



## CUTE Mag to Bar code Translation

### Enabling the 100% BCBP airport

IATA – Simplifying the Business  
Bar Coded Boarding Pass  
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### **About this document**

IATA has set a deadline in 2010 to reach 100% BCBP and to phase out magnetic stripes.

Given this industry mandate, airports should not purchase any additional mag stripe equipment, printers or readers. Instead airports should consider translating into 2D bar codes the mag data coming from airlines that are not BCBP capable yet.

The target audience of this document includes:

- CUTE providers
- their customers, such as airlines, airports and Airline Operators Committees (AOC)

The purpose of this document is to:

- Facilitate the transition to 100% BCBP according to the IATA Mandate
- Enable airlines sharing check-in and boarding equipment to eliminate the need for unnecessary mag stripe equipment

The purpose of this document is NOT to:

- Extend the life of mag stripe equipment
- Give a way for airlines to bypass the 2008 deadline

### **Enabling a 100% BCBP airport**

An airport is said to be 100% BCBP when only BCBP are issued and read in the airport and no mag stripes are processed.

The ATB to Bar code transition is a major challenge for airports. An airport migrating to 100% BCBP before the 2008 deadline may serve airlines which are not BCBP capable yet. The airport should offer solutions to airlines that are not 2D bar code capable yet.

The solution presented in this document consists in translating the airline's mag data into 2D bar codes.

### **Description of the solution**

IATA airlines issue boarding passes either as BCBP M format, or ATB W format, or bar code or magstripe proprietary format. Translation may apply as follows:

- The BCBP M format needs no translation.
- The ATB W format can be translated automatically at the CUTE level.



➤ Other formats cannot be translated automatically into the M Format but the data can be encapsulated into a PDF417

In an airport CUTE environment, all boarding pass data can be converted into 2D bar codes. The solution enables a 100% BCBP airports.

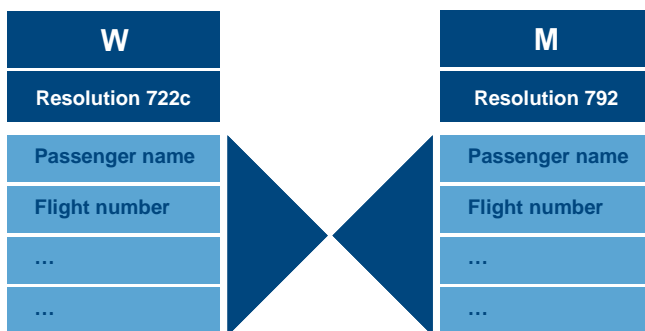
Airport environment	Native storage	Native format	Conversion	Print output
Airline Native M	PDF417 bar code	M format	Not Applicable	BCBP M Format
Airline Native W	Mag stripe	Format code W	Translation W->M	BCBP M Format
Airline Non IATA	Mag stripe	Proprietary	Encapsulation	PDF417 bar code
Airline total	Mix Mag stripe/ Bar code	Mix formats		<b>100% 2D Bar code</b>

### Translation of W to M

The W format, defined in Resolution 722c, is used to store data such as passenger name of flight number into a magnetic stripe.

The M format, defined in the BCBP standard, Resolution 792, is used to store similar data into a 2D barcode.

As both formats are defined in IATA standard, the translation can be automated. The fields of the M format can be populated automatically from the fields of the W format.





### Check-in and boarding middleware

The solution is implemented at the check-in and boarding. At check-in, middleware translates the data coming from the airline host and sends it to the printer's BCBP interface.



Conversely, at boarding, other middleware performs the opposite translation. The data captured from the bar code by the scanner is translated back into mag data and sent to the airline's host.



The whole process enables the airline to use BCBP without affecting the host, which still deals with ATB data streams.

### Encapsulation

The bar code will be encoded to contain the Pectab Format code, Magnetic Track, Block and Start position and data. This will allow interlining since the same magnetic track, block and position will always be used even if a different pectab version (W7) is used to print the coupon and a different Pectab version (W1) is used at the gate at time of boarding. Only Element Steering Commands A,B,C,D,E,H and Q (defined in the AEA BGR specifications) can be used when creating the bar code from the pectab.

Example:

UXp|11293229|...data...|21404122|...data...

Where:

- UX - Identify for Non IATA Standard Bar codes
- p - Pectab format code used to create the bar code
- | - Delimiter (4th position defines the delimiter to be used throughout the bar code)



The delimiter is a special character; neither Alpha nor Numeric. The delimiter can't be part of the Pectab Header for Pectab Field separator, replacement for unreadable character, Print steering command character and not part of the Airline print data stream. The delimiter needs to be unique character to define the Start and End of magnetic encoding fields.

```
UXB{11294319{FITZPATRICK/CHRIST{11021302{AVV{11051305{SYD{....
|   |||           ||
|   |||           |Data
|   |||           Ending Separator for magnetic position (7Dhex)
|   || Magnetic position
|   | 4th position defines the delimiter used for magnetic position "{" (7Bhex ).
|   Pectab Version
UX header for non standard bar code
```

### Contributions

The following IATA Strategic Partners contributed to this document:

- ARINC
- SITA
- ULTRA

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<http://www.iata.org/stbsupportportal/bcbp/materials/>