



## Simplifying the Business

### Bar Coded Boarding Pass (BCBP)

#### Strategy Paper

Version 2.1 – April 21<sup>st</sup>, 2009

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## Document

Author	Version	Date
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## Reference documents

Documents	Date	Source
BCBP Implementation Guide 3 <sup>rd</sup> Ed.	01 June 2008	StB Extranet / IATA online store
BCBP Standard (Resolution 792)	01 June 2008	StB website
PSC Resolutions Manual	01 June 2008	StB Extranet / IATA online store
Report from the AGM 60	28 July 2004	

StB Website:

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

## 1. Purpose of document

The purpose of this document is to provide clear guidance on the Bar Coded Boarding Pass (BCBP) project in order to facilitate the **alignment of all stakeholders** on the IATA Board mandate.

The version 2.1 of the BCBP strategy paper updates the previous version and provides details on the second phase of the project.

This document is published on the IATA Simplifying the Business (StB) support portal:

➤ <http://www.iata.org/stb/bcbp/materials/>

***All aviation managers involved in airport automation or customer services and wanting to understand IATA's strategy on BCBP should read this document.***

Additional **generic information** about IATA and StB can be found on IATA's web site:

➤ <http://www.iata.org/stb>

Additional **technical information** about bar codes and boarding passes can be found in other IATA documents such as:

➤ The BCBP Implementation guide (available on the StB Extranet for IATA members and on the IATA online store)

➤ The BCBP standard (available on the StB Website).

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## **2. Executive Summary**

Bar Coded Boarding Passes (BCBP) is one of the initiatives mandated by IATA's Board of Governors under the Simplifying the Business (StB) programme to reduce costs and enhance the passenger experience.

The Board of Governors has set deadlines for all airlines to start issuing BCBP (2008) and for all boarding passes to contain the IATA standard 2D bar code (2010). IATA has set up a project team and defined a standard. Industry-wide implementation of BCBP will reduce airlines' costs by up to US\$1.5 billion per annum.

BCBP replaces the need for magnetic stripes on boarding passes and enables web and mobile check-in at an industry level.

IATA is engaging and supporting all its member airlines and their through check-in partners through multiple channels, as well as key stakeholders such as airports, system providers and security agencies. IATA is designing materials and tools to facilitate the transition to 100% BCBP.

In 2008 IATA reached the target of 200 BCBP capable airlines as a measure of industry capability. Key project milestones in 2008 included the validation of a BCBP measurement methodology and solution, the publication of an enhanced standard and new case studies, and the deployment of mobile BCBP in key markets.

In 2009 and 2010 IATA will mobilize airlines and airports to upgrade boarding pass printers and boarding gate readers. This unprecedented global mobilization of the 2,000 airports where IATA members operate is a major challenge for the industry.

### 3. Background

In 2004, the industry was in crisis – due to low cost competition, the lingering effects of the September 11 attacks, and SARS. As a result, the CEOs of IATA member airlines mandated the Association to lead an industry-wide programme designed to ease the transport of passengers and freight. That programme was called Simplifying the Business (StB).

Today, as the industry finds itself in yet another crisis, StB continues to deliver industry change. The programme now promises to deliver up to up to US\$14 billion in annual industry savings.

In April 2009 Simplifying the Business was comprised of four projects that together formed an end-to-end simplified travel process:

- Bar-coded boarding passes (BCBP) —100% BCBP capability by end of 2010
- IATA e-freight — 100% e-freight by the end of 2010 where legally feasible
- Fast Travel Programme
- Baggage Improvement Programme

100% electronic ticketing (ET) was completed in June 2008. CUSS was completed in December 2008.

## 4. IATA's Vision

The report of the IATA Board of Governors (BoG) to the 60<sup>th</sup> Annual General Meeting in 2004 clearly defines the background and objective for Bar Coded Boarding Pass (BCBP).

“The Chairman of the Board, Mr Isao Kaneko, began his report by highlighting a few issues that have been of **critical importance** to the Board since the last meeting in Washington. The first relates to a significant challenge facing all network carriers. How to **improve efficiency** and **reduce costs** in light of the pressures from the so-called ‘low cost’ sector?”

“In December 2003, the Board requested IATA management to develop a strategy for **simplifying the systems** that support the network structure – at the same time reducing costs and improving service to customers.”

***The vision of the BoG is a unique low-cost industry standard for boarding passes that improves efficiency and reduces costs.***

Airlines have used 2D bar codes on boarding passes successfully since 1998. BCBP, the new standard for boarding passes, defines a **two-dimensional (2D) bar code** that replaces the magnetic (mag) stripes defined in the Automated Ticket and Boarding Pass Version 2 (ATB2) standard. ATB2's mag stripes have three drawbacks as far as cost reduction and travel simplification are concerned (see [Business Case](#) in Appendix). 2D bar codes provide a storage capacity similar to mag stripes, which enables interline boarding passes.

Phasing mag stripes out completely is a consequence of two project mandates:

- The e-ticket project eliminates paper tickets, which carry mag stripes
- The BCBP project eliminates the need for mag stripes on boarding passes.

Eliminating mag stripes enables the digitization of airline travel documents (ticket and boarding pass). 2D bar codes can be sent to mobile phones, creating electronic boarding passes. Added to electronic tickets it means **paperless travel** for passengers.

2D bar codes enable the **direct delivery** of boarding passes to passengers - boarding passes printed from the airline web site or displayed on a mobile phone - reducing costs for airlines and simplifying passenger's experience:

- Whenever a passenger prints their boarding pass at home, the airline does not bear the costs of paper stock, printers, desk and staff.
- A web checked-in passenger does not have to wait in line to receive a boarding pass.

**Passengers** are at the heart of the BCBP strategy because most airlines savings come from new passenger behaviour: direct delivery and paperless travel.

## 5. IATA's Mandate

The BoG gave IATA a mandate to deliver targets and deadlines set to fulfil the vision (see Appendix [Mandates history](#)).

The two deadlines set for the industry by the BoG are:

- airlines BCBP capable by end **2008**
- 100% BCBP by end **2010**

The first deadline – **2008** – means that all the airlines have started issuing BCBP. IATA considers an airline capable upon receiving a sample of **one boarding pass** issued by the airline on one of its flights and validating that the bar code complies with the BCBP standard.

The second deadline – **2010** – means that **all boarding passes** must contain the IATA standard 2D bar code. It implies that all the equipment used for check-in in the airports must be capable of printing and reading the IATA standard 2D bar code. Airlines typically own their equipment in their main stations and share the common use equipment in the other stations.

The two deadlines correspond to two different phases of the BCBP project: the BCBP capability deadline in 2008 concerns the airlines and their **systems** whereas the 100% BCBP deadline in 2010 concerns the **equipment** (boarding pass printers and boarding gate readers) in the airports. The 2008 deadline allows airlines to allocate resources to this initiative after the 100% ET deadline. The 2010 deadline allows five-year equipment replacement cycles to take place since the BCBP project launch in 2005.

The main challenge for the BCBP project is to manage the transition from all solutions to a unique standard: BCBP. The deadlines support the transition challenge and help align all stakeholders to reach a common objective and fulfil the vision.

The main risk is that all solutions, including ATB2, remain in use, and that BCBP just becomes another solution used by some airlines in some airports. This would add more complexity and costs, as well as confusion for the passenger. This risk is mitigated by the December 2010 sunset date on ATB2 approved by the Passenger Service Conference in 2007.

BCBP improves the case for boarding automation. However, BCBP should not be enforced in manual stations. The Board recognized in June 2007 that BCBP usage cannot be measured, hence not managed, and IATA should focus on BCBP equipment capability at airports, as a measure of BCBP usage.

IATA's original mandate of promoting the BCBP standard also applies to:

- BCBP on mobile phones, as defined in the standard published in June 2008
- Acceptance of home printed and mobile BCBP at security checkpoints

IATA will ensure that the boarding gate readers support 2D bar codes displayed on mobile phones (equipment capability), while not enforcing 2D bar code on mobile phones (usage).

## 6. Project scope and timeline

While the vision for the industry is that all airlines and airports use BCBP, IATA has defined a scope of airlines and airports for BCBP implementation. IATA will engage and report on airlines and airports in scope.

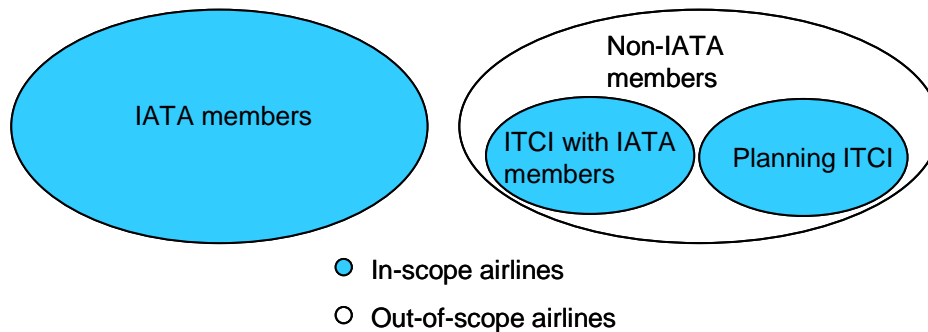
### 6.1. Airlines

The scope of airlines is defined as:

- all IATA members carrying passengers and using automated boarding passes
- all non-IATA members having, or intending to have, interline through check-in (ITCI) agreements with IATA members

Airlines are considered **in scope** whenever the type of boarding passes or related equipment or software used on their flights has an impact on IATA members. Basically when two airlines have an interline through check-in (ITCI) agreement, the upline station will check the passenger in for the online and interline flights and will issue the related boarding passes. The upline carrier capability has an impact on the downline carrier: if the former does not issue the IATA standard then the latter will have to board the passenger manually or re-issue a boarding pass, generating in both cases additional costs and passenger inconvenience.

#### BCBP Airline scope



According to the scope definition, **212 airlines** were considered in scope for BCBP in April 2008.

Airline type	In scope?	Comments
Cargo-only IATA members	NO	They don't use boarding passes
Airlines outsourcing the entire check-in and boarding process	YES	Boarding passes are issued for passengers
Airlines issuing manual boarding passes only	NO	No mandate to enforce automation

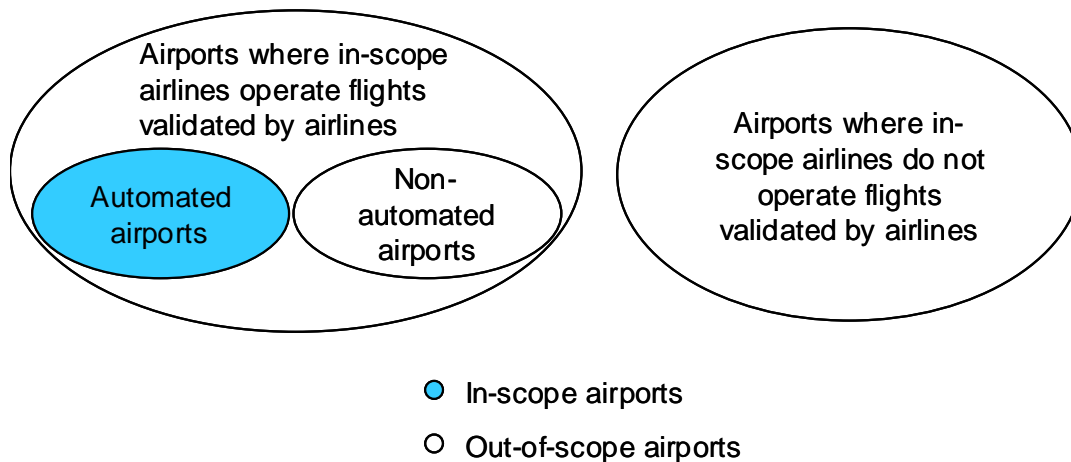
## 6.2. Airports

An airport is identified by a IATA three-letter code where scheduled flights are operated by airlines in scope. Following the definition of the airline scope and its limitation to automated boarding passes, an airport is considered in scope if it is automated, i.e. there are a system and a printer already in use that can support 2D bar codes.

The airport scope is defined as:

- at least one airline in scope is operating a flight (airline confirmation required)
- the airport is automated, i.e. at least one system and one printer are used to issue boarding passes (airline confirmation required)

### BCBP Airport scope



IATA will mobilize the providers of the check-in and boarding equipment used at the airport, i.e. the airlines, the airports and the ground handlers. After ensuring that at least an airline is operating at a given airport, IATA will investigate the automation. If the equipment is owned by the airline, or dedicated to the airline, then the airline will have to upgrade the equipment. If the equipment is owned by a third party, e.g. airport or ground handler, and shared by several airlines, then IATA will engage the owner of the equipment and recommend that the equipment is upgraded.

Airport type	In scope?	Comments
3-letter code but no scheduled flight	NO	E.g. city area code
Cargo-only airport, military airport	NO	No boarding passes issued
Airports where printers are provided but no gate readers	YES	Automated boarding passes are issued

All the stakeholders providing products and services to airlines in scope have to support the transition to 100% BCBP (see Appendix [Scope and stakeholders management](#)).

### 6.3. *Mobile BCBP*

The scope of the project includes mobile BCBP, i.e. the mobile version of the boarding pass. The 2008/2010 deadlines however only apply to the paper boarding passes.

IATA is tracking the airlines that have implemented mobile BCBP and ensures that the 2D barcode on mobile is compliant with the BCBP standard. The BCBP Implementation Guide addresses the barcode delivery options such as wap-push, email or MMS.

Mobile BCBP provide benefits which are similar to web BCBP, i.e. the check-in and delivery of boarding pass does not need to take place at an airport check-in counter. The mobile BCBP has additional benefits, as it allows the airlines to update and automate the delivery of a boarding pass. After checking the bags, the airline can send an update barcode containing the bag tag numbers. In case of a change of seat (change of aircraft or upgrade) the new boarding pass can be pushed directly to the phone of the passenger.

### 6.4. *Security*

The acceptance of home printed and mobile BCBP at airport security checkpoints depends on the local security authorities. The benefits of the BCBP project are directly impacted by the acceptance of web and mobile BCBP. If the security administration requires that a home printed boarding passes be stamped at a desk, or even re-printed at a desk, the additional step for the passenger negates the benefits of web check-in. It is critical for IATA to track and encourage that home printed BCBP are accepted at security checkpoints.

Term	Definition
Boarding pass accepted at security	<p>A boarding pass is accepted by security authorities in its original format, as issued by the airline.</p> <p>A boarding pass that is scanned at security, or that contains a digital signature, is still considered as accepted.</p> <p>If the local security authorities require a stamp, or a sticker, or any additional process not provided by the airlines, and that could potentially delay the passenger process, the boarding pass is not considered as accepted (defeats the purpose of remote check-in).</p>

IATA is promoting the BCBP standard towards security authorities. Where home printed and mobile BCBP are not yet accepted, IATA engages the security authorities to identify the issues and propose solutions based on global best practices. If the local authorities decide to require proprietary solutions to validate the boarding passes, IATA will recommend using the solutions provided by the BCBP standard. Instead of using a proprietary 'security barcode', IATA will recommend using the digital signature available in the BCBP standard. Instead of using a proprietary 'link to airline systems', IATA will recommend using the XML interface available in the BCBP standard.

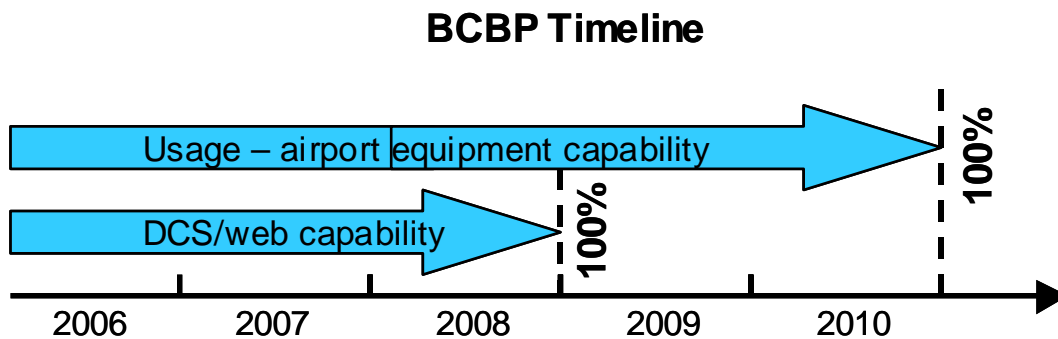
IATA is conducting campaigns in order to identify the obstacles to acceptance of web and mobile BCBP, and the countries in which those obstacles take place. IATA will then engage the local security authorities, promote the BCBP standard and recommend the solutions included in the BCBP standard if necessary.

IATA will track the number of airports accepting web and mobile BCBP, as well as the countries where obstacles are found. IATA will publish a tracker on the proportion of passengers travelling through airports where web or mobile BCBP are accepted.

### 6.5. *Timeline*

For an airline to fully deploy BCBP in every station, the major obstacle is airport infrastructure. Unless the printers at all stations can support 2D bar codes, an airline will not be able to print 2D bar codes on 100% of the boarding passes. In the meantime airports will not retrofit the equipment until a significant number of airlines systems can feed the 2D bar code.

The project timeline relies on airline leadership to upgrade their systems so that airports can progressively upgrade their equipment. Some airports are already reaping the benefits of a cutover to low cost bar code technologies. Even when airlines systems were not BCBP capable, airports provided interim solutions so that BCBP is used without impacting the airlines host systems.



IATA will drive airlines and airports BCBP capability as far as possible. The end of paper tickets and the critical mass of plain paper boarding passes issued will naturally phase out proprietary bar codes and magnetic stripes. After **December 31<sup>st</sup> 2010**, all boarding passes should contain the IATA 2D bar code.

IATA considers that an airline has completed the BCBP project once the equipment used at every automated airport is BCBP capable.

## 7. Project governance

The BCBP project has a global impact on the aviation industry. As a result, IATA must ensure that the project governance reflects the make up of the industry.

The governance applies to:

- **Strategic decisions** - e.g. the full speed scenario that led to the Mandate - the BCBP project manager requests the advice and support of the StB Steering Group (SG). The proposals, including annual targets, are submitted to the BoG for approval.
- **Standard proposals and principles** - e.g. the mobile BCBP standard - are discussed by the BCBP Working Group (WG), a sub-group of the CUSS Management Group (MG). Proposals endorsed by the CUSS MG are submitted to the Joint Passenger Service Conference (JPSC). The standards are adopted by the JPSC.

The stakeholders involved in the groups and committees are:

- The IATA airline members join the StB SG, the BCBP WG and the JPSC. The StB SG is only composed of BoG members. The JPSC is only composed of IATA Airline members.
- The IATA Strategic Partners, including vendors and airports, actively contribute to the BCBP Standard and Implementation Guide by attending the BCBP Working Group.

Action	Responsibility	Consultation	Awareness
Mandate, deadlines	BoG	IATA StB	All stakeholders
Strategic decisions	Project Manager	StB Steering Group	All stakeholders
Engagement	StB Country Representatives	Project Manager	All stakeholders
Material	Project Manager	StB team, StB Preferred Partners	All stakeholders
Status reports	Project Manager	Airlines and airports	All stakeholders
Workshops	StB	StB Preferred Partners	Airlines and airports
Standard proposals and principles	JPSC	BCBP Working Group / CUSS MG	All stakeholders

IATA also coordinates actions with organizations representing key stakeholders:

- The Airports Council International (ACI), representing 500+ members operating 1650 airports, supports the StB airport initiatives and advises its members to fully support BCBP for their own benefits. ACI has circulated a new bulletin supporting StB to its members in October 2008 (available on ACI and IATA web sites).

## 8. Delivery

There are three reasons underpinning the industry implementation of 100% BCBP by 2010:

1. 100% IATA members approved the mandate proposed by the Board of Governors at the Annual General Meeting 2006,
2. All aviation stakeholders work in an interconnected industry and BCBP enables and supports interconnectivity. BCBP provides a unique and common standard for airlines exchanging passengers and sharing infrastructure with other airlines.
3. A natural attrition will take place once a **critical mass** is reached in airline capability and airport infrastructure. Remaining stakeholders who have not been able to deliver the required implementation will face higher operating costs, declining supplies and very poor process efficiency. Some stakeholders may resist the change until it is not sustainable, e.g. until equipment spare parts are not available any more or boarding passes cannot be issued any more.

IATA's role is to facilitate the industry transition to 100% BCBP and to support its members in the implementation of BCBP. As the industry leader and main driver of BCBP, IATA will engage all the stakeholders and will collect data from them to report on the industry status.

### 8.1. Objectives

To successfully deliver the BCBP mandate, IATA has set 10 objectives – strategic and tactical.

Strategic objectives	Tactical objectives
<ol style="list-style-type: none"> <li>1. Set a unique format standard enabling multiple segments</li> <li>2. Inform, mobilize, and monitor the industry on global status and challenges</li> <li>3. Set a BCBP capability measurement methodology</li> <li>4. Ensure availability of enabling technology</li> <li>5. Support all adopters and facilitate implementation</li> </ol>	<ol style="list-style-type: none"> <li>6. Communicate actively deadlines to all stakeholders (e.g. industry conferences)</li> <li>7. Secure leading airlines implementation</li> <li>8. Formalise implementation material (e.g. best practices and case studies)</li> <li>9. Secure interim solutions to facilitate transition</li> <li>10. Develop tools to accelerate deployment</li> </ol>

Concretely delivering those objectives means that the following has been or will be achieved:

1. Unique standard: published in June 2007.
2. Mobilization: The monthly engagement delivered through StB Country Representatives enables IATA both to collect information and address issues.
3. Measurement methodology: Airline BCBP system capability is tracked by IATA through validation of samples. Infrastructure BCBP capability is tracked by IATA through airline and airport reports into the BCBP Matchmaker.
4. Technology: System providers are aligned on IATA's mandate and have deployed solutions.

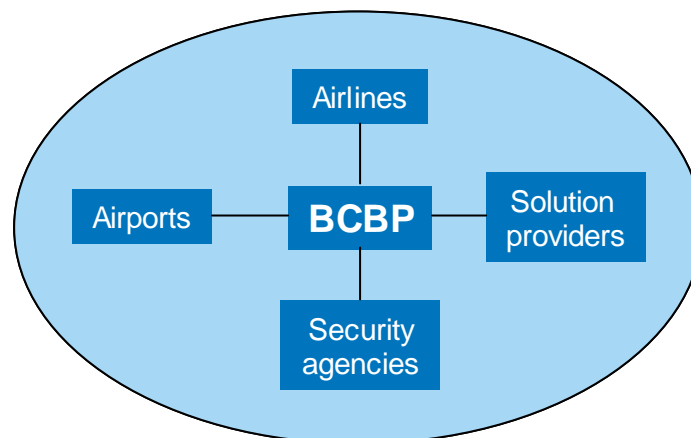
5. Support: The StB support model describes the support provided by StB for the BCBP project.
6. Communication: The key messages are delivered through a range of communication channels. Communication contributes to the awareness effort of IATA.
7. Implementation: 200 airlines have implemented the BCBP standard by end 2008, less than 3 years after the mandate was given.
8. Material: IATA provides all the material relevant to BCBP implementation, e.g. standard, implementation guide.
9. Interim solutions: IATA defined a data translation solution for CUTE provider to enable 100% BCBP airports although some airlines were not natively capable. This interim solution enabled to manage the transition until 2010.
10. Tools: IATA publishes surveys of solutions providers and maps of airport capability, as well as the BCBP Matchmaker.

## 8.2. Stakeholders

All stakeholders have different interests and play different roles in the transition to 100% BCBP:

- **Airlines:** asked IATA to lead the industry transition to 100% BCBP and have to ensure their system providers provide them with BCBP capable products
- **Airports:** need to provide the infrastructure to support BCBP
- **Ground handlers:** need to ensure that they can support BCBP
- **DCS providers:** need to provide BCBP as the default feature for boarding passes
- **CUTE providers:** need to ensure that BCBP is supported by their systems and equipment
- **Hardware providers:** need to provide certified devices supporting BCBP and retrofitting options to facilitate the transition
- **Security authorities:** need to accept plain paper printed documents at airport security and immigration and to advise fraud-prevention procedures if necessary

### Stakeholders of the BCBP project



StB has a specific support model for all stakeholders (see Appendix [Supporting stakeholders](#)).

### **8.3. Approach**

IATA has developed a specific **approach** towards each stakeholder to maximise the impact and the success of the project, while leveraging on IATA's network and resources.

#### **Airlines:**

- Mobilisation campaigns: to educate, to get commitment and collect data
- Regional workshops: to address local issues, to facilitate matchmaking, to provide hands-on implementation support
- Interactive airport map / BCBP Matchmaker: to speed-up deployment plans and facilitate dialogue between airlines and airports. Airlines validated their progress into the BCBP Matchmaker, which also helps to define the airport scope.
- Local support through the global network (Monthly engagement): to provide specific and targeted support on a local basis to implement BCBP

#### **Airports:**

- Mobilisation campaign and interactive airport map: to educate, to get commitment and collect data
- Invitations to workshops: to address local issues, to facilitate matchmaking
- BCBP requests from the Matchmaker: to speed-up local implementation
- ACI and MoUs: to secure leadership at a global/regional level

#### **Ground handlers:**

- Participation in conferences: to raise awareness

#### **DCS/CUTE providers:**

- Preferred Partner programme: to facilitate match-making
- User group community development: to speed-up systems capability

#### **Hardware providers:**

- Preferred Partner programme: to facilitate match-making

#### **Security authorities:**

- Interactive map: reporting acceptance of home printed BCBP at security
- Visit to local authorities: assess local requirements, define solutions
- Regional workshops: special invitations to address local issues

### **8.4. The BCBP Matchmaker**

The BCBP Matchmaker is also key to the BCBP strategy as it enables self-engagement of airports by airlines.

The BCBP Matchmaker is a service provided free of charge by IATA. It allows airlines and airports to work together to plan the implementation of BCBP on shared equipment. The service provides a regularly updated list of participating carriers and airport BCBP contacts that both airlines and airports can update in real time. Using a secure website, airlines select an airport and propose a date for the implementation of

BCBP. The request is submitted in real time to the airport. Airlines' StB Champions or airports BCBP Contacts can register directly on the BCBP Matchmaker.

As the BCBP Matchmaker contains the information on the availability of printers and readers validated by airlines, it enables IATA to define the scope of airports (as defined in 6.2). The routes are also entered by airlines (only routes for scheduled flights, not charter).

The BCBP Matchmaker also tracks acceptance of web and mobile BCBP at security, including requirements such as scanning the 2D barcode.

To further support implementation, the BCBP Matchmaker provides a form to report print quality issues. The web site also contains the list of future airports by IATA, so that airlines can raise issues and have IATA to add them to the agenda of the meetings.

IATA developed 15 Key Performance Indicators to ensure that the data quality is acceptable. On a monthly basis, gaps are identified and reminders are sent to users in order to update the data.

### **8.5. Project structure**

The structure of the Project Team is aligned with the objectives:

- A project manager, in charge of articulating the strategy and action plan of the project, supporting the delivery of the BCBP project as mandated by the Board
- An implementation manager, focusing on airlines implementation and vendors mobilization
- A solutions manager, responsible for the BCBP Matchmaker

The project team structure will be adapted to the future needs to deliver the benefits of 100% BCBP at airports worldwide.

The shared resources and support (communication, IT, business intelligence, events, reporting) are provided by the StB Centre Team.

## 9. Appendices

### 9.1. *Business case*

The BCBP project is based on a strong business case at both industry and local level.

#### 9.1.1. The win-win-win situation

The BCBP project provides significant benefits for its three main stakeholders:

- Passengers
- Airlines
- Airports

Airlines and airports have a mutual interest to invest in BCBP as it creates a very attractive win-win-win situation.

The key benefits for passengers are:

- Less time and hassle in airports when the boarding pass is delivered directly on the web or mobile phone
- Single boarding pass for the entire journey

The key benefits for airlines are:

- Reduced check-in costs with the direct delivery of boarding passes
- Reduced equipment cost when replacing mag stripes by 2D bar codes

The key benefits for airports are:

- Passengers spend less time in check-in lines
- Better use of space
- Lower maintenance costs

#### 9.1.2. The cost benefit analysis

The drawbacks of mag stripes on boarding passes are:

1. Mag stripes require devices much more expensive than bar coding devices
2. Mag stripes require printers located in the airport, at a desk or inside a kiosk
3. Mag stripes represent a significant unit cost for paper stock

When the industry reaches the milestones by end 2010, our projections show:

- A decrease in the processing costs of passengers at a check-in desk
- A decrease in the overall check-in cost per passengers
- An increase in the delivery of boarding passes on web and mobile phones

BCBP dimensions	Projections end 2010
BCBP usage	100%
Web and mobile delivery of boarding passes	25%
Industry annual savings	USD 1.5bn

### 9.1.3. Stakeholders cases

Airlines migrating from mag stripes to 2D bar codes see the strongest business case:

- Reduced cost of capital and maintenance from ATB2 devices to direct thermal and bar code devices
- Reduced cost of consumables from mag stripe paper stock to plain paper

Airlines migrating from 1D bar codes to 2D bar codes see a different business case:

- They are willing to change for 2D capable equipment at next replacement cycle, as 2D equipment supports 1D and is not more expensive than 1D equipment.
- 2D bar codes have a larger storage capacity enabling enhanced passenger services.
- Only the IATA standard 2D bar code can guarantee interoperability: Supported in airports worldwide, enables automated boarding of through-checked passengers

Airlines migrating from any 2D bar code to the IATA standard 2D bar code see yet another business case:

- They may be willing to change for equipment capable of supporting the IATA 2D standard at next replacement cycle, as the IATA standard is larger than most 2D matrix codes in use.
- Only the IATA standard 2D bar code can guarantee interoperability, as presented above.

Finally airlines processing passengers manually are likely to consider BCBP as it reduces the capital and operating costs compared to the previous standard, ATB2. Manual boarding means that the gate agent types in a sequence number, either during the enplanement or after passengers have boarded. Manual boarding is cost effective when only few passengers are enplaned, either for small aircraft or for a limited number of connecting passengers.

Airports are willing to migrate to the IATA standard 2D bar codes as it reduces their equipment costs, including CUSS kiosks, and it reduces the number of supported check-in and boarding solutions to one. IATA released a policy statement on the elimination of magnetic stripes in February 2006, which was confirmed by the ATB2 sunset date of 2010 adopted by the JPSC.

### 9.1.4. Common Use Self Service

The CUSS project was completed in 2008. CUSS kiosks support the deployment of BCBP in several ways:

- In local CUSS projects, IATA recommends that printers and scanners embedded in the CUSS kiosks support 2D bar codes
- The CUSS Implementation Guide recommends that CUSS kiosks print 2D bar codes on plain paper instead of ATB2
- The baggage drop-off points designed for CUSS kiosks also support passengers checked-in on the web and using a BCBP
- The CUSS Recommended Practice 1706c was reviewed so that ATB2 is not an option anymore in CUSS 1.2.

### **9.1.5. Radio-Frequency Boarding Passes**

Radio-Frequency Identification (RFID) is a mature technology that StB investigated in 2007 for several areas of aviation: baggage tags, catering and duty-free trolleys, spare parts, Unit Load Device (ULD) and IATA e-Freight.

But RFID is NOT identified by StB as a solution for boarding passes:

- An RFID boarding pass would NOT reduce costs – an RFID chip cannot be printed at home and is more expensive than plain paper, managing re-usable tags would add costs to airlines
- An RFID boarding pass would NOT simplify the passenger experience – to collect the re-usable RFID chip would add a step in the check-in process compared to web or mobile check-in

However passengers carrying a mobile phone with an Integrated Circuit (IC) would benefit from using their mobile phone as a boarding pass. The check-in data would be transmitted to the mobile phone. The IC would transfer the data back to the system while going through the boarding gate. The BCBP Working group will explore this solution needs once the required market conditions are met.

## **9.2. *Mandate history***

When the Board launched the StB programme, including BCBP, in June 2004, the mandate was to “finalise industry standards and develop an industry implementation programme”.

One year later, at the Board meeting in June 2005, a standard was agreed and the focus shifted to achieve significant savings, estimated at USD 0.5 billion with a 20% BCBP penetration. A new business case was delivered in 2007 to account for 100% BCBP. The new savings amount to USD 0.8 billion.

In December 2005, the Board requested that a timetable for full global implementation of BCBP be developed.

When the Board met in June 2006, it confirmed the vision, reviewed the timetable and gave a new mandate, to reach 100% BCBP usage.

In June 2007 the Board recognized that measuring BCBP usage would require extensive resources, whereas measuring BCBP capability was more realistic and still deliver the benefits.

In December 2008, the Board set a target of 60% BCBP capability for the end of 2009.

## **9.3. *Scope and stakeholder management***

### **9.3.1. Airlines with no ITCI**

“Interline through check-in” (ITCI) means that two airlines have an agreement to check a passenger in for the onward flight and that the passenger will not have to check-in at a transfer desk. ITCI usually requires that the flight itinerary is issued on a single ticket

with one booking. "Interline" means that two airlines have an agreement to sell tickets on flights operated by the partner.

Airlines with no ITCI agreements will not issue a boarding pass on another carrier's flight. Those airlines do not see the benefits of using BCBP for interoperability.

Signing an ITCI agreement is a business decision based on the volume of interline passengers between two airlines. Although BCBP facilitates the issuance of boarding passes for ITCI partners, BCBP alone will not make airlines to sign an ITCI agreement.

The through tagging of baggage is a separate topic.

### **9.3.2. Airlines with no ABC**

"Automated Boarding Control" means that a system manages the list of passengers and provides an automated solution to check that passengers are boarded correctly. That includes machine-readable data on a boarding pass and automated acquisition of the data at boarding.

"Manual Boarding" means that a system is used but there is no data acquisition, e.g. no Boarding Gate Reader used.

Using BCBP means that the data acquisition is automated. An airline processing all passengers manually may not see the benefits of a new automated solution.

### **9.3.3. Airlines with no DCS**

An airline may either handle its own flights or rely on handling agents. When the airline handles its own flights, it usually has an agreement with a DCS provider to access a host system. Handling agents either access the airline's host or have their own DCS.

Airlines that have completely outsourced their check-in and boarding operations may not feel impacted by BCBP, but they are. It is the airline's responsibility to issue BCBP for all its passengers, especially the passengers who have connections with other IATA flights.

The mandate applies to those airlines. They are supposed to communicate the mandate to their third parties and have at least one provider capable by end 2008.

### **9.3.4. Airlines not committed to the deadlines**

The mandate has been proposed by IATA Board of Governors and adopted by all IATA member airlines during the 2006 Annual General Meeting. Although all airlines have adopted the mandate, some airlines may still decide not to implement BCBP by the deadline. They will face various consequences: major disruptions in passenger processing, loss of business and high increase in operating costs. Non-IATA member airlines may face increased operating costs of magnetic stripes when the whole industry will have moved to 2D bar codes.

### **9.3.5. Airports**

Reaching 100% BCBP usage means that all boarding passes contain the IATA standard 2D bar code. IATA will track Airline systems' capability and Airport printers and readers' capability.

IATA will assume that once the system and the equipment are BCBP capable, then the boarding pass issued should be BCBP.

IATA will engage and mobilise airlines that own their equipment, and airports that provide check-in and boarding services to IATA members.

### **9.3.6. DCS providers**

The DCS should identify the 2D capability of the output device and - whenever the device is capable - add the IATA 2D bar code into the boarding pass.

DCS providers are supposed to add that feature to their products no later than 2007 so that their customers have enough time to implement it.

DCS providers are considered in-scope if one of their products is used to issue boarding passes on the in-scope airlines' flights.

### **9.3.7. Ground handlers**

MITA airlines providing ground services to IATA members have to follow the IATA standard. The BCBP standard will reflect the deadlines set by the BoG and make the 2D bar code mandatory on boarding passes.

Regarding ground handlers there is a provision in the IATA Standard Ground Handling Agreement (SGHA) for "documents" which obliges ground handlers to follow IATA standards for documents such as boarding passes.

### **9.3.8. Supporting stakeholders**

IATA has developed a specific support model for all stakeholders:

- StB Centre: IATA has published a BCBP implementation guide and case studies, and updates BCBP FAQs with answers to all the questions received by IATA. Other materials are available on the BCBP section of the StB website.
- Mobilisation: StB runs communication and mobilisation campaigns towards airlines and airports. StB also identifies and monitor local BCBP projects.
- Business Intelligence: IATA publishes the list of BCBP capable airlines and airports.
- Events: Regional workshops targeted to airlines and airports are organized to prepare for BCBP implementation. IATA communicates the mandate and deadline at each conference opportunity.
- Matchmaking: Preferred Partners offering products and services supporting BCBP have been selected, the BCBP Matchmaker collects implementation requests from airlines and sends them to selected airports

- Standard development: IATA develops standards within a number of functional areas to ensure systems in place support efficient communication between airlines and their industry partners.

## **9.4. Measuring progress**

One can only manage what one can measure. The measurement of progress towards the 2010 deadline is provided by the BCBP Matchmaker.

### **9.4.1. The 2008 deadline**

To manage the 2008 deadline and 100% airline capability, the IATA project team had to identify airline capability.

IATA decided to validate an airline's capability whenever:

- The airline has communicated that one boarding pass, containing a BCBP compliant 2D bar code, has been printed on one airline flight
- The airline has sent a sample to IATA that has validated it as BCBP compliant

An airline using a DCS should issue the boarding pass with its DCS – a boarding pass issued by a third party on a local DCS would not make that airline capable. An airline that has got no DCS – and outsources check-in in all stations – should have a boarding pass issued from at least one station.

The StB campaigns included in their objectives the collection of BCBP samples.

### **9.4.2. The 2010 deadline**

The original mandate was set to 100% BCBP usage. To manage a project deadline the IATA project team must be capable of measuring progress, i.e. BCBP usage. When the BCBP usage deadline was set no measurement solution was in place. E-Ticket (ET) usage in IATA Billing and Settlement Plans (BSPs) was controlled and measured by IATA. Boarding passes don't go through BSPs or any IATA controlled system.

The scope of boarding passes include mag stripes, 1D or 2D bar codes, on paper and mobile phones. As BCBP usage cannot be tracked, the Board agreed to track BCBP capability, defined and measured as:

- 100% boarding pass printers at check-in counters – used by airlines in scope at airports in scope – are capable of issuing 2D bar codes (PDF417)

## **9.5. Solutions and tools**

IATA develops solutions and tools that facilitate the implementation of BCBP.

### **9.5.1. The BCBP Interactive map**

The BCBP Interactive map, published on the StB support portal, was developed to track and report the progress of airport equipment capability.

The map contains all the airports in scope, engaged by IATA and providing shared infrastructure to airlines.

[http://www.iata.org/html\\_email/stb\\_map/BCBP.html](http://www.iata.org/html_email/stb_map/BCBP.html)

After the launch of the BCBP Matchmaker, the maps are fed directly by data reported by airports.

### 9.5.2. The ATB/BCBP translator

The objective of the BCBP project is that airlines implement BCBP as a native feature in their DCS. However airport's infrastructure refreshment cycles are not always aligned with airline system refreshment cycles. An airport providing shared equipment to airlines will only benefit from hardware savings when all airlines get a bar code solution. If an airline has not implemented BCBP yet – or after 2010 if the airline is not an IATA member – and the airline still requires ATB devices, the airport will not be able to reduce costs. Unless another solution enables the airport to deal with airlines that do not support BCBP.

The translator should not be considered as a long-term solution for airlines.

The ATB/BCBP translator runs at the CUTE level. It captures the mag data from the airline's host, translates them to BCBP data and sends them to the printer. And vice-versa with the boarding gate reader. Such a translator does not exist on all CUTE platforms and does not generate IATA standard BCBP yet.

Through IATA's facilitation, CUTE vendors have agreed on a common solution that guarantees that non-BCBP-capable airlines are issuing the BCBP standard.

## 9.6. Risks

Key risks faced by the industry and mitigating actions are:

Risk description	Mitigating actions
The cost to replace existing equipment is too high for some stakeholders	IATA has developed business cases to outline savings for each situation
Lack of speed in the transition may force dual equipment and pave the way for a multiple standard situation	IATA has developed a service (Matchmaker) to connect airlines and airports and align their deployment plans
Plain paper printed documents may not be accepted by control authorities	When local issues are reported by airlines IATA engage the authorities in a local working group
Airlines may want to use the standard beyond its current limits, e.g. display it on the screen of a mobile phone	The BCBP has been extended and is available on mobile phones
Lack of unique format may prevent interoperability	The BCBP standard offers a unique format enabling multiple segments, known as M format.
Lack of BCBP usage measurement solution	Measurement of progress will be provided by the BCBP Matchmaker
Lack of communication may have some	IATA runs regional workshops in all

regions keep ATB for several more years and disrupt inter-regional flights	regions and attend conferences to spread the message. IATA has asked all its members to communicate the deadline to their partners
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## 9.7. Roles and responsibilities

### 9.7.1. IATA's role

IATA is the global leader of the BCBP project mandated by the IATA Board of Governors and endorsed by its Members.

As a project objective, IATA will establish the conditions for the global adoption of BCBP and thereby facilitate and support the stakeholders in their implementation of BCBP.

#### IATA's 10 objectives – Roles and responsibilities

Objective	StB Ownership	Supporter
Set a unique format standard enabling multiple segments	Project Manager	IATA passenger services standards Airlines
Set a usage measurement methodology		Airlines / Vendors
Ensure availability of enabling technology		Vendors
Support all adopters and facilitate implementation		StB / RCT / RPM
Monitor and inform the industry on global status and challenges		RCT / RPM
Secure 200 airlines implementation in 2008		RCT / RPM
Secure interim solutions to facilitate transition		Vendors
Formalise implementation material, e.g. case studies		Airlines
Develop tools to accelerate deployment		StB / Airlines
Communicate actively deadlines to all stakeholders		StB / RCT / RPM

Note: RCT = IATA Regional Coordination Team, RPM = StB Regional Programme Manager

### 9.7.2. Airlines' role

Early adopters are leading the transition to BCBP in their region.

Airlines nominate:

- A contact - Airline StB champion - who is the sponsor of the StB projects in their organisation and has the authority to influence their implementation
- A contact for the BCBP project - BCBP contact - who is tasked to deliver the project.

- A contact for the BCBP Matchmaker who updates the progress of the project in the web site.

Airlines contribute to the efforts on standards, usage measurement and industry status information.

### **9.7.3. Airports' role**

Airports nominate a BCBP contact that can manage the relationship with IATA regarding the BCBP project. The role of the BCBP contact is to answer IATA's requests, airlines requests in the BCBP Matchmaker, and to communicate internally all information relevant to BCBP, acting as a champion for the project.

## **9.8. Glossary**

- 1D: One Dimensional
- 2D: Two Dimensional
- ACI: Airports Council International
- ATB2: Automated Ticket and Boarding Pass Version 2
- BCBP: Bar Coded Boarding Pass
- BoG: IATA Board of Governors
- CUTE: Common Use Terminal Equipment
- DCS: Departure Control Systems
- JPSC: Joint Passenger Service Conference
- RPM: IATA StB Regional Programme Manager
- RVP: IATA Regional Vice-President
- StB: Simplifying the Business