International Civil Aviation Organization

Twenty-Sixth Meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/26)

Video Teleconference, 20 – 23 September 2021

Agenda Item 2: Review Outcomes of Related Meetings

FIT-ASIA MEETING OUTCOMES

(Presented by the Secretariat)

SUMMARY

This paper presents the outcomes of the Eleventh Meeting of the Future Air Navigation Services (FANS) Interoperability Team – Asia (FIT-Asia/11) for review by RASMAG/26.

1. INTRODUCTION

1.1 The Eleventh Meeting of the FANS Interoperability Team-Asia (FIT-Asia/11) was held by Video Teleconference from 23 to 26 August 2020.

1.2 The full report of the meeting is available on the FIT-Asia/11 meeting web-page at:

https://www.icao.int/APAC/Meetings/Pages/2021-FIT-Asia11.aspx

2. DISCUSSION

Central Reporting Agency (CRA) Reports

FIT-Asia Problem Reports

2.1 There were 27 Problem Reports (PRs) raised in the previous 12-month period (**Figure 1**). The lower number of Problem Reports (PRs) submitted in the last 12 months reflected the dramatic decrease in air traffic due to the impact of the COVID-19 pandemic.

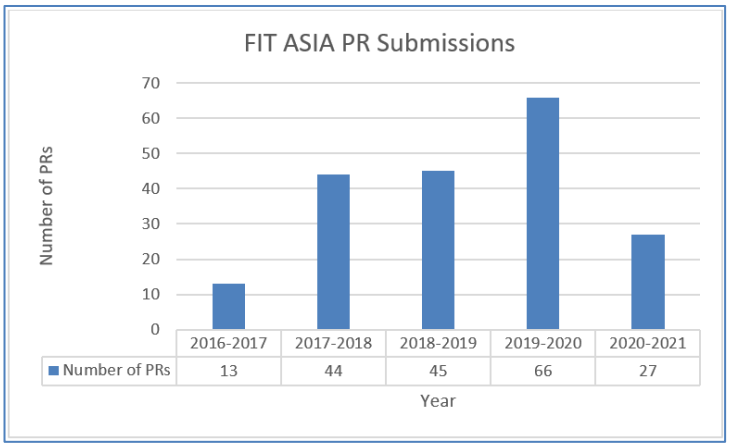

Figure 1: FIT-Asia PR Submissions

2.2 Regarding PRs relating to flights in areas of poor VHF coverage with subsequent reversion to SATCOM (PR 3178-MM), or flights on the edge of VHF coverage experiencing media transitions (3099-KS) the meeting was reminded of the guidance for data link performance improvement for aircraft operators provided in **FIT-Asia/9 WP/03** and subsequently approved by RASMAG for regional use under ***Conclusion RASMAG/24-1: Guidance for Data Link Performance Improvement for Aircraft Operators***. The guidance is available on the ICAO Asia/Pacific Regional Office eDocuments web-page: https://www.icao.int/APAC/Pages/eDocs.aspx.

2.3 The meeting noted that while there had been improvement, there were still two operators that did not release their data link logs for analysis by the CRA. ICAO undertook to approach the operators and/or their States of Registry to request their cooperation, and to encourage them to sign up to the PBCS Charter.

2.4 In discussing the need for a minimum of 100 data points for analysis of PRs, New Zealand informed the meeting that they routinely requested additional data from adjacent FIRs in cases where there were insufficient data points within the Auckland Oceanic FIR. Singapore highlighted that this solution was not entirely foolproof as issues caused by local geographical conditions may not be accurately reflected.

PBCS Performance Issues in the South China Sea

2.5 Fit-Asia CRA also provided information on the causes of poor Performance-Based Communications and Surveillance (PBCS) performance in the South China Sea, and potential resolutions. Investigation had found this to be due to weak VHF coverage in the area, especially after the removal of a specific VHF ground station leading to frequent media transitions to SATCOM. **Figure 2** illustrated coverage of VHF ground stations in the area of concern.

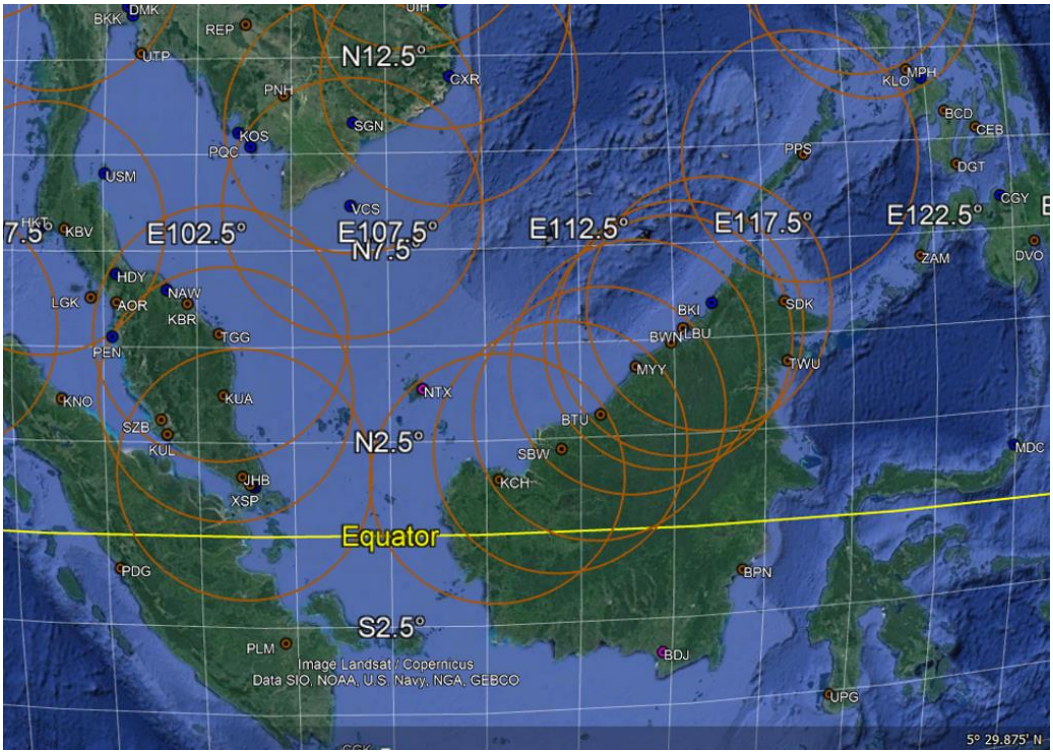

Figure 2: ARINC VHF Coverage in the South China Sea (~200 NM Radius per Ground Station)

2.6 Flights operating in the channel of airspace not covered by VHF from the ground stations would have good data link performance as the aircraft would remain on SATCOM. However, analysis had demonstrated most flights tended to fly along the edge of the VHF coverage on either side of the channel, leading to performance issues.

2.7 **Figure 3** illustrated the VHF coverage of SITA ground stations in the same region, noting the main difference was the absence of a SITA station at the VCS location, reducing coverage on the north side of the channel.

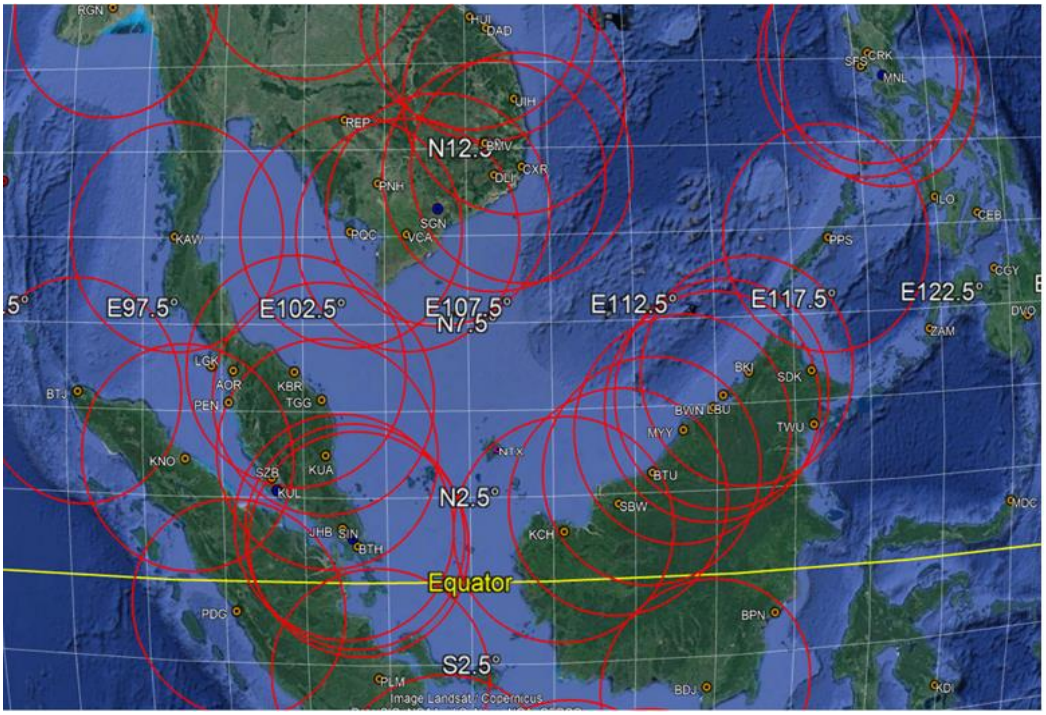

Figure 3: SITA VHF Coverage in the South China Sea (~200 NM Radius per Ground Station)

2.8 An additional cause of the poor performance in the area was the deactivation of an existing VHF ground station at NTX, which had been deactivated since 2017. Barring any network or avionics improvements poor PBCS performance would continue, and should be taken into account by affected ATC centres for aircraft flying those routes. Indonesia agreed to attempt to establish contact with the relevant authority to determine whether the NTX ground station could be re-activated.

PBCS Developments and Implementation

Latency Monitor Reject Analysis

2.9 The meeting was informed of an analysis of Latency Monitor Reject messages received from Airbus aircraft operating in the Auckland Oceanic FIR (NZZO) during the period from July 2020 to June 2021. On receipt of a CPDLC uplink message for which the latency exceeded the 300 second monitored value, Airbus aircraft did not present the message to the flight crew but instead sent a reject message in response. **Table 1** summarized latency rejects by month and classification.

Month	# Rejects	Latency Reject Classification						
		Unknown	Time Source	Inmarsat	Iridium	HFDL no SATCOM	Inmarsat sent HFDL	Unable SATCOM via VDL
Jul-20	0	0	0	0	0	0	0	0
Aug-20	0	0	0	0	0	0	0	0
Sep-20	0	0	0	0	0	0	0	0
Oct-20	2	0	0	1	0	0	1	0
Nov-20	0	0	0	0	0	0	0	0
Dec-20	2	0	0	2	0	0	0	0
Jan-21	6	0	0	5	1	0	0	0
Feb-21	0	0	0	0	0	0	0	0
Mar-21	0	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0	0
May-21	1	0	0	0	1	0	0	0
Jun-21	1	0	0	0	1	0	0	0
Totals	12	0	0	8	3	0	1	0

Table 1: Latency rejects by month and classification

FANS/1A CPDLC Latency Timer Value

2.10 New Zealand proposed that a FANS1/A CPDLC Latency Timer value of 300 seconds as currently being trialled in the North Atlantic (NAT) Region be adopted in the APAC Region for oceanic airspace.

2.11 Development work for the implementation of the uplink latency monitor was primarily done by the NAT Uplink Timer Planning Team (ULT PT) and ICAO Operational Data Link Working Group (OPDLWG). Although the group recognized that the PBCS Manual identified ETTRN as 210 seconds to support operations dependent on RCP240, there were concerns that this value may not be suitable for the current data link environment and that setting the value too low may have a negative impact on workload for both controllers and flight crew. NAT ULT PT had emphasized that the main priority should be sufficient mitigation of the three identified hazards associated with safety requirement SR-15: detected late or expired message; undetected late or expired message; and undetected spurious/inadvertent message delivery. NAT ULT PT had also considered the potential impact on ground system modifications to improve data link performance, such as retry timers addressing problematic transition areas. Ultimately it had been concluded that the safest and most practical way forward was to trial a value of 300 seconds, which was projected as the minimum value that would prevent interference with the retry timer.

2.12 The importance of not having different values for latency time between neighbouring FIRs and support for global standardization was emphasized.

2.13 The meeting was informed that the 300 seconds latency timer value had been implemented under trial for several years in the NAT Region. In response to New Zealand's proposal that it be adopted by the APAC Region, the meeting agree that a latency timer value of 300 seconds should be implemented on a trial basis for 12 months, with a view to formalizing its region-wide use at FIT-Asia/12 in 2022. The meeting further noted that that there was no impediment to immediate implementation by any State. New Zealand would report back to FIT-Asia/12 on the results of its implementation. Other States were also requested to trial this latency timer value and report back.

2.14 FIT-Asia/11 agreed to the following Draft Conclusion for consideration by RASMAG/26:

Draft Conclusion FIT-Asia/11-1: FANS1/A CPDLC Latency Timer Value

That, recognizing:

1. the need for aircraft to provide an appropriate indication when the age of the time stamp of a received CPDLC message exceeds a defined value (latency timer value), in accordance with ICAO Doc 9869 PBCS Manual safety requirement SR-15;
2. a latency timer value of 300 seconds supports both RCP240 and RCP400 operations;
3. the need for a single, standardized global value; and
4. the trialling of a value of 300 seconds in the North Atlantic Region;

States are urged to implement a latency timer value of 300 seconds on a trial basis and report outcomes to FIT-Asia.

Regional PBCS Implementation Update

2.15 The Secretariat provided an update on the status of PBCS implementation among Asia/Pacific Administrations, as reported using the APAC regional Survey of the Status of Current and Planned Implementation of Performance-Based Horizontal Separation Minima form. The meeting was reminded of relevant Conclusions of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) and the Regional Airspace Safety Monitoring Advisory Group (RASMAG):

Conclusion APANPIRG/27-7: PBCS Operator Requirements

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

Conclusion APANPIRG/28-11: PBCS Operational Authorizations

Conclusion RASMAG/23-1: PBCS Compliance

2.16 The survey form had been uploaded to the ICAO APAC Regional Office eDocuments web-page (https://www.icao.int/APAC/Pages/eDocs.aspx), for initial reporting by August 2017 and subsequent reporting by no later than 30 April each year.

2.17 A total of 19 APAC Administrations had responded to the survey in its four years' availability. Only six had provided their annual survey response for 2020 reporting to FIT-Asia, and only Australia, Indonesia and Singapore in 2021. **Attachment A** summarizes the current implementation of performance-based separations as reported in survey responses since 2017.

2.18 The meeting was reminded that the provisions of ICAO Annexes 6 and 11, and Doc 4444 PANS-ATM, required that PBCS services and regulations were implemented, summarized as follows:

- by Air Navigation Service Providers applying the following commonly used performance-based separation minima , where supported by ADS-C/CPDLC:
  - 23 NM lateral separation (RNP 4 or RNP 2);
  - 50 NM longitudinal separation (RNAV 10/RNP 10 or RNP 4); and
  - 30 NM longitudinal separation (RNP 4 or RNP 2)
- by Regulatory Authorities:
  - For safety oversight of ANSP PBCS operations; and
  - To approve, and monitor the performance of, PBCS operations by aircraft and aircraft operators of the State of Registry.

Regional Supplementary Procedures Update

2.19 The meeting was informed of the status of Regional Supplementary Procedures (Doc 7030) supporting performance-based separations in in the APAC Region. SUPPS provided the procedural means of implementing in airspace over the high seas the provisions of Doc 4444, and any regionally agreed procedures supplementing, but not in conflict with, the provisions of the Annexes to the Convention and PANS.

2.20 Following on from discussions at related meetings in the Asia/Pacific Region, most recently the Ninth Meeting of the South China Sea Traffic Flow Review Group (SCSTFRG/9, 01 -03 June 2021), ICAO APAC Regional Office had prepared a draft PfA to update Doc 7030 MID/ASIA SUPPS to add the FIRs listed in Table 3. The meeting was informed that Indonesia had provided ICAO with the necessary formal letter requesting an update to Doc 7030, and that the same should be provided as soon as possible by the other States concerned. the performance-based separations in APAC FIRs that were currently supported by SUPPS.

Administration FIR/s	50 NM Lateral RNAV 10 (RNP 10)	50 Longitudinal RNAV 10 (RNP 10) with PBCS	23 NM Lateral RNP 4 or RNP 2 with PBCS	30 NM Longitudinal RNP 4 or RNP 2 with PBCS
Indonesia Ujung Pandang *Formal letter received by ICAO*	✓	✓	*Future consideration*	✓
Philippines Manila	✓	✓		
Singapore Singapore	*implemented*	*implemented*	✓	✓
Sri Lanka Colombo	✓	✓		
China Sanya	*For removal?*	*For removal?*		
Hong Kong, China Hong Kong	*For removal?*	*For removal?*		

Table 3: Performance-based Separation Minima to be supported in proposed Doc 7030 PfA

Competent Airspace Safety Monitoring Organizations List

2.21 The RASMAG List of Competent Airspace Safety Monitoring Organizations was reviewed and updated by the meeting. The list as reviewed by FIT-Asia/11 is provided for agreement by the meeting in WP/36.

Review of ADS-C/CPDLC Operations and Performance

PBCS Non Compliance Investigation

2.22 United States presented information on monthly non-compliance monitoring for individual aircraft, and analysis of performance issues observed by media delivery path. The information provided included a flow chart of actions for non-compliance monitoring, and the steps in

the reporting process from the Air Traffic Service Provider through the RMAs to the State of Operator/Registry.

2.23 Additional information included a sample non-compliance report form, considerations for determining whether an aircraft should be placed on the non-compliance report, and commonly observed problems. A case study of the analysis of non-compliant data link performance was also provided.

2.24 USA had observed that issues related to media delivery path were generally traced to specific aircraft/avionics or the design of ATS routes in relation to VHF/SAT transition areas, and that in airspace with little VHF coverage VHF/SAT transition issues for a fleet could be masked due to the aggregate nature of PBCS monitoring.

Asia/Pacific Region Combined PBCS Monitoring Report

2.25 China presented the Combined PBCS Monitoring Report, prepared by China and USA, using data provided by the States identified in **Table 4**.

Reporting FIRs		
State	**FIR**	**Location Indicator**
Australia	Brisbane	YBBB
	Melbourne	YMMM
China	Lanzhou	ZLLL
	Urumqi	ZWWW
France (French Polynesia)	Tahiti	NTTT
Fiji	Nadi	NFFF
India	Chennai	VOMM
Indonesia	Ujung Pandang	WAAF
Japan	Fukuoka	RJJJ
Malaysia	Kuala Lumpur	WMFC
New Zealand	Auckland Oceanic	NZZO
Philippines	Manila	RPHI
Singapore	Singapore	WSJC
Sri Lanka	Colombo	VCCF
United States	Oakland Oceanic	KZAK
	Anchorage Oceanic	PAZA
Viet Nam	Ho Chi Minh	VVHM

Table 4: 2020 APAC Combined PBCS Report – Reporting FIRs

2.26 The report highlighted consolidated performance data and issues associated with Actual Surveillance Performance (ASP) and Actual Communications Performance (ACP) for the region.

2.27 Overall ASP for the region had met the 95% criterion for RSP180 but fell marginally below the 99.9% criterion. While the volume of data count had significantly reduced in 2020, the trend of regional performance in both the 95% and 99.9% criteria had generally improved.

2.28 Several aircraft operators had not met performance requirements for the whole year, and stakeholders were advised to look into this issue if the monitoring results remained unimproved in 2021.

2.29 It was again noted that HF data link performance results did not meet performance requirements in several FIRs.

2.30 Overall ACP for the region met the 95% criterion (**Table 5**). ACP for most FIRs fell marginally below the 99.9% criterion, but several FIRs failed to meet it. In the first half of 2020 one FIR did not meet the 95% criterion for Actual Communications Technical Performance (ACTP) two FIRs failed to meet the 99.9% criterion. In the second half of the year all reporting FIRs met the 95% criterion, but four did not meet the 99.9% criterion.

ACTUAL COMMUNICATION PERFORMANCE - FIR AGGREGATE (ALL MEDIA TYPES)										
Region	Asia-Pacific Region									
Performance Criteria	RCP240									
Time Period	2020 January-June					2020 July - December				
Colour key: Meets criteria / 99.0%-99.9% / Under criteria	Message Counts	ACP Criteria		ACTP Criteria		Message Counts	ACP Criteria		ACTP Criteria	
		95%	99.90%	95%	99.90%		95%	99.90%	95%	99.90%
FIR		% <= 180sec	% <= 210sec	% <= 120sec	% <= 150sec		% <= 180sec	% <= 210sec	% < = 120sec	% <=150sec
PAZA	70739	99.12%	99.33%	99.21%	99.50%	68090	99.06%	99.32%	99.24%	99.48%
RJJJ	34547	99.57%	99.78%	99.65%	99.75%	31739	99.60%	99.76%	99.63%	99.73%
KZAK	192062	99.31%	99.53%	99.65%	99.77%	142934	99.46%	99.64%	99.72%	99.84%
NFFF	3764	99.62%	99.81%	99.81%	99.89%					
NTTT	2939	99.49%	99.78%	99.71%	99.78%	1002	99.40%	99.70%	100.00%	100.00%
NZZO	7999	99.58%	99.73%	99.72%	99.74%	2803	99.82%	99.71%	99.89%	99.89%
YBBB	24042	99.25%	99.29%	99.46%	99.48%	11475	99.29%	99.29%	99.48%	99.48%
YMMM	29335	99.55%	99.48%	99.67%	99.66%	12820	99.38%	99.38%	99.53%	99.53%
RPHI	4665	97.59%	97.84%	98.91%	99.24%	9044	98.24%	98.40%	98.58%	98.82%
VCCF	24214	98.45%	99.53%	99.28%	99.78%	16601	98.37%	99.39%	99.17%	99.76%
VOMF	31266	99.77%	99.86%	99.84%	99.86%	31445	99.77%	99.85%	99.84%	99.86%
VVTS	26896	95.80%	96.31%	99.40%	99.65%	31859	96.26%	96.64%	99.48%	99.72%
WAAF	21900	98.20%	98.45%	99.70%	99.78%	11451	97.80%	98.12%	99.68%	99.75%
WMFC	9261	98.14%	98.71%	98.54%	99.11%	30246	97.67%	98.45%	97.42%	98.40%
WSJC	19113	98.94%	99.29%	98.87%	99.22%	14758	98.93%	99.20%	99.05%	99.29%
ZLLL	2447	97.99%	98.32%	98.40%	98.81%	1140	97.10%	97.28%	98.42%	98.68%
ZWWW	464	95.90%	96.76%	93.31%	96.98%	111	97.29%	98.19%	96.39%	96.39%

Table 5: Asia/Pacific Region ACP (RCP240)

2.31 Pilot Operator Response Time (PORT) performance requirements were not met by a number of aircraft operators. Operators were advised to first investigate their avionics systems or software updates. If these were appropriately configured, operators should stress the procedures described in ICAO Doc 10037 *Global Operational Data Link (GOLD) Manual*.

2.32 While most operators met the RCP240 95% performance criterion, more effort was required to improve performance to meet the 99.9% criterion.

Reviewing the L888 HF Issues

2.33 China provided detailed information on their analysis of HF data link performance including *inter alia* the different performance of ADS-C and CPDLC using HF media, HF message counts for ADS-C (but not CPDLC) exceeding normal levels in an environment where HF served as an alternate medium, and aircraft switching data link connections from VHF to HF. Progress reports had been provided to FIT-Asia/7, 8, 9 and 10 meetings. Reviewing actions taken, and in collaboration with Boeing CRA, China noted that VHF and SATCOM, being the primary and first alternative means of data link communication, fully covered ATS route L888 and provided satisfactory PBCS performance. Of 323,547 ADS-C messages in 2020 only 35 (~0.01%)were transmitted by HF.

2.34 Several other changes in avionics such as identifying next on busy and SATCOM improvements had improved overall data link performance and reduced reversions to HF. The meeting was also informed that ARINC had made a change to the routing of messages. Previously the routing had been prioritized VHF, then SATCOM, then HF, then SITA, but was now VHF – SATCOM – SITA before then attempting HF.

Asia/Pacific CRA Arrangements, Problem Reporting and Performance Analysis Reporting

2.35 The meeting was provided with updated information on the status of Asia/Pacific regional engagement in data link problem reporting through the FANS-CRA website, and on the status of performance analysis reporting to a recognized FIT. It was noted that all Asia/Pacific States known to be providing data link services had registered on the FANS-CRA website. **Table 6** summarized the submission of PRs and the submission of data link performance reports to a recognized FIT.

State	# PR 2018	# PR 2019	# PR 2020 (FIT-Asia/10)	# PR 2021 (to 21 Aug)	Performance Analysis Reports to FIT
Australia*	9	6	2	5	YES
China	2	-	1	0	YES[1]
Fiji*	-	-	-	1	YES
France (Polynésie Française)*	1	-	-	0	YES
India	1	24	-	13	YES[2]
Indonesia	18	19	-	1	YES[3]
Japan*	N/K	5	*PRs submitted to CRA Japan*		YES
Malaysia	1	1	2	2	YES[4]
Myanmar	-	1	-	0	YES
Maldives	-	-	-	0	NO
Papua New Guinea*	-	-	-	3	NO
Philippines	9	9	-	0	YES
New Zealand*	6	8	9	12	YES
Singapore	10	16	13	10	YES
Sri Lanka	6	3	2	1	YES
USA*	14	7	2	17	YES
Viet Nam	1	3	1	2	YES
* *non-FIT-Asia States*					

Table 6: Submission of PRs to FANS-CRA and Performance Analysis Reports to FIT

2.36 The following States provided Working Papers or Information Papers communicating performance reports and other relevant information to the FIT-Asia/10 meeting:

China, India, Indonesia, Malaysia, Philippines, Singapore, Sri Lanka.

2.37 Performance data provided by other FIT-Asia States, together with FIT-IPACG and FIT-ISPACG, was included in the aggregated regional data analysis.

Note: FIT-ISPACG (Informal South Pacific ATS Coordinating Group) is the competent FIT for Australia, Fiji, France (French Polynesia), New Zealand and Papua New Guinea.

FIT-IPACG (Informal Pacific ATC Coordinating Group) is the competent FIT for Japan and USA.

[1] Lanzhou and Urumqi FIRs
[2] Chennai FIR and, in 2021, Kolkata FIR
[3] Ujung Pandang FIR.
[4] Kuala Lumpur FIR.

2.38 The meeting noted that, while most States providing data link services provided performance data to a recognized FIT, few provided information on their analysis of the data, or on any investigative or rectification action taken, or to evaluate the need for withdrawal of PBCS-dependent separations where RCP and/or RSP specifications were not met.

Data Link-related ANS Deficiencies

2.39 The Secretariat presented the relevant excerpt of the APANPIRG ATM and Airspace Safety Deficiencies List for review by the meeting.

2.40 FIT-Asia/11 recommended deletion of the following Deficiency:

Fiji: *Problem reports not provided to CRA.*

2.41 FIT-Asia/11 recommended amendment of the following Deficiency:

India: *Performance monitoring and analysis not reported for ~~Kolkata and~~ Mumbai FIRs.*

2.42 FIT-Asia/11 recommended the following Deficiency remain current:

Maldives: *Problem reports not provided to CRA. Performance monitoring and analysis not reported to FIT.*

2.43 These above recommendations are included in the Deficiencies List provided for RASMAG/26 discussion and agreement in WP/37.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper;

b) note the regional PBCS implementation Status;

c) note the continued need to encourage States to fully analyze PBCS performance that fails to meet RCP/RSP specifications, take rectification action, and report same to FIT;

d) note the aggregated regional PBCS performance;

e) agree to the **Draft Conclusion RASMAG/26-X: FANS1/A CPDLC Latency Timer Value**;

f) note the continuing unsuitability of HFDL for PBCS;

g) note and agree to the FIT-Asia/11 recommendations on data link-related APANPIRG ATM and Airspace Safety Deficiencies.

h) discuss any relevant matters as appropriate.

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<table>
<tr><td colspan="3">Draft Conclusion RASMAG/26-X: FANS 1/A CPDLC LATENCY TIMER VALUE</td></tr>
<tr><td colspan="2">What: That, recognizing:
1. the need for aircraft to provide an appropriate indication when the age of the time stamp of a received CPDLC message exceeds a defined value (latency timer value), in accordance with ICAO Doc 9869 PBCS Manual safety requirement SR-15;
2. a latency timer value of 300 seconds supports both RCP240 and RCP 400 operations;
3. the need for a single, standardized global value; and
4. the successful trialling of a value of 300 seconds in the North Atlantic Region; States are urged to implement a latency timer value of 300 seconds on a trial basis and report outcomes to FIT-Asia.</td><td>Expected impact:
☐ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: to provide latency timer value that has been successfully used over several years of its operational implementation on a trial basis in the NAT region for States intending to implement the latency timer in accordance with PBCS safety requirement SR-15, and to support regional and global standardization</td><td colspan="2">Follow-up: ☒Required from States</td></tr>
<tr><td>When: 23-Sep-21</td><td colspan="2">Status: Draft to be adopted by Subgroup</td></tr>
<tr><td colspan="3">Who: ☒Sub groups ☒APAC States ☐ICAO APAC RO ☐ICAO HQ ☒Other: XXXX</td></tr>
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FIT-Asia PBCS Planning Chart (Administrations with FIR/s)

State																									
				Afghanistan	Bangladesh	Cambodia	China	Hong Kong China	India	Indonesia	DPR Korea	Republic of Korea	Lao PDR	Malaysia	Myanmar	Maldives	Mongolia	Nepal	Pakistan	Philippines	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		
		A-2	ANSP (PBCS policies, objectives supporting safety oversight)				X															X		
		A-3	Operator and aircraft System- PBCS policies, objectives supporting safety oversight				X															X		
		A-4	Regional Supplementary Procedures (Doc. 7030) for PBCS operations , if applicable				X							X								X		
	Group B	B-1	PBCS Implementaion Plan				X			X										X		X		
		B-2	Target dates for PBCS and relevant ATM operations				X			X										X	X	X		
		B-3	RCP/RSP specifications				X			X										X	X	X		X
		B-4	PBCS awareness				X			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		X
		C-3	ATC automation changes for PBCS monitoring							X										X		X		
		C-4	Confirm initial ANSP compliance with RCP/RSP specifications				X			X										X		X		X
	Group D	D-1	Aircraft operator readiness																	X		X	X	X
		D-2	Confirm initial operator and/or aircraft type/system compliance with RCP/RSP																	X		X	X	X
	Group E	E-1	PBCS monitoring - post implmentation				X			X										X		X		
Does your State submit data link problem reports to a recognized Central Reporting Agency (CRA)							X						X							X		X		X
Cmmunication Specifications & Interoperatability Standards	Normal	RCP240	FANS1/A CPDLC				X			X										X		X		X
	Alternate	RCP400	SATVOICE										X											
		RCP400	HF							X			X											
Surveillance Specifications & Interoperatability Standards	Normal	RSP180	FANS1/A ADS-C				X			X										X		X		X
	Alternate	RSP400	SATVOICE										X											
		RSP400	HF							X			X											
	ADS-B																					X		
Navigation Specifications & Applicable ATM Operations	RNAV/RNP	RNAV/RNP 10	50 NM Lateral Separation					X		X			X				X		X		X	X		X
			50 NM Longitudinal Separation					X		X							X		X	X		X		X
		RNP 4	30 NM Longitudinal Separation																					X
			30 NM Lateral Separation (pre-existing std)																					X
			23 NM Lateral Separation (new std)																					X
		RNP2	30NM Climb-Descend Through																					
			20NM Lateral Climb-Descend Through	**NOT YET SURVEYED**																				
			07 - 15 NM VHF Lateral Separation	**NOT YET SURVEYED**																				
			8NM VHF Climb-Descend Through	**NOT YET SURVEYED**																				
	10 MINUTE Longitudinal Separation without MNT.																							
	RVSM																							
Other ATM Operations	ADS-C CDP																							
	ADS-B ITP																							
	Tactical Lateral Offsets for Climb or Descent																							
	Tailored Arrival																							
	CDO																							
	UPR																							
	DARP	Accept																						
		Initiate																						

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

						Applicable Airspace	Brunei Darussalam	Bhutan	Macao China	Timor 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	Operatpr 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 Implementaion 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 implmentation																						
Cmmunication Specifications & Interoperatability Standards	Normal	RCP240	FANS1/A CPDLC																						
	Alternate	RCP400	SATVOICE																						
		RCP400	HF																						
Surveillance Specifications & Interoperatability Standards	Normal	RSP180	FANS1/A ADS-C																						
	Alternate	RSP400	SATVOICE																						
		RSP400	HF																						
	ADS-B																								
Navigation Specifications & Applicable ATM Operations	RNAV/RNP	RNAV/RNP 10	50 NM Lateral Separation		X																				
			50 NM Longitudinal Separation		X																				
		RNP 4	30 NM Longitudinal Separation																						
			30 NM Lateral Separation (pre-existing std)																						
			23 NM Lateral Separation (new std)																						
		RNP2	30NM Climb-Descend Through																						
			20NM Lateral Climb-Descend Through	**NOT YET SURVEYED**																					
			07 - 15 NM VHF Lateral Separation	**NOT YET SURVEYED**																					
			8NM VHF Climb-Descend Through	**NOT YET SURVEYED**																					
	10 MINUTE Longitudinal Separation without MNT.																								
	RVSM																								
Other ATM Operations	ADS-C CDP																								
	ADS-B ITP																								
	Tactical Lateral Offsets for Climb or Descent																								
	Tailored Arrival																								
	CDO																								
	UPR																								
	DARP	Accept																							
		Initiate																							

PBCS Planning Chart (Non-FIT-Asia Administrations)

Applicable Airspace	Task Group	Task ID	TASK descriptor	Australia	Fiji	French Polynesia	Japan	Nauru	New Caledonia	New Zealand	Papua New Guinea	Solomon Islands	United States
PBCS Implementation Task List	Group A	A-1	AIP (Prescription of an RCP/RSP specification)										X
		A-2	ANSP (PBCS policies, objectives supporting safety oversight)		X					X			X
		A-3	Operatpr and aircraft System- PBCS policies, objectives supporting safety oversight		X					X			X
		A-4	Regional Supplementary Procedures (Doc. 7030) for PBCS operations , if applicable	X			X			X			X
	Group B	B-1	PBCS Implementaion 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
	Group C	C-1	Operational concepts and procedures for PBCS operations		X		X			X			X
		C-2	ATC automation changes to use flight plan RCP/RSP indicators							X			X
		C-3	ATC automation changes for PBCS monitoring	X			X			X			X
		C-4	Confirm initial ANSP compliance with RCP/RSP specifications		X					X			X
	Group D	D-1	Aircraft operator readiness	X						x			X
		D-2	Confirm initial operator and/or aircraft type/system compliance with RCP/RSP	X									X
	Group E	E-1	PBCS monitoring - post implmentation							x			X
Does your State submit data link problem reports to a recognized Central Reporting Agency (CRA)				X			X			X			X
Cmmunication Specifications & Interoperatability Standards	Normal	RCP240	FANS1/A CPDLC	X			X			X			X
	Alternate	RCP400	SATVOICE							X			X
		RCP400	HF	X						X			X
Surveillance Specifications & Interoperatability Standards	Normal	RSP180	FANS1/A ADS-C	X			X			X			X
	Alternate	RSP400	SATVOICE							X			X
		RSP400	HF	X						X			X
	ADS-B												
Navigation Specifications & Applicable ATM Operations	RNAV/RNP	RNAV/RNP 10	50 NM Lateral Separation	X			X			X			X
			50 NM Longitudinal Separation	X			X			X			X
		RNP 4	30 NM Longitudinal Separation	X			X			X			X
			30 NM Lateral Separation (pre-existing std)	X			X			X			X
			23 NM Lateral Separation (new std)	X									
		RNP2	30NM Climb-Descend Through										X
			20NM Lateral Climb-Descend Through	**NOT YET SURVEYED**									
			07 - 15 NM VHF Lateral Separation	**NOT YET SURVEYED**									
			8NM VHF Climb-Descend Through	**NOT YET SURVEYED**									
	10 MINUTE Longitudinal Separation without MNT.												
	RVSM												
Other ATM Operations	ADS-C CDP												
	ADS-B ITP												
	Tactical Lateral Offsets for Climb or Descent												
	Tailored Arrival												
	CDO												
	UPR												
	DARP	Accept											
		Initiate											