



ICAO

International Civil Aviation Organization

**Fifteenth Meeting of the FANS Interoperability Team – Asia
(FIT-Asia/15)**

Bangkok, Thailand, 24 – 27 June 2025

Agenda Item 3: PBCS Developments and Implementation

REGIONAL PBCS IMPLEMENTATION UPDATE

(Presented by the Secretariat)

SUMMARY

This paper presents an update on the status of Performance-Based Communication and Surveillance (PBCS) implementation among Asia/Pacific Administrations, as reported using the Status of Current and Planned Implementation of Performance-Based Horizontal Separation Minima survey form.

1. INTRODUCTION

1.1 The survey of the Status of Current and Planned Implementation of Performance-Based Horizontal Separation Minima is expected to be completed annually by all Asia/Pacific Administrations, by not later than 28 February each year. The survey report form (**Attachment A**) is available on the ICAO Asia/Pacific Regional Office eDocuments webpage at <https://www.icao.int/APAC/Pages/eDocs.aspx>.

1.2 Completion and submission of the completed survey report form is supported by a number of formal Conclusions agreed by the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG), and its technical sub-group to which FIT-Asia reports to, that is the Regional Airspace Safety Monitoring Advisory Group (RASMAG).

2. DISCUSSION

2.1 The following APANPIRG and RASMAG Conclusions relate to the survey on performance-based separations:

2016 – APANPIRG/27

Conclusion APANPIRG/27-7: PBCS Operator Requirements

That, States are urged to take appropriate measures to develop, establish, implement and promulgate, through advisory circular or other relevant State instrument, necessary policies and procedures to enable operators conducting flights in airspace where separations are dependent on Performance-Based Communication and Surveillance (PBCS) to start using Required Communication Performance (RCP) / Required Surveillance Performance (RSP) indicators in the flight plan as soon as possible. This should take into account:

a) time for the operator to comply with the States' policies; and

- b) *the need for the State to distribute data from PBCS monitoring programs, as necessary.*

2017 – RASMAG/22 and APANPIRG/28

Conclusion RASMAG/22-3: Performance-Based Separation Implementation Survey

That,

- 1. All APAC States are urged to complete a Survey on Performance-Based Separation Implementation and return the completed survey to the ICAO APAC Regional Office by not later than 18 August 2017; and*
- 2. The Performance-Based Separation Implementation Survey form be uploaded to the ICAO Asia/Pacific Regional Office website, for annual reporting by all APAC States by not later than 30 April each year.*

Conclusion APANPIRG/28-11: PBCS Operational Authorizations

That, noting the expected implementation of Performance-Based Communications and Surveillance (PBCS) provisions of ICAO Annexes, PANS and Guidance Material by not later than 29 March 2018, Asia/Pacific States are urged to:

- 1. Expedite the development and implementation of the PBCS authorization process;*
- 2. Share information through the ICAO Asia/Pacific Regional Office on the availability of PBCS regulatory material and on the expected readiness of their aircraft operators; and*
- 3. Monitor communications and surveillance performance against RCP240 and RSP 180 specifications as described in Doc 9869 – PBCS Manual for all individual aircraft using datalink in their area of responsibility, and make the performance data available on request to all States of Registry.*

2018 – RASMAG/23

2.2 At FIT-Asia/8 (June 2018), it was reported that only one Asia/Pacific Administration had submitted a completed report form since FIT-Asia/7 (December 2017). Consequently, RASMAG/23 formed the following Conclusion:

Conclusion RASMAG/23-1: PBCS Compliance

That, ICAO reminds all Asia/Pacific Administrations of Conclusions RASMAG/22-3, and APANPIRG 26/7 and 28/11, and requests they urgently complete the annual Survey on Performance-Based Separation Implementation, due by April 30 each year, particularly with respect to Survey items D1 and D2.

2.3 The emphasis on survey items D1 and D2 reflected regional concerns relating to the number of airframes that had not yet been authorized by their regulatory authority to include PBCS indicators in their flight plans. Such aircraft are not eligible for performance-based separations, such as those based on Required Navigation Performance (RNP) in circumstances where the application of the separation minimum is dependent on PBCS. Examples include 50 NM longitudinal, 30 NM longitudinal and 23 NM lateral separation minimums requiring Automatic Dependent Surveillance – Contract (ADS-C) and Controller-Pilot Data Link Communications (CPDLC).

2.4 2022 – RASMAG/27

Conclusion RASMAG/27-2: Updated Reporting of PBCS Implementation Status and Performance Monitoring Data

That:

1. *The revised Survey of the Status of Current and Planned Implementation of Performance-Based Separation Minima at Appendix C to the report, and the revised PBCS Action List for ANSPs at Appendix D to the report be uploaded to the ICAO Asia/Pacific Regional Office website to replace the existing; and*
2. *States are urged to submit the following to the Asia/Pacific Regional Office by not later than 28 February each year:*
 - a) *The completed Survey of the Status of Current and Planned Implementation of Performance-Based Separation Minima form; and*
 - b) *PBCS performance data for inclusion in the aggregated regional PBCS performance data report, using the Data Link Performance Report Template – ANSP to FIT provided on the ICAO Asia/Pacific Regional Office website.*

Note 1: Non-FIT-Asia States may submit their PBCS performance data through the relevant FIT.

Note 2: This Conclusion supersedes Conclusions RASMAG/22-3, 23-1, 23-2 and 23-3.

2.5 Prior to FIT-Asia/14, one or more complete survey report forms were provided by 16 Asia/Pacific Administrations:

Hong Kong China, Fiji, Indonesia, Japan, Malaysia, Mongolia, Nepal, New Zealand, Papua New Guinea, Philippines, Republic of Korea, Singapore, Sri Lanka, Thailand, United States, Viet Nam.

2.6 The following 13 Asia/Pacific Administrations submitted survey report forms for the 2025 update and report to FIT-Asia/15:

Bangladesh, Bhutan, Fiji, India, Japan, Malaysia, Nepal, New Zealand, Philippines, Singapore, Sri Lanka, United States, Viet Nam.

2.7 **Attachment B** summarizes the PBCS implementation data provided to the ICAO Asia/Pacific Regional Office.

2.8 The following notes summarize the updates provided since FIT-Asia/14:

- a) Bangladesh: reported has not assessed aircraft operator readiness.
- b) Bhutan: reported not implementing 50 NM lateral separation and 50 NM longitudinal separation.
- c) Fiji: no change from the previous report.

- d) India: added completion of tasks B-2, B-4, C-1, C-2, C-3, C-4 and E-1; reported having plan to complete tasks A-1 and B-1 by 01 December 2025 and 22 December 2026 respectively; reported not providing data link problem reports to CRA; reported implementation of RCP240 and RSP180; reported implemented 50 NM lateral separation; reported conducting trials implementation of 30 NM longitudinal separation, 5 minutes longitudinal separation (ICAO Doc 4444 paragraph 5.4.2.9.2) and 20 NM longitudinal separation using ATS surveillance systems where VHF voice communications are not available (ICAO Doc 4444 paragraph 8.7.4); and reported having plan to implement 20 NM longitudinal separation (RCP240 and RSP180) in 2027.
- e) Japan: reported implemented 12 NM lateral separation while climbing and descending; and reported having plan to implement 20 NM longitudinal separation (2026).
- f) Malaysia: added completion of tasks C-1; removed completion of tasks C-3; and reported implementation of RCP400 (SATVOICE) and RSP400 (SATVOICE).
- g) Nepal: no change from the previous report.
- h) New Zealand: reported implemented 20 NM longitudinal separation.
- i) Philippines: added completion of tasks A-3, D-1 and D-2; reported having plan to complete task A-2 by Q2 of 2025; and reported not providing data link problem reports to CRA.
- j) Singapore: reported not implementing 20 NM longitudinal separation.
- k) Sri Lanka: added completion of tasks B-4, C-1, C-2 and C-3; reported not providing data link problem reports to CRA; reported not implementing 50 NM longitudinal separation; and reported having plan to implement 30 NM longitudinal separation and 30 NM lateral separation by 31 October 2025.
- l) United States: no change from the previous report.
- m) Viet Nam: added completion of task E-1.

2.9 The meeting is invited to note that the provisions of ICAO Annexes 6 and 11, and ICAO Doc 4444 (PANS-ATM), require that PBCS services and regulations are implemented, summarized as follows:

- a) by air navigation service providers (ANSPs) applying the following commonly used performance-based separation minima¹, where supported by ADS-C/CPDLC:
 - i. 23 NM lateral separation (RNP 4 or RNP 2);
 - ii. 50 NM longitudinal separation (RNAV 10/RNP 10 or RNP 4); and
 - iii. 30 NM longitudinal separation (RNP 4 or RNP 2)
- b) by regulatory authorities:
 - i. for safety oversight of ANSP PBCS operations; and
 - ii. to approve, and monitor the performance of, PBCS operations by aircraft and aircraft operators of the State of Registry.

¹ ICAO Doc 4444 Procedures for Air Navigation Services – Air Traffic Management (PANS-ATM) sections 5.4.1.2.1.6 and 5.4.2.9.2 detail the communications and surveillance performance requirements for all performance-based separation minima that are supported by ADS-C/CPDLC.

2.10 The meeting should also recall that the implementation of performance-based separations in airspace over the high seas requires supporting procedures in ICAO Doc 7030 – *Regional Supplementary Procedures*, particularly including:

- a) 50 NM lateral separation – RNAV 10 (RNP 10);
- b) 50 NM longitudinal separation – RNAV 10 (RNP 10), RCP240, RSP180;
- c) 30 NM longitudinal separation – RNP 4 or RNP 2, RCP240, RSP180; and
- d) 23 NM lateral separation – RNP 4 or RNP 2, RCP240, RSP180.

2.11 States of registry of aircraft operators that are approved or are seeking approval to file RCP/RSP indicators in flight plans are requested to review their reported progress in Group D and Group E tasks.

Note: Group D tasks relate to regulatory approval for aircraft operators to file RCP/RSP indicators in flight plans, and Group E relates not only to regulatory requirements for post-implementation monitoring, analysis and reporting by ANSPs, but also regulatory monitoring of performance by approved aircraft operators.

2.12 The meeting is also invited to note that ICAO Asia/Pacific Regional Office will continue to monitor regional implementation and raise APANPIRG Air Navigation Deficiencies or take other action as necessary in cases where States do not comply with relevant ICAO provisions.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper;
- b) ensure that PBCS implementation status reports are provided to the ICAO Asia/Pacific Regional Office in accordance with RASMAG and APANPIRG Conclusions;
- c) ensure the consistency of reporting between elements of PBCS and other elements of the survey report form, and between annual reports; and
- d) discuss any relevant matters as appropriate.

— — — — —

SURVEY OF THE STATUS OF CURRENT AND PLANNED IMPLEMENTATION OF PERFORMANCE-BASED HORIZONTAL SEPARATION MINIMA

Instructions:

1. Complete the Survey at least once annually and return by email to the ICAO APAC Regional Office (apac@icao.int) by **NOT LATER THAN 28 FEBRUARY EACH YEAR.**
 2. **Administrations that provide ATC Separation Services in Category R airspace¹:**
 - Complete all sections of the form.
 3. **Administrations that do not provide separation services in Category R airspace:**
 - Complete Section 1 Group A (question A3), Group D and E
ICAO Doc 9869 – PBCS Manual Appendix A refers.
-

¹ The Asia/Pacific Seamless Air Navigation Services Plan defines Category R Airspace: Category R: remote en-route airspace with Air Traffic Services (ATS) HF or CPDLC communications and outside the coverage of ground-based surveillance coverage.

1. Has your Administration completed any of the following preparations for PBCS implementation?					
PBCS Implementation Task List	Task Group	Task ID	TASK descriptor	Y/N	If NO, Planned Date
	Group A	A-1	AIP (Prescription of an RCP/RSP specification. Also see B-3 below)		
		A-2	PBCS policies, objectives supporting safety oversight of ANSP PBCS operations		
		A-3	PBCS policies, objectives supporting safety oversight of Aircraft Operator and Aircraft System PBCS operations		
		A-4	Proposal for Amendment to ICAO Doc 7030 - <i>Regional Supplementary Procedures</i> for PBCS operations , if applicable		
	Group B	B-1	PBCS Implementation Plan		
		B-2	Target dates for PBCS and relevant ATM operations		
		B-3	RCP/RSP specifications		
		B-4	PBCS awareness		
	Group C	C-1	Operational concepts and procedures for PBCS operations		
		C-2	ATM automation system changes to use flight plan RCP/RSP indicators		
		C-3	ATM automation changes for PBCS monitoring		
		C-4	Confirm initial ANSP compliance with RCP/RSP specifications		
	Group D	D-1	Aircraft operator readiness		
		D-2	Confirm initial operator and/or aircraft type/system compliance with RCP/RSP		
	Group E	E-1	PBCS monitoring, analysis and reporting - post implementation		

2. Does your Administration submit data link problem reports (PRs) to a recognized Central Reporting Agency (CRA)?	Y/N	If NO, Planned Date

3. Does your Administration monitor and analyse data link performance in accordance with the following specifications and report the analysis to a recognized FANS Interoperability Team (FIT)?				Y/N	If NO, Planned Date
Communication Specifications & Interoperability Standards	Normal	RCP240	FANS1/A CPDLC		
	Alternate	RCP400	SATVOICE		
		RCP400	HF		
Surveillance Specifications & Interoperability Standards	Normal	RSP180	FANS1/A ADS-C		
	Alternate	RSP400	SATVOICE		
		RSP400	HF		

4. Has your Administration implemented, or does it plan to implement, the following performance-based horizontal separation minima?				Yes, already implemented	Yes, future (Planned Date)	NO
Navigation Specifications & Applicable ATM Operations	RNAV/RNP	RNAV/RNP 10, RNP 4, RNP 2	50 NM Lateral Separation Communication other than direct controller-pilot VHF voice			
		RNAV/RNP 10, RNP 4	50 NM Longitudinal Separation RCP/240 and RSP/180			
		RNP 4 or RNP 2	30 NM Longitudinal Separation RCP/240 and RSP/180			
			30 NM Lateral Separation RCP/240 and RSP/180 <i>In cases where the ANSP has considered there is insufficient operational benefit to justify the investment in the change from 30 NM to 23 NM.</i>			
			23 NM Lateral Separation RCP/240 and RSP/180			
			20 NM Longitudinal Separation RCP/240 and RSP/180			
			Other planned or implemented separations dependent on RCP240/RSP180 <i>Please also provide the DOC 4444 PANS-ATM reference.</i>			

FIT-Asia PBCS Planning Chart (Administrations with FIR/s)

				Administrations	Alghanistan	Bangladesh	Cambodia	China	Hong Kong, China	India	Indonesia	DPR Korea	Lao PDR	Malaysia	Myanmar	Maldives	Mongolia	Nepal	Pakistan	Philippines	Republic of Korea	Sri Lanka	Singapore	Thailand	Viet Nam
PBCS Implementation Task List	Task Group	Task ID	TASK Descriptor																						
	Group A	A-1	AIP (Prescription of an RCP/RSP specification)					X			X			X						X			X		
		A-2	ANSP (PBCS policies, objectives supporting safety oversight)					X			X			X									X		
		A-3	Operator and aircraft System- PBCS policies, objectives supporting safety oversight					X	X		X			X						X	X		X	X	X
		A-4	Regional Supplementary Procedures (Doc 7030) for PBCS operations, if applicable					X			X			X						X			X		
	Group B	B-1	PBCS Implementation Plan					X			X			X						X		X	X		
		B-2	Target dates for PBCS and relevant ATM operations					X		X	X			X						X		X	X		
		B-3	RCP/RSP specifications					X		X	X			X						X		X	X		
		B-4	PBCS awareness					X		X	X			X						X		X	X		
	Group C	C-1	Operational concepts and procedures for PBCS operations					X		X	X			X						X		X	X		
		C-2	ATC automation changes to use flight plan RCP/RSP indicators					X		X	X									X		X	X		
		C-3	ATC automation changes for PBCS monitoring					X		X	X									X		X	X		
		C-4	Confirm initial ANSP compliance with RCP/RSP specifications					X		X	X			X						X		X	X		
	Group D	D-1	Aircraft operator readiness					X	X		X			X						X	X	X	X		X
		D-2	Confirm initial operator and/or aircraft type/system compliance with RCP/RSP					X	X		X			X						X	X	X	X		X
	Group E	E-1	PBCS monitoring - post implementation					X	X	X	X									X	X		X		X
Does your Administration submit data link problem reports (PRs) to a recognized Central Reporting Agency (CRA)								X			X		X	X									X		X
Communication Specifications & Interoperability Standards	Normal	RCP240	FANS1/A CPDLC					X		X				X						X		X	X		X
	Alternate	RCP400	SATVOICE					X					X	X											
Surveillance Specifications & Interoperability Standards	Normal	RSP180	FANS1/A ADS-C					X		X	X			X						X		X	X		X
	Alternate	RSP400	SATVOICE					X					X	X											
		RSP400	HF					X					X							X					
			ADS-B																						
Navigation Specifications & Applicable ATM Operations	RNAV/RNP	RNAV/RNP 10, RNP 4, RNP 2	50 NM Lateral Separation <i>Communication other than direct controller-pilot VHF voice</i>							X	X		X	X					X	X		X	X		
		RNAV/RNP 10, RNP 4	50 NM Longitudinal Separation RCP/240 and RSP/180								X			F					X	X			X		
		RNP 4 or RNP 2	30 NM Longitudinal Separation RCP/240 and RSP/180				X		X		X			F						X		F	X		
			30 NM Lateral Separation RCP/240 and RSP/180								X									X		F	X		
			23 NM Lateral Separation RCP/240 and RSP/180								X														
			20 NM Longitudinal Separation RCP/240 and RSP/180																						
			Other planned or implemented separations dependent on RCP240/RSP180. <i>Please also provide the Doc 4444 (PANS-ATM) reference</i>							X															

Responded to Survey 2025

F

= Future Plan

FIT-Asia PBCS Planning Chart (Administrations without FIR/s)

Administrations					Brunel Darussalam	Bhutan	Macao, China	Timo- Leste
PBCS Implementation Task List	Task Group	Task ID	TASK Descriptor					
	Group A	A-1	AIP (Prescription of an RCP/RSP specification)					
		A-2	ANSP (PBCS policies, objectives supporting safety oversight)					
		A-3	Operator and aircraft System- PBCS policies, objectives supporting safety oversight					
		A-4	Regional Supplementary Procedures (Doc 7030) for PBCS operations, if applicable					
	Group B	B-1	PBCS Implementation Plan					
		B-2	Target dates for PBCS and relevant ATM operations					
		B-3	RCP/RSP specifications					
		B-4	PBCS awareness					
	Group C	C-1	Operational concepts and procedures for PBCS operations					
		C-2	ATC automation changes to use flight plan RCP/RSP indicators					
		C-3	ATC automation changes for PBCS monitoring					
		C-4	Confirm initial ANSP compliance with RCP/RSP specifications					
	Group D	D-1	Aircraft operator readiness					
	Group E	E-1	PBCS monitoring - post implementation					
Communication Specifications & Interoperability Standards			Normal	RCP240	FANS1/A CPDLC			
			Alternate	RCP400	SATVOICE			
Surveillance Specifications & Interoperability Standards			Normal	RCP400	HF			
			Normal	RSP180	FANS1/A ADS-C			
			Alternate	RSP400	SATVOICE			
			Alternate	RSP400	HF			
ADS-B								
Navigation Specifications & Applicable ATM Operations			RNAV/RNP	RNAV/RNP 10, RNP 4, RNP 2	50 NM Lateral Separation <i>Communication other than direct controller-pilot VHF voice</i>			
				RNAV/RNP 10, RNP 4	50 NM Longitudinal Separation RCP/240 and RSP/180			
				RNP 4 or RNP 2	30 NM Longitudinal Separation RCP/240 and RSP/180			
					30 NM Lateral Separation RCP/240 and RSP/180 <i>In cases where the ANSP has considered there is insufficient operational benefit to justify the investment in the change from 30 NM to 23 NM</i>			
					23 NM Lateral Separation RCP/240 and RSP/180			
					20 NM Longitudinal Separation RCP/240 and RSP/180			
					Other planned or implemented separations dependent on RCP240/RSP180. <i>Please also provide the Doc 4444 (PANS-ATM) reference</i>			

Responded to Survey 2025

✓

PBCS Planning Chart (Non-FIT-Asia Administrations)

				Administrations	Australia	Fiji	French Polynesia	Japan	Nauru	New Caledonia	New Zealand	Papua New Guinea	Solomon Islands	United States
PBCS Implementation Task List	Task Group	Task ID	TASK Descriptor											
	Group A	A-1	AIP (Prescription of an RCP/RSP specification)		X	X	X	X			X			X
		A-2	ANSP (PBCS policies, objectives supporting safety oversight)			X	X	X			X			X
		A-3	Operator and aircraft System- PBCS policies, objectives supporting safety oversight		X	X	X	X			X			X
		A-4	Regional Supplementary Procedures (Doc 7030) for PBCS operations, if applicable				X	X			X			X
	Group B	B-1	PBCS Implementation Plan					X			X	X		X
		B-2	Target dates for PBCS and relevant ATM operations					X			X	X		X
		B-3	RCP/RSP specifications		X		X	X			X			X
		B-4	PBCS awareness		X		X	X			X			X
	Group C	C-1	Operational concepts and procedures for PBCS operations			X	X	X			X			X
		C-2	ATC automation changes to use flight plan RCP/RSP indicators			X		X			X	X		X
		C-3	ATC automation changes for PBCS monitoring		X	X		X			X	X		X
		C-4	Confirm initial ANSP compliance with RCP/RSP specifications			X	X	X			X	X		X
	Group D	D-1	Aircraft operator readiness		X	X	X	X			X			X
		D-2	Confirm initial operator and/or aircraft type/system compliance with RCP/RSP		X	X	X	X			X	X		X
	Group E	E-1	PBCS monitoring - post implementation			X	X	X			X			X
Does your Administration submit data link problem reports (PRs) to a recognized Central Reporting Agency (CRA)					X	X	X	X			X	X		X
Communication Specifications & Interoperability Standards	Normal	RCP240	FANS1/A CPDLC		X	X	X	X			X			X
		RCP400	SATVOICE											
	Alternate	RCP400	HF		X		X				X			
Surveillance Specifications & Interoperability Standards	Normal	RSP180	FANS1/A ADS-C		X	X	X	X			X			X
		RSP400	SATVOICE											
	Alternate	RSP400	HF		X		X							
ADS-B														
Navigation Specifications & Applicable ATM Operations	RNAV/RNP	RNAV/RNP 10, RNP 4, RNP 2	50 NM Lateral Separation		X	X	X	X			X	X		X
			Communication other than direct controller-pilot VHF voice											
		RNAV/RNP 10, RNP 4	50 NM Longitudinal Separation		X	X	X	X			X	F		X
			RCP/240 and RSP/180											
		RNP 4 or RNP 2	30 NM Longitudinal Separation		X	X	X	X			X	F		X
			RCP/240 and RSP/180											
			30 NM Lateral Separation		X	X	X					F		X
			RCP/240 and RSP/180											
			In cases where the ANSP has considered there is insufficient operational benefit to justify the investment in the change from 30 NM to 23 NM											
			23 NM Lateral Separation		X			X			X			X
			RCP/240 and RSP/180											
			20 NM Longitudinal Separation					F			X			F
			RCP/240 and RSP/180											
			Other planned or implemented separations dependent on RCP240/RSP180. Please also provide the Doc 4444 (PANS-ATM) reference					X			X	F		

Responded to Survey 2025

F = Future Plan