

Information system for growing transport networks

The Dubai transport authority utilises enterprise GIS system for agency-wide access to geographical data and centralised visualisation, data management and access platform



One of the world's fastest growing cities, Dubai, has witnessed tremendous growth in infrastructure, construction projects and road networks.

The Roads and Transport Authority (RTA) is responsible for planning and executing all transportation projects in the city, preparing legislation and strategic plans, planning and constructing the Dubai Metro, developing other integrated solutions of road systems and marine networks that are safe and in line with the city's economic development plans.

G-tech for informed decisions

In order to proactively manage the transportation system in Dubai, the RTA required a very strong focus on geospatial information management. There is a great deal of data which is generated, acquired and managed by various agencies, departments and sections within the RTA. This information comes in many formats and is acquired from consultants, other governmental agencies and various other data providers. To properly support the RTA's goals and objectives, this data must be complete, easily accessible, accurate and up-to-date.

In the past, the RTA tried and implemented vendor-neutral geospatial technology to create an interoperable platform to manage and maintain its geospatial data. However, due to difficulties faced during spatial data administration and maintenance, the RTA went into an in-depth evaluation of the different GIS systems and technologies available, and by end of 2011 decided to go for a complete enterprise GIS platform revamp implementation project based on Esri ArcGIS Server, Geocortex Essentials and FME technology. The project was awarded to GISTEC, the local Esri distributor.

EGPR project highlights

- The revamped enterprise GIS provides improved access, allows better management of geospatial data and facilitates GIS integration with other RTA systems.
- Utilises RTA's Enterprise Service Bus to publish GIS Web services for consumption by RTA's agency applications.

- Provides efficient problem solving.

The project was supported and executed under the leadership of the GIS Section, which is part of the Information Technology Department at RTA. There was a well-defined sense of direction regarding software platforms, data administration and project coordination. The RTA very clearly articulated the need for a central enterprise GIS system-based on services-oriented architecture to extend the benefits of GIS technology and assets to more business processes and non-GIS professionals in a variety of business units.

GIS Web services framework

The GIS services exposed by ArcGIS Server and FME were integrated and published on the RTA's Platform Agnostic Enterprise Service Bus (TIBCO) for consumption by various agency applications within the RTA. This integrated solution offered platform-neutral support for heterogeneous IT and SOA environments, ensuring the RTA was not tied to any single product or vendor.

GIS portal

Another key success criterion for the project was the migration of the existing Web portal to new revamped sites that enabled all key RTA businesses such as the rail agency, marine department, public transport, traffic department, strategy and corporate governance and corporate technical services support sector to visualise and manage their respective GIS assets.

The revamped portal provides advanced Web mapping capabilities and allows exposing out-of-the-box, feature-rich, user-centric Web mapping applications. The revamped GIS portal was built to achieve the following objectives:

- Allow agency-wide access to GIS data based on authorised content, whereby each agency can visualise data that they own against common vector and image basemaps.
- Allow each agency to perform Web-based editing for easy management of the GIS layers that they own.
- Deliver services such as driving directions,

data download, search, query, overlay, measure, charting, customised reporting etc. for all internal RTA agency users.

- Provide an interface for running the complex geo-processing services hosted by RTA GIS administrators.

Update by CAD clients

CAD drawings are widely used in RTA during all roads construction cycle. The power of FME was utilised to give the RTA business users a Web interface whereby they could download GIS data into a CAD format. This feature has allowed the RTA to upgrade its enterprise GIS while maintaining compatibility for various versions of CAD clients for some of the specific tasks. This capability allows RTA business users to extract and download GIS data on-demand from the GIS portal.

Conclusion

The availability of SOA-style GIS Web services has ensured that the platform supports standards that promote enterprise wide availability of GIS services. The revamped system has thereby provided an operational focal point for delivering access to all of RTA's geospatial data, services, applications, and the GIS infrastructure. 🌐

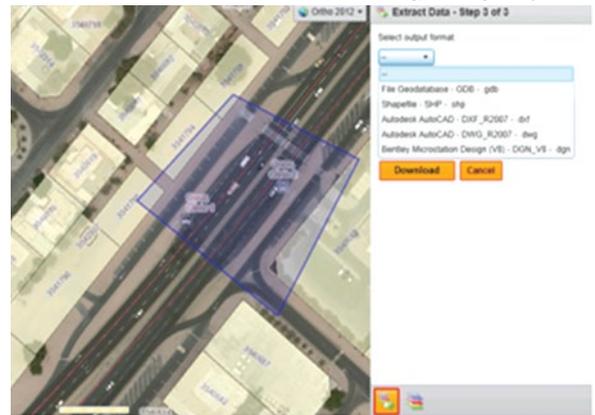
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Advanced mapping capability and services offered by the portal



Extraction and download of GIS data on demand from GIS portal