

Case Study: City of Houston - Work Order and Service Request Monitoring System

Based on eSpatial's iSMART®, the City of Houston's Public Works and Engineering Department has deployed a Work Order and Service Request Monitoring Application. This application extends a legacy system that registers problems derived from customer complaints or inspections, resources used to solve those problems (materials and labor), and tracks the budget dedicated to water and wastewater issues and maintenance. iSMART extends this system by providing a Web based, enterprise solution integrated with reporting and monitoring tools. The system analyzes historic data and represents this data in a graphical and easy to use manner that permits the users to view the work status over maps of the City of Houston and the amount of Work Orders / citizen requests accumulated in specific areas.

Introduction:

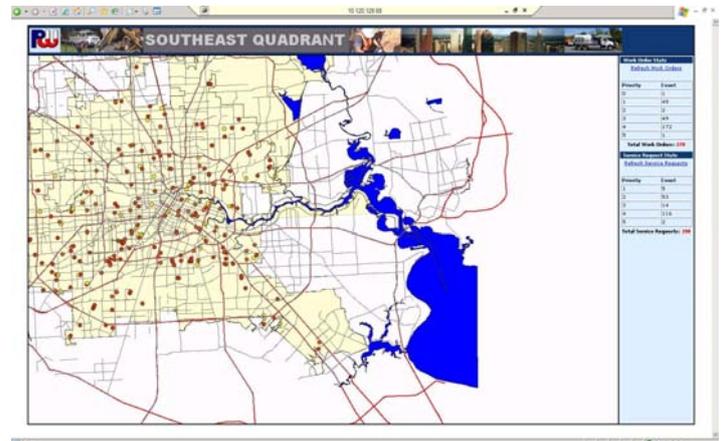
The City of Houston selected iSMART and Oracle Spatial as the basis for a Work Order and Service Monitoring Application. As the data was stored in Oracle, the City leveraged the routing and logistics capabilities of Oracle Spatial and eSpatial's iSMART for the development of a role based, enterprise application.

eSpatial's Solution:

The system reads the X,Y coordinates from the Oracle tables where the Work Orders and the Citizen Requests are registered by the main system. These coordinates are processed by Oracle Spatial functions and updated to Oracle Spatial Layers. These layers are then displayed in maps built with iSMART tools and JSP tags that automatically refresh the map features at specific intervals and display the updated version on plasma screens at the Dispatch Center. The Public Works and Engineering Department's Dispatch Center is using six 57" plasma screens dedicated to display each quadrant of the City and to have an overview for the dispatchers of problematic areas at any given time during the day.

"We chose eSpatial's iSMART as the basis for our Work Order and Service Request Monitoring System because of the native Oracle support and the ability to build an application embedded within our current infrastructure."

Brenda Kirkling, Manager of the Dispatch Center



City of Houston – South East Quadrant

Core Requirements

Core requirements for the City Of Houston were:

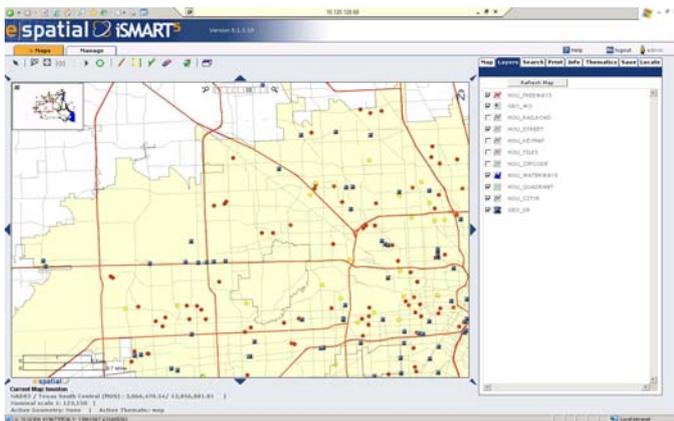
- Compatibility with existing infrastructure
- Ability to embed spatial functionality as part of the core engineering applications and not as an external "bolt on" module.
- Leverage their current Oracle functionality,
- Utilize the existing ESRI based data
- Allow internal developers to create interactive and self updating maps
- Incorporate non map data including citizen requests

The resulting system was an intuitive application developed over a few months which shows City quadrant displaying the current active or work in progress work orders and open Citizen Requests.

Technology Summary

- iSMART 5.1
 - GeoPortal (for map development and viewing)
 - iSMART Server (for application deployment)
 - iSMART tag library (for development)
- HP Proliant with Intel Xeon processor, 4 Gb RAM,
- Microsoft Windows 2003 Server
- Oracle 10G Database
- Oracle Application Server OC4J bundled with iSMART
- The iSMART server connects to an enterprise Oracle database cluster running Oracle 10G RAC that stores the relational and Spatial data

The system can also be accessed with a browser from any point within the City network enabling easy access for managers who want to monitor the current operation.



Why eSpatial?

When the IT department researched different tools to accomplish this task, they looked at various options for a solution. Some of these technologies were incompatible with the data used and some of them were unable to automatically track changes to geo-referenced points.

The City of Houston's choice was eSpatial's iSMART GeoPortal and Web development tools. GeoPortal is used to develop and style the maps and a custom iSMART application was built for the display screens using the iSMART JSP tag library and development tools.

About eSpatial

eSpatial, founded in Dublin, Ireland and with offices in the USA, is a world leader in enterprise strength spatial information management technology. Its advanced spatial environment, iSMART, provides a platform for highly scalable and secure spatially enabled applications in a standard enterprise IT environment with unprecedented ease of use, manageability and support for OGC Web Services. Its standards based Rapid Application Development environment and GeoPortal allows organizations to quickly and easily build new applications (or extend existing ones) to include spatial functionality. These applications provide spatial intelligence to anyone, anywhere, on any device, connected or disconnected. eSpatial's technology is used in every area of IT including Public Sector, Defense, Telecommunications and Utility organizations.

About City Of Houston:

The City of Houston Public Works and Engineering Department provides many of the basic services that affect the daily lives of everyone who lives and works in Houston. Primarily, the department is responsible for all the things we take for granted on a daily basis: the administration, planning, maintenance, construction management and technical engineering of the City's infrastructure. This includes the production and distribution of over 145 billion gallons of water per year and the treatment of over 90 billion gallons per year of wastewater. That is enough to fill the Astrodome four times per day with fresh water and over twice per day with wastewater. It also includes the maintenance of the City's over 16,000 lane miles of streets, over 100,000 manhole covers, over 900,000 street name and traffic control signs, over 17,000 freeway and under bridge light fixtures, over 48,000 fire hydrants and traffic signals at over 2,000 intersections.



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