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TROLLEYPONDER/ECOTAG/RADAR RFID Newsletter #100

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Your latest copy of our regular newsletter keeping you up to date with developments.

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1. Development of new range of transponders for radar

In our earlier newsletter we reported that the freighting world had changed dramatically for shipping electronic goods as of the 1st April 2014. From that time on it has become extremely difficult to airfreight any electronic item that contained any form of battery. Any battery that used lithium was marked for special attention and was regarded as a hazardous cargo, and was not allowed in some countries to be shipped on an aircraft that carried passengers.

We had two systems caught in transit by these new regulations, namely one being moved by a global courier and the other by a freight forwarder. Instead of taking a few days to do the shipment as in the past, it took nearly 30 days each for those two shipments to be delivered. The freight forwarder had his shipment rejected on three occasions by the airlines despite the goods having all the required hazardous cargo certificates. Eventually he shipped via a third country to bypass one of the bottlenecks. All this was
over 18 very small watch batteries that were in the battery assisted transponders. These are long life batteries and are built inside the transponder in manufacture to power up the devices for five years.

It seems that lithium is a particular problem for the airlines as their existing fire extinguishers have trouble dealing with a lithium fire. With the goods being classified as hazardous cargo the shipping cost are much higher than normal.

Trolley Scan have redesigned the battery assisted transponders in their product range to allow access to the batteries from outside the transponder. In the past the battery was inserted in the middle of the structure during manufacture, and was then encased in plastic and rubber to make a waterproof device. In the new design, a battery holder has been included in the case design so that the battery can be inserted and removed. We now build the devices to order, soak test the devices, and then remove all the batteries prior to shipment. The client buys the same batteries

from their local supplier and fits the batteries when the system arrives.

This is not an ideal solution as the waterproofing of the transponder has been compromised but it does allow the equipment to be delivered.

2. Using RFID-radar to steer robots

The RFID-radar has the ability to measure the angles of arrival of signals reaching the reader from a number of transponders virtually simultaneously. The range measurement to the transponders is speed limited and usually our clients are wanting to travel at a higher speed than the range features allow.

The clients want to make robot systems that can operate over large warehouses freely.

By placing many transponders around the area in which the robot will be operating, the robot is able to read the angles from many transponders at any instant, and from the angles of arrival solve its current position.

The reader does not do any of the solving of the position, but reports all the angles to a host computer on the robot which then does the position solution.

To build this system you need computer skills as you are processing complex geometric situations and there will also be an element of fuzzy logic to deal with obstructed radio paths and possible some multipath.

3. Product range

Trolley Scan are a manufacturer of UHF RFID systems. Trolley Scan manufacture fixed readers, portable readers and RFID-radar systems (Real Time Locating systems that give accurate position information) as well as a variety of transponders for different applications. Transponders come in the form of passive transponders with operating ranges up to 20 metres and battery assisted transponders with an operating range up to 40 metres. Trolley Scan also combine some of these components into packages for end users which are supplied with the appropriate software. Typical applications are asset management, notebook tracking, equipment barriers, store control, sheep and cattle tracking, event logging and sports timing systems.

Trolley Scan have been delivering their RFID solutions for the past 15 years and offer full support for all their equipment.

4. Getting your own complete RFID/radar system

You can order RFID systems or RFID-radar systems from Trolleyscan.com
Trolley Scan provide small RFID reader systems which give new users the ability to evaluate UHF RFID and their applications without needing specialised skills.

Trolley Scan provide a variety of easy starter systems for first time users who have an application that needs a solution. Typical packages are :

- Standard UHF long range readers with antennas and 100 transponders
- RFID-radar system comprising long range reader, antennas and a variety of different transponders.
- RFID-asset tracking systems comprising portable reader, antenna and a variety of transponders with software.
- RFID-notebook/laptop tracking system comprising reader, antennas, transponders and software

In addition components such as readers and transponders are available
These systems are already operating in 52 countries.
To find out details of the systems and to order see http://trolleyscan.com/