

Leveraging IoT and Cloud Manufacturing to Revolutionize Asset Tracking & Audit Prep

- *Understand where to begin your implementation*
- *Consider real-world use cases*
- *Understanding new breakthroughs in RFID technology*
- *Gain improved insights*



LEVERAGING IOT AND CLOUD MANUFACTURING TO REVOLUTIONIZE ASSET TRACKING & AUDIT PREP


BY SHEL MOORE

United States manufacturing is the largest in the world producing 18.2% of the world's goods according to the U.S. Manufacturing Statistics & Outlook. However, this leading position is continually threatened by high operating costs, opening a window of advantages to other countries, like China.

One of the chief reasons for decline in U.S.-based manufacturing is the strong shift to service-based business after the recession of 1999. Other factors play into this decline as well; including an increasing healthcare sector, federal policies that decrease American competitiveness, and tax rates.

Overall, manufacturing is projected to increase substantially by 2020. Major contributing factors are increased productivity via modern technologies, the growing production of oil/natural gas, and rising wages in emerging markets outside the United States of America.

According to recent reports, such as the IDC's Global Technology and Industry Research Organization IT Survey, the primary drivers to integrating cloud computing and IoT technologies in manufacturing include: lowering operational costs, increasing customer acquisition/retention, better customer service/support, business process efficiency, and competitive differentiation.



Helen Saunders, in her July 2018 article in *The Manufacturer*, “Industry 4.0: A sustainable roadmap for midsize manufacturers,” recommends that manufacturers start with a manageable segment of your processes – like location tracking for assets to introduce emerging technologies to improve this finite area of your business before fully scaling an implementation. As experienced system integrators, we are fortunate to explore a diverse range of technical solutions that perform all the above for enhanced profit, productivity, compliance, and overall satisfaction. The team at ID Integration, Inc. also believes it’s most effective to hone in on a powerful segment of manufacturing for true success with cloud manufacturing and IoT improvements. For this reason, we’ve focused primarily on two of the most common manufacturing challenges: asset tracking and audit preparation to deliver maximum benefit to those considering the journey to revolutionize their manufacturing processes.

Emerging improvements to existing location tracking technologies, in terms of both capability and cost, make this a valuable time to consider RFID location tracking to implement or enhance a manufacturer’s work order process, asset tracking for easier audits, as well as more specific applications; like expired chemicals tracking to ensure expired chemicals are not used in production. Today, the price of RFID technology has decreased substantially. There are active, passive, and hybrid systems at work already providing considerable efficiencies in

aerospace, IUID, and even hospitals. From the recently launched Brady® CenSys RFID Reader, the first IoT RF Reader to market, to the new generation of active RFID and GPS RFID tags, it's possible to implement complex location tracking solutions, both indoors and outdoors, with less capital expense today.

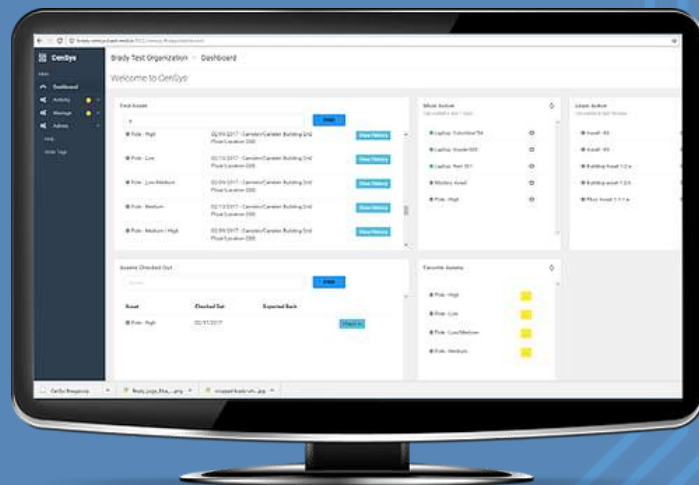
AUTOMATING THE WORK ORDER PROCESS WITH NEXT-GEN RFID

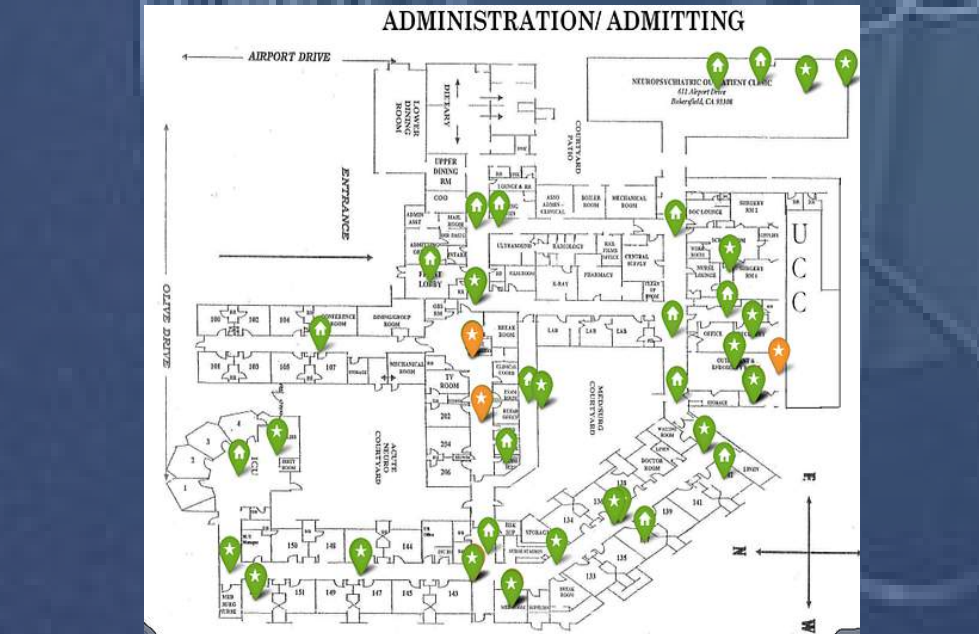
Refining the work order process is an application with a big payoff to manufacturers looking to improve production efficiencies, product quality, and overall customer satisfaction. There are a variety of cloud-based software solutions that either integrate within existing manufacturing systems or function as a stand-alone solution – particularly in cases where legacy enterprise software may be a challenge. With today's IoT and cloud-based RFID location tracking technologies, it's possible to implement a robust work order process yielding considerable savings and improvements in a factory. Ultimately, by locating and tracking orders more quickly, a manufacturer finds potential to reduce manual labor and better analyze key factors impacting overall production. By positioning gateway readers strategically throughout a factory, you can create specific zones of activity to better track the work order process. For example, a plant may include various stages in their manufacturing output: design, materials, cutting, welding, assembly, painting, quality control, and shipping, among others. By creating these zones, an RFID location tracking system will be able to track orders throughout the entire production process – including valuable data like time duration, logging machinery downtime, etc., within each zone. Analyzing the information collected will enable a manufacturer more evidence to the areas within their process that may need further work to increase efficiency, ultimately reducing labor or materials costs and even more expensive; errors which require a product to be scrapped & unsaleable. From an operations perspective, an automated work order process provides real-time visibility of every stage, machine, department, plant, and/or process. Recently improved RFID technologies make this type of application even more cost effective than before and provide notifications, software tracking maps, and other conveniences on computers, smart phones, and tablets.



RFID LOCATION TRACKING OF ASSETS AND TOOLS FOR EASIER AUDITS

Asset and tool tracking is another manageable area that's a perfect fit for RFID location tracking that relies on cloud-based systems. The government and military industries possess many requirements for unique item identification tracking as well as maintaining expensive loaned tools that must be quickly located during audits. There are several solutions available that facilitate asset and tool tracking with ease and reasonable cost. Whether a manufacturer needs to know where assets and goods are in real-time or to eliminate losses from tool misplacement or theft, RFID systems can scan an entire warehouse in seconds. Implement GPS RFID to extend tracking outdoors and build a bigger picture of the supply chain. Existing evidence of successful RFID location tracking solutions are already saving some manufacturers considerable cost in lost tools. One powerful example involves a well-known aerospace manufacturer who was responsible for keeping track of a tool on loan from a very prestigious customer.



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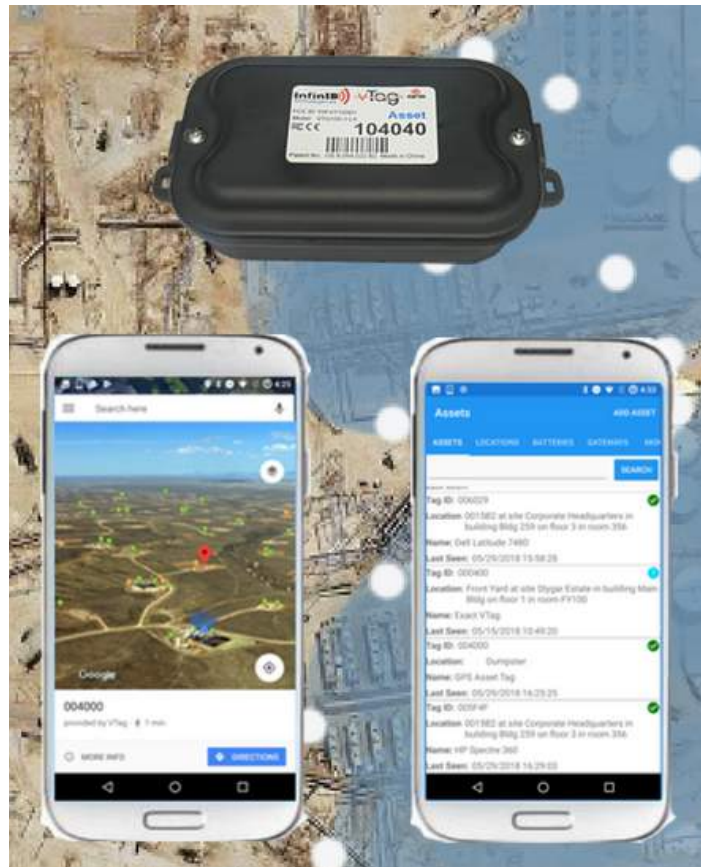
EXPIRING CHEMICALS TRACKING WITH RFID & HYBRID TECHNOLOGIES FOR MORE EFFICIENT USAGE

Another popular application involves expiring chemicals tracking, usage, and disposal. To maximize efficiency, it's important to examine these assets to ensure a first-expired-first-out management process. Emerging technologies make a compelling case for implementing RFID location tracking and hybrid systems involving barcoding for cradle-to-grave tracking of all chemical assets. There are many solutions to consider, dependent on the size, required reach, positioning, and durability of individual tags.

For example, the new Brady® CenSys RFID Reader is a simple, plug-and-play solution available for less than a thousand dollars and works with lower cost paper RFID tags as minimal as ten to fifteen cents each. This IoT RFID Reader makes it very easy to implement a chemical tracking solution without programming. Users plug the reader in and mount it on a wall then begin setting up using cloud-based software.

Another viable solution with more durable RFID tags is active V-Tag™ RFID technology. These hardy tags withstand harsher environments and work with a cloud-based software to track and display information on a software map. Additionally, these durable active RFID tags are available for around thirty-five dollars each – making it a very affordable alternative. Do you need a solution that includes tracking chemicals outdoors? Consider the new V-Tag™ GPS RFID tags and ensure a bigger picture solution.

Most all modern RFID solutions enable users to program alert notifications, track and report asset movement, and more – and all from a variety of convenient devices; including computers, smart phones, and tablets. The dilemma of expiring chemicals could be managed more simply by pre-programming a series of alerts to notify management teams before expiring. This process would ensure that items closest to expiration were being used first – resulting in less lost materials or expensive errors where an expired chemical may be used in current manufacturing.





WHAT INNOVATIONS WILL THE **FUTURE** BRING TO ASSET TRACKING?

As affordable as many IoT and cloud-manufacturing based solutions have become, it makes sense for manufacturers to consider these technologies for production improvement, increased quality, and the overall customer experience. Continuing with current trends, the team at ID Integration, Inc. firmly believes that RFID location tracking technology will continue to expand its capabilities and connectivity with IoT and cloud-based software providing even more depth in tracking, alerting, and automated data collection. For modern manufacturing to advanced further, productivity and efficiency must remain paramount.

Future-forward applications include a blending of internet technologies that merge Google Maps-type science with already accessible software tracking maps. In the future, users may literally be able to view a virtual representation of work order status centers, asset storage, and warehouse locations. This three-dimensional representation would present a multilayer model of an entire factory that enables users to virtually walk through a facility locating necessary assets in real-time. Ultimately, whether you're searching for solutions to track assets indoors or outdoors, on WiFi or between devices, there is a diverse range of hardware and software available today to make such enhancements possible.

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Going Beyond The Mark!

ID Integration, Inc. is a seasoned integrator with deep experience in a variety of industries and compliance disciplines. We are an independent systems integrator of IUID, UDI, AIT, & RFID solutions with 20+ years of experience integrating asset tracking in manufacturing facilities.

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