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Five Great Applications for Passive UHF Metal-Mount RFID Tags

Where is the “low-hanging fruit”?

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Yesterday...

(pre 2005 A.D.)

- Development impetus on supply chain driven largely by select few large customers to better manage their supply chains.
- Most tag antenna designs were optimized for use on corrugated cardboard and open air intended for “single-use.
- A few exceptions were developed for other materials, but generally customer-specific.
- Asset Tracking in infancy stages, but beginning to take hold.
- Very few actually optimized for metal attachment...volumes not justified yet.



Today...

- Value of RFID in tracking assets is now being realized.
- Tags available for a variety of dielectrics, sizes, and enclosures to meet demands of customer applications.
- Variety of environmental compliances in vertical markets such as Aerospace, Transportation, Defense, O&G, etc.
- Metal is no longer the enemy, but actually can be an asset to performance with the right antenna design.
- Metal-tuned tags are now available for direct surface attachment in a variety of form factors, and some can actually be embedded.



What do the Five Great Applications have in common?

- A few key applications have risen above the rest.
- Many of these applications are portable across industries.
- These applications have proven implementation success.
- They have documented Return-On-Investment.



Five Great Metal-Mount Applications

- Tool Tracking
- IT Asset Tracking
- Instrumentation Tracking (ATE, Process, Medical)
- RTI and Container Tracking
- Parts/Spare Parts Tracking



Tool Tracking



Key Benefits:

- Automation of tool check-out/check-in process.
- **Faster check-out / check-in reduces lines at the tool crib, increasing time on the floor.**
- Reduction of time spent searching for the correct tool.
- **Automate tool database by type, vendor, size, age, etc.**
- Reduce delays in project work-flow process.
- Increase accountability by establishing “ownership.”
- Determine usage rate and life of certain tools for replenishment.
- **Determine best “tool kits” or “crib configurations” for particular remote sites or plant areas by rate of use.**



Tool Tracking



Key Benefits (continued):

- Reduce tool loss at remote job sites by increasing accountability of direct and contract labor.
- Improve accuracy of job resource requirements.
- **Find misplaced tools in specific work areas using RFID.**
- **Accurately account for old and broken tools that are decommissioned from service or being repaired.**
- **Establish an accurate preventive maintenance procedure for power tools.**
- Conform to industry safety requirements such as FOD (Foreign Object and Debris) prevention, FME (Foreign Material Exclusion).



IT Asset Tracking



Key Benefits:

- **Greatly reduce the amount of time it takes to inventory IT assets... from weeks to days.**
- Significantly reduce “non-SLA-related” hours of Data Center personnel.
- Accurately account for which components are in which rack.
- **Accurately account for older components that are too be decommissioned from service.**
- Minimize time searching for components that require preventive maintenance or upgrades.
- **Know immediately what is under manufacturer warranty or extended service agreements by rack #, position #.**
- **Accurately forecast warranty and equipment replacement/upgrade costs.**



IT Asset Tracking



Key Benefits (continued):

- Become the Configuration Manager's new best friend!
- Manage “moves, adds, and changes” within and between DC's.
- **Maintain 100% accurate records for government compliances such as Sarbanes-Oxley Act, HIPAA (Health Information) or financial audits.**
- Reduce SLA penalties by minimizing problem resolution time.
- **Disaster recovery time reduction.**
- Reduce spares cost through optimizing required back-up and spares inventory levels.
- **ROI's often between 6 and 12 months!**



Instrumentation Tracking (Process, ATE, Medical)



Key Benefits (Process):



- Accurately reflect on-site and remote location inventory of pumps, valves, flanges, gauges, meters, etc.
- Optimize field service readiness spares inventory by accurate process instrument count and perhaps failure rate (MTBF).
- **Minimize MTTR time by having the right spares on-hand.**
- Minimize spares inventory (don't over-buy) due to lack of accurate in-use asset inventory.
- **Reduce Inspection time and have accurate time-stamped digital records for regulatory agencies.**
- **Minimize recovery time in disaster-response.**
- Have accurate data for business insurance premiums.

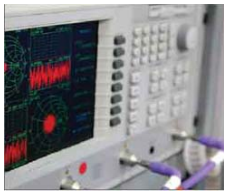


Instrumentation Tracking (Process, ATE, Medical)



Key Benefits (ATE):

- Create up-to-date inventory of R&D, QA, Test Lab, and Field Service instrumentation.
- Time-stamped records of check-out/check-in times and assign personal responsibility.
- **Reduce instances of “personal test instrument collections”.**
- Reduce instances of having to over-buy due to poor visibility of existing inventory.
- **Keep accurate records of calibration due-dates and have a pro-active monthly plan.**
- **Reduce crib inventory time significantly.**
- **Improve management of manufacturer warranties, service agreements, and de-commissioned inventory.**



Instrumentation Tracking (Process, ATE, Medical)



Key Benefits (Medical):



- Assignment of correct medical instrument “configurations” in operating rooms by procedure requirements.
- More accurate patient/insurance billing for health-support and monitoring systems utilized during patient stay.
- **Accurate “real-time” calibration and service data for FDA regulatory compliance and accreditation; JCAHO (Joint Commission on Accreditation of Healthcare Organizations).**
- **Reduce time spent by staff locating mobile assets and emergency equipment.**
- Reduce overspending (often 20%+) on equipment purchases and lease extensions due to misplacement.
- **Correct storage location information can be determined quickly; i.e.; “3rd Floor Blood Lab.”**



RTI & Container Tracking



Key Benefits:



- Manage RTI pool shrinkage due to “stockpiling” in the distribution channel or at customer sites.
- RFID read point at “ownership” transitions in the supply chain.
- **Account for damaged and lost RTI’ s in financial budgeting.**
- **Increase availability of existing container supply by proper allocation based on need/volume.**
- Accurately account for seasonal or regional patterns of use.
- Confirm cargo loads by quickly scanning RTI’ s, reducing mistakes in shipments... much faster than barcodes!
- **Product returns and recalls can be better managed.**

RTI & Container Tracking



Key Benefits (continued):

- Reduce cost of leased RTI' s through more efficient inventory tracking.
- Reduce theft of high-value cargo by assigning responsibility... customer knows the RTI is being tracked.
- **Tagged RTI' s can facilitate regulatory compliance by tracking origination (i.e. fresh food products) and destination (particular store or DC) for an audit trail.**
- Insights to brand/product buying behavior by measuring cycle time of RTI' s in a geography or by outlet.
- **Manage RTI cleaning schedules for regulatory compliances.**
- Manage periodic maintenance requirements by cycling inventory back to factory/production plant.



Parts / Spare Parts Tracking



Key Benefits:



- Configuration management can be improved through tracking assembly and sub-assembly revision levels from receipt through in-use products.
- **Fast and accurate identification of old revision parts (in inventory and in use) due for replacement or upgrade.**
- Track and trace maintenance, repair, and overhaul history.
- **Creation of an audit trail with traceable component records of Serial #, Lot #, Batch #, etc.**
- Set up inspection-triggering function for durable parts (and tooling) to maintain calibration, usage cycle-count, replacement, or maintenance.



Parts / Spare Parts Tracking



Key Benefits (continued):

- Verification of authenticity of OEM components and assemblies for quality and warranty purposes.
- Parts and spare parts can be located much more quickly reducing work stoppage, maintaining delivery or departure schedules.
- Worn or broken parts taken out of commission for disposal or maintenance are accurately accounted for.
- Track warranty or service agreement information.
- Implement tracking as a part of a Lean Production strategy.



Where to get started with the “Top 5”

Unproductive Activity

- Why are direct-labor employees walking around and not at their work areas?
- Why does it take so long to check out tools at the beginning of a shift, and why are people coming back to the tool cage or crib multiple times?
- Ask employees how much time they spend “looking for things,” and what get’s them frustrated.

Downtime and workflow interruptions

- Ask Program/Project Managers how many times a project is put on “hold” because something is on order, locating things, or waiting for it to be available.
- Why do we spend so much on rush deliveries when we should have had that in stock
- Why are 10 people looking for a lost socket wrench?



Where to get started with the “Top 5”

Availability and Unproductive assets:

- Why is that test instrument just sitting there collecting dust when I just bought a new one?
- Why is the lab/test equipment supplier van here twice a week picking things up and dropping things off? And, for that matter, why do they give you a bottle of 18 year old Scotch every holiday season?
- Why is all this equipment in this storage room, and if it's old, has it been written off yet? Are we still paying insurance on it? Are we still paying a lease on it?

RTI's and Containers

- The parts were here all the time, surprise!
- This ULD was supposed to go on the BWI flight!
- Why am I buying/leasing 20% more RTI's when sales were up only 6%?
- If we have a product recall, how quickly can we respond, and where is it in the supply chain...on what truck, and at which customer?
- Our Dayton plant just got the big order! Why are most of my RTI's in Detroit?

About us...

Whether it's on- metal,



...in-metal,



...or just hanging around.



XERAFY™

verify. quantify.

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