



**Thought leader in next generation
RFID sensor-based solutions**





Overview of RFID technology and the SENSEIQ™ InSight Platform for Asset Management

What is RFID?

RFID — Radio Frequency Identification — is an Automatic Identification and Data Collection (AIDC) technology that uses radio-frequency waves to transfer data between a reader and a movable item to identify, categorize, and track. RFID is a technology that provides wireless identification of people and assets.

RFID is a wireless system that works in conjunction with an organization's information technology infrastructure to improve business processes such as inventory management and visibility into the enterprise's information systems.

It can greatly enhance an enterprise's ability to manage its assets and resources by providing a real-time view of where assets are located, and where and how they are moving across the enterprise's environment. This results in unprecedented gains in operational efficiency for the organisation.

How do RFID Systems Work?

An RFID System consists of one or more RFID tags, interrogators with antennas, host computer

and the appropriate software to transform the raw data into actionable information.

Readers may be either fixed or mobile. Fixed readers may be installed at any location, ideally where the tags frequently pass through such as gates or chokepoints, at a point of sale, or in a warehouse. Mobile readers are usually smaller, handheld devices with cable or wireless communication.

RFID Application Areas

RFID has gained immense popularity over the past few years and is now being implemented for various applications across different industries.

Healthcare

- Medical equipment location
- Optimize capital asset utilization
- Hospital Staff location
- Positive Patient identification, tracking and monitoring
- Theft prevention of high value equipment and medicines
- Supports Joint Commission on Accreditation of Healthcare Organizations' (JCAHO) compliance

Construction Industry

- Apply RFID tags to construction assets

including tractors, excavators, cranes, and a multitude of attachments

- Tracking attachments at their various locations and knowing which store they are at. Many of these attachments are non-serialized. Often the various yards lose visibility of these items and are then forced to reacquire new ones
- Managing inventory across different construction locations

Manufacturing Plant/Automation

- Raw materials and WIP inventory tracking on factory shop floors
- Finished goods tracking in manufacturing supply chains
- Personnel and employee tracking

Hospitality Industry

- Theme Parks
- Special Event and Guests Tracking
- Ski resorts and Large malls
- Children and Adult assistance homes

Office Asset Management and Call Centers

- Theft prevention of high value equipment
- Employee Access control and tracking
- Employee Productivity

Timber Plant Application

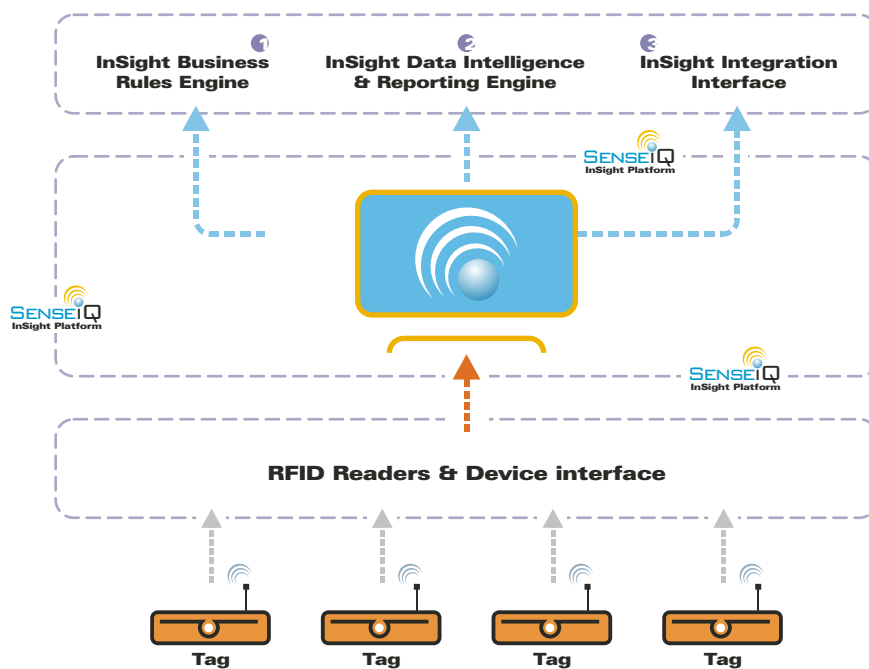
- Tracking Wood Supplies
- Theft Prevention

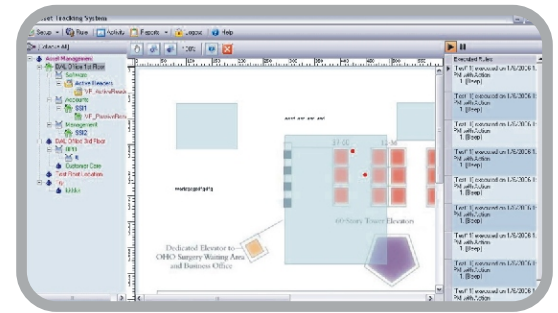
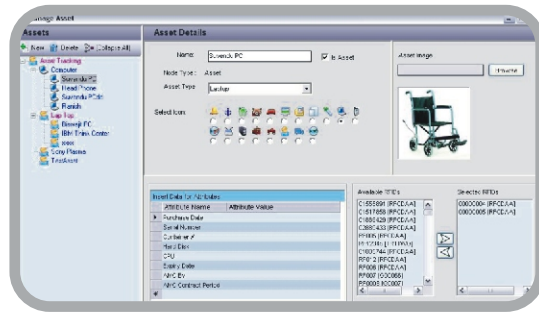
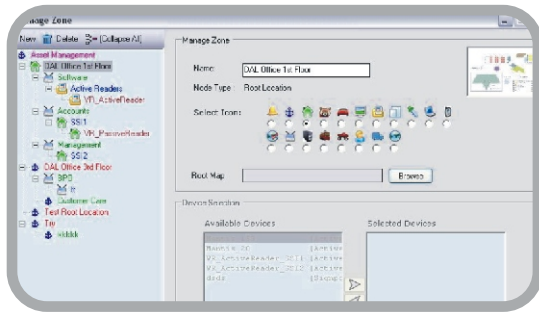
Utility Industry

- Meter Tampering and theft prevention
- Staffing Productivity and Analysis (# of meters read/day)

Logistics

- Increase security in global commerce - cargo theft, loss, misplaced items
- Reduce operating costs and streamline operations
- Improve efficiencies in cargo handling, container tracking
- Scale operations by getting visibility into the physical operations across different locations
- Provide value added services by integrating with other logistics information systems





SenselQ™ InSight Platform

RFID tags and readers are only a part of an RFID implementation, serving as the enablers for automated transmission of information. An RFID deployment may generate a significant amount of tag and event data.

To realize true RFID deployment benefits, enterprises need to shift their focus from hardware technology to data management and intelligence. It is the intelligent use of the real-time and historical event data generated by RFID that will improve efficiencies, automate decision making, bring in cost savings and provide competitive advantage.

The SenselQ™ InSight platform is developed to address this need. InSight is the only software platform specifically designed to support hybrid RFID sensor technology with a full suite of asset management capability including automatic asset data collection and correlation, managing asset lifecycle and intelligent decision making with a flexible business rules and workflow engine for defining custom alerts and data filters.

SenselQ™ InSight Platform Core Features

- Complete asset lifecycle management functionality including administrative functions to manage tags and devices like creating asset-tag associations, commissioning tags, modifying attributes, etc.
- Supports active and passive tags and various EPC (Electronic Product Code) tag formats.
- Microsoft .Net services based Distributed Architecture with synchronous and asynchronous communication support between various SenselQ™ InSight components.
- Supports GSM/GPRS connectivity in areas with limited network access.
- Business Rules to enforce workflow route planning and verification, and dynamic route adjustments based on actual asset movements. Supports complex user-defined business rules and built-in templates.
- Supports real-time alerts sent to an SMS recipient, email, management console, and IP network address.
- Correlation Engine enables autonomous event data collection and correlation to handle data read errors and other data integrity issues.
- Supports industry leading products including active, passive and hybrid RFID tags, RFID printers, barcode scanners and EDGE devices (photo-eyes, Programmable Logic Controllers, light stacks, IP cameras, Infra Red Transmitters).
- Intuitive user interface to manage assets, search for assets, define business rules to filter assets, define “alerts” based on specific business events or workflow inconsistencies.
- Mapping interface to integrate physical maps and blueprints of physical layouts. This enables associating devices to physical zones and makes it easy to relate the asset movement to the current environment.
- Easy to install, deploy, manage and maintain.
- Intelligent Reports including asset pedigree, zone traffic history and audit trail reports enables informed decision making.
- Web-based interface to provide remote management and monitoring.
- Supports managed service provider model.

SenselQ™ InSight RFID/Sensor based Business Application

ERP, SCP, WMS other 3rd party Applications

Core Features

- Complete Asset Lifecycle Management
- Supports various EPC tag formats
- Supports Managed Service Provider model
- GSM/GPRS Support
- Flexible Business Rules Engine
- Real-time Alerts
- Correlation Engine
- Intuitive User Interface
- Mapping
- Microsoft .Net Services Architecture
- Easy to deploy and maintain
- Intelligent Reporting
- Remote Management and Monitoring

Business Rules Engine

Intelligence Query & Reporting Engine

3rd Party Integration Interface

Data Intelligence and Reporting Interface Layer

Data Collection, Filtering and Normalization layer

RFID & Sensor Device interface

Management and Monitoring

System Utilities & Tools

SenseIQ™ InSight Platform Features

SenseIQ™ believes the true value of any application or investment is realized by combining information from disparate sources, processing it and extracting value to maximize the return on investment.

- 3rd party Integration Service enables integration with existing ERP, SCM, WMS systems and can co-exist with legacy application
- Data correlation and integration capability provides ability to capture business context and semantics in conjunction with real-time event data to enable decision making with SenseIQ™ InSight
- RFID data interface supports for multiple RFID devices (readers), tags and sensors from industry leading vendors (including ThingMagic, Symbol, Alien, RF Code, CrossBow, SamSys, Texas Instruments, iPico, Intermec, MacSema, AWID, and Zebra) and provides ability to support other devices

SenseIQ™ InSight Benefits

- Increases visibility into your organization's flow of assets to provide near real-time location information.
- Reduces additional capital costs by minimizing the "buffer" inventory which needs to be maintained for smooth operations and compensate for lost or misplaced assets
- Enables automatic data collection, increases efficiency, accuracy and reduces data errors and inconsistent information. SenseIQ™ InSight provides opportunity to collect data potentially in real-time and in locations not previously feasible
- Increases control and security, improves service and efficiency, minimizes misrouting and helps identify bottlenecks in enterprise's physical infrastructure
- Improves labor productivity by helping operators efficiently process each asset's information quickly and saves time in locating assets or finding other tagged resources such as employees, customers or mission critical equipment
- Business analytics and intelligence reporting capability provides ability to analyze asset flow, workflow patterns, productivity and utilization analysis to enable informed decision making

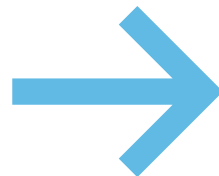
SenseIQ™ Consulting Services

SenseIQ™ works with companies to determine the best approach to deploying RFID based solutions. SenseIQ's implementation methodology ensures success in integrating RFID into your enterprise's infrastructure. Our cross functional specialists have many years of experience in assisting clients in evaluating and implementing new technologies across various industries which helps us to serve our clients better.

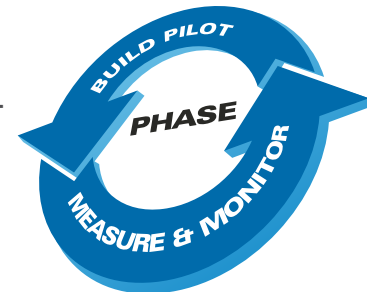
SenseIQ's Services Team provides turnkey solutions by offering the following services:

- Business case development by working with customers to do ROI analysis and feasibility study
- RFID Program Management
- Site survey to understand any environmental factors to consider for RFID configuration
- Installation Services for device configuration, network and software setup and system commissioning
- Consulting Services to define business rules tailored to specific business requirements and application integration
- Ongoing platform maintenance and helpdesk support
- Training and Education Programs

**Business Case
Development and
Strategic Alignment**



**RFID Strategy &
Business Case
Development**



**Full Scale
Rollout and
Benefits realization**

Program & Project Management



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