

TECHNICAL BRIEF

UtiliSphere™ Mobile

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



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.

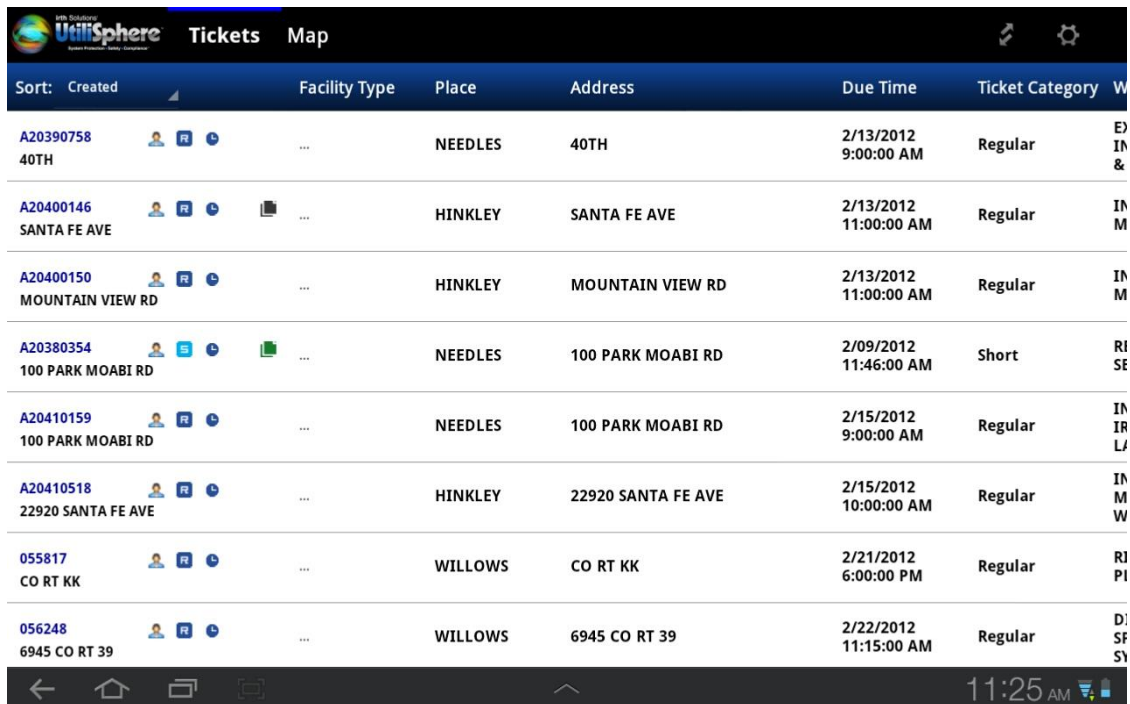
Ticket Management

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.



The screenshot displays the UtiliSphere mobile application's 'Tickets' screen. At the top, there's a navigation bar with the UtiliSphere logo, 'Tickets', and 'Map' tabs. Below this is a header row for the ticket list with columns: 'Sort: Created', 'Facility Type', 'Place', 'Address', 'Due Time', 'Ticket Category', and a partially visible 'W' column. The list contains eight tickets, each with a unique ID, location details, due time, and category. Each ticket row also includes small icons for user, location, and status. At the bottom, there's a mobile OS navigation bar with back, home, and recent apps buttons, and a status bar showing the time as 11:25 AM.

Sort: Created	Facility Type	Place	Address	Due Time	Ticket Category	W
A20390758 40TH	...	NEEDLES	40TH	2/13/2012 9:00:00 AM	Regular	EJ 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.

UtiliSphere Tickets Map

Sort: Created

Ticket Details Ticket History Attachments Dig Site Map Custom Map Google Map

A20390758 40TH

A20400146 SANTA FE AVE

A20380354 100 PARK MOABI RD

A20410159 100 PARK MOABI RD

055817 CO RT KK

064713

065834 CO RT 114

066238 CO RT 32A

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

12:08 PM

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.

UtiliSphere Tickets Map

Sort: Created Ticket Details **Ticket History** Attachments Dig Site Map Custom Map Google Map

A20390758 40TH

A20400146 SANTA FE AVE

A20380354 100 PARK MOABI RD

A20410159 100 PARK MOABI RD

055817 CO RT KK

064713

065834 CO RT 114

066238 CO RT 32A

- A20400146 VO 2/09/2012 10:33:00 AM

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

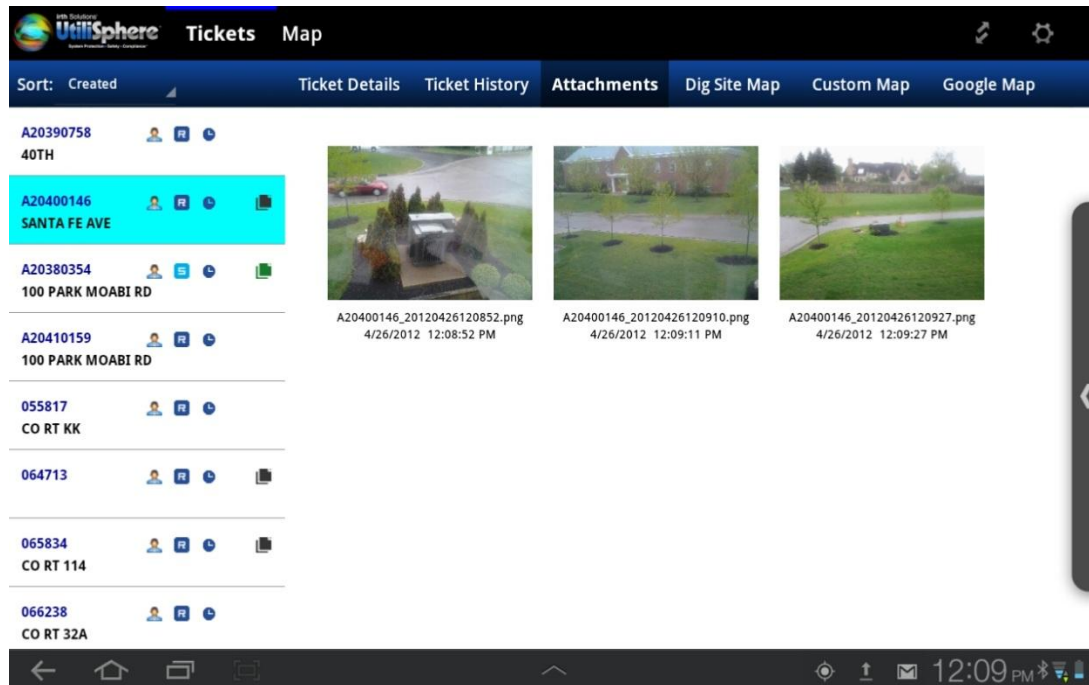
Thu Feb 09 2012 10:33 AM Ticket Queued
DETAILS: Ticket queued for delivery

Thu Feb 09 2012 10:33 AM Ticket Queued
DETAILS: Ticket queued for delivery

12:08 PM

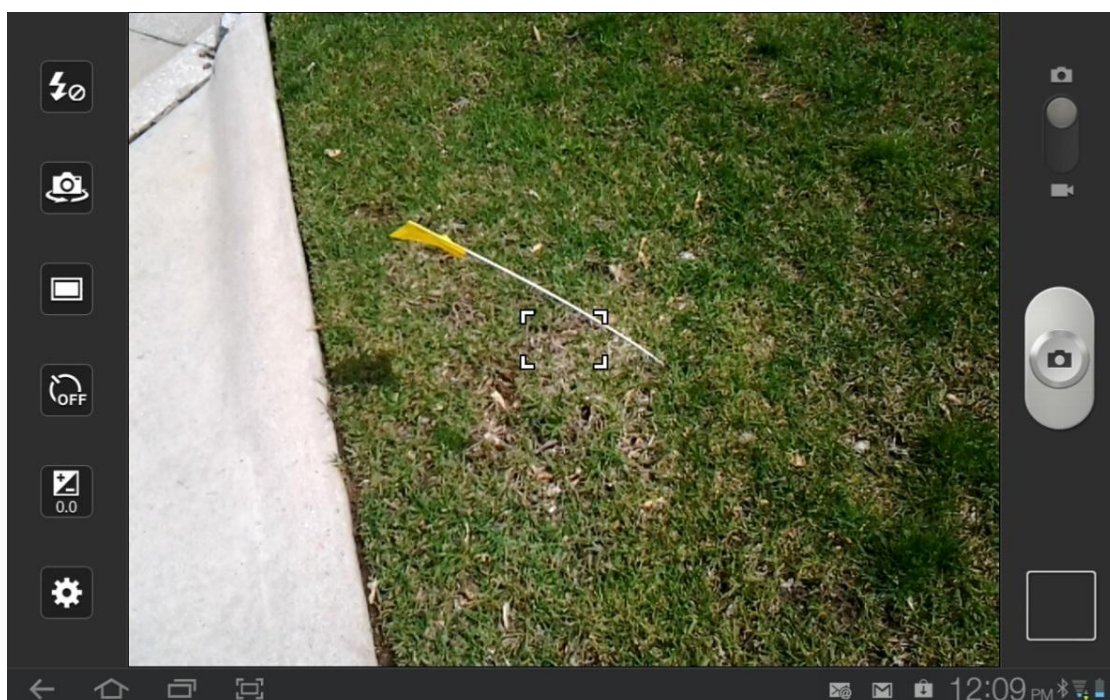
Ticket Attachments

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.



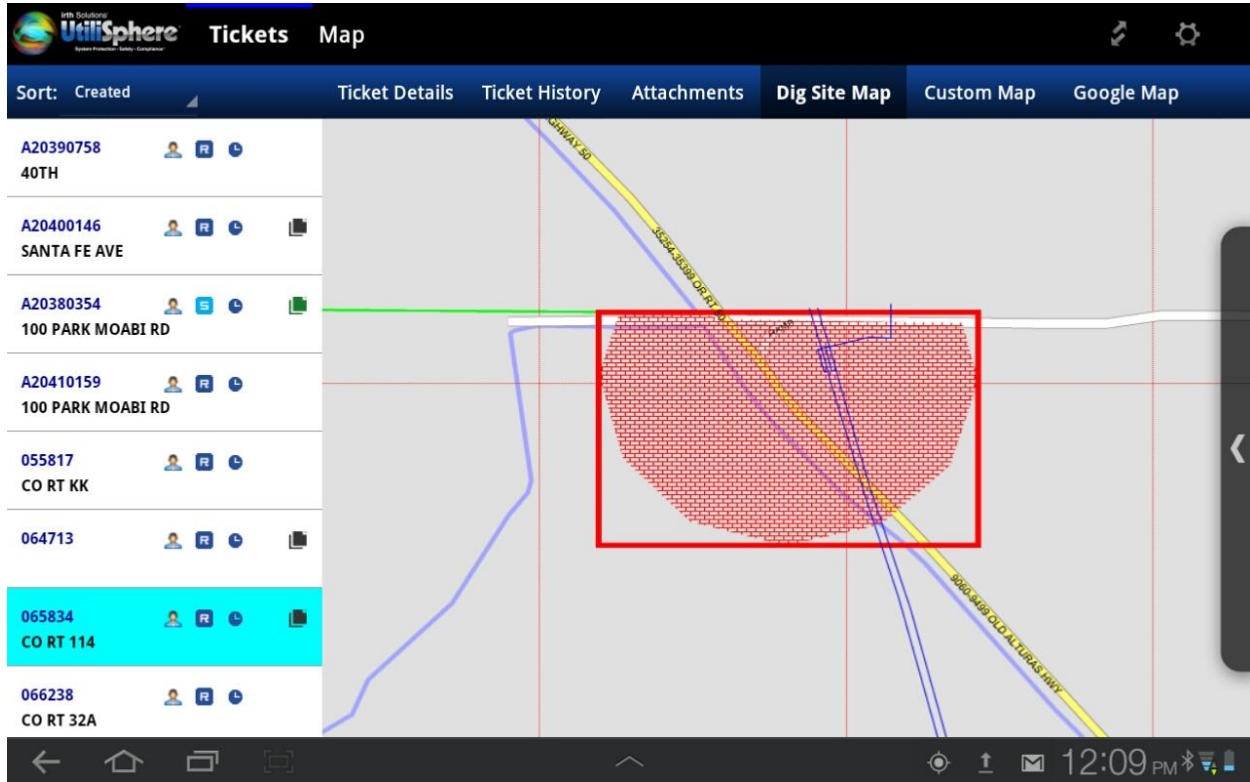
ADD PICTURE

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.



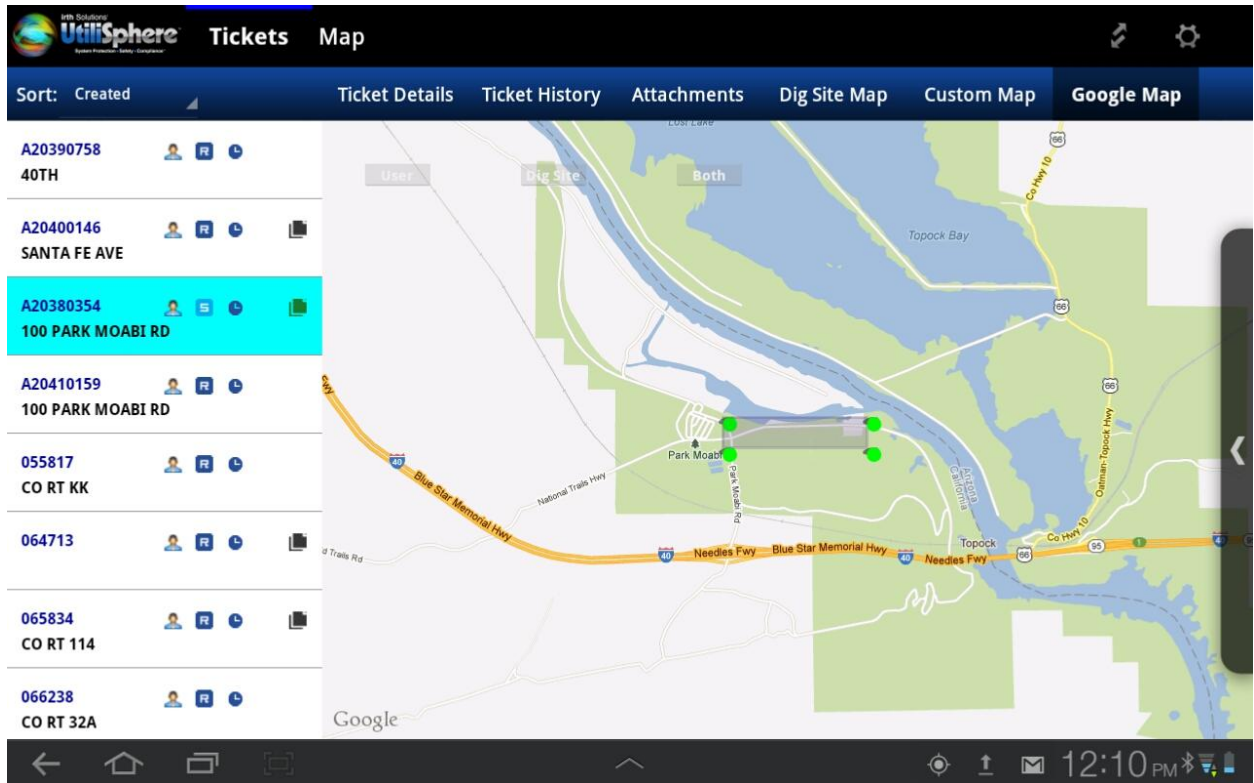
Dig Site Map

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.



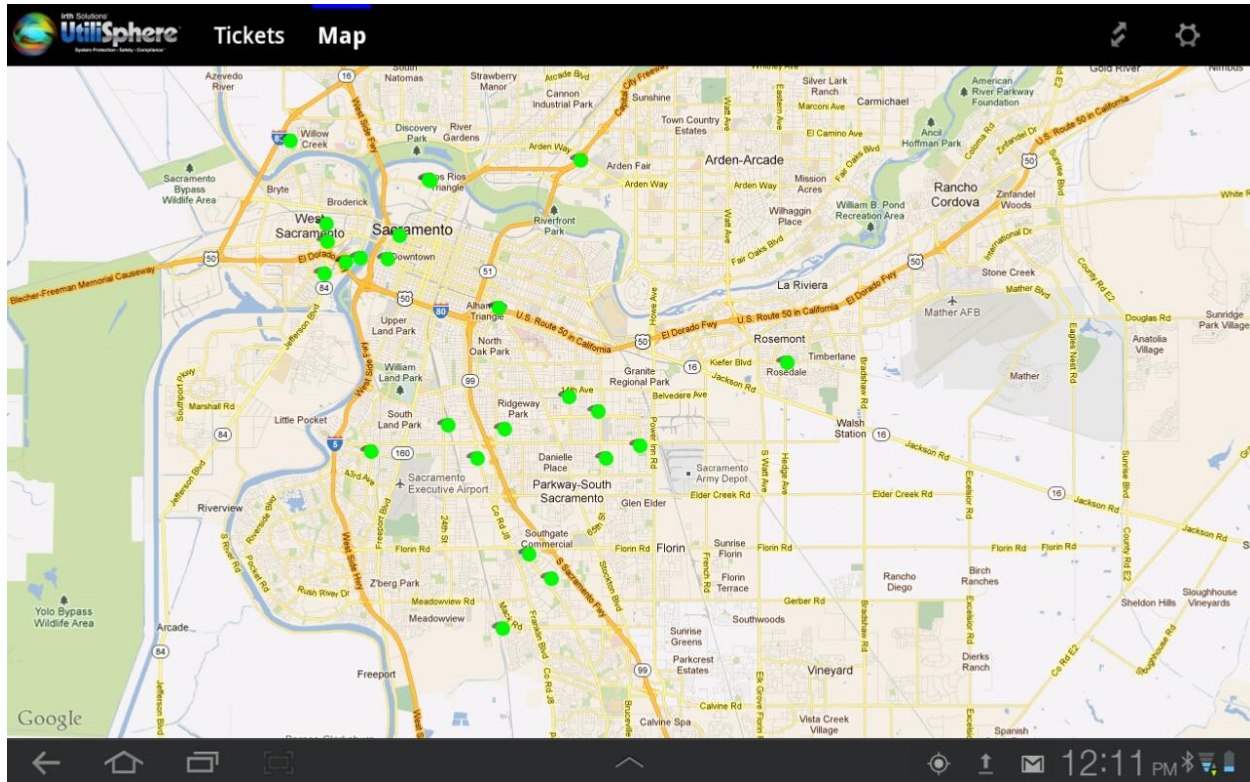
Maps

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.

UtiliSphere Tickets (127) **Monitoring (3)** Map

Sort: Activity ID Status **Activity Details** Daily Logs Attachments Related Tickets Google Map

Ticket ID	Status
201206010002 11239 Midway Rd 95927	Assigned
201206010007 CO RT 32A and CO RT 88	Assigned
201206010010 11239 Midway Rd 95927	Assigned

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

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 Monitoring interface. At the top, there's a navigation bar with 'Tickets (126)', 'Monitoring (3)', and 'Map'. Below this is a tabbed interface with 'Attachments' selected. The main area shows a list of tickets with their status and location. Two tickets are highlighted in blue: '201206010007 CO RT 32A and CO RT 88' and '201206010010 11239 Midway Rd 95927'. To the right of the list, two photos are displayed, each with a red location pin. The photos are labeled with their file names and timestamps: '201206010007_20120627035602.png' and '201206010007_20120627035622.png'. A context menu is open on the right side of the photos, listing actions such as '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'. The bottom of the screen shows a mobile OS navigation bar with icons for back, home, and recent apps, along with a status bar displaying the time as 3:57.

Sort:	Activity ID	Status	Activity Details	Daily Logs	Attachments	Related Tickets	Google Map
	201206010002	Assigned	11239 Midway Rd 95927				
	201206010007	Assigned	CO RT 32A and CO RT 88				
	201206010010	Assigned	11239 Midway Rd 95927				

201206010007_20120627035602.png 6/27/2012 3:56:02 PM

201206010007_20120627035622.png 6/27/2012 3:56:23 PM

- re-assign
- un-assign
- add to folder
- remove from folder
- add picture and note
- add picture
- add log
- submit for reassessment
- close
- re-open

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 shows the UtiliSphere Mobile application interface. At the top, there's a header with the UtiliSphere logo, navigation links for 'Tickets (126)', 'Monitoring (3)', and 'Map', and icons for settings and help. Below this is a blue bar with the title 'Asset Maintenance' and buttons for 'Clear', 'Save', and 'Cancel'. The main content area is titled 'Please enter asset maintenance information' with a red warning message: 'The assets below must be calibrated today.' The form is for asset '456789 (Locating Device Receiver)'. It contains several input fields: 'LAN ID', 'Measured Signal Strength', 'Maximum Deviation from Centerline (inches)', 'Measured Depth at Midpoint (inches)', and 'Depth of Test Facility at the Midpoint (inches)'. There's also a 'Comments' text area. A section for 'Method Used to Verify Calibration' has two radio buttons: 'Buried Facility' (selected) and 'Wire On Top of Ground'. 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.

UtiliSphere Tickets (126) Monitoring (3) Map

Asset Maintenance Clear Save Cancel

Please enter asset maintenance information
The assets below must be calibrated today.

456789 (Locating Device Receiver)

LAN ID :

Measured Signal Strength :

Method Used to Verify Calibration :
☒ Buried Facility ☐ Wire On Top of Ground

Maximum Deviation from Centerline (inches) :

Division/District :

Measured Depth at Midpoint (inches) :

Depth of Test Facility at the Midpoint (inches) :

Comments :

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.