



International Civil Aviation Organization

The Third Meeting of the Future Air Navigation Systems Interoperability Team-Asia (FIT-Asia/3)

Pattaya, Thailand, 26-27 May 2014

Agenda Item 6: Any Other Business

**REGIONAL SUPPLEMENTARY PROCEDURES AMENDMENT TO SUPPORT
ADS-C/CPDLC MANDATES**

(Presented by the Secretariat)

SUMMARY

This paper presents a Proposal for Amendment to Regional Supplementary Procedures (ICAO Doc 7030) to support State mandates for ADS-C and CPDLC equipage in aircraft operating outside territorial airspace, within the area of responsibility of the State.

1. INTRODUCTION

1.1 The ICAO Regional Supplementary Procedures (SUPPS) form the procedural part of the Air Navigation Plans developed by Regional Air Navigation (RAN) Meetings to meet those needs of specific areas which are not covered in either the Annexes to the Convention on Civil Aviation or the Procedures for Air Navigation Services (PANS). The RAN Meeting function for the Asia/Pacific Region is carried out by the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG).

1.2 SUPPS approved by the Council of ICAO are recommended to Contracting States for application in the Flight Information Regions (FIRs) to which they are relevant.

1.3 APANPIRG has adopted Conclusions supporting mandates for the carriage and use of ADS-C and CPDLC equipment within portions of airspace within their area of responsibility, and priority for access to such airspace.

2. DISCUSSION

2.1 The following Conclusion concerning ADS-C and CPCLC was adopted by APANPIRG:

Conclusion 23/5 – Asia/Pacific Air Navigation Concept of Operations Mandates

That, States intending to implement Performance-Based Navigation and Safety Nets may, after appropriate consultation with airspace users, designate portions of airspace within their area of responsibility:

- a) as providing priority for access to such airspace for aircraft with prescribed Performance-Based Navigation (PBN) specifications and supporting data-link equipage (ADS-C/CPDLC); and/or*

b) mandating the carriage and use of an operable Automatic Dependent Surveillance-Contract/Controller Pilot Data-link Communications Systems (ADS-C/CPDLC) system, and mode A/C and/or mode S transponder.

2.2 Proposals for Amendment (PfA) to *Regional Supplementary Procedures ICAO Doc 7030/5* have been drafted by the ICAO Asia/Pacific Regional Office (Serial Nos. APAC-S 14/07 and 14/09 – MID/ASIA/PAC). The PfAs include amendments relating to mandates for CPDLC (14/07) and ADS-B, ADS-C, ACAS II and Mode S SSR transponders (14/09), to provide a framework for Asia/Pacific States to establish performance-based airspace by enabling States to promulgate equipage mandates in airspace over the High Seas. A parallel PfA relating to Performance-Based Navigation (PBN) has also been drafted). The PfAs are intended to encourage a regional approach to the establishment of such mandates, where it is appropriate to do so. The proposals recognize that unlike the cases of Europe, the North Atlantic or North America it is not practical for the Asia/Pacific Region to establish Sub-Regional or Region-wide simultaneous mandates.

2.3 The proposed amendments are in accordance with the concept of Seamless ATM and performance-based approaches, the Aviation System Block Upgrade (ASBU) initiative and Global Air Traffic Management Operational Concept (ICAO Doc 9854).

2.4 The ADS-C-related excerpts from PfA 14/09 are provided at **Attachment A**. PfA 14/07 (CPDLC) is provided at **Attachment B**. The PfAs will be presented for agreement by the Second Meeting of the Air Traffic Management Sub-Group of APANPIRG (ATM/SG/2) in August 2013, and subsequent endorsement by APANPIRG.

2.5 Following endorsement by APANPIRG the PfAs will be submitted for Council approval in late October 2014.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper; and
- b) discuss and agree to the proposed amendments to Regional Supplementary Procedures for MID/ASIA and PAC regions as related to ADS-C and CPDLC mandates and detailed in **Attachments A and B**.

**Proposal for Amendment of
Regional Supplementary Procedures ICAO Doc 7030/5**
(Serial No. APAC-S 14/09 – MID/ASIA/PAC)

- a) **Regional Supplementary Procedures, Doc 7030/5:** MID/ASIA and PAC
- b) **Proposing State:** ICAO
- c) **Proposed Amendment:** 5. On page MID/ASIA 5-3 dated 30/11/07

5.4 Automatic Dependent Surveillance – Contract (ADS–C)

Insert the following text on 5.4.1:

5.4.1 Carriage and operation of ADS–C

5.4.1.1 All aircraft operating within the following FIRs shall carry and operate a serviceable ADS – C facility within designated portions of airspace and the conditions mandated by the State with responsibility for the FIR concerned: Auckland Oceanic, Bangkok, Beijing, Brisbane, Chennai, Colombo, Delhi, Dhaka, Fukuoka, Guangzhou, Hanoi, Ho Chi Minh, Honiara, Hong Kong, Incheon, Jakarta, Kabul, Karachi, Kathmandu, Kolkata, Kota Kinabalu, Kuala Lumpur, Kunming, Lahore, Lanzhou, Male, Manila, Melbourne, Mumbai, Nauru, Phnom Penh, Port Moresby, Pyongyang, Sanya, Shanghai, Shenyang, Singapore, Taibei, Ujung Pandang, Ulan Bator, Urumqi, Vientiane, Wuhan, Yangon.

5.4.1.2 The portions of airspace referred to in 5.4.1.1 may only be designated after the following actions had been undertaken:

- a) appropriate consultation with affected airspace users and affected Air Traffic Control (ATC) units;
- b) conduct of a safety case, which includes, *inter alia*, a human factors review and the integration of data into the ATC workstation;
- c) appropriate pilot and ATC training;
- d) the ability to provide an enhanced service delivery; and
- e) promulgation of the airspace mandate with appropriate notice, and in accordance with the provisions of Annex 15.

6. On page PAC 5-3 dated 30/11/07

5.4 Automatic Dependent Surveillance – Contract (ADS–C)

Insert the following text on 5.4.1:

5.4.1 Carriage and operation of ADS–C

5.4.1.1 All aircraft operating within the following FIRs shall carry and operate a serviceable ADS–C facility within designated portions of airspace and the conditions mandated by the State with responsibility for the FIR concerned: Anchorage Oceanic, Auckland Oceanic, Nadi, Tahiti.

5.4.1.2 The portions of airspace referred to in 5.4.1.1 may only be designated after the following actions had been undertaken:

- a) appropriate consultation with affected airspace users and affected Air Traffic Control (ATC) units;
- b) conduct of a safety case, which includes, *inter alia*, a human factors review and the integration of data into the ATC workstation;
- c) appropriate pilot and ATC training;
- d) the ability to provide an enhanced service delivery; and
- e) promulgation of the airspace mandate with appropriate notice, and in accordance with the provisions of Annex 15.

d) Proposers' Reasons for Amendment:

Since 2011, the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) has agreed to a number of Conclusions designed to facilitate the enhancement of Air Navigation Services (ANS) within performance-based airspace. In essence, APANPIRG endorsed the concept of airspace mandates to improve the safety and efficiency of airspace, as long as there was appropriate consultation and a performance benefit to airspace users. The development of the Seamless ATM Plan in 2013 was the main mechanism for States to improve ANS and airspace performance on a region-wide basis. The Conclusions are as follows:

APANPIRG/23 (2012)

Conclusion 23/5 – Asia/Pacific Air Navigation Concept of Operations Mandates

That, States intending to implement Performance-Based Navigation and Safety Nets may, after appropriate

consultation with airspace users, designate portions of airspace within their area of responsibility:

- a) as providing priority for access to such airspace for aircraft with prescribed Performance-Based Navigation (PBN) specifications and supporting data-link equipage (ADS-C/CPDLC); and/or
- b) mandating the carriage and use of an operable Automatic Dependent Surveillance-Contract/Controller Pilot Data-link Communications Systems (ADS-C/CPDLC) system, and mode A/C and/or mode S transponder.

While it is recognised that States may introduce restrictions and performance-based measures over their sovereign territory, mandates over the High Seas need to be implemented in line with regional air navigation agreements; in this case through APANPIRG. Thus it is necessary to introduce an amendment to the Regional Supplementary Procedures (ICAO Doc 7030) for Asia/Pacific FIRs that allows States to designate portions of performance-based airspace when they are able to provide the performance benefit and in accordance with aircraft equipage and capability.

The level of ANS capability and aircraft equipage varies throughout the Asia/Pacific, so it is intended that States will designate airspace when possible, in either exclusive or ‘non-exclusive’ (mixed mode with lower priority for non-equipped aircraft), as appropriate.

e) **Proposed Implementation Date of the Amendment:** Upon approval of the Council

f) **Proposal Circulated to the Following States and International Organizations:**

Afghanistan	Mongolia
Australia	Myanmar
Bangladesh	Nauru
Brunei Darussalam	New Zealand
Cambodia	Palau, Republic of
China	Papua New Guinea
(cc: Hong Kong, China)	Philippines
(cc: Macao, China)	Republic of Korea
Cook Islands	Samoa
Democratic People’s Republic of Korea	Singapore
Fiji	Solomon Islands
France	Sri Lanka
Indonesia	Thailand
Japan	Timor-Leste
Kiribati	Tonga
Lao People’s	United States
	Vanuatu

Democratic Republic Malaysia Maldives Marshall Islands Micronesia, Federated States of	Viet Nam IATA IFALPA IFATCA
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g) **Secretariat Comments:**

The amendment of Doc 7030 in respect of ADS-B, ADS-C, ACAS II and Mode S transponders, together with amendment proposals APAC-S 14/07 and 14/08 for MID/ASIA and PAC Regions, provides a framework for the state to establish performance based airspace, with consideration of such matters as existing and proposed airspace user equipages, mandate timing, definition of airspace volumes (both vertical and horizontal), exclusive or non-exclusive application, exemption provisions and management of State aircraft.

The amendment is specifically intended to enable States to promulgate airspace mandates over the High Seas, and to encourage a regional approach to the establishment of such mandates, where it is appropriate to do so and recognizing that it is not practical for the Asia/Pacific Region to establish Sub-Regional or Region-wide simultaneous mandates. This is in accordance with the concept of the Seamless ATM and performance-based approaches, as well as the Aviation System Block Upgrade (ASBU) initiative and Global Air Traffic Management Operational Concept (ICAO Doc 9854).

**Proposal for Amendment of
Regional Supplementary Procedures ICAO Doc 7030/3**
(Serial No. APAC-S 14/07 – MID/ASIA/PAC)

- a) **Regional Supplementary Procedures, Doc 7030/3:** MID/ASIA and PAC
- b) **Proposing State:** ICAO
- c) **Proposed Amendment:** 1. On page MID/ASIA 3-2 dated 25/08/09

Insert the following text on 3.3.1:

3.3 Controller-Pilot Data Link Communications (CPDLC)

3.3.1 All aircraft operating within the following FIRs shall carry and operate a serviceable CPDLC facility within designated portions of airspace and the conditions mandated by the State with responsibility for the FIR concerned: Auckland Oceanic, Bangkok, Beijing, Brisbane, Chennai, Colombo, Delhi, Dhaka, Fukuoka, Guangzhou, Hanoi, Ho Chi Minh, Honiara, Hong Kong, Incheon, Jakarta, Kabul, Karachi, Kathmandu, Kolkata, Kota Kinabalu, Kuala Lumpur, Kunming, Lahore, Lanzhou, Male, Manila, Melbourne, Mumbai, Nauru, Phnom Penh, Port Moresby, Pyongyang, Sanya, Shanghai, Shenyang, Singapore, Taipei, Ujung Pandang, Ulan Bator, Urumqi, Vientiane, Wuhan, Yangon.

3.3.2 The portions of airspace referred to in 3.3.1 may only be designated after the following actions had been undertaken:

- a) appropriate consultation with affected airspace users and affected Air Traffic Control (ATC) units;
- b) conduct of a safety case, which includes, *inter alia*, a human factors review and the integration of data into the ATC workstation;
- c) appropriate pilot and ATC training;
- d) the ability to provide an enhanced service delivery; and
- e) promulgation of the airspace mandate with appropriate notice, and in accordance with the provisions of Annex 15.

2. On page PAC 3-2 dated 30/11/07

Insert the following text on 3.3.1:

3.3 Controller-Pilot Data Link Communications (CPDLC)

3.3.1 All aircraft operating within the following FIRs shall carry and operate a serviceable CPDLC facility within designated portions of airspace and the conditions mandated by the State with responsibility for the FIR concerned: Anchorage Oceanic, Auckland Oceanic, Nadi, Tahiti.

3.3.2 The portions of airspace referred to in 3.3.1 may only be designated after the following actions had been undertaken:

a) appropriate consultation with affected airspace users and affected Air Traffic Control (ATC) units;

b) conduct of a safety case, which includes, *inter alia*, a human factors review and the integration of data into the ATC workstation;

c) appropriate pilot and ATC training;

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d) Proposers' Reasons for Amendment:

Since 2011, the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) has agreed to a number of Conclusions designed to facilitate the enhancement of Air Navigation Services (ANS) within performance-based airspace. In essence, APANPIRG endorsed the concept of airspace mandates to improve the safety and efficiency of airspace, as long as there was appropriate consultation and a performance benefit to airspace users. The development of the Seamless ATM Plan in 2013 was the main mechanism for States to improve ANS and airspace performance on a region-wide basis. The Conclusions are as follows:

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While it is recognised that States may introduce restrictions and performance-based measures over their sovereign territory, mandates over the High Seas need to be implemented in line with regional air navigation agreements; in this case through APANPIRG. Thus it is necessary to introduce an amendment to the Regional Supplementary Procedures (ICAO Doc 7030) for Asia/Pacific FIRs that allows States to designate portions of performance-based airspace when they are able to provide the performance benefit and in accordance with aircraft equipage and capability.

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	Australia	Myanmar
	Bangladesh	Nauru
	Brunei Darussalam	New Zealand
	Cambodia	Palau, Republic of
	China	Papua New Guinea
	(cc: Hong Kong, China)	Philippines
	(cc: Macao, China)	Republic of Korea
	Cook Islands	Samoa
	Democratic People’s Republic of Korea	Singapore
	Fiji	Solomon Islands
	France	Sri Lanka
	Indonesia	Thailand
	Japan	Timor-Leste
	Kiribati	Tonga
	Lao People’s Democratic Republic	United States
	Malaysia	Vanuatu
	Maldives	Viet Nam
	Marshall Islands	IATA
	Micronesia, Federated States of	IFALPA
	IFATCA	

g) Secretariat Comments:

This Doc 7030 amendment proposal in respect of CPDLC, together with amendment proposals APAC-S 14/08 and 14/09 for MID/ASIA and PAC Regions, provides a framework for the state to establish performance based airspace, with consideration of such matters as existing and proposed airspace user equipages, mandate timing, definition of airspace volumes (both vertical and horizontal), exclusive or non-exclusive application, exemption provisions and management of State aircraft.

The amendment is specifically intended to enable States to promulgate airspace mandates over the High Seas, and to encourage a regional approach to the establishment of such mandates, where it is appropriate to do so and recognizing that it is not practical for the Asia/Pacific Region to establish Sub-Regional or Region-wide simultaneous mandates. This is in accordance with the concept of the Seamless ATM and performance-based approaches, as well as the Aviation System Block Upgrade (ASBU) initiative and Global Air Traffic Management Operational Concept (ICAO Doc 9854).