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# GIS 소프트웨어 분석

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. GIS S/W

. GIS S/W

. GIS S/W

. IntraMap

# I. GIS S/W

# 1. GIS S/W

## I. GIS S/W



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- 
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가

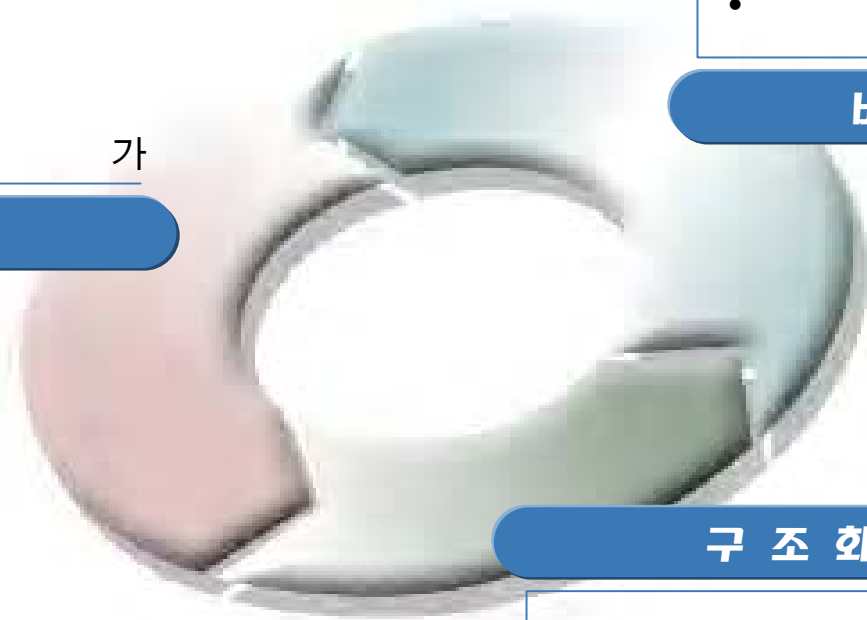
완 벽 화

- 
- 

비 중 복 화

구 조 화

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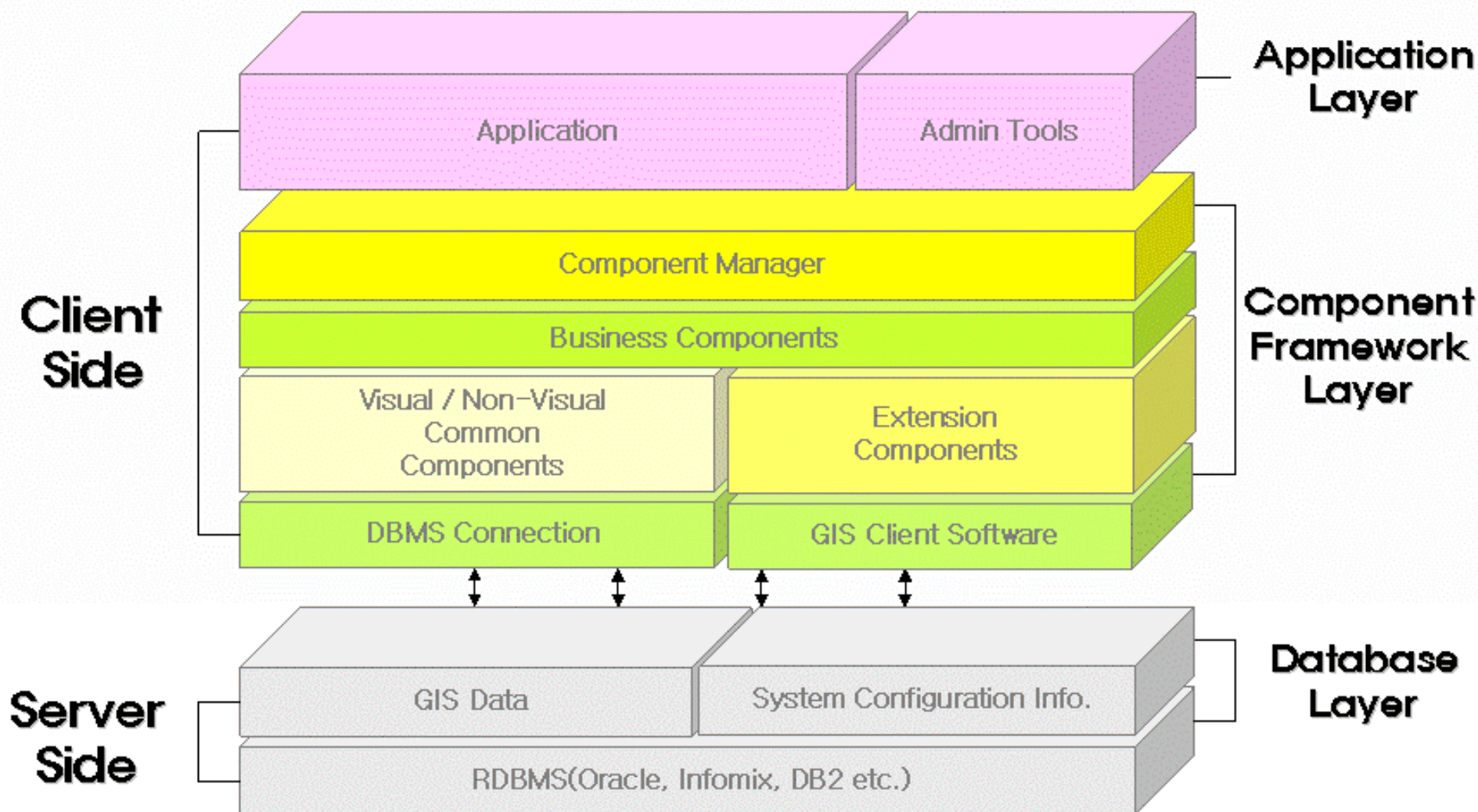




## 2. GIS S/W 구성도

## I. GIS S/W 개요

❖보편적인 GIS S/W 구성은 아래와 같은 구성을 이루고 있다.



### 3. GIS S/W

#### I. GIS S/W

##### ❑ GIS

##### ❑

➤ UNIX, Windows, LINUX OS



##### ❑

➤ - ,

➤ - ,

##### ❑

##### ❑

## II. GIS S/W

# 1. GIS S/W

. GIS S/W



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# 1. GIS S/W ( )

. GIS S/W



## ➤ Topological Operation

- (touch, contain, intersect )

## ➤ Geometrical Analysis

- , , ,

## ➤ Buffering Analysis

## ➤ Overlay Analysis

- union, intersect, difference

## ➤ Network Analysis

- , , , ,

## ➤ Spatial Analysis

- surface

### III. GIS S/W

# 1. GIS S/W

# . GIS S/W

GIS S/W Name

SMALLWORLD

GEUS

SDE/Map object



## 주요특징

- Raster/Vector
- Seamless Database
- CASE Tool

- GIS DBMS
- (DBMS
- SQL
- Spatial SQL

- , CAD, RDBMS
- API
- Cooperative processing
- Open System Client/Server



## 데이터베이스 체계

- VMDS : RDB
- UNIX Window DBMS (ORACLE, DB2, INGRES, Rdb, SYBASE, INFORMIX)
- ODBC Drivers (Oracle, SQL Server, Access)

- UNIX Window DBMS (ORACLE, DB2, SYBASE, INFORMIX)
- ODBC Drivers (Oracle, SQL Server)

- UNIX Window DBMS (ORACLE, SYBASE, DB2, INFORMIX)
- ODBC Drivers



## 외부데이터 변환

- ARC/INFO Arc Shape
- ASCII, DGN, DXF, IGDS, NTF
- TIFF

- DXF, SHAPE, SDTS, INFOMAP
- SIF
- TIFF, JIF, BMP, JPG, PM

- SHAPE, COVERAGE, SDE LAYER

# 1. GIS S/W

( )

# . GIS S/W

3D GIS					
		Arc/View 3D Analyst	Erdas Virtual GIS	GIS soft NeoMap3D	KSIC IntraMap3D
OS		Windows	Windows	Windows/WEB	Windows/WEB
3D DataBase		CAD,Shape	CAD	CAD	CAD,Shape,DGN
	3	DEM, TIN	DEM		VRML, OBJ, IM3
		Image, VRML	Movie(AVI) VRML		VRML, OBJ, IM3 3
3D 가	가	가	가	가	3D
					/
	가				Navigation
	가	3 2			,
			가	가	WEB 3 ,
		3			VRML,

# 1. GIS S/W

( )

. GIS S/W

## □ Web GIS Tool /

( ) IntraMap 3D	<ul style="list-style-type: none"> <li>• Web 3 가</li> <li>• Web 가</li> </ul>	<ul style="list-style-type: none"> <li>• ( 3D 가 )</li> </ul>
Intergraph GeoMedia Web Map	<ul style="list-style-type: none"> <li>• import</li> <li>• 가 .</li> </ul>	<ul style="list-style-type: none"> <li>• 3 가 가</li> </ul>
ZEUS WEB	<ul style="list-style-type: none"> <li>• 가 가</li> </ul>	<ul style="list-style-type: none"> <li>• ZEUS Database Import</li> </ul>
GE SmallWorld	<ul style="list-style-type: none"> <li>• Object Oriented</li> </ul>	<ul style="list-style-type: none"> <li>• 가</li> <li>• Web GIS</li> <li>• 가</li> </ul>

# 1. GIS S/W

( )

. GIS S/W

## □ Web GIS Tool / ( )

ESRI ArcIMS	<ul style="list-style-type: none"> <li>• ESRI</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> <li>• ESRI</li> </ul>
GEOMania iWeb	<ul style="list-style-type: none"> <li>• Web</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> <li>•</li> <li>•</li> </ul> 가
MapInfo MapXtreme	<ul style="list-style-type: none"> <li>•</li> <li>•</li> <li>•</li> </ul> scalability	<ul style="list-style-type: none"> <li>• ORDBMS</li> <li>•</li> </ul> 가
SDS Web & Mobile GIS	<ul style="list-style-type: none"> <li>•</li> <li>•</li> <li>•</li> </ul> 가 3D Visualization 가	<ul style="list-style-type: none"> <li>•</li> <li>• 3D</li> <li>• Network</li> </ul>

## 2. Intergraph

. GIS S/W

### □ Intergraph – GeoMedia Web map



- o Windows / Browser
- Internet , MS Explorer Client
- Intranet Netscape
- GIS Web Viewing Software



- o (Interoperability) : GIS Publish 가
- o GIS : Database
- o Raster Image : Raster
- o Layer On/Off : Feature Layer On/Off
- o HotSpot : / , ,
- o Tooltip :
- o :
- o / , , Magnify : / / Magnify
- o Redline, Capture, Print : , , Capture

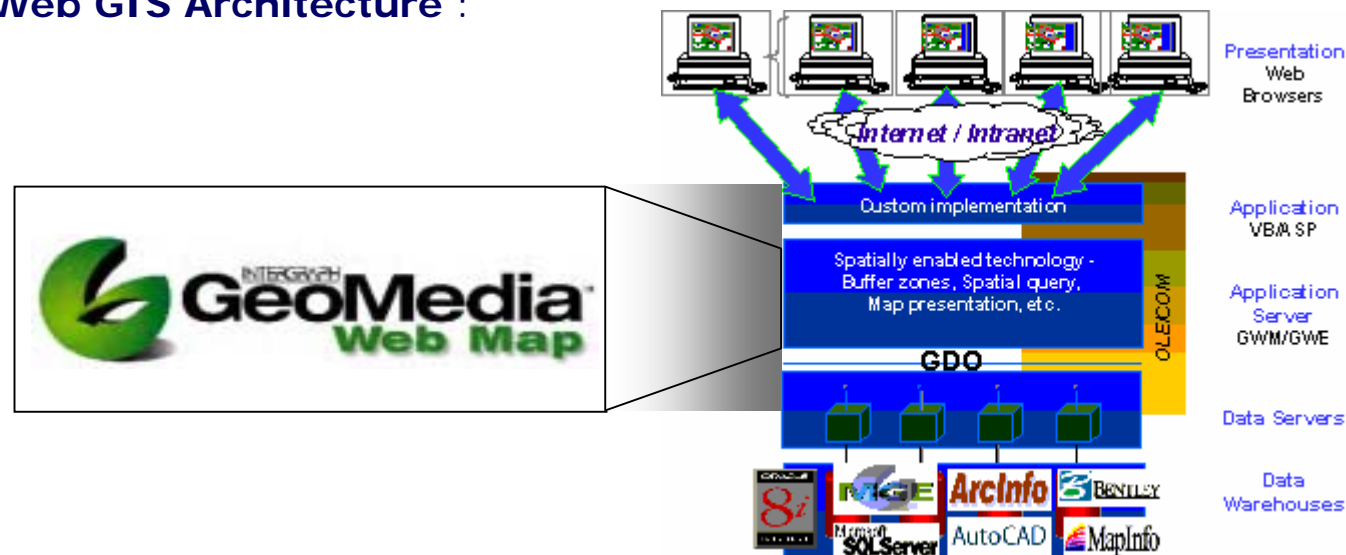


## 2. GeoMedia Web map( )

. GIS S/W

### ❑ Intergraph – GeoMedia Web map

- **Source GIS Data Format** : MS Access, MS SQL Server, ESRI ArcInfo Coverage, ESRI Shape Files, MapInfo data, Oracle SC, AutoDesk DXF, Microstation DGN, Intergraph MGE, MGDM, MGSM, Intergraph FRAMME ...
- : Vector (CGM)
- **Client** : ActiveX , Java Applet
- :
- :
- **Web GIS Architecture** :



3.

– ZEUS/WEB

. GIS S/W



– ZEUS/WEB



o ZEUS/WEB ZEUS Application Server

가 , 가



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o

- API

emdedded SQL

-

3.

# – ZEUS/WEB( ) . GIS S/W

O

- B+-tree R+-tree

O

- SQL (OpenGIS SQL )

O

- / (UNIX,Windows NT/95/98)

- 3-tier  
- (CORBA,OLE/OCX )



3.

## – ZEUS/WEB( ) . GIS S/W



### – ZEUS/WEB

#### ➤ Source GIS Data Format :

MS Access, MS SQL Server, Informix, Sybase ESRI Arc/Info Coverage, ESRI Shape Files, AutoDesk DXF, Microstation DGN, VPF, SDTS, INFORMAP..

- ZEUS DB Import

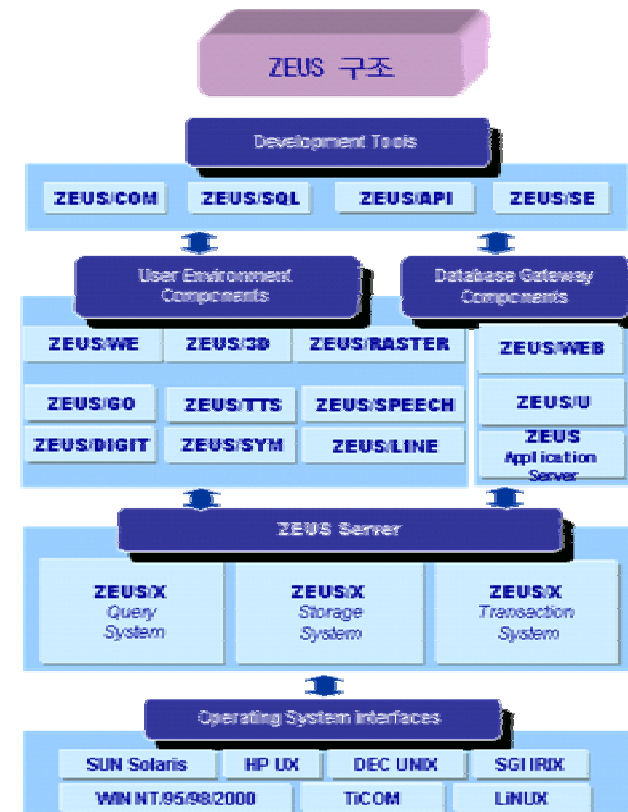
➤ : Raster Vector

➤ Client : Java Applet

➤ : ( )

➤ :  
( )

➤ ZEUS



## 4. GE Smallworld

. GIS S/W

### □ GE Smallworld – Internet Application Server



o GE Smallworld Internet Application Server 가

가

XML

WMS, GML



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S/W

o

가

S/W

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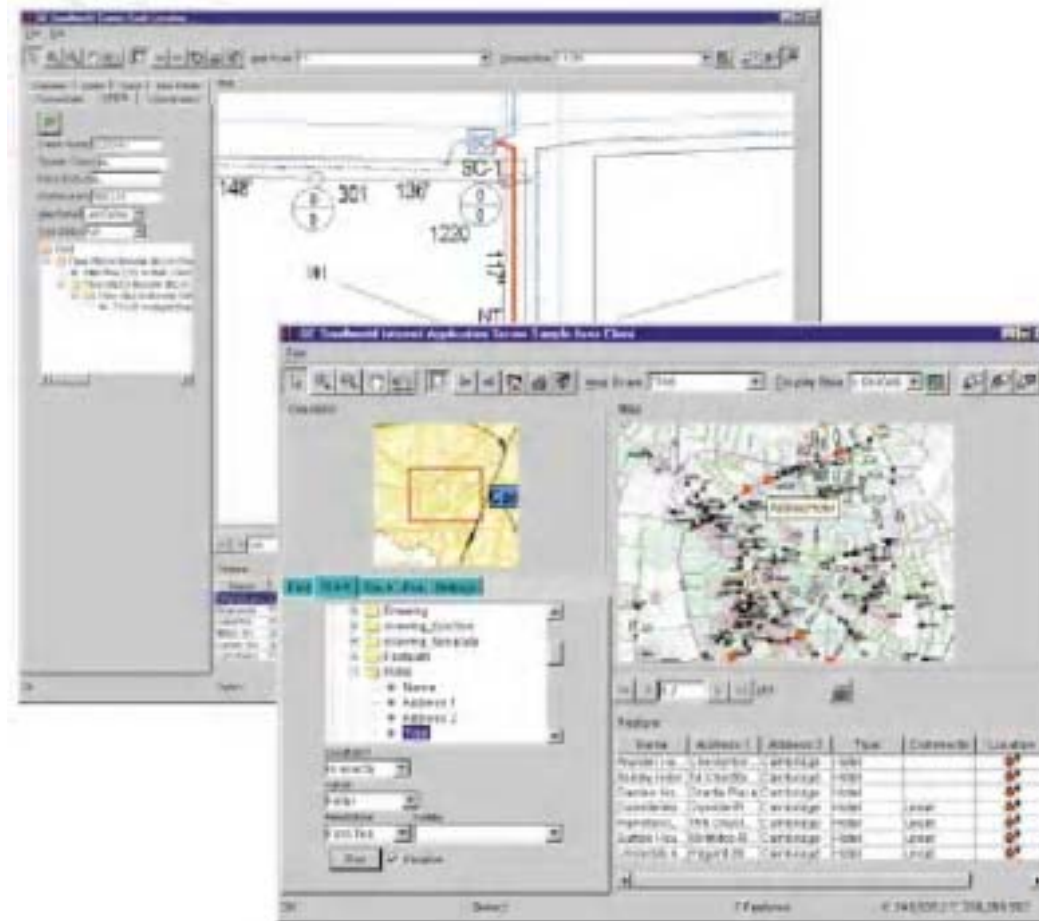
o

Database

## 4. GE Smallworld( )

. GIS S/W

➤ Internet Application Sever



## 5. ESRI - ArcIMS

. GIS S/W

### ❑ ESRI – ArcIMS



- o (Image Server)
- o feature streaming (Feature Server)
- o (Query Server)
- o Geocoding (GeoCode Server)
- o Shapefile (Extract Server)
- o - Web
- o Markup MapNotes
-



## 5. ESRI – ArcIMS( )

. GIS S/W

o

- VBScript    JavaScript
- 가 가

ArcIMS

o

가

- ArcIMS

-

가

- ColdFusion, Microsoft Transaction Server, Active Server Pages

## 5. ESRI – ArcIMS( )

. GIS S/W

### □ ESRI – ArcIMS

#### ➤ Source GIS Data Format :

- Vector Format: AutoDesk DXF,DWG, Microstation DGN, ESRI Shape File, SDTS, MIF, ESRI ArcInfo
- Raster Format:  
(GIF,BMP,PCX,JPG,TIFF/GeoTIFF,WMF,EMF
- FoxPro, MS Access, Excel, ODBC 가 Database

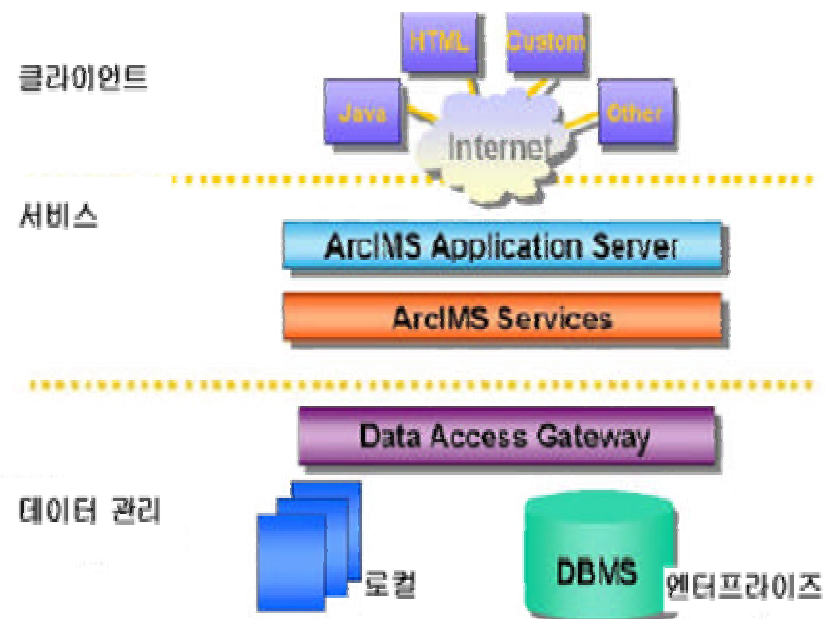
- : Vector Raster
- Client : ActiveX , Java Applet
- :
- :
- :

## 5. ESRI – ArcIMS( )

. GIS S/W

### ➤ ArcIMS

ArcIMS Three-Tier 아키텍처



### ➤ ArcIMS

- o ArcIMS Spatial Server
- o ArcIMS Application Server
- o ArcIMS Application Server Connectors
- o ArcIMS Manager

## 6. GEOMania

. GIS S/W



### – GEOMania/Web(iWeb)



- o GEOMania/Web internet  
Web GIS S/W  
Component

HTML

GEOMania/Web

가 가

가



o

- VBScript, JavaScript
- Component

- , 가 가

o

- GEOMania (GDF) 가
- ODBC Oracle, Sybase DBMS

가

o

- MS Explorer, Netscape Navigator 가
- MS NT(IIS) UNIX

## 6. GEOMania( )

## . GIS S/W

- o Component

—

## Component

O

—

가

O

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/

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가

## 6. GEOMania( )

. GIS S/W



### – GEOMania/iWeb

➤ **Source GIS Data Format :**

GEOMania

GDF

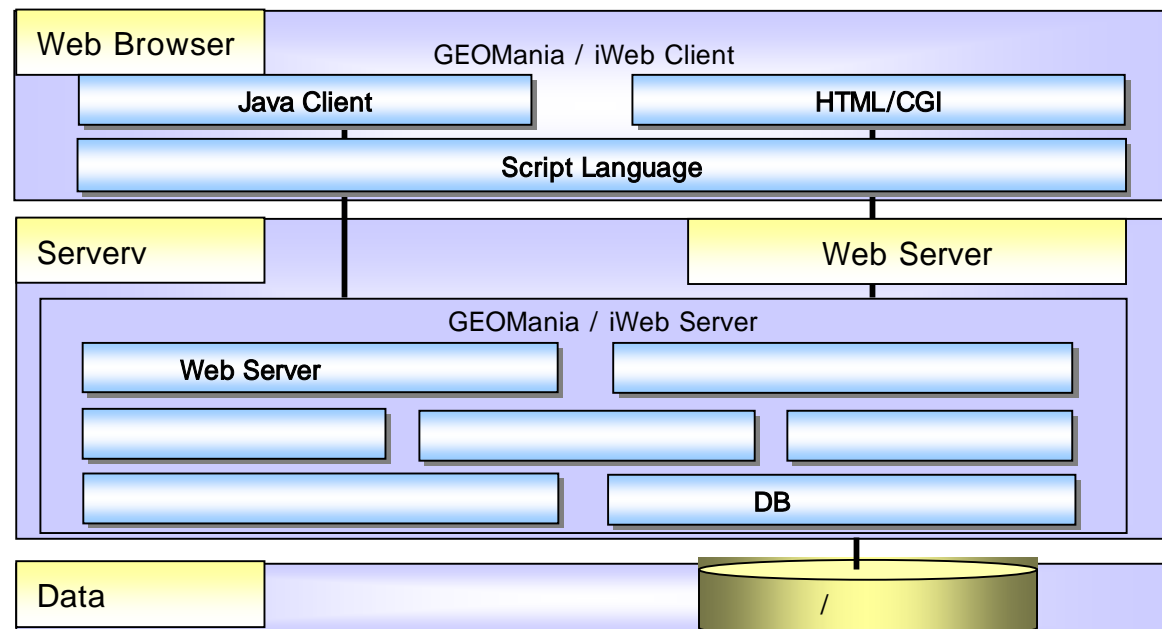
SDF

➤ : Raster

➤ **Client** : Java Applet

➤ : ( )

➤ : ( )



## 7. MapInfo

. GIS S/W

### □ MapInfo – MapXtreme java/NT



- o MapXtreme WindowNT  
java 가 .  
가 ,  
MapXtreme S/W 가 .



(MapXtreme NT Edition version 2.5)

- o - Oracle Informix Mapinfo SpatialWare
- o Microsoft Active Server Pages(ASP)  
가
- o 가
- o SpatialWare MapXtreme , , 가
- o HAHT , MapXtreme
- o Session Manager : mapping



## 7. MapInfo( )

. GIS S/W



(MapXtreme JAVA Edition version 3.1)

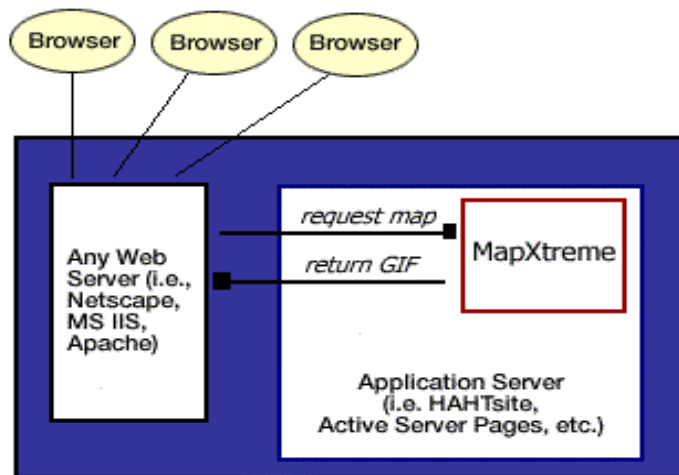
- o Scalability
- o (UNIX,NT) 가  
ISAPI,NSAPI,CGI
- o Thin web
- o Java Bean
- o Oracle8i TM Spatial
- o Plug-In 가

## 7. MapInfo( )

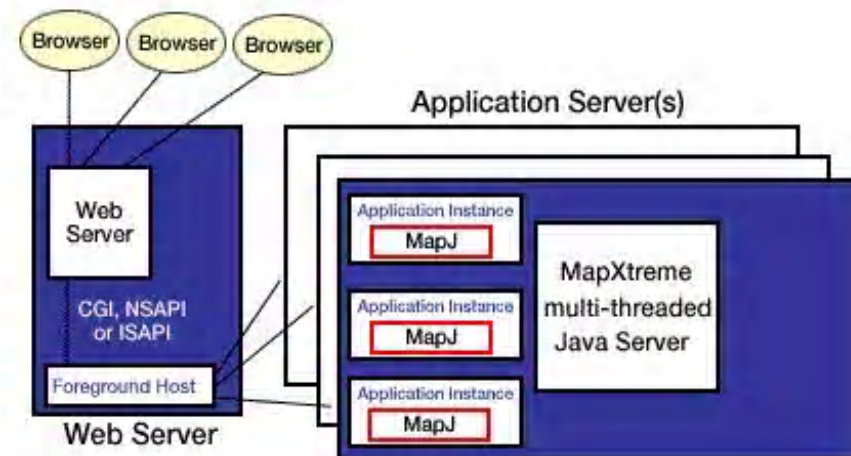
. GIS S/W

### ❑ MapInfo – MapXtreme

- **Source GIS Data Format** : ORDBMS   Spatial Blade   SC   .
- : Vector
- **Client** : ActiveX
- :
- :
- **Web GIS Architecture** :



NT Edition



Java Edition

8.

## SDS – Web & Mobile GIS

. GIS S/W



### SDS – Web & Mobile GIS(Vector Map/ActiveX)



- o SDS가 Web Mobile GIS  
가 가 Vector Map  
/ActiveX

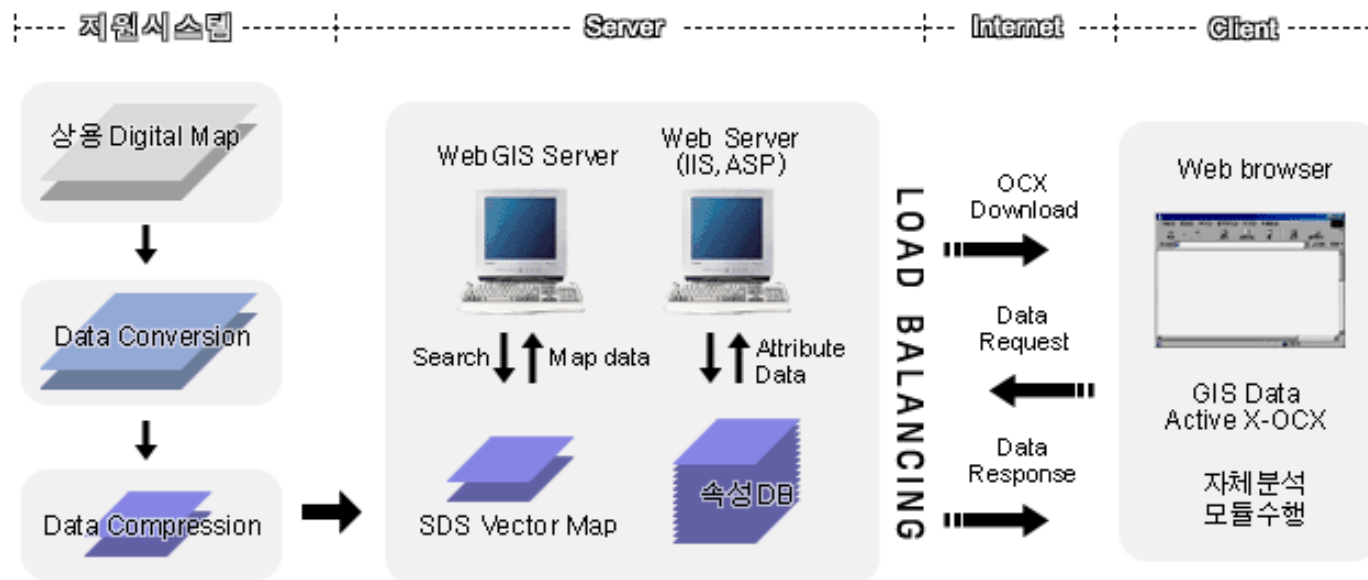


- o GIS 가
- o MS Windows NT OS IIS 4.0
- o ASP ActiveX Customizing
- o Data Conversion Data Compression
- o / / / / /
- o :
- o On/Off : Layer On/Off
- o :
- o
- o
- o
- o 3D

## 8. SDS – Web & Mobile GIS( ) . GIS S/W

### □ SDS – Web & Mobile GIS(Vector Map/ActiveX)

- **Source GIS Data Format :** (Shape file, DXF  
Pre-Conversion 가 )
- : Vector
- **Client :** ActiveX
- :
- :
- **Web GIS Architecture :**



. Intramap

# 1. Intramap

. Intramap

## ❑ KSIC – IntraMap3D



o IntraMap3D Intranet/Internet 3  
2 3 , 3 ,  
3 , 2  
3 (360 ) 3



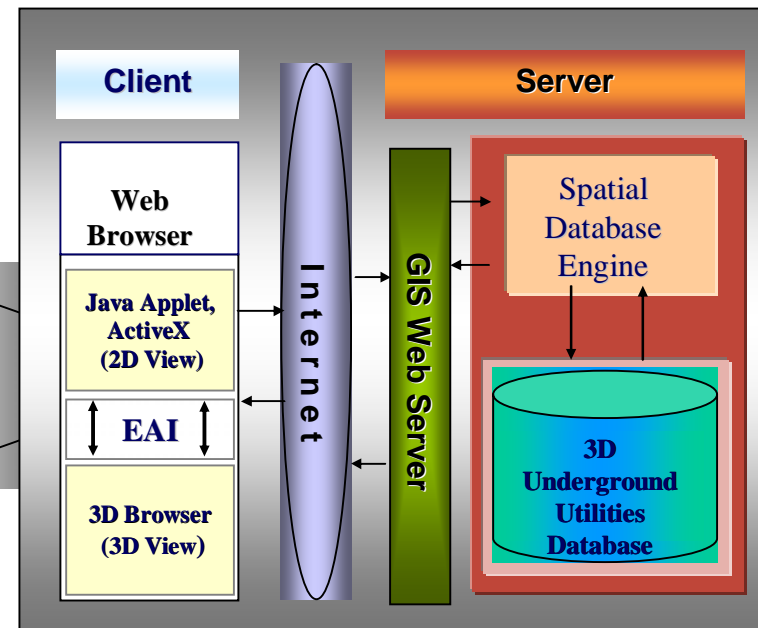
o 2/3 3 가  
o 2 가 , , ,  
o 2 3  
o 3 Navigation  
o  
o 가  
o TCP/IP

## 2. Inramap S/W

. Inramap

### ❑ KSIC – IntraMap3D

- **Source GIS Data Format** : MS Access, MS SQL Server, ESRI ArcInfo Coverage, ESRI Shape Files, Oracle SC, AutoDesk DXF, DWG, Microstation DGN, MapInfo MIF...
- : Vector (IM3, VRML, OBJ)
- **Client** : ActiveX , Java Applet
- :
- :
- **Web GIS Architecture** :





3. Intramap

3. Intramap

## ❑ IntraMap3D



O

2

7

## IntraMap3D

2

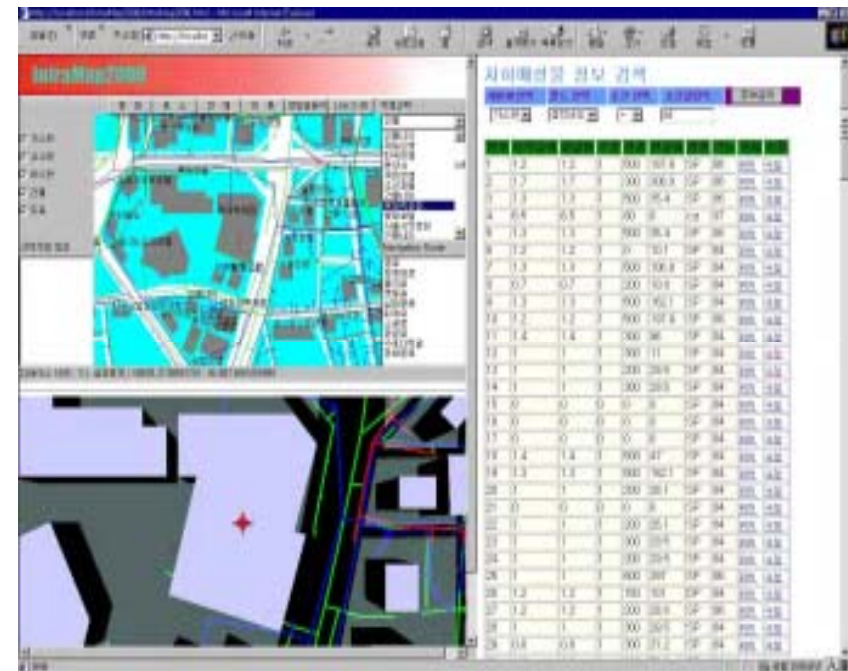
3

•

3

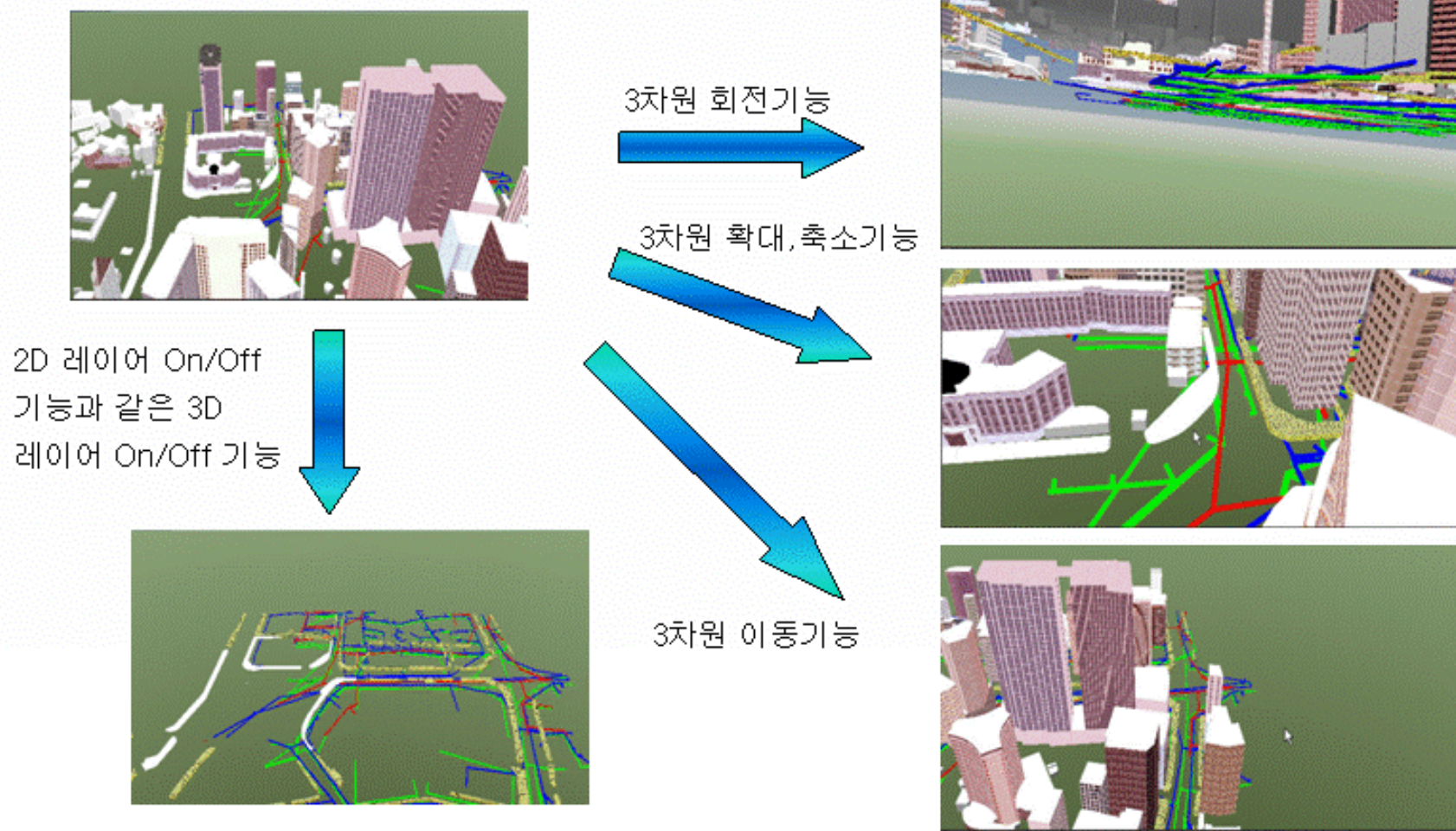
가

가



## 4. Intramap 활용 예시

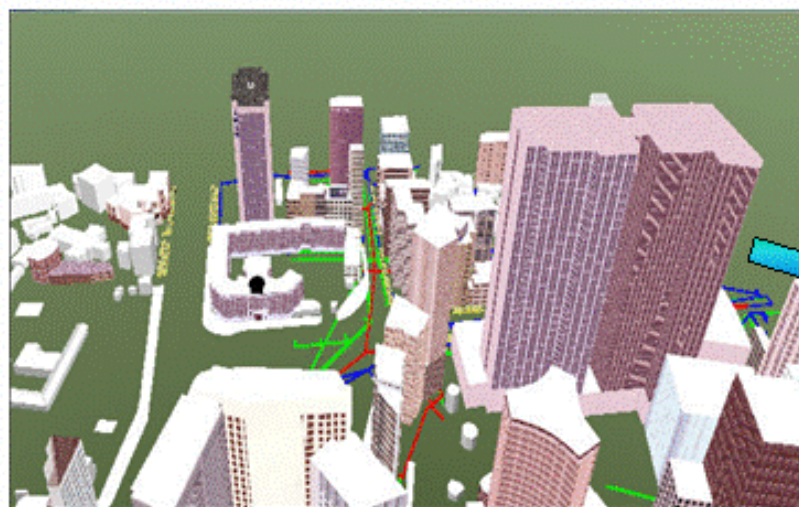
## IV. Intramap 소개



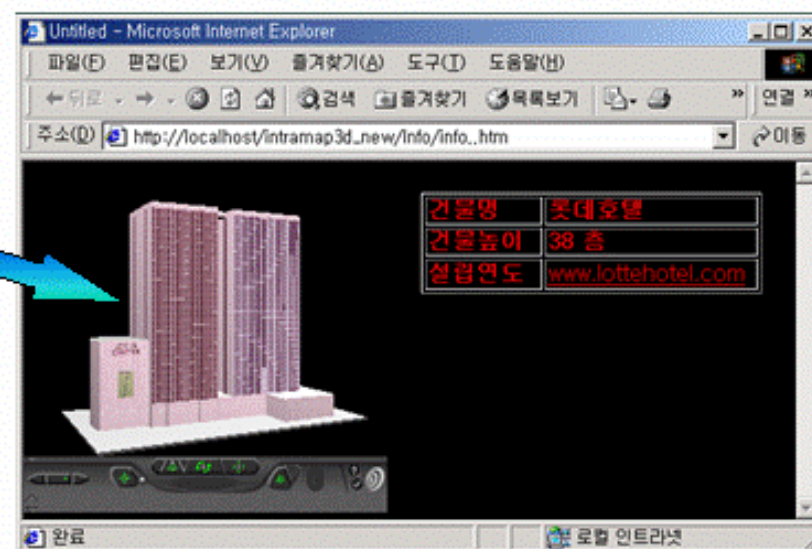


## 4. Intramap 활용 예시 (계속)

## IV. Intramap 소개



클릭



3차원상에서 시설물을 클릭 시 3차원 시설물 별 Display 및 정보조회기능

## 4. Intramap

( )

. Intramap

➤3

0

3

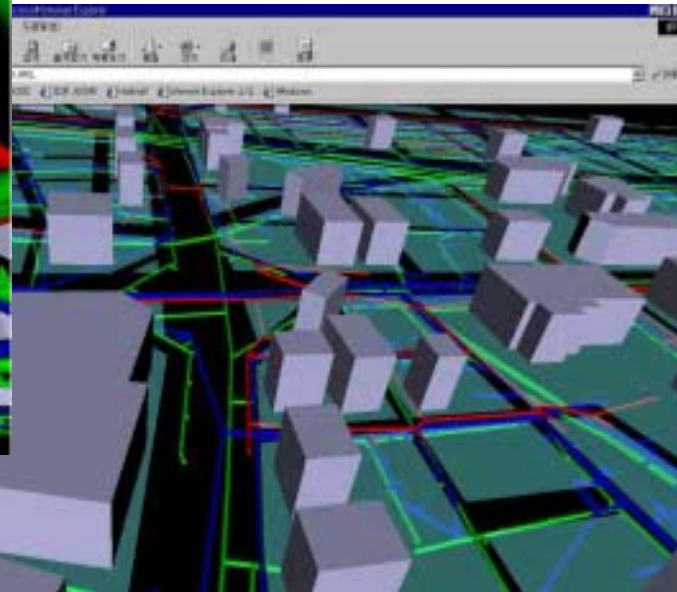
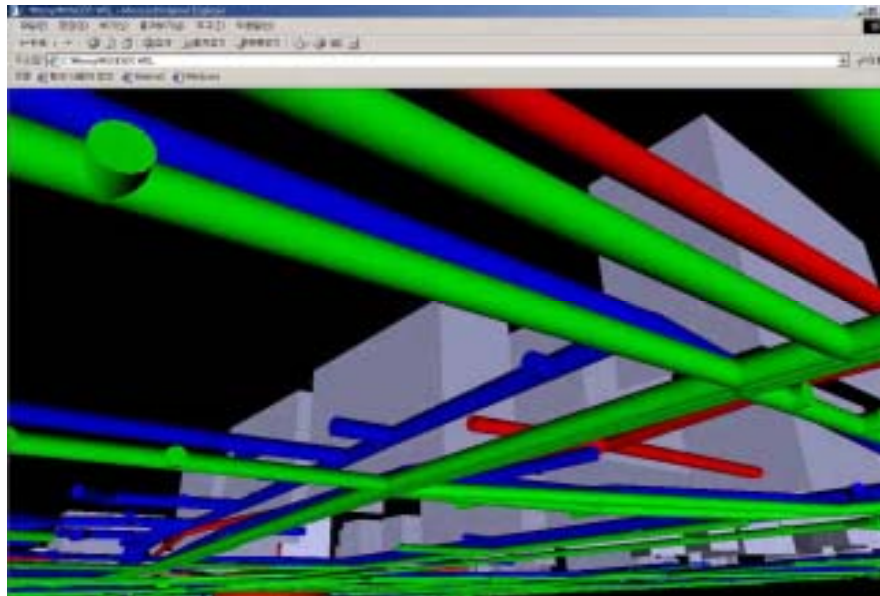
3

360

3

(View)

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## 4. Intramap

( )

. Intramap



0

2

3

, GIS



2,3D

## 4. Inramap

( )

. Inramap

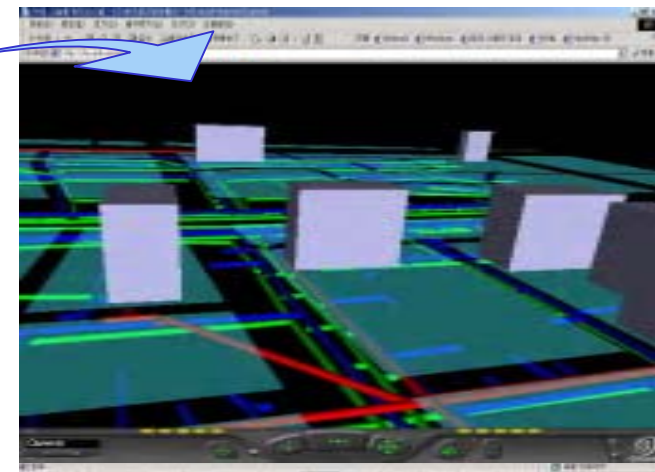
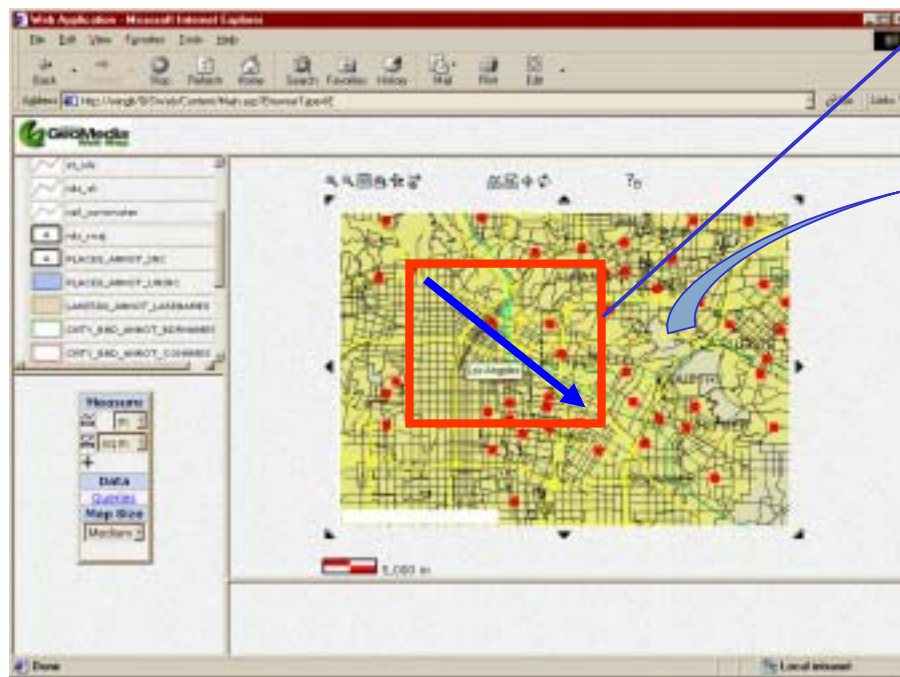
➤2D

3D

o 2

IntraMap3D

3



## 4. Intramap

( )

. Intramap

➤2D

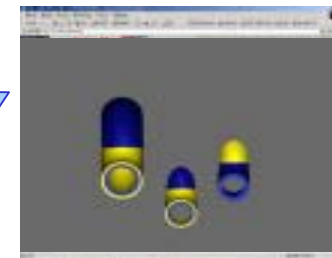
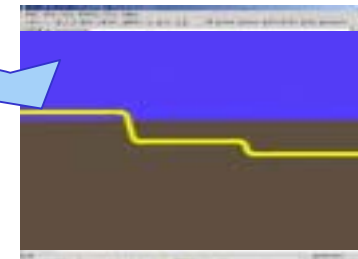
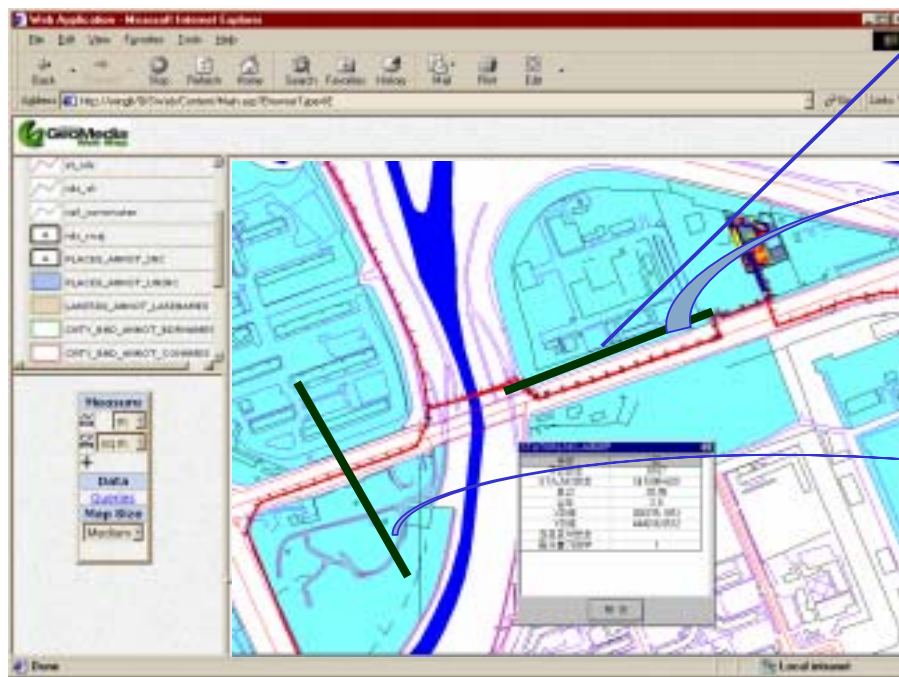
/

o 2

가

가

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## 4. Intramap

( )

. Intramap



o

90

가

,

가 3m

”

3 (view)

.





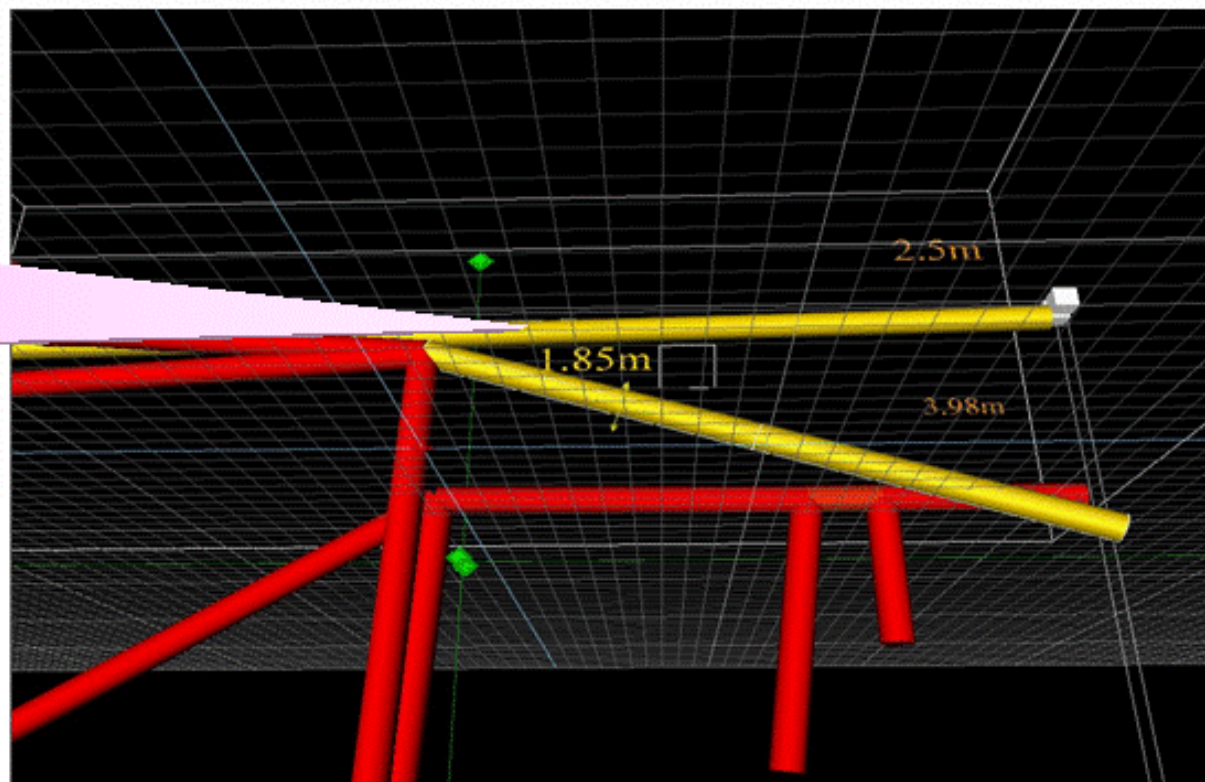
## 4. Intramap 활용 예시

## IV. Intramap 소개

### ➤ 공간연산기능

- o IntraMap3D가 3차원 시설물 관리 시스템으로서의 특별한 기능은 3차원 공간연산 기능을 지원하는 것에 있다. 특히 아래 그림과 같이 이격거리 연산을 수행함으로써 시설물간 이격거리 뿐만 아니라 지표면에서의 시설물까지의 거리를 계산할 수 있다.

실제 3차원  
공간상 배관  
사이의 거리를  
3차원 공간상에  
표현



## 4. Intramap

( )

. Intramap



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GIS 2

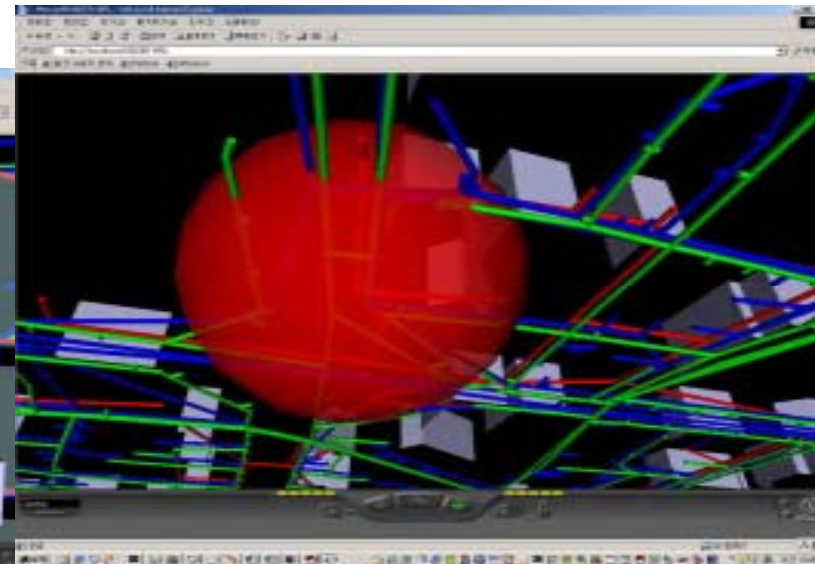
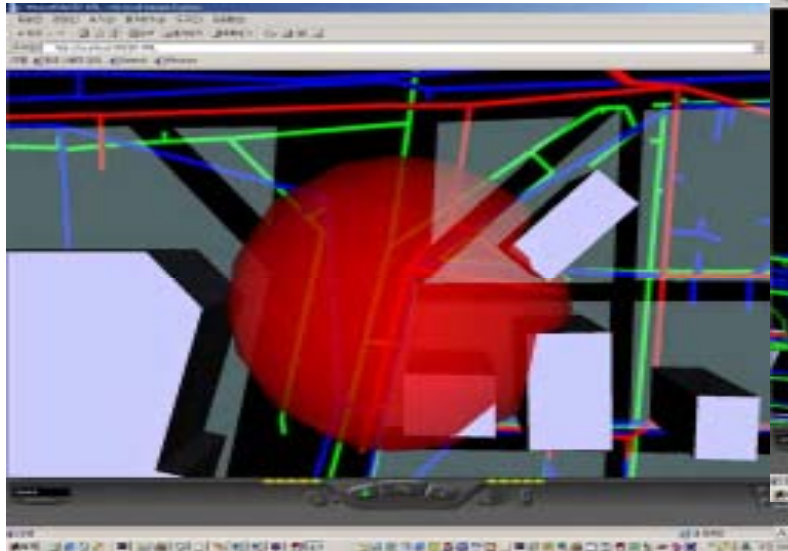
3

3

가

3

가





## 4. Intramap 활용 예시 (계속)

## IV. Intramap 소개

### ➤ 가상 시뮬레이션 기능

o IntraMap3D는 3차원 시뮬레이션 기능을 지원함으로써 실세계와 같은 3차원 공간데이터와 실제 동작을 표현함으로써, 각종 공사의 사전 시뮬레이션의 활용으로, 사전 설계의 경제적인 비용의 절감 효과 및 안전한 공사를 할 수 있는 기능이다. 아래 그림은 지하 시설물 굴착공사 시뮬레이션으로 굴착깊이에 따른 노출시설물 및 공사상황을 3차원 영상으로 볼 수 있다.

굴착공사로 인해  
노출되는 관을  
가상으로 확인하여  
공사에 대한 안전을  
고려할 수 있다.

