

Geolus Search

Innovation through re-use

Features

- Similarity search based on 3D part shapes – results ranked by similarity
- Analysis is 100 percent automatic – no manual classification necessary; language neutral
- Interactive response times – web-based clients; modern, service-oriented deployment
- Visual feedback – interactive thumbnail graphics
- Works with neutral file formats – including JT, VRML and STL

Key operating characteristics:

- Online operation: average response time per query – < 2 seconds
- Batch operation: average insert/ update time per part – 15 seconds
- Average disk occupancy per part: about 15 KB

Awards:

- 2004: Innovator of the Year Award (CAD-CAM Magazine)
- 2005: Innovation Prize (GI: German Informatics Society)

Summary

Geolus® Search software is a geometry-based search engine for both single- and multi-CAD environment PLM stakeholders who need to reduce/control part costs throughout the product lifecycle, manage engineering design knowledge and increase manufacturing efficiencies. Geolus Search provides automated part search results based on geometric similarity. The ability to re-use parts and information saves in design time, cost estimating, procurement, manufacturing and inventory. Geolus Search capabilities go far beyond prototyping and parts classification systems. Geolus Search has the unique ability to build a searchable parts database across multi-CAD environments using JT™ data format.

The geometric search engine for design parts

Geolus Search is a high-performance search engine for 3D data that locates similar parts in large, heterogeneous data resources within fractions of a second. This is made possible by an innovative technology (patent pending) that analyzes the 3D geometry of the parts and automatically extracts characteristic features. Geolus Search works with all widely used PLM and CAD systems, can be quickly adapted to suit users' individual requirements, is very easy to use and can be accessed from any commonly available web browser. You no longer have to be a designer to search for design parts; anyone can do it.

Geolus Search functions

- *Result preview with interactive views of parts* – Preview graphics in jpeg format; no special client software necessary. All search results displayed uniformly with main, side and top views
- *Data exchange via XML* – Efficient, transparent interface for transferring highly compressed shape data, including customer-specific parts attributes
- *Processing of JT, VRML and STL files* – Multi-CAD capability through support for the commonly used exchange formats for visualization and DMU
- *Configurable search profiles for different applications* – The search configuration for Geolus can be tailored to meet the search requirements of different user groups via custom services engagement
- *Ease of customization to suit customer-specific attributes* – Extensible data model; attributes and available filters easily adapted to suit users' requirements

PLM COMPONENTS

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Geolus Search

Prevent duplicate parts

Geolus can notify developers when they seem to be running the risk of designing parts that are similar or identical to existing parts. They don't need to do anything other than what they normally do. The system can be configured to automatically notify users in this situation.

Consider manufacturers and suppliers in a joint development project. Often they exchange virtual design parts whose administration information may have changed, but whose geometric design data remains the same. Geolus Search considerably reduces the administrative effort required to distinguish between current and outdated data.

Intuitive navigation and ease of use

The search engine is easy to use and therefore provides rapid access to parts – even for those without a designer's specialist knowledge. The search results are displayed in an interactive 3D preview, which allows users to view the parts found from the top or side as well. Specific attributes and search criteria are critical to the effective deployment of the geometric search engine in a company.

Locating parts across company boundaries with geometric navigation

Geometric navigation allows companies to search their suppliers' networked data resources for parts such as axles, shafts or brackets. The suppliers, who need only install the lightweight module Geolus Search Extractor, make the required parts information available via an XML interface.

Their customer can thus search both its own data resources as well as those of its suppliers in a single operation. Suppliers thus benefit by giving their customers direct access to what they have to offer, while designers spend less time searching for parts and avoid duplicating parts that already exist.

Geolus technical data

Supported file formats

- JT
- VRML 2.0 (common subset)
- STL

Batch operation (data provision)

Hardware (entry configuration):

- 1 GHz single processor
- 2 GB RAM
- 3D graphics adapter with support for Java3D 1.2.1 or higher

Hardware (high-end configuration):

- 3 GHz dual processor
- 4 GB RAM
- High-end 3D graphics adapter with support for Java3D 1.2.1 or higher

Online application (query processing)

Hardware (entry configuration):

- 1 GHz single processor
- 2 GB RAM
- 32-bit architecture

Hardware (high-end configuration):

- 3 GHz dual processor
- 16 GB RAM
- 64-bit architecture

Database server (RDBMS)

DBMSs supported:

- DB2 V8.1
- MySQL 4.1 or higher
- Oracle 8.1 or higher
- Other JDBC 2.0-capable databases on request

Web client

Internet browsers supported:

- Internet Explorer 5.5 or higher
- Firefox 0.9 or higher
- Netscape 6.0 or higher
- Other browsers and versions on request

CAD client

- 1 GHz single processor
- 1 GB RAM

Contact

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