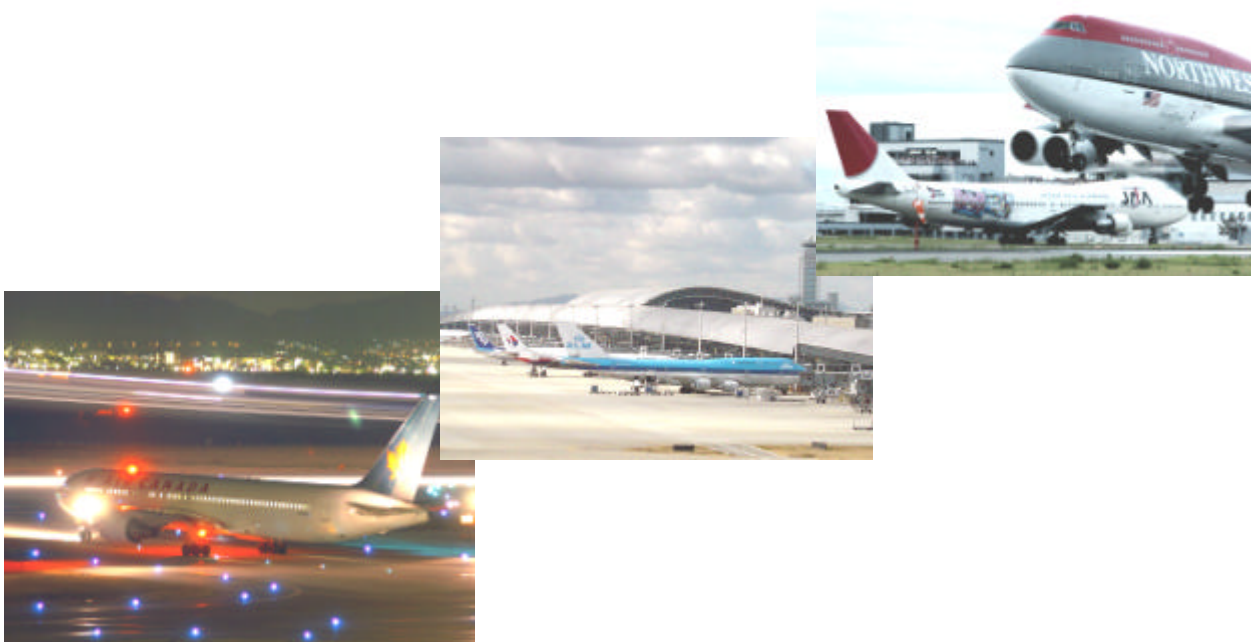


Technical Committee 2004 Annual Research Debriefing

Overview - 2003 Model Trial Plan – 2005 Research



March 18, 2005

ASTREC

1 . Objectives

The project objectives for the trial were as follows.

- (1) Hands-free Travel
 - Execution of the "Hands-free travel" Trial, the first ever in the world
 - Data collection for purposes to promote "Hands-free Travel"
- (2) Verification of the e-Tag baggage recognition rate
 - Extraction of operational issues in the use of e-Tag at 13.56MHz.
 - Issuing 200,000 e-Tags. Measurement of recognition rate in an operational environment.

2. Hands-free Travel Trial Data (Mar. 1, 2004 – Jan. 30, 2005)

(1) Hands-free Travel Track Record

| Item | Departure | | Arrival | | Total |
|---------|-----------|----------------------------|---------|----------------|--------|
| | Handled | Occasion and rate of abort | Handled | Rate of return | |
| Total | 9,842 | 20 0.204 % | 2,261 | 23.0 % | 12,103 |
| A model | 796 | 1 0.125 % | 71 | 8.9 % | 867 |
| B model | 9,046 | 19 0.210 % | 2,190 | 24.2 % | 11,236 |

Cause: Spray Can (5), Gas lighter (4), Insect fumigant (3), Can of lighter fluid (1), Bottled Oxygen(1), Butane gas for camping (1), Machine parts(1), canned Abrasive soap(1), Accessories(1), toy fireworks(1), unknown(1)

(2) The number of inquiries of baggage tracking

| Item | Inquiries | Inquiries after April (10 months) |
|---------|-----------|-----------------------------------|
| Total | 414 | 209 |
| A model | 289 | 175 |
| B model | 125 | 34 |

- The number for March 2004, includes the effect of mass media reports regarding the start of the trial.
- The numbers represents accesses to the ASTREC server, and inquiries to delivery services companies are not included

3. Interline e-Tag Recognition Rate

| Item | Number of tags | Data Evaluation Remarks |
|---------------|----------------|---|
| e-Tags issued | 196,685 | Objective of 200,000 tags almost achieved. |
| Valid e-Tags | 101,749 | World's largest scaled trial for airline baggage. |

| Item | Trial data average | Range |
|------------------------|--------------------|--|
| e-Tag recognition rate | 98.84 % | 99.76 ~ 98.05 % (Under L-island, A Company's antenna) |

| Item | Verification of the data in air transportation |
|---------|--|
| Results | There were no data errors identified between Narita and an overseas airport. |

4. Conclusion

The trial was a huge success with the following results:

- The amount of data collected was in excess of 100,000 which was the world's largest scale of e-Tag issuance and in an operational environment.
- We planned and carried out the Hands-Free Travel trial, the first ever in the world. Moreover, part of the data contents conformed to the IATA Standard RP1740c ^{*1}.
- We were the first in Japan to operate the EDS Inline Screening System, and obtained basic data.

2005 Research Plan

Conduct the following research programs and trials of advanced airport systems using RFID for airline baggage.

Basic Research

Basic research of e-Tags and antennas for UHF operating under different frequencies.

Research of System Application

Research of a system application which would allow any vendor to implement and promote hands-free travel.

(3) Trial

Trials directed to promote and seek commercial viability of RFID through bilateral trials using RFID tags under UHF with overseas airports.

*1 In order to respond to the growth of air travel in recent years, large scaled terminal buildings and cost reduction efforts IATA, is planning to introduce RFID as the next generation technology. The current bar code technology has been causing complications in the operation due to a limitation in the read performance. IATA has specified the RFID data elements, in IATA RP (Recommended Practice) 1740c, under "RFID DATA CONTENT."