

### 6.1 System Design

The IIMS system will be separately placed in DTGC and DUA, as their locations are physically apart and their main purposes for having IIMS are different (i.e. data preparation and data utilization). The IIMS system was designed to commence under the current circumstances and to accommodate future expansion including computer networking.

The IIMS comprises hardware, software, GIS data and applications supported by basic modules of the GIS software. Presented here are the required specifications for hardware and basic software and the rationale for selection of such specifications, which have been derived directly from the findings detailed in the preceding chapters.

Criteria of software selection for DTGC were powerful figure processing functions, capability of data import and export to and from other agencies, capability of geographic contour analysis and adaptability of data media such as CD-ROM and ZIP for data distribution. Criteria of software selection for DUA were powerful map information processing functions, capability of information search, easy management of layers for thematic maps, capability of data processing such as cross tabulation and graph display, and adaptability of data media such as CD-ROM and ZIP for data distribution.

System requirements for the specifications of the proposed system included a French operating environment, least confusion with current software in use, broad applicability to various requirements, easy operation with good manuals, maintenance support and consumables available in Dakar.

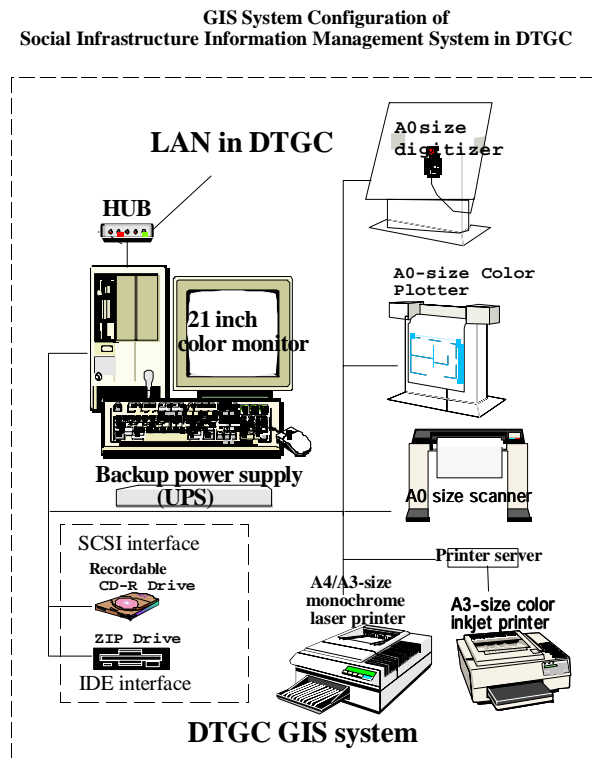
### 6.2 System Structure

In the system for DTGC, the ArcInfo NT is recommended for the purposes of strengthening figure processing function and enabling three-dimensional information processing. It is proposed that the figure data input will be done by tablet digitizer and scanner. Figure 6.1 illustrates the recommended system including data input, thematic map preparation, evaluation map preparation, and map output functions. As its current version sufficiently handles map management, the existing GeoConcept software is also proposed to support the new system in display, analysis, and output functions.

Regarding the system for DUA, a version-up of the existing GeoConcept software is proposed in order not to cause confusion by introduction of a new software. GeoConcept is judged to have adequate functions for analysis support in layer management, statistics, graphic display, and map output functions. The existing data input method by tablet

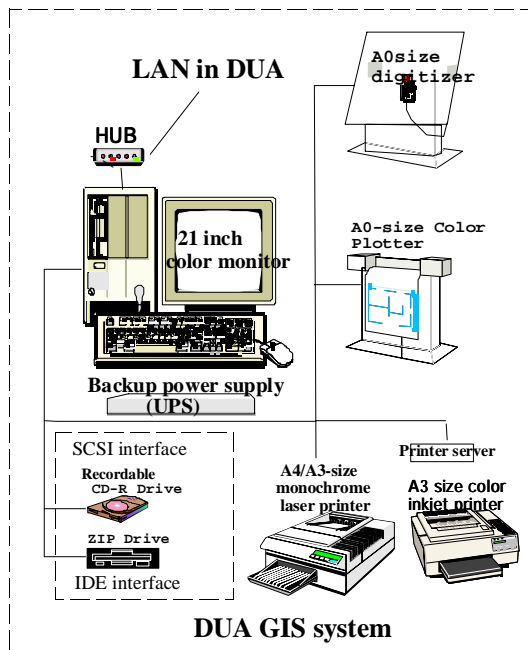
digitizer is proposed to be continued. Figure 6.2 shows the whole system including data input, preparation of evaluation map, and map output functions.

**Figure 6.1 Infrastructure Information Management System for DTGC**



**Figure 6.2 Infrastructure Information Management System for DUA**

GIS System Configuration of  
Social Infrastructure Information Management System in DUE



### **6.3 Equipment Specification**

Hardware specification recommended for the IIMS is as follows:

**(1) DTGC**

- a) PC: Pre-Installed model of Windows NT 4.0  
Pentium 550 MHz, 512 MB RAM, 512 KB cash memory, 36 GB Hard disk drive, CD-ROM drive (IDE), 1.4 MB diskette drive (FD), Keyboard, Mouse, Network board (PCI interface)
- b) SCSI board (PCI interface), SCSI terminator, SCSI cable
- c) CD-R drive unit (SCSI interface or IDE interface)
- d) ZIP drive unit (100 MB or 250 MB, IDE interface )
- e) Monitor: 21-inch color monitor 16 Bit 1,600x1,280
- f) A0-size tablet digitizer including digitizer cable, 16 button cursor and tool kit, mechanical stand
- g) A0-size color scanner including cable and tool kit, floor stand
- h) A0-size color inkjet plotter including Ethernet board and printer cable, Additional memory 32 MB
- i) A3-size color inkjet printer including Ethernet board and printer cable
- j) A4/A3-size monochrome laser printer including Ethernet board and printer cable
- k) Hub (8 port )
- l) Network cable (10/100Base-T, direct cable)
- m) UPS (750 VA)

**(2) DUA**

- a) PC: Pre-Installed model of Windows NT 4.0  
Pentium 550 MHz, 256 MB RAM, 512 KB cash memory, 18 GB Hard disk drive, CD-ROM drive (IDE), 1.4 MB diskette drive (FD), Keyboard, Mouse
- b) Network board (PCI interface)
- c) SCSI board (PCI interface), SCSI terminator, SCSI cable

- d) CD-R drive unit (SCSI interface or IDE interface)
- e) ZIP drive unit (100 MB or 250 MB, IDE interface )
- f) Monitor: 21-inch color monitor (16 Bit, 1,600x1,280)
- g) A0-size tablet digitizer including digitizer cable, 16 button cursor and tool kit, mechanical stand
- h) A0-size color inkjet plotter including Ethernet board and printer cable, Additional memory 32MB
- i) A3-size color inkjet printer including Ethernet board and printer cable
- j) A4/A3-size monochrome laser printer including Ethernet board and printer cable
- k) Hub (8 port)
- l) Network cable (10/100 Base-T, direct cable)
- m) UPS (750 VA)

Software specification recommended for the IIMS is as follows:

**(1) DTGC**

- a) Arc Info for Windows NT (ESRI Corporation)
- b) TIN module of additional topographic module of Arc Info
- c) Carta Linx (Clark University)
- d) IDRISI 32 (Clark University)
- e) Microsoft Office 97 (Access 97, Excel 97)
- f) SCSI drivers and utilities
- g) Scanning utility software
- h) Photo Shop (ADOBE Corporation)
- i) Windows NT 4.0 Service Pack 3 (Microsoft Corporation)

**(2) DUA**

- a) Geo Concept 4.1 expert (Geo Concept Corporation)

- b) Kit Geo Concept (Geo Concept Corporation)
- c) Carta Linx (Clark university)
- d) IDRISI 32 (Clark University)
- e) Microsoft Office 97 (Access 97, Excel 97)
- f) SCSI driver and utility