

The main aims of the SEE-GEO project (Secure access to GEOspatial services) are:

- To arrive at recommendations to the JISC on how to progress with the provision of secure access to Geospatial Information. The focus will be on Grid technology, particularly the National Grid Service, and the work of the Open Geospatial Consortium (OGC).
- Development of client applications which will demonstrate secure access to heterogeneous data sources hosted by the national data centres via OGC web services integrated into standard Grid middleware.

This project is closely linked to the EDINA-led GESE (Grid Enabling EDINA Services) and the MIMAS GEMS (Grid Enabling MIMAS Services) projects. The next phase of SEE-GEO will concentrate on the security aspects of the project using primarily a combination of Shibboleth, Grid Security Infrastructure, and WS-Security technology.

SEE-GEO started in October 2006 and will run until May 2008.

1 GeoLinking Service (GLS) client

The GLS client has been created by the National Centre for e-Social Science (NCeSS) MoSeS (Modelling and Simulation for e-Social Science) node. A wide variety of scenarios exist where it is useful to be able to create custom maps showing the distribution of a wide variety of health related statistics, eg, long term ill, according to a variety of geographies, eg, census output areas.

2 Web Processing Service (WPS)

The WPS interface provides a generic mechanism to describe and web-enable a wide variety of geospatial processes. In this case, the process is linking geospatial features to attributes at run time. WPS became a full OGC interface specification in Summer 2007.

3 Web Processing Service Proxy

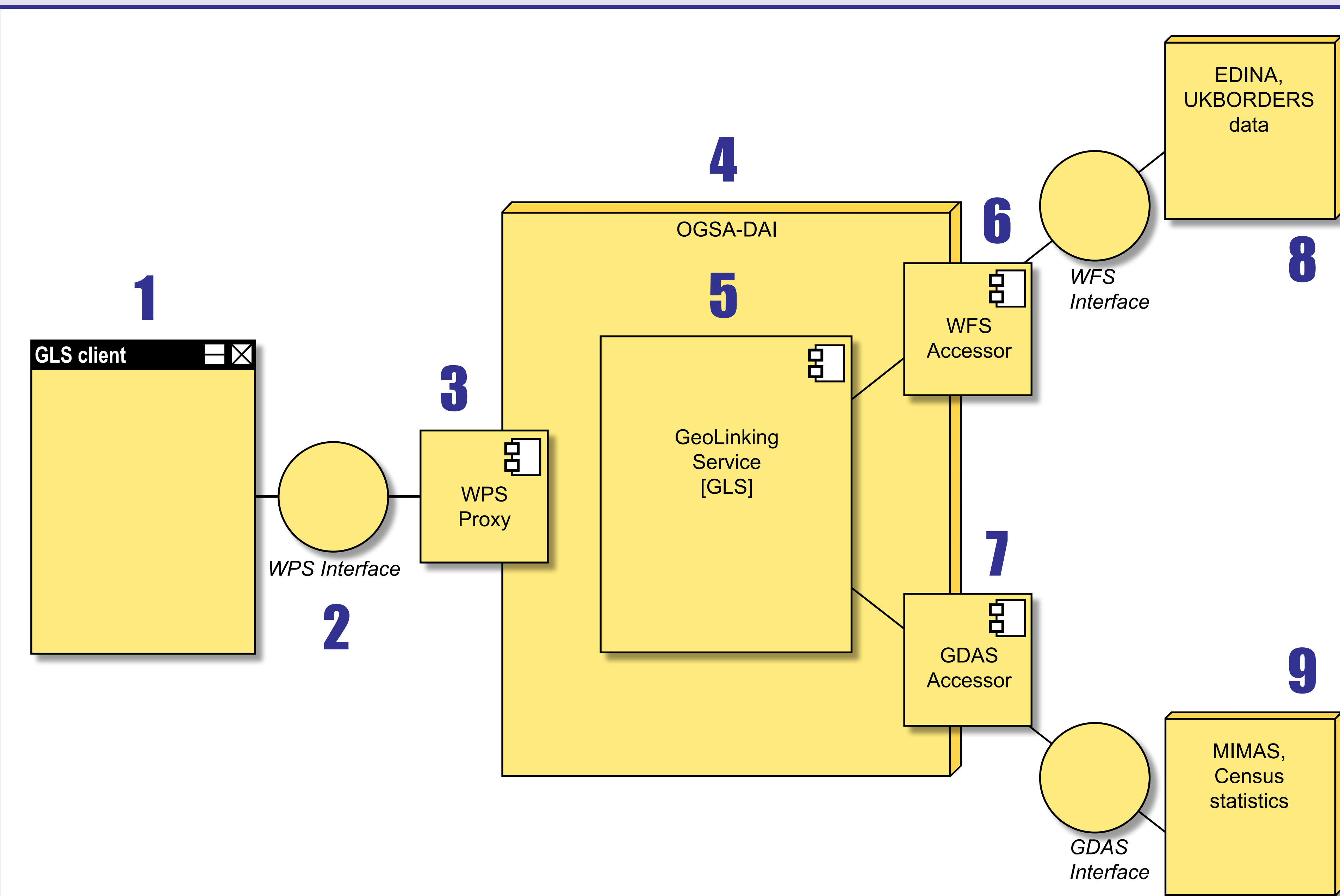
This component allows OGSA-DAI to be used as a generic toolkit for building OGC compliant Web Processing Services (WPS). The range of data sources and rich set of activities provides low level building blocks from which additional WPS may be built.

4 OGSA-DAI

OGSA-DAI is a middleware product which supports the exposure of data resources, such as relational or XML databases, on to grids. Various interfaces are provided and many popular database management systems are supported. The software also includes a collection of components for querying, transforming and delivering data in different ways, and a simple toolkit for developing client applications. OGSA-DAI is designed to be extensible, so users can provide their own additional functionality.

5 GeoLinking Service (GLS)

The GLS is an application profile of the Web Processing Service (WPS). It links geographically related attribute data from a Geospatially-linked Data Access Service (GDAS) with geometric features from separate geospatial datasets (in this case, supplied by a Web Feature Service). A common geographic identifier is the prerequisite for geolinking.



6 Web Feature Service (WFS)

The OGC WFS Specification allows the retrieval and update of geospatial data encoded in Geography Markup Language (GML). The specification defines interfaces for data access and manipulation operations on geographic features, using HTTP as the distributed computing platform. Via these interfaces, a Web user or service can combine, use and manage geodata from different sources.

7 Geospatially-linked Data Access Service (GDAS)

The GDAS is an integral part of geolinking and a candidate OGC specification. GDAS delivers geographically related data (not geometries) in a simple XML format that can be used in a variety of ways. In this case, the GDAS stream is being merged with a GML stream to create an amended GML stream incorporating the additional attribute information provided by the GDAS.

8 UKBORDERS

Part of the ESRC Census Programme, the EDINA UKBORDERS online service provides access to a wide variety of digitised UK boundary datasets. An OGC WFS interface has been made available to supply Census Output Area geometries for geolinking.

9 MIMAS Census Statistics

Part of the ESRC Census Programme, the Census Disseminate Unit at MIMAS provides access to a variety of census data including UK Census Aggregate Statistics. A GDAS interface has been made available to provide a variety of census statistics for geolinking.

The OGC GeoLinking Interoperability Experiment

The SEE-GEO project is participating (Summer 2007) in an OGC Geolinking Interoperability Experiment (IE). The purpose of IEs is to enable OGC members to work together to develop and harden candidate specifications with the intention of furthering their progress in the standardisation process. The purpose of the geolinking experiment is to advance standards which separate access to fundamental geospatial datasets from access to the wide range of attributes that may be attached to them. In this case, SEE-GEO has created a demonstrator using data from the UK Census Programme - fundamental geographies from EDINA, eg, Census Output Areas, and census statistics from MIMAS.

Open Geospatial Consortium, Inc (OGC)

The OGC is an international industry consortium of 350 companies, government agencies and universities participating in a consensus process to develop publicly available interface specifications. [OpenGIS® Specifications](#) support [interoperable](#) solutions that "geo-enable" the Web, wireless and location-based services, and mainstream IT. The specifications empower technology developers to make complex spatial information and services accessible and useful with all kinds of applications.