

INTERNATIONAL CIVIL AVIATION ORGANIZATION



REPORT OF THE TENTH MEETING OF THE FANS INTEROPERABILITY TEAM-ASIA (FIT-ASIA/10)

VIDEO TELECONFERENCE
03 TO 06 AUGUST 2020

The views expressed in this Report should be taken as those of the
Meeting and not the Organization

Approved by the Meeting
and published by the ICAO Asia and Pacific Office, Bangkok

FIT-Asia/10
Table of Contents

CONTENTS

INTRODUCTION	iii
Meeting	iii
Attendance	iii
Officers and Regional Office	iii
Opening of the Meeting	ii
Documentation and Working Language	iii
List of Draft Conclusions/Decisions and Conclusions/Decisions.....	iv
REPORT ON AGENDA ITEMS.....	1
Agenda Item 1: Adoption of Agenda.....	1
Agenda Item 2: Central Reporting Agency Reports	1
Agenda Item 3: PBCS Developments and Implementation.....	3
Agenda Item 4: Review of ADS-C/CPDLC Operations and Performance.....	7
Agenda Item 5: Data Link Developments and Guidance Material	17
Agenda Item 6: Data Link-related ANS Deficiencies.....	17
Agenda Item 7: FIT-Asia Task List	18
Agenda Item 8: Any Other Business.....	18
Agenda Item 9: Date and Venue of the Next Meeting.....	18

FIT-Asia/10
Table of Contents

APPENDIXES

Appendix A:	List of Participants.....	A-1
Appendix B:	List of Working and Information Papers	B-1
Appendix C:	Revised PBCS Non-Compliance Report Form Template.....	C-1
Appendix D:	APANPIRG Air Navigation Deficiencies – Data Link	D-1
Appendix E:	FIT-Asia Task List.....	E-1

INTRODUCTION

Meeting

1.1 The Tenth Meeting of the FANS Interoperability Team – Asia (FIT-Asia/10) was held by Video Teleconference from 03 to 06 August 2020.

Attendance

2.1 A total of 101 registered participants from Australia, Bangladesh, Brunei Darussalam, China, Hong Kong China, Fiji, India, Indonesia, Lao PDR, Malaysia, Myanmar, New Zealand, Philippines, Singapore, Sri Lanka, Thailand, United States, IATA, IFATCA, SITA, Boeing (CRA) and ICAO participated in the FIT-Asia/10 Video Teleconference. The list of participants is provided at **Appendix A** to this report.

Officers and Regional Office

3.1 Mr. Kwek Chin Lin, Chief ATC Specialist, Systems Development, Civil Aviation Authority of Singapore, chaired the meeting.

3.2 Mr Shane Sumner, Regional Officer ATM/AIM, ICAO Asia/Pacific (APAC) Office, was Secretary of the meeting. He was assisted by Ms. Prakayphet Chalayonnawin, Programme Analysis Associate (ATM).

Opening of the Meeting

4.1 Mr. Kwek Chin Lin welcomed participants to the meeting.

4.2 On behalf of Mr. Arun Mishra, Regional Director of ICAO Asia and Pacific Office, Mr Shane Sumner welcomed all participants.

Documentation and Working Language

5.1 The working language of the meeting and all documentation was English. There were 17 Working Papers (WP), four Information Papers (IP), seven Presentations and two Flimsies presented for considered by the meeting.

5.2 A list of papers is included at **Appendix B** to this report.

Draft Conclusions, Conclusions, Draft Decisions and Decisions of FIT-Asia – Definition

6.1 FIT-Asia records its actions in the form of Draft Conclusions, Draft Decisions and Decisions within the following definitions:

- a) **Draft Conclusions** deal with matters that, according to APANPIRG terms of reference, require the attention of States, or action by the ICAO in accordance with established procedures;
- b) **Conclusions** deal with matters of a technical nature relating to regional guidance material for publication on the ICAO Asia/Pacific Regional Office website.
- c) **Draft Decisions** deal with the matters of concern only to APANPIRG and its contributory bodies; and
- d) **Decisions** of FIT-Asia that relate solely to matters dealing with the internal working arrangements of FIT-Asia

List of Draft Conclusions/Decisions and Conclusions/Decisions

7.1 List of Draft Conclusions and Draft Decisions

Draft Conclusion FIT-Asia/10-1: Revised PBCS Non-Compliance Report Form Template	
What: That, the PBCS Non-Compliance Report Form Template at Appendix C to the Report be uploaded to the Asia/Pacific Regional Office website, to replace the previous template.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: To include additional information and standardize the format of presentation for reporting to PBCS non-compliance to Regional Monitoring Agencies.	Follow-up: <input type="checkbox"/> Required from States
When: 30-Oct-20	Status: Draft to be adopted by Subgroup
Who: <input checked="" type="checkbox"/> Sub groups <input type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other:	

7.2 List of Conclusions and Decisions

Nil

REPORT ON AGENDA ITEMS

Agenda Item 1: Adoption of Agenda

Adoption of Agenda

1.1 The FIT-Asia/10 agenda (WP/1) was adopted by the meeting.

Agenda Item 2: Central Reporting Agency Reports

FANS Interoperability Team (FIT) Central Reporting Agency (CRA) Problem Report Briefing (WP/2 and SP/1)

2.1 The FIT CRA provided information describing the investigation and status of submitted Air Traffic Services (ATS) data link problem reports relevant to the APAC Region. ATS data link stakeholders could submit Problem Reports (PRs) for investigation through the FANS-CRA website (<http://www.fans-cra.com/>).

2.2 The meeting was reminded that the FANS-CRA website, hosted by Airways New Zealand, was used for the purposes of FIT-Asia CRA, the Informal South Pacific ATS Coordinating Group (ISPACG) FIT, Informal Pacific ATC Coordinating Group (IPACG) FIT, and the Data Link Monitoring Agency (DLMA) for North Atlantic (NAT) Region. The website hosted the Performance-Based Communications and Surveillance (PBCS) Charter, and de-identified PRs submitted since 2016 were available for viewing.

2.3 **Figure 1** illustrates the number of PRs submitted per calendar year by FIT-Asia States since 2016

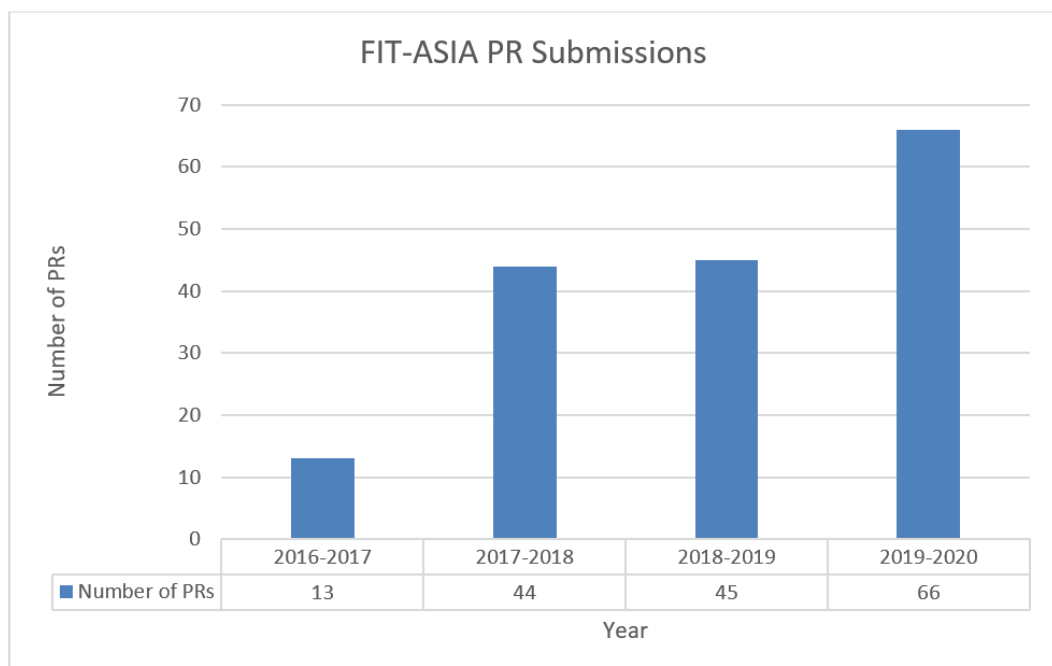


Figure 1: FIT-Asia PR Submissions

2.4 Information was provided on 11 significant PRs submitted by FIT-Asia States. The status¹ of seven was CLOSED, three remained OPEN and one was ACTIVE. Information was also provided on 47 less-significant PRs investigated since FIT-Asia/9.

2.5 Analysis of the following PRs demonstrated the need for ATS units to ensure compliance with the relevant provisions of ICAO Doc 4444 – *Procedures for Air Navigation Services - Air Traffic Management* (PANS-ATM), and to ensure all process steps for establishing CPDLC connections were correctly applied.

2992-MM CLOSED/AIR-Technical. An ADS-C uplink failed to be delivered to the aircraft due to flying in an area with weak or no VHF coverage. The aircraft did not have SATCOM connection at the time of the uplink and it is unclear what caused the lack of connection. The PR was closed as being due to a technical issue on the aircraft. However, it is of note that the data showed the SATCOM link being established only seconds after the uplink failed. Which means had the ATS center resent the uplink after a short delay, then it most likely would have succeeded. Additionally ICAO DOC 4444 (Section 14.3.8) recommends that ATS facilities resend failed uplinks one time after a short delay.

3035-MM, ACTIVE/TBA. An operator reported inability to perform a manual logon to an ATS center although connection with subsequent centers were successful. The data analyzed showed that the flight crew attempted to logon five times over approximately 30 minutes. Each logon attempt received a positive acknowledgement (AFN_Ack) uplink, however there was no CPDLC connection request (CR1) uplinked to the aircraft. The PR was assigned to the ATS center for further investigation.

2.6 The meeting was further informed of six significant PRs that occurred in other regions but which may be of interest to FIT-Asia.

2.7 In discussing the need for CRA access to data link logs for investigating PRs, the meeting was informed that some operators had not signed up to the PBCS Charter, which inter alia facilitated the release of logs. IATA requested details of operators that were not signed up the Charter, so efforts could be made to encourage their participation. Further noting that logs were in some cases expiring while the Communications Service Provider (CSP) waited for the aircraft operator's approval to release the logs, New Zealand proposed that a simple fix may be for the CSP to extract the logs and then hold them until the approval to release them was received.

¹ **RAISED:** The PR had been submitted by the originator but had not yet been processed by the DLMA

ACTIVE: The DLMA had processed the PR and assigned it for investigation

OPEN: The PR investigation was complete but some form of correction is required before it could be closed

OPEN – FIX AVAILABLE: Corrective action had been implemented and fix was available for installation

CLOSED AS DUPLICATE: The PR was closed because the problem was already tracked under another PR

CLOSED: Corrective action had been implemented

2.8 Sri Lanka informed the meeting of a case of a B777 aircraft which had transmitted two different ICAO Aircraft Addresses, which caused problems in the Automatic Dependent Surveillance – Contract (ADS-C) and ADS – Broadcast (ADS-B) environments. FIT-CRA informed the meeting that a PR should be raised. Further coordination would be conducted off-line.

2.9 In response to a query on the combination of data from two or more Flight Information Regions (FIRs) in cases where insufficient data points for a flight were available in one FIR, New Zealand informed the meeting that it was common practice among Pacific FIRs, and was a good method for ensuring sufficient data for analysis of PRs by the CRA.

Agenda Item 3: PBCS Developments and Implementation

PBCS Post-Implementation Monitoring NZZO (IP/2 and SP/2)

3.1 New Zealand presented information on the monthly PBCS post-implementation monitoring and reporting carried out by Airways New Zealand. The monitoring program had been developed using the guidance in Doc 9869 *PBCS Manual* to meet Annex 11 requirements and ensure that the Controller-Pilot Data Link Communications (CPDLC communication and ADS-C surveillance systems operate to the Required Communications Performance (RCP) 240 and Required Surveillance Performance (RSP) 180 performance levels to maintain efficient and safe operations. Attention of the meeting was drawn to the guidance provided in Doc 9869 section 4.5.2. *Local PBCS monitoring programme*.

3.2 The information provided included examples of a consolidated performance reports using data extracted from a website-based analysis tool. Monthly performance reports were provided by Airways to the regulatory authority. Performance data was also provided to ISPACG FIT, and to the USA for consolidated performance reports in the CRA website.

3.3 In discussion, the meeting was advised by New Zealand to exercise caution when filtering raw data, citing the example of aircraft in oceanic airspace that was not connected to SATCOM, causing a performance issue for VHF data link when the aircraft dumped the stored data when in VHF range.

Latency Monitor Reject Analysis (IP/3 and SP/3)

3.4 The meeting was informed of an analysis of Latency Monitor Reject messages received from Airbus aircraft operating in the Auckland Oceanic FIR during the period from January 2019 to June 2020. 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.

FIT-Asia/10
Report on Agenda Items

Month	# Rejects	Classification						
		Unknown	Time Source	Inmarsat	Iridium	HFDL no SATCOM	Inmarsat sent HFDL	Unable SATCOM via VDL
Jan-19	22	0	0	5	0	0	16	1
Feb-19	5	0	0	2	0	0	3	0
Mar-19	9	0	0	2	4	1	2	0
Apr-19	8	0	0	2	2	1	3	0
May-19	17	1	0	4	3	6	3	0
Jun-19	1	0	0	0	0	0	1	0
Jul-19	5	0	4	1	0	0	0	0
Aug-19	1	0	0	1	0	0	0	0
Sep-19	4	0	2	0	2	0	0	0
Oct-19	14	0	4	0	8	2	0	0
Nov-19	3	0	0	2	1	0	0	0
Dec-19	6	0	0	0	4	0	2	0
Jan-20	3	0	0	2	0	0	1	0
Feb-20	3	0	0	0	1	1	1	0
Mar-20	0	0	0	0	0	0	0	0
Apr-20	0	0	0	0	0	0	0	0
May-20	0	0	0	0	0	0	0	0
Jun-20	0	0	0	0	0	0	0	0
Totals	101	1	10	21	25	11	32	1

Table 1: Latency rejects by month and classification.

PBCS Implementation and Readiness Status in Singapore FIR (IP/4)

3.5 Singapore provided an update on PBCS implementation and readiness status in the Singapore FIR, including a summary of the current status and action plan for the tasks identified in the checklist in the PBCS implementation plan guidance provided in Doc 9869. Singapore responded to the annual ICAO APAC regional survey of performance-based horizontal separation minima (**FIT-Asia/10 IP/4 Attachment A**), which allowed Singapore to assess and review its current PBCS implementation plan and readiness. Singapore urged all APAC States, Air Navigation Service Providers (ANSPs) and aircraft operators to adopt the PBCS implementation plan described in Doc 9869, and to provide data link performance reports to FIT-Asia, using the new templates.

PBCS Implementation in Indonesia (Flimsy 2)

3.6 The meeting was informed of PBCS implementation in Indonesia, particularly in the Ujung Pandang FIR. The current status of implementation was provided in **FIT-Asia/10 Flimsy 2 Appendix A**. It was noted that the effectiveness of PBCS implementation in the Ujung Pandang FIR was not optimal due to the limited implementation in some neighbouring FIRs.

3.7 It had previously been reported to FIT-Asia/9 that, for the period January to March 2019, 36.3% of overflights through the Ujung Pandang FIR included P2 and SUR/RSP180 in their filed flight plans. The percentage had increased to 43.8% in the period May/June 2020.

3.8 Since November 2017 Indonesia had submitted 32 PRs to the CRA. 26 were now closed, and six remained open. Two PRs had been assigned to Indonesia, and were under investigation (**FIT-Asia/10 Flimsy 2 Appendix D**).

3.9 In discussion of the flights filing PBCS indicators in flight plans, IATA informed the meeting that FIT-Asia/9 had been informed that IATA would conduct a survey of aircraft operators' PBCS capability each year. The survey had not been conducted this year due to the impact of the COVID-19 pandemic. It was expected, however, that PBCS equipage/capability of overflight traffic should be now have reached a significantly higher level.

Regional PBCS Implementation Update (WP/3)

3.10 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

3.11 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.

3.12 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. **FIT-Asia/10 WP/3 Attachment B** summarized the current implementation of performance-based separations as reported in survey responses since 2017.

3.13 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 minima², 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

² 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 performance-based separation minima that are supported by ADS-C/CPDLC.

- To approve, and monitor the performance of, PBCS operations by aircraft and aircraft operators of the State of Registry.

3.14 The following Administrations were requested to review their reported implementation and provide any update:

Hong Kong, China – 50 NM lateral and longitudinal separation implemented, but no Group A, B, C, D or E tasks completed.

Indonesia and Philippines – 50NM longitudinal separation implemented, but no procedure in ICAO Doc 7030 *Regional Supplementary Procedures*.

3.15 The meeting was informed that several other States were believed to have implemented performance-based separations requiring PBCS support, but had not reported implementation or completion of relevant tasks in the survey. Others had not reported completion of key group D and E tasks in the survey, relating to the approval of PBCS operations by aircraft operators of their State of Registry.

3.16 Indonesia informed the meeting that the lack of Doc 7030 procedure supporting performance-based separation had been a barrier to implementation in the Ujung Pandang FIR. Indonesia and Philippines indicated that action was under way to submit the necessary Proposal for Amendment (PfA) to Doc 7030.

3.17 In the case of Hong Kong China, clarification should be sought on whether the performance-based separations specified in Doc 7030 for the Hong Kong FIR continued to be valid, as it was understood that the Hong Kong FIR had 100% radar/ADS-B and VHF radio coverage.

3.18 Further clarification was needed on the regulatory readiness of a number of APAC Administrations to issue PBCS approvals and conduct performance monitoring of aircraft operators.

Regional Supplementary Procedures Update (WP/4)

3.19 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.

3.20 **Table 2** summarized the performance-based separations in APAC FIRs that were currently supported by SUPPS.

Administration FIR/s	50 NM Lateral RNAV 10 (RNP 10)	50 Longitudi nal RNAV 10 (RNP 10) with PBCS	23 NM Lateral RNP 4 or RNP 2 with PBCS	30 NM Longitudi nal RNP 4 or RNP 2 with PBCS
Australia Brisbane and Melbourne	✓	✓	✓	✓
China Sanya	✓	✓		
Hong Kong, China Hong Kong	✓	✓		

FIT-Asia/10
Report on Agenda Items

Administration FIR/s	50 NM Lateral RNAV 10 (RNP 10)	50 Longitudi nal RNAV 10 (RNP 10) with PBCS	23 NM Lateral RNP 4 or RNP 2 with PBCS	30 NM Longitudi nal RNP 4 or RNP 2 with PBCS
France (Polynésie Française) Tahiti	✓	✓	✓	✓
Fiji Nadi	✓	✓	✓	✓
Japan Fukuoka	✓	✓	✓	✓
Malaysia Kuala Lumpur	✓	✓		
Nauru Nauru	✓	✓	✓	✓
New Zealand Auckland Oceanic and New Zealand	✓	✓	✓	✓
Papua New Guinea Port Moresby	✓	✓	✓	✓
Singapore Singapore	✓	✓		
Solomon Islands Honiara	✓	✓	✓	✓
USA Anchorage and Oakland Oceanic	✓	✓	✓	✓
Viet Nam Ho Chi Minh	✓	✓		

Table 2: Doc 7030-supported Performance Based Separations per APAC State/FIR

3.21 States not listed in Table 2 that were believed to have currently implemented, or intended to implement, performance based separations in the high seas airspace within their FIRs included India, Indonesia, Maldives, Myanmar, Philippines and Sri Lanka. States were requested to notify the ICAO Asia/Pacific Regional Office so that a coordinated PfA to Doc 7030 may be prepared. The meeting noted that Indonesia and Philippines were currently coordinating with ICAO on this matter. Sri Lanka informed the meeting that 50 NM longitudinal and 50 NM lateral separation in the Colombo FIR should also be included in the PfA.

Competent Airspace Safety Monitoring Organizations List (WP/5)

3.22 The RASMAG *List of Competent Airspace Safety Monitoring Organizations (FIT-Asia/10 WP/5 Attachment A)* was provided for review and any recommended update where appropriate by FIT-Asia.

Agenda Item 4: Review of ADS-C/CPDLC Operations and Performance

Data Link Performance Report for Ho Chi Minh FIR (WP/6)

4.1 Viet Nam provided a report on data link performance for the Ho Chi Minh FIR for 2019. Viet Nam did not participate in the meeting. The paper was presented on their behalf by the Secretariat.

4.2 The meeting noted that Viet Nam appeared to have some data link performance challenges in the first half of 2019, which partially improved in the second half of the year. **Table 3** provides the example of CPDLC performance per VHF Remote Ground Station (RGS):

FIT-Asia/10
Report on Agenda Items

FIR		HCM									
Criteria		RCP 240									
Period		Jan - Jun 2019					Jul - Dec 2019				
Colour key Meets criteria 99.0% - 99.84% Under Criteria	Message Counts	95%		99.9%		Message Counts	95%		99.9%		
		ACP %<= 180s	ACTP %<= 120s	ACP %<= 210s	ACTP %<= 150s		ACP %<= 180s	ACTP %<= 120s	ACP %<= 210s	ACTP %<= 150s	
By Remote Ground Station (RGS) Ground Earth Station (GES)											
Designator	Type	(RGS/GES With message counts >100)									
N/A	VHF	480	56.56%	90.83%	64.17%	94.11%	60	97.28%	100.00%	97.52%	100.00%
XXP	VHF	1039	93.86%	97.64%	95.25%	98.63%	861	92.92%	97.19%	94.48%	97.75%

Table 3: Ho Chi Minh FIR CPDLC Performance 2019 per VHF RGS

4.3 Viet Nam indicated in their paper that observed data link performance was acceptable. PRs were raised against the small number of aircraft that did not meet the RCP 240 and/or RSP 180 specifications, while RGS/Ground Earth Station (GES) availability was affected by a number of Iridium outages. Viet Nam had followed up on the matter with the CSP.

Data Link Performance Report for China (WP/7)

4.4 China presented data link performance data for the Urumqi and Lanzhou FIRs. PBCS (RCP 240 and RSP 180) was formally implemented in China on 29 March 2018, and was applicable to the data link services applied on ATS routes L888, Y1 and Y2 within the Urumqi and Lanzhou FIRs.

4.5 Comparing data link performance in 2018 and 2019, ADS-C downlink latency met the 95% criterion for RSP 180, and was marginally below the 99.9% criterion in both years. (**Table 4**).

Title	DT/OT value comparison between 2018 and 2019 in ZLLL and ZWWW evaluated by RSP 180							
Time	2018 First Half		2018 Second Half		2019 First Half		2019 Second Half	
Criteria	95%	99.9%	95%	99.9%	95%	99.9%	95%	99.9%
ZLLL	97.59	99.29	97.7	99.38	97.92	99.55	97.83	99.47
ZWWW	97.84	99.35	97.89	99.43	98.08	99.57	98.08	99.55

Table 4: ADS-C Performance in Lanzhou and Urumqi FIRs 2018/2019

4.6 CPDLC performance also met the 95% criterion for RCP 240, in both years but in 2018 did not meet the 99.9% criterion. CPDLC Performance was marginally below the 99.9% criterion in the Lanzhou FIR in 2019. CPDLC performance in the Urumqi FIR in the first half of 2019 did not meet the 99.9% criterion, but in the second half of the year was marginally below the criterion. **Table 5** summarizes CPDLC performance in China in 2018 and 2019.

Title	TT/ET value comparison between 2018 and 2019 in ZLLL and ZWWW evaluated by RCP 240							
Time	2018 First Half		2018 Second Half		2019 First Half		2019 Second Half	
Criteria	95%	99.9%	95%	99.9%	95%	99.9%	95%	99.9%
ZLLL	95.19	96.21	96.22	96.55	99.14	99.35	99.22	99.41
ZWWW	95.19	96.21	96.95	97.68	97.83	98.22	98.74	99.28

Table 5: CPDLC Performance in Lanzhou and Urumqi FIRs 2018/2019

FIT-Asia/10
Report on Agenda Items

4.7 China had completed a series of projects to build the PBCS monitoring programme. By 2019 the general PR reporting mechanism had been implemented. In 2020 China was working on upgrading the mechanism, developing the tracking and resolution module. Furthermore, China was making efforts to complete the monitoring system with real-time monitoring and post-implementation analysis functions.

Data Link Performance Report for Kuala Lumpur FIR (WP/8)

4.8 Malaysia informed the meeting that overall data link performance in the Kuala Lumpur FIR observed in 2019, measured against RSP 180 and RCP 240 criteria, was acceptable. **Table 6** summarized ADS-C Downlink Latency, and **Table 7** summarized CPCLC Actual Communications Performance (ACP) by media type.




















FIR	WMFC					
Criteria	RSP180					
Period	January-June 2019			July-December 2019		
Colour Key						
 Meet Criteria	Message	95%	99.90%	Message	95%	99.90%
 99.0% - 99.9%	Counts	%<=90sec	%<=180sec	Counts	%<=90sec	%<=180sec
 Under Criteria						
By Media Type						
SATCOM	283,649	 96.96%	 99.16%	197,497	 96.75%	 99.15%
VHF	364,450	 99.30%	 99.78%	231,919	 98.95%	 99.15%
HF	67	 94.21%	 97.91%	47	 76.10%	 94.65%
ALL	648,166	 98.28%	 99.51%	429,463	 97.93%	 99.45%

Table 6: Kuala Lumpur FIR ADS-C Performance by Media Type




















FIR	WMFC					
Criteria	RCP240					
Period	January-June 2019			July-December 2019		
Colour Key						
 Meet Criteria	Message	95%	99.90%	Message	95%	99.90%
 99.0% - 99.9%	Counts	%<=120sec	%<=150sec	Counts	%<=120sec	%<=150sec
 Under Criteria						
By Media Type						
SATCOM	10,267	 97.57%	 98.59%	13,751	 96.91%	 98.05%
VHF	10,101	 98.44%	 98.90%	16,350	 98.36%	 98.81%
HF	73	 92.69%	 95.07%	145	 92.84%	 95.92%
ALL	20,441	 97.97%	 98.73%	30,246	 97.67%	 98.45%

Table 7: Kuala Lumpur FIR CPDLC Performance

FIT-Asia/10
Report on Agenda Items

FANS 1/A Performance Report of India (WP/9)

4.9 India provided a report of Future Air Navigation Services (FANS) 1/A performance observed in the Chennai FIR during the period 01 January to 31 December 2019, measured against the RCP 240 and RSP 180 specifications. **Tables 8 and 9** summarised the ADS-C and CPDLC

FIR	VOMM					
Criteria	RSP180					
Period	Jan-June 2019			July-December 2019		
Colour Key ■ Meets Criteria ■ 99.0%-99.84% ■ Under Criteria	Message Counts	95%	99.90%	Message Counts	95%	99.90%
		% <= 90sec	% <= 180sec		% <= 90sec	% <= 180sec
By Media Type						
SATCOM	249038	96.66%	98.67%	221117	96.99%	98.82%
VHF	263968	96.94%	98.70%	269715	97.66%	99.07%
HF	247	36.11%	53.24%	285	45.38%	60.58%
ALL	513253	96.77%	98.66%	491117	97.33%	98.94%

Table 8: ADS-C Performance Chennai FIR per Media Type

FIR	VOMM										
Criteria	RCP240										
Period	Jan - Jun 2019					Jul - Dec 2019					
Colour Key ■ Meets Criteria ■ 99.0%-99.84% ■ Under Criteria	Message Counts	95% benchmark		99.9% Benchmark		Message Counts	95% benchmark		99.9% Benchmark		
		ACP % <= 180sec	ACTP % <= 120sec	ACP % <= 210sec	ACTP % <= 150sec		ACP % <= 180sec	ACTP % <= 120sec	ACP % <= 210sec	ACTP % <= 150sec	
By Media Type											
SATCOM	19002	98.85%	99.03%	99.32%	99.43%	17589	98.59%	98.93%	99.17%	99.39%	
VHF	48473	99.54%	99.73%	99.69%	99.83%	48125	99.46%	99.72%	99.63%	99.83%	
HF											
ALL	67475	99.34%	99.53%	99.59%	99.71%	65714	99.23%	99.51%	99.50%	99.71%	
By Remote Ground Station (RGS) Ground Earth Station (GES)											
Designator	Type	(RGS/GES with message counts >100)									
APK1	SAT	18614	98.86%	99.06%	99.32%	99.45%	17237	98.64%	98.89%	99.20%	99.38%
IGW1	SAT	220	100.00%	99.91%	100.00%	100.00%	191	99.99%	99.43%	100.00%	100.00%
APK2	VHF	4063	98.74%	98.87%	99.28%	99.23%	2692	97.55%	98.43%	98.44%	99.11%
BLR	VHF	3248	99.90%	100.00%	99.95%	100.00%	2754	99.74%	99.93%	99.83%	99.94%
BLR1	VHF	4515	99.75%	99.99%	99.83%	100.00%	4444	99.57%	99.96%	99.66%	99.98%
BLR2	VHF	3665	99.70%	100.00%	99.75%	100.00%	2642	99.56%	99.96%	99.66%	99.97%
BOM	VHF	242	100.00%	100.00%	100.00%	100.00%	143	100.00%	100.00%	100.00%	100.00%

Table 9: CPDLC Performance Chennai FIR by Media Type and GES/RGS

4.10 In response to a query, India informed the meeting of coordination of performance issues with the CSP, and that India was now working on feedback received. India further informed the meeting that the collection and analysis of performance data for the Kolkata and Mumbai FIRs was subject to ATM automation system challenges, and that subject to system upgrades performance reports for those FIRs may be possible in 2021.

Data Link Performance Report for Singapore FIR (WP/10 and SP/4)

4.11 Singapore presented a report of data link performance in the Singapore FIR from January to December 2019. Overall observed performance against the RCP 240 and RSP 180 specifications was acceptable. PRs were raised against the small number of aircraft that did not meet specifications, while RGS/GES availability was mainly affected by the time taken for aircraft avionics to transition between different media. **Tables 10 and 11** summarized CPDLC and ADS-C performance, by media type.

FIT-Asia/10
Report on Agenda Items

Period	Jan - Jun 2019					Jul - Dec 2019				
	Message Counts	95%		99.9%		Message Counts	95%		99.9%	
		ACP % <= 180s	ACTP % <= 120s	ACP % <= 210s	ACTP % <= 150s		ACP % <= 180s	ACTP % <= 120s	ACP % <= 210s	ACTP % <= 150s
By Media Type										
SATCOM	16,514	97.83%	97.31%	98.55%	98.27%	20,565	97.91%	97.41%	98.71%	98.34%
VHF	15,118	99.33%	99.46%	99.46%	99.64%	27,114	99.44%	99.60%	99.56%	99.71%
HF	62	65.77%	66.38%	73.79%	75.81%	86	78.49%	80.23%	81.88%	85.92%
ALL	31,694	98.47%	98.27%	98.93%	98.88%	47,765	98.74%	98.62%	99.16%	99.09%

Table 10: CPDLC Performance Singapore FIR by Media Type

Period	Jan - Jun 2019				Jul - Dec 2019					
	Message Counts	95%		99.9%		Message Counts	95%		99.9%	
		ACP % <= 180s	ACTP % <= 180s	ACP % <= 210s	ACTP % <= 210s		ACP % <= 180s	ACTP % <= 180s	ACP % <= 210s	ACTP % <= 210s
By Media Type										
SATCOM	351,592	96.99%	99.30%	99.30%	156,270	96.26%	99.11%	99.11%	99.11%	
VHF	838,279	99.72%	99.92%	99.92%	425,153	99.54%	99.88%	99.88%	99.88%	
HF	119	70.59%	83.24%	83.24%	123	68.70%	85.91%	85.91%	85.91%	
ALL	1,189,990	98.91%	99.74%	99.74%	581,546	98.65%	99.67%	99.67%	99.67%	

Table 11: CPDLC Performance Singapore FIR by Media Type

4.12 While the ADS-C performance for High Frequency (HF) data link was not statistically significant due to the low number of data points, Singapore had notified operators to use SATCOM and VHF in the Singapore FIR.

4.13 As recommended in FIT-Asia/9, Singapore also conducted monthly data analyses since June 2019. Each analysis was done on data from the current month and previous two months (rolling three-month data set). Problem reports were reported to the CRA and non-compliance cases for aircraft were reported to respective aircraft operators through EMAs.

4.14 Singapore provided details of some of the more significant problems encountered, including identification and resolution of aircraft difficulty in maintaining the VHF link, and poor performance at the edges of VHF coverage where aircraft were attempting to downlink via VHF before transitioning to SATCOM.

4.15 In discussing the challenges of assessing datalink performance across different FIRs, and the lack of sufficient data points to verify reported rectification of aircraft performance issues, Boeing CRA informed the meeting that the Air Traffic Service Provider (ATSP) concerned should seek performance data from other FIRs, and add a comment identifying those FIRs in the submitted PR. In addition, Boeing CRA suggested that for the issue of reinstating PBCS performance, the state authority for that airframe could decide to allow that airframe to file PBCS indicators where verification was not possible due to the lack of data.

Data Link Performance Report for Ujung Pandang FIR – Indonesia (WP/11)

4.16 Indonesia provided a report of data link performance in the Ujung Pandang FIR for the periods January to June and July to December 2019.

4.17 Indonesia informed the meeting that CPDLC performance had met the 95% criterion, but fell marginally below the 99.9% criterion (**Table 12**)

FIT-Asia/10
Report on Agenda Items

FIR	WAAF									
Criteria	RCP240									
Period	Jan - Jun 2019				Jul - Dec 2019					
Message Counts	95% benchmark		99.9% Benchmark		Message Counts	95% benchmark		99.9% Benchmark		
	ACP % <= 180sec	ACTP % <= 120sec	ACP % <= 210sec	ACTP % <= 150sec		ACP % <= 180sec	ACTP % <= 120sec	ACP % <= 210sec	ACTP % <= 150sec	
By Media Type										
SATCOM	13,025	98,73	99,31	99,03	99,57	10288	95,75	99,78	96,83	99,85
VHF	26,996	98,55	99,11	98,82	99,34	26774	96,46	99,55	97,48	99,59
ALL	41583	98,61	99,21	98,88	99,44	38744	96,46	99,63	97,31	99,68

Table 12: CPDLC Performance Ujung Pandang FIR by Media Type

4.18 Downlink latency for ADS-C messages sent by Satellite and VHF media also met the 95% criterion but fell marginally below the 99.9% criterion. (**Table 13**).

FIR	WAAF					
Criteria	RSP180					
Period	Jan-June 2019			July-December 2019		
Message Counts	95%	99,90%	Message Counts	95%	99,90%	
	% <= 90sec	% <= 180sec		% <= 90sec	% <= 180sec	
By Media Type						
SATCOM	63020	97,68	99,30	51262	98,05	99,50
HF	740	64,32	82,12	725	64,83	82,07
VHF	227071	98,94	99,47	220669	99,20	99,62
ALL	290.831	98,58	99,39	272656	98,89	99,55

Table 13: ADS-C Downlink Latency Ujung Pandang FIR by Media Type

Data Link Performance Report for Manila FIR (WP/12)

4.19 Philippines presented the data link performance for the Manila FIR from January to December 2019. As this was the first time Philippines had performed this monitoring, the report provided would serve as a reference for further monitoring of PBCS performance.

4.20 Philippines acknowledged and thanked AIRNAV Indonesia for their assistance and support in the development of data link performance monitoring and reporting capability for the Manila FIR.

4.21 **Table 14**, summarizing ADS-C downlink latency, indicated that SATCOM and VHF performance met the 95% criterion, but marginally fell below the 99.9% criterion.

FIT-Asia/10
Report on Agenda Items




FIR		RPHI					
Criteria		RSP 180					
Period		January-June 2019			July-December 2019		
Colour Key  Meets Criteria  99.0%-99.84%  Under Criteria	Message counts	95% %<=90sec	99.90% %<=180sec	Message counts	95% %<=90sec	99.90% %<=180sec	
	By Media Type						
	SATCOM	190017	96.49%	99.47%	63596	96.41%	99.50%
	VHF	40737	98.79%	99.57%	463042	99.12%	99.70%
HF	1668	64.15%	84.47%	1117	74.31%	89.88%	
ALL	232422	98.34%	99.51%	527755	98.74%	99.65%	

Table 14: ADS-C Performance Manila FIR by Media Type

4.22 CPDLC performance data in **Table 15** indicated that overall CPDLC performance in the Manila FIR met the 95% criterion, but did not meet the 99.9 percent criterion.




FIR		RPHI												
Criteria		RCP240												
Period		January-June 2019						July-December 2019						
Colour Key  Meets Criteria  99.0%-99.84%  Under Criteria	Message counts	95% Benchmark		99.90% Benchmark		95% PORT %<60sec	Message counts	95% Benchmark		99.90% Benchmark		95% PORT %<60sec		
		ACP %<=180s ec	ACTP %<=120s ec	ACP %<=210s ec	ACTP %<=150s ec			ACP %<=180s ec	ACTP %<=120s ec	ACP %<=210s ec	ACTP %<=150s ec			
	By Remote Ground Station(RGS) / Ground Earth Station(GES)													
	Designator	Type	(RGS/GES with messaging counts>100 recorded)											
APK1	VHF	3082	97.18%	98.77%	97.51%	98.82%	93.74%	4948	97.64%	98.55%	97.82%	98.75%	94.44%	
APK2	VHF	686	99.10%	99.94%	99.28%	99.97%	95.77%	1124	98.80%	99.91%	99.04%	99.93%	93.86%	
BK1	VHF							104	90.93%	98.01%	91.08%	98.45%	90.65%	
CEB	VHF	154	98.52%	94.58%	98.79%	94.71%	98.46%	267	98.64%	98.08%	98.72%	98.32%	97.63%	
CRK	VHF							161	99.05%	98.95%	99.39%	99.20%	96.67%	
HI6	HV	118	85.88%	84.75%	88.56%	88.98%	75.88%	258	85.48%	78.52%	86.88%	84.73%	79.65%	
IGW1	VHF	191	97.57%	99.36%	97.68%	99.52%	94.94%	440	96.77%	99.60%	97.41%	99.71%	90.23%	
PPS	VHF	162	97.72%	98.90%	97.98%	99.17%	93.83%	301	97.87%	99.44%	97.94%	99.73%	95.93%	
SYX	VHF	103	97.09%	96.59%	97.21%	96.76%	88.67%	163	93.64%	92.96%	93.79%	93.10%	89.03%	
XXA	SAT	707	98.43%	100.00%	98.62%	100.00%	92.22%	1668	99.36%	100.00%	99.43%	100.00%	92.99%	
XXA	SV	498	97.00%	100.00%	97.07%	100.00%	94.81%	1191	97.85%	99.93%	97.94%	99.95%	95.21%	
XXP	SAT	553	98.46%	99.72%	98.78%	99.77%	90.14%	868	99.14%	100.00%	99.31%	100.00%	92.15%	
ZAM	VHF	512	92.31%	98.12%	92.43%	98.19%	91.23%	781	94.94%	98.53%	95.19%	98.98%	93.47%	

Table 15: CPDLC Performance Manila FIR by Media Type, RGS and GES.

4.23 The meeting noted that some cases identified as VHF media type in the report were actually SATCOM. It was recommended that Philippines review the data.

4.24 In response to a query, Philippines informed the meeting that it was intended to implement 50NM longitudinal separation in oceanic areas of the Manila FIR in 2021.

Data Link Performance Report for Sri Lanka (Flimsy 1)

4.25 Sri Lanka provided a data link performance report for the Colombo FIR for the period January to December 2019. The meeting was informed that Sri Lanka did not have information to separate performance data into the different media types. There was a need to develop a process for identification of media types, and Sri Lanka had been communicating with their CSP in this regard.

4.26 A summary of ADS-C downlink latency data for the Colombo FIR was provided in **Table 16**, and CPDLC performance in **Table 17**.

FIT-Asia/10
Report on Agenda Items

FIR		VCCF					
Criteria		RSP180					
Period		Jan-June 2019			July-December 2019		
Colour Key ■ Meets Criteria ■ 99.0%-99.84% ■ Under Criteria	Message Counts	95%	99.90%	Message Counts	95%	99.90%	
		% <= 90sec	% <= 180sec		% <= 90sec	% <= 180sec	
By Media Type							
SATCOM + VHF	598937	98.45	99.46	563087	98.53	99.49	
VHF	This Data is Not Available.						
HF	N/A	N/A	N/A	N/A	N/A	N/A	
ALL	598937	98.45	99.46	563057	98.53	99.49	
By Remote Ground Station (RGS) Ground Earth Station (GES)							
Designator	Type	(only RGS/GES with message counts >100 recorded)					
ADS-C Provided through FANS 1/A Service by SITA. These details are not available.							

Table 16: ADS-C Downlink Latency Colombo FIR

FIR		VCCF								
Criteria		RCP240								
Period		Jan - Jun 2019				Jul - Dec 2019				
Colour Key ■ Meets Criteria ■ 99.0%-99.84% ■ Under Criteria	Message Counts	95% benchmark		99.9% Benchmark		Message Counts	95% benchmark		99.9% Benchmark	
		ACP	ACTP	ACP	ACTP		ACP	ACTP	ACP	ACTP
		<= 180sec	<= 120sec	<= 210sec	<= 150sec		<= 180sec	<= 120sec	<= 210sec	<= 150sec
By Media Type										
SATCOM + VDL	29676	98.31	99.27	99.24	99.69	32594	98.12	99.21	99.39	99.68
VHF	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HF	-	-	-	-	-	-	-	-	-	-
ALL	29676	98.31	99.27	99.24	99.69	32594	98.12	99.21	99.39	99.68
By Remote Ground Station (RGS) Ground Earth Station (GES)										
Designator	Type	(RGS/GES with message counts >100)								
CPDLC Provided through FANS 1/A Service by SITA. These details are not available.										

Table 17: CPDLC Performance Colombo FIR

Data Link Performance Reports – Other States (WP/13)

4.27 The Secretariat provided performance data (**FIT-Asia/10 WP/13 Attachments A to D**) that had been forwarded to the ICAO Regional Office by Japan, Myanmar, Sri Lanka and ISPACG for inclusion in the regional aggregated data analysis (WP/14).

Asia/Pacific Region Combined PBCS Monitoring Report (WP/14, SP/5 ad SP/6)

4.28 USA presented the Combined PBCS Monitoring Report, using data provided by the States identified in **Table 18**.

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
Myanmar	Yangon	VYYF
New Zealand	Auckland Oceanic	NZZO
Philippines	Manila	RPHI
Singapore	Singapore	WSJC
Sri Lanka	Colombo	VCCF
United States	Oakland Oceanic	KZAK
Viet Nam	Ho Chi Minh	VVHM
	Anchorage Oceanic	PAZA
United States	Oakland Oceanic	KZAK

Table 18: 2019 Performance Data – Reporting FIRs

4.29 The aggregated regional data was provided in FIT-Asia/10 WP/14 Attachments A to E. The results of the analysis of the performance data and a proposal to update the Asia/Pacific regional template for non-compliance reporting were presented in SP/5 and SP/6 for discussion by the meeting.

4.30 RSP and RCP issues were summarized in SP/5. The meeting noted there were several instances where performance criteria were not being met, and that further ATSP effort was required to undertake appropriate analysis and corrective action to ensure performance-based horizontal separation minima could continue to be applied. It was also noted that there were several instances where media types were incorrectly identified, and all States should exercise caution when providing this information.

4.31 The performance report would be provided to RASMAG for further consideration.

4.32 PBCS non-compliance report templates were used by ATSPs to inform the relevant Regional Monitoring Agency (RMA) of aircraft/aircraft operators where data link performance did not comply with specifications. The revised non-compliance report form template was proposed in order to include additional information, to harmonize with the template already adopted in the North Atlantic (NAT) Region, and to use MS Excel format to facilitate data handling by the RMA.

4.33 The meeting agreed to the following Draft Conclusion:

Draft Conclusion FIT-Asia/10-1: Revised PBCS Non-Compliance Report Form Template

That, the PBCS Non-Compliance Report Form Template at **Appendix C to the Report** be uploaded to the Asia/Pacific Regional Office website, to replace the previous template.

FIT-Asia/10
Report on Agenda Items

Asia/Pacific CRA Arrangements, Problem Reporting and Performance Analysis Reporting (WP/15)

4.34 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 providing data link services had registered on the FANS-CRA website. **Table 19** summarized the submission of PRs and the submission of data link performance reports to a recognized FIT.

State	# PR 2017	# PR 2018	# PR 2019	# PR 2020 (to 30 July)	Performance Reports to FIT
Australia	1	9	6	2	YES
China	-	2	-	1	YES ³
Fiji	-	-	-	-	YES
France (Polynésie Française)	2	1	-	-	YES
India	7	1	24	-	YES ⁴
Indonesia	7	18	19	-	YES ⁵
Japan	N/K	N/K	5	-	YES
Malaysia	-	1	1	2	YES ⁶
Myanmar	-	-	1	-	YES
Maldives	-	-	-	-	NO
Papua New Guinea ⁷	-	-	-	-	NO
Philippines	-	9	9	-	YES
New Zealand	7	6	8	9	YES
Singapore	6	10	16	13	YES
Sri Lanka	-	6	3	2	YES
USA	4	14	7	2	YES
Viet Nam	1	1	3	1	YES

Table 19: Asia/Pacific CRA Registration and PR Activity, and Performance Reporting

³ Lanzhou and Urumqi FIRs

⁴ Chennai FIR.

⁵ Ujung Pandang FIR.

⁶ Kuala Lumpur FIR.

⁷ Papua New Guinea commenced PBCS operations January 2020.

4.35 The meeting noted that, while most States providing data link services also provided performance data to a recognized FIT, few provided any information on their analysis of the data, or on any action taken to investigate and rectify data link performance and non-compliance issues, or to evaluate the need for withdrawal of PBCS-dependent separations where performance fails to meet RCP and/or RSP specifications. The meeting was reminded of the applicable standard in Annex 11 paragraph 3.3.5.2, and **Conclusion RASMAG/23-2: PBCS Action List for ANSPs** (drafted by FIT-Asia/8 in 2018). The meeting was also reminded that ICAO Doc 9869 *PBCS Manual* Chapter 4 and Appendix D provided detailed guidance on compliance with RCP/RSP specifications, and continued operational compliance through PBCS monitoring programmes and corrective action.

4.36 The Chair informed the meeting that it was expected that States would move towards providing more information on their analysis of data link issues identified in the data gathered, and detailing the actions taken to rectify issues and ensure compliance. This had been discussed at some length in FIT-Asia/9, which had drafted a Conclusion on the matter, subsequently agreed by RASMAG/24 (**Conclusion RASMAG/24-2: Continuous Data Link Performance Monitoring**).

Unsuitability of HF Data Link for Application of Performance-Based Separation Minima

4.37 During discussion the meeting noted that all reported data for HF data link did not meet any PBCS performance criteria. IATA expressed their concern on this matter, and New Zealand reiterated the previous FIT-Asia discussions in this regard: HF data link was not suitable for PBCS required to support performance-based horizontal separation minima. The meeting was advised that the ATSP had excluded HF data link aircraft from the application of PBCS-supported separation minima.

Agenda Item 5: Data Link Developments and Guidance Material

ICAO Update on GOLD and PBCS Manuals (SP/7)

5.1 The Secretariat reminded the meeting of information that had been provided at FIT-Asia/9 by ICAO HQ. The meeting was informed that the updated GOLD Manual was expected to be available by the end of 2021. Due to COVID-19-related constraints on progressing the work of the Operational Data Link Working Group (OPDLWG), the availability of the updated PBCS Manual was delayed until a date to be advised.

Agenda Item 6: Data Link-related ANS Deficiencies

Air Navigation Deficiencies Relating to Data Link Performance Monitoring and Analysis (WP/17)

6.1 The Secretariat presented the list of APANPIRG Air Navigation Deficiencies in the ATM field relating to data link performance monitoring and analysis (FIT-Asia/10 WP/17 Attachment A). FIT-Asia recommended deletion of the following Deficiency:

Myanmar: *Problem reports not provided to CRA.*

6.2 FIT-Asia recommended the following Deficiencies remain current:

Fiji: *Problem reports not provided to CRA.*

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

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

6.3 The Deficiencies List as updated by the meeting is appended at **Appendix D to the Report.**

Agenda Item 7: FIT-Asia Task List

FIT-Asia Terms of Reference and Task List (WP/18)

7.1 The FIT Asia Terms of Reference (TOR, **FIT-Asia/10 WP/18 Attachment A**) and Task List were provided for review and update by the meeting. It was noted that the TOR were updated by APANPIRG/30 (November 2019) following a review by FIT-Asia/9.

7.2 The FIT-Asia Task List as updated by the meeting is provided at **Appendix E to the Report.**

Agenda Item 8: Any Other Business

8.1 *Nil*

Agenda Item 9: Date and Venue of the Next Meeting

9.1 The next meeting, FIT-Asia/11 would tentatively be held in Bangkok, Thailand, in June or July 2021, one to two weeks before the RASMAG/26 meeting.

Closing of the Meeting

9.2 In closing the meeting, the Chair thanked the meeting participants for their support and contributions.

List of Participants

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1.	AUSTRALIA (1)			
	1.	Dr. Amelia Gontar	Risk Intelligence Specialist/Australian Observer to FIT-Asia Airservices Australia Building 101 Da Vinci Business Park 2A Boronia Road, Brisbane Airport 4008 <u>AUSTRALIA</u>	Tel: +61 7 3866 3462 Fax: Email: amelia.gontar@airservicesaustralia.com ;
2.	BANGLADESH (4)			
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FIT-Asia/10
Appendix A to the Report

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FIT-Asia/10
Appendix A to the Report

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FIT-Asia/10
Appendix A to the Report

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FIT-Asia/10
Appendix A to the Report

	STATE/NAME		TITLE/ORGANIZATION	TEL/FAX/EMAIL
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FIT-Asia/10
Appendix A to the Report

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FIT-Asia/10
Appendix A to the Report

	STATE/NAME		TITLE/ORGANIZATION	TEL/FAX/EMAIL
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FIT-Asia/10
Appendix A to the Report

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FIT-Asia/10
Appendix A to the Report

	STATE/NAME	TITLE/ORGANIZATION	TEL/FAX/EMAIL
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FIT-Asia/10
Appendix A to the Report

	STATE/NAME		TITLE/ORGANIZATION	TEL/FAX/EMAIL
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FIT-Asia/10
Appendix A to the Report

	STATE/NAME		TITLE/ORGANIZATION	TEL/FAX/EMAIL
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FIT-Asia/10
Appendix A to the Report

	STATE/NAME		TITLE/ORGANIZATION	TEL/FAX/EMAIL
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FIT-Asia/10
Appendix A to the Report

	STATE/NAME		TITLE/ORGANIZATION	TEL/FAX/EMAIL
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FIT-Asia/10
Appendix A to the Report

	STATE/NAME		TITLE/ORGANIZATION	TEL/FAX/EMAIL
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FIT-Asia/10
Appendix A to the Report

	STATE/NAME		TITLE/ORGANIZATION	TEL/FAX/EMAIL
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FIT-Asia/10
Appendix A to the Report

	STATE/NAME		TITLE/ORGANIZATION	TEL/FAX/EMAIL
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FIT-Asia/10
Appendix A to the Report

	STATE/NAME		TITLE/ORGANIZATION	TEL/FAX/EMAIL
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FIT-Asia/10
Appendix A to the Report

	STATE/NAME		TITLE/ORGANIZATION	TEL/FAX/EMAIL
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FIT-Asia/10
Appendix A to the Report

	STATE/NAME		TITLE/ORGANIZATION	TEL/FAX/EMAIL
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FIT-Asia/10
Appendix A to the Report

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FIT-Asia/10
Appendix A to the Report

	STATE/NAME		TITLE/ORGANIZATION	TEL/FAX/EMAIL
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FIT-Asia/10
Appendix A to the Report

	STATE/NAME	TITLE/ORGANIZATION	TEL/FAX/EMAIL
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FIT-Asia/10
Appendix A to the Report

	STATE/NAME		TITLE/ORGANIZATION	TEL/FAX/EMAIL
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	94.	Mr. Diego Albert	ATM Senior Business Development Manager SITA 11 Loyang way <u>SINGAPORE</u>	Tel: +65 901 77 895 Fax: Email: diego.albert@sita.aero ;
21.	BOEING (1)			
	95.	Mr. Rochelle Perera	Datalink Systems Engineer The Boeing Company P.O. Box 3707 M/C 07-25 Seattle, WA 98124-2207 <u>UNITED STATES OF AMERICA</u>	Tel: +1 425 237 6306 Fax: Email: Rochelle.e.perera@boeing.com ;
22.	ICAO (6)			
	96.	Mr. Shane Sumner	Regional Officer, Air Traffic Management ICAO Asia and Pacific Office 252/1 Vibhavadi Rangsit Road Chatuchak, Bangkok 10900 <u>THAILAND</u>	Tel.: +66 2 5378189 Fax: +66 2 5378199 Email: ssumner@icao.int ;

FIT-Asia/10
Appendix A to the Report

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FIT-Asia/10
Appendix A to the Report

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ICAO

International Civil Aviation Organization

Tenth Meeting of the FANS Interoperability Team – Asia
(FIT-Asia/10)

Video Teleconference, 03 – 06 August 2020

LIST OF WORKING AND INFORMATION PAPERS

(Presented by the Secretariat)

WORKING PAPERS

NUMBER	AGENDA	TITLE	PRESENTED BY
WP/1	1	Provisional Agenda	Secretariat
WP/2	2	FIT Central Reporting Agency (CRA) Problem Report Briefing (SP/1)	Boeing (FIT-Asia CRA)
WP/3	3	Regional PBCS Implementation Update	Secretariat
WP/4	3	Regional Supplementary Procedures Update	Secretariat
WP/5	3	Competent Airspace Safety Monitoring Organizations List	Secretariat
WP/6	4	Data Link Performance Report for Ho Chi Minh FIR	Viet Nam
WP/7	4	Data Link Performance Report for China	China
WP/8	4	Data Link Performance Report for Kuala Lumpur FIR	Malaysia
WP/9	4	FANS1/A Performance Report of India	India
WP10	4	Data Link Performance Report for Singapore FIR (SP/4)	Singapore
WP/11	4	Data Link Performance Report for Ujung Pandang FIR	Indonesia
WP/12	4	Data Link Performance Report for Manila FIR	Philippines
WP/13	4	Data Link Performance Reports – Other States	Secretariat
WP/14	4	Asia/Pacific Region Combined PBCS Monitoring Report (SP/5 and SP/6)	USA
WP/15	4	Asia/Pacific CRA Arrangements, Problem Reporting and Performance Analysis Reporting	Secretariat
WP/16	5	PBCS Outcomes of Related Meetings (ACSICG outcome) - <i>Withdrawn</i>	
WP/17	6	Air Navigation Deficiencies Relating to Data Link Performance Monitoring and Analysis	Secretariat
WP/18	7	FIT-Asia Terms of Reference and Task List	Secretariat

INFORMATION PAPERS

NUMBER	AGENDA	TITLE	PRESENTED BY
IP/1	-	List of Working and Information Papers	Secretariat
IP/2	3	PBCS Post-Implementation Monitoring NZZO (SP/2)	New Zealand

FIT-Asia/10
Appendix B to the Report

NUMBER	AGENDA	TITLE	PRESENTED BY
IP/3	3	Latency Monitor Reject Analysis (SP/3)	New Zealand
IP/4	3	PBCS Implementation and Readiness Status in Singapore FIR	Singapore

PRESENTATIONS

NUMBER	AGENDA	TITLE	PRESENTED BY
SP/1	2	FIT Central Reporting Agency (CRA) Problem Report Briefing	Boeing (FIT-Asia CRA)
SP/2	3	PBCS Post-Implementation Monitoring NZZO	New Zealand
SP/3	3	Latency Monitor Reject Analysis	New Zealand
SP/4	4	Data Link Performance Report for Singapore FIR	Singapore
SP/5	4	Regional Performance Analysis Report	USA
SP/6	4	PBCS Non-Compliance Reporting Updates	USA
SP/7	5	ICAO Update on GOLD and PBCS Manuals	Secretariat

FLIMSIES

NUMBER	AGENDA	TITLE	PRESENTED BY
Flimsy 01	4	Data Link Performance Report for Sri Lanka	Sri Lanka
Flimsy 02	3	PBCS Implementation in Indonesia	Indonesia
Flimsy 03	5	Aeronautical Mobile Service (AMS) and Data Link Strategy Amendment Proposal – ACSICG/7	Secretariat

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Issue code	Explanation	Recommendation(s)
(*1) Delayed reports around VHF/SAT transitions.	This note is used when ADS-C or CPDLC reports are observed with delays when there is mixed media usage in the sequence of reports before, at or after the delayed reports	- Review "NAT OPS Bulletin 2019_003: Data Link Performance Improvement Options" and recommended solutions/actions (Problem/Issue #2).
(*2) Delayed reports via HF media.	This note is used when delayed ADS-C or CPDLC reports are observed to be delivered via HF data link (HF DL) or near reports delivered via HF DL. Check whether this appears to be a SATCOM failure with one flight or a period during the flight, or more continuous, intermittent use of HF DL. Potential issue with aircraft media priority settings.	- Review "NAT OPS Bulletin 2019_003: Data Link Performance Improvement Options" and recommended solutions/actions (Problem/Issue #1, #4, #9). - Review all Service Information Letters (SILs) and Software Bulletins (SBs) released from Satcom avionics manufacturers, particularly advice on Operator Requirement Table (ORT) set-up. - Operator should be aware that HF DL DOES NOT meet the RCP/RSP criteria for PBCS operations.
(*3) Delayed reports due to Inmarsat satellite to satellite transition (aircraft) or satellite problems (network).	This note is used when ADS-C or CPDLC reports are observed with delays and its noticed that there is a switch sequence between different or same Inmarsat satellite paths (Ex.: XXF/XXH/XXF/XXH). One known area where this occurs in the NAT is at 30W longitude. If multiple aircraft observed with same issue around same time, may be a network-related issue and ATSP may want to report to FANS-CRA/DLMA.	- Review all Service Information Letters (SILs) and Software Bulletins (SBs) released from Satcom avionics manufacturers, particularly advice on Operator Requirement Table (ORT) set-up. - Check with contracted Data Link Service Provider and Satellite Service Provider for possible coverage problems.
(*4) Delayed reports due to Iridium avionics (aircraft) or satellite problems (network).	This note is used when ADS-C or CPDLC reports are observed with delays via Iridium satellite paths (IG1, IGW1). If multiple aircraft observed with same issue around same time, may be a network-related issue and ATSP may want to report to FANS-CRA/DLMA.	- Check for SATCOM radio/unit problems.
(*5) Reported only on VHF and/or HF.	This note is used when delayed ADS-C reports or CPDLC messages are observed via VHF and/or HF only (no SATCOM). This might indicate that SATCOM unit is defective or became unavailable during flight. Check if this issue is observed during one flight or part of one flight only, or whether it is an ongoing problem. If not observed on subsequent flights, the issue may have been addressed.	- Operator should not declare PBCS if SATCOM not available. - Check for SATCOM radio/unit problems. - Flight crew should inform ATC if SATCOM becomes unavailable during flight.
(*6) Poor ACP due to high PORT.	This note is used when its found that the delayed CPDLC transactions are caused by high pilot operational response time (PORT).	- Review "NAT OPS Bulletin 2019_003: Data Link Performance Improvement Options" and recommended solutions/actions (Problem/Issue #6). - Review procedures to reduce pilot operational response time (PORT) to CPDLC messages.
(*7) Aircraft data link connection problems detected.	This note is used when we can identify that delays happened on periods that disconnections and reconnections have been performed. Check whether this appears to be a problem with one flight or a period during one flight, or whether it is an ongoing problem. If problem is not observed on later flights, the issue may have been addressed.	- Review "NAT OPS Bulletin 2019_003: Data Link Performance Improvement Options" and recommended solutions/actions (Problem/Issue #8 unknown cause).
(*8) Delays related to specific VHF station.	This note is used when the delayed ADS-C reports and CPDLC messages are observed via a specific VHF ground station. If multiple aircraft observed with same issue, ATSP may want to report to FANS-CRA/DLMA as a VHF station issue.	- Review "NAT OPS Bulletin 2019_003: Data Link Performance Improvement Options" and recommended solutions/actions (Problem/Issue #2).
(*9) FMS time before ATC uplink time. Clock setting not synchronized with GPS.	This note is used when its found that the FMS response time is earlier than the ATC uplink time. According to aircraft manufacturers this happens when clock is set manually and not being set by synchronization with GPS source.	- Review procedures for clock settings to be set to GPS clock instead of manual set of clock.

PBCS ATSP Non-compliance Report Form							
Report Date:			8/5/2020				
Period of observed non-compliance:							
Reporting Air Traffic Service Provider (ATSP):							
Contact email address(es) at Reporting ATSP:							
Reporting to Regional Monitoring Agency (RMA):			NAT CMA				
ICAO CODE:							
Airline Operator:							
State of Operator/Registry:							
PBCS Data							
FIR	4-letter ICAO Aircraft Type	Registration	ADS-C downlink Message Counts	95% RSP 180 Benchmark	CPDLC Transaction Counts	95% RCP 240 benchmark	Issue code
				ASP		ACP	
				<=90 sec		<=180 sec	
KZNY	B772	Reg 1	410	93.41%	25	96.00%	(*1)(*3)
KZNY	B772	Reg 2	290	94.48%	21	95.24%	(*1)

PBCS ATSP Non-compliance Report Form							
Report Date:			8/5/2020				
Period of observed non-compliance:							
Reporting Air Traffic Service Provider (ATSP):							
Contact email address(es) at Reporting ATSP:							
Reporting to Regional Monitoring Agency (RMA):			NAT CMA				
ICAO CODE:							
Airline Operator:							
State of Operator/Registry:							
PBCS Data							
FIR	4-letter ICAO Aircraft Type	Registration	ADS-C downlink Message Counts	95% RSP 180 Benchmark	CPDLC Transaction Count	95% RCP 240 benchmark	Issue code
				ASP		ACP	
				<=90 sec		<=180 sec	
KZNY	B772	Reg 1	1,174	94.46%	88	95.45%	(*1)(*3)

FIT-Asia/10
Appendix D to the Report

ATM Deficiencies List

Identification		Deficiencies			Corrective Action			
Requirements	States/ facilities	Description	Date first reported	Remarks	Description	Executing body	Target date for completion	Priority for action**
Data Link Performance Monitoring and Analysis Requirements of Annex 11 paragraph 2.29 and/or 3.3.5.2 not met.								
	Fiji	Post-implementation monitoring not implemented	25/06/2018	Problem reports not provided to CRA.		Fiji	TBD	A
	India	Post-implementation monitoring not implemented	5/6/2017	Performance monitoring and analysis not reported for the Kolkata and Mumbai FIRs.	Performance monitoring and analysis reported for Chennai FIR only. Delhi FIR N/A.	India	TBD	A
	Myanmar	Post-implementation monitoring not implemented	29/5/2015	Problem Reports not provided to CRA.		Myanmar	TBD	A
	Maldives	Post-implementation monitoring not implemented	29/5/2015	Problem Reports not provided to CRA. Performance monitoring and analysis not reported to FIT.		Maldives	TBD	A

FIT-Asia/10
Appendix E to the Report

FIT-ASIA — TASK LIST

(last updated 04 July 2019)

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
2/4	States to inform Regional Office of current data-link service status, and/or provide update on planned implementation	Ongoing	FIT-Asia States/Secretariat	Open Closed	Closed FIT-Asia/10 Reporting defined in RASMAG Conclusions
3/4	Register on FANS CRA Website	Ongoing	All FIT-Asia Administrations providing data link services in the FIR All FIT-Asia Administrations' Regulatory Authorities responsible for approving aircraft and aircraft operators for PBCS operations	Open Closed	In accordance with APANPIRG Conclusion 24/24 Non-data link service provider States also to register, to provide access to the PBCS Charter, problem report information, and data link performance reports. Updated FIT-Asia/9 Closed FIT-Asia/10 Registration defined in APANPIRG Conclusion
4/4	Provide problem reports to CRA of switching to HF in areas where good SATCOM coverage exists.	Ongoing	China, Boeing CRA	Open	CRA to analyse why aircraft are reverting to HF in areas where good SATCOM coverage exists. Description modified at FIT-Asia/6

FIT-Asia/10
Appendix E to the Report

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
6/1	CRAs to provide a list of States having made problem reports, and the number of problem reports submitted by each State, prior to each FIT-Asia meeting	ongoing	BOBASMA/FIT-Asia/Boeing CRA	Open Closed	To ensure consistency of information on State engagement with CRA is provided to Fit Asia meetings, and to ensure accurate update of the deficiency list. Closed FIT-Asia/10: Merged with Task 7/1
6/3	Provide a briefing on the timing of the HF Data Link Network upgrade and expected improvements	FIT-Asia/10 FIT-Asia/11	Secretariat	Open	Collins Aerospace No reply from Collins Aerospace (formerly Rockwell Collins). Informal information indicates hardware upgrade 2022, full improved capability 2024 Updated FIT-Asia/9 FIT-Asia/10
6/7	Provide Contact Details for FIT-Asia PBCS SWG participants	Ongoing	FIT-Asia SWG Participants	Open	SWG India, New Zealand, Singapore, IATA (Japan) Updated FIT-Asia/9
6/11	Review TOR	Fit-Asia/9	Chair, Secretary, in consultation with FIT-Asia PBCS SWG	Completed	Updated FIT-Asia/9
7/1	IPACG and ISPACG All APAC FIT and CRA to provide further update a list of States having submitted on-problem report and performance analysis submissions reports to CRA (including number of reports) and FIT IPACG FIT and ISPACG FIT	Ongoing	FIT-Asia IPACG FIT ISPACG FIT SEASMA	Open	FIT-Asia/7 IP/3 To be provided one month prior to each annual FIT-Asia meeting Updated FIT-Asia/10

FIT-Asia/10
Appendix E to the Report

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
7/2	Direct correspondence to survey non-respondent States with FIRs listed in Doc 7030 with performance-based separations	FIT-Asia/10 Ongoing	Secretariat	Open	FIT-Asia/7 WP/4 and IP/13 Include availability of guidance for operations authorizations Updated FIT-Asia/9 FIT-Asia/10
7/3	Direct correspondence to survey non-respondent States known/believed to have implemented performance-based separations without Doc 7030 support	FIT-Asia/10 Ongoing	Secretariat	Open	FIT-Asia/7 WP/4 and IP/13 Include availability of guidance for operations authorizations Updated FIT-Asia/9 FIT-Asia/10
7/4	Clarification of non-requirement in ICAO provisions for operations authorizations for RCP400/RSP400	FIT-Asia/9	Secretariat	Closed	Included in available specs in PBCS manual, but no such specification applied.
8/1	States to complete annual data link performance analysis in new template format	Ongoing By 31 March each year	States	Open	1. Forward to Secretariat for forwarding to State responsible for aggregated Regional data. 2. Prepare report of State performance for FIT-Asia

FIT-Asia/10
Appendix E to the Report

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
8/2	Prepare aggregated Regional data link performance data for submission to FIT-Asia and RASMAG	Ongoing By 31 May each year	USA (first and second annual Report to FIT-Asia/9 and RASMAG/24, and FIT-Asia/10)	Open	<p>Rotational responsibility</p> <p>The US as a member of the FIT SWG agreed during RASMAG/23 and FIT-Asia/9 to lead this effort in the first year two years. FIT Asia agreed to the creation of this report with responsibility of production rotating on an annual basis.</p> <p>USA to retain this task pending the agreement of another APAC Administration to accept responsibility.</p> <p>Secretariat and Chair to seek interest from others Administrations. May require a transitional arrangement to become familiar</p> <p>The US will work with Europe to assure poor performing global fleets are reported to the states of registry outside of their region of operation.</p> <p>Updated FIT-Asia/9 FIT-Asia/10</p>
8/3	Re-circulate PBCS implementation survey	Ongoing	Secretariat	Open Closed	<p>Include formal State POCs, and relevant FIT-Asia participant or other ATM-related POCs that may assist in getting the survey completed. Follow-up with all APAC States known to be providing data link services to ensure response.</p> <p>Updated FIT-Asia/9</p> <p>RASMAG Conclusion Refers</p>

FIT-Asia/10
Appendix E to the Report

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
8/4	Create a regional template to report PBCS performance reporting for aircraft fleet operations across multiple FIRs. Responsibility FIT SWG (United States volunteered for initial production).	FIT-Asia/9	USA	Completed	<p>The US as a member of the FIT SWG agreed during RASMAG/23 to lead this effort in the first year. FIT Asia agreed to the creation of this report with responsibility of production rotating on an annual basis.</p> <p>The US will work with Europe to assure poor performing global fleets are reported to the states of registry outside of their region of operation.</p> <p>Updated FIT-Asia/9</p>
9/1	Aircraft Operators to ensure contact details on the FANS CRA website are up to date, and include, the correct contact for approving release of data link logs	31 July 2019 Ongoing	IATA States (non IATA members) Boeing CRA	Open	FIT-Asia/9 Report paragraph 2.5 Updated FIT-Asia/10
9/2	Make performance data available to all APAC Administrations for regulatory oversight purposes, on request.	Ongoing	All ANSPs providing data link	Open Closed	FIT-Asia/9 Report paragraph 3.14 Draft Conclusion FIT-Asia/9-2 Closed FIT-Asia/10 RASMAG Conclusion Refers
9/4	Remove old performance analysis reporting templates from Regional Office website	12 July 2019	Secretariat	Open Completed	FIT-Asia/9 Report paragraph 4.6 Completion recorded FIT-Asia/10
9/5	Review and develop Draft of new version of <i>Guidance Material for End-to-End Safety and Performance Monitoring of ATS Data Link Systems in the APAC Region.</i> Include region-specific matters from Appendix B to the GOLD Manual (to be removed from the manual in 2020)	FIT-Asia/10 FIT-Asia/11	China, India, Indonesia Singapore, USA, Boeing CRA, Secretariat FIT-Asia/SWG	Open	FIT-Asia/9 Report paragraphs 3.5 and 5.1 Updated FIT-Asia/10

FIT-Asia/10
Appendix E to the Report

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
10/1	Provide details of operators that were not signed up to the PBCS Charter, for IATA to follow up to encourage their participation	30 September 2020	Fit-Asia CRA/IATA	Open	FIT-Asia/10 Report paragraph 2.7 Progress to be reported to FIT-Asia/11
10/2	Confirm separation minima for Doc 7030 Proposal for Amendment (50 NM longitudinal, 30 NM longitudinal 50 NM lateral, 23 NM lateral)	10 August 2020	Indonesia, Philippines, Sri Lanka	Open	FIT-Asia/10 Report paragraph 3.20 and WP/4
10/3	Confirm need for Doc 7030 procedure for Hong Kong FIR (50 NM longitudinal)	FIT-Asia/11	Hong Kong, China Secretariat	Open	FIT-Asia/10 Report paragraph 3.17
10/4	Seek clarification on regulatory readiness to issue PBCS approvals and conduct performance monitoring of aircraft operators	Fit-Asia/11	Secretariat, various States.	Open	FIT-Asia/10 Report paragraph 3.17 Will need preliminary analysis of P2 and SUR/RSP180 in FPL