Worldwide demand for energy and water is increasing while costs are rising.
By 2030, the world’s population will increase by 1 billion, consuming 40% more energy and 53% more water.
The increased demand is deteriorating our utility infrastructures, requiring $35 trillion in upgrades by 2030.
The Time To Act Is Now
COMPANY
OVERVIEW
Proven Technology

For global electric, gas and water utility infrastructures that enable intelligent use, measurement and conservation of critical energy and water resources
Sensus by the Numbers

12M
SmartPoints™
deployed in NA

3,600
EMPLOYEES
on 5 continents

10,000
CUSTOMERS
on 5 continents

$46M
R&D Investment

341
AMI Water Systems
What We Offer

- Smart Grid Communications Networks
- Smart Meters
- Advanced Metrology
- Distribution Automation
- Demand Response
- Home Area Networks
- Smart Lighting
- Managed Services
- Software
Sensus Technology Offerings

**Water and Heat Meters**
Residential and commercial meters to measure, and monitor water, air conditioning and radiated heat. Includes sub-metering for multi-unit housing and commercial buildings.

**Electricity Smart Meters**
iCON® A residential and iCON APX commercial meters used with FlexNet™ two-way smart grid communications network.

**Gas Meters**
Mechanical meters (Cubix, R275) and advanced ultrasonic (Sonix) meters. Can include smart points for two-way communication and remote shut off.

**Distribution Automation**
Devices and software applications that provide communications and control of utility distribution operations and equipment.

**Software & Services**
Managed services and application software to increase network productivity, lower operating costs and reduce risk.
Sensus Smart Water Technology

- Leak Detection
- Pressure Monitoring
- Advanced Communications
Smart Grid Communications Network

- Tower or pole-based utility communication system
- Licensed, primary-use radio spectrum
- Electric, water and gas utilities
- Enables multiple “smart grid” applications
  - Distribution Automation
  - Smart Metering & Data Acquisition
  - Demand Response
  - Home Area Networks
  - Lighting Control
  - Pre-Pay
  - Leak Detection
  - Each over a separate, dedicated channel
FlexNet Communications - Transceiver

Field Demonstrated

- Add/Change Spectrum on Same Infrastructure
- Dedicate Spectrum to Applications
- Dedicate Sub-Channels to Applications
- Upgrade Collector Rack Mount Hardware
- Accommodate Future Apps and Protocols
FlexNet 520M2 Transmitter

- 20 Year Battery Warranty
- True Two-Way Communications
- Top of Hour Readings
- Transmits at Two Watts of Power
- Primary Use Licensed Band
- User Configurable Alarms
- Hourly Readings 6 times per day
- Change Endpoint Settings Remotely
- Update Firmware Remotely
- Dual Port Unit Available

Integrated Alarms
- Leak Detection
- Reverse Flow Detection
- Broken Pipe Detection
RNI - Meter Data Management

The interface to utility operations

- Generates reports
- Interfaces with utility billing system
- Customize information for maximum efficiency
Individual Meter Information

- **FlexNet ID:** 13543778
- **Meter ID:** B71941383
- **Type:** Water Meter, North American 2-Way Water
- **Firmware Revision:** Flexnet: 0.3.5
- **Top Level State:** Fixed Base MOM

- **Meter State:** Install. Cycle: Not Configured / 0
- **Location:** Kimberly, ID
- **Position:** 42.529280°, -114.359600°
- **Encryption:** Disabled
- **Key Rotation:** None

**Readings Chart**

- **Latest Reading On:** 2011-09-06 12:00:00
- **Latest Read Value:** 145900.0 g
- **Second Channel:** 0.0

**Alarms**
- Broken Pipe: No current or valid value.
- Leak Detection: 2011-09-06 05:12:54
- Backflow: No current or valid value.
- Transmitter Tamper: No current or valid value.
- Low Battery: No current or valid value.
- Battery Voltage: 3.671875 V
Data Management Partnership

- Our utility customer owns the data at all times
  - This includes when we or our partners provide Software as a Service

- We assess and validate our partners through a structured process
  - Requirements driven
  - Secure
  - Scalable
  - Stable

- Open standards driven integration
  - RNI – MultiSpeak for transactions (on demand reads)
  - RNI - CMEP files (California Meter Exchange format) – flat file exchanges of data
  - RNI – Database Views
Redwood City
Automated Meter Infrastructure
Redwood City

- Service Area Population 86,000
  - 24,000 water service connections
AMI in Redwood City

- Started 2008 in preparation for budget based rates
- 650 dedicated irrigation accounts fully implemented
- 168 Recycled Water accounts
- AMI for all new and replaced meters
- 5000 residential, commercial, and other
- 18,000 manual meters not yet converted
- 3 – TGBs (data collectors)
Customer Portal

- Quick view of Past Year
  - Water consumption
  - Water budget
  - Percentage of over/under use

- Automated Email Notices
  - Leak Alerts
  - Over Budget notices
  - Water Use Report
View by Period

- Consumption & Budget totals by day for billing period.
- Cumulative or Daily Totals
- Irrigation schedules
- Time of use
  - Restrictions
  - Troubleshooting
- Constant use (leak)
- Broken Pipe
Target Range 100% to 125%
encourage adequate irrigation for poor soil conditions to leach salts
Flat rate for all use
Notifications to Staff

* Alerts Currently in Use
  * Leak Alert Summary
  * Closed Accounts with Consumption
  * Accounts with Negative Consumption

* Planned Alerts
  * Broken Pipe Detection
  * Meter Tamper Alarms
  * Battery Alarms
Notifications to Customers

* Notifications Currently in Use
  * Leak Alert (daily while leak persists)
  * Usage Alert (daily if over budget)
  * Usage Report (every two weeks)
  * Administrator Notifications (as needed)

* Future Notifications
  * Broken Pipe
  * User configurable usage/budget alert
Questions/Contact

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