Intelligent Tag Radar
Expands RFID Power and ROI

As RFID expands into more applications, the simple knowledge that a given tag was seen at a certain read point is sometimes inadequate. For some applications we'd like to know more. Was the tag moving or stationary? Which direction? How fast? How far away?

For example, in a sea of stationary DVDs on a retail shelf, perhaps we only care about the one that is in motion. From this we can determine what movie trailer to display to the customer. Maybe we can draw inferences about the relative interest level in different products based on how long customers handle them. Perhaps this information can be integrated into a theft control system, raising an alarm when the product is removed from a designated area. The imagination can conjure many applications for this kind of information.

Alien's new Intelligent Tag Radar provides this and other information about the tag. ITR enables the reader to not only know what data is in a tag, but to know where it is going, how fast and in what direction. This capability enables the RFID system to enhance a number of fundamental applications of passive, Gen 2 RFID, and will open up many new applications and sources of ROI for users.

The Intelligent Tag Radar Reader Platform Includes These Capabilities:

› ITR- Singulation™ enables the reader to discriminate among adjacent tagged objects on a conveyor in applications such as Baggage Handling, Manufacturing and Logistics.

› ITR-Velocity™ provides real-time information on the speed of a tagged object, enabling discrimination between stationary and moving objects and

automated decision-making based on speed and location in Retail, Asset Tracking and Security applications.

› ITR-Directionality™ identifies whether an item is coming or going as well as the direction of the item in applications such as Retail and Asset Tracking.

› ITR-Range™ enables the system to locate tagged items within a given zone, in applications such as Asset Tracking and Security.

ITR in Retail

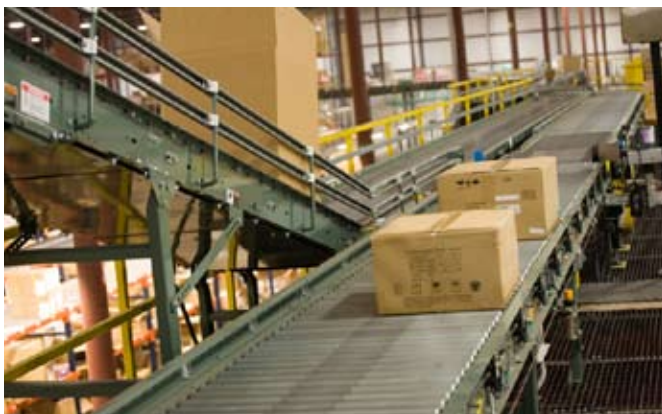Knowing whether a case of product has moved from the back room to the store floor or the reverse helps

retailers provide more accurate inventory information and supplements shrinkage control systems. ITR-Velocity will enable retailers to know the direction of travel of a tag passing a choke point. Retailers will also be able to discern moving inventory items from stationary ones. This information will enable retailers to provide timely and specific information on the product the customer is examining, while collecting valuable marketing data about how long the customer interacted with the item.

ITR in Airline Baggage Tracking

One of the challenges of using RFID for baggage tracking is the difficulty in isolating individual tagged bags as they pass the antenna. Standard solutions to this problem entail reduced conveyor speed or greater separation between tagged objects, reducing throughput. ITR-Singulation™ enables the isolation of

the one tag that is "top-dead-center" with respect to the antenna, enabling passenger-specific action without the cost of special equipment or the reduction of system throughput. Alien subsidiary Quatrotec applies ITR in its RFID-enabled baggage tracking solution.

ITR in Manufacturing and Logistics

As with baggage handling, ITR-Singulation enables conveyor systems to recognize and take action on specific items in manufacturing applications. Current solutions involve special antennas or expensive and difficult-to-replicate shielding solutions. In some applications ITR-Range will help in reducing cross-reads, where the reader reads tags beyond the area of interest.

ITR in Asset Tracking

In many asset-tracking applications, passive RFID is replacing more expensive active RFID solutions. ITR-Range and ITR-Directionality enable the system to isolate the tagged asset to a given zone, with precision that is sufficient for many applications, but with much lower cost than competitive technologies like active and WiFi RFID.

ITR in Government Applications

A promising application for ITR is range measurement and control. In desert venues helicopter rotors whip up sand that can blind laser range finders that are customarily used when attaching loads to cargo helicopters. Dust is transparent to UHF, enabling a clear view of the load, so that soldiers can attach the load to the helicopter with less risk to person and valuable equipment. Alien Advanced R&D has demonstrated this application for a military customer.

ITR Is an Extension of the Powerful Alien Reader Protocol

Alien's patented Intelligent Tag Radar software is an extension to the widely-supported Alien Reader Protocol. The Alien Reader Protocol provides powerful tools for tailoring Alien readers to many applications, including:

> AutoMode, an intelligent, triggered state machine that allows unattended, intelligent operation

> Configurable Notification, which enables tag data to be communicated over LAN, Internet, serial or email, and in batch or streaming modes

> Configurable data formats including XML, ASCII and user-defined

> Extensive filtering and collection modes, with inclusive and exclusive masking, and now with ITR, the ability to discriminate between tags based on speed, signal strength and other attributes

The Alien Reader Protocol with ITR makes Alien Enterprise Readers powerful tools for automatic data collection in almost any business environment.

ALR-9900

Starting in July, ITR will be available in Alien's Enterprise Class reader family, which is composed of the ALR-9900, 9800 and 8800 models. New firmware and an updated Software Development Kit with sample application code can be downloaded from the Alien Partner Portal.