

Battle of the scanners



➤ **DESPITE NEW TECHNOLOGY APPEARING IN THE FORM OF RFID, THE TRADITIONAL BARCODE SCANNING SYSTEM IS DEFENDING ITS DOMINANCE AT MANY AIRPORTS. *FUTURE AIRPORT* SPEAKS TO HEAD OF STUTTGART'S CONVEYING AND MACHINE TECHNOLOGY DEPARTMENT **UWE KASCHDAILEWITSCH**, ONE INDUSTRY EXPERT WHO STUCK WITH HIS WEAPON OF CHOICE.**

The debate over RFID and barcode scanning systems is not specific to the aviation industry. Any sector with supply chain or physical logistics activities has weighed up the benefits of the systems since a barcode was first used on a ten-pack of Juicy Fruit gum on 26 June 1974. But 35 years later airports including Stuttgart continue to choose the barcode over its sexier, more sophisticated rival, proving that the bow and arrow of baggage handling technology still hits the mark.

KEY FACTS

- Barcodes have been in use since they first appeared in 1974.
- Stuttgart Airport's Terminals 1 and 2 still use barcode technology.
- In 2008, mishandled bags cost the aviation industry \$3.3 billion.

Can traditional radar cope? Probably not. The application of the technologies may be the same but the functionality and concept behind them are completely different. The barcode is a simple and effective technology but does the changing face of travel mean entire systems should be updated? Can the two technologies be compared at all? A purchaser's decision can be based only on the specific criteria needed for their operation. That's the conclusion Uwe Kaschdailewitsch, head of Stuttgart Airport's conveying and machine technology department, reached when redesigning the baggage handling systems for the airport's Terminals 1 and 2.

'The major change was in Terminal 1, where we had a total reconstruction of the baggage handling system,' he says. 'We took a long time

to plan the system and engaged in many studies, looking at different solutions. It completely depends on the airport. You have to focus on the points that make a difference: your layout, the ratio of transfer passengers, the cost you have available to you and the types of labels coming in from different airports. It's not a simple decision; you need to look directly at your own issues and what you need from your systems.'

Baggage handling systems are a continuous drain on resources for the aviation industry, with mishandled bags accounting for an estimated cost of \$3.3 billion in 2008 alone. Analysis by IATA shows that between 2005 and 2007, the amount of mishandled baggage in Europe and the US has increased three times faster than passenger growth, but there have since been clear improvements. Mishandling rates have fallen, but this isn't purely down to a change in technology or direct efforts made to specific systems. The change is due in part to passengers travelling with fewer bags and changing the way

RFID IN ACTION

Hong Kong, Milan Malpensa and Las Vegas McCarran were the first airports to use RFID technology, in 2005. Such systems have shown a read rate of more than 97% compared with about 80% for conventional barcodes. IATA estimates that RFID can eliminate about 20% of mishandlings through more accurate tag reading and better visibility throughout the entire baggage operation.

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they think when they pack. A recent increase in charges has led to careful decisions on what and how much to take, as weight has become a concern. This has meant there has been less baggage for airports and airlines to handle. It should be noted that any future statistics for 2009 that may appear to show an improvement should take into account the recent decrease in traffic.

Individual needs

IATA takes an 'if it ain't broke, don't fix it' stance despite championing the use of RFID in its 2009 baggage improvement programme. If an airport has a baggage handling rate of less than one per 1,000 passengers, it does not require an RFID system because IATA considers there to be no problem to solve. Similar circumstances include cases in which a highly developed infrastructure already exists, for example, one that incorporates the use of a destination coded vehicle (DCV). RFID would also not be optimal in a situation where cost-effective and high-performing manual systems are in place. The focus is on the individual requirements of each airport looking at changing its system and whether it needs to update at all.

Surely in a game of numbers and costs, the more reliable system the better, particularly given in today's economic climate where money is top of the agenda? So, what convinced Kaschdailewitsch to choose a barcode system at Stuttgart?



UWE KASCHDAILEWITSCH

➔ Uwe Kaschdailewitsch has been head of Stuttgart Airport's conveying and machine technology department since 1990. His interest in motor mechanics began with an apprenticeship in 1978.

'It's not only the price that's a factor,' he argues. 'You bring RFID to the system and you have to rebuild the entire infrastructure, buy new printers that can write on the chip and involve all the airlines that are working from a barcode system and printers. It's not only the RFID reader: it begins at the check-in desk with the label.'

In this case, the decision was well researched and a clear winner was evident because the benefits lay with the people who matter the most – the passengers.

Since becoming fully functional in May 2008, the system has already proved its worth. 'We're not a transfer hub,' says Kaschdailewitsch. 'The number of transfers is very low so our baggage labels have a short journey from the check-in where they are printed to the barcode reader, which means we have a very good reading rate. If you have bags from another airport, the label has been handled in many ways before it comes to the barcode reader. Even though we have made

Scanning-Statistics and Reading Rate

Date	Reads	No. Reads	Multiple Reads	Summary
1.1.2009	242	19	21	962
2.1.2009	1659	21	27	1708
3.1.2009	1629	24	42	1699
4.1.2009	1498	37	48	1571
5.1.2009	1293	21	31	1344
6.1.2009	1277	36	37	1350
7.1.2009	801	10	12	823
8.1.2009	708	9	14	730
9.1.2009	722	15	13	750
10.1.2009	910	12	14	936
11.1.2009	906	6	20	932
12.1.2009	783	14	12	809
13.1.2009	736	8	12	756
14.1.2009	742	10	15	767
15.1.2009	767	14	24	795
16.1.2009	843	10	19	872
17.1.2009	1026	6	20	1031
18.1.2009	736	9	16	763
19.1.2009	893	4	24	921
20.1.2009	839	10	21	870
21.1.2009	772	6	15	793
22.1.2009	809	13	17	839
23.1.2009	1041	15	12	1068
24.1.2009	873	19	13	905
25.1.2009	994	10	10	914
26.1.2009	961	6	23	990
27.1.2009	856	9	29	894
28.1.2009	943	9	25	977
29.1.2009	933	13	19	965
30.1.2009	1036	24	19	1120
31.1.2009	942	9	19	970
Jan 09	25981	426	641	30868

Example: Terminal 2 January 2009

Reading Rate Terminal 2: **99,20 %** (Reads and Multiple Reads)

changes to all the other technology, we wanted to stay with barcodes. Of course, we thought about changing to RFID at the time, but it was expensive and, more importantly, we had excellent results from our previous equipment, so we decided to buy new barcode readers similar to the last ones.'

However, the future is uncertain. There will always be a place for barcodes but, looking at the disposable income of airports at the moment, it's unlikely that many newly planned refurbishments will be seen very soon.

'The future will bring more and more RFIDs and that will make it easier to move to the new equipment if future developments take place,' says Kaschdailewitsch. 'For the near future, a hybrid system would make sense for some airports. We will continually be reassessing the situation, but it's not going to be soon. In a few years maybe – technologies are always moving forward – but I'm confident we made the right decision for now.'