

TECHNICAL BRIEF

UtiliSphere™ Mobile

Collect, analyze and take action on the most accurate and real-time data from the field



July 2012

Table of Contents

- Introduction 2
- Mobile App..... 3
- Ticket Management 4
 - Ticket Summary 4
 - Ticket Detail Screen 5
 - Ticket History 6
 - Ticket Attachments 7
 - Add Picture..... 7
 - Dig Site Map 8
 - Maps 9
 - Map Navigation..... 10
- Monitoring 11
 - Activity Logging and Tracking..... 11
 - Photo & Forms Attachment 12
- Asset Tracking 13
 - Calibration Warning System 13
- Conclusion..... 13
- About UtiliSphere..... 14
- About irth Solutions 14

Introduction

Numerous energy and utility companies already have initiatives to evaluate deploying mobile tablets to their workforce. Meantime, many front-line locators are using their own mobile devices to perform daily maintenance and operation (M&O) work in the field, such as preventing excavation damage.

Analysts estimate that today, about 30% of mobile devices connected to the corporate network are owned by the employees. Going forward, it is expected that this trend will continue to increase and result in a client computing world where individuals use technology on a more continual, fluid, natural, dynamic and often-invisible basis.

At **irth** Solutions®, we see how mobile is revolutionizing the energy and utility industries, resulting in a natural part of an individual's daily activity, rather than a unique and separate activity. Mobile (tablets, phones and laptops) is a great productivity enhancer that enable front-line, remote workforce to access and update real-time information while on-site that will change the way they conduct one job and move to the next one. In addition, mobile is enabling remote workforces to collect on-the-spot, accurate data. By instantly integrating that data into a system like UtiliSphere, it provides real-time data for everyone in the organization – from corporate management, to field management, to field technicians – to make better decisions to take the right actions that impact the three most important areas of the business: protecting system delivery, meeting regulatory compliance and ensuring public safety.

Tablets and smartphones are key technologies today to get access to real-time data, and we're excited to introduce you to UtiliSphere™ Mobile in this technology brief. As leaders in the industry, we at **irth** Solutions continue to constantly look at new ways to collect the most accurate and real-time data.

Mobile App

UtiliSphere Mobile leverages real-time data sources to quickly capture and process data as it arrives. The mobile applications of UtiliSphere – including the field-focused features of **irthnet**, uMonitor and uCalibrate – include solutions for managing the excavation request processes and logging activities for system excavation observation to ensure real-time system protection, safety and compliance with or without an Internet connection.

Only a genuine mobile application, available on both the iOS and Android tablets, is able to deliver on the true promise of mobility. Built using the latest technology, including the Android and iOS platform, UtiliSphere Mobile gathers accurate real-time data faster to enhance decision-making abilities.



UtiliSphere Mobile is a genuine mobile application, enabling the field workforce to complete their critical work, even without an Internet connection.

Ticket Management

Constantly evolving, UtiliSphere **irthnet**® has set the industry standard for ticket management for more than 15 years. Selected by numerous enterprise energy and utility companies, **irthnet** provides the most accurate, efficient and trusted solutions for the damage prevention industry. UtiliSphere Mobile makes key features of **irthnet** available to the field workforce to improve productivity, with or without an Internet connection.

Ticket Summary

The Ticket Summary provides a snapshot of excavation request tickets. These views of excavation request information provide for more personalized and productive way to review, manage and process tickets.

Simple navigation enables quicker, better, and improved communication of critical information to protect your system. By applying best practice techniques from popular web-based applications, the user experience, usability, and navigation have been enhanced. Rest assured that current users will be immediately familiar with our latest enhancements, improving productivity for locators, operators and administrators.

Sort: Created	Facility Type	Place	Address	Due Time	Ticket Category	W
A20390758 40TH	...	NEEDLES	40TH	2/13/2012 9:00:00 AM	Regular	EP IN &
A20400146 SANTA FE AVE	...	HINKLEY	SANTA FE AVE	2/13/2012 11:00:00 AM	Regular	IN M
A20400150 MOUNTAIN VIEW RD	...	HINKLEY	MOUNTAIN VIEW RD	2/13/2012 11:00:00 AM	Regular	IN M
A20380354 100 PARK MOABI RD	...	NEEDLES	100 PARK MOABI RD	2/09/2012 11:46:00 AM	Short	RI SE
A20410159 100 PARK MOABI RD	...	NEEDLES	100 PARK MOABI RD	2/15/2012 9:00:00 AM	Regular	IN IR LJ
A20410518 22920 SANTA FE AVE	...	HINKLEY	22920 SANTA FE AVE	2/15/2012 10:00:00 AM	Regular	IN M W
055817 CO RT KK	...	WILLOWS	CO RT KK	2/21/2012 6:00:00 PM	Regular	RI PI
056248 6945 CO RT 39	...	WILLOWS	6945 CO RT 39	2/22/2012 11:15:00 AM	Regular	DI SF SY

Ticket Detail Screen

The Ticket Detail Screen enables the Locator in the field to easily access and quickly prioritize or complete the job as it offers the text of the ticket, ticket history, attachments, map and other key details.

The screenshot displays the UtiliSphere Tickets Map application interface. At the top, there is a navigation bar with the UtiliSphere logo and the text 'Tickets Map'. Below this is a secondary navigation bar with tabs for 'Sort: Created', 'Ticket Details', 'Ticket History', 'Attachments', 'Dig Site Map', 'Custom Map', and 'Google Map'. The main content area is divided into two columns. The left column lists several tickets, with the ticket 'A20400146 SANTA FE AVE' highlighted in red. The right column displays the detailed information for the selected ticket, including company name, address, phone numbers, and work details. At the bottom of the screen, there is a mobile OS navigation bar with icons for back, home, and recent apps, along with a status bar showing the time as 12:08 PM and various system icons.

Ticket ID	Address	Company	Caller
A20390758	40TH		
A20400146	SANTA FE AVE	WOODWARD DRILLING CO	ROD CROTHER -- STANTEC
A20380354	100 PARK MOABI RD		
A20410159	100 PARK MOABI RD		
055817	CO RT KK		
064713			
065834	CO RT 114		
066238	CO RT 32A		

Ticket Details for A20400146:

PGEGWH 00001A USAS 02/09/12 08:33:21 A20400146-00A NORM NEW GRID

Ticket : A20400146 Date: 02/09/12 Time: 08:30 Oper: KRI Chan: 200
 Old Tkt: A20400146 Date: 02/09/12 Time: 08:33 Oper: KRI Revision: 00A

Company: WOODWARD DRILLING CO Caller: ROD CROTHER -- STANTEC
 Co Addr: UNK
 City&St: Zip: 90712
 Phone: 562-354-2645 Ext: Call back: 8- 5 PM
 Formn: ROD CROTHER Phone: 714-614-5371
 Email: RODNEY.CROTHER@STANTEC.COM

State: CA County: SAN BERNARDINO Place: HINKLEY
 Delineated: Y
 Delineated Method: WHITEPAINT
 Address: Street: SANTA FE AVE
 X/ST 1 : MOUNTAIN VIEW RD
 MPM 1 : MPM 2 :
 Locat: N/SIDE OF SANTA FE AVE AT 400FT E/OF MOUNTAIN VIEW RD, MARK 100FT RADIUS

Excav Enters Into St/Sidewalk: N

Grids: 3587J062
 Lat/Long : 34.929738/-117.170218 34.929276/-117.169415
 : 34.929054/-117.170612 34.928591/-117.169809
 Caller GPS:

Boring: N Explosives: N Vacuum: N
 Re-Mark: N

Work : INSTALL WTR MONITOR WELL
 Wkend: N Night: N
 Work date: 02/13/12 Time: 09:00 Hrs notc: 096 Work hrs: 048 Priority: 2
 Instruct : MARK BY Permit: NOT AVAILABLE

Ticket History

UtiliSphere keeps a history of tickets, and UtiliSphere Mobile helps improve productivity with complete knowledge of previous actions, notes and attachments to the ticket.

The screenshot displays the UtiliSphere mobile application interface. At the top, there is a navigation bar with the UtiliSphere logo and the text "Tickets Map". Below this is a secondary navigation bar with tabs for "Sort: Created", "Ticket Details", "Ticket History" (which is selected), "Attachments", "Dig Site Map", "Custom Map", and "Google Map".

The main content area is divided into two columns. The left column lists several tickets, each with a unique ID and address. The ticket with ID "A20400146" and address "SANTA FE AVE" is highlighted in a light blue box. The right column shows the history for the selected ticket, with a dark blue header indicating the ticket ID and time: "- A20400146 V0 2/09/2012 10:33:00 AM".

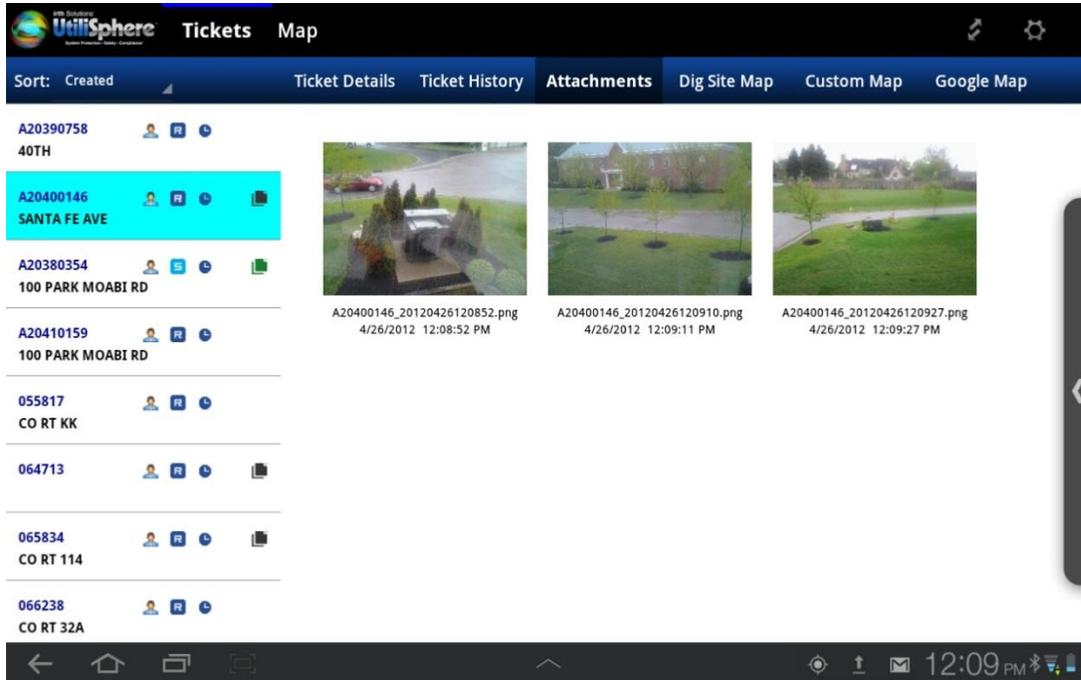
The history entries are as follows:

- Thu Feb 09 2012 10:33 AM Received**
DETAILS: Ticket received for registration code PGEGWH
- Thu Feb 09 2012 10:33 AM Put in Folder**
DETAILS: Put in Trans. GWH - Hinkley by auto process
NOTE: Auto Processed per All Tickets
- Thu Feb 09 2012 10:33 AM Assigned**
DETAILS: Assigned to GWH - Hinkley GT by auto process
NOTE: Assigned on folder placement
- Thu Feb 09 2012 10:33 AM Message Queued**
DETAILS: Message queued for delivery
- Thu Feb 09 2012 10:33 AM Message Queued**
DETAILS: Message queued for delivery
- Thu Feb 09 2012 10:33 AM Ticket Queued**
DETAILS: Ticket queued for delivery
- Thu Feb 09 2012 10:33 AM Ticket Queued**
DETAILS: Ticket queued for delivery

At the bottom of the screen, there is a standard Android navigation bar with icons for back, home, and recent apps, along with a status bar showing the time as 12:08 PM and various system icons.

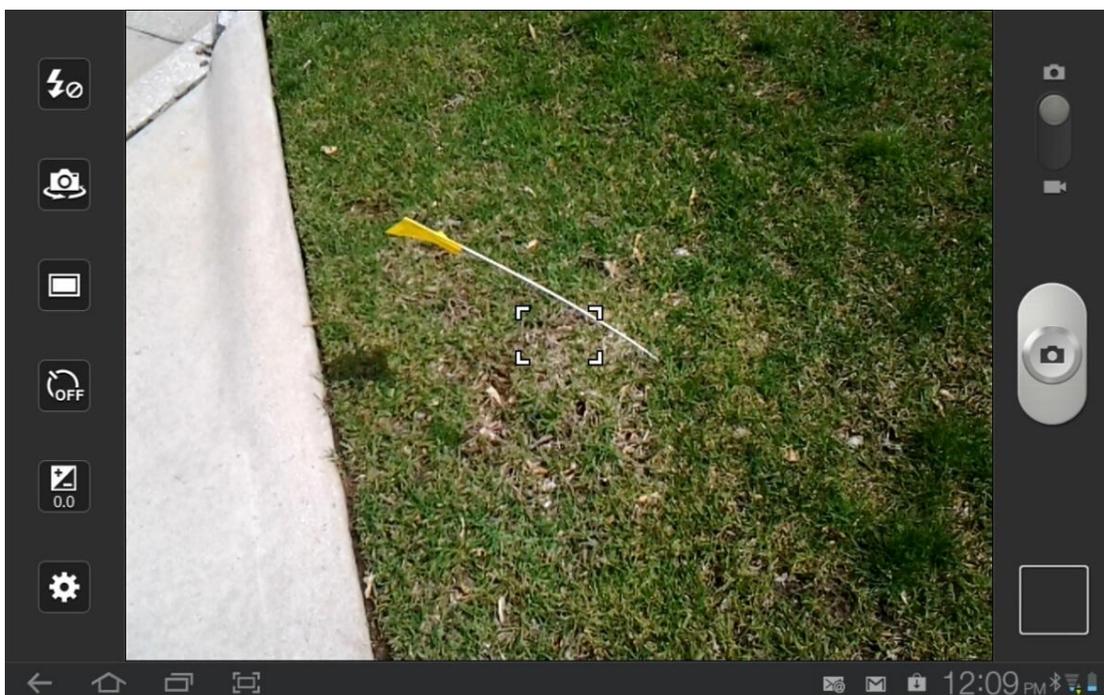
Ticket Attachments

UtiliSphere Mobile allows users to upload and attach photos, videos, signed files, and other evidence of monitoring and excavation activity to help ensure system protection and public safety.



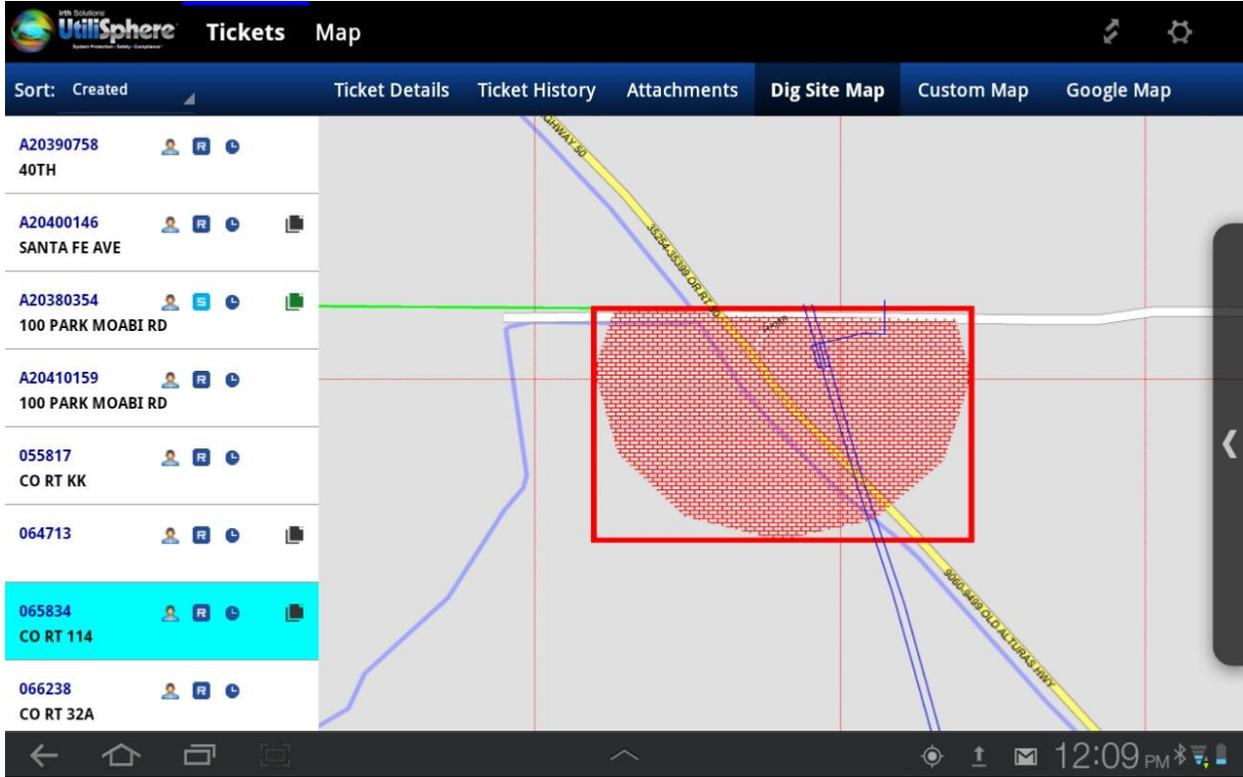
ADD PICTURE

UtiliSphere Mobile leverages the tablet's native camera to add a picture, eliminating the time-consuming logistics of carrying and connecting to another device to submit electronically with the response.



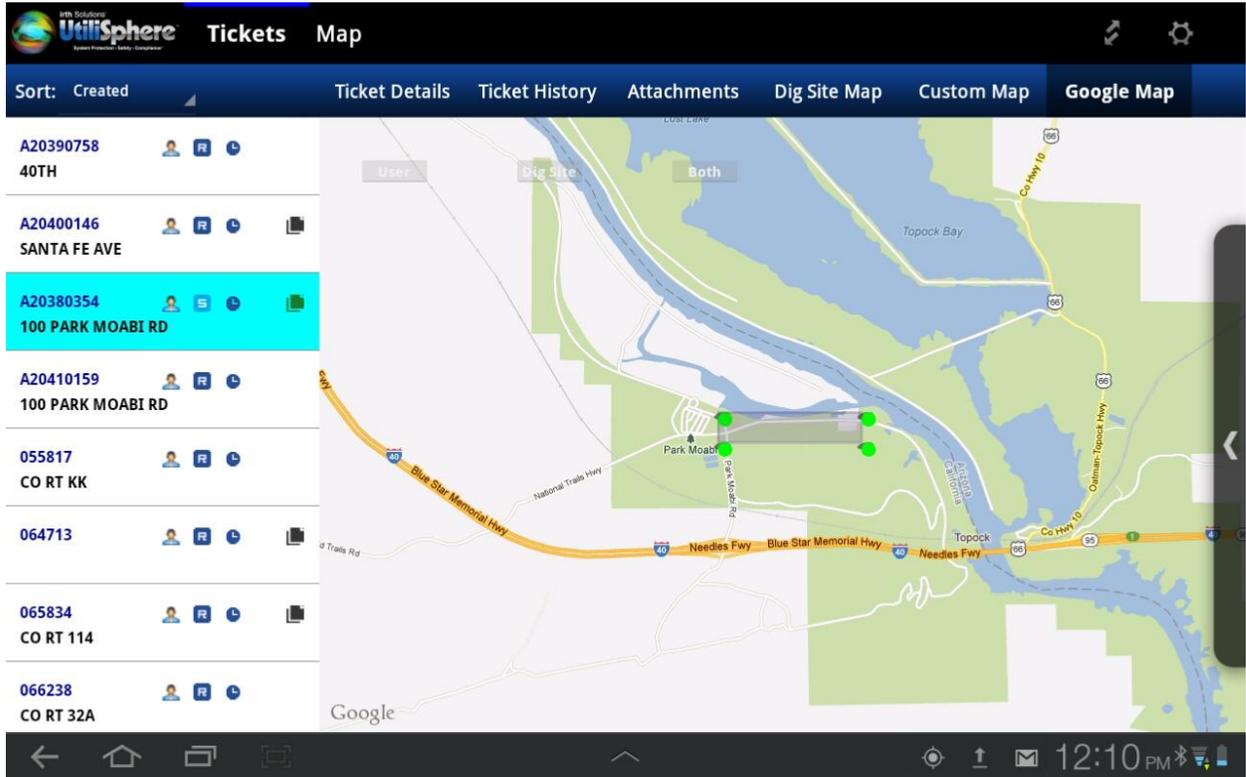
Dig Site Map

Facility Mapping helps improve operational efficiency and reduces risk to public safety. Facility shapes pinpoint system locations and buffers to quickly identify if the excavation activity is a threat to the system or to public safety.



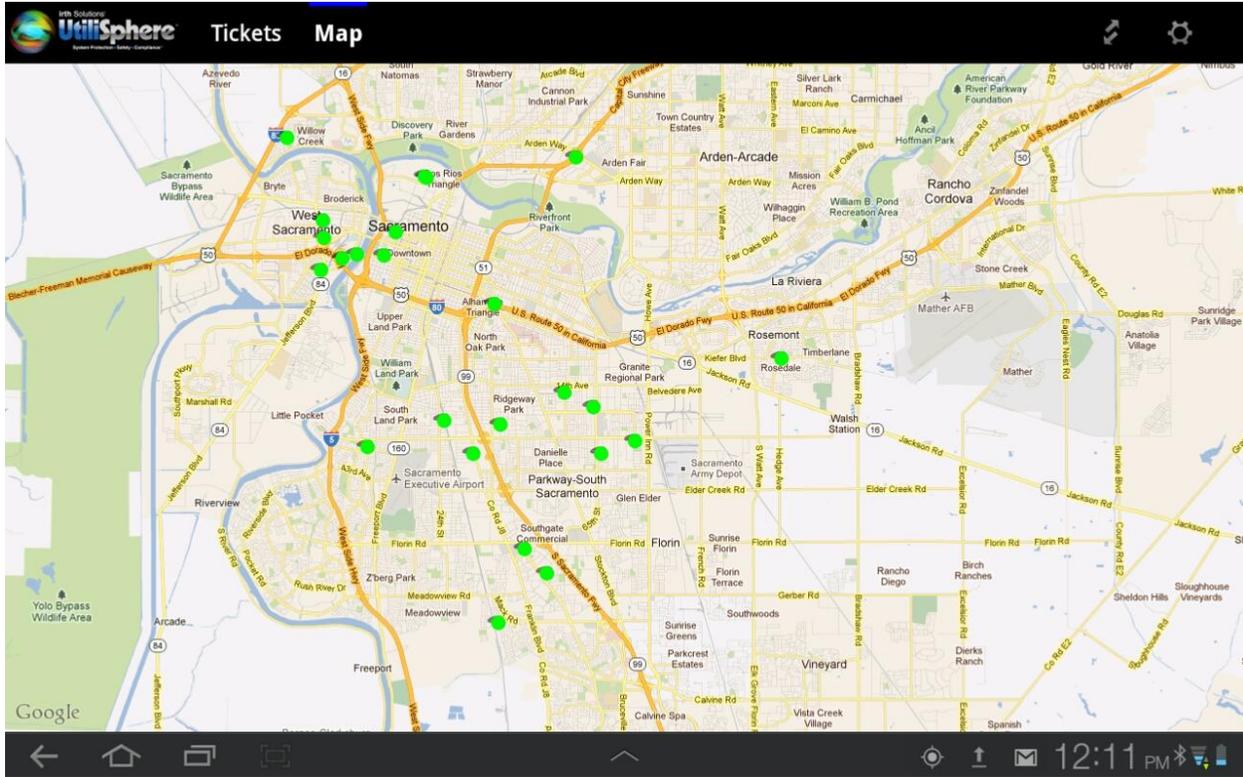
Maps

Geographical system locations and excavation sites are displayed in UtiliSphere via a GIS land-based system (Tom-Tom) which identifies the most updated street information to improve the accuracy of the marking as well as increase safety of the public. UtiliSphere Mobile also incorporates public street map systems from Google, which provides another reference point as well as enables the Locator to map out work activity and plan the most efficient route to each excavation site.



Map Navigation

Map Navigation provides a visual representation of assigned tickets to help ensure the Locator in the field can plan the most safe and efficient route. The interactive map enables zoom for more or less detail and the ability to view the ticket number for that dig site with a single tap a green circle icon.



Monitoring

UtiliSphere Mobile makes key features of UtiliSphere uMonitor available to the field. uMonitor provides a complete and accurate overview of excavation activity, minimizing risks and potential hazards.

Additionally, uMonitor provides the ability to monitor and record excavation activities from the point of discovery through excavation completion.

Activity Logging and Tracking

Record end-to-end system management activity to create a complete view of all the excavation activities surrounding critical systems, coordinate the efforts of internal resources to improve efficiencies for related system management activities, and proactively manage and rate excavators to identify high risk to critical systems.

The screenshot displays the UtiliSphere mobile application interface. At the top, there is a navigation bar with the UtiliSphere logo, "Tickets (127)", "Monitoring (3)", and "Map". Below this is a menu bar with options: "Sort: Activity ID", "Status", "Activity Details", "Daily Logs", "Attachments", "Related Tickets", and "Google Map".

The main content area shows a list of tickets on the left and detailed activity information on the right. The selected ticket is 201206010002, with status "Assigned" and address "11239 Midway Rd 95927".

ACTIVITY SUMMARY

Job Name:		Source:	
Activity:	N/A	Frequency:	
From Date:		To Date:	
Scheduled Time:			
Comments:			

LOCATION & AFFECTED AREAS

State:	CA	County:		Place:	Chico
Address:	11239 Midway Rd 95927				
Inspect. likely?:	No	Exact loc. known?:	No		
Location Notes:					

AFFECTED GPS

No coordinates have been added.

AFFECTED AREA

No affected areas have been defined yet.

ANALYSIS OF EXCAVATION SITE

Type of Work:	Diggin'	Duration:	
Scope of Excavation:		Proximity to Pipe:	
Complexity of Work:		# of Foreign X-ings:	
Depth of Cover:		Other Utils Present:	
Potential Impact:			

The bottom of the screen shows a standard Android navigation bar with icons for back, home, and recent apps, along with a status bar displaying the time 2:54 and various system icons.

Photo & Forms Attachment

Attach photos and forms observations to provide evidence of monitoring activity for proof of threat to the system and public safety.

The screenshot displays the UtiliSphere mobile application interface. At the top, the header shows "UtiliSphere Tickets (126) Monitoring (3) Map". Below the header is a navigation bar with tabs: "Sort: Activity ID", "Status", "Activity Details", "Daily Logs", "Attachments", "Related Tickets", and "Google Map". The main content area shows a list of tickets with their details and attachments. The second ticket is highlighted in blue.

Activity ID	Status	Attachments
201206010002 11239 Midway Rd 95927	Assigned	
201206010007 CO RT 32A and CO RT 88	Assigned	 201206010007_20120627035602.png 6/27/2012 3:56:02 PM
201206010010 11239 Midway Rd 95927	Assigned	 201206010007_20120627035622.png 6/27/2012 3:56:23 PM

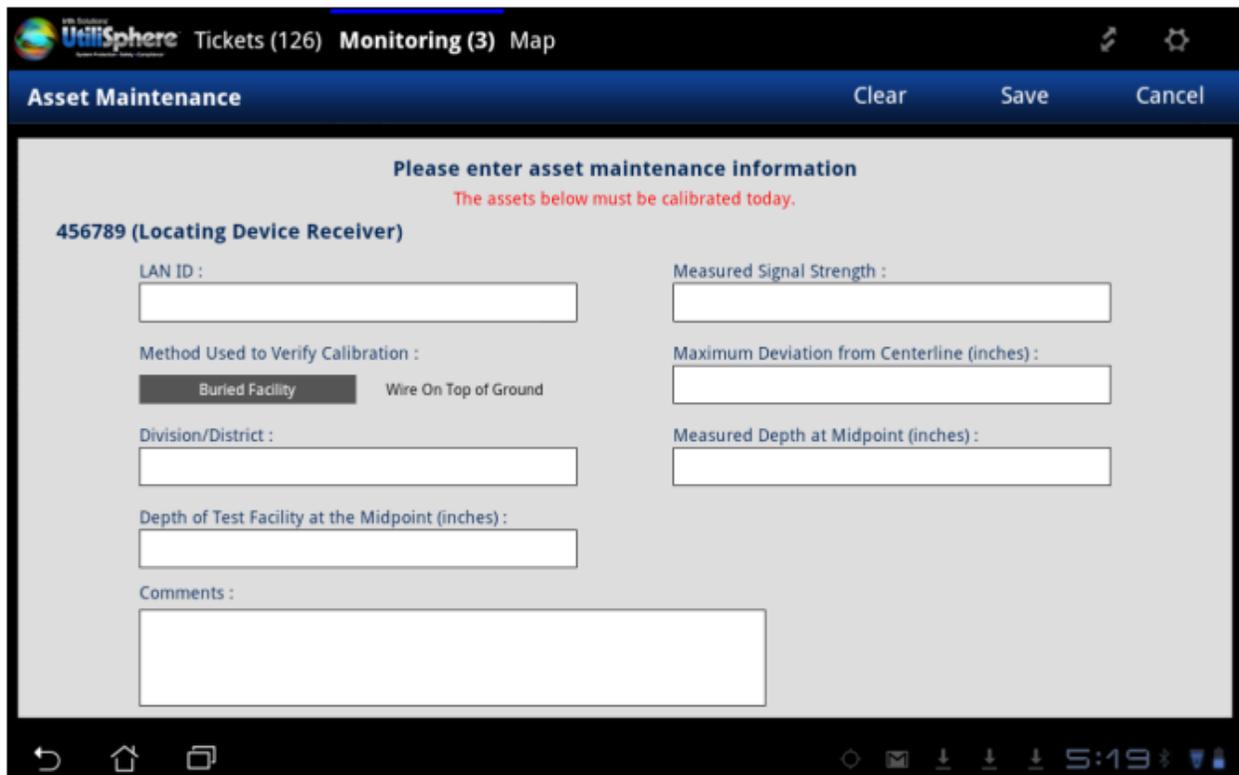
On the right side, a context menu is open, listing the following actions: re-assign, un-assign, add to folder, remove from folder, add picture and note, add picture, add log, submit for reassessment, close, and re-open. At the bottom of the screen, there is a navigation bar with icons for back, home, and recent apps, along with a status bar showing the time 3:57 and battery level.

Asset Tracking

UtiliSphere Mobile leverages the features of uCalibrate to help ensure safety by preventing devices from being used during mark and locates while out-of-calibration. UtiliSphere links the device to the dig requests, logs the marker's device information and incorporates its calibration history. Plus, it alerts you when marking devices need to be recalibrated or if an unsafe device is about to be used.

Calibration Warning System

UtiliSphere Mobile helps prevent non-calibrated marking devices from mismarking system locations, schedules time increments for devices to be re-calibrated and warns the user if an un-calibrated device is about to be used. In addition, it prevents the user from entering activity into a ticket.



The screenshot displays the UtiliSphere Mobile application interface. At the top, the header shows 'UtiliSphere Tickets (126) Monitoring (3) Map' with navigation icons. Below this is a blue bar with 'Asset Maintenance' and buttons for 'Clear', 'Save', and 'Cancel'. The main content area is titled 'Please enter asset maintenance information' with a red warning: 'The assets below must be calibrated today.' The asset is identified as '456789 (Locating Device Receiver)'. The form includes several input fields: 'LAN ID', 'Measured Signal Strength', 'Method Used to Verify Calibration' (with radio buttons for 'Buried Facility' and 'Wire On Top of Ground'), 'Division/District', 'Maximum Deviation from Centerline (inches)', 'Depth of Test Facility at the Midpoint (inches)', and 'Measured Depth at Midpoint (inches)'. A large text area for 'Comments' is at the bottom. The bottom of the screen shows a mobile OS navigation bar with icons for back, home, and recent apps, along with a status bar showing the time as 5:19.

Conclusion

Tablets, laptops and smartphones in the field can enhance the communication of critical information to the people that need it most. In addition, mobile technology can empower the field workforce to update the information on-site and get the most accurate information possible in real time. This dynamic information is fed into models that identify and prioritize where the next focus should be in the field to protect critical assets while ensuring safety and compliance.

As leaders in the industry, we at **irth** Solutions continue to constantly look at new ways to collect the most accurate and real-time data. To learn more about UtiliSphere Mobile visit www.irthsolutions.com or contact sales@irthsolutions.com

About UtiliSphere

UtiliSphere™ is a business intelligence solution for the utility and energy industries. Leveraging our Software-as-a-Service (SaaS) platform, it transforms raw data into actionable insight for delivery system protection, safety and compliance. As an integrated platform, UtiliSphere collects, analyzes and reports on utility delivery system activities, such as ticket management, safety monitoring, public awareness tracking and much more. By using UtiliSphere, organizations improve system uptime, increase workforce efficiencies, ensure regulatory compliance and enhance public safety.

About irth Solutions

irth Solutions®, Technologies For Earth™, provides the leading business intelligence solutions to gas, oil, electric, telecommunications and other utility companies across the country to increase operational efficiency, improve workforce productivity, comply with regulatory requirements and ensure public safety. For nearly two decades, **irth Solutions** has processed thousands of billions of bits of data and has met the unique needs of each customer with unmatched service and ground-breaking system protection, safety, and compliance.