INTERNATIONAL CIVIL AVIATION ORGANIZATION

TWENTY EIGHTH MEETING OF THE ASIA/PACIFIC AIR NAVIGATION PLANNING AND IMPLEMENTATION REGIONAL GROUP (APANPIRG/28)

Bangkok, Thailand, 11 to 14 September 2017

Agenda Item 3: **Performance Framework for Regional Air Navigation Planning and Implementation**

3.3: **RASMAG**

REGIONAL SUPPLEMENTARY PROCEDURES FOR PERFORMANCE-BASED COMMUNICATIONS AND SURVEILLANCE

(Presented by the Secretariat)

SUMMARY

This paper presents a Proposal for Amendment to ICAO Doc 7030 – Regional Supplementary Procedures supporting the implementation of ICAO provisions for performance-based separation in airspace over the high seas

1. INTRODUCTION

1.1 ICAO Doc 7030 – *Regional Supplementary Procedures* (SUPPS) form the procedural part of Regional Air Navigation Plans formulated to meet the needs of specific areas including airspace over the High Seas.

1.2 SUPPS provide a mode of implementing procedural provisions in Annexes to the Convention on International Civil Aviation, and in the Procedures for Air Navigation Services (PANS). SUPPS must not be in conflict with the provisions contained in the Annexes and PANS. They either specify detailed procedural options for the provisions of the Annexes and PANS, or promulgate a regional procedure of justifiable operational significance additional to existing provisions in Annexes and PANS.

1.3 Current SUPPS applicable to the Asia/Pacific Region are included in SUPPS for the Middle East/Asia Regions and the Pacific (PAC) Region[1].

1.4 New provisions in the Annexes and PANS for Performance-Based Communications and Surveillance (PBCS) supporting performance-based separation became applicable in November 2016[2]. These provisions have rendered SUPPS relating to performance-based separations in airspace over the High Seas redundant, and require amendment to the SUPPS.

1.5 Due to the failure of Asia/Pacific States to either individually or collectively submit PBCS-related Proposals for Amendment (PfAs) to SUPPS, it is now necessary for APANPIRG to authorize ICAO to submit appropriate PfAs to ensure that SUPPS MID/ASIA conform with the provisions of the Annexes and PANS, and to provide the procedural support for States implementing PBCS provisions in airspace over the High Seas.

[1] ICAO Doc 7030 is in the process of being restructured to conform with the current ICAO Regional structure.
[2] Circulated by ICAO State Letter SP 52/4-15/44, 12 June 2015

2. DISCUSSION

APANPIRG/27 Outcomes

2.1 APANPRG/27 (Bangkok, Thailand, 05 to 08 September 2016) considered the outcomes of the Twenty-First Meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/21, Bangkok, Thailand, 14 to 17 June 2016) and the Fourth Meeting of the Air Traffic Management Sub-Group of APANPIRG (ATM/SG/4, Bangkok, Thailand, 04 to 08 July 2016) relating to PBCS provisions in Annexes and PANS, and related ICAO guidance material, which became applicable from November 2016. APANPIRG/27 agreed *inter alia* to the following Conclusions:

> ***Conclusion APANPIRG/27/7: State Implementation of ICAO Provisions for PBCS***, urging States that apply or plan to apply performance-based separations using Required Navigation Performance (RNP) specifications RNP4 and RNP10/RNAV10 to implement ATM system capability for processing PBCS indicators in flight plans, and to apply common implementation dates for the use of these indicators supported by joint submission of Proposals for Amendment (PfAs) to SUPPS; and
>
> ***Conclusion APANPIRG/27/9: Asia/Pacific Region PBCS Transition Strategy***, endorsing the Asia/Pacific PBCS Transition Strategy (**Attachment A**)

RASMAG/22 Outcomes

2.2 RASMAG/22 (Bangkok, Thailand, 10 to 13 July 2017) noted that performance-based separation in airspace over the High Seas required enabling procedures in SUPPS, and that PfAs were required to ensure the SUPPS provided adequately for States implementing PBCS provisions of the Annexes and PANS in that airspace. RASMAG/22 agreed to the following technical Conclusion:

> ***Conclusion RASMAG/22-6: PBCS-related Procedures in ICAO Document 7030***
>
> *That, the templates for Proposals for Amendment to ICAO Document 7030 – Regional Supplementary Procedures at **RASMAG/22/WP03 Attachments D and E** be made available on the ICAO Asia/Pacific Regional Office website, for use by States or groups of States implementing horizontal separations dependent on Performance-Based Communications and Surveillance (PBCS).*

2.3 The templates were uploaded to the ICAO Asia/Pacific Regional Office eDocuments web-page (https://www.icao.int/APAC/Pages/edocs.aspx) in June 2017.

2.4 No State or group of States has submitted a PfA. In follow-up communications with relevant State experts, the ICAO Regional Office was requested by the Informal South Pacific ATS Coordination Group (ISPACG) to prepare and submit the necessary PfAs on behalf of APAC States. This request was not accompanied by a formal request from any State.

Requirement for PfA Submission

2.5 Amendments to Annex 6 and ICAO Doc 4444 – PANS-ATM applicable from November 2016 require the implementation of PBCS to support performance-based separation in airspace over the High Seas; thus the current SUPPS for performance-based separation are no longer valid. The time available for the ICAO Regional Office to further communicate the significance of this issue to APAC States, and for APAC States to prepare formal submission of PfAs is limited. Moreover, without the support of updated SUPPS the States that plan to implement PBCS by the APANPIRG/27 agreed date (not later than 29 March 2018) will not have the procedural support necessary to commence the process of AIP amendment to incorporate PBCS requirements.

2.6 In order to avoid as far as possible any further delay, it is necessary that ICAO APAC Office prepares and circulates PfAs to all APAC States, and then submits them on behalf of APAC States for consideration by the Council of ICAO. This action requires formal endorsement by APANPIRG.

PfAs to SUPPS MID/ASIA and PAC

2.7 Draft PfAs to SUPPS enabling performance-based separation that conforms with the applicable provisions of ICAO Annexes and PANS in airspace over the High Seas are provided in **Attachments B and C**. These PfAs are based on the templates approved by RASMAG/22, updated following consultation with ICAO Headquarters to refine the presentation of the information. The technical details as approved by RASMAG/22 are unchanged.

2.8 The procedures in the PfAs will be applicable to the same FIRs as the now redundant procedures relating to performance-based separations currently in SUPPS, namely:

- SUPPS PAC;
- Anchorage Oceanic, Auckland Oceanic, Nadi, Oakland Oceanic and Tahiti FIRs;
- SUPPS MID/ASIA; and
- Auckland Oceanic, Brisbane, Fukuoka, Honiara, Melbourne, Nauru, New Zealand and Port Moresby FIRs.

2.9 Other States that plan to implement performance based separations requiring PBCS, whether over the high seas or over territorial airspace, and States that may have implemented performance-based separations without having specific procedural support for their FIRs identified in SUPPs, are invited to nominate their FIR/s for inclusion in the relevant PfA.

2.10 The PfA for the MID/ASIA Region will be coordinated with the ICAO EUR and MID Regional Offices. However, no EUR or MID FIRs will be specifically identified in the PfA.

2.11 The meeting is invited to consider the following Draft Conclusion:

<table>
<tr><td colspan="3">Draft Conclusion APANPIRG/28/X: PBCS-Related Proposals for Amendment to Regional Supplementary Procedure</td></tr>
<tr><td colspan="2">What: That, ICAO Asia/Pacific Regional Office is requested to circulate to States and then submit for consideration by the Council of ICAO the Proposals for Amendment to Regional Supplementary Procedures MID/ASIA and PAC provided in APANPIRG/28 WP/9 Attachments B and C.</td><td>Expected impact:
☐ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: To ensure that Regional Supplementary Procedures conform with the performance-based separation provisions of ICAO Annexes and PANS, and to provide procedural support for States that have implemented or plan to implement performance-based separation in airspace over the High Seas.</td><td colspan="2">Follow-up: ☒Required from States</td></tr>
<tr><td>When: 14-Sep-17</td><td colspan="2">Status: Draft to be adopted by APANPIRG</td></tr>
<tr><td colspan="3">Who: ☐Sub groups ☐APAC States ☒ICAO APAC RO ☐ICAO HQ ☒ Other: APANPIRG</td></tr>
</table>

2.12 The meeting should note that the process of circulating the PfAs to States provides the opportunity for States to register any objections. In the event of an objection being received, the FIRs of State concerned will be removed from the list of FIRs in the PfA before submission for approval by the Council of ICAO.

3. ACTION BY THE MEETING

3.1 The Meeting is invited to:

a) note the information in this paper;

b) nominate any additional FIR/s for inclusion in the PfAs;

c) agree to the Draft Conclusion proposed; and

d) discuss any relevant matters as appropriate.

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PERFORMANCE-BASED COMMUNICATION AND SURVEILLANCE (PBCS) IMPLEMENTATION STRATEGY FOR THE ASIA/PACIFIC (APAC) REGIONS

Considering that:

1. The ICAO Provisions for PBCS including new Standards and Recommended Practices (SARPS) and related guidance material are applicable from 10 November 2016;

2. State policies and procedures enabling aircraft operators to file Required Communication Performance (RCP) and Required Surveillance Performance (RSP) designators in flight plans are not likely to be promulgated and implemented by the applicable date;

3. Some Asia/Pacific Region States providing Required Navigation Performance (RNP)-based horizontal separation minima requiring the use of Controller-Pilot Data Link Communications (CPDLC) and Automatic Dependent Surveillance – Contract (ADS-C) are not likely to be ready to implement separation minima based on PBCS designators in flight plans by the applicable date;

4. Some States outside the APAC Regions may require the filing of PBCS designators in flight plans for the provision of 50 NM and 30 NM longitudinal and 23 NM (formerly 30 NM) lateral separation minima on or soon after the applicability date of the PBCS provisions;

5. Area Navigation (RNAV) and Required Navigation Performance (RNP)-based 50 NM and 30NM longitudinal 30NM lateral separation minima are currently being applied in some APAC Region FIRs, normally between a relatively small proportion of eligible aircraft pairs;

6. RNAV and RNP-based horizontal separation minima should already be supported by data link performance monitoring in accordance with Annex 11 requirements;

7. RASMAG has noted that horizontal PBN separation standards (30NM and 50NM) have consistently met Target Level of Safety for many years; and

8. ATM automation systems should, as a minimum, currently be configured to accept without processing PBCS indicators in received flight plans[i].

The APAC Regional PBCS Implementation Strategy is as follows:

1. States are urged to take appropriate measures to develop, establish, implement and promulgate, through advisory circular or other relevant State instruments, necessary policies and procedures to enable operators conducting flights in airspace where separations are dependent on Performance-Based Communication and Surveillance (PBCS) to start using required communication performance (RCP) / required surveillance performance (RSP) indicators in the flight plan as soon as possible.

   This should take into account:

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

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

2. The application of existing and planned RNAV and RNP-based 50 NM and 30NM longitudinal and 30NM lateral separation minima should continue, subject to the conditions that:

   a. PBCS monitoring is in place; and

   b. Performance-based horizontal separation using PBCS designators in flight plans is implemented as soon as practically possible;

3. Common implementation dates are applied by States using PBCS indicators to establish performance-based separation in adjacent airspace, supported by joint submission of Proposals for Amendment (PfA) to ICAO Doc 7030 – Regional Supplementary Procedures; and

4. States that apply or plan to apply 30 NM and/or 50 NM longitudinal separation minima and/or 30 NM or 23 NM lateral separation minimum are urged to implement the ATM system capability to process and use ICAO PBCS flight plan indicators to determine aircraft eligibility for performance-based horizontal separation by **not later than 29 March 2018**; and

5. States applying performance-based horizontal separation minima, whether RNAV/RNP or PBCS based, should report their implementation status to the FANS-Interoperability Team – Asia (FIT-Asia) at least once annually, and upon any change of implementation status[ii].

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[i] As described in the *Asia/Pacific Guidance Material for the Implementation of Amendment 1 to the 15th Edition of the Procedures for Air Navigation Services – Air Traffic Management (PANS-ATM, Doc 4444)*.

[ii] Reporting form to be developed and distributed by the FIT-Asia Secretary.

DRAFT

PROPOSAL FOR AMENDMENT OF THE REGIONAL SUPPLEMENTARY PROCEDURES MIDDLE EAST/ASIA (MID/ASIA) REGION (Doc. 7030/5)

a) Regional Supplementary Procedures:

MID/ASIA

b) Proposed by:

APANPIRG

c) Proposed amendment:

Editorial Note: Amendments are arranged to show deleted text using strikeout (~~text to be deleted~~), and added text with grey shading (text to be inserted).

Glossary

…

RCP	required communication performance
RSP	required surveillance performance
PBC	performance-based communication
PBCS	performance-based communication and surveillance
PBN	performance-based navigation
PBS	performance-based surveillance

…

Chapter 2. FLIGHT PLANS

2.1 CONTENT – GENERAL
(A2 – Chapter 3; P-ATM – Chapter 4 and Appendix 2)

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2.1.5 Required communication performance (RCP) specifications

2.1.5.1 From 29 March 2018, all aircraft authorized for performance-based communication (PBC) and planning to operate in the MID/ASIA Region shall insert the appropriate descriptor(s) in Item 10a of the flight plan to indicate the compliance with the relevant required communication performance (RCP) specification(s).

2.1.6 Required surveillance performance (RSP) specifications

2.1.6.1 From 29 March 2019, all aircraft authorized for performance-based surveillance (PBS) and planning to operate in the MID/ASIA Region shall insert relevant required surveillance performance (RSP) specification(s) (e.g. RSP 180) in Item 18 of the flight plan following the SUR/ indicator.

2.1.6 Required surveillance performance (RSP) specifications

2.1.6.1 From 29 March 2019, all aircraft authorized for performance-based surveillance (PBS) and planning to operate

2.1.~~5~~7 Reduced vertical separation minimum (RVSM)-approved aircraft

2.1.~~5~~7.1 the aircraft registration shall be inserted in item 18 of the flight plan.

Editorial Note. — All remaining paragraphs in Chapter 2 are renumbered accordingly.

2.1.~~14~~16 Controller-pilot data link communications (CPDLC)

2.1.14.1 All aircraft planning to operate in the MID/ASIA Region and intending to use controller-pilot data link communications (CPDLC) shall insert the appropriate descriptor(s); (J2, J3, J4, J5, J6 and/or J7) in Item 10a of the flight plan.

2.1.17 Automatic dependent surveillance –contract (ADS-C)

2.1.16.1 All aircraft planning to operate in the MID/ASIA Region and intending to use automatic dependent surveillance — contract (ADS-C) services shall insert the D1 descriptor in Item 10b of the flight plan.

Chapter 3. COMMUNICATIONS

3.1 PERFORMANCE BASED COMMUNICATIONS (PBC)

(A6, Part I – Chapter 7; A6, Part II – Chapter 2.5; A6, Part III, Sections II and III – Chapter 5; A11 – Chapters 2, 3 and 6; A15 – Chapter 7, P-ATM – Chapters 4 and 5, and Appendix 2)

Note.— Additional guidance can be found in the ICAO Performance-based Communication and Surveillance (PBCS) Manual (Doc 9869).

3.1.1 Required communication performance (RCP) Specifications

3.1.1.1 RCP 240

3.1.1.1.1 RCP 240 is applicable to communication systems used to support the separation minima specified in 6.2.1.3 and 6.2.2.

Note. As of 29 March 2018, the separation minima specified in 6.2.1.3 and 6.2.2 will be applied in portions of the MID/ASIA Region, as notified in State AIPs.

Means of compliance

3.1.1.1.2 The aircraft operator shall:

a) implement provisions for receiving the reports of observed performance and taking corrective actions for aircraft identified as not complying with RCP specification (s); and

b) be authorized by the State of the Operator or the State of Registry, as appropriate, in order to qualify for the separation minima specified in 6.2.1.3 and 6.2.2.

3.1.1.1.3 The air navigation services providers (ANSPs) shall:

a) ensure that the communication system satisfies RCP 240 when applying the separation minima specified in 6.2.1.3 and 6.2.2;

b) establish PBCS monitoring programmes; and

c) apply the appropriate flight plan designator to determine aircraft eligibility for the application of relevant separation minima.

Editorial Note. — All remaining paragraphs in Chapter 2 are renumbered accordingly.

3.~~3~~4 CONTROLLER-PILOT DATA LINK COMMUNICATIONS (CPDLC)

Nil.

Editorial Note.— All remaining paragraphs in Chapter 3 are renumbered accordingly.

Editorial Note.— Chapter 4 is included for reference and consequential amendments resulting from PBCS Pfa.

Chapter 4. NAVIGATION

4.1 PERFORMANCE-BASED NAVIGATION (PBN)

Note.— As the Middle East/Asia (MID/ASIA) Region transitions to PBN as contained in the Performance-based Navigation Mid(PBN) Manual (Doc 9613), the contents of 4.1 will be amended.

4.1.1 Area navigation (RNAV) specifications

4.1.1.1 RNAV 10 (RNP 10)

Note.— RNAV 10 retains the RNP 10 designation, as specified in the Performance-based Navigation (PBN) Manual (Doc 9613~~)~~, 1.2.3.5.

4.1.1.1.1 The RNAV 10 (RNP 10) specification shall be applicable to navigation systems used to support the separation minima specified in 6.2.1 and 6.2.2.

~~4.1.1.1.1 For flights on designated controlled oceanic routes or areas within the Auckland Oceanic, Brisbane, Fukuoka, Ho Chi Minh, Hong Kong, Honiara, Kuala Lumpur, Melbourne, Nauru, New Zealand Port Moresby, Sanya and Singapore FIRs, a lateral separation minimum of 93 km (50 NM) may be applied.~~

~~4.1.1.1.2 For flights on designated controlled oceanic routes or areas within the Auckland Oceanic, Brisbane, Fukuoka, Ho Chi Minh, Hong Kong, Honiara, Kuala Lumpur, Melbourne, Nauru, New Zealand Port Moresby, Sanya and Singapore FIRs, a longitudinal separation minimum of 93 km (50 NM) derived by RNAV may be applied between RNAV-equipped aircraft approved to RNP 10 or better, in accordance with the provisions of the PANS-ATM, 5.4.2.6.~~

Means of compliance

4.1.1.1.~~3~~2 For application of 4.1.1.1.1 and 4.1.1.1.2, the aircraft and the operator must have been approved by the State of Registry or the State of the Operator, as appropriate, to meet the following requirements (or equivalent):

a) aircraft navigation performance shall be such that the standard deviation of lateral tracks shall be less than 8.7 km (4.7 NM) (or the aircraft approved to RNP 10); and
b) operator programmes shall be established to mitigate the occurrence of large navigational errors due to equipment malfunction or operational error:

   1) operator in-flight operating drills shall include mandatory navigation cross-checking procedures to identify navigation errors in sufficient time to prevent aircraft from inadvertent deviation from ATC-cleared route; and

   2) the operator shall establish programmes to provide for the continued airworthiness of aircraft navigation systems necessary to navigate to the degree of accuracy required.

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4.1.2 Required navigation performance (RNP) specifications

4.1.2.1 RNP 4

4.1.2.1.1 The RNP 4 specification is applicable to navigation systems used to support the separation minima specified in 6.2.1 and 6.2.2.

~~4.1.2.1.1 For flights on designated controlled oceanic routes or areas within the Auckland Oceanic, Brisbane, Fukuoka, Honiara, Melbourne, Nauru, New Zealand and Port Moresby FIRs, a lateral separation minimum of 55.5 km (30 NM) may be applied.~~

~~4.1.2.1.2 For flights on designated controlled oceanic routes or areas within the Auckland Oceanic, Brisbane, Fukuoka, Honiara, Melbourne, Nauru, New Zealand and Port Moresby FIRs, a longitudinal separation minimum of 55.5 km (30 NM) derived by RNAV may be applied between RNAV-equipped aircraft approved to RNP 4 or better, in accordance with the provisions of the PANS-ATM, 5.4.2.6.~~

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Chapter 5. SURVEILLANCE

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5.1 PERFORMANCE-BASED SURVEILLANCE (PBS)

(A6, Part I – Chapter 7; A6, Part II – Chapter 2.5; A6, Part III, Sections II and III – Chapter 5; A11 – Chapters 2, 3 and 6; A15 – Chapter 7, P-ATM – Chapters 4 and 5, and Appendix 2)

Note.— Additional guidance can be found in the ICAO Performance-based Communication and Surveillance (PBCS) Manual (Doc 9869).

5.1.1 Required surveillance performance (RSP) specifications

5.1.1.2 RSP 180

5.1.1.2.1 RSP 180 is applicable to surveillance systems used to support the separation minima specified in 6.2.1.3 and 6.2.2.

Note. As of 29 March 2018, the separation minima specified in 6.2.1 and 6.2.2 will be applied in portions of the MID/Asia Region, as notified in State AIPs.

Means of compliance

5.1.1.2.3 The aircraft operator shall:

a) implement provisions for receiving the reports of observed performance and taking corrective actions for aircraft identified as not complying with RSP specification(s); and

b) be authorized by the State of the Operator or the State of Registry, as appropriate, in order to qualify for the separation minima specified in 6.2.1.3 and 6.2.2.

5.1.1.2.3 The air navigation services providers (ANSP) shall:

a) ensure that the communication system satisfies RSP 180 when applying the separation minima specified in 6.2.1 and 6.2.2;

b) establish PBCS monitoring programmes; and

c) apply the appropriate flight plan designator to determine aircraft eligibility for application of relevant separation minima.

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Editorial Note.— All remaining paragraphs in Chapter 5 are renumbered accordingly.

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Chapter 6. AIR TRAFFIC SERVICES

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6.2 SEPARATION

6.2.1 Lateral

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6.2.1.3 The minimum lateral separation shall be 93 km (50 NM) between aircraft meeting ~~the provisions in~~ RNAV 10 (RNP 10) or RNP 4 in accordance with 4.1.1.1 on designated controlled oceanic routes or areas within the Auckland Oceanic, Brisbane, Fukuoka, Honiara, Kuala Lumpur, Melbourne, Nauru, New Zealand, Port Moresby, Sanya and Singapore FIRs.

6.2.1.4 The minimum lateral separation shall be 42.6 km (23 NM) between aircraft meeting ~~the provisions in 4.1.2.1, provided~~ on designated controlled oceanic routes or areas within the Auckland Oceanic, Brisbane, Fukuoka, Honiara, Melbourne, Nauru, New Zealand, and Port Moresby FIRs. This minimum is applied in accordance with 5.4.1.2.1.6 b) of PANS-ATM and provided that the following conditions are met:

~~a) the aircraft are approved by the State of Registry or the State of the Operator to RNP4;~~

~~b) direct controller-pilot voice communications or controller-pilot data link communications (CPDLC) are maintained;~~

~~c) surveillance is maintained using an automatic dependent surveillance (ADS) system;~~

~~d) an ADS lateral deviation change event contract is established, with a lateral deviation threshold of 9.3 km (5 NM).~~

a) communication – CPDLC RCP 240 per para. 3.1.1.2;

b) navigation – RNP 4, per para. 4.1.1 and 4.1.2;

c) surveillance – ADS-C RSP 180 per para. 5.1.1.2.

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6.2.2 Longitudinal

(P-ATM – Chapters 5 and 13)

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6.2.2.2 The minimum longitudinal separation shall be 93 km (50 NM) ~~derived by RNAV between aircraft meeting the provisions in 4.1.1.1~~ between aircraft on designated controlled oceanic routes or areas within the Auckland Oceanic, Brisbane, Fukuoka, Ho Chi Minh, Hong Kong, Honiara, Kuala Lumpur, Melbourne, Nauru, New Zealand, Port Moresby, Sanya and Singapore FIRs. This minimum is applied in accordance with 5.4.2.9 of PANS-ATM and provided the following conditions are met:

a) communication – CPDLC RCP 240 per para. 3.1.1.2;

b) navigation – RNAV 10 (RNP 10) or RNP 4 per para. 4.1.1 and 4.1.2;

c) surveillance – ADS-C RSP 180 per para. 5.1.1.2.

6.2.2.3 The minimum longitudinal separation shall be 55.5 km (30 NM) between aircraft ~~meeting the provisions in 4.1.2.1~~ on designated controlled oceanic routes or areas within the Auckland Oceanic, Brisbane, Fukuoka, Honiara, Melbourne, Nauru, New Zealand and Port Moresby FIRs. This minimum is applied in accordance with 5.4.2.9 of PANS-ATM and provided the following conditions are met:

a) communication – CPDLC RCP 240 per para. 3.1.1.2;

b) navigation – RNP 4 per para. 4.1.2;

c) surveillance – ADS-C RSP 180 per para. 5.1.1.2.

~~*Note.- ADS is required for the application of this minimum; therefore, the applicable provisions will be those of PANS-ATM, 5.4.2.6.1 to 5.4.2.6.3 and 5.4.2.6.4*~~.

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Chapter 7. SAFETY MONITORING

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7.2 AIRSPACE MONITORING

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7.2.4 PBCS

7.2.4.1 Adequate monitoring shall be conducted to assess continuing compliance of the communication and surveillance systems with the prescribed RCP and/or RSP specifications.

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Editorial Note.— All remaining paragraphs in Chapter 7 are renumbered accordingly.

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-END-

DRAFT

PROPOSAL FOR AMENDMENT OF THE REGIONAL SUPPLEMENTARY PROCEDURES PACIFIC (PAC) REGION (Doc. 7030/5)

a) Regional Supplementary Procedures:

PAC

b) Proposed by:

APANPIRG

c) Proposed amendment:

Editorial Note: Amendments are arranged to show deleted text using strikeout (~~text to be deleted~~), and added text with grey shading (text to be inserted).

Glossary

…

RCP	required communication performance
RSP	required surveillance performance
PBC	performance-based communication
PBCS	performance-based communication and surveillance
PBN	performance-based navigation
PBS	performance-based surveillance

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Chapter 2. FLIGHT PLANS

2.1 CONTENT – GENERAL
(A2 – Chapter 3; P-ATM – Chapter 4 and Appendix 2)

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2.1.5 Required communication performance (RCP) specifications

2.1.5.1 From 29 March 2018, all aircraft authorized for performance-based communication (PBC) and planning to operate in the PAC Region shall insert the appropriate descriptor(s) in Item 10a of the flight plan to indicate the compliance with the relevant required communication performance (RCP) specification(s).

2.1.6 Required surveillance performance (RSP) specifications

2.1.6.1 From 29 March 2019, all aircraft authorized for performance-based surveillance (PBS) and planning to operate in the PAC Region shall insert relevant required surveillance performance (RSP) specification(s) (e.g. RSP 180) in Item 18 of the flight plan following the SUR/ indicator.

2.1.6 Required surveillance performance (RSP) specifications

2.1.6.1 From 29 March 2019, all aircraft authorized for performance-based surveillance (PBS) and planning to operate

2.1.~~5~~7 Reduced vertical separation minimum (RVSM)-approved aircraft

2.1.~~5~~7.1 the aircraft registration shall be inserted in item 18 of the flight plan.

Editorial Note. — All remaining paragraphs in Chapter 2 are renumbered accordingly.

2.1.~~14~~16 Controller-pilot data link communications (CPDLC)

2.1.14.1 All aircraft planning to operate in the PAC Region and intending to use controller-pilot data link communications (CPDLC) shall insert the appropriate descriptor(s); (J2, J3, J4, J5, J6 and/or J7) in Item 10a of the flight plan.

2.1.17 Automatic dependent surveillance –contract (ADS-C)

2.1.16.1 All aircraft planning to operate in the PAC Region and intending to use automatic dependent surveillance — contract (ADS-C) services shall insert the D1 descriptor in Item 10b of the flight plan.

Chapter 3. COMMUNICATIONS

3.1 PERFORMANCE BASED COMMUNICATIONS (PBC)

(A6, Part I – Chapter 7; A6, Part II – Chapter 2.5; A6, Part III, Sections II and III – Chapter 5; A11 – Chapters 2, 3 and 6; A15 – Chapter 7, P-ATM – Chapters 4 and 5, and Appendix 2)

Note.— Additional guidance can be found in the ICAO Performance-based Communication and Surveillance (PBCS) Manual (Doc 9869).

3.1.1 Required communication performance (RCP) Specifications

3.1.1.1 RCP 240

3.1.1.1.1 RCP 240 is applicable to communication systems used to support the separation minima specified in 6.2.1.3 and 6.2.2.

Note. As of 29 March 2018, the separation minima specified in 6.2.1.3 and 6.2.2 will be applied in portions of the PAC Region, as notified in State AIPs.

Means of compliance

3.1.1.1.2 The aircraft operator shall:

a) implement provisions for receiving the reports of observed performance and taking corrective actions for aircraft identified as not complying with RCP specification (s); and

b) be authorized by the State of the Operator or the State of Registry, as appropriate, in order to qualify for the separation minima specified in 6.2.1.3 and 6.2.2.

3.1.1.1.3 The air navigation services providers (ANSPs) shall:

a) ensure that the communication system satisfies RCP 240 when applying the separation minima specified in 6.2.1.3 and 6.2.2;

b) establish PBCS monitoring programmes; and

c) apply the appropriate flight plan designator to determine aircraft eligibility for the application of relevant separation minima.

Editorial Note. — All remaining paragraphs in Chapter 2 are renumbered accordingly.

3.~~3~~4 CONTROLLER-PILOT DATA LINK COMMUNICATIONS (CPDLC)

Nil.

Editorial Note.— All remaining paragraphs in Chapter 3 are renumbered accordingly.

Editorial Note.— Chapter 4 is included for reference and consequential amendments resulting from PBCS Pfa.

Chapter 4. NAVIGATION

4.1 PERFORMANCE-BASED NAVIGATION (PBN)

Note.— As the Pacific (PAC) Region transitions to PBN as contained in the Performance-based Navigation (PBN) Manual (Doc 9613), the contents of 4.1 will be amended.

4.1.1 Area navigation (RNAV) specifications

4.1.1.1 RNAV 10 (RNP 10)

Note.— RNAV 10 retains the RNP 10 designation, as specified in the Performance-based Navigation (PBN) Manual (Doc 9613~~)~~, 1.2.3.5.

4.1.1.1.1 The RNAV 10 (RNP 10) specification shall be applicable to navigation systems used to support the separation minima specified in 6.2.1 and 6.2.2.

~~4.1.1.1.1 For flights on designated controlled oceanic routes or areas within the Anchorage Oceanic, Auckland Oceanic, Nadi, Oakland Oceanic and Tahiti FIRs, a lateral separation minimum of 93 km (50 NM) may be applied.~~

~~4.1.1.1.2 For flights on designated controlled oceanic routes or areas within the Anchorage Arctic, Anchorage Continental, Anchorage Oceanic, Auckland Oceanic, Nadi, Oakland Oceanic and Tahiti FIRs, a longitudinal separation minimum of 93 km (50 NM) derived by RNAV may be applied between RNAV-equipped aircraft approved to RNP 10 or better, in accordance with the provisions of the PANS-ATM, 5.4.2.6.~~

Means of compliance

4.1.1.1.~~3~~2 For application of 4.1.1.1.1 and 4.1.1.1.2, the aircraft and the operator must have been approved by the State of Registry or the State of the Operator, as appropriate, to meet the following requirements (or equivalent):

a) aircraft navigation performance shall be such that the standard deviation of lateral tracks shall be less than 8.7 km (4.7 NM) (or the aircraft approved to RNP 10); and
b) operator programmes shall be established to mitigate the occurrence of large navigational errors due to equipment malfunction or operational error:

   1) operator in-flight operating drills shall include mandatory navigation cross-checking procedures to identify navigation errors in sufficient time to prevent aircraft from inadvertent deviation from ATC-cleared route; and

   2) the operator shall establish programmes to provide for the continued airworthiness of aircraft navigation systems necessary to navigate to the degree of accuracy required.

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4.1.2 Required navigation performance (RNP) specifications

4.1.2.1 RNP 4

4.1.2.1.1 The RNP 4 specification is applicable to navigation systems used to support the separation minima specified in 6.2.1 and 6.2.2.

~~4.1.2.1.1 For flights on designated controlled oceanic routes or areas within the Anchorage Arctic, Anchorage Continental, Anchorage Oceanic, Auckland Oceanic, Nadi, Oakland Oceanic and Tahiti FIRs, a lateral separation minimum of 55.5 km (30 NM) may be applied.~~

~~4.1.2.1.2 For flights on designated controlled oceanic routes or areas within the Anchorage Arctic, Anchorage Continental, Anchorage Oceanic, Auckland Oceanic, Nadi, Oakland Oceanic and Tahiti FIRs, a longitudinal separation minimum of 55.5 km (30 NM) derived by RNAV may be applied between RNAV-equipped aircraft approved to RNP 4 or better, in accordance with the provisions of the PANS-ATM, 5.4.2.6.~~

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Chapter 5. SURVEILLANCE

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5.1 PERFORMANCE-BASED SURVEILLANCE (PBS)

(A6, Part I – Chapter 7; A6, Part II – Chapter 2.5; A6, Part III, Sections II and III – Chapter 5; A11 – Chapters 2, 3 and 6; A15 – Chapter 7, P-ATM – Chapters 4 and 5, and Appendix 2)

Note.— Additional guidance can be found in the ICAO Performance-based Communication and Surveillance (PBCS) Manual (Doc 9869).

5.1.1 Required surveillance performance (RSP) specifications

5.1.1.2 RSP 180

5.1.1.2.1 RSP 180 is applicable to surveillance systems used to support the separation minima specified in 6.2.1.3 and 6.2.2.

Note. As of 29 March 2018, the separation minima specified in 6.2.1 and 6.2.2 will be applied in portions of the PAC Region, as notified in State AIPs.

Means of compliance

5.1.1.2.3 The aircraft operator shall:

a) implement provisions for receiving the reports of observed performance and taking corrective actions for aircraft identified as not complying with RSP specification(s); and

b) be authorized by the State of the Operator or the State of Registry, as appropriate, in order to qualify for the separation minima specified in 6.2.1.3 and 6.2.2.

5.1.1.2.3 The air navigation services providers (ANSP) shall:

a) ensure that the communication system satisfies RSP 180 when applying the separation minima specified in 6.2.1 and 6.2.2;

b) establish PBCS monitoring programmes; and

c) apply the appropriate flight plan designator to determine aircraft eligibility for application of relevant separation minima.

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Editorial Note.— All remaining paragraphs in Chapter 5 are renumbered accordingly.

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Chapter 6. AIR TRAFFIC SERVICES

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6.2 SEPARATION

6.2.1 Lateral

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6.2.1.3 The minimum lateral separation shall be 93 km (50 NM) between aircraft meeting ~~the provisions in~~ RNAV 10 (RNP 10) or RNP 4 in accordance with 4.1.1.1 on designated controlled oceanic routes or areas within the, Anchorage Oceanic, Auckland Oceanic, Nadi, Oakland Oceanic and Tahiti FIRs.

6.2.1.4 The minimum lateral separation shall be 42.6 km (23 NM) between aircraft meeting ~~the provisions in 4.1.2.1, provided~~ on designated controlled oceanic routes or areas within the Anchorage Oceanic, Auckland Oceanic, Nadi, Oakland Oceanic and Tahiti FIRs. This minimum is applied in accordance with 5.4.1.2.1.6 b) of PANS-ATM and provided that the following conditions are met:

~~a) the aircraft are approved by the State of Registry or the State of the Operator to RNP4;~~

~~b) direct controller-pilot voice communications or controller-pilot data link communications (CPDLC) are maintained;~~

~~c) surveillance is maintained using an automatic dependent surveillance (ADS) system;~~

~~d) an ADS lateral deviation change event contract is established, with a lateral deviation threshold of 9.3 km (5 NM).~~

a) communication – CPDLC RCP 240 per para. 3.1.1.2;

b) navigation – RNP 4 per para. 4.1.1 and 4.1.2;

c) surveillance – ADS-C RSP 180 per para. 5.1.1.2.

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6.2.2 Longitudinal

(P-ATM – Chapters 5 and 13)

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6.2.2.2 The minimum longitudinal separation shall be 93 km (50 NM) ~~derived by RNAV between aircraft meeting the provisions in 4.1.1.1~~ between aircraft on designated controlled oceanic routes or areas within the Anchorage Oceanic, Auckland Oceanic, Nadi, Oakland Oceanic and Tahiti FIRs This minimum is applied in accordance with 5.4.2.9 of PANS-ATM and provided the following conditions are met:

a) communication – CPDLC RCP 240 per para. 3.1.1.2;

b) navigation – RNAV 10 (RNP 10) or RNP 4 per para. 4.1.1 and 4.1.2;

c) surveillance – ADS-C RSP 180 per para. 5.1.1.2.

6.2.2.3 The minimum longitudinal separation shall be 55.5 km (30NM) between aircraft ~~meeting the provisions in 4.1.2.1~~ on designated controlled oceanic routes or areas within the Anchorage Oceanic, Auckland Oceanic, Nadi, Oakland Oceanic and Tahiti FIRs This minimum is applied in accordance with 5.4.2.9 of PANS-ATM and provided the following conditions are met:

a) communication – CPDLC RCP 240 per para. 3.1.1.2;

b) navigation – RNP 4 per para. 4.1.2;

c) surveillance – ADS-C RSP 180 per para. 5.1.1.2.

~~*Note. ADS is required for the application of this minimum; therefore, the applicable provisions will be those of PANS-ATM, 5.4.2.6.1 to 5.4.2.6.3 and 5.4.2.6.4*~~.

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Chapter 7. SAFETY MONITORING

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7.2 AIRSPACE MONITORING

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7.2.4 PBCS

7.2.4.1 Adequate monitoring shall be conducted to assess continuing compliance of the communication and surveillance systems with the prescribed RCP and/or RSP specifications.

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Editorial Note.— All remaining paragraphs in Chapter 7 are renumbered accordingly.

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