SCAN The DATA CAPTURE Report

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Special
SCAN: The DATA CAPTURE Report
Reprint

ID Integration And InfinID Team Up To Provide Low-Cost Location Tracking System

New active "talking tags" enable users to adopt Location Tracking without huge infrastructure costs.

Last week, **ID Integration** and **InfinID Technologies** announced a new asset tracking system based on InfinID's V-Tag™ active RFID tags and its AssetWorx! software platform. The new system was demonstrated this week at the annual ***RFID Journal Live!*** show in San Diego. By using tags that "talk" to each other, users can eliminate most of the infrastructure cost generated by the need for multiple access points. The two companies believe this revolutionary technology is a game changer.

Before we get into more discussion on the new offering, let us introduce our readers to InfinID. InfinID Technologies Incorporated is a privately held company located in La Canada, CA. The company is a leading supplier of innovative software solutions in support of the **Department of Defense** (**DoD**) mandate that is the compliance of MIL-STD 129 RFID and MIL-STD 130 UID among other commercial solutions. InfinID Technologies is also the recipient of three Small Business Innovation Research awards (SBIR) totaling over $2.5m for the development of the V-Tag™.

Founded in 2004 by Chuck Stygar and Dr. Rod Goodman, InfinID grew out of the need for cutting-edge IT that would reduce labor costs in logistics, accounting, shrinkage, and theft of intellectual property. The team of Stygar and Goodman understand technical challenges and the resources necessary to overcome them. Stygar is a seasoned executive; prior to founding InfinID Technologies he was CEO/CTO of **Dynamic Systems Inc.**, which he co-founded and built into to a $80M revenue company. Goodman, a talented engineer and businessman, has founded five successful research and development companies in both the U.S. and the UK. His honors and awards include two **NATO** Senior Scientist Awards and a Research Fellowship of the **Royal Society**. Dr. Goodman has published over 150 technical papers and patents in his areas of expertise.

Gary Moe, founder and president, ID Integration.

Commenting on the main driver for the founding of InfinID, Stygar stated, "There were significant studies that determined that RFID technology could be made more effective and less costly. We were so pleased when we received that first SBIR award, and have been extremely grateful to have worked with the **Army**. The things we are now able to accomplish with this technology would not have happened so quickly if it were not for the SBIR funding."

A seasoned partnership…

Gary Moe, ID Integration founder and president, told *SCAN/DCR*, "We've been a partner of InfinID for over 10 years. We sold the InfinID idWorx! software

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Chuck Stygar, co-founder, InfinID Technologies.

package, the predecessor to AssetWorx!. Both our companies have focused on supplying government groups and agencies with UID technology. I have served as a systems integrator for over 20 years. In 1996-1999, my company provided tool tracking technology for Boeing. It also provided RFID and direct part marking tracking technology for stringers and spars (which are airplane structural wing parts)

"We used to have plastic tracking tags that had to be removed for processes such as shot peening and acid treatment," he continued. The problem was, after the procedures were performed, sometimes the tags were not reattached or were reattached to the wrong tool or part in process. This lead to part being mismarked for shipping. After careful consideration, we decided to use a smaller RFID tag, similar to what was being used to track pets, and housed it in a much tougher plastic. It was basically just a 10-digit license plate. These were not based on UHF technology, and we had to also accommodate **Boeing's** demand for human readable technology as a back-up."

Eventually, ID Integration integrated a dot peen marking system that contained a Data Matrix code and human readable. It was a couple years ago when Moe and his team, once again, began to look at RFID more closely.

"It seemed like we started fielding questions about RFID every time we had a booth at an industry trade show," Moe explained. "Potential clients were interested in a system that combined both bar code and RFID technology. We now believe RFID is ready for use with our government and aerospace customers. We have new tag and reader technology, cloud computing, and the necessary software to make sure RFID provides the value it is supposed to. And, about a year ago, we decided to really leverage our tracking and systems integration experience to branch out beyond government orders."

The V-Tag Mesh...

The V-Tag™ Location Tracking System is based on a mesh

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of tags that communicate and relay information. Instead of an expensive infrastructure, including reader and antenna installation, the active RFID tags can now "talk" to each other with this ad-hoc (self generating) network called V-Tag™. The hop distance between RFID tags can be up to 300 feet and can stretch out to as much as a half mile! Imagine RFID asset tracking that goes well beyond the warehouse walls. Using AssetWorx!, the innovative RFID asset tracking software, users will find it easy to locate their V-Tags™ on a map of their facilities.

This new, **FCC**-approved solution to RFID asset tracking and Work-In-Process (WIP) tracking can be applied to a variety of industry sectors, from medical equipment and fire/rescue applications to environmental monitoring and pipeline monitoring, to asset management and location systems. Whether users need a full WIP solution to track all parts and assets moving through manufacturing, repair, and overhaul without expensive infrastructure or they simply need to reduce the hassle and pain of audits for smarter tool tracking, this revolutionary active RFID solution offers substantial cost-savings with superior reliability.

Here are just a few of the advantages of the V-Tag™ Location Tracking System:

- View tag positions within custom maps of your facilities-Associate tags with locations and assets
- Monitor RFID tag status-Set rules for tag movements and set tag alarms for events that exceed threshold limits
- Review current and historical sensor reports-Generate reports and graphs of asset movement
- Verify contents of shipments sent and received
- Make audits of tools or assets fast and easy
- Easily change your plant floor plan when necessary
- Facilitate complete Work-In-Process tracking for MRO and manufacturing applications.

The V-Tag™ solution was first employed for the U.S. Army Medical Research and Material Command and the **Telemedicine and Advanced Technology Research Center** (**TATRC**) to improve the tracking of medical supplies in field operations. V-Tag™ is now ready for general industrial use, and can be purchased through ID Integration.

Other apps…

As we noted, the V-Tag™ technology is integrated with AssetWorx! ™, making it a major differentiator within the RFID commercial market industry. InfinID Technologies is offering an active and passive RFID software solution priced under $3,500.00, which makes it a market disruptor as well. V-Tag™ has received strong interest within different industries, such as Maintenance, Repair, and Operations (MRO), Logistics, Oil, Medical, First Responders and Mining. RFID technology cuts across many markets and the advancements made through these government SBIR awards will benefit society as a whole.

"We have two major companies that have placed orders," said Moe. "However, we are not at liberty to give their names yet. One of the companies is using the system to track over 4,000 tools. When we are putting a system together for a particular customer, the first thing we do is to get a blueprint of the facility. We then create a mesh of fixed tags that are attached to walls, ceilings, doorways, etc. We also have 'asset tags' for individual items. Each fixed tag has a programmed location. Fixed and asset tags can communicate with each other.

Asset tags communicate with V-Tags that relay information to a host computer.

"Fixed tags can communicate with each other for a distance of 200 to 300 feet," he continued. "But with an entire mesh, you can actually track items up to a half mile in some instances. Assets are linked to the asset tag. By triangulating signals, we can determine the location of an item. Judging the strength of a signal also helps us come up with specific asset locations."

Reduced costs

As we noted in our intro paragraph, the reduced cost of the V-Tag system is what makes it so revolutionary. Whether it's a UHF passive tag or a traditional RTLS system, in nearly all cases, the necessary infrastructure includes a sizeable number of access points to capture info and relay it to a host computer. Obviously, the larger the facility, the more access points are needed.

Moe said the V-Tag system is proprietary and that he couldn't discuss actual component costs at this point. But he did say that, overall, a V-Tag system can be "significantly less" to install than the two systems mentioned above. He even ventured to say that this active tag-based system could be purchased for half the cost of a UHF system.

"We offer UHF systems to our customers," Moe stated, "but with active tags, there are less misreads and better accuracy. We can locate assets to a 10 to 15 foot range and even better if we add more fixed tags to the system. We let the application determine what is needed. I am not

aware of any other Location Tracking System competition at this price point."

[*Editor's note: Although InfinID and ID Integration are pushing the V-Tag system, both companies are working with the other main forms of RFID, as well.*]

Some flexibility

The V-Tag may be proprietary, but it does offer some flexibility. InfinID's software continuously tracks items and sends updates every 1 to 20 minutes. Clients can use smart phones or tablets to check on items. The system may require only one "gateway reader" which can be installed with industrial-grade Velcro. Once again, the size of the facility determines how many readers are required.

Still another aspect concerning flexibility is the fact that a V-Tag system is much easier to change if the layout of the plant is changed. Everything with the V-Tag system is easily attached and taken down.

"AssetWorx! handles both passive and active RFID technology," said Moe. "It can help create a revenue stream for ISVs who can provide the necessary software to incorporate AssetWorx! into ERP systems."

Closing

As we ended our conversation, Moe stated, "We believe we'll see hybrid systems coming in the near future. They will incorporate bar code, direct part marking, cloud services, and several forms of RFID. This should be a great revenue stream for ID Integration and other AIDC industry players. I do believe the key to successful use and integration of this new RFID technology is working with experienced systems integrators like ID Integration."

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