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*Forward-thinking organizations are embracing next-generation mobile solutions to empower geospatial workflows.*

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**m**obility has reached near ubiquity. This year, Gartner Group estimates that more people will access the Internet through mobile devices than through traditional desktop systems.

Today's organizations require mobile solutions with flexibility and depth for more efficient and effective decision making. To meet this need, the market now offers a plethora of mobile offerings that can reside in a thin-client setting, where users can access smart apps that tap into data and analytics to support specific workflows (see "Surveying Uncharted Territory," page 20). With consumers embracing mobile apps to meet virtually any need, state and local governments, the defense and intelligence communities, utilities and larger commercial enterprises have embraced this movement.

The mobility movement is changing the entire geospatial sector as we know it. For many years, large organizations relied on cumbersome geographic information systems (GIS) that required intensive training to use, resulting in segregated workflows with multiple, disconnected datasets. This ultimately resulted in major delays in getting the right information into the right hands. Today's solutions are much more nimble and app-based, requiring little training, and all solutions are integrated into the enterprise.

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## Tapping into the Enterprise

Next-generation mobile solutions now function as an extension of the overall enterprise, with the ability to access geospatial data and asset information in the field for real-time reviewing and updating.

With the amount of geospatial data captured and repositories to store data swelling, solutions must be cloud-based and embrace interoperability standards from the Open Geospatial Consortium (OGC) and the Infrastructure for Spatial Information in Europe. Such interoperability initiatives provide an extra layer of flexibility and are highly cost-effective.

With data existing on both mobile devices and the enterprise, there's an inherent need for updating the data in real time for enhanced reporting and accuracy when managing and monitoring assets in the field.

## Crowdsourcing Mobile Data

With crowdsourcing to collect data about city infrastructure growing in popularity, new mobile solutions now allow

With more young people entering the geospatial arena, the expectations for easy-to-use mobile solutions will continue to increase.

citizens with Global Positioning System (GPS)-enabled smartphones and tablets to play an active role in their regions by immediately sending incident information to authorities.

Some of these new apps are designed specifically for local governments and their supporting infrastructure (such as utility companies) to have more "feet on the street." Many of these new offerings let citizens simply take a photo of an asset or an event and send it to a hosted system where it can be addressed in near real time by local government and police forces.

These types of apps are ideal for interested citizens who can register issues

involving anything from graffiti and illegal trash dumping to road problems, such as potholes, missing streetlights or broken signage. Of course, these downloadable apps have highly intuitive interfaces, enabling users to complete a report and send it to the appropriate authorities in minutes.

Fortunately, many local governments already embrace these types of solutions, which play a major role in enhancing overall public safety and bring the concept of citizen engagement to a new level.

## Updating Field Assets in Real Time

In addition, new solutions entering the marketplace allow organizations to view, edit and update

field asset information in near real time (see "New Zealand Leads Mobile Solution Revolution," page 26). These downloadable iOS and Android apps allow organizations to more easily manage field assets through their smartphones in real time in ways that drive smarter decision making overall.

Accessible through a simple interface, these solutions use OGC-standard Web services and are compatible with all GIS platforms on the market. As a result, users can work directly in their database without any data conversion, synchronization or temporary data stores. This open architecture also allows field updates to

Organizing and updating massive datasets are critical tasks for today's mobile workforce. To help German electricity and gas company RWE Deutschland organize and manage geospatial data for the entire country of Germany, Intergraph had to deliver 38 terabytes of imagery data for all of Germany at 20 centimeters, spanning 370,000 files. Technology found in ERDAS IMAGINE was used to process and compress the 38 terabytes of uncompressed imagery down to a 1-terabyte ECW file.



BKG/Intergraph

become instantly available to any and all GIS platforms—on the desktop, Web or mobile devices.

## Delivering Useful Content on Demand

A key benefit of mobile solutions is the ability to leverage content on demand, though leveraging geospatial data for various purposes across large, disparate organizations is a tremendous challenge, especially when geospatial data ownership is decentralized.

Often the road to mobility is hindered when different departments need to access

# New Zealand Leads Mobile Solution Revolution

It's often countries outside of the United States that serve as the early adopters of key innovations. With smaller infrastructures in place and few demands for other resources, these nations serve as the perfect case studies for how to best use mobile solutions.

For example, New Zealand police are deploying smartphones and tablets to more than 6,000 frontline officers. Leadership in New Zealand tout this effort as a solid step in helping prevent crime and protect citizens.

Linking to computer-aided dispatch software (I/CAD), this app helps New Zealand field officers use smartphones to access critical information required for more informed decision making.

The app's key benefit is that it allows officers to spend more time in the field, reducing paperwork significantly. It's also estimated that this effort increases productivity by 30 minutes per shift, resulting in a staggering 520,000 hours annually!

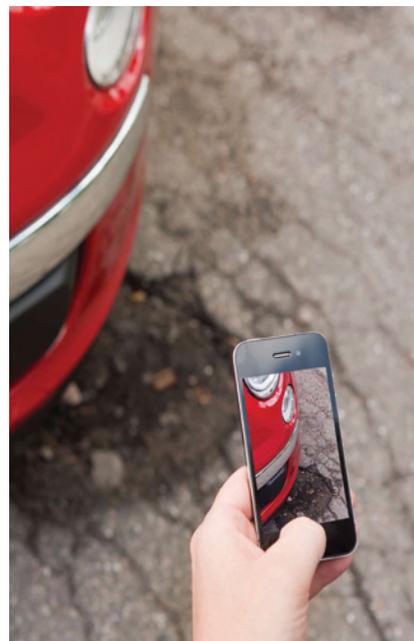
In addition, the organization is leveraging a solution that integrates data from police communications centers into near real-time interactive maps, displaying information required by officers on and off the field. The system stores current and historic event reports and acts as a key planning and decision-making tool that conceivably could help create a positive outcome in a life-or-death situation.

*When a major 7.1 magnitude earthquake struck Christchurch, New Zealand's second-largest city, and surrounding districts in September 2010, the New Zealand Fire Service had to react quickly to the emergency situation and widespread damage. Intergraph's I/CAD system dispersed comprehensive geospatial map data for the whole country to multiple agencies in the field, including cadastre, location verification and aerial images of New Zealand.*

and process data in a variety of ways. Organizing and keeping data up to date across jurisdictions while delivering that data in a common way and timely manner are all crucial factors in large organizations to make smarter decisions.

For example, one major European utility needed to organize and manage geospatial data for the entire country of Germany. This massive undertaking, which covered more than 365,000 square kilometers of land area, required keeping all mapping data up to date along with rapid delivery of the data to a variety of regional organizations.

Using a combination of a cloud infrastructure, a geospatial data management solution, image



*Intergraph Mobile Alert simplifies reporting for citizens. Cities benefit by enlisting the masses to help define and pinpoint issues, such as road or utility line damage.*

processing and analysis, as well as compression and decompression capabilities, it was possible for this utility to not only manage the data more effectively, but also access content on demand in the cloud.

## Satisfying New User Expectations

As user expectations for mobile applications grow at a dramatic pace, now is the time to create simplified solutions that leverage large geospatial datasets.

With more young people entering the geospatial arena, the expectations for easy-to-use mobile solutions will continue to increase. Meeting this demand will be challenging, especially because the GIS sector has been built upon using cumbersome larger systems for managing workflows.

By embracing this new frontier, users can better deliver solutions that streamline geospatial workflows and improve productivity as well as lower training costs and increase use. With solutions that are nimble and leverage all enterprise data, it will be possible for any business to take advantage of geospatial solutions. 

