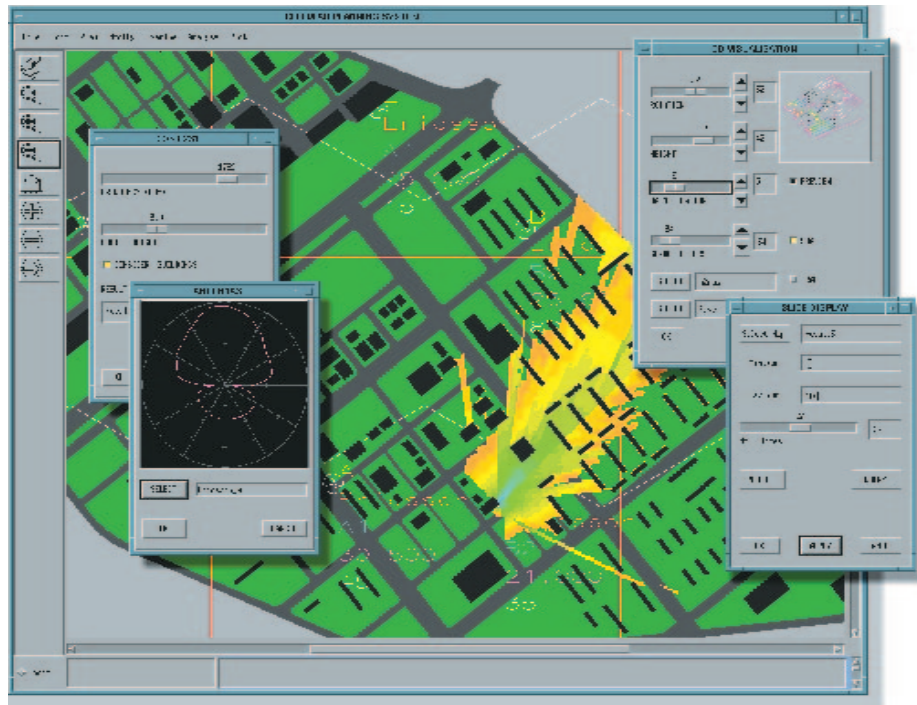


GenaMap

Integrated vector / raster GIS

Full function, Open Systems GIS for the uncompromising user

GenaMap is a comprehensive Geographic Information System, combining advanced, client / server architecture with easy access to a wide set of functionality. It combines the power of vector / raster analysis and display in a single, consistent and integrated environment. Genasys believe that the GIS does not own the system or application and that the geographics are often only part of the overall solution. GenaMap is therefore the GIS choice for users who don't wish to compromise on functionality or performance or shut themselves out of future growth.



The Challenge

As the quantity of information describing our physical environment increases, so does the need to manage this spatial information and use it to improve decision-making and the effectiveness of other IT systems. Spatial information poses unique challenges for systems: Large volumes of varied data must be stored accurately and precisely; accessed and analysed quickly, and presented graphically to screen and to print. Vector information (Legal and administrative boundaries, pipes, cables, etc.) must combine consistently with raster information (Land cover, satellite and aerial sources, terrain models, etc.) and the two must remain accurate and coordinated in projection across large areas.

The Solution

GenaMap provides the user with powerful options for spatial management: Data Entry from digitizer, on-screen digitizing and many digital sources; Data Structuring to produce a truly continuous, fully-topological (spatially structured) database; Data Selection using Spatial Views created by a wide range of search and query facilities; Fully parametric Display and Query of the selected information with connection to multiple attribute sources; Dynamic background image management; Cartographic composition and hardcopy output to monochrome and color devices.

The Environment

To encapsulate all this functionality and present it in an easy-to-use form, GenaMap includes an advanced development environment. Graphical User Interfaces can be created using point-and-click methods and connected to scripts based on an industry-standard language. The interfaces present a focused, relevant view of the spatial information, optimizing the level of detail, accessibility and even terminology to best suit the application user's context - consistently, from X workstation to Windows PC.

PRODUCT
Series

GenaMap GIS functions at a glance...

Data entry

GenaMap supports entry of vector data from table digitisers; on-screen or "heads up" digitising from scanned images and from digital formats via a wide range of reformatters. Raster data can be imported from scanned, aerial, GPS and satellite imagery and from a large number of exchange formats. GenaMap is also integrated with GenaRave, Genasys' line-following vectorizer, allowing direct importation of the results of the automated vectorizing process. Vector data can be used to create raster data and vice versa for maximum flexibility.

Data structuring

GenaMap provides full control over the process of correct topological structuring and verification, producing data ready for spatial query and analysis. Cleaning functions are available to snap spatial data and edgematch adjacent data sets. Continuous topology is maintained over tiled source data sets and extensive support is provided for projections, ellipsoids and datums with on-the-fly reprojection. Data is stored at 32 bit precision, allowing a full survey accuracy database to be maintained. Storage is independent of projection, units or scale, all of which can be defined at time of analysis or display.

Vector analysis

Query and Analysis operations on vector data include select, overlay, buffering, proximity, reclassification, thicken, dissolve, point in polygon, dynamic segmentation and trace. Spatial Views simplify complex vector analysis and the scripting language allows analyses to be automated as user-defined commands. All vector analysis operations can be combined with attribute-based analyses for increased flexibility.

Raster analysis

GenaMap's raster query and analysis functions are completely integrated with the vector functions. For example, a query can access both vector and raster data in the same operation. Raster analysis operations include interpolation (minimum curvature, kriging, grid, quintic spline), rasterize vector data, resample, reclassify, categorize, clump, cut, extract, renumber, slice, size, count, nines filter, edge-detect, maths, cross, intersect, proximity, zone, aspect, hillshade, slope, scan, smoothing and visibility analysis.

Network analysis

GenaMap supports an extensive set of networking functions including shortest path, district and zone allocation, travelling salesman and network trace. The origin-destination and gravity or accessibility modelling functions can be used to analyze demographic areas and to determine the best sites for placement of service centers. All networking functions are integrated with attributes for management of travel time, one-way streets, the status of valves in pipe networks, etc.

Genius

Genius is an interface tool which makes building and running graphical applications as easy as pointing and clicking. Genius fully supports the OSF/Motif 1.2 widget set and contains a rich set of commands for run-time management of the interface. Genius can also be used as a prototyping tool, allowing an application interface to be constructed in minutes. Genius allows the experienced user to encapsulate GenaMap functions into a simple interface that is quick to learn and easy to use.

Spatial views

Created as the result of query and analysis operations, spatial views are "virtual data sets", analogous to views in a relational database. They can be used anywhere a real data set is used but do not duplicate data or create storage overhead. Spatial views can be treated as dynamic objects, with operations being applied to the view in a single operation. The views can be combined using Boolean and Set operations. By using Spatial Views, complex, multi-step analyses consume no extra intermediate storage and calculations proceed faster.

External attributes

While GenaMap supports attributes internally, the majority of spatially-related information resides in external systems. GenaMap's Client / Server database servers provide an efficient, flexible connection to multiple databases simultaneously from anywhere on the network. Servers exist for all main vendors (ORACLE, Informix, Ingres, Sybase etc.) and further servers are continually being produced. Database attributes connect to the relevant spatial features and can be used in query, analysis and presentation of data.

All of this geo-processing functionality is readily accessible from a variety of sources including Command Line, OSF/Motif or Windows Graphical User Interface, Request Broker architecture or via a C Language Spatial Application Program Interface (API). GenaMap is the ideal product for adding "Spatial Insight" into existing and planned information systems. Because it is open, extensible and rich in functionality, GenaMap can be used to provide graphical, geographical and geo-processing services to a wide range of applications.

Systems integrators and users throughout the world are using GenaMap every day to produce superior applications and systems. The greater your need to understand the physical environment in which you are working, the better suited GenaMap is to meeting that need.

GenaMap from Genasys

For more information on Genasys and its products and services, go our web site at:

www.genasys.com