

# Automating Field Data Capture and Management

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**GeoGathering 2011**

GIS for Gathering and Production Lines

# Agenda

- GTI Introduction
- Intelligent Utility System
- Applications for Gathering Lines

- > Not-for-profit research, with 65+ year history
- > Facilities
  - 18 acre campus near Chicago
  - 200,000 ft<sup>2</sup>, 28 specialized labs
- > \$60+ million in revenue
- > Staff of 250
- > A growing business
- > Commercial partners take our technologies to market



Offices  
& Labs



Energy & Environmental Technology Center

Flex-Fuel  
Test  
Facility

## Addressing Key Energy Industry Issues Across the Value Chain



**Supply**

**Expanding the supply of affordable energy**



**Delivery**

**Ensuring a safe and reliable energy delivery infrastructure**



**End Use**

**Promoting the efficient use of energy resources**

# GTI Membership Programs

- Collaborative funding mechanisms
- Operations Technology Development (OTD)
  - Leverage joint funding
  - Share IP
  - Direct selection of R&D projects

# D&IM Program Research Objectives

- Reduce the cost of collecting field data
- Improve the accuracy and quality of field data
- Reduce back-office processing
- Streamline the integration of field data
- Create combined data sets that allow analysis and decision making
- Maintain or increase data security

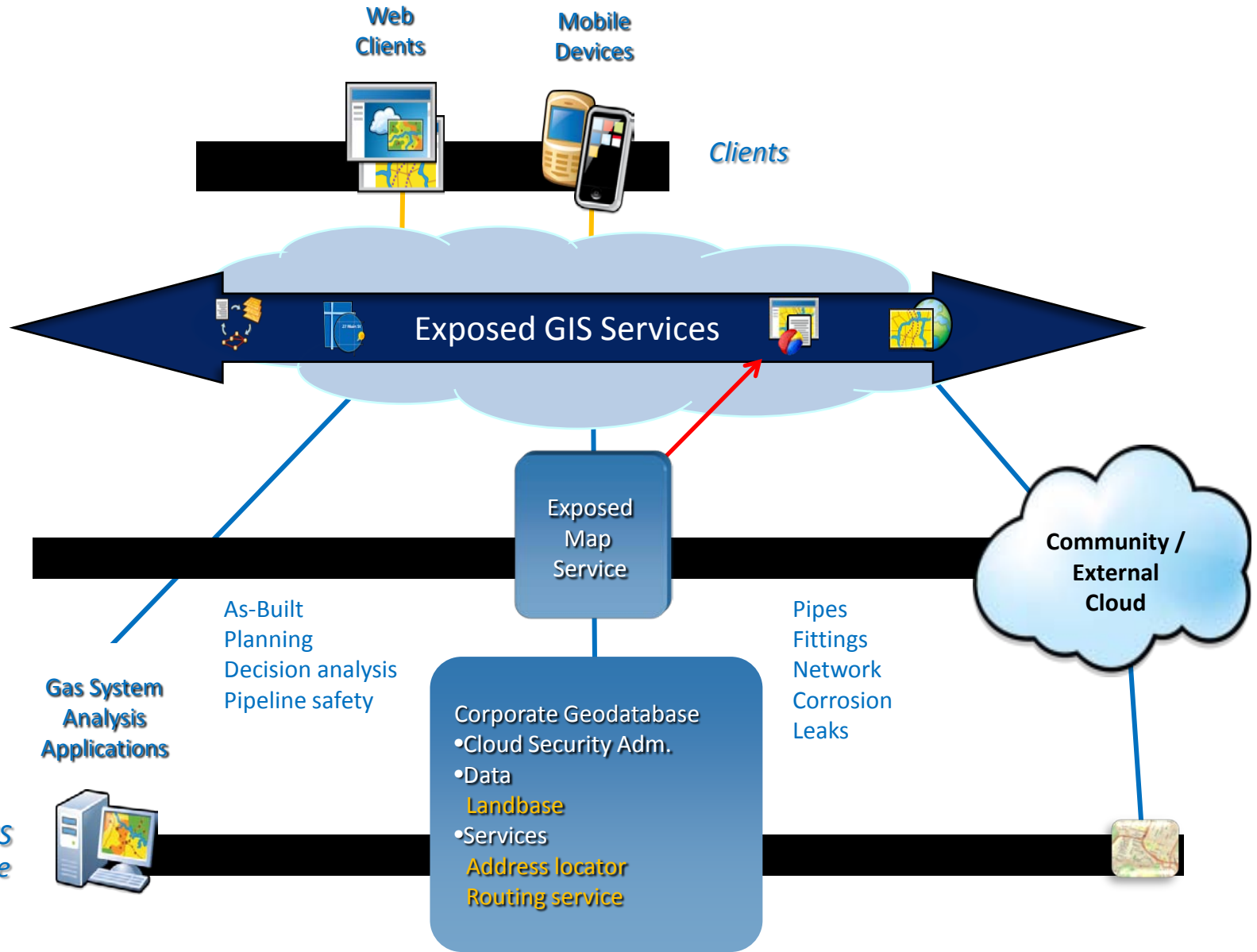
# Intelligent Utility System

- Low cost data collectors
  - Smart phones and tablets
- Cloud computing
  - Amazon Web Services
- GIS
  - Esri ArcServer
- Software Application
  - 3-GIS Network Express



# GeoGathering 2011

GIS for Gathering and Production Lines





# Data Collectors

- Consumer grade smart phones and tablets
  - iPad and iPhone
  - Android devices
- Cost = \$400 - \$800
- Feature rich, easy to use
- Plethora of developers and supporting services
- Durability? But easy to replace



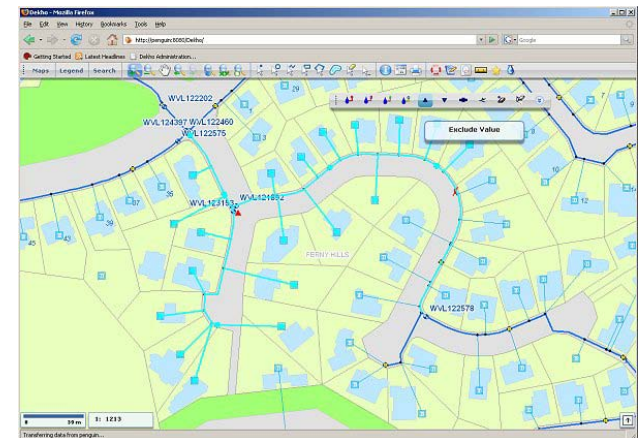
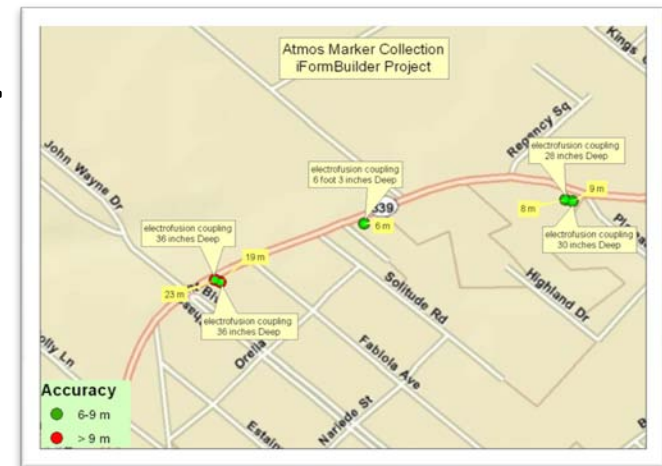
# Cloud Computing

- Hosts exposed map services and provides access to the GIS
- Outside the firewall
- Security
  - Allows controlled distribution of GIS and related data
  - Only exposes small amounts of data



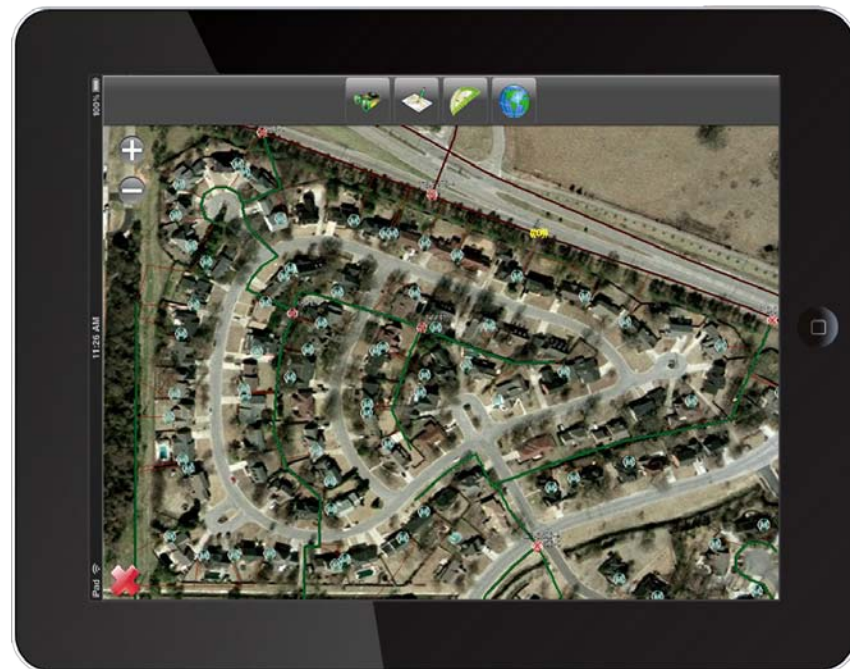
# GIS

- Allows direct access to GIS for field viewing
- Allows direct GIS feature updates
- Attaching field data to GIS features facilitates future analysis and trending
- Using Esri ArcServer



# Software Application

- 3-GIS Network Express
- Smart phone/tablet version of mobile data collection software



# Applications

- CP readings
- Marker ball installations (RFID tags)
- HCA field data capture
- One-call tickets and excavation damage monitoring
- New service installations

# Gathering Line Applications

- New installations
- Leak surveys
- Locating and visualization
- Valve inspections

# Benefits

- Low cost electronic field data capture hardware
- Map-based viewing improves data quality and ease of use
- Direct GIS data integration eliminates back office processing
- Creates combined data sets
- Enhances data security
- Avoids traditional IT concerns
- Uses consumer grade devices

# What next?



For more information . . . .

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