



Real Solutions in Real Time: RFID and RTLS

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Is your team creative enough to exploit real-time location system (RTLS) and radio frequency identification (RFID) technologies, which both can offer a new level of real-time operational visibility?

RFID and RTLS have received a great deal of attention as technology products and offerings. Their features and functions are easily understood. The Internet is an incredible research tool, and anyone can learn all they could ever want to know about these technologies after just a few clicks of a computer's mouse. But the real issue is the creative innovation and urgency needed to leverage these technologies and harness them as part of an integrated solution. The potential is not only excellent for any organization's operations, but can open up a whole new world of operational improvements that was never before available.

The RF Technology And Hardware

Early in the emergence of the RFID industry, most companies – and there are hundreds of manufacturers, converters, software developers, and other providers of RFID products and services – presented their solutions as if the customer would buy them and figure out how to use them. Multiple technologies and frequencies (e.g. UHF [ultra high frequency], HF [high frequency], LF [low frequency], NFC [near-field communication]) complicated choices. The passive UHF RFID world sprang up several years ago with the encouragement of Wal-Mart and the DoD. However, both were well prepared with extensive knowledge and expertise to implement and integrate a widespread RFID project. Most companies are not prepared for that level of technology expertise and systems implementation.

The effectiveness of RFID is real, proven, and pragmatic. Any decision to leverage this technology is not a hardware decision, it is a solution decision; that is, to become truly valued, hardware must be integrated with application-specific and enterprise system software.

RTLS also has a significant hardware component, but by its nature, is forced to be considered as part of an enterprise solution. Furthermore, the latest advancements in RF capabilities are making RTLS even more compelling to end users.

Convergence Leads To Hybrid RF Solutions

RFID companies are announcing new products every month, and while the past focused on one frequency and technology type, today we have hybrids that include readers and tags that are multitechnology, multifrequency, and multipurpose.

Up to now, RTLS typically provided these kinds of advantages: long-range locating capability of tagged items/assets; one frequency band; zonal locationing, at least with X and Y planes; and high-memory capacity for read/write functionality.

Disadvantages included a relatively higher tag cost (from \$25 to \$100 each), a form factor that required a battery, and a tag the size of a pack of cigarettes.

But progress continues, and today we have what I call hybrid RF products that combine multiple technologies and frequencies into one tag that can be read by a standards-based reader. As an example, Axxess International in Dallas has a tag half the size of most toll tags you have on your windshield, but it includes two chips — one for UHF passive and one for 433 MHz active RTLS. It can be read by a reader that is EPC (electronic product code)-compliant and can switch modes easily. It has all the advantages of both technologies in one. Don't like UHF? Then use LF with 123 KHz with the 433 MHz frequency. It just depends on the application.

For example, a hybrid tag can be affixed to a container with passive tagged items/assets inside it. The passive tags can be associated to the hybrid tag, which holds megabytes of data. The hybrid tag can be read at a very long range (hundreds of feet) by an RTLS reader or a passive RFID reader over UHF or 433 MHz. Even more, although zonal location will be available, directional flow will also be available so that the user knows in which direction the container is moving.

Inevitably, the key to any solution will be the cost of the tag. For years, many said a dollar or more for a passive tag was too much, and the price had to be cut in half. However, even with the price falling below twenty cents, people still focus on the tag cost and not the total solution value. The new hybrid RTLS tags can now get below \$10, a far cry from \$40 to \$50 average RTLS tag costs in the past.

The Challenge Is The Advantage

So, now we have the opportunity to create real-time operational visibility by using all types of RF technologies, form factors, frequencies, and software to deliver solutions that can create real ROI. We can track and trace most anything, telling us where something is, where it is supposed to be, and what needs to happen to keep everything on track.

If an organization could see in real time what is happening, where its assets are, where problems are, and where potential future problems can arise, then that organization will have the kind of visibility that provides a serious operational advantage. The advantage is obtained by integrating RF technologies with hybrid capabilities to gain visibility. Can you see this opportunity?

About Shipcom

Shipcom develops "extended supply chain applications" to leverage ERP Systems like E-Business Suite, PeopleSoft, JD Edwards & SAP to gain operational visibility. It is a private company with eleven years experience in developing composite mobility and RFID applications, transformational workflows, and operational dashboards for the enterprise.

The company focuses on providing real ROI value that impact key business drivers and processes across various industries. The company is headquartered in Houston, TX, with offices in Boston, Philadelphia, Toronto, France, India and Dubai. The company has satisfied customers in over 17 countries with hundreds of customer sites with real operational deployments. The company is comprised of experts in SAP, Oracle and other back-end IT system software, and all types of RFID, AIDC and Mobility applications.

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