

Providing Enterprise Access to Roadway Information



PROFILE:

Name – South Carolina Department of Transportation (SCDOT)

Web site – www.dot.state.sc.us

In contrast with the national average of a mere 20 percent of public roads being under state control, 65 percent of all public roads – including construction and maintenance – in South Carolina are under the control of the South Carolina Department of Transportation.

Size – Headquartered in Columbia, South Carolina, SCDOT services more than 41,000 miles of state-controlled roads and related assets, including highways and bridges statewide.

KEY BENEFITS:

- Comprehensive data is now available across the enterprise
- Multiple locales can update locational information in their respective applications
- SCDOT staff can focus on maintenance of the roadway inventory, rather than technologies behind their data system

PRODUCTS USED:

- Oracle® relational database application
- Sybase® PowerBuilder™
- Microsoft® BizTalk® Server

MAINFRAME DATABASE WAS ACCESSIBLE TO FEW EMPLOYEES

The South Carolina Department of Transportation (SCDOT) is responsible for controlling 65 percent of the total roadway miles in South Carolina. Information about the 41,000 miles of state-controlled road inventory has historically been maintained in a mainframe-based application, with limited user access across the SCDOT enterprise. Data access was limited to employees with an in-depth knowledge of both the mainframe application and the structure of the data itself. Reports were mostly written and maintained by programmers or by users with extensive knowledge of the mainframe reporting languages. In order to make the data more easily accessible to more employees, SCDOT sought an upgraded roadway inventory application. SCDOT needed an application that simplified management of the inventory and associated roadway assets, and that would allow users to generate their own queries and reports.

THE PROJECT OBJECTIVES:

- Implement system that would make data readily available to SCDOT employees statewide
- Simplify inventory management and associated roadway assets
- Allow employees to generate queries and reports

Based on our long history in providing effective transportation solutions to state government, Intergraph Solutions Group (ISG) was selected by SCDOT to migrate the roadway inventory from the mainframe to an Oracle®-based Roadway Information Management System (RIMS). The RIMS graphical user interfaces, developed with Sybase® PowerBuilder™, were designed after many planning and requirement gathering sessions with SCDOT. These intensive requirement and design sessions are part of the strict, proven project development methodology utilized by ISG to design and implement enterprise applications; in this case, a system that met the needs of all SCDOT employees. In addition, ISG utilized a phased approach to delivering RIMS to SCDOT that allowed the modules developed early in the project to be deployed and made available to many users across the department.

The ISG team designed RIMS with a tabular interface that allows users to query specific database tables. An embedded list of standard queries makes common data easily accessible

with a few quick mouse clicks. Users are also able to build their own query against any table available in the RIMS database. This combination of query tools ensures that many different users can access the roadway inventory data they need to support their respective day-to-day business.

RIMS interfaces with both SCDOT pavement and traffic data. While the SCDOT Pavement Management System is very useful to engineers for reporting, planning, and forecasting, it is not designed for the day-to-day user needing high-level pavement information. Using RIMS, however, users are allowed access to these additional data sources, and are able to view pavement and traffic data as it relates to a specific segment of roadway. Pavement data available through RIMS includes roughness, distress, and quality index data. In addition, RIMS includes a built-in viewer that allows users to view SCDOT's entire database of Photolog images. The Photolog images are linked to appropriate points on a route and allow instantaneous display of not only the image itself, but also additional database attributes associated with the segment on the roadway the image represents. This allows users to "ride" a section of roadway, and to a degree, assess its associated asset information from the desktop.

Upon completion of the RIMS project, SCDOT anticipates there will be between 800-1000 employees using the RIMS application every day. RIMS will include a Web-based map interface that allows users to access data from point-and click queries generated from the map. Both the map and tabular data associated with RIMS will be deployed to the SCDOT enterprise via a Microsoft® BizTalk® Server implementation. The roadway inventory data serves as the locational basis for data in other SCDOT applications, and RIMS allows users of these applications to build the queries needed to update locational information in their respective applications. Most importantly, by delivering the ability to query and report on data to users throughout SCDOT, roadway inventory staff can focus on maintenance of the inventory itself. Enhanced Federal Reporting RIMS serves as the basis for the HPMS federal report that is submitted annually by SCDOT to the Federal Highway Administration

(FHWA). An enhanced HPMS, including a field data collection application, is currently being developed for RIMS.

For more information, visit www.intergraph.com.

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and operating better plants and ships, and protecting critical infrastructure and millions of people around the world.



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