Transform Your Field Service with Modern Mobile Mapping

Integrated work order management and GIS improve safety, accuracy, and productivity

Small devices make a big impact

For decades, the business world has not only gone digital, it's gone mobile. Shifting market demands, greater competition, and increased regulations have led more companies to turn to mobile applications to make field service workers more productive. Yet the actual effectiveness of many mobile solutions often falls short of expectations.

Inadequate mobile solutions lead to workflow disruptions, employee frustration, and operational inefficiencies. In fact, according to **VDC's most recent research**, each mobile solution "failure" leads to 73 minutes of lost productivity.

Whether in energy, oil and gas, construction, transportation, or government, today's field crews often rely on mobile solutions that fail to deliver value. Why? Because they are connected to disparate systems and applications. IT departments waste money and resources managing overly complex infrastructure. And capturing and updating data in this manner results in duplications, errors, inaccuracies, and conflicts. Moreover, today's field worker often works offline, which adds complexity to completing tasks.

What's needed is an enterprise approach that streamlines mobile application use while enabling crews to perform tasks using tools built around their workflows. That's where modern mobile mapping makes a difference—integrating work order management, enterprise asset management, GIS, and more into a single solution using the power of location and mapping. As a result, modern mobile mapping solutions ensure faster, safer work with greater accuracy by supplying a single view of the workflows and data that functions online and offline.

A complex, evolving business landscape

Utilities, public works, DOTs, and other infrastructure companies often still rely on traditional paper-based methods for many of their workflows, which delay asset inspections, as-builting, redlining, and other processes. This situation leads to data redundancy, re-entry, and inaccuracy, which causes missed warning signs and a lack of confidence in the information.

And while some companies have spent significant resources acquiring field service-specific technology, many of these popular tools have recently reached the end of their lifecycle. For example, Click Software has been almost an industry standard for field tech scheduling and optimization. Version 8 will arrive at end-of-support on December 2023, and most utilities will need a replacement.

For others, digital transformation initiatives have caused organizations to review and upgrade their IT. For example, the introduction of the Esri Utility Network Management Extension and associated data models have fueled a refresh of field GIS tools. In addition, changes in ERP applications have spurred businesses to upgrade.

It's not uncommon for large-scale enterprises to deploy different apps for different use cases, meaning more data replication to more systems. This also leads to high costs to own, operate, and maintain a whole portfolio of apps. Moreover, none of the stovepipe applications connect or interoperate with GIS. They may have access to GIS data, but GIS isn't connecting with anything else they do in the field.

Companies looking to solve this problem typically have two options:

- First, work order management systems that attempt to include GIS—these solutions check boxes on RFPs. Still, they don't actually meet field usage requirements for offline, handling large amounts of data, GIS editing (especially offline), or other GIS capabilities.

- Traditional mobile GIS solutions claim to do field service or work order management— these solutions don't support real-world fieldwork requirements of utilities like advanced timekeeping for crews, truck load-outs, long-term construction projects, and other tasks that work order management solutions do well.

Thus, both approaches fall short. In addition, with the increased usage of location data across departments comes the increased demand to capture and share accurate spatial data.

Mobile field service challenges:
- Paper-based methods or in-house solution
- Disconnected field service management and GIS
- Lack of integrated workflows
- Connected-only capabilities
- Slow performance and data load limitations

Work order management combined with GIS

Modern mobile mapping delivers on the promise of better field service management. How? For starters, it connects to enterprise work management systems (e.g., SAP, Salesforce, and IBM Maximo) to seamlessly combine GIS and work management into a singular, intuitive, and workflow-centric experience.

The integrated applications remove the complexity of GIS for field users. Traditional mapping apps take a GIS-focused approach that requires field crews to train on GIS functions. And the overabundance of available data, combined with a GIS-focused interface and workflows, make these solutions suboptimal because they aren't fieldwork-friendly and give more data and tools than needed.

Modern mobile mapping involves capabilities designed around workflows. The tools are simple, straightforward, and intended for non-GIS users. And you enable your staff—ranging from hundreds to thousands—to capture accurate GIS data while in the field, without specialized training or equipment.

Modern mobile mapping pulls together relevant data from multiple systems to work safely and efficiently with incredible speed and performance, while supporting both online and offline environments. This provides outstanding efficiency for remote workers who can perform duties anywhere in their service territory without worry about connectivity. They do their jobs, and data updates are made regardless of location or internet access.

With this integrated capability, which provides a spatial reference for every workflow, businesses can consolidate disparate data to support all aspects of field service, including inspection, asset verification, updates, and modeling. Teams can digitally document conditions on the ground while performing tasks, updating attributes, and redlining online maps, fueling your back-office enterprise systems with high-quality data for sophisticated analytics.

In addition, modern mobile mapping removes the need for many point solution applications, each designed for specific tasks performed in the field. This can mean eliminating dozens of point solution apps with a single unified experience.

Modern mobile GIS solution:
- Leverage integrated tools to automate tasks and reduce errors
- Perform work in both online and offline environments
- Accelerate construction to as-built in record time
- Capture and correct data in the field
- Ensure adoption and minimize training

# Modern mobile mapping defined: welcome to Lemur

Designed to meet field worker needs while simplifying IT infrastructure, **Lemur** delivers on the promise of modern mobile mapping. The Lemur solution is built on Esri ArcGIS technology, with a unified experience with SAP, Salesforce, and other leading work management solutions. It fits with your existing platforms for maximum value while streamlining workflows to boost productivity.

Lemur ties asset location with related field service management information. As a result, field crews can do their jobs using work order applications and GIS without manually opening and switching between multiple windows.

Lemur provides streamlined GIS map interaction using a field service management UX/UI to complete field service actions from GIS assets. This means your users do the work without learning new software. You empower your crews with nearly zero training using a solution tailored and standardized to their workflow.

For example, they may have a work order to install a new gas service; they'll get a work order in an enterprise application like or SAP Service and Asset Manager or Salesforce Field Service, then click a link or a button to view the work order in the Lemur mobile GIS application. This provides a real-world view of the work with the critical context of adjacent GIS assets. This can be especially important with underground assets.

The user experience can be tailored specifically to the work, so field staff only see relevant information. This includes the ability to only capture the types of GIS features applicable to the current workflow, whether doing a basic overview with simple markup tools on the map or an as-built survey with survey-grade external GPS equipment. In addition, Lemur allows for the real-time correction of GIS data found to be in error, bringing GIS data correction times down from months or years to hours or days.

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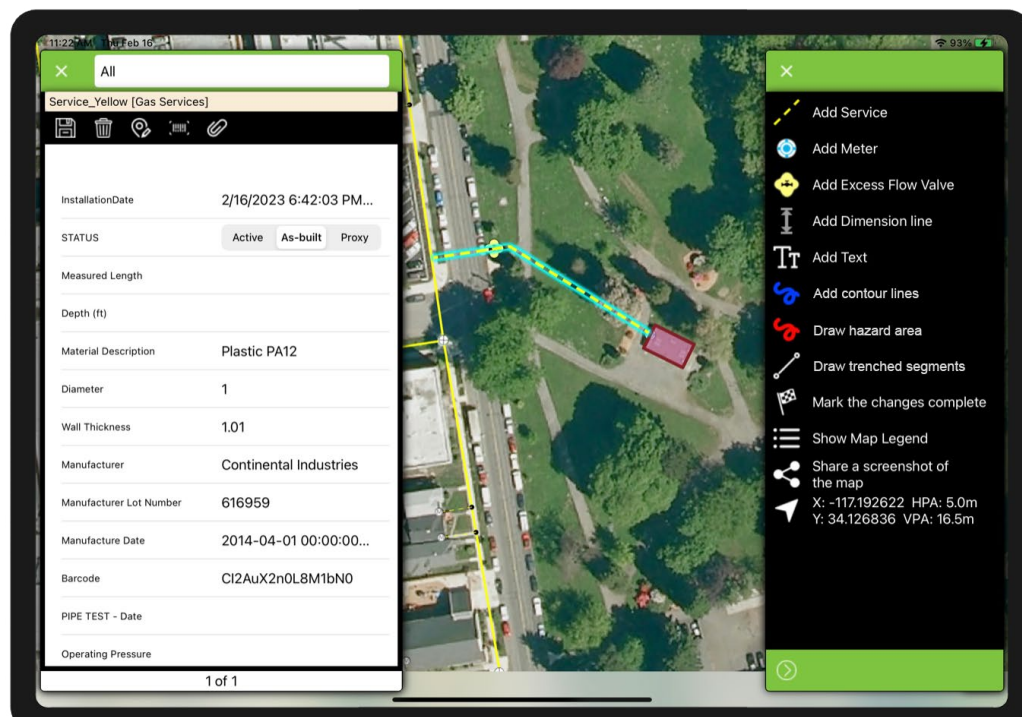
Deliver value everywhere

Modern mobile mapping, specifically the Lemur solution, delivers an enterprise platform approach, including templates, data models, and samples for specific use cases that provide value to the business and the customer. As a result, field crews enhance data quality through their daily activities by performing functions that populate data required on the work order and any ancillary information needed in GIS.

System management

Collect and correct asset information—from gas mains to transmission lines to pump stations—on what's out there and exactly where it is. Modern mobility allows people in the field to correct something they see as incorrect. Empower your staff to operate more efficiently, whether building new assets to extend your network or upgrading assets and materials as part of modernization efforts.

Safety and compliance

Perform regulatory work, like capturing data for a newly installed gas pipe by scanning and decoding an ASTM 2897 barcode and using its embedded values for GIS asset attribution. Barcode scanning simplifies material tracking and traceability and can eliminate typos that may lead to penalties. You can ensure the material used is properly tracked. In addition, you can perform work order details along with the asset, connected and nearby assets, environmental data, property data, and other geospatial information that will help complete the work quickly and safely.

Leak management

Investigate, detect, and manage leaks with greater accuracy. You can use GIS data to understand your precise location in the field. Capture where you are, quickly draw polygons that get saved back to GIS or click a button to send the leak reading coordinates back to the office. In addition, record location data combined with your work order, grade leaks from the field with location data, and recheck assets to ensure repair integrity. You can identify at high-consequence areas such as schools or hospitals more easily.

Vegetation management

Reduce risk by using tools to measure, monitor, and track all vegetation types, from Kudzu vines around electric wires to wetlands to species that may need protection. Manage fuel reduction workflows using spatial data such as property location, customer data, network, and asset data, and public lands. You can rate fire risk, view lines transitioning property, and capture specific potential hazards, such as fallen dead trees or mudslides. Make it easy for staff to see where they are, where their work starts and ends, view aerial imagery, and more.

As-built documentation

Capture as-built asset information, then share data with the office where remote work is reviewed, supplemented, and officially recorded. You can populate new as-built data using GIS on the device to reduce data entry time and ensure data accuracy. For example: scanning ASTM 2897 bar codes for asset attributes, using GIS data context to understand property ownership, fire risk, and environmentally sensitive areas around as-built work.

Inspections

View location data and the most up-to-date inspection and asset details, including historical information, while completing service tickets. For example, staff can tap on a map, which accesses different GIS layers, and prepopulate inspection forms, so there is less chance for human error, reducing the need for multiple trips to the same inspection site.

Maintenance and repairs

Enhance maintenance and repairs quickly and efficiently using work order data and GIS. In addition, you can create follow-up service tickets when you see an asset problem so that office managers can assign work at a later date. Or, if permissible, the field worker can create the new work order and perform the labor on an asset immediately and synchronize the new work order and asset information back to the master systems.

Get real results

Improving field services goes well beyond data and asset accuracy. It directly impacts employee safety and efficiency, network performance and reliability, customer service, and the business's bottom line. By providing GIS tools adapted for specific mobile workflows, you empower your entire field force. The business creates high-quality data for improved analysis, decision support, and verifiable reporting.

Increased efficiency: Streamline fieldwork by giving remote technicians templates, data models, workflows, and maps designed for industry-specific tasks. Supply visual context required to make accurate, timely decisions in the field. Reduce errors in performing and recording work with tools to collect, capture, and correct data.

Lower costs: Increase productivity for field and back-office users with real-time data updates. Eliminate the inefficiencies inherent in a system of dozens of point solutions. Reduce fines by ensuring compliance and streaming operations, regardless of location. Reduce the need for map books and map book production.

Improved operations: Replace consumer-grade maps with ArcGIS-based Lemur to reduce time-to-completion for fieldwork. Ensure mobile workers and office staff see the network and surroundings—buildings, property, communities—as they work independently and in a coordinated fashion.

Reduced risk: Supply easy access to data to help staff understand the conditions they face for every work order. Avoid legal, financial, and reputational risks by meeting regulatory compliance requirements. Reduce network data errors with the automation of tasks and eliminating redundancy.

Enhanced collaboration: Collaborate using field service maps that act as a common operating picture for remote staff and field managers, engineers, executives, and others. Use maps and visualized information to coordinate activities with others using with other remote staff as well as officer personnel.
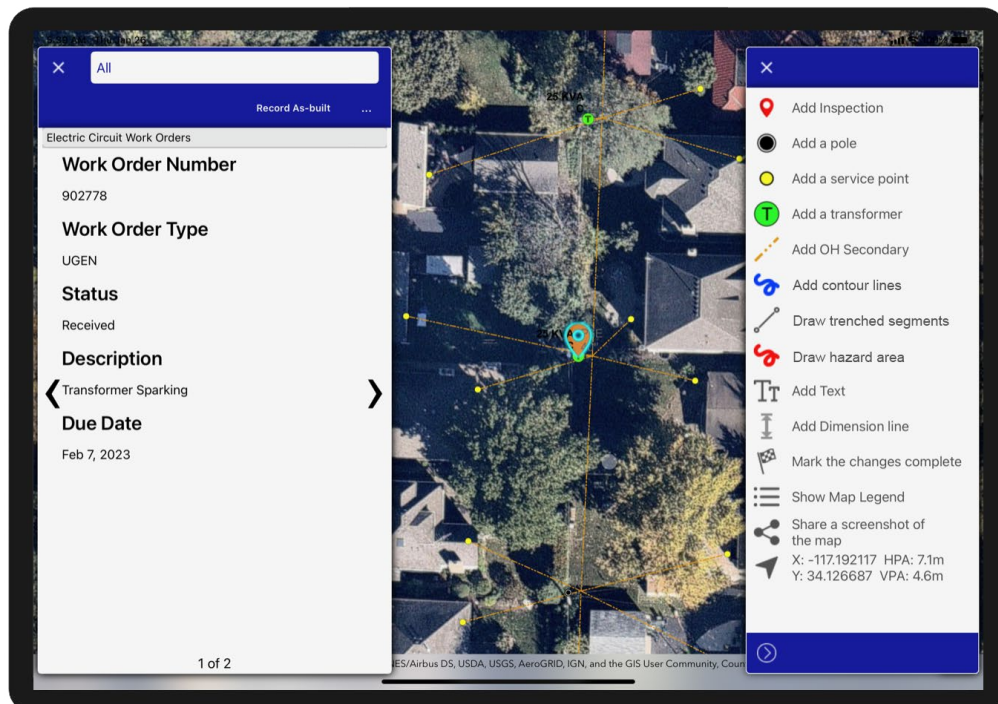
Bring the power of location to the field

Without a complete and reliable view of assets and information, organizations can't operate efficiently, make sound strategic decisions, or meet the market challenges of the day. By integrating GIS data and mapping with work order planning, creation, scheduling optimization, and dispatch, companies optimize their field force while improving the overall business.

Modern mobile mapping, and specifically, Locana's Lemur solution, combines Esri's GIS with leading field service solutions from SAP, Salesforce, and others. The integrated interface provides a consistent experience in the back office and the field. And because you provide an intuitive user experience that requires minimal training, you ensure fast and complete adoption.

Using GIS tools and data that work both online and offline, you empower your team to perform tasks with greater efficiency, no matter where they are. And you enable them to effectively capture and update data. As a result, you streamline workflows and increase asset and network performance, reliability, and safety.

Locana | Lemur™

Contact Locana today to learn more about how you can transform your field service with modern mobile mapping.

Learn more.

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