of the country and the reinforcement of the State Authority for Geodetic Works (previous called the State Department of Geodesy).

The Government of Macedonia greatly expected that the Mapping Project would be carried out in 2001 as it was accepted by the Japanese Government. However, in February 2001, an unforeseen civil conflict broke out in the northern part of Macedonia. Since the ceasefire in August 2001, NATO forces started peace keeping operations and overseeing implementation of the peace plan in Macedonia.

In March 2003 the NATO Forces were replaced with the first European Peace Mission called "Harmony", with duration of 6(six) months and which has to be the last peace mission in the Republic of Macedonia.

Having reported that the Parliamentary elections on September 15, 2002 were conducted peacefully and generally met the global standard, a lot of countries including the

Japanese Government welcomed the results as a step forward in the peace process of Macedonia.

Accordingly, donor countries and international organizations resumed assistance in order to contribute to the full and timely implementation of national development in Macedonia. It is needless to say that the Japanese Government reopened its technical assistance in a friendly way.

The Mapping Project which the Government of Macedonia has been requesting to the Japanese Government has become more important and urgent than ever. This project is essential, as new digital topographic maps are required to take measures to promote the peace deals, poverty reduction, the rehabilitation of infrastructure, and the revitalization of the economy in Macedonia.

As stated in the attached proposals, the Government of Macedonia has not had any original national topographic maps in its possession since gaining its independence. The State Authority for Geodetic Works has little technology and experience in producing digital small-scale topographic maps.

As the World Bank started projects with care in the northern part of the areas where the conflict occurred in 2001, a positive signal has been sent regarding the situation in such areas. In order to conduct the Mapping Project smoothly and carefully, the Government of Macedonia would like to make the following proposal:

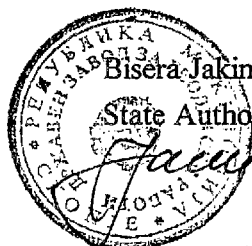
1. After the completion of the technical transfer concerning field surveys in Skopje by the JICA Study Team, the staff of the State Authority for Geodetic Works should commence a series of required field survey works in the northern part of the region. The supervision by the JICA Study Team should be carried out in order to improve the precision of the survey and to finalize the field survey works on schedule.
2. The office work concerning the digital mapping and the field survey in the remaining areas shall be carried out by the JICA Study Team in collaboration with the State Authority of Geodetic Works.
3. The line of demarcation for the field survey shall be fixed by the mutual agreement between the JICA side and Macedonian side.
4. The Government of Macedonia should secure the safety of the JICA Study Team.

5. The aerial photos shall be taken and the mapping shall be done covering the whole country in reply to the user's demand.

Again, this is the indispensable and urgent project to restore the country. Special consideration and immediate commencement by the Japanese Government would be highly appreciated.

Skopje, 26.05.2003

Sincerely yours,

  
Bisera Jakimovska  
State Authority for Geodetic Works  
*Jakimovska*

2. 実施細則(S/W)、協議議事録(M/M) レター方式 調査団側



## **REQUEST FOR TECHNICAL ASSISTANCE**

### **RAPID NATIONAL TOPOGRAPHIC MAPPING**

**IN**

**THE REPUBLIC OF MACEDONIA**

**2003**

**STATE AUTHORITY FOR GEODETIC WORKS**

**GOVERNMENT OF THE REPUBLIC OF  
MACEDONIA**

## **REQUEST FOR TECHNICAL ASSISTANCE**

### **PROJECT TITLE:**

**Rapid National Topographic Mapping in Macedonia**

### **REQUESTING AGENCY:**

**State Authority for Geodetic Works (SAGW)**

**(Address: Trifun Hadzi Janev St. No.4, Tel/Fax: 389-2-171-668)**

**Republic of Macedonia**

**Director : Jakimovska Bisera**

**E-mail : dzgr@katastar.gov.mk**

**E-mail : b.jakimovska@katastar.gov.mk**

### **SOURCE OF ASSISTANCE:**

**Government of Japan**

### **TYPE OF ASSISTANCE:**

**Development Study (Digital Topographic Mapping)**

- **Photo Scale: 1:40,000**
- **Map Scale: 1:25,000**
- **Mapping area: 25,000 km<sup>2</sup>**



## 1. BACKGROUND AND JUSTIFICATION

### (Preface)

Maps are one of the most important technical components of any social and economic development projects. For nations to develop effectively and efficiently, it is essential to first strengthen and promote requirements that are basic to human needs. Maps are the first and foremost in the consolidation of fundamental data for any development study. Needless to say, maps are quite useful in the preservation of the fragile natural environment.

SAGW, a governmental institution, provides information services to other public agencies, the private sector and the general public, in the form of topographic maps, aerial photographs, numerical data and legal diagrams required for land ownership and transfer. In order to meet the needs of users, e.g. the Ministry of Economy, Ministry of Transport and Communications, Ministry of Agriculture, Forestry and Water Supply, which have varied over the last few years, the SAGW strives to collect and provide the latest information.

National topographic maps covering the entire territory are one of the fundamentals that every country must have in case of emergency, e.g. earthquake, forest fire, and landslide. Moreover, the Government has a mission to prepare and renew the national maps to meet the users' needs at all time.

The latest maps and aerial photographs will be certainly needed in order to achieve smooth and efficient implementation of the Development Plan in the Republic of Macedonia. Ongoing and future projects emphasize the Government's efforts to promote infrastructure development which is vital to the immediate reinforcement of the SAGW.

However, the existing national topographic maps made in 1972 are obsolete. None of the original manuscripts are in the Republic of Macedonia. They have been kept in the Military Institute of Geography (Mije Kovacevica St. No.5, 11002 Belgrade, Tel: 381-11-3247-220) in Republic of Serbia and Monte Negro since the Republic of Macedonia declared independence and sovereignty in 1991 after the collapse of the Yugoslav federation. They can no longer be borrowed from the Institute. Map users are using black and white map copies that are sometimes

obscure.

**(Current Situation in the SAGW)**

The production of the existing national topographic maps at the scale of 1:25,000 started in the late 1960s. As these activities were completed about 30 years ago, the maps are now obsolete. In order to revise the maps according to topographic changes that have taken place since, it is SAGW's strong intention to conduct aerial photography and revision work of the existing maps on most of the national territory. However, the works had not been decided on due to lack of know-how in the following techniques:

- 1) Cartography
- 2) Digital mapping for small scale maps.

In addition, SAGW also lacks the following:

- 1) Manuscripts at the scale of 1:25,000
- 2) Experienced cartographer
- 3) Funds
- 4) Equipment for digital photogrammetry

Annual budgets of SAGW over the last 5 years are as follows:

<b>Fiscal Year</b>	<b>US\$</b>
1999	4,007,714
2000	4,650,571
2001	4,901,211
2002	5,171,235
2003	6,120,595 (estim.)

Regardless of efforts made to overcome the above-mentioned, the survey works for national topographic maps has come to a standstill, leaving governmental organizations and private sector with no choice but to continue utilizing outdated maps in drawing up development projects and management plans. Consequently, a lot of time has been wasted trying to maintain the suitability of the projects.

**(Macroeconomic Environment)**

Macro-economic policy of the Republic of Macedonia in 2003 was set up in

accordance with Article 8 of the Law on the Government of the Republic of Macedonia. Despite normalizing the political and security situation the Republic of Macedonia enters 2003 with fragile macroeconomic stability and heavy social burden.

Having in the existing problems as well as the evaluated possibilities, assumptions and limiting factors, the main goals of the macro-economic policy in 2003 will be:

- Encouragement of employment
- Alleviation of poverty

The macro-economic policy in 2003 will enhance macro-economic stability, creating conditions for more harmonized relations in the trade and payment balance, stable rate of the Denar, sustainability of the midterm fiscal position and stable prices. Besides, activities for improvement of reform processes will be carried out that will support economic activities.

**(Investment in the public sector)**

In 2003, in the public sector the “Program for public investments in the Republic of Macedonia” shall become operational. The investment in the public sector shall be carried out with the investor’s assets, assets from the state budget, assets from the sale of “Macedonian Telecommunications” irreversible aid from oreign donors as well as the use of premium foreign credits, in accordance with the states payment balance opportunities.

The following are major projects that urgently require up-to-date topographic maps for their planning and execution of their on-going projects effectively.

Sector	Project Name
Energy	Construction of Power Plant “Kozjak”
	Construction of the long distance power line Dubrovo-Radomir
	Construction of the Hydro Power Plant “Matka 2”
	Oil pipeline Skopje-Thessalonica
	Reconstruction and revitalization of the existing Hydro Power Plant

	Power supply and telecommunication infrastructure in the underdeveloped regions
	Power supply to the non-connected inhabited settlements
	Revitalization of the distribution power network
Water Supply and Irrigation	Rehabilitation and reconstruction of the Hydro meteorological Station "Bregalnica", "Tikves", "Radiovce-Bistrica", "Gostivarsko pole", "Banjicko pole"
	Water Supply and purification of wastewater in rural areas
	Water supply system in Studenchica
Road network	Construction of the motorway between Negotino-Demir Kapija
	Construction of new motorways in transport corridors 8 and 10
	Construction of a new road between Smokvica and Gevgelija
	Road around Skopje
	Construction of part of the highway E75 Stobi-Negotino
	Greek plan for reconstruction of the Balkans
Environment	Protection of the Prespa Lake and the river Vardar
	Recovery of the Dojran Lake
	Installation of monitoring stations net on the air
	Reconstruction and upgrading of the monitoring system of the waters
	Waste management in the area of Gevgelija and the Southwest Macedonia
Telecommunication	Radiotransmitting network
Other Economy	Monitoring of the rivers in Macedonia
	Ecological protection of the Ohrid Lake
	Ecological protection of the Prespa Lake
	Associated measures for creating new employment posts via activities for improving the communal infrastructure in 13 boroughs
	Geological research program

**(Conclusion)**

The Government has a wide range of sustainable development programs to intended to boost the economy and preserve the natural environment. In order to

formulate master plans for urban and rural development, as well as natural environment conservation, that are compatible with the prevailing trends in the areas concerned, new and small-scale maps are necessary. Up-to-date maps and aerial photos are also very important in field surveys in order to understand present conditions, e.g. geographical features, infrastructure, houses and facilities.

All of the original maps at the scale of 1:25,000 covering republic of Macedonia are still in the possession of the Republic Serbia and Monte Negro. In spite of the repeated requests from the Government of the Republic of Macedonia, no action from the Serbian side has been made so far.

Small-scale maps available in the Republic of Macedonia cover the entire territory at a scale of 1:25,000 and were produced in the late 1960s - early 1970s. Nonetheless, these maps have been used in the past for many rural development projects, e.g. resettlement programs, infrastructure planning, agricultural improvement, public health and sanitation, and forestry.

Due to financial constrains and insufficient technical expertise, the existing national topographic maps have never been revised precisely in terms of including changes in the population, environment and economy, hence they are no longer expedient for future project planning and design programs.

It is clearly evident that the successful implementation of all development programs, particularly projects focusing on rehabilitation and preservation of the country's environment will largely depend on the availability of topographic maps. Moreover, the production of new small-scale topographic maps using the latest digital technology will definitely accelerate the progress of development plans. It goes without saying that national topographic maps are important for independent countries to secure a permanent peace.

Given the above-mentioned background and justification, the SAGW wishes to conduct a mapping project. The terms of reference for the Study are outlined in the subsequent sections of this document.

## **2. OBJECTIVES OF THE STUDY**

Based on the above justification of the Study, the major objectives of the Study are defined as follows:

- 1) To review the national topographic mapping system.
- 2) To make suitable recommendations regarding the standardization of data acquisition and structuring processes, production system, and other necessary systems.
- 3) To identify the necessity for essential institutional strengthening.
- 4) To produce digital topographic maps at the scale of 1:25,000 covering the entire territory.
- 5) To conduct technology transfer, e.g. digital photogrammetric work, to the counterpart personnel during the implementation of the Study.

## **3. STUDY AREA**

The Study area shall cover the whole country (25,000km<sup>2</sup>).

## **4. PROJECT GOAL**

The goal of the Project is to create SAGW able to:

- 1) Administer work in accordance with the Survey Code.
- 2) Establish and maintain geodetic control points.
- 3) Offer consultation on the design and preparation of various maps used by national and regional authorities, perform entrusted work for preparation of maps, carry out surveys, research, and do other related activities.
- 4) Manage map data, including reproduction and publication of maps.
- 5) Research and develop survey technology.
- 6) Hold seminars and lectures to promote and improve the level of knowledge

concerning maps and aerial photographs.

7) Distribute new aerial photographs.

## 5. SCOPE OF THE STUDY

- 1) Mapping works such as contour plotting, photogrammetry works and the field works required for these mapping works will be conducted jointly by the Macedonian counterpart and the Japanese Study Team.
- 2) The works summarized hereunder shall be completed within a two-year period.

### 1) Current SAGW Functions and Policies

- Assessment of technical competence of SAGW and staff
- Recommendations for the SAGW reorganization plan

### 2) Existing Equipment

- Preparation of an inventory of existing equipment (year of purchase, frequency of use and maintenance, etc.)
- Assessment of the efficiency and effectiveness of equipment and facilities
- Recommendation of equipment and facility procurement plan

### 3) Existing Data, Maps and Aerial Photographs

- Collection and data-processing /analysis for the establishment of a national geodetic network
- Preparation of an inventory of existing topographic maps, aerial photographs and related materials, their quantity included
- Investigation of national control points
- Study of survey code and related regulations
- Recommendations on the maintenance plan of topographic maps and other data.
- Recommendation on standardization of the data acquisition processes
- Recommendation on standardization of the data structuring processes

### 4) Related Ministries and Companies

- Investigation of the survey equipment owned
- Evaluation of activities in terms of maps, thematic maps and GIS usage
- Interviews with other agencies regarding their awareness on the importance of

maps, survey works, and the SAGW

- Recommendation of a plan to promote closer collaboration between SAGW and other agencies

#### **5) Topographic Mapping**

- Aerial photography of approximately 25,000km<sup>2</sup> at the scale of 1:40,000.
  - Processing of contact prints and photos for enlargement.
  - Piercing of existing triangulation points for use as control points. Performance of ground control survey using GPS in the absence of triangulation points, and the connection of new control points to existing network of national ground stations to fully cover the specified mapping area. Concrete pillars with metal marks will be set up at new control points.
  - Field identification in close cooperation with the Macedonian counterparts.
  - Clear identification of important information, e.g. names of villages, boundaries, mountains, rivers, and roads, in cooperation with Macedonian counterparts.
  - Implementation of aerial triangulation, stereo plotting and compilation by the Japanese Study Team in cooperation with the Macedonian counterparts. Use of digital photogrammetry for stereo plotting and compilation
  - Printing of two (2) screened positives on polyester base of each map sheet and handing over final digital data to SAGW.
  - Specification of detailed information e.g. legend, map sheet, colors, mutually agreed upon by the Study Team and SAGW
  - Provision of printed topographic maps
- Seminars and workshops will be held in Macedonia in the course of the study dedicated to the transfer of technology, e.g. digital mapping and map utilization.

### **6. TRANSFER OF TECHNOLOGY**

Technology transfer and training will be provided to the counterpart by foreign experts in the following fields, in the form of on-the-job training. Seminars and oversea- training will also be included, the latter to be conducted preferably in Japan.

- 1) Various field survey and investigation methods
- 2) Latest digital mapping techniques



## **7. STUDY SCHEDULE**

Total estimated duration of the Study -24 months.

The Government of Macedonia hopes that the study will be completed as soon as possible.

## **8. REQUIRED EXPERTS**

The following experts will be required to take part in the study:

- Team Leader
- Supervisor of aerial photography works
- Photogrammetrist
- Supervisors of field survey work including GPS, leveling, field classification.
- Geodesist
- Cartographer
- Coordinator

## **9. STUDY OUTPUT**

The following will be prepared in the course of the Study.

- Inception Report
- Interim Report
- Draft Final Report
- Final Report
- Negative Film (scale : 1: 40,000)
- Contact Prints
- Original Maps (scale: 1:25,000)
- Printed Maps 500 sets
- 1:25,000 scale digital cartographic framework data file (e.g. CD-ROM) 5 sets
- Field Survey and Aerial Triangulation Data

## **10. EQUIPMENT SUPPLY**

The following equipment brought into Macedonia by the Study Team shall be

handed over to the Government of Macedonia after the completion of the Study.

a) Field survey equipment

- Four wheel drive vehicles
- Laptop computers and software
- GPS receivers
- Total stations and other small survey equipment such as handheld GPS

b) Digital Mapping Equipment

- Workstations
- Printers
- Scanner and related equipment including software,
- A0 - Plotter and related equipment including software,
- Copy Machines.
- Furniture for storage of printed maps and original maps

## **11. CURRENT SITUATION IN THE SAGW**

### **11.1 Service and Products**

The current services and products of SAGW include mainly:

- Surveying services for the departments- cadastral surveys, site surveys, and settlement of boundary disputes.
- Supervision and control of all the surveys for the purposes of land registration.
- 1:1,000 topographic cadastral maps covering all towns and larger villages
- 1:2,500 topographic cadastral maps covering 85% of the territory.

The following topographic maps were produced by the Military Institute of Geography in the former Yugoslav federation. All of the manuscripts are still in Belgrade.

- 1:5,000 printed colored maps covering a part of the territory, issued in 1961-1971
- 1:10,000 printed colored maps covering 40% of the territory, issued in 1925, partly revised in 1967
- 1:25,000 printed colored maps (204 sheets in total) of the entire country, issued in 1971-1972.

- 1:50,000 (56 sheets in total) printed colored maps of the entire country, issued in 1971-1972
- 1:100,000 printed colored maps of the entire country, issued in 1972
- 1:200,000 printed colored maps of the entire country, issued in 1960
- 1:300,000 printed colored maps of the entire country, issued in 1966
- 1:500,000 printed colored maps of the entire country, issued in 1950, revised in 1958
- 1:000,000 printed colored maps of the entire country, issued in 1965

### 11.2 Personnel

SAGW employs 918 people in 30 district offices throughout the Republic of Macedonia. The educational structure of the trained staff is listed below:

9%:	Survey engineers (Bsc. in Geodesy)
10%:	Lawyers (Bsc in Law)
4%:	Agronomists (Bsc. in Agriculture) and other
21%:	Geodetic engineers ( college graduates)
31%:	Geodetic technicians ( secondary education)
7%:	College graduates in other fields
4%:	Elementary education

### 11.3 Existing Equipment

SAGW conforms to the current technical-technological resolutions in the geodesy field and computer science, with intensity that does not allow complete implementation of the new technological resolutions. This is due to budget restrictions in procurement of new equipment. Technical equipment currently available in SAGW is given below:

Name of Equipment	Quantity
Photogrametric Workstations SD-3000	2
Stereophotogrametric instruments A7,A8,AMU	3
Total Station	34

GPS	1
Digital level instruments	1
Electric distance measuring equipment	3
Theodolite	50
Level instruments	20
Alpha Server 3000-model LX300	1
Microvax	10

#### 11.4 Ongoing Projects by Donor Countries

- Permanent GPS station in Ohrid connected to the European system of permanent stations

#### 11.5 Current Environment

The environment within which SAGW operates is constantly changing. The most apparent trend in the mapping field is switching from analogue to digital technology using high performance computers. The cadastral information held by SAGW is being computerized and trials have also been carried out in capturing topographic information digitally. SAGW is eager to master the digital mapping work.

### 12. MAIN USER GROUPS

The digital maps, their information and reports generated through the project will be useful to several groups of people across different sectors of society. Main user groups may include the following:

- Policy makers and their advisers in the Government at national level
- Government officials and technical staff at the national and sub-national levels
- Civil society, e.g. NGOs, community-based organizations
- Donor community, e.g. UN agencies, bilateral donors
- Researchers including academics
- Training Institutions, e.g. statistics, meteorology, geography, cartography
- Private sectors, e.g. Developers, Construction companies, Urban Planners and Consultants

**13. ANY CONSTRAINTS AGAINST THE LOW INCOME PEOPLE CAUSED BY THE PROJECT**

It is no doubt that there are no constraints against the low-income people. The Project will never have an influence on destruction of environment in the course of the Project and never give negative impact on the people and environment after the completion of the project.

**14. UNDERTAKING OF THE GOVERNMENT OF MACEDONIA**

**14.1** In order to facilitate the smooth and efficient realization of the Study, the Government of Macedonia shall take necessary measures:

- (1) To secure the safety of the Study team,
- (2) To permit the members of the Study team to enter, leave and sojourn in Macedonia in connection with their assignment therein, and exempt them from registration requirements for foreigners as well as consular fees,
- (3) To exempt the study team from taxes, duties and any other charges on equipment, machinery and other materials brought into and out of Macedonia for the realization of the Study,
- (4) To exempt the study team from income tax and charges of any kind imposed on or in connection with any emoluments or allowance paid to the members of the study team for their services in connection with the implementation of the study,
- (5) To provide necessary facilities to the study team for remittance as well as utilization of the funds introduced in Macedonia from Japan in connection with the implementation of the Study,
- (6) To secure permission for entry into private properties or restricted areas for the realization of the Study,
- (7) To secure permission for the study team to take necessary data, documents,

aerial photographs, topographic maps related to the Study out of Macedonia  
- to Japan,

- (8) To provide medical services as needed. Expenses will be chargeable to the members of the study team,
- (9) To secure necessary permission for aerial photography by foreign registered aircraft for the implementation of the Study, and
- (10) To obtain the necessary permission from the government of the neighboring countries, Republic of Bulgaria, Republic of Albania, and Republic of Greece for execution of aerial photography by the study team at the area of border line.

14-2 The Government of Macedonia shall bear claims, if any arise against member (s) of the Japanese Study team resulting from, occurring in the course of or otherwise connected with the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or willful misconduct on the part of the member of the Study team.

13-3 The SAGW shall act as a counterpart agency to the Japanese study team and also as a coordinating body in relation with other governmental and non-governmental organizations interested in smooth implementation of the Study.

The Government of Macedonia guarantees that the matters referred to in this form will be ensured with purpose of smooth conduct of the Development Study by the Japanese study team.



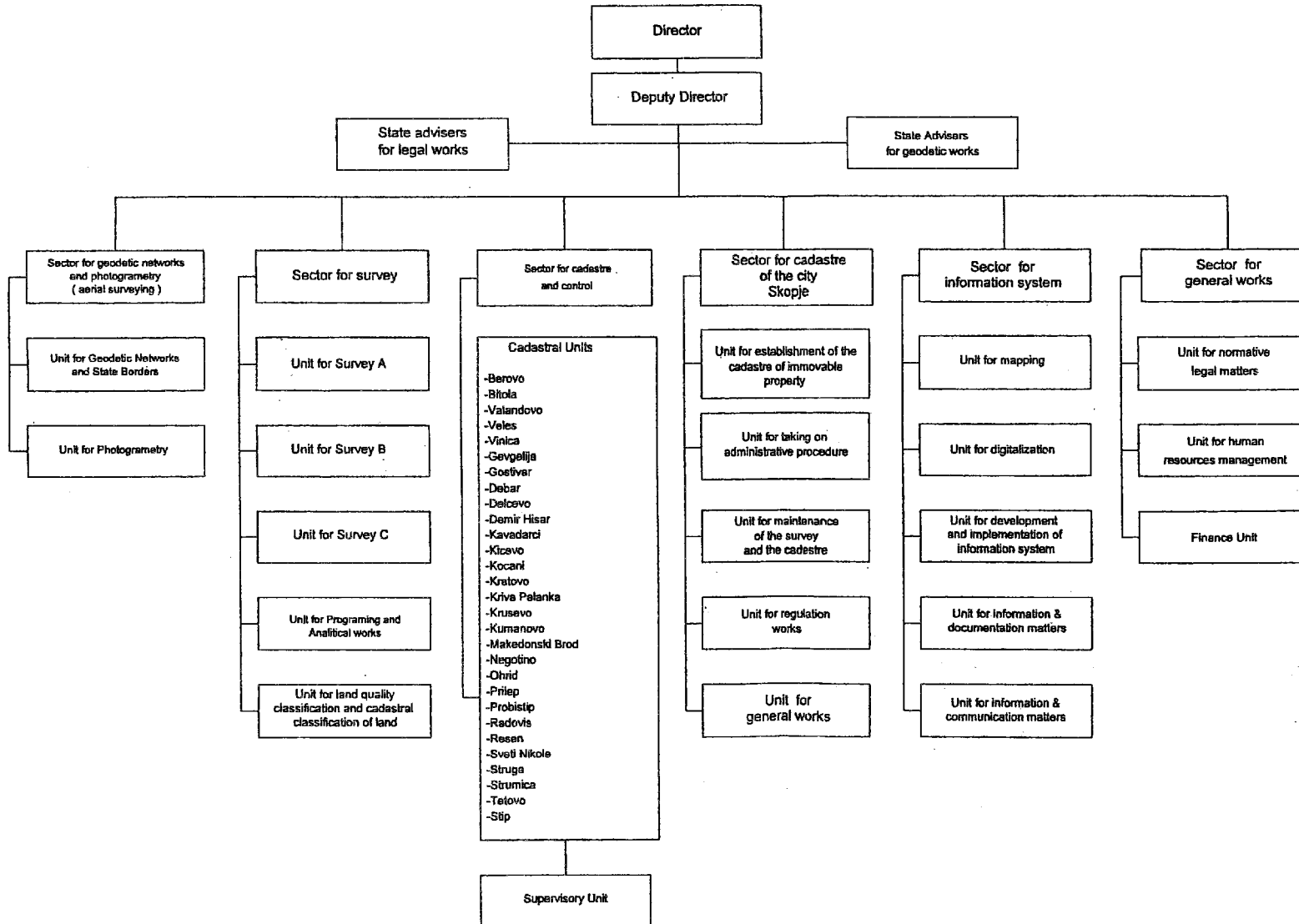
Signed: Jakimovska Bisera

Title: Director

STATE AUTHORITY FOR GEODETIC WORKS

Date: 26.05.2003

# STATE AUTHORITY FOR GEODETIC WORKS INTERNAL ORGANIZATION



November 19, 2003

Ms. Bisera Jakimovska  
Director  
State Authority for Geodetic Works (SAGW)

Dear Ms,

With reference to the discussions held between the Preparatory Study Team of the Japan International Cooperation Agency and the State Authority for Geodetic Works (hereinafter referred to as "the SAGW") from November 11 to November 19, 2003, concerning the Study for Establishment of State Base Maps for GIS in the Former Yugoslav Republic of Macedonia (hereinafter referred to as "the Study") to be undertaken by JICA. I, hereby, confirm SAGW that the Scope of Work and the Minutes of Meetings for the Study, which is duly recorded in the attachment, has been agreed upon between the JICA and SAGW.

I would appreciate it very much if you could confirm the aforementioned Scope of Work and Minutes of Meetings on behalf of the SAGW.

Sincerely yours,

小出正則

KOIDE Masanori, Leader  
Preparatory Study Team  
Japan International Cooperation Agency (JICA)



3. 実施細則(S/W)、協議議事録(M/M) レター方式 マケドニア側

**SCOPE OF WORK**  
**FOR**  
**THE STUDY**  
**FOR**  
**ESTABLISHMENT OF STATE BASE MAPS FOR GIS**  
**IN**  
**THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA**

*Mh*

## I. INTRODUCTION

In response to a request of the Government of the Former Yugoslav Republic of Macedonia (hereinafter referred to as "the GOM"), the Government of Japan decided to conduct "The Study for Establishment of State Base Maps for GIS in the Former Yugoslav Republic of Macedonia" (hereinafter referred to as "the Study"), in accordance with the relevant laws and regulations in force in Japan.

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 GOM.

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

## II. OBJECTIVES OF THE STUDY

The objectives of the Study are:

- 1) to take new aerial photographs of the whole country of the Former Yugoslav Republic of Macedonia  
(Approximately 25,000 square kilometers);
- 2) to prepare new digital topographic maps covering as shown in Appendix-1 (hereinafter referred to as "the Mapping Area"), at the scale of 1:25,000;
- 3) to pursue technology transfer in the course of implementation of the Study.

## III. SCOPE OF THE STUDY

In order to achieve the objectives mentioned above, the Study shall cover following items.

### 1. Review of Existing Conditions

Existing conditions relevant to the Study including organization set-up, mapping system, facilities management and control points shall be reviewed.

### 2. Aerial Photography

Black and white aerial photographs at the scale of 1:40,000 covering the whole country shall be taken.

### 3. Map Production for covering as the Mapping Area.

#### 1) Control Point Survey, Leveling and Pricking

Control point survey, leveling and pricking shall be carried out.

#### 2) Aerial Triangulation

Aerial triangulation shall be carried out.

#### 3) Field Identification

Topographic information shall be interpreted mainly using the aerial

*ml*

photographs. The field identification shall be conducted in case that the information on the aerial photographs is difficult to be interpreted.

4) Digital Plotting

Digital topographic data shall be plotted.

5) Editing and Symbolization

The digital topographic data shall be edited and symbolized to print topographic line maps at the scale of 1:25,000.

6) Field Completion

Field completion shall be carried out.

7) CD-ROM production

The digital topographic data shall be compiled into CD-ROM.

8) Printing of Maps

The digital topographic data shall be printed at the scale of 1:25,000.

4. Others

1) Technology Transfer

In order to facilitate technology transfer to the counterpart personnel, part of the above-mentioned items shall be undertaken by the counterpart personnel under the technical supervision of the Study Team.

2) Dissemination of the Final Products

Recommendations for the wide and effective use of the topographic data produced under the Study shall be prepared.

#### IV. STUDY SCHEDULE

The Study shall be implemented in accordance with the tentative schedule as shown in Appendix-2. The schedule, including report submission dates stated in the next clause (V), is tentative and subject to be modified when both sides agree upon and any necessity that arises in the course of the Study.

#### V. REPORTS AND FINAL PRODUCTS

JICA shall prepare and submit the following reports in English and the final products of topographic mapping works to the GOM.

1. Inception Report

Twenty (20) copies      At the commencement of the Study

2. Interim Report

Twenty (20) copies      At the end of the first year

3. Draft Final Report

Twenty (20) copies      At the end of the second year

*MLK*

The written comments on the Draft Final Report from the The State Authority for Geodetic Works (hereinafter referred to as "SAGW") shall be submitted to JICA within one (1) month after submission of the report.

4. Final Report

Twenty (20) copies      Within one (1) month after the receipt of the comments on the Draft Final Report.

5. Final products of topographic mapping

- 1) One (1) set of negative films of aerial photographs for the whole country
- 2) One (1) set of diapositive films of aerial photographs for the whole country
- 3) Two (2) sets of contact prints of aerial photographs for the whole country
- 4) Two (2) sets of digital data of aerial photographs for the whole country
- 5) Two (2) copies of result of ground control point survey for map production of the Mapping Area
- 6) Two (2) copies of result of aerial triangulation for map production of the Mapping Area.
- 7) Five (5) sets of 1:25,000 scale digital topographic data for the Mapping Area
- 8) Five hundred (500) copies of 1:25,000 scale printed topographic maps for the Mapping Area

## VI. UNDERTAKING OF THE GOM

1. To facilitate the smooth conduct of the Study, the GOM shall take the following necessary measures :
  - 1) to secure the safety of the Study Team ;
  - 2) to permit the members of the Study Team to enter, leave and sojourn in the Former Yugoslav Republic of Macedonia for the duration of their assignments therein and exempt them from foreign registration requirements and consular fees ;
  - 3) to exempt the members of the Study Team from taxes, duties and any other charges on equipment, machinery and other material brought into the Former Yugoslav Republic of Macedonia for the implementation of the Study ;
  - 4) to exempt the members of the Study Team from income tax and charges of any kind imposed on or in connection with any emoluments or allowance paid to the members of the Study Team for their service in connection with the implementation of the Study ;
  - 5) to provide necessary facilities to the Study Team for the remittance as well as utilization of the funds introduced into the Former Yugoslav Republic of Macedonia from Japan in connection with the implementation of the Study ;
  - 6) to secure necessary permission to use aircraft for aerial photography in connection with the implementation of the Study ;
  - 7) to facilitate legal entry with permission (or, to secure permission for the Study Team for entry) into private properties and restricted areas for the implementation of the

*Mk*

- Study ; and
- 8) to secure permission for the Study Team to take all data (including topographic maps, negative films, contact prints and digital data of aerial photographs) related to the Study out of the Former Yugoslav Republic of Macedonia.
2. The GOM shall bear claims, if any arises, against the members of the Study Team resulting from, occurring in the course of, or otherwise connected with, the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or willful misconduct on the part of the members of the Study Team.
  3. The SAGW shall, at its own expense, provide the Study Team with the following in cooperation with other organizations concerned :
    - 1) available data and information related to the Study ;
    - 2) security-related information on as well as measures to ensure the safety of the Study Team ;
    - 3) information on as well as support in obtaining medical service ;
    - 4) counterpart personnel ;
    - 5) suitable office space with necessary office equipment and furniture ;
    - 6) credentials or identification cards ; and
    - 7) vehicles with drivers.

## VII. UNDERTAKING OF JICA

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

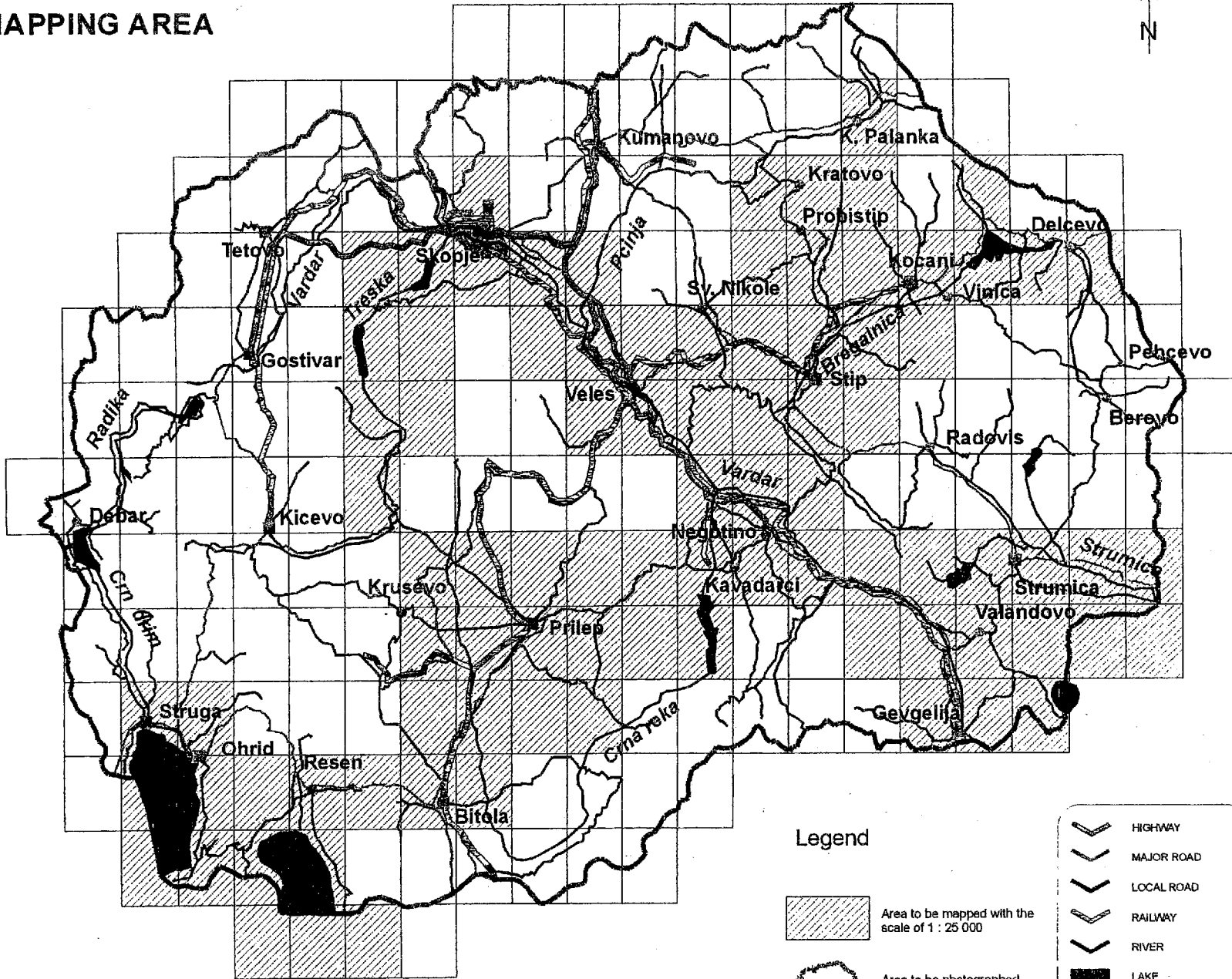
- 1) to dispatch, at its own expense, the Study Team to the Former Yugoslav Republic of Macedonia ; and
- 2) to pursue technology transfer to the Former Yugoslav Republic of Macedonia counterpart personnel in the course of the Study.

## VIII. OTHERS









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

*md*

# MAPPING AREA



## Legend

-  Area to be mapped with the scale of 1 : 25 000
-  Area to be photographed (Entire area of Macedonia)
-  HIGHWAY
-  MAJOR ROAD
-  LOCAL ROAD
-  RAILWAY
-  RIVER
-  LAKE

Scale = 1 : 1 000 000

*ML*

TENTATIVE SCHEDULE OF THE STUDY

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
Work in Macedonia																													
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Report and Final Products	△ IC/R											△ IT/R																	

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

*mk*

**MINUTES OF MEETING**  
**FOR**  
**THE STUDY**  
**FOR**  
**ESTABLISHMENT OF STATE BASE MAPS FOR GIS**  
**IN**  
**THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA**



The Japanese Preparatory Study Team (hereinafter referred to as "the Study Team") organized by Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Koide Masanori visited the Former Yugoslav Republic of Macedonia from 10 to 20 November 2003 to discuss the Scope of Work for the " Study for Establishment of State Base Maps for GIS in the Former Yugoslav Republic of Macedonia" (hereinafter referred to as "the Study"). During their stay in the Former Yugoslav Republic of Macedonia, the Team held a series of meetings with the officials of State Authority for Geodetic Works (hereinafter referred to as "SAGW") and the authorities concerned. A list of participants is given in Appendix.

Through these meetings, both sides have completed the Scope of Work and confirmed the following points:

1. Counterpart Personnel

Both sides recognized the necessity of technology transfer to the staff of the SAGW as a relevant organizations of the Government of the Former Yugoslav Republic of Macedonia so that SAGW builds up the capability to produce and revise digital topographic maps by themselves. Based on the recognition, the SAGW shall provide sufficient counterpart personnel at its own expense in the course of the Study.

2. Securing the Safety

The Study Team requested to secure the safety for the Study Team especially against the danger of mines during the field survey.

SAGW agreed to arrange required measures for the Study Team in cooperation with relevant organizations.

The staff of the SAGW should execute a series of required field survey works in the northern and western part of the country.

3. Aerial Photography

Both sides agreed, in case that aerial photography is not completed within the scheduled duration in terms of area coverage and quality which will be designated in the contract on account of the unseasonable weather or inevitable accidents, to extend the duration of aerial photography and the following Study within the limit of one (1) year, and SAGW take the responsibility to take necessary administrative action for aerial photography.

Both sides also agreed to consult with each other in respect of changing the method of the Study, in case the aerial photography is not completed within the limit of one (1) year due to the above-mentioned reason.

4. Permission for aerial photography

SAGW is responsible to secure necessary permission for aerial photography by a foreign registered aircraft for the implementation of the Study.

5. Office Space and Equipment

SAGW agreed to provide the furnished office space in SAGW with necessary equipment and utilities such as desks, chairs, photocopy machines, telephone lines and internet access,

etc.

6. Equipment and Vehicles

SAGW requested that the study equipment which will be used during the implementation of the Study, should be provided to SAGW after the completion of the Study, in order to improve the technology and to finish the mapping for the whole territory of the country.

Regarding difficulties in providing enough vehicles, SAGW expressed their wish that the vehicles required for the Study Team would be arranged by JICA and SAGW.

The Study Team promised to convey this request to JICA Headquarters.

7. Duty-Free Clearance

Both sides agreed that SAGW shall act as consignee of the equipment, and shall carry out all the necessary procedure, such as duty-free clearance, etc., and otherwise SAGW shall pay all other necessary expenses for import procedure for the equipment.

Both sides also agreed that the equipment thus imported shall be used exclusively for the implementation of the Study under the supervision of the Study Team.

8. Training of Counterpart Personnel in Japan

SAGW requested that counterpart personnel take advantage of training in Japan related to the Study to promote effective technology transfer.

The Study Team promised to convey this request to JICA Headquarters.

9. Publicity of the Final Report and Products

The Study Team requested SAGW that the final report and products to be prepared by the Study shall be open to the public immediately after completion upon request of users.

SAGW understood the request and agreed to take full responsibility for necessary procedure.

*me*

List of Participants

State Authority for Geodetic Works (SAGW)

Ms. Bisera Jakimovska	Director
Mr. Zoran Angelov	Deputy Director
Mr. Saso Dimeski	Deputy Head of the Sector for Referent Nets and Photogrammetry
Ms. Sonja Dimova	State Advisor for Geodetic Works
Mr. Zoranco Mukanov	Deputy Head of the Sector for Survey

JICA Preparatory Study Team

Mr. Masanori Koide	Team Leader
Mr. Shudo Takao	Precision Management Planning
Mr. Hideki Yokoyama	Study Planning
Mr. Hisashi Mori	Basic Map and Equipment Planning
Mr. Kosei Otoi	Geography Information and Technology Transfer Planning



REPUBLIC OF MACEDONIA  
STATE AUTHORITY FOR GEODETIC WORKS

Nr. \_\_\_\_\_

\_\_\_\_\_ 2003 god.

SKOPJE

TO: JAPAN INTERNATIONAL COOPERATION AGENCY  
Attn: Mr. KOIDE Masanori  
Leader of the Preparatory Study Team  
Shinjuku Maynds Tower Bldg. 7<sup>th</sup> Floor  
1-1, Yoyogi, 2-Chome  
Shibuya-Ku, Tokyo, 151- 8558  
JAPAN

Dear Sir,

Thank you very much for your letter concerning the Study for Establishment of State Base Maps for GIS in The Republic of Macedonia.

I am pleased to inform you of the confirmation by The State Authority for Geodetic Works that The Scope of Work and Minutes of Meetings for the Study, which is duly recorded in the attachment, has been agreed upon between The State Authority for Geodetic Works and JICA.

Hoping that this Study will be successfully accomplished, I am staying

Sincerely yours,

Bisera JAKIMOVSKA, Director  
State Authority for Geodetic Works

**SCOPE OF WORK**  
**FOR**  
**THE STUDY**  
**FOR**  
**ESTABLISHMENT OF STATE BASE MAPS FOR GIS**  
**IN**  
**THE REPUBLIC OF MACEDONIA**

75

## I . INTRODUCTION

In response to a request of the Government of the Republic of Macedonia (hereinafter referred to as "the GOM"), the Government of Japan decided to conduct "The Study for Establishment of State Base Maps for GIS in the Republic of Macedonia" (hereinafter referred to as "the Study"), in accordance with the relevant laws and regulations in force in Japan.

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 GOM.

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

## II . OBJECTIVES OF THE STUDY

The objectives of the Study are :

- 1) to take new aerial photographs of the whole country of the Republic of Macedonia (Approximately 25,000 square kilometers) ;
- 2) to prepare new digital topographic maps covering as shown in Appendix-1 (hereinafter referred to as "the Mapping Area"), at the scale of 1:25,000 ;
- 3) to pursue technology transfer in the course of implementation of the Study.

## III . SCOPE OF THE STUDY

In order to achieve the objectives mentioned above, the Study shall cover following items.

### 1. Review of Existing Conditions

Existing conditions relevant to the Study including organization set-up, mapping system, facilities management and control points shall be reviewed.

### 2. Aerial Photography

Black and white aerial photographs at the scale of 1:40,000 covering the whole country shall be taken.

### 3. Map Production for covering as the Mapping Area.

- 1) Control Point Survey, Leveling and Pricking  
Control point survey, leveling and pricking shall be carried out.
- 2) Aerial Triangulation  
Aerial triangulation shall be carried out.
- 3) Field Identification

Topographic information shall be interpreted mainly using the aerial photographs. The field identification shall be conducted in case that the information on the aerial photographs is difficult to be interpreted.

4) Digital Plotting

Digital topographic data shall be plotted.

5) Editing and Symbolization

The digital topographic data shall be edited and symbolized to print topographic line maps at the scale of 1:25,000.

6) Field Completion

Field completion shall be carried out.

7) CD-ROM production

The digital topographic data shall be compiled into CD-ROM.

8) Printing of Maps

The digital topographic data shall be printed at the scale of 1:25,000.

4. Others

1) Technology Transfer

In order to facilitate technology transfer to the counterpart personnel, part of the above-mentioned items shall be undertaken by the counterpart personnel under the technical supervision of the Study Team.

2) Dissemination of the Final Products

Recommendations for the wide and effective use of the topographic data produced under the Study shall be prepared.

#### IV . STUDY SCHEDULE

The Study shall be implemented in accordance with the tentative schedule as shown in Appendix-2. The schedule, including report submission dates stated in the next clause (V), is tentative and subject to be modified when both sides agree upon and any necessity that arises in the course of the Study.

#### V . REPORTS AND FINAL PRODUCTS

JICA shall prepare and submit the following reports in English and the final products of topographic mapping works to the GOM.

1. Inception Report

Twenty (20) copies      At the commencement of the Study

2. Interim Report

Twenty (20) copies      At the end of the first year

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  - Twenty (20) copies      At the end of the second year
  - The written comments on the Draft Final Report from the The State Authority for Geodetic Works (hereinafter referred to as "SAGW") shall be submitted to JICA within one (1) month after submission of the report.
  
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  - 1) One (1) set of negative films of aerial photographs for the whole country
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  - 3) to exempt the members of the Study Team from taxes, duties and any other charges on equipment, machinery and other material brought into the Republic of Macedonia for the implementation of the Study ;
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  - 5) to provide necessary facilities to the Study Team for the remittance as well as utilization of the funds introduced into the Republic of Macedonia from Japan in connection with the implementation of the Study ;

*JG*



- 6) to secure necessary permission to use aircraft for aerial photography in connection with the implementation of the Study ;
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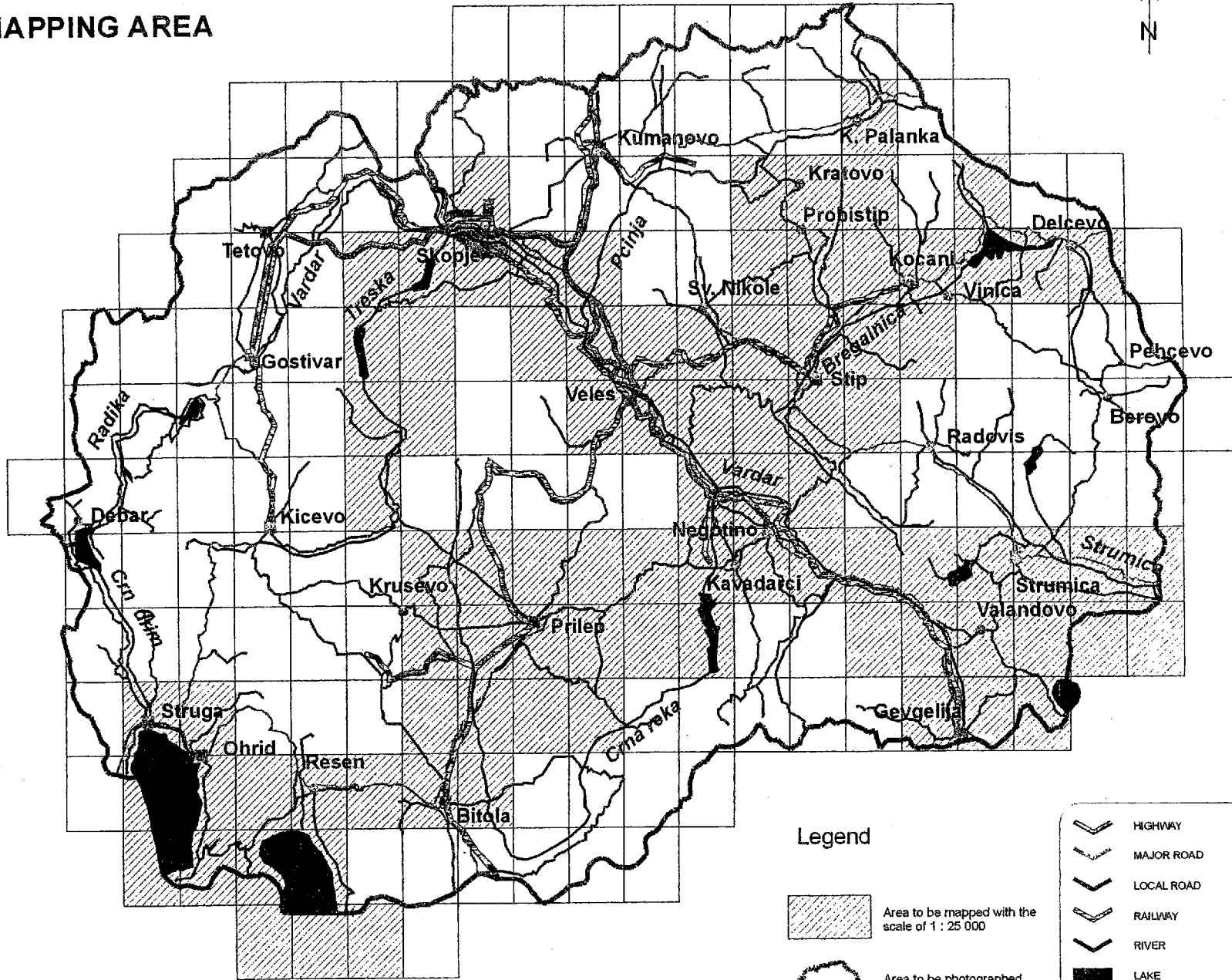
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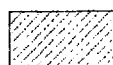
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# MAPPING AREA



## Legend

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 Area to be photographed (Entire area of Macedonia)

-  HIGHWAY
-  MAJOR ROAD
-  LOCAL ROAD
-  RAILWAY
-  RIVER
-  LAKE

Scale = 1 : 1 000 000

*Handwritten initials*

TENTATIVE SCHEDULE OF THE STUDY

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Handwritten signature or initials.

**MINUTES OF MEETING**  
**FOR**  
**THE STUDY**  
**FOR**  
**ESTABLISHMENT OF STATE BASE MAPS FOR GIS**  
**IN**  
**THE REPUBLIC OF MACEDONIA**

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finish the mapping for the whole territory of the country.

Regarding difficulties in providing enough vehicles, SAGW expressed their wish that the vehicles required for the Study Team would be arranged by JICA and SAGW.

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#### 9. Publicity of the Final Report and Products

The Study Team requested SAGW that the final report and products to be prepared by the Study shall be open to the public immediately after completion upon request of users.

SAGW understood the request and agreed to take full responsibility for necessary procedure.

List of Participants

**State Authority for Geodetic Works (SAGW)**

Ms. Bisera Jakimovska	Director
Mr. Zoran Angelov	Deputy Director
Mr. Saso Dimeski	Deputy Head of the Sector for Referent Nets and Photogrammetry
Ms. Sonja Dimova	State Advisor for Geodetic Works
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Mr. Masanori Koide	Team Leader
Mr. Shudo Takao	Precision Management Planning
Mr. Hideki Yokoyama	Study Planning
Mr. Hisashi Mori	Basic Map and Equipment Planning
Mr. Kosei Otoi	Geography Information and Technology Transfer Planning

Handwritten signature or initials.

QUESTIONNAIRE  
DIGITAL TOPOGRAPHIC MAPPING  
OF  
Republic of Macedonia

October 2003

Contact Mission  
of  
J I C A





Item	Contents	Availability	Note (response)																																			
<b>2. Social and Economic Information</b>																																						
<b>1.Latest economic index and information</b>	(1) GDP (Recent 5 years) (2) Budget (Recent 5 years) (3) Major Productions	Y	<table border="1"> <thead> <tr> <th data-bbox="1272 399 1332 422">Year</th> <th colspan="2" data-bbox="1377 399 1646 478">from budget funds in millions denars      in millions USD</th> <th colspan="2" data-bbox="1680 399 1948 478">from self-financing activities in millions denars      in millions USD</th> </tr> </thead> <tbody> <tr> <td>1998</td> <td>225,4</td> <td>4,3</td> <td>49,4</td> <td>0,9</td> </tr> <tr> <td>1999</td> <td>224,5</td> <td>4,2</td> <td>67,4</td> <td>1,3</td> </tr> <tr> <td>2000</td> <td>249,0</td> <td>4,7</td> <td>76,6</td> <td>1,5</td> </tr> <tr> <td>2001</td> <td>216,4</td> <td>4,0</td> <td>61,5</td> <td>1,2</td> </tr> <tr> <td>2002</td> <td>221,9</td> <td>4,2</td> <td>71,6</td> <td>1,4</td> </tr> <tr> <td>2003 plan</td> <td>247,0</td> <td>4,7</td> <td>115,4</td> <td>2,5</td> </tr> </tbody> </table>	Year	from budget funds in millions denars      in millions USD		from self-financing activities in millions denars      in millions USD		1998	225,4	4,3	49,4	0,9	1999	224,5	4,2	67,4	1,3	2000	249,0	4,7	76,6	1,5	2001	216,4	4,0	61,5	1,2	2002	221,9	4,2	71,6	1,4	2003 plan	247,0	4,7	115,4	2,5
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<b>2.Related Statistics</b>	(1) Population on census base <ul style="list-style-type: none"> <li>· By area (state ,province etc.)</li> <li>· National</li> </ul> (2) Education <ul style="list-style-type: none"> <li>· Compulsory Education</li> <li>· Advanced Education (High school, University )</li> </ul> (3) Other statistical data if any																																					
<b>3. Meteorological data</b>	(1) Overall monthly metrological observation data for more than 10 years.  (2) Precipitation and weather tendency by local observation data	Y	<p>全国 12 観測所 データ 降水量、日照、気温、降雨日数、平均雲量</p>																																			

Item	Contents	Availability	Note (response)
<b>3. Organization concerning Topographic Mapping</b>			
<b>1. Agency in charge of topographic mapping</b>	(1) Jurisdiction of the Agency  (2) Organization chart *  (3) Number of staff and engineers in each division (with academic background, training and experience levels)  (4) Annual budget (with breakdown if possible)  (5) Available Equipment list <ul style="list-style-type: none"> <li>• Digital photogrammetric</li> <li>• Field Survey</li> <li>• Reproduction</li> <li>• GIS and so on</li> </ul> (6) Future plan  (7) Relation to military sector	Y	組織図あり  • The State Authority for Geodetic Works employs 908 people: <ul style="list-style-type: none"> <li>- 4% graduated survey engineers</li> <li>- 18% engineers of surveying</li> <li>- 37% surveyors</li> <li>- 9% attorneys at law</li> <li>- 2% with elementary education</li> <li>- 29% other</li> </ul> • Available equipment <ul style="list-style-type: none"> <li>- we do not dispose with digital photogrammetric stations -field measurement equipment</li> <li>Photogrammetric Work Stations SD-3000 (2)</li> <li>- Stereophotogrammetric instruments A7,A8,AMU(3)</li> <li>- Surveying equipment               <ul style="list-style-type: none"> <li>- Total stations (34)</li> <li>- GPS (1 set)</li> <li>- Digital leveling instrument (1)</li> <li>- Electric distance measuring equipment (3)</li> <li>- Theodolite (50)</li> <li>- Leveling instruments (20)</li> </ul> </li> <li>-We do not have reproduction equipment- GIS               <ul style="list-style-type: none"> <li>- ARCInfo (2)</li> <li>- ARCView (2)</li> <li>- ARC SDE (5)</li> <li>- ARC IMS (1)Micro station Geographics (1)</li> <li>ORACLE 9i (1)</li> </ul> </li> </ul> Future plans * Setting up cadastre of immovable property on the territory of the Republic of Macedonia * Annual program for survey and cadastre on immovable properties for year 2004 (working material) * Middle-term program for survey and cadastre on immovable properties for year 2004 (Working material)
<b>2. Private sector organizations to conduct surveys and GIS</b>	Name, Staff, Equipment		





Item	Contents	Availability	Note (response)
<b>5. Future plan for strategic Surveying and Mapping</b>			
<b>1. Basic Surveying Policy</b>	<b>(1) Authorized Master Plans</b> - geodetic network construction  - Update and /or Addition of National base maps  - Aerial photography for mapping  - Reproduction of Maps  - Dissemination system of Base Map  -GIS strategy	Y	
<b>2. Activity by other donor countries for surveying , mapping and GIS</b>	<b>(1) Past and present activities by other donor countries</b>  <b>(2) Project report submitted by other donor</b>		地籍図作成に関して、World Bank の「Cadastre Realestate Project」が実施され報告書が出されている。

Item	Contents	Availability	Note (response)
<b>6. Legal Permission and Restriction etc.</b>			
<b>1. Agencies in charge of and/or concerning with the followings:</b>	<p>(1) Permission of aerial photography (Security clearance for flight)</p> <ul style="list-style-type: none"> <li>- Name of Agencies and Department</li> <li>- Name and position of the responsible persons whom the Japanese Study Team contact</li> </ul> <p>(2) Permission of reproduction of aerial photos</p> <p>Same as above</p> <p>(3) Permission of taking out the survey-data out from Macedonia to Japan (including aerial photos fair draft)</p> <ul style="list-style-type: none"> <li>- Name of Agencies and Department</li> <li>- Name and position of the responsible persons whom the Japanese Study Team contact</li> <li>- Period of Taking out</li> </ul>		<p>まったく問題なし。 許可申請は余裕をもって1ヶ月前に行うこと。 実際には、1週間で可。</p> <p>禁じられてはいない。 持ち出し等に関する規定は、特段定められてはいない。 新たに規則を設けることを考えている。</p>





Item	Contents	Availability	Note (response)
<b>(8). Proposed Use of the Products</b>			
<b>(1) Project planned by the use of this product</b>	Information to be extracted - Printing maps - Digital base data - Aerial photographs	Y	2020年目標の国土開発計画がある。
Item	Contents	Availability	Note (response)
<b>(9). Other information</b>			
<b>1. Training for survey and mapping</b>	(1) Formal education and training system for survey	Y	OJTにより新規採用者の教育を実施。
<b>2. Availability of laborer</b>	(1) Driver (wages / day) (2) Workers (wages / day) (3) Regulation for employment (working day, working hour)		ドライバー 20ユーロ/日 人夫 10ユーロ/日  8時 ~ 17時
<b>3. Availability of counterpart</b>		Y	
<b>4. Present safety conditions</b>	Existence of dangerous areas Harmful animals, insects and diseases		きわめて安全
<b>5. Availability of transport</b>	(1) Government vehicles (2) 4WD cars or others		1台のみ提供可 LADA 1700 Caravan 4WD