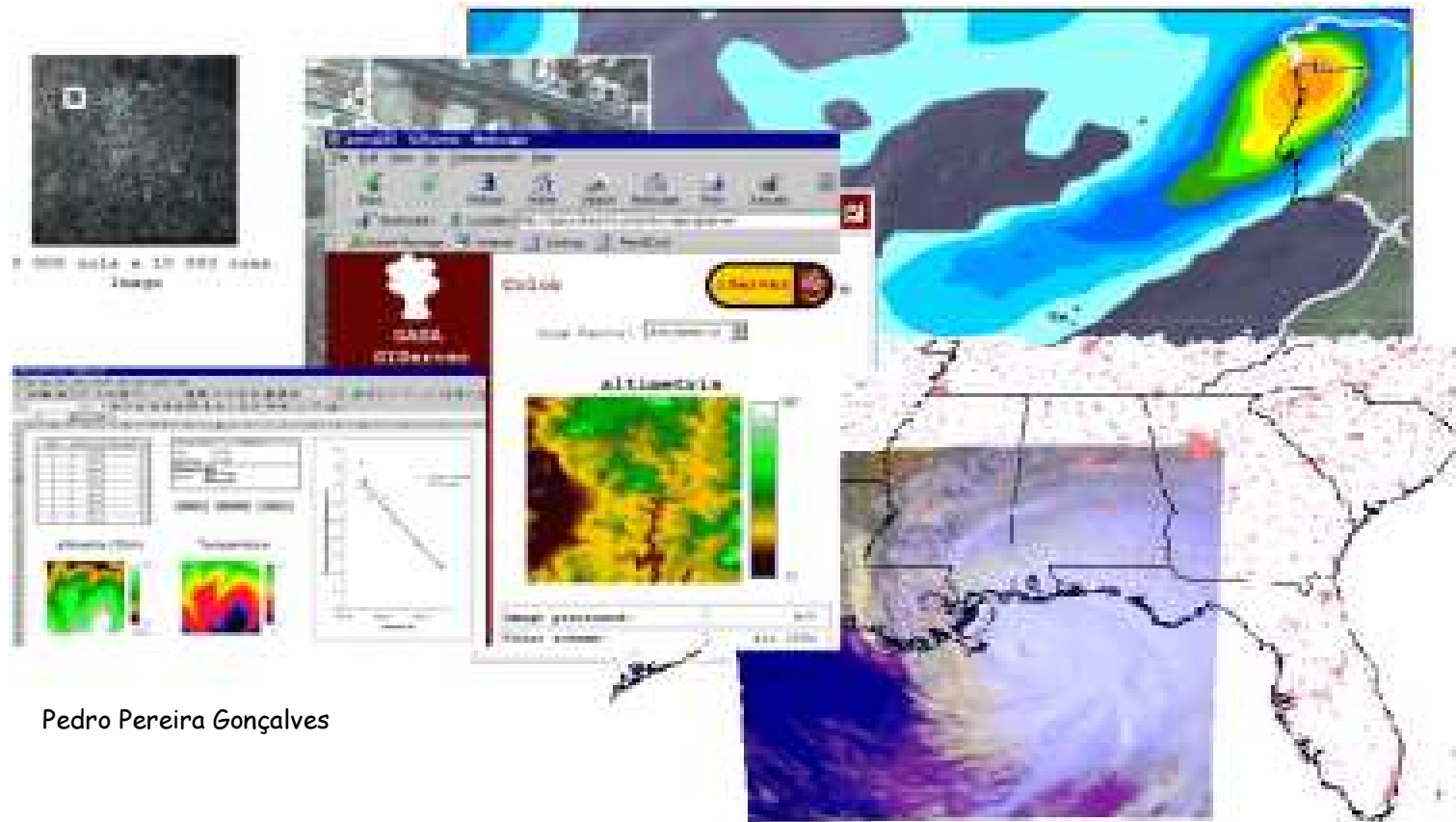


Summary

- GRID internal ESA promotion
- CEOS and GRID
- Compatible technologies
 - MASS
 - Large EO database and Interoperability
 - OpenGIS and Web Services

Creating GRID Services for Web Mapping



Pedro Pereira Gonçalves

OpenGIS Consortium

- International Consortium of 220 companies, governmental agencies and universities
- Consensus building for geographic information public access interfaces
- Interoperable solutions for geographic services in internet and mobile communications

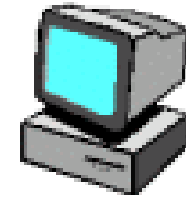
Web Map Service Specification

Web Map Services

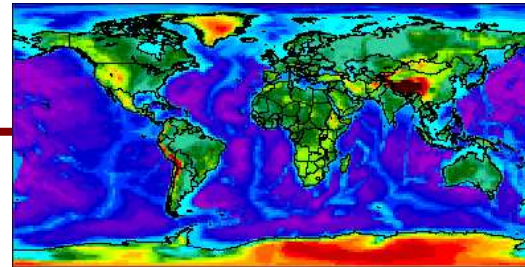


USER

URL



Webmap Service



Environmental Data

Location Based Services

Satellite Images

Catalogue Systems

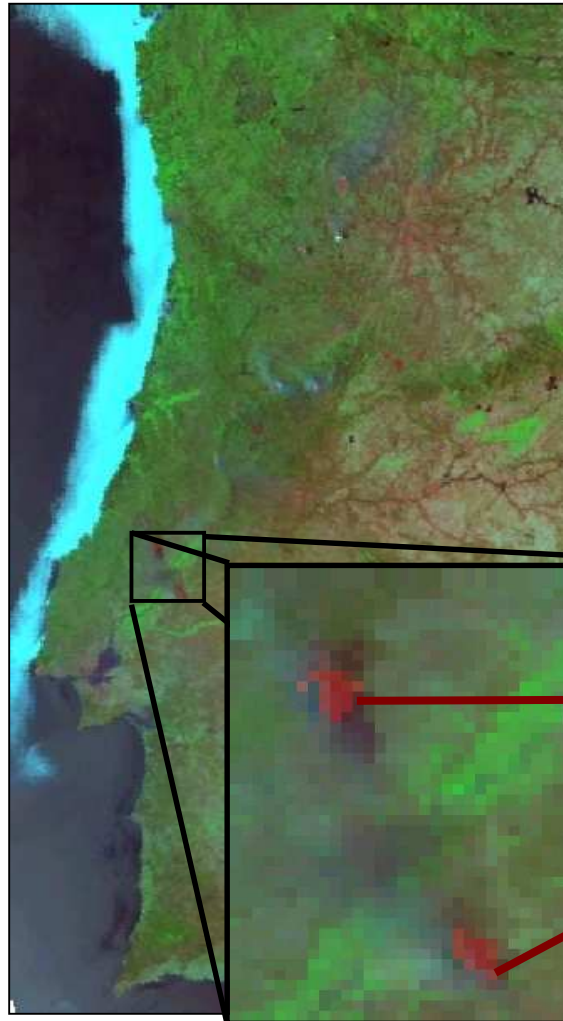
Geographical Data

The collage includes several web browser windows:

- GeoSAPO**: A map interface with search and navigation tools.
- msn**: Microsoft's search engine homepage.
- HomeAdvisor**: A real estate service website.
- terra server**: A satellite imagery search interface.
- ESA ODISSEO**: The European Space Agency's Earth Observation catalogue system. It features a search interface with a table of satellite data:

Id	Product	Mission	Sensor	Start Date
1	RAM	LandSat-5	TIS	2001-06-02
2	RAM	LandSat-5	TIS	2001-06-02
3	RAM	LandSat-5	TIS	2001-06-10
4	RAM	LandSat-5	TIS	2001-06-10
5	RAM	LandSat-5	TIS	2001-07-04
6	RAM	LandSat-5	TIS	2001-07-04
7	RAM	LandSat-5	TIS	2001-07-20

Web Map Services



```
http://inovagis.dcea.fct.unl.pt/giserver/map.exe?  
VERSION=1.1.0&REQUEST=GetMap&  
LAYERS=rgb(portugal.noaa.band1,portugal.noaa.band2,portugal.noaa.band3)&  
WIDTH=229&HEIGHT=450&  
BBOX=70000,-10000,375000,590000&  
SRS=SHGM&  
FORMAT=JPEG&  
TIME=2000-08-09&  
STYLES=max300,max300,max300
```

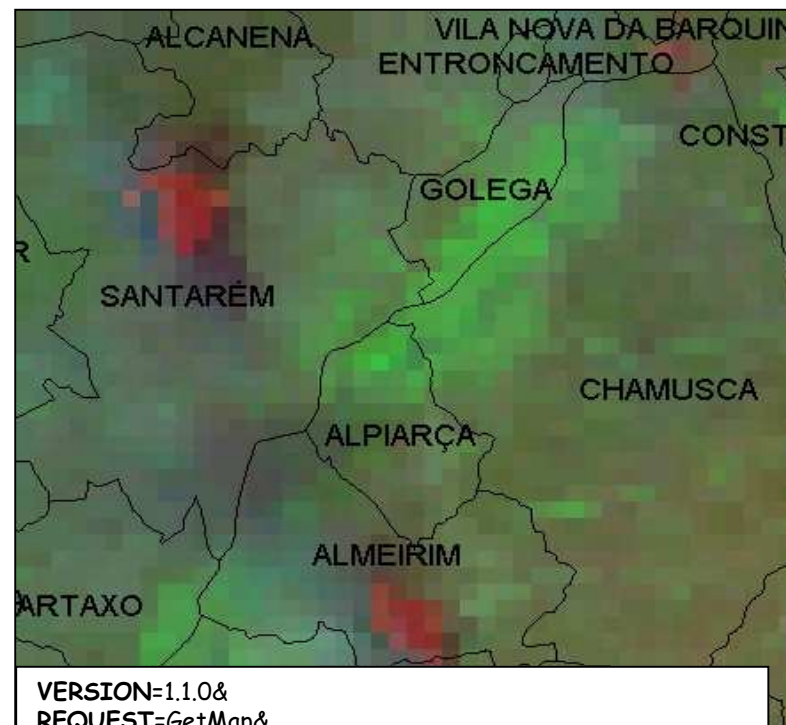
Fire Detection

Auxiliary Information



```

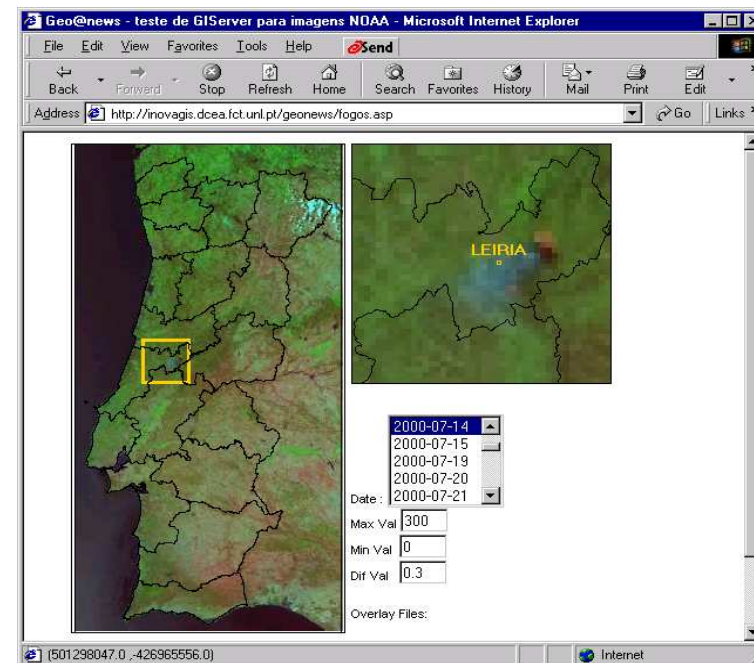
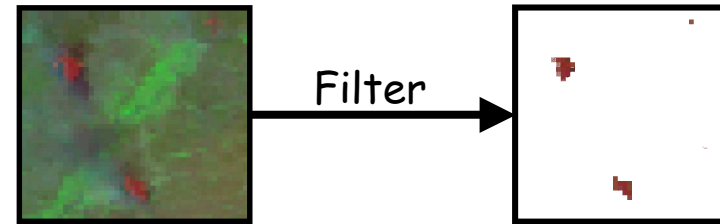
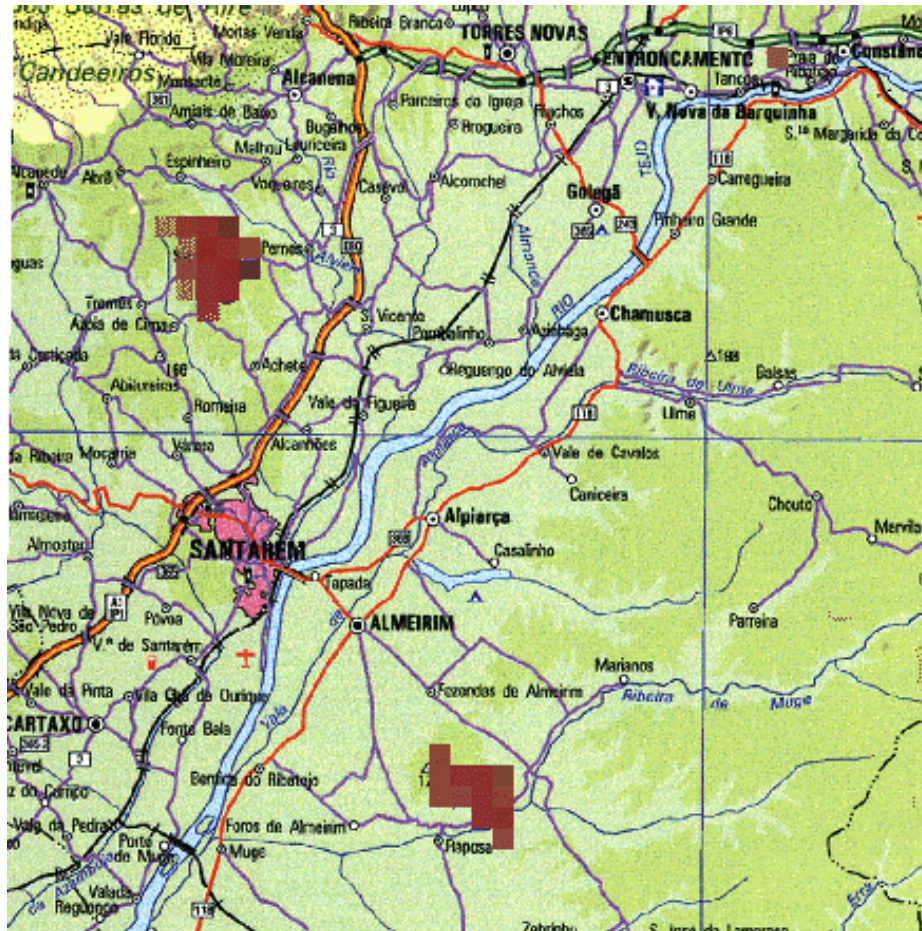
VERSION=1.1.0&
REQUEST=GetMap&
LAYERS=PORTUGAL.CONC &
WIDTH=440&HEIGHT=440&
BBOX=138800,232800,187200,281200&
SRS=SHGM&
FORMAT=GIF&
STYLES=text18+portugal.conc.text_concelhos
EXCEPTIONS=application/vnd.ogc.se_inimage
    
```



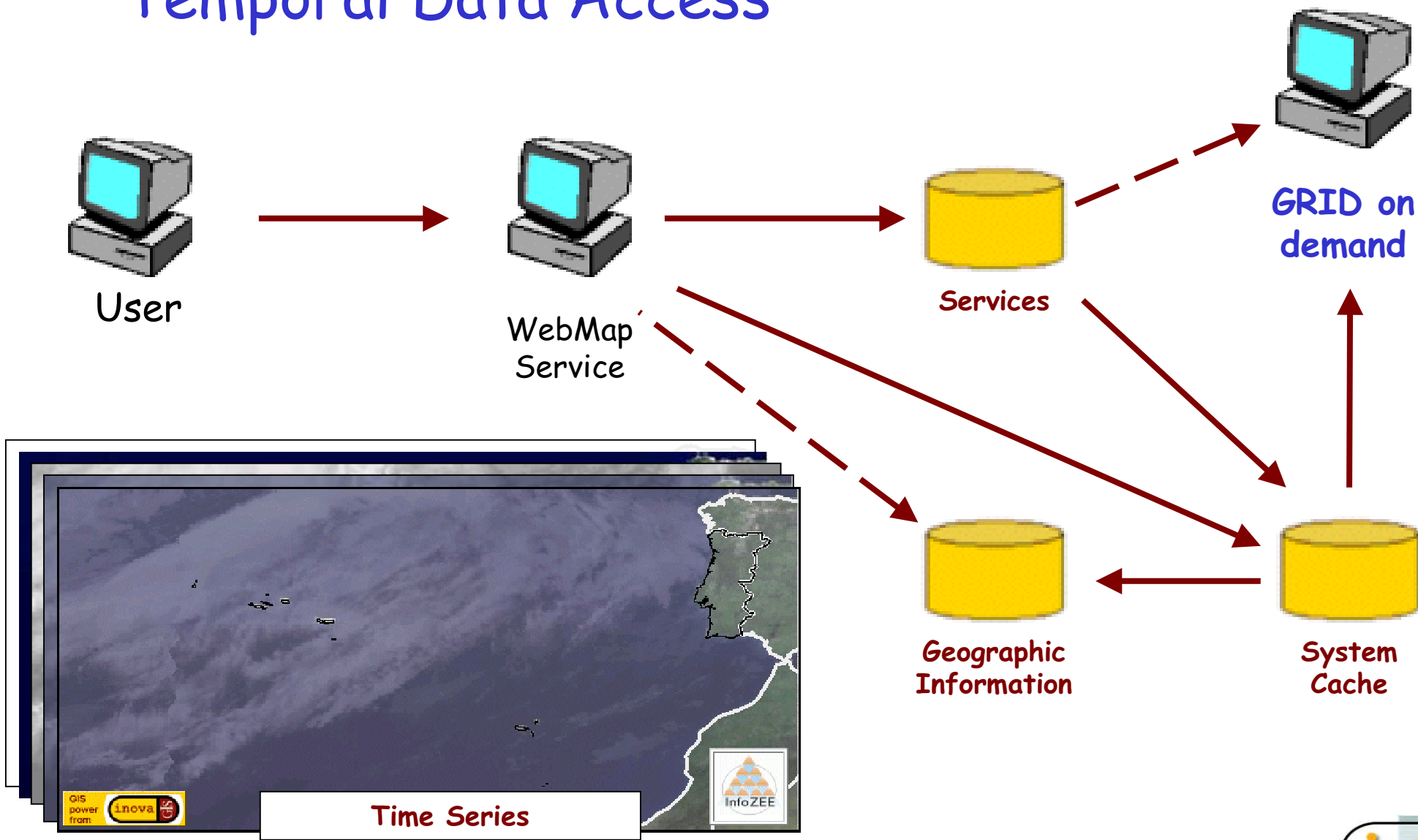
```

VERSION=1.1.0&
REQUEST=GetMap&
LAYERS=rgb(PORTUGAL.NOAA.BAND1,PORTUGAL.NOAA.BAND2,PORTUGAL.NOAA.BAND3),
PORTUGAL.CONC&
WIDTH=440&HEIGHT=440&
BBOX=138800,232800,187200,281200&
SRS=SHGM&
FORMAT=JPEG&
TIME=2000-08-09&
STYLES=max300,text18+portugal.conc.text_concelhos&
EXCEPTIONS=application/vnd.ogc.se_inimage
    
```

Image Processing Services



Temporal Data Access



GAF - IONIC Geographical Application Framework - Netscape

File Edit View Go Communicator Help

Location: <http://mapserv2.esrin.esa.it/map/wtf/>

esa Web map server European Space Agency

ABOUT IONIC ESRIN

Data from 1999-01-01 to 2000-12-07

Search by

- Country
- Date

X: 32.39
Y: 31.53
Scale: 2768961

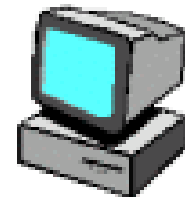
GML

Document: Done

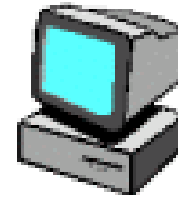
Potential for "GRID on demand" Services

- Catalogue Searching
- Automatic Image Mosaic
- Classification
- Environmental Data Processing

Web Access to GRID Services



User



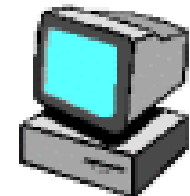
Server



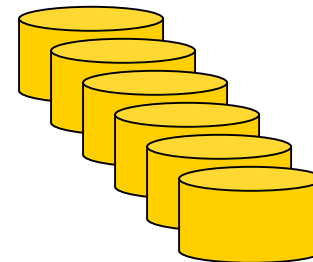
Certificate Authority



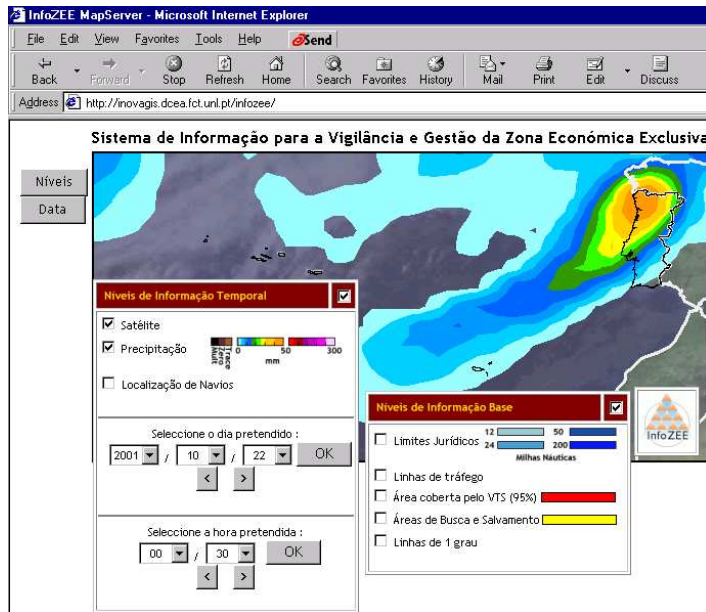
GRID Service Layer Broker

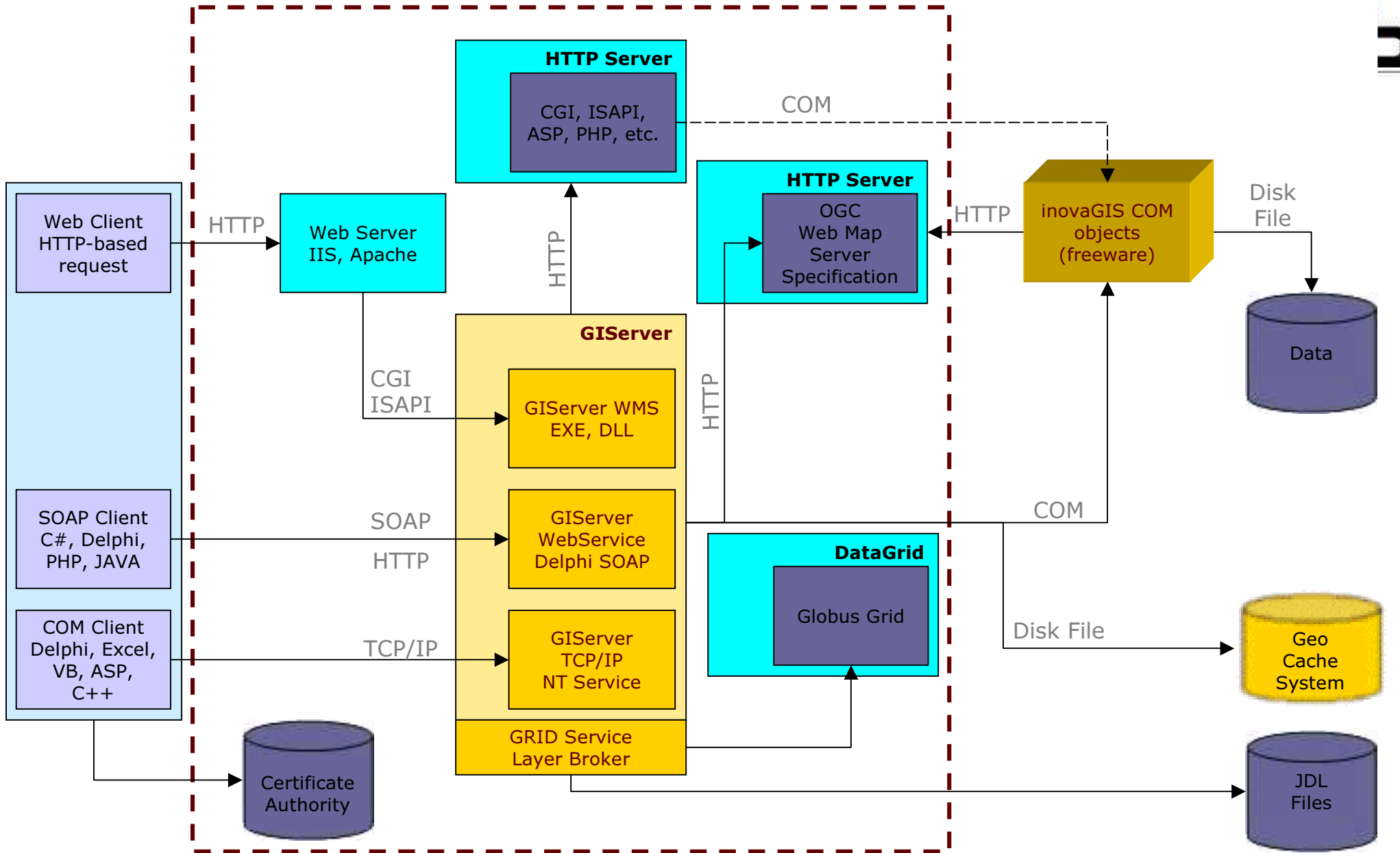


External GRID Server



Geographic Information





Presentation Tier

Business Logic Tier

Data Tier



Note: The arrows go from the caller to the recipient.



Internet Boundary
External Clients

External HTTP servers
3rd-Party Elements

Implemented by inovaGIS
Only in Win-OS

