Intergraph Mobile GeoSpatial Products
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The Mobile Revolution
Everyone has a mobile or tablet device

- People always have their mobile device with them
  - Mobile market growing exponentially
  - People will soon access Internet through mobile over desktop

- Business and government organizations see a game-changing opportunity
  - Quickly developing business workflows on smart mobile devices.
Mobile enables organizations such as:
- Cadaster
- Rail
- Local governments
- Transportation authorities
- Public works
- Utilities
- Agriculture
- Forestry
- Transit
- Infrastructure
- Telecom
- Police

To view, create, edit and update geospatial information in the field in real-time
• **15 years ago**
  Organizations relied on cumbersome, desktop-based GIS systems
  • Required skilled technical staff to use
  • Expensive IT overhead to maintain

• **Past decade**
  Industry discovered ease of browser-based applications
  • But only delivered static web maps
  • Real GIS work to still carried out on desktops/laptops

• *Delivering powerful applications in a simple way to remote users remained unsolved*....
• **Now**

  • Smart mobile devices can now support high end apps
    • Processing power
    • Storage
    • Network capabilities

  • Support a variety of geospatial functionality
    • Powerful data access
    • Superior visualization
    • Creation
    • Query
    • Analysis

• *Intergraph is there to present next-generation applications on smart mobile devices*
What does Intergraph mobile provide?
Intergraph embraces the broad capabilities of today’s mobile devices

Provide next-generation mobile solutions
  • Extension of the overall enterprise

Support specific business workflows in the field
  • Access geospatial data and asset information
  • Real-time creation, analysis, review and update

Offer several packages and smart apps
  • Pre-packaged yet easily-tailored
  • Deliver apps to thin and thick clients
  • Cloud-based and on-premise offerings
What is Mobile Alert?

- Intergraph cloud-based service for local governments, public works and utilities
  - Provides crowd-sourced incident information to subscribing organizations

- Watchful citizens
  - Anonymously report incident information to authorities
  - Upload photos

- Report on issues needing repair or cleanup, such as
  - Overflowing trash cans in parks
  - Hazardous potholes
  - Broken street lights
  - Traffic signal malfunctions
  - Obstacles on city streets

- Free client app available for iOS and Android smartphones
  - From respective app stores
What are the Benefits of Mobile Alert?

• Crowdsourcing to reduce costs
  • Cost-effective means of collecting actionable data
  • Extends reach and response

• Empower citizens and communities
  • Watchful citizens use GPS-enabled smartphones
  • Simple means to report on issues
  • Citizens play an active role
    • Contribute and improve the quality of life in their communities

• Concentrate on the business, not the technology
  • Flexible cloud-based solution
  • No in-house IT requirement
  • Intergraph provides the total solution
    • Installation, upgrades, support, and maintenance handled by Intergraph
  • Free app available on iOS and Android mobile devices from respective app stores
  • Citizens use their own hardware!
What is Mobile MapWorks?

- Tablet-based, field inspection and editing app for enterprise GIS data
- Supporting asset management for:
  - Local governments
  - Transportation authorities
  - Utilities
  - Communication companies
- Provides view, create, edit, update and photo-upload functionality
- Configurable user interface to fit a wide variety of purposes
- Free client app available for iOS and Android smartphones
  - From respective app stores
What are the Benefits of Mobile MapWorks?

• Bring GIS to the field
  • Efficient field capture of critical business information
  • Validate and update your enterprise GIS

• Tailored to meet your organization’s needs
  • A practical tool for field and site inspection workflows, e.g.
    • Pole or vegetation inspection
    • Traffic light and bridge inspection
    • Cell or mobile tower site inspection

• Leverages your current investments
  • Interoperable ensuring easy integration
  • Users work directly in their database
  • Instant availability of field updates to GIS desktop, web, mobile
  • Improve business processes
  • Free app available on iOS and Android mobile devices
Who is using mobile products?
• Utility company
• Maintaining 7,000 km2 of street lights
• Citizens report on street light issues
• Enables faster outage repair
• Population = 51,000
• Citizens respond more quickly to many urban issues
• Send emails directly to departments
• GeoMedia used in office to further analyze
• Population = 1.2 million
• 3,030 km² area
• Park department registers trees in danger of disease over time
  • Previously used webpage to register trees
• Upgrade to
  • Mobile app
  • Updated db directly
  • Including photos
• Population = 83,000
• 211 km² area
  • urban and non-urban area
• Field edit and update of bus stops
  • Used to maintain a spreadsheet
• Now:
  • workers collect bus stop information including pictures, and save time by updating a master database directly.
Technical Aspects of Mobile Alert
What is Mobile Alert? – Key Features

• Camera is automatically engaged to take incident photo. GPS is used to georeference photo

• Location is used to reverse geocode incident to an address to report to subscribing authority

• If GPS signal is weak or outside accuracy threshold, citizen can pinpoint incident on a Bing Hybrid map display

• Category with graphic display can be quickly selected for incident

• Citizen has an option to enter a comment or clarify the “Other” category
What is Mobile Alert? – Key Features

- E-mail of reported incident with x,y location. E-mails can be departmentalized based on category.

- Address of incident and URL with incident located on map for geographic context.

- Web portal access to review all incidents in list or map display.

- Update incident status or delete incident. Review each incident’s location and photo.

- WFS access to incidents reports for further geospatial processing.
Citizens see and report issues.

Product & System Architecture

Azure Cloud

- Storage Service
- Incidents as GeoMedia Features

WebServer
- GeoMedia WebMap 2013
- Mobile Alert Services

E-mail Service

Geocode Service

Database Server

- Mobile Alert Database
  - Customer Footprints
  - Customer E-mails
  - Categories
  - Incidents as GeoMedia Features

Customer Entry Process

Customer

Incident Photos
## Mobile Alert Roadmap

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<tbody>
<tr>
<td>- Client app with fixed categories per country</td>
<td>- Windows Phone</td>
<td>- Subscription purchases and changes are online</td>
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<tr>
<td>- E-mail notification of incident</td>
<td>- Customized categories per customer</td>
<td>- Geospatial Server Product Line – Geospatial Portal</td>
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<tr>
<td>- Nearest address and URL for map view</td>
<td>- Ability to add, edit or delete categories</td>
<td>- Hotspot and Incident analysis</td>
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<td>- Incident photo access</td>
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<tr>
<td>- Admin client portal with map view of incidents</td>
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<tr>
<td>- Ability to delete incidents or change incident status</td>
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<tr>
<td>- GeoMedia warehouse of incidents with WFS access</td>
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<tr>
<td>- Localizable</td>
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<tr>
<td>- iPhone &amp; Android</td>
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Technical Aspects of Mobile MapWorks
What is Mobile MapWorks? – Key Features

• Vendor-agnostic, online access (3G, 4G, wireless) to structured geospatial data using OGC-compliant WMS, WMTS or WFS-T services. No need for data import/export

• Make use of device’s camera for uploading photos of your assets in the field

• Server-based configurations delivered to a mobile, field device based on user identity

• Free client app, available on iOS and Android mobile devices and downloadable from respective app stores

• GPS integration for location and orientation
What is Mobile MapWorks? – Key Features

- Base map, overlay and vector layer control. Base map could be OpenStreetMaps.

- Review and edit feature attributes. Attribute list is configurable. Picklists are possible as well.

- Review, add, edit and delete feature geometry (point, lines and areas).

- Configurable based on user identity. Users can have one or more configurations. Each configuration specifies what operations can be performed by the user per feature class.

- Perform searches based on WFS information.

- Map navigation using touch gestures.
Field Workers—Use Mobile MapWorks configurations to confirm and correct field issues.
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<tr>
<td>• Field editing of both feature geometry and attributes</td>
<td>• Windows RT</td>
<td>• Smart phones</td>
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<tr>
<td>• Support for OGC services WMS, WMTS, WFS-T</td>
<td>• Offline editing</td>
<td>• ECWP support</td>
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<tr>
<td>• Administrative console for user-based, configuration definition</td>
<td>• Map navigation using GPS, e.g. keep centered, scroll map at window extent</td>
<td>• 3D</td>
</tr>
<tr>
<td>• iOS and Android</td>
<td>• Support for Utilities &amp; Communications Workflows</td>
<td>• GPS integration for accurate editing of feature geometry</td>
</tr>
<tr>
<td>• Available on Apple iTunes and Google Play Store</td>
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Thank You