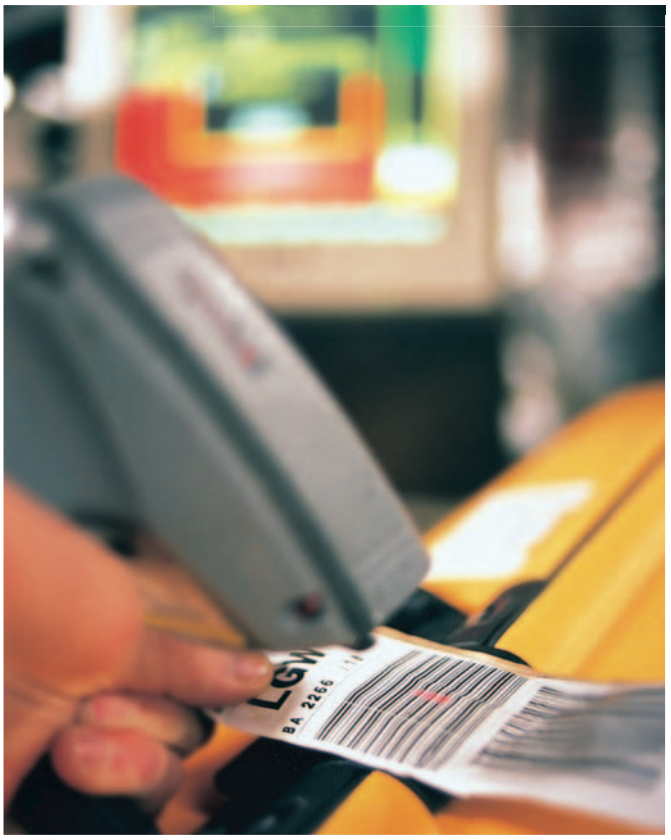
RFID update

Reading Lesson

Is this the solution to better baggage handling?



Since we reported on the state of play within the RFID sector 12 months ago, the technology has been increasingly under the media spotlight; and with that has come a greater understanding of its benefits as well as its shortcomings.

Shortcomings? Well, if we are honest, despite the wealth of attractions inherent in this radio frequency technology, it is still be regarded warily by many carriers, airports and handlers. One of the main stumbling blocks (if not the principal one) is that of cost. Equipping bags (and it is baggage handling that we are focused upon here) with disposable tags calls for continued investment, investment that carries on after the infrastructural requirements have been put in place.

The increasingly competitive nature of the aviation marketplace continues to encourage airports to seek ways to improve their efficiency and cost-effectiveness. With RFID, instead of a barcode on the baggage tag, a mini transponder is embedded in the tag. This sends radio frequency signals to a receiver: it's that simple.

Back in 2007, we looked at the airports around the world which had already invested in this technology or which were trialling the innovation. Actually, innovation is a poorly chosen word, since RFID in a primitive form actually existed back in the 1940s.

IATA has, predictably, been firmly behind the idea of RFID, seeing in it an opportunity to reduce the quantity of mishandled baggage. Whilst it hasn't slotted the technology into its rolling programme of technology adoption, it feels that RFID could very well be used to track baggage at major UK airports within the next five years. Having commented on how the roll-out of RFID should proceed, IATA has gone on to identify some 80 airports around the world that are responsible for 80% of all lost luggage. According to its Project Manager, Andrew Price, the implementation of the technology could save carriers upwards of £400m a year when it comes to mishandled bag issues.

It almost goes without saying that such a statistic has created no little interest in the application.

But...

RFID is a welcome advance, of that there can be no doubt. But even so, concern continues to linger in the marketplace, not least because other initiatives that have been designed to smooth the day-to-day business of aviation have not necessarily borne fruit. E-ticketing, for example should, by now, be universal – but it isn't. In a similar vein, for RFID to really reap dividends, all parties in the network are obliged to have the necessary hardware installed. Reports have suggested that a high proportion of mishandled baggage goes astray at transit points: at busy hubs, which are prey to all manner of hiccoughs, an aircraft departing without a bag isn't exactly unknown. Similarly, neatly RFID tagged bags may be leaving the station – but what of those arriving?

It's rather like the inventor of the fax machine: a great idea, but of limited use if you know of no-one else with the same apparatus.

Industry cynics look askance at the scenario and declare that the situation is not likely to alter very quickly, nor very soon, come to that; and that barcodes and RFID tags will probably quietly co-exist for some time to come, in a regrettable (and unnecessarily expensive) duplication of technologies.

Carriers and providers

If anything, it has been a period of waiting and seeing, writes David Jacoby of Boston Logistics.

At the close of 2007 only 10% of operators had RFID in place and some 42% were saying they had no plans to implement RFID; this, according the 2007 Airport ID Trends Survey. Whilst 14% are looking to implement it in the next year or two, with 19% taking a slightly longer-term view, most carriers are following easyJet's example, which is waiting to see how the market moves. Indeed, British Airways said last summer that it was waiting for IATA to define standards.

RFID, though, is up and running. It has a strong business case in high-volume environments with a significant proportion of interchange cargo or baggage. Unlike in many other applications, where the cost of a mistake is much lower (for example, tagging high-volume, low-value consumer goods such as toilet tissue), RFID is inevitable in multi-staged baggage and cargo environments. And while the first users of the technology

were sometimes the guinea pigs that spent more than they gained, it is clear that the "first mover disadvantage" will disappear and there will be little reason to delay any longer.

It certainly helps that IATA is exhibiting strong leadership in defining new technical standards. IATA's broad-based, RFID strategy calls for plans to roll out RFID for tracking of baggage, aircraft parts, cargo and galley units. IATA has standardised RFID on the UHF (850-950MHz) spectrum, with an air interface is based on the ISO-18000-6-C protocol. Accordingly, a wave of new deployments has arisen over the past few months. The feedback from implementation is shifting towards more consistent success stories, as users benefit from high read rates and cost savings. That read rates are very high cannot be stressed enough: last year, Madrid put in a pilot programme that generated read rates of 99.8%, and Air France's Amsterdam-Paris trial is posting a 100% read rate, according to sources.

Recent deployments have included Thailand's Suvarnabhumi, which decided to opt for RFID. Thai Airport Ground Services (TAGS) is targeting a 15-20% reduction in logistics costs and a 66% increase in the velocity of cargo transiting the free zone. Likewise, the UK's Heathrow is testing RFID behind selected check-in desks. Airports of India has also introduced plans to implement RFID at four airports by 2009. Finally, Korea Airports has deployed an RFID solution from UPM Raflatac. It bought 350,000 UHF EPC Generation 2 inlays and its US$3.3m budget has covered 98 readers and 85 printers at Gimpo, Korea and Haneda, Japan. The tag being used is designed to be relatively insensitive to the direction of the baggage, partly because of its dipole antenna design.

The investment costs of these pilot and roll-out programmes are demonstrably lower. According to Andrew Price, Hong Kong's RFID system has cut the cost per bag by as much as half, as of last August.

"Hong Kong used to have a US$7 (£3.50) cost for each handled bag. Since RFID was implemented, the success rate means that less manual coding is needed and operations run more smoothly. The price now is nearly halved at US$4 (£2) a bag," he reveals.

With such positive results on the customer side, vendor sales are picking up after a mid-year slowdown. IBM and Vanderlande Industries are to manage a programme that will implement RFID as part of a larger scheme to increase baggage handling efficiency through robotics at Schiphol airport.

Moreover, UFIS Airport Innovation is setting up a consortium of suppliers to demonstrate the value of RFID to transportation service providers. It is relying on its experience deploying RFID in baggage handling at Oslo's Gardermoen airport. The consortium

of vendors includes RFID Lab Norway, UPM Raflatac Finland and the Nordic Innovation Centre *(see below)*.

IER has begun supplying Paris Charles de Gaulle airport with a full solution including hardware (including IER's 506 RFID bag tag printers), software, and tags whilst Matrics will supply Hong Kong with tags and readers, according to the head of Technical Services and Procurement at the Airport Authority of Hong Kong.

Baggage handling on high-volume lanes with a high proportion of interchange traffic is one of the most economically viable applications for RFID. IATA has shown leadership in selecting a standard and identifying the airports that could benefit the most from implementing RFID: now the time is ripe for airports, airlines and ground handling companies to take the technology seriously.

And the users?

As always, it's the users that are best placed to comment on the systems, the progress witnessed and the drawbacks, where applicable. Studies have been a useful tool in the appraisal of any new technology and to that end, UFIS Airport Innovation has joined with other Nordic companies in carrying out a case study on Radio Frequency Identification. The goal of this project was to illustrate and demonstrate the benefits of using this emergent technology to new users.

In actual fact, UFIS has already implemented RFID technology in its baggage handling systems in Oslo's Gardermoen airport. Using this knowledge and experience, the company partnered with RFID Lab Norway, UPM Raflatac Finland and the Nordic Innovation Centre in this study to communicate the bigger picture of RFID advantages in the transportation sector. In fact, RFID is expected to be an integral part of the airport infrastructure at Scandinavian airports within the next decade.

"We are proud to add our experience to the RFID case study project," comments Idar Sørgjerd, Managing Director of UFIS Airport Innovation. "The experience we have in this area is a great benefit for the implementation of this project. It also allows us to further explore the possibilities of this technology and better respond to the needs of our customers."

"UFIS Airport Innovation, as part of the UFIS Group, is a technological leader in the baggage handling area," adds Anders Sagadin, UFIS-AS's President and CEO. "We are glad that we can contribute to ensure the promotion and implementation of new technologies in the airport sector."

The case study project began last August and was due to be completed by the end of 2007. The project was partly financed by the Nordic Innovation Centre.