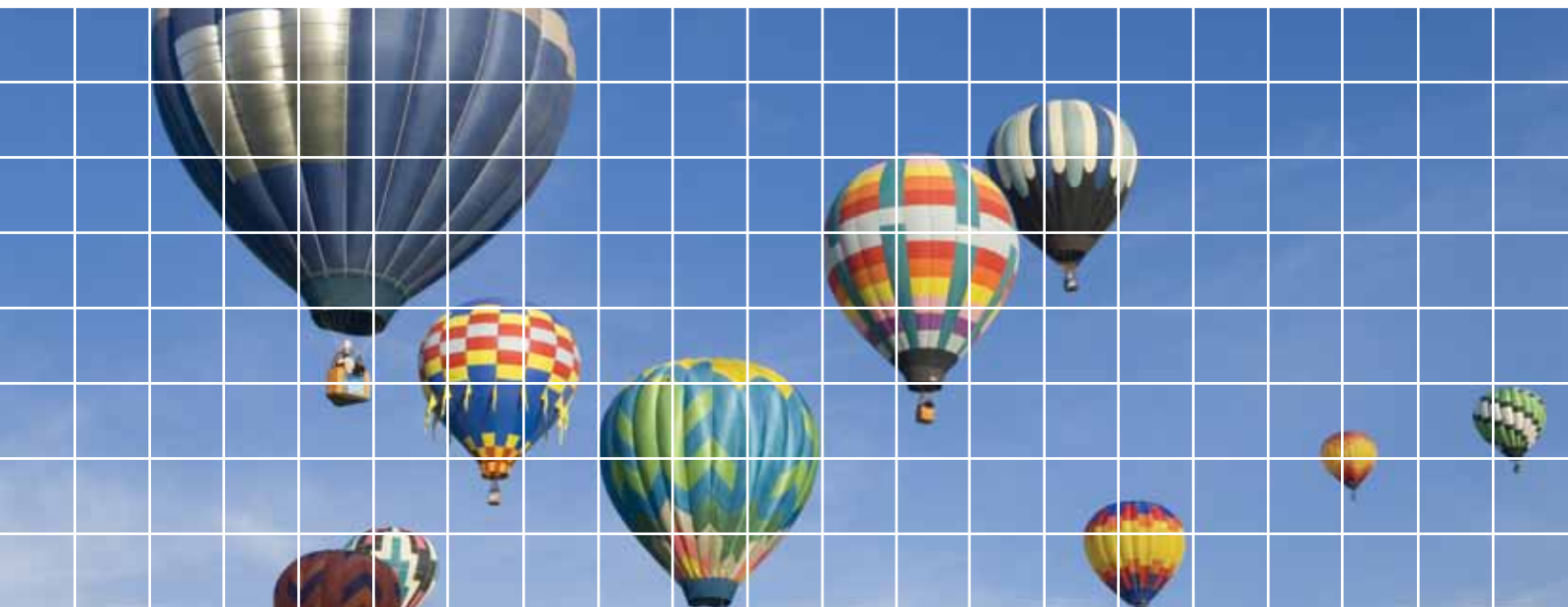


Taking Visionary Thinking into the field

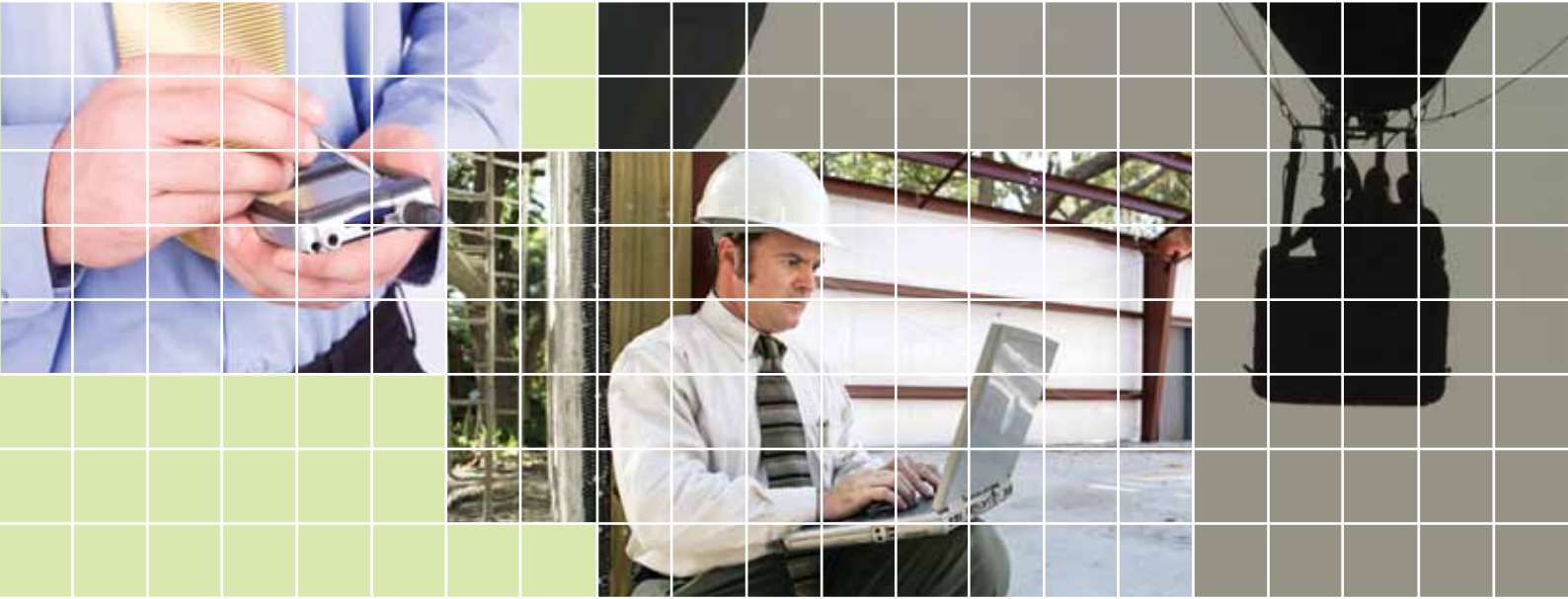
Mobile GIS



Extend the power of GIS beyond the office

ArcGIS Mobile and ArcPad enable your field-based personnel to capture, store, update, manipulate, analyse and display geographic information – delivering an up-to-date, accurate picture that everyone can share.

Visionary



For many years, Geographic Information Systems have been helping organisations improve productivity and cost efficiency within the work place. Now, with the flexible functionality provided by ArcGIS Mobile and the advanced features of ArcPad, the benefits of GIS can be quickly and easily realised in the field. Whether you need to extend your corporate ArcGIS environment to the field, or equip mobile workers with a task-focused application, our mobile solutions will enable your organisation to capture, view, analyse and share up-to-date and accurate information on the move.

At ESRI (UK) we know that a successful mobile strategy goes beyond simply delivering mapping data and GIS tools to field workers - many of whom may be operating in remote or difficult locations, or who don't have time to deal with complex or cumbersome systems. We are committed to providing our customers with a mobile GIS solution that is adaptable and robust enough to meet a range of business needs and user abilities.

Field-based tasks that benefit from the increased efficiency and accuracy of mobile GIS include:

- Asset inventory requiring data collection or mapping
- Asset maintenance
- Inspections
- Incident reporting
- GIS analysis and decision making
- Information/intelligence gathering

ArcGIS Mobile

A task-based mobile GIS application, ArcGIS Mobile can be used to view, collect, search and synchronise GIS data directly with ArcGIS Server. It provides central management, configuration and deployment of mobile data, maps and projects to a range of mobile devices to improve productivity and accuracy of GIS data across your organisation.

Robust and flexible enough to meet a range of business needs, even field staff without prior GIS experience will find it easy to use for mapping, spatial query, sketching, GPS integration, GIS editing and wireless data access to ArcGIS Server Web Services.

With ArcGIS Mobile you can

- Utilise simple developer tools to create centrally-managed, lightweight GIS focused mobile applications, customised to users' needs and business objectives
- Make updates to the server in near real-time and instantly share with other colleagues in the office or field
- Easily deploy applications to various mobile devices that run Windows Mobile or desktop technologies including smartphones, Pocket PCs and Tablet PCs

About ArcPad

A feature rich application that supports numerous devices, ArcPad enables field-based GIS users to capture, edit, analyse and display geographic information easily and efficiently. Its advanced tools facilitate: the creation and editing of spatial data; map navigation; data query to identify and locate features; map measurement of distance, area and bearings and GPS navigation.

Use ArcPad to:

- Support industry-standard vector and raster image display
- Perform reliable, accurate, and validated field data collection
- Integrate GPS, rangefinders, and digital cameras into GIS data collection
- Share enterprise data with field-workers for updating and decision making
- Improve the productivity of GIS data collection
- Improve the accuracy of the GIS database and make it more up to date

thinking delivered

“We chose ArcGIS Mobile for its simplicity, reliability and easy integration with our existing GIS infrastructure. We found it to be a tremendous time-saver when compared to other solutions.” ”

Chris Carter, Planning Department, City of Anaheim, California.

Easy to use ArcGIS Mobile applications enable field staff to carry out:

- Mapping
- Spatial query
- Sketching
- GPS Integration
- GIS Editing
- Wireless data access to ArcGIS Server Web services
- Geo-referenced Information capture

Case Study: Virginia Department of Forestry (VDOF)

The challenge: VDOF needed to give its mobile staff access to geo-data and time sheets to accurately map forest activity and track time spent on tasks in the field.

The solution: A mobile solution that integrates GPS functionality, allowing staff to use ESRI's ArcGIS Server and ArcGIS Mobile software. All field workers are issued with hand held devices that enable them to collect data (such as wildfire sites, pest infestations) on an inventory form, along with GPS co-ordinates. The ArcGIS mobile technology makes it faster and easier for staff to capture and describe the nature and location of critical forestry data. GIS Web services then push the data from the mobile device to the Integrated Forest Resource Information System website.

Results:

- Workers can monitor their activity and submit time sheets without having to return to the office
- Regional managers can monitor departmental projects and make rapid adjustments to target resources to priority areas
- Greatly reduced paper work (13 paper forms eliminated)
- VDOF expect that within 3 years of implementation this mobile solution will yield a return on investment of 52%

Case Study: Oakland County Animal Control (OCAC)

The challenge: OCAC needed basic map navigation and a data entry system that allowed field crews to quickly and accurately enter pet census information. Historically, OCAC field crews used printed maps and collected census information on paper, which then went to the central office for data input. This system compromised data quality and was not time-efficient.

The solution: OCAC use ArcGIS Server and ArcGIS Mobile 9.3 platforms to deploy a customised mobile application. Inspectors are assigned grids showing areas with the fewest pet licenses (where the census might be most productive) and a mobile device to conduct door-to-door inspections. Using Windows Mobile 6.0 and ArcGIS Mobile on an AT&T Tilt mobile device gives field inspection crews basic map navigation and data entry tools, allowing them to quickly move through targeted areas and enter census results. The inspectors select the parcel from their maps using the Identify tool on the ArcGIS Mobile View Map task. From there, they can quickly fill out the attribute forms to update the appropriate information. This is then posted directly to the ArcGIS Server.

Results:

- Inspectors get accurate data so they can perform a greater number of inspections daily
- Pet licensing revenue can be directly correlated to census results
- Redundant data entry has been eliminated – saving 80% of one staff member's time



Easy to use ArcPad applications enable field staff to carry out:

- Asset inventory
- Asset maintenance
- Inspections
- Incident reporting
- GIS analysis and decision making
- Mobile data capture

Case study: Edgecombe County

The challenge: Edgecombe County (North Carolina) needed to map and inventory its entire water/wastewater (old and new) infrastructure inside its existing GIS. This required field mapping over 20 feature types and collecting up to 15 attributes per feature along 400 linear miles of water and sewer transmission mains – over a timeframe of just two months.

The solution: A bundled hardware-software package, which included a Trimble GeoExplorer GeoXT™ equipped with ESRI's ArcPad mobile GIS software was introduced. Data models of the attributes that would be collected in the field for each type of infrastructure were generated and used to create a geodatabase. At the start of each day's fieldwork technicians opened the GPS Analyst program (operating inside ArcGIS) on a laptop to check out the datasets to be mapped. The geodatabase files relating to those infrastructure features that would be mapped or updated that day were then selected and uploaded by USB cable link from the laptop to ArcPad running on the GeoXT handheld.

In the field, ArcPad displayed a schematic of the water system assets to be mapped. As the field crew located each feature, an on-screen point-and-click menu generated from the data file helped the user collect the desired attribute information. As the descriptive data was entered into ArcPad, the GPS receiver recorded 20 location points for each feature in less than a minute. This location data was stored with the other attribute data in the mobile geodatabase inside the GeoXT. Once the fieldwork was done for the day, the crew simply reconnected the GPS receiver with the laptop computer to download field data into the ArcGIS geodatabase.

The results:

- Both location and attribute data were gathered simultaneously during field mapping
- Collected data was accurate to within one metre
- Recording of double the number of features (compared to traditional surveying techniques)
- Data was transferred from mobile device to in-office computer effortlessly
- Completed mapping of entire system within set time frame

Take the next step - outside

These mobile GIS developments from ESRI (UK) can offer significant returns for companies looking to increase productivity and reduce costs within their fieldwork operations.

To find out more about how ArcGIS Mobile and ArcPad could benefit your organisation please visit www.esriuk.com/mobile