



International Civil Aviation Organization

**Fourth Meeting of the ICAO Asia/Pacific Seamless ATM Planning Group  
(APSAPG/4)**

Hong Kong, China, 3-7 June 2013

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**Agenda Item 4: Asia/Pacific Seamless ATM Status and Strategies**

**MONITORING OF SEAMLESS ATM BASED ON THE  
AVIATION SYSTEM BLOCK UPGRADES (ASBU) FRAMEWORK**

(Presented by Hong Kong, China)

**SUMMARY**

This paper outlines the planning and implementation of Aviation System Block Upgrades (ASBU) in Hong Kong, China. It also proposes the adoption of a common template to facilitate reporting by States on implementation status of ASBU initiatives, and review by ICAO on the readiness of APAC region in achieving seamless ATM.

This paper relates to –

**Strategic Objectives:**

- A: *Safety – Enhance global civil aviation safety*
- C: *Environmental Protection and Sustainable Development of Air Transport – Foster harmonized and economically viable development of international civil aviation that does not unduly harm the environment*

**Global Plan Initiatives:**

- GPI-1 Flexible use of airspace
- GPI-3 Harmonization of level systems
- GPI-4 Alignment of upper airspace classifications
- GPI-8 Collaborative airspace design and management
- GPI-12 Functional integration of ground systems with airborne systems
- GPI-17 Data link applications
- GPI-18 Aeronautical information
- GPI-21 Navigation systems
- GPI-22 Communication infrastructure
- GPI-23 Aeronautical radio spectrum

**1. INTRODUCTION**

1.1 The ICAO endorsed the Aviation System Block Upgrades (ASBU) during the 12th Air Navigation Conference held in November 2012 providing a framework for air traffic management (ATM) systems modernization in a globally harmonized, environmentally friendly and cost-effective manner. In line with ICAO's endorsement, the Civil Aviation Department (CAD) of Hong Kong China has established an ASBU Planning and Implementation Committee (ASBU/PIC) since February 2013 with membership consisting of representatives from various sectors of aviation

industry to steer and oversee the planning and implementation of ASBU in Hong Kong. The inaugural meeting of the ASBU/PIC was held on 1 February 2013 with strong support and participation from all members. For the coming years until 2018, the ASBU/PIC will put focus on block 0 modules while keeping in view development/readiness of higher block modules. In order to promote and facilitate understanding of ASBU initiatives among the aviation community, CAD has conducted a series of briefing since May 2013 introducing the characteristics of each Block 0 module such as the technical and operational requirements, operational benefits, proposed implementation plan and support/actions that are expected from stakeholders in achieving the plan.

## 2. DISCUSSION

2.1 For effective planning and implementation of ASBU Block 0 modules in Hong Kong, CAD has developed an implementation plan (see Appendix 1) which is based on inputs from stakeholders, the regional priorities as established by the APSAPG, operational needs, cost-benefits analysis and applicability under Hong Kong environment. This plan provides a clear picture on the implementation roadmap for each Block 0 module by adopting the methodology agreed by APSAPG (see WP/6 in APSAPG/3) in which the implementation status of each module is defined by a three-level “Capability Element Value” (0, 1 and 2) from 2013 to 2018. To facilitate monitoring and management, CAD has further sub-divided the Capability Element Value 1, into “Preparation before Trial and Transition” and “Trial and Transition” (see Table 1).

Capability Element Value	Colour Code	Meaning
0		Not yet started
1		Preparation before Trial and Transition
1		Trial and Transition
2		Full Implementation
2		Not Applicable

Table 1: Summary of “Capability Element Value” and corresponding meaning

2.2 In the current version of the Asia/Pacific Seamless ATM Plan, six Block 0 modules have been identified as critical ASBU upgrade that are accorded with the highest priority for harmonized implementation in the region so as to realize a seamless ATM. To facilitate monitoring of progress by States/Administrations on these critical modules, it is proposed that a template on implementation plan similar to the one shown in Appendix 1 be used. For example, through analyzing plans of concerned States for implementation of B0-84 (Initial Capability for Ground Surveillance) along busy air traffic routes, it will be feasible to evaluate when seamless surveillance (i.e. full implementation of B0-84) along those routes can be achieved and whether the desired timeline under Seamless ATM Plan can be met (see Appendix 2a). In another scenario, if a State has a plan to implement B0-84 but the plan has significant deviation from others, it can be easily unveiled by comparing the States’ plans (see Appendix 2b).

## 3. ACTION BY THE MEETING






3.1 The meeting is invited to:


- a) note the work of Hong Kong, China in the planning and implementation of ASBU to support APAC in achieving a seamless ATM; and
- b) adopt a common template to facilitate monitoring of progress by States/Administrations as well as ICAO in regard to planning and implementation of the Block 0 modules.

Proposed ASBU Block 0 Implementation Plan for Hong Kong

Appendix 1

		2013	2014	2015	2016	2017	2018	
PIA1	B0-65 Optimisation of approach procedures including vertical guidance	Full implementation (Green)						
	B0-70 Increased Runway Throughput through Wake Turbulence Separation	Preparation (Yellow)	Trial/Transition (Orange)			Full implementation (Green)		
	B0-75 Safety and Efficiency of Surface Operations (A-SMGCS Level 1-2)	Trial/Transition (Orange)			Full implementation (Green)			
	B0-80 Improved Airport Operations through Airport-CDM	Preparation (Yellow)	Trial/Transition (Orange)				Full implementation (Green)	
	B0-15 Improved Traffic Flow through Runway Sequencing (AMAN/DMAN)	Preparation (Yellow)			Trial/Transition (Orange)			Full implementation (Green)
PIA2	B0-25 Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration	Trial/Transition (Orange)			Full implementation (Green)			
	B0-30 Service Improvement through Digital Aeronautical Information Management	Preparation (Yellow)	Trial/Transition (Orange)				Full implementation (Green)	
PIA3	B0-10 Improved Operations through Enhanced En-Route Trajectories	Preparation (Yellow)	Trial/Transition (Orange)			Full implementation (Green)		
	B0-35 Improved Flow Performance through Planning based on a Network-Wide view	Trial/Transition (Orange)				Full implementation (Green)		
	B0-84 Initial Capability for Ground Surveillance	Trial/Transition (Orange)			Full implementation (Green)			
	B0-85 Air Traffic Situational Awareness (ATSA)	Not applicable to HK at this stage (Full radar coverage in HKFIR)						
	B0-86 Improved access to Optimum Flight Levels through Climb/Descent Procedures using ADS-B	Not applicable to HK at this stage (Full radar coverage in HKFIR)						
	B0-101 ACAS Improvements	Trial/Transition (Orange)					Full implementation (Green)	
PIA4	B0-102 Increased Effectiveness of Ground-Based Safety Nets	Trial/Transition (Orange)			Full implementation (Green)			
	B0-105 Meteorological Information Supporting Enhanced Operational Efficiency and Safety	Full implementation (Green)						
	B0-05 Improved Flexibility and Efficiency in Descent Profiles (CDO)	Trial/Transition (Orange)			Full implementation (Green)			
	B0-40 Improved Safety and Efficiency through the initial application of Data Link En-Route	Not applicable to HK at this stage (Full VHF coverage in HKFIR)						
	B0-20 Improved Flexibility and Efficiency Departure Profiles - Continuous Climb Operations (CCO)	Preparation (Yellow)			Trial/Transition (Orange)		Full implementation (Green)	

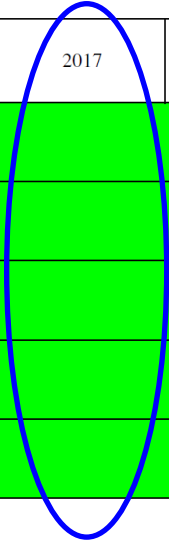
-  -Not yet start, Capability Element Value = 0
-  - Preparation until Trial/Transition and Capability Element Value = 1
-  - Trial/Transition and Capability Element Value = 1
-  - Full implementation, i.e. Capability Element Value = 2
-  - Not applicable to Hong Kong, i.e. Capability Element Value = 2

 Critical ASBU Upgrade

**Appendix 2a**

Example for assessment on readiness for achieving seamless surveillance (i.e. full implementation of B0-84) along a busy air traffic route involving five states (ready by 2017).

B0-84 Initial Capability for Ground Surveillance	2013	2014	2015	2016	2017	2018
State A						
State B						
State C						
State D						
State E						



**Appendix 2b**

Example for assessment on impediments in achieving seamless surveillance along a busy air traffic route involving five states (proactive actions need to be considered for State B and C to harmonize with others)

B0-84 Initial Capability for Ground Surveillance	2013	2014	2015	2016	2017	2018
State A						
State B						
State C						
State D						
State E						

