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A World of Innovation: Readers Share their Geospatial Applications

Aug 1, 2004
Geospatial Solutions

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Creating Custom GIS Search Tools

In the City of Hamilton, Ontario, Canada, hundreds of GIS datasets are processed every day for land-use, community services, and engineering purposes by many different departments, including public works, traffic, health, and planning. Most processing involves creating attribute queries for locating features. But, because the city has extensive GIS datasets and creating queries is a clunky procedure involving several steps, it takes considerable time to locate each feature, and it is very easy to make mistakes.

To improve efficiency and accuracy when locating data, the city's GIS Service Section developed a user-friendly GIS search tool. The custom tool allows users to search by address, street, points of interest, ward, neighborhood, and tax-roll number. We deployed the search tool internally through the city intranet by adding a toolbar and menu items to a commercial GIS software program. Users wishing to add the search functionality to their copy of the software simply run an install program that registers the commands with the program. The newly installed menu items are located under the menu of Custom Tools/Navigation.

We encountered some challenges while developing the tools. The biggest issue was the speed at which the application connects to the database. To solve the problem, we optimized algorithms applied in the code. Another challenge was finding the appropriate deployment solution because city staff are scattered across different locations. Our solution in this case was compiling the installer with several batch files to automate the online, networkwide deployment.

With the search tool now deployed, city staff can, for example, find addresses by typing the first few letters of a street name or community to receive a menu of options for selecting the appropriate community and entire street name, including suffix (street, road, and so forth). The address search tool also allows users to specify directions, a range of street numbers, and an optional zoom range. They can also search street centerline features by name and intersection.

In all, the custom search tool provides general GIS users at the city with an express route to a wealth of information. Simply by clicking a standard menu bar inside the GIS desktop application, the user can choose from six searches. With the use of these custom tools, it is no longer necessary to have clunky background queries saved inside each and every individual workspace. The user has access to all of the custom commands regardless of which files they

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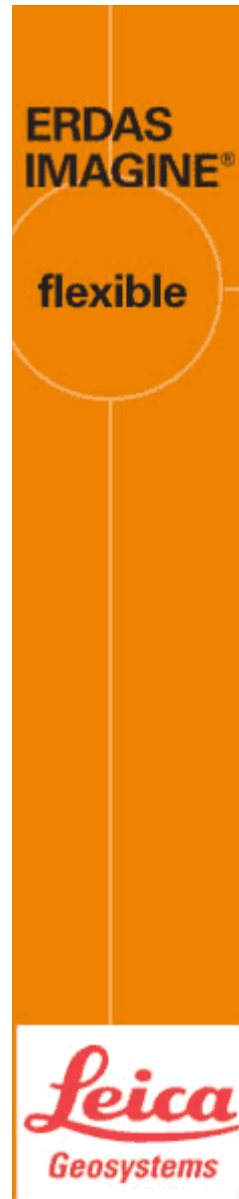
are working in, provided that they keep the standard default warehouse connections. Through the use of these tools, the user has an interactive gateway to live datasets and the ability to find the exact information he or she needs in a very user-friendly and timely manner. The search solutions have already greatly improved the efficiency and accuracy of the GIS work in the City of Hamilton, and the savings will continue to grow as each custom search tool saves more valuable minutes of staff time and helps them avoid any accidental mistakes.



Jin Y. Xie, City of Hamilton, GIS Services Section

The GIS Services Section created the custom search tools for Intergraph Mapping and Geospatial Solutions' (imgs.intergraph.com) GeoMedia 5.1 and GeoMedia Professional 5.1 using Microsoft (www.microsoft.com) Visual Basic and SQL (structured query language) to access data from a central Oracle (www.oracle.com) database configured with Oracle Spatial 8i. They also used Microsoft's Visual InterDev Version 6.0 and IIS Version 5.0 to automat online, networkwide deployment..

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