

7 IIMS OPERATION AND MANAGEMENT

7.1 System Operation and Management

The initial system will be installed in the Department of Geographic and Cartographic Works of the Ministry of Equipment and Transport (DTGC), and in the Department of Urban Planning and Architecture of the Ministry of Urban Planning and Housing (DUA).

System Administration

The initial IIMS in DTGC and the one in DUA have slightly different specifications. However, regarding the administration of the system, there will be little difference between each other. A system manager must be assigned and he will be responsible for System Management, System Maintenance, External Relations and Training.

Both agencies are expected to apply the wide-range of GIS data to mapping activities and thus to practical planning. It is therefore necessary for them both to instruct potential users on which operations the GIS data can be utilized through marketing and consulting activities. This is also necessary for the wide use of data that hardware and software engineers will be provided. Therefore, it is expected that both agencies will be the appropriate organizations to embody demand arising from other governmental agencies

Software Administration

The initial IIMS in DTGC provides software suitable for the spatial data infrastructure for the system and image processing in order to prepare the base map. In particular, the preparation of geographic elevation is a specific function of DTGC. As the supplier of such base maps to various future users, the data format exchange is also important.

The initial IIMS in DUA provides software suitable for preparation of thematic maps, display and analysis related to urban planning and urban problem solution. In addition, as the various socio-economic data will be incorporated in the urban planning process, the function of data import with necessary data exchange will gradually become more important.

Data Management

(1) Spatial Data Infrastructure

DTGC will broadly be the manager responsible for the spatial data infrastructure. However, in the case of administrative boundaries, the competent agency is not DTGC but the Department of Land Development of the Ministry of Economy, Finance and Planning

(DAT). In this case, DTGC should collaborate with DAT in defining the exact geographic locations of administrative boundaries and provide them with geographical coordinates.

DTGC will also serve as an agency to collect and store the maps and information related to GIS. In undertaking this, DTGC will utilize the National Mapping Committee and act as an organization for supplying thematic maps by carrying out works related to GIS for and on behalf of other governmental agencies. For improved use of IIMS, the spatial data infrastructure must be updated periodically. Therefore, coordination among agencies is essential for the spatial data infrastructure management. As the existing National Map Committee is chaired by the DTGC, this committee must be efficiently utilized and its role must be enhanced for this purpose.

(2) Other GIS Data

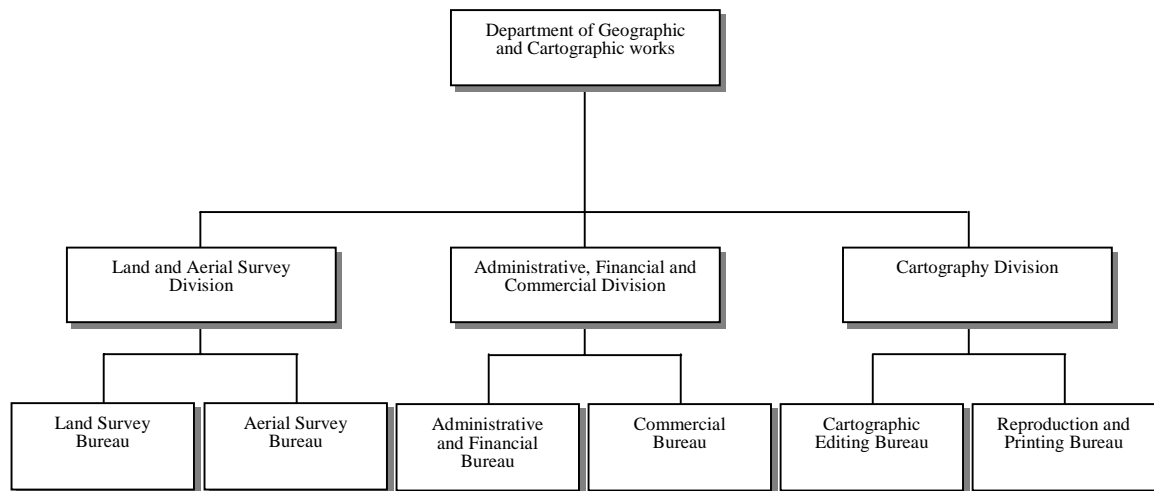
The initial IIMS includes other GIS data such as utilities (sewage, drainage and water supply), public services (transportation, garbage collection) and land use plans (urban plan, zoning, etc.). The latter one is partly DUA’s responsibility, however, the former are not. The data preparation of utilities is the responsibility of each utility company and routes of public services are also under responsible organizations.

7.2 Structure of DTGC and DUA for Operation of IIMS

DTGC

The organization chart proposed to the Ministry of Equipment and Transport is shown in Figure 7.1.

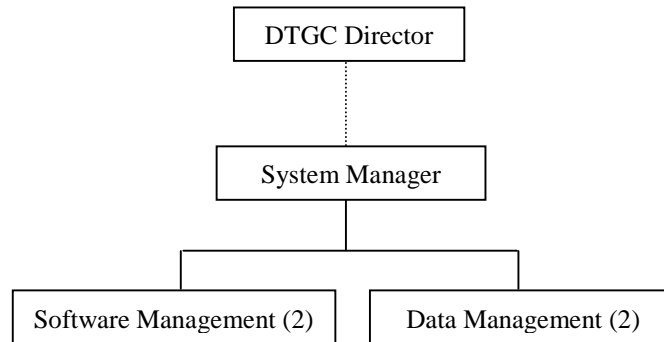
Figure 7.1 Proposed Organization Chart of DTGC



Source: DTGC

Assignment of responsible staff as shown in Figure 7.2 is essential for the sustainable operation of IIMS. However, it would be very difficult at the initial stage to fill these proposed posts with experienced new staff in addition to the personnel indicated in Figure 7.1. The Study Team proposes to make double assignments for the posts necessary for the IIMS operation in DTGC.

Figure 7.2 Operating Structure in DTGC

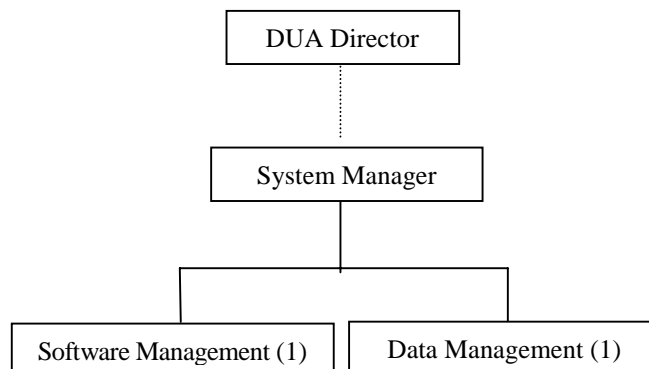


Source: JICA Study Team

DUA

DUA has 10 years experience using computer or GIS for urban planning. There is a GIS unit in DUA even though it is not recognized officially as an independent section. It is essential for DUA to have an organization as shown in Figure 7.3 for GIS operation. However, recruiting skilled experts and adding a new section is not realistic, as is for DTGC. The Study Team proposes double assigning of current staff with responsibilities shown in the Figure 7.3.

Figure 7.3 Operating Structure in DUA



Source: JICA Study Team

7.3 Operating Cost of IIMS and Cost Recovery

Table 7.1 shows the estimates of IIMS operation cost in DTGC. The Study Team proposes the source of these expenditures as follows;

- Personnel cost Ordinary budget of MET
- Electricity, telephone Ordinary budget of ME
- Consumables DTGC income from sales of maps and charges of services
- Maintenance Project budget from outer agencies

Table 7.1 Operation Cost Projection for DTGC

	1 st Year	2 nd Year	3 rd year	4 th Year	5 th Year
Personnel	10,000,000	10,300,000	10,610,000	10,930,000	11,260,000
Electricity, Telephone	240,000	247,000	255,000	262,000	270,000
Consumables	4,039,000	4,160,000	4,285,000	4,414,000	4,546,000
Software Maintenance	4,626,000	4,765,000	4,908,000	5,055,000	5,207,000
Hardware Maintenance	505,000	521,000	536,000	552,000	569,000
Total	19,410,000	1,993,000	20,594,000	21,213,000	21,852,000

Unit: F CFA

Source: JICA Study Team

Operation cost of IIMS for DUA is shown in Table 7.2. These costs shall be covered with the ordinary budget as DUA has any other financial resources. However, if DUA assists in a project for another agency, the costs of IIMS should be covered by the project budget of the agency that received the services.

Table 7.2 Operation Cost Projection for DUA

	1 st Year	2 nd Year	3 rd year	4 th Year	5 th Year
Personnel	10,000,000	10,300,000	10,610,000	10,930,000	11,260,000
Electricity, Telephone	240,000	247,000	255,000	262,000	270,000
Consumables	4,039,000	4,160,000	4,285,000	4,414,000	4,546,000
Software Maintenance	823,000	848,000	874,000	900,000	927,000
Hardware Maintenance	445,000	459,000	473,000	487,000	501,000
Total	15,547,000	16,014,000	16,497,000	16,993,000	17,504,000

Unit: F CFA

Source: JICA Study Team

Cost Recovery

Regulatory reforms, which took place after the presidential election in February 2000, made it possible for DTGC to retain revenues from the sale of maps and charges of services to other organizations. DTGC can earn a substantial amount by gaining the trust of users through the quality upgrading of its map products. Such new products may include a street map of Dakar showing street names and area names, residential map, tourist map, and so on.

DUA, however, has not as many options for new business as DTGC. It is desirable that users of information including thematic maps produced by DUA should be charged for the cost of such services. In order for the users to readily accept such charges, the quality of the services should be improved. In order to meet these objectives, it is important that the National Map Committee is strengthened and revitalized.