Geographic Database

2-

STUDY ON TWO-TIER DATABASE APPLICATION INTEGRATED WITH GEOGRAPHIC DATABASE ON NUCLEAR SITE IMAGE INFORMATION

,   ,   ,

150

.   (Geospatial Information System,

GIS)   .

GIS

.   heads-up digitizing

geographic database

UNION   2-

.

Abstract

More than half of the information relevant to the nuclear control is considered to be geospatially related.   Therefore the need for building a geospatial information system (GIS) in the field of the nuclear control 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 relevant GIS.   This paper discusses a 2-tier database application which, by means of UNION queries, integrates several same-structure tables of a linked geographic database which manages heads-up digitized image files of commercial satellite images on nuclear sites and associated tables.

1.

(IAEA) (safeguards) 30

. 1997 5 IAEA

‘Model Protocol for Additional to Safeguards Agreement’ (’ ’)

. 1999 6

.

(Geospatial Information System, GIS)

[1, 2, 6]. 9.11

(Physical Protection, PP) PP

GIS .

.

2.

(Korea Atomic Energy Research Institute, KAERI)

(Technology Center for Nuclear Control, TCNC) GIS

. TCNC (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 (attribute)

geographic database(GDB) (: 3
KAERI-KNFC-NETI-KOPEC.mdb). GIS

feature attribute - (object-
relational database) GDB . GDB

personal GDB multi-user GDB .
Personal GDB 1-tier (1-) application (2 GIS
, Geographic Database(MDB)) , multi-user GDB two-tier (2-
) multi-tier application . 2
, . personal GDB

Microsoft (MS)   Access database   MDB   .

2-1.   2-

　　　　　　　　　　　　.   MS
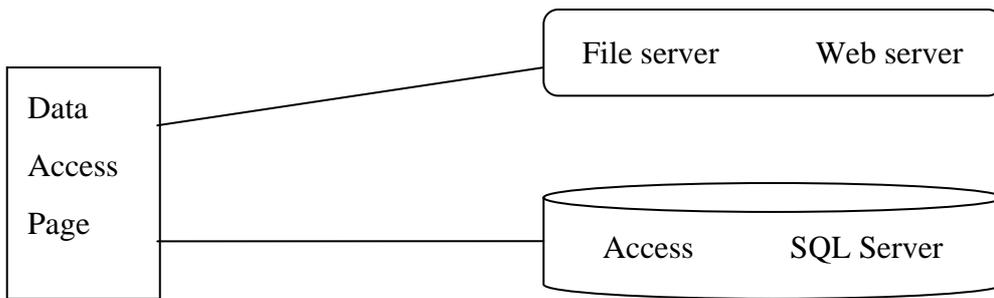　　　.   Access   . Access
　　　　　　　　　(LAN: Local Area Network)
　　　　　　　　Form   Report
　　Data Access Page (DAP)   . Intranet   2-
　　　, Internet   3-   .

Data Access Page	File server Web server
	Access SQL Server

　　　　　　　1.   2-   ([7]   1 .   )

2-
　　　　　　　　　　　　UNC (Universal Naming Convention)   .
Client
　　　　　　.   C/S (Client/Server)   .

client
　　　　　　　.   (Local Area Network, LAN)
　　　　　　[5].

2-2.

　　2   (   ), GIS   (   ),
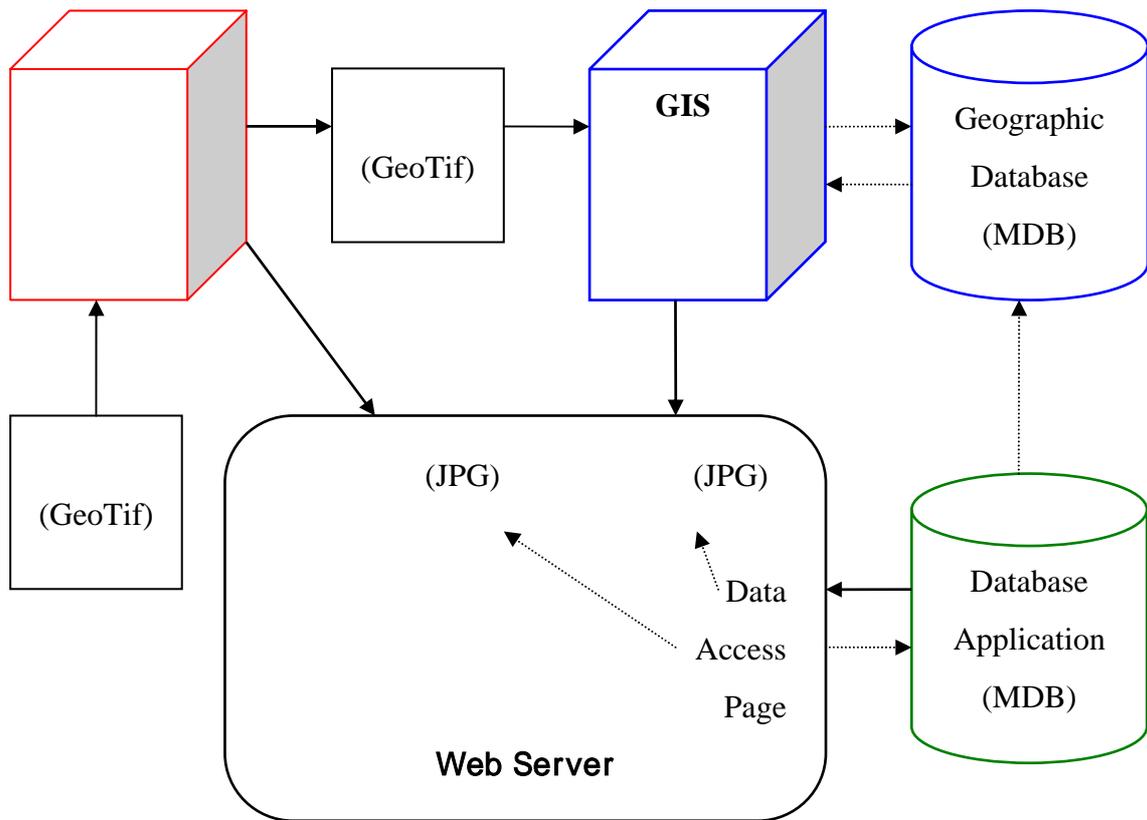　　　(   ),   (   ) 4   .

2. Data Access Page 2-

([7]   2.   )

ER-Mapper 6.3   . GIS

[7].

GIS   ArcGIS 8.1   .   3   ArcGIS   ArcCatalog
.   layer

KAERI   '   '   .

ArcCatalog   layer   GDB
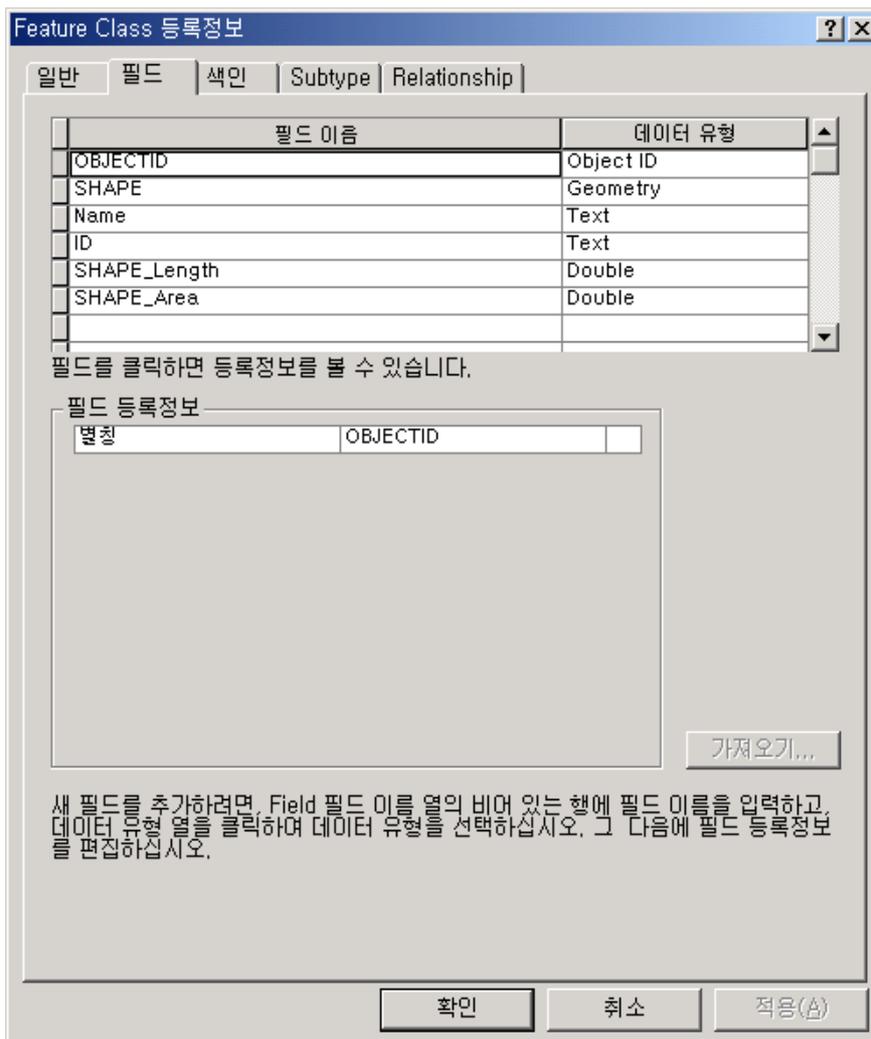
. ArcCatalog   GDB   2   database application

'   ID   '   '   GDB

.

4   3   XXX_building   (KAERI_building,
KNFC_building, ...)   .   .   2

(query)

(link)   .
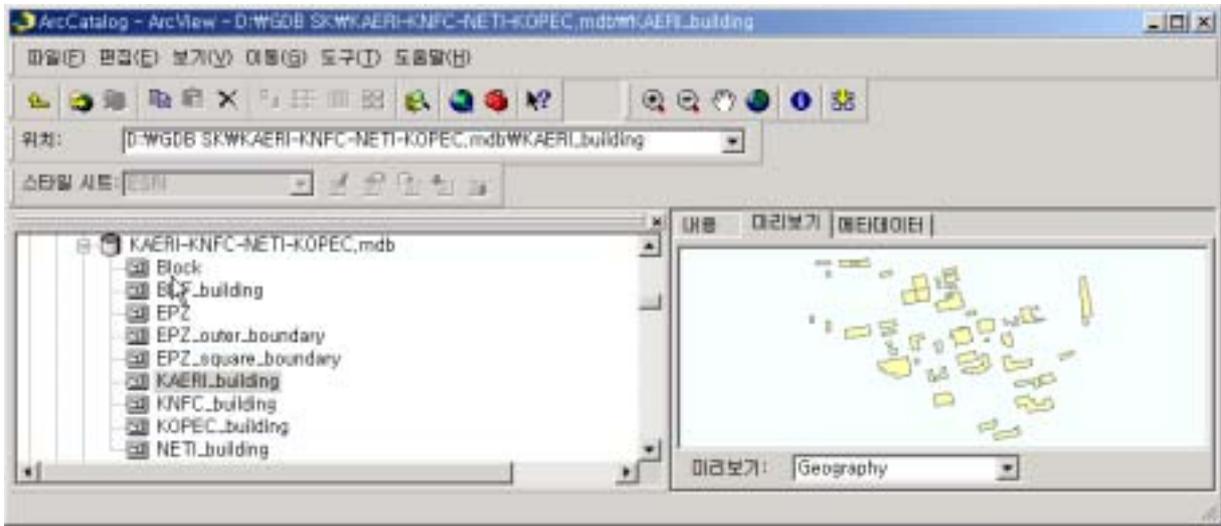
3.   KAERI- KNFC- NETI- KOPEC.mdb

4.

3

XXX_building

2-2-3.

LAN　　　　Web　　　　　　　　·
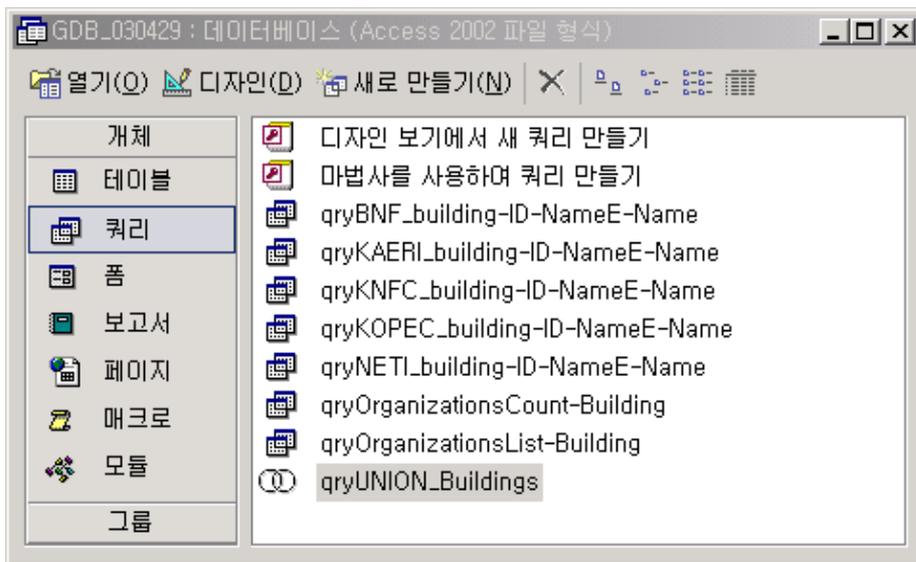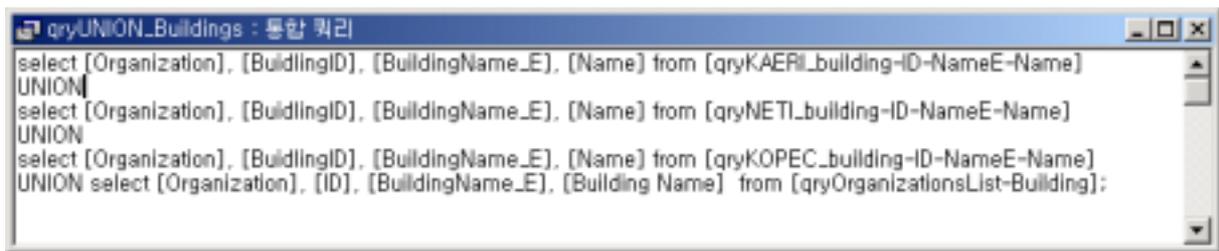
　　　　　　　　MS　　　Access 2002　　　. TCNC Intranet

　　　　　　　　　　　　　　　MS Office XP　　　　　　　　. DAP

　MS　　　　　　　　　　　Access　　SQL Server

　　　　　　　　　Intranet

　LAN　　　　　　　　　　　　　　　　　　　Form　　Report

5.

2-

6.　　　　　UNION query

5　　　　　　　　　qryXXX_building-ID-NameE-Name　　　　　　　·

　　2　　　　　　　　　　　　　Database Application

　　　Geographic Database　　　　　　　　　. Geographic Database

　　　　　　　　·　　　　　　　　　　(organization)

·

6   3   XXX_building   (KAERI_building,
KNFC_building, …)   .   5
                    (   )   qryUNION_Buildings
                7   .

dapUNION_buildings

7.   6   UNION query   Data Access Page

                                                  .   .

Pivot-Table
                         .

3.

(Geospatial Information System, GIS)   .
              2-   .
                    Access   .
                                                  Pivot-Table
                    .

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2. C. Vincent Tao and Q.S. (Bob) Truong, A WEB-BASED GEOSPAITIAL 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

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6.   ,   , 2002   ,   , 2002.10.24~25

7.   ,   Geographic Database   2-Database Application   ,   2003   ,   , 2003.05.29~30