

Geographic Database 2 - Database Application

Study on 2-Tier Database Application Linked with Geographic Database on Nuclear Site Image Information

150

가

(Geospatial Information System, GIS)

가

GIS

geographic database

2-

Abstract

More than half of the information relevant to the nuclear control is considered to be spatially related. Therefore the need for building a geospatial information system (GIS) is increased. High resolution commercial satellite images with positional information covering wide areas such as nuclear sites are regarded as one of the fundamental information for building a GIS. This paper discusses a 2-tier database application linked with geographic databases which manage heads-up digitized image files of commercial satellite images on nuclear sites and associated tables.

1.

(IAEA)

30

. 1997 5 IAEA

‘ Model

Protocol for Additional to Safeguards Agreement' (' 가 ')

1999 6 가

가 가

(Geospatial Information System, GIS)

가 [1, 2].

2.

(Technology Center for Nuclear Control, TCNC)

GIS

TCNC가 (Korea Aerospace

Research Institute, KARI) KOMPSAT(Korea Multi-Purpose Satellite,)

(pan-chromatic) e-hd.com IKONOS-2 4-band (blue, green, red, near-infrared) [3].

heads-up digitizing

feature class(4)

(attribute) geographic database(GDB) (

3). GIS

feature attribute

(object-relational database)

GDB

. GDB personal

GDB multi-user GDB . Personal GDB 1-tier

application(2) , multi-user GDB two-tier

multi-tier application . personal GDB

Microsoft (MS) Access database MDB .

2-1. (Web Application)

MS Access

Data Access Page (DAP) . ' 1가, , '

2-1-1. 1-

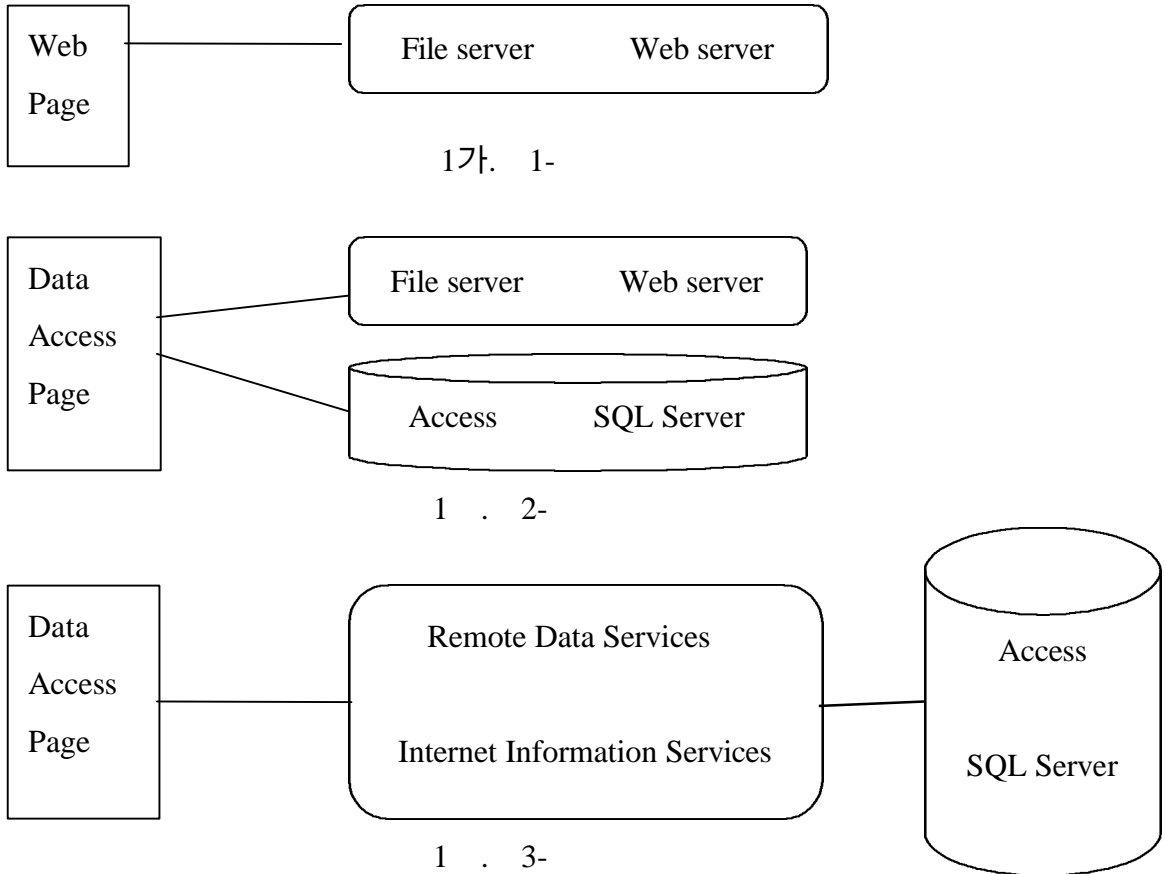
가 ' 2가'

1-

TCNC

hyperlink

[4].



2-1-2. 2-

UNC (Universal

Naming Convention)

. Client

가

가

C/S (Client/Server)

가

client

가

가

(Local Area

Network, LAN)

[5].

2-1-3. 3-

. Client

가 가 middle tier

가 2-

. Multi-tier

database application

2-2.

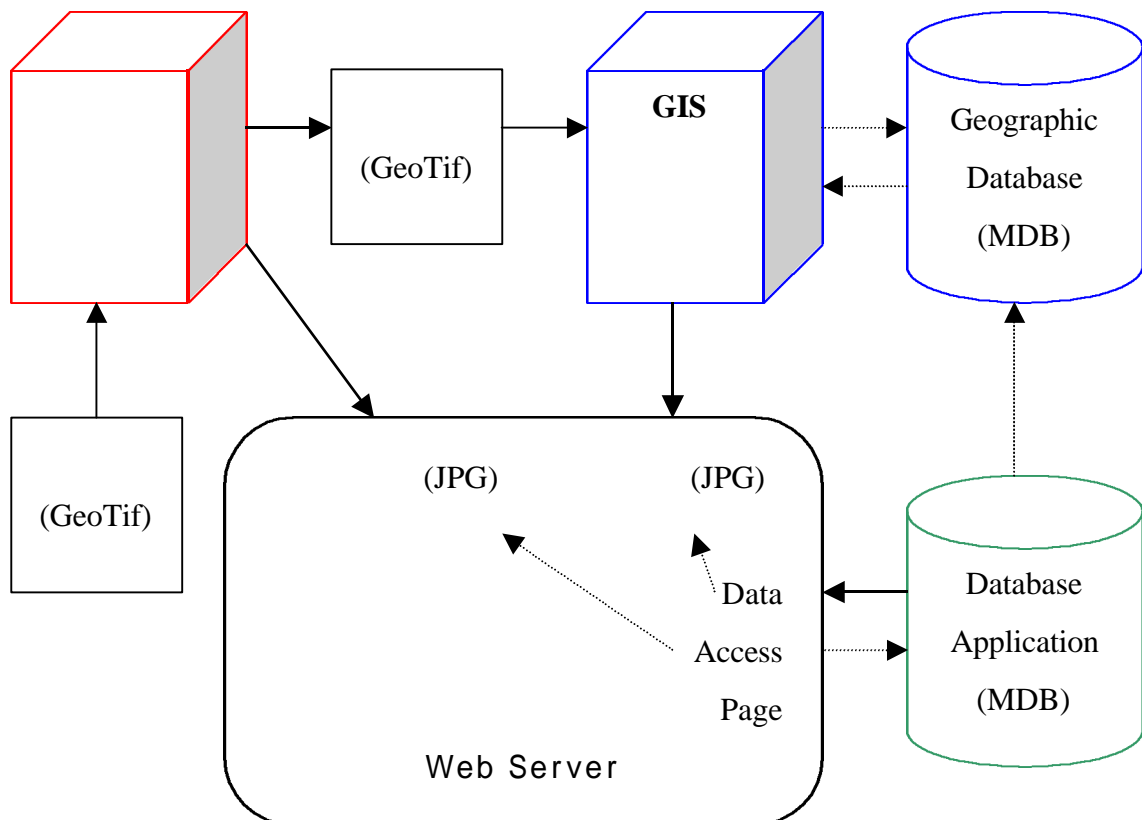
2

(), GIS (),

(), () 4가

(JPG), (JPG), Data Access

Page (HTML)



2. Data Access Page 2-

(, .)

2-2-1.

ER-Mapper 6.3 . GIS

가 (band)

1 .

(4m)				
Red	20	2047	571.2	357.5
Green	14	2047	483.7	336.0
Blue	3	2047	425.8	305.3

1. e-HD.com

2-2-2. GIS

GIS

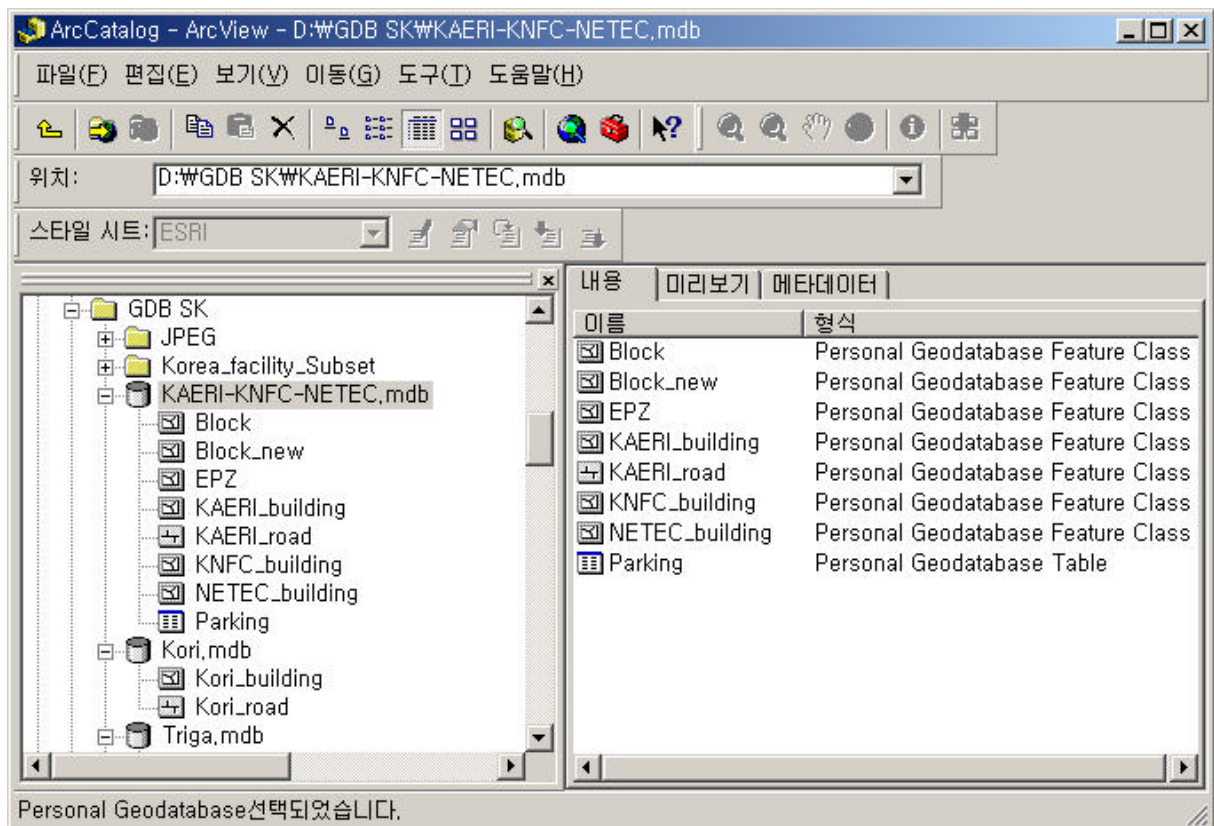
ArcGIS 8.1 .

3

ArcGIS

ArcCatalog

layer



3. ArcCatalog

ArcCatalog layer GDB

GDB Microsoft Access database MDB

ArcCatalog GDB 2 database application

ID GDB

4 AcGIS 8.1

ArcMap

KAERI

6

layer

(3)

5 layer

KAERI

heads-up digitizing

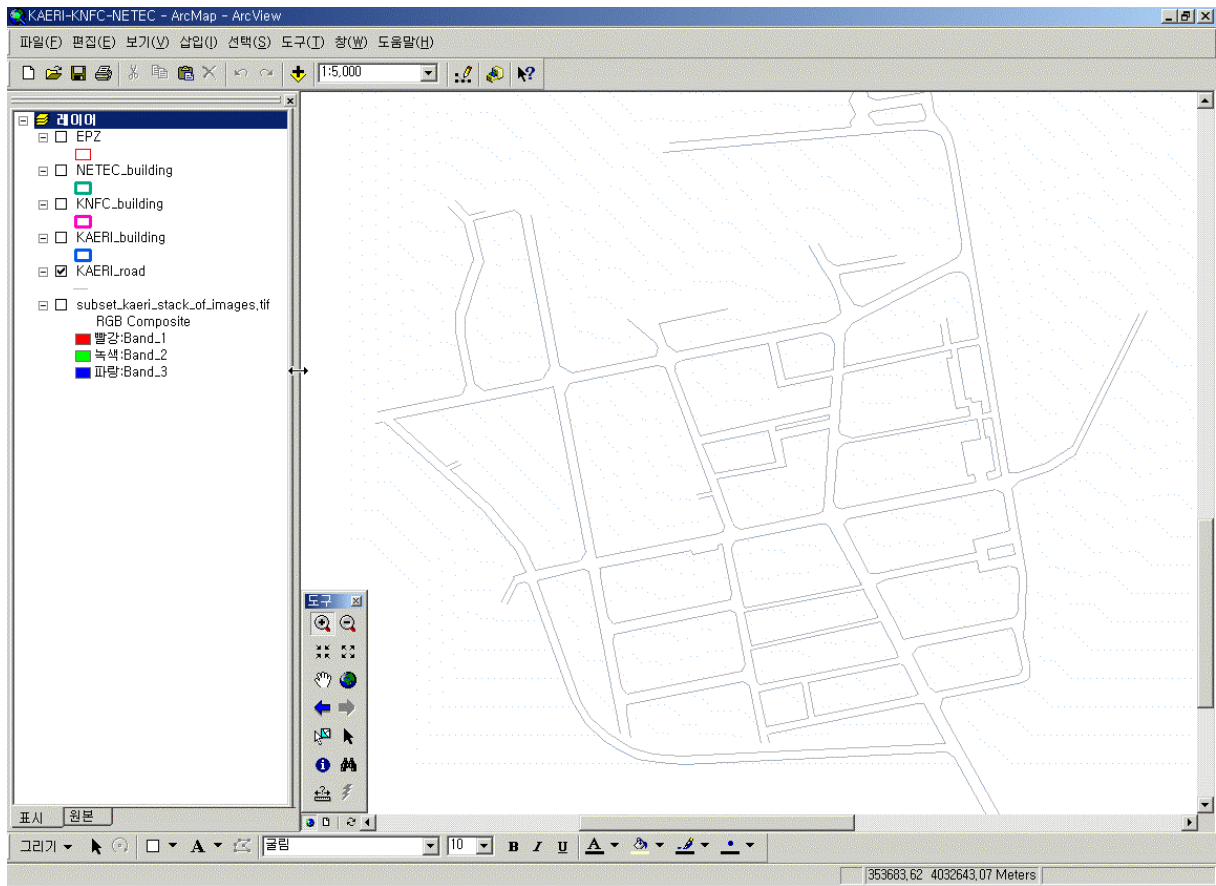
vector

layer

KAERI

layer

KAERI



4. ArcMap

2-2-3.

Microsoft Access 2002

. TCNC

가

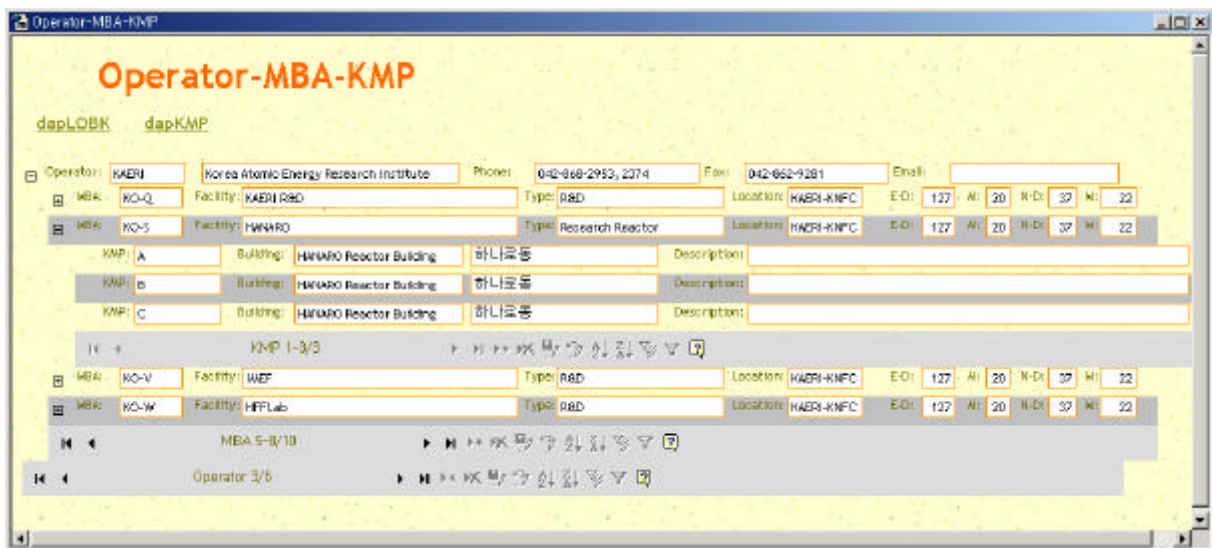
. DAP Microsoft

Access SQL Server

Access Form Report



5. Location - Organization - Building - KMP



6. Operator - MBA - KMP

- 5 table relationship 'Location -> Organization -> Building -> KMP'
 INFCIRC/540 2 Geographic Database()
 ' ' ' ID' (link)
 hyperlink가
- 6 table relationship 'Operator -> MBA -> KMP'
 INFCIRC/153(Corrected) 2 Geographic Database()
 ' ' ' ID ' (link)

3.

TCNC

2-tier database application

multi-tier database application 가

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2. C. Vincent Tao and Q.S. (Bob) Truong, A WEB-BASED GEOSPATIAL INFORMATION SYSTEM FOR SAFEGUARDS DATA INTEGRATION AND MANAGEMENT, 42ND Annual Meeting of Institute for Nuclear Materials Management, Renaissance Esmeralda Resort, Indian Wells, California. USA, July 15-18, 2001
3. , (Study on Commercial Satellite Imagery for Safeguards), 2000 , 2000.10.26~27
4. , (A Geographical Information Based Multimedia Information System Development for Nuclear Control), , 2000. 05. 26-27.
5. KIM HYUN TAE, et. al., DEVELOPMENT OF TWO-TIER DATABASE APPLICATION WITH COMMERCIAL SATELLITE IMAGE UNDER SECURE FIREWALL, 43TH Annual Meeting of Institute for Nuclear Materials Management, Renaissance Orlando Resort at Seaworld, Orlando, Florida. USA, June 24, 2002