



**IoT Warehouse
Tracker**
Tag. Track. Manage.



Tracker IoT LLC

Software, Tracking and Security Technologies



Incorporated in 2007 and registered as TrackingSystems^{IoT} in 2019

Florida Secretary of State ID Code: 190916172539-200334160982#1

United States Federal Identification and Taxation #: 84-3082964

United States Authorized Resale Identification #: 68-801850871



Representative Experience



The United States Department of State

Weapon management system to register and manage all U.S. Department of State weapons, gear and ammo at centralized weapons depot warehouse in Washington, D.C.. The State Department warehouse stores a wide range of weapons, gear and magazines that are Issued to embassies and agents worldwide for security operations at U.S. embassies and for use by State Department agents in their field-of-duty.

Established stand-alone secure, local network of seventeen (17) computers across procurement, armory and warehouse. Established a double-blind system to separate procurement operations and data from armory operations and data, including direct link with the State Department's ERP system.

Amazon

Amazon maintains 39 fulfillment centers across India, and utilizes our solution at multiple sites and is being expanded across the enterprise to manage their core warehouse functions utilizing RFID technology, including USB RFID scanners at registration and shipping workstations and mobile RFID scanners for warehouse operations. Tracks goods to storage locations, cycle-counts and manages put-ins and pulls.

- Real-time visibility of inventory in warehouses
- Check-in/Check-out, transfers and inventories
- 85% reduction in manhours for work processes

E-Durables

E-Durables is one of the world's largest OEM air conditioner manufacturers, with state-of-the-art factory producing 4,500+ units per day, and has earned reputation as the best original design manufacturer in living appliances category. Implemented our solution for tracking raw materials and goods-in-process throughout manufacturing operations and automation of production lines for OTIF achievement, traceability of subcomponents and warranties with sub-suppliers and coordination of planning, production, FG and dispatch data. Solution provides end-to-end traceability and online tracking as required for best utilization of workers, components and parts for higher productivity and enhanced customer satisfaction.



Representative Experience



Hindustan Petroleum Corporation

Hindustan Petroleum Corporation (HPCL) is ranked 367th on the Fortune Global 500 list of the world's biggest corporations. Implemented our solution to identify and manage the assets, parts and tools across their warehouse operations, to track the location and status of assets and equipment.

Implemented digitized our tracking and traceability system to maintain and track assets at customer premises using QR codes, RFID, IoT and barcodes. Manages the receipt, maintenance, quantities and transaction history of assets at each of over 1,500 locations. Solution improved asset utilization, accountability and reconciliation, while reducing costs, improving customer service and customer retention.



Miami Museum of Modern Art

The Perez Art Museum Miami is a modern and contemporary art museum dedicated to collecting and exhibiting international art of the 20th and 21st centuries. The museum maintains an inventory of 1,000's of artworks and artifacts, that are periodically rotated for display or loaned to other museums and institutions.

Implemented UHF RFID solution to tag the art and artifacts in their warehouse, including unique shelf location barcodes so that the exact locations of assets are available at all times. Utilizes mobile RFID scanner to rapidly perform inventories and to find missing objects. Includes RFID antennas and alarm at exit from storage system to the museum display areas for real-time, passive check-in / check-out.



Mahindra Acelo

Mahindra Group is a US \$20.7 billion multinational group, with a presence in more than 100 countries, a global leader in the supply of high grade CRGO laminations for transformers. Our solution is utilized to manage goods and manufacturing processes, integrated with key backend database systems, and including:

- Online KPIs : Production, Productivity, OEE, Performance, Availability, Runtime, Downtime
- Traceability from Steel Coils to CRGO laminations
- Automated Reporting including Shift, Daily , Monthly, Yearly and Shutdown

IoT Warehouse Tracker Technology



**State-of-the-Art, Best-of-Breed Technology for
Long Term Performance**

IoT Warehouse Tracker



- WarehouseTracker^{IoT} deploys barcodes, QR codes, UHF RFID and long-range tracking technologies to optimize the management and tracking of goods, assets, equipment and personnel across warehouse operations, or improved operations and profitability.
- Integrates with backend ERP and WMS databases and software for bi-directional data interchange
- Identifies each serialized item, each of which can be tagged with barcode and/or UHF RFID for intake, tracking within warehouse and dispatch
- Identifies each non-serialized item, and tracks their intake tracking within warehouse and dispatch by scanning common barcode identifier and increment-decrementing quantities
- Supports networked computers, laptops, tablets, phones and mobile scanners for streamlined operations and work on-the-go



IoT Warehouse Tracker Process Flow

IoT Warehouse Tracker

Data-Driven Warehouse Management

- WarehouseTracker^{IoT} is available cloud-based or installed on local server and network, for managing goods based on barcode, QR codes, RFID, serialized ID # or non-serialized ID #.
- Material check-in
- Bin allocation or storage location scan and identification
- Inventory and cycle counts based on variable criteria, such as 'by client' or 'by bin'
- Audit storage locations to determine expected and found, expected and not found and unexpected and found data
- Pull items and check-out through mobile computing, or take to dispatch computer for on-computer check-out
- Complete audit trail historical records of all transactions
- Comprehensive reports and performance analysis



Material Receipt | Check-In | Put Away



Material Receipt

- Receive and unload materials
- Verify materials against data from bill-of-lading and receiving documents displayed on computer, tablet or phone
- Note exceptions, damaged goods and other data-points to validate goods received



Check-In

- Material sorting
- Verify if goods have unique barcode or RFID or non-serialized barcodes
- Tag any goods that require barcode and/or RFID with preprinted labels or through printing of labels
- Update tag data values to software



Put Away

- Software provides put-away list in sequence to minimize walk-around
- Scan shelves and bins when placing goods into storage, and scan goods or enter serialized or non-serialized data identifier to log goods to specific storage locations
- Enables pinpoint locating in future

Inventory & Audit | Locate | Check-Out



Inventory & Audit

- Scan the storage location barcode, enter location # or select location from a drop-down list in software
- Inventory list of goods expected at the location display as 'expected records'
- List of found 'available' and 'missing' inventory will display on scanner, phone or tablet



Locate missing inventory

- Expected goods not located at a storage location auto-populates mobile device 'Locate' list
- 'Missing' goods ID #'s can be manually added to the mobile device to main single 'Locate' list
- The mobile scanner utilizes numeric index, color scale and frequency of beeps to guide User right to goods

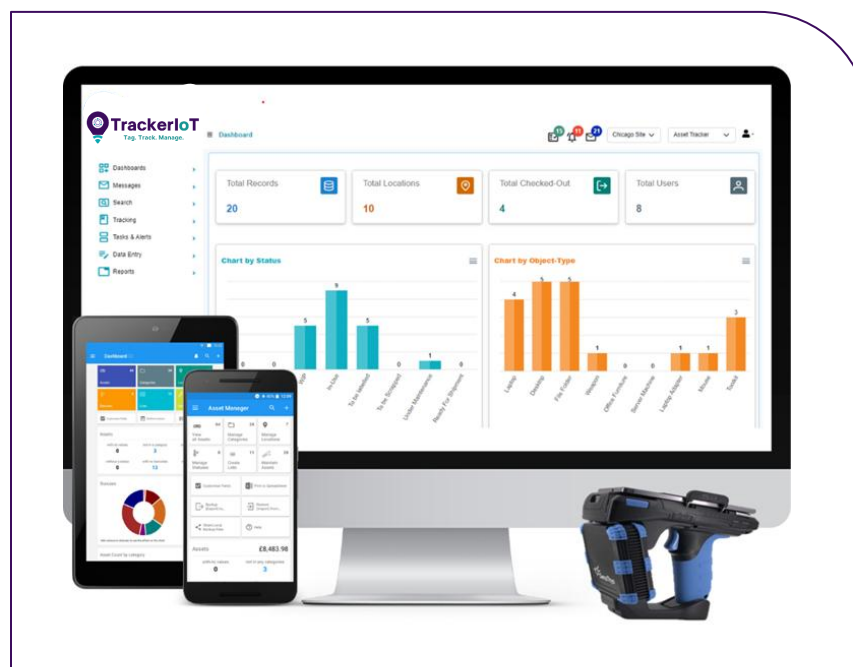


Check Out

- Utilize mobile scanner, tablet or phone to identify the goods being pulled and to select or scan the destination to which the goods are being dispatched
- If re-usable RFID tags are utilized, remove the tags from the goods
- Fully supports workstation-based check-out of goods



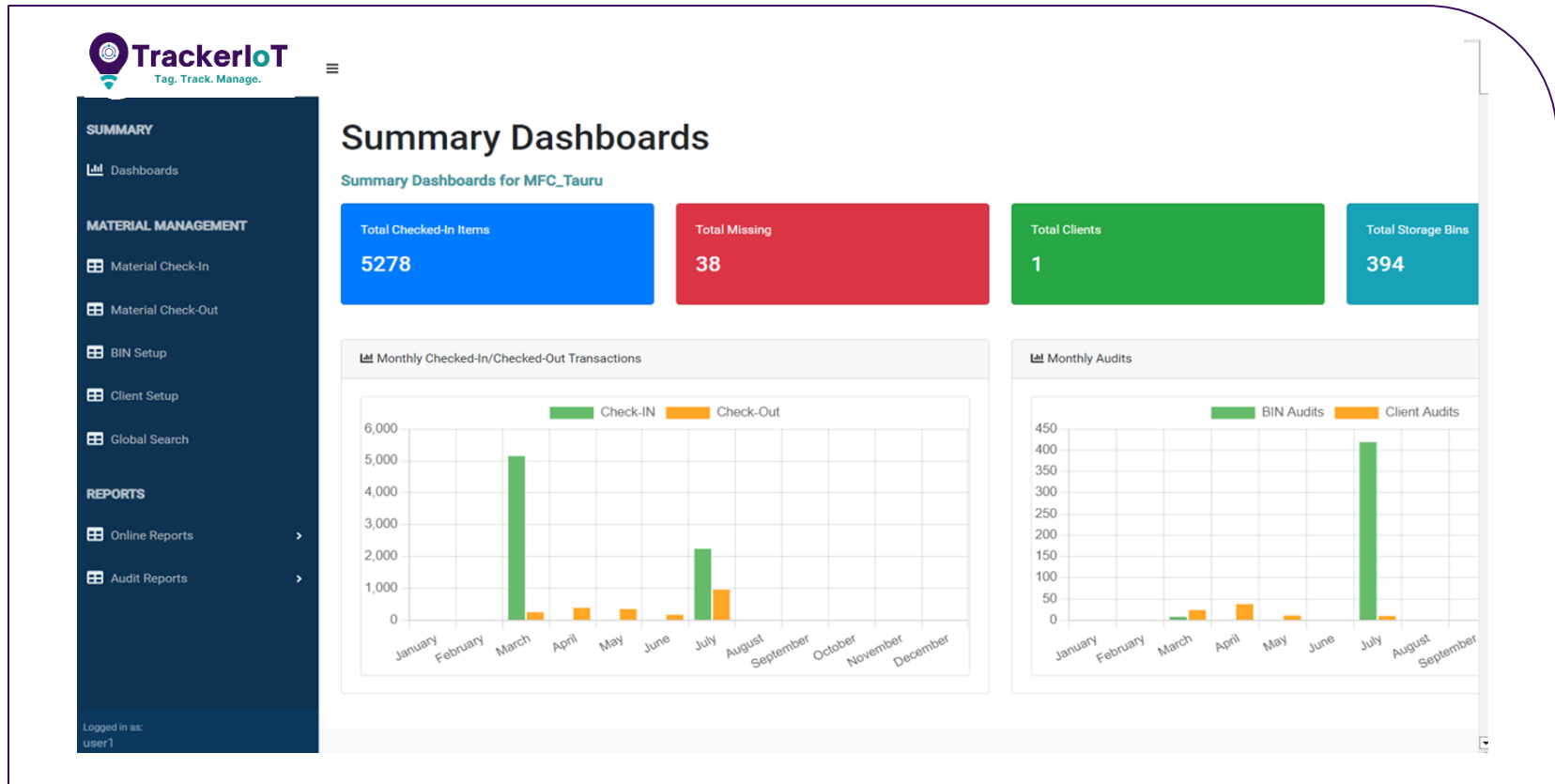
IoT Warehouse Tracker Networked Software



COTS (commercial-off-the-shelf) Software

- WarehouseTracker^{IoT} software is rapidly configurable and deployable for any industry's and customer's manufacturing, warehousing and distribution applications
- All features developed by TrackingSystems^{IoT} or developed for customers iterates the single software code-base with all capabilities available out-of-the-box for each new customer
- Software features, tracking technologies and security technologies are configurable for each customer's exacting data, workflow, tracking, reporting and security requirements
- Includes existing template optimized for warehouse and distribution operations

Site Dashboard



- Fully configurable dashboard with graphs and charts to display critical warehouse management data
- Management interface for tasks, workflows, alerts and messaging
- Calendar that displays tasks and alerts based on dates

Material Check-in

Material Check-In

Dashboard / Material Check-In

*Select Storage BIN

SF-170101-C

+BIN

*Select Client

Select Client

+CLNT

Storage Col

Storage Co

Storage Row

BOX#

Storage Row

BOX

*RFID

RFID

Barcode

Barcode

CLR

+ Add

+Direct RFID

Date	RFID	Barcode	Client	Storage Col	Storage
08-Jul-2023 09:57	E280699500005000FE535080	8907066343787	Goat_Breakbounce		
08-Jul-2023 09:57	E2806995000050008912154E	8907066344371	Goat_Breakbounce		
08-Jul-2023 09:57	E2806995000050008911EDE9	8907066344470	Goat_Breakbounce		
08-Jul-2023 09:57	E2806995000050008911F91A	8907066335966	Goat_Breakbounce		

- Reconciles physical items against backend procurement, ERP and other customer database systems
- Confirms item identity, tracks to storage location and utilizes scanning or increment/decrement for movements
- Enables periodic inventories and cycle-counts of items in inventory to keep the database current

Material Check-out

Material Check-Out

[Dashboard](#) / Material Check-Out

*RFID

*Select Storage BIN



Total

19

Select	Date↕	RFID↕	Barcode↕	Client↕	Storage Col↕	Storage Row↕
<input type="checkbox"/>	08-Jul-2023 09:53	E280699500004003795940B6	8907066335966	Goat_Breakbounce		
<input type="checkbox"/>	08-Jul-2023 09:53	E200001D241402702010EC6B	8907066341738	Goat_Breakbounce		
<input type="checkbox"/>	08-Jul-2023 09:54	E2806995000050008911F212	8907066336161	Goat_Breakbounce		
<input type="checkbox"/>	08-Jul-2023 09:54	E2806995000050037957308D	8907066336673	Goat_Breakbounce		
<input type="checkbox"/>	08-Jul-2023 09:54	E2806995000040008912111E	8907066335966	Goat_Breakbounce		
<input type="checkbox"/>	08-Jul-2023 09:54	E28069950000500089120D1E	8907066335966	Goat_Breakbounce		
<input type="checkbox"/>	08-Jul-2023 09:54	E280699500005003795695CD	8907066336659	Goat_Breakbounce		

- Enables the use of mobile scanners, tablets and phones to identify items that are being checked-out
- Checks-out serialized items by serial #, barcode or RFID tag and non-serialized items by decrement
- Automatically updates the database and produces audit-trail records for each item(s) check-out!

Inventory by Storage Location

Inventory By Storage Location

[Dashboard](#) / [Inventory By Storage Location](#)

*Select Storage BIN

SF-170101-C



Check-In Date	RFID	Barcode	Client	Storage Col	Storage Row
08-Jul-2023 09:53	E280699500004003795940B6	8907066335966	Goat_Breakbounce		
08-Jul-2023 09:53	E200001D241402702010EC6B	8907066341738	Goat_Breakbounce		
08-Jul-2023 09:54	E2806995000050008911F212	8907066336161	Goat_Breakbounce		
08-Jul-2023 09:54	E2806995000050037957308D	8907066336673	Goat_Breakbounce		
08-Jul-2023 09:54	E2806995000040008912111E	8907066335966	Goat_Breakbounce		
08-Jul-2023 09:54	E28069950000500089120D1E	8907066335966	Goat_Breakbounce		
08-Jul-2023 09:54	E280699500005003795695CD	8907066336659	Goat_Breakbounce		
08-Jul-2023 09:55	E2806995000040008912111D	8907066344425	Goat_Breakbounce		

- Each storage location and/or bin is identified by a unique serial # label and/or barcode serial # label
- User enters location serial # or scans location tag and then scans each serialized item and counts or weighs non-serialized items for complete, accurate inventory counts
- Inventory data automatically updates WarehouseTrackerIoT and backend database systems

Real-Time inventory Counts

Inventory Snapshot By Storage Location

Dashboard / Inventory Snapshot By Storage Location

Download

Bin Name	Quantity
SF-170101-C	19
SF-170202-C	5
SF-170102-C	24
SF-170104-C	19
SF-170201-C	20
SF-170105-C	6
SF-170203-C	21
SF-170103-C	12
SF-170101-A	26
SF-170101-B	24

- WarehouseTracker^{IoT} keeps track of the quantities and locations of all materials, goods-in-process and inventory by item-type and by the specific storage locations at which they are located
- Enables rapid reconciliation of 'expected inventory' and 'actual inventory' for exceptions management

Unlimited Standard and Custom Reports

Report Missing Items

Dashboard / Report Missing Items

Start Date: 01-Jun-2023 End Date: 24-Jul-2023 [Get Data](#)

[Download](#)

Check-In Date	RFID	Barcode	Client	Bin	Storage Col	Storage Row
09-Jul-2023 14:54	E28069950000500379562C60	8907066339230	Goat_Breakbounce	SF-170402-B		
09-Jul-2023 14:56	E28069950000400089123944	8907066343992	Goat_Breakbounce	SF-170402-C		
09-Jul-2023 17:14	E2806995000050037956E030	8907066337076	Goat_Breakbounce	SF-170504-A		
15-Jul-2023 11:27	000000000000000000000000		Goat_Breakbounce	SF-172503-A		
15-Jul-2023 17:11	E28011700000021713CA1AD7	8907066347051	Goat_Breakbounce	SF-172704-C		

- Select the report that you would like to run with date, date range and other parameters for pinpoint reports
- Reports can render to any required report formatting
- View, print and email reports



Mobile Software

Mobile Computing Summary

Data-Driven Warehouse Management

WarehouseTracker^{IoT} supports the use of phones, tablets and mobile scanners to streamline and automate warehouse functions. TrackingSystems^{IoT} is a certified partner for barcoding, RFID and RTLS solutions with Zebra, the global #1 leader in warehouse management tracking devices.

- Identify goods at point of receipt
- Identify goods being placed into storage and the locations at which the goods are being stored
- Pull goods and transfer to destinations
- Inventory and cycle count
- Audit storage locations and bins for exceptions management
- Locate 'missing' items to complete disposition and for accountability



Inventory Count by Client and Criteria

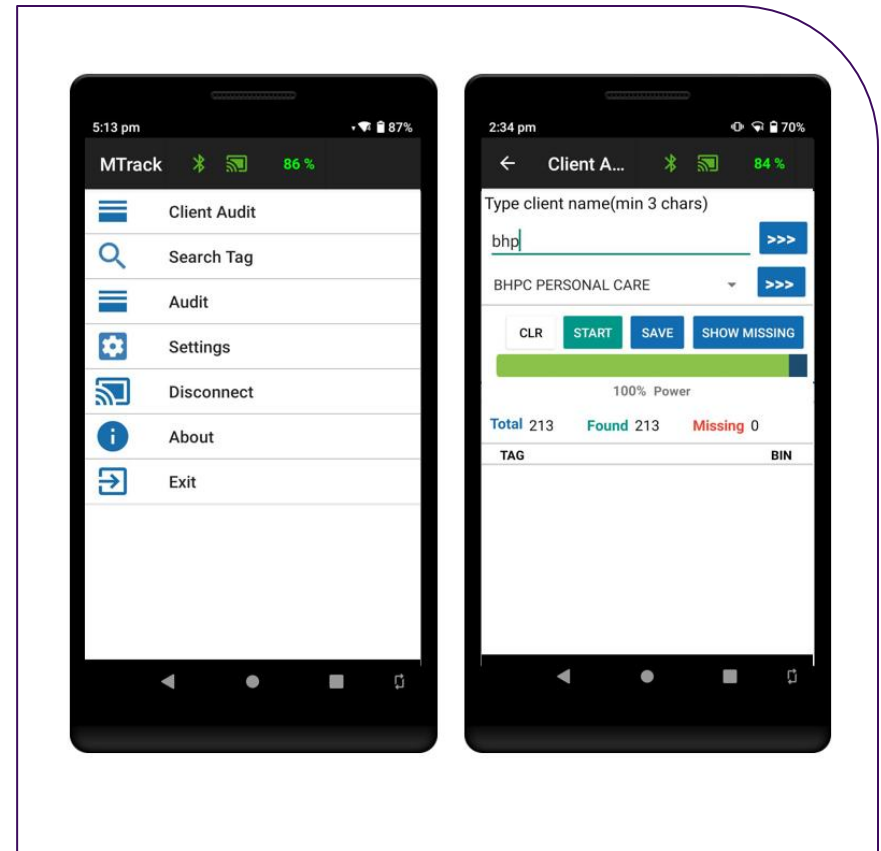
Inventory count by criteria

Utilize mobile scanners and tablets to rapidly inventory goods in storage systems, including the ability to identify goods related to specific clients, shipments or other criteria.

Goods can be inventoried by scanning barcode label, RFID tag or by selecting or entering the ID #'s of goods

Mobile scanner software enables entry or selection of client, shipment or other parameters to identify items at each discreet storage location matching the search criteria

Total inventory counts show as number in green for Found and Red for Missing



Inventory Count by Bin

Inventory count by bin

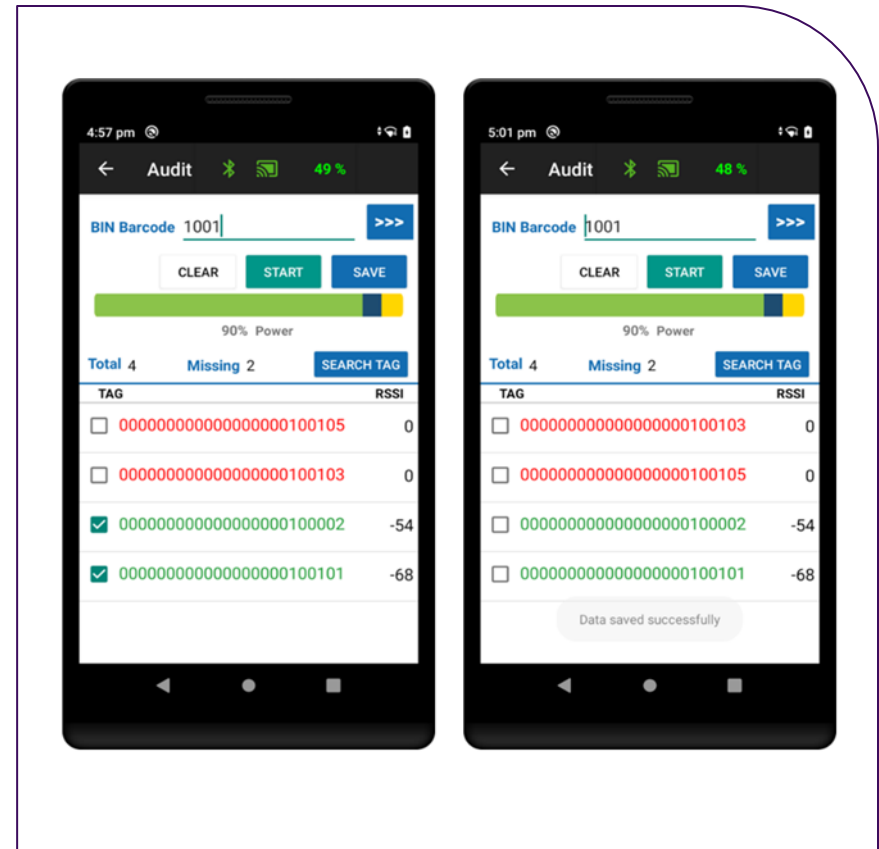
Utilize mobile scanners and tablets to rapidly goods in storage bins, including the ability to identify goods related to specific clients, shipments or other criteria.

Scan Bin barcode, selected Bin from list or enter Bin # to identify the Bin that is being inventoried

Scan all RFID tagged items in Bins all at once, scan Bin goods by barcode one at a time or enter ID #'s for the goods that are located in each Bin

Highlights Items Found and Items missing using red and green ID #'s, enabling real-time inventory adjudication

Transition mobile scanner to 'Locate' mode to find goods that are missing from a Bin



Locate Goods - Inventory

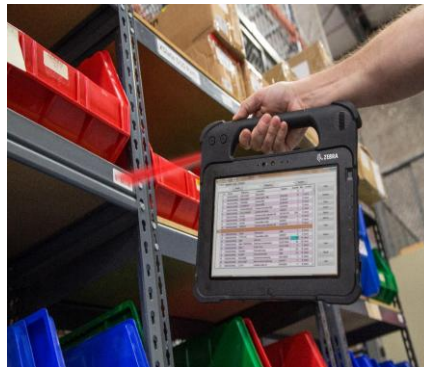


- Goods or inventory that are not located during inventory audits can be automatically added to the mobile scanner software's 'Locate' list
- Goods or inventory can be manually added to the mobile scanner software or item #'s can be Searched and added or data entered and added to the 'Locate' List
- The mobile scanner software utilizes frequency of beeps, cold-warm-hot color scale and 0 to 100 numeric index to guide Users right to needed items...the mobile scanner has a detection range approximate 25'+



Tracking Technologies

Barcode, QR Code and UID



Barcode or QR code labels can be ordered on rolls or sheets pre-printed with specific serial #'s and descriptions and/or item labels can be printed using WarehouseTrackerIoT

- Labels are available in multiple sizes and made of paper, poly or metal material
- USB scanners speed computer workflows and reduce errors
- Phones, mobile scanners and tablets enable efficient and accurate of tracking to storage locations, put-aways, take-aways and inventories

UHF 'Ultra High Frequency' RFID



RFID labels can be on rolls or sheets that are pre-printed and encoded with sequential serial #'s and descriptions. Labels can also be printed using WarehouseTrackerIoT with variable customer data and based on existing asset #'s.

- Labels are available in multiple sizes and made of paper, poly or metal material
- Mobile scanners enable rapid inventories and finding missing assets with approximate 20' detection range
- Networked RFID antennas can be placed at doorways or choke-points to establish RFID detection zones for real-time tracking

Bluetooth and Long-Range RFID



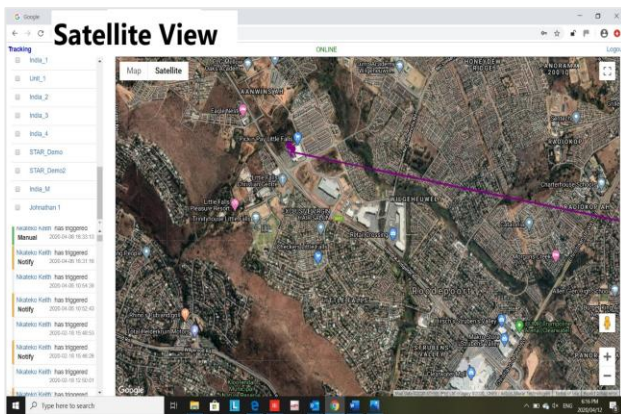
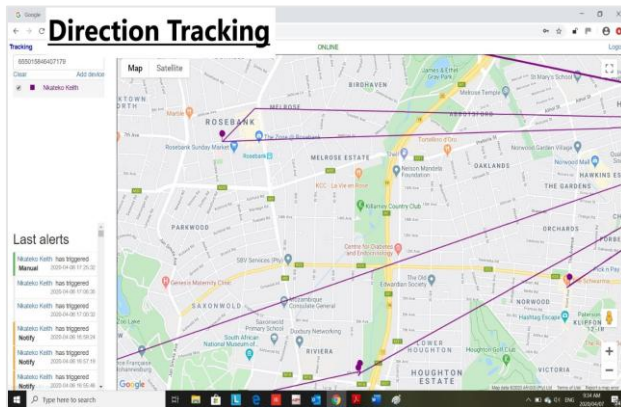
Bluetooth (BLE) and Long-Range RFID tags have a standard detection distance up to approximately 1,000', with ability to scan up to 5+ miles:

- Tags have battery that enables the tag to transmit its location beacon that is detected real-time by gateways that immediately update WarehouseTrackerIoT
- Tags are available with laser light and audible alert to guide staff right to needed items
- Gateways can be calibrated for short-range tag scanning for specific doorways or choke-points, and can be calibrated for long-term scanning of large indoor and outdoor areas

GSM and GPS Tracking and Security

WarehouseTracker^{IoT} supports GSM/GPS asset tags that enable item tracking off-premises, country-wide and worldwide for logistics and to point-of-delivery:

- Automatically updates WarehouseTracker^{IoT} when an item leaves a room, facility or property (geo-fencing)
- Real-time tracking of items based on GSM cellular towers and GPS satellites
- Current item location data automatically updates WarehouseTracker^{IoT} and sends alert messages based on business rules “where is the tag and where should it be”



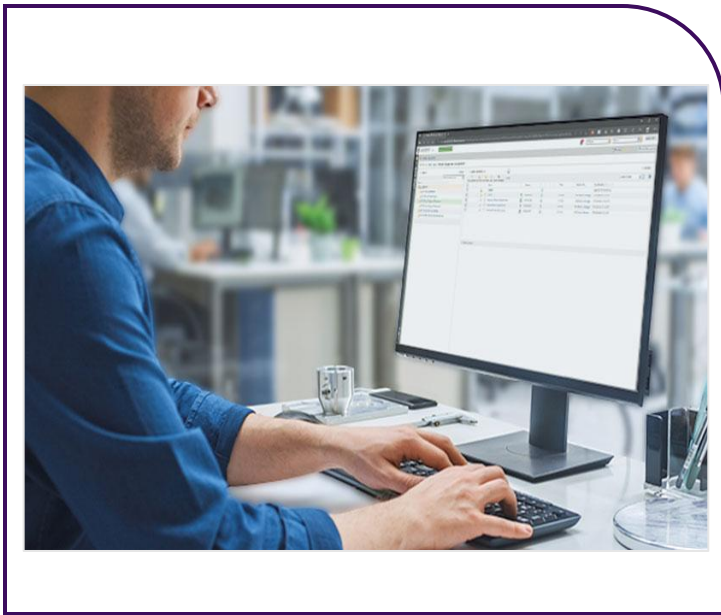


Professional Services

Software Configuration & Customization

WarehouseTrackerIoT is fully developed software with extensive support for tags, sensors, tracking and security technologies:

- All features developed for all prior customers are included out-of-the-box
- WarehouseTrackerIoT includes a rapid-software-configuration toolkit that enables TrackingSystems^{IoT} technical staff to rapidly and inexpensively configure the software and to integrate hardware for each new client's exacting requirements
- Whereas most features and functions that a customer may require are already in WarehouseTrackerIoT, new software code can be written to produce new features and capabilities and/or new hardware devices integrated to continually advance and iterate WarehouseTracker^{IoT} based on customer feedback and feature requests



Turn-key Installations and Training

TrackingSystemsIoT and our local partners provide turn-key deployments including:

- Project management from contract inception to solution turnover and ongoing support
- Tag, sensor and hardware installation and benchmarking
- Software installation, networking/cloud and backend database/systems integration
- Admin and IT training for high level system operation, internal support and solution continuity
- User training on all aspects of system capabilities



Ongoing maintenance and support

TrackingSystemsIoT and our reseller partners provide continuous and comprehensive support for all components of all systems:



- Software support and enhancements
- Periodic application and server stack updates to most current versions
- Hardware troubleshooting and “repair or replace” guarantee
- User support and continual User training
- Information Technology (IT) support



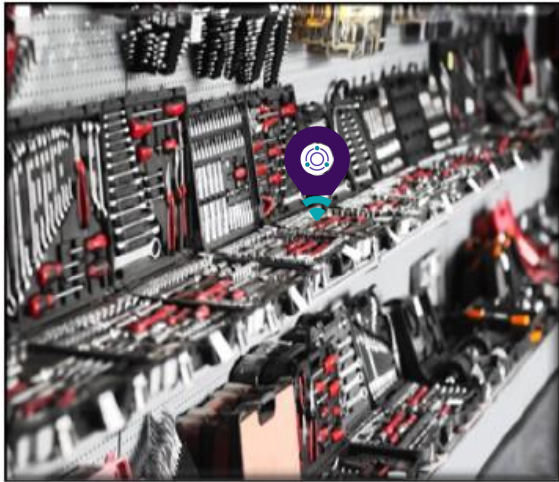
Scalability

Asset Management



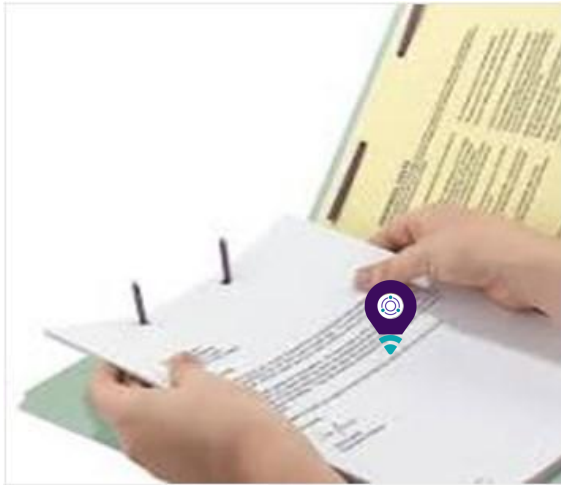
- Register industrial assets and define asset locations
- Manage the status of assets and asset inspections, calibrations and maintenance
- Manage asset insurance, warranties and maintenance agreements
- Monitor asset utilization and reduce asset capital expenditures and rentals

Industrial Tools



- Register all tools in computerized electronic database with ID #'s
- Provide computer and/or kiosk(s) for keyboard/mouse/touch-screen check-in and check-out
- Implement RFIF antennas at tool crib entrance / exit(s) to passively track tool movements
- Mobile barcode/RFID scanners and tablets to inventory and track while in-circulation or in-storage
- Manage tool inspections, maintenance and readiness

Folders and Job Jackets



- FileTracker^{IoT} includes extensive document and file management capabilities, including indexing, labeling, organizing, tracking and finding.
- RFID technology enables check-in/check-out, real-time tracking through choke point detection zones and the ability to track and find with mobile scanners. FileTrackerIoT also supports electronic document management.

Personnel Mustering and Tracking



- Track personnel and visitors with UHF RFID passively and stop missing people that don't utilize the access control system properly and according to policy.
- Enemy or criminal threats, industrial accidents and emissions, natural disasters or terrorist events can occur at any moment. Be ready. Protect the life of your personnel through long-range tracking for real-time worker and visitor locations and instant muster reports. Reduce insurance costs while maximizing worker safety.

Ports and Terminals



- Reduce downtime - Increase capacity and throughput with terminal automation
- Improve operational efficiency - Speed information flow and increase visibility for better planning, asset utilization, and productivity
- Track better to manage better - Optical character recognition (OCR), Long-range RFID, GSM/GPS and video recognition enhance productivity in cargo management and gate control
- Terminal operating system (TOS) - Real-time visibility into TOS clients' data to help enable better planning, use of assets, and throughput.

Airport management



- Suspect Bag Tracking & IATA 753 Compliance - Airport baggage tracking system for suspect bag visibility in arrivals and IATA resolution 753 Compliance
- Ground Service Equipment (GSE) Fleet Management System - Enhanced Control over Mission Critical Ground Support Equipment
- WIP Tracking and Analytics for MRO (Maintenance, Repair and Overhaul) - Real-time Project Visibility, Optimized Service Turnaround
- Tracking Solutions – Baggage, Passengers, trolleys, personnel, assets, weapons...track anything and everything for increased utilization and asset performance

Oil and Gas



- Prevent catastrophic circumstances that result in unanticipated shutdowns followed by lost productivity and very high costs associated with non-productive time (NPT)
- By measuring variables that affect the performance of the facility (such as pressure, temperature, and flow) from remote locations, maintenance task scheduling is predictive and proactive
- Avoid worker-equipment collisions, man-down sensors and real-time personnel mustering
- Improved water and energy usage and sensing dangerous elements in the air

Mining



- IoT and 'big data' bring cost-effective methods of conducting operations and achieving efficiency
- Reduce operational downtime by utilizing the data accumulated from machine and vehicle sensors to monitor machinery and prevent breakage or underperformance
- Avoid worker-equipment collisions, man-down sensors and real-time personnel mustering
- Improved water and energy usage and sensing dangerous elements in the air



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