



ICAO

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**Seventh Meeting of the Surveillance Implementation
Coordination Group (SURICG/7)**

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Agenda Item 5: Review of regional requirements for Surveillance in the e-ANP, Seamless ANS Plan and the reported implementation status

REVIEW OF REGIONAL SURVEILLANCE REQUIREMENTS IN ICAO APAC e-ANP AND SEAMLESS ANS PLAN

(Presented by the Secretariat)

SUMMARY

This paper consolidates Surveillance-related requirements specified in ICAO APAC e-ANP and Seamless ANS Plan (Version 3.0, November 2019). The meeting participants are invited to review the data affecting their administration and provide feedback to ICAO on the data's accuracy in requisite format to update the relevant requirements.

1. INTRODUCTION

1.1 ICAO Council approved the new e-ANP format on 18 June 2014. The Proposal for Amendment of APAC e-ANP Volume I and Volume II were prepared in accordance with the approved ANP template to replace the APAC Facilities and Services Implementation Document FASID ANP (Doc 9673).

1.2 The PfA to Vol. I was approved by the President of the Council on 24 February 2016. Consequently States were notified of the approval on 29 February 2016 (Ref.: T 11/2.1- AP034/16). The PfA for Vol. II was approved on 11 April 2016 in accordance with amendment procedure through State Letter Ref: T11/2.1 – AP051/16. The e-ANP containing Volume I, II, and III can be accessed at <http://www.icao.int/APAC/Pages/APAC-eANP.aspx>.

1.3 APANPIRG/30 in 2019 has reviewed and adopted the Asia/Pacific Seamless ANS Plan Version 3.0 as **APANPIRG Conclusion 30/5: Asia/Pacific Seamless ANS Plan**, which can be accessed by the following link: <https://www.icao.int/APAC/Documents/edocs/Asia%20Pacific%20Seamless%20ATM%20Plan%20V%203.0.pdf>

1.4 This paper reviews and consolidates the CNS requirements specified in the ICAO Regional e-ANP and the ICAO APAC Seamless ANS Plan (Version 3.0, November 2019).

2. DISCUSSION

2.1 Regional e-ANP and its Surveillance-related Requirements

e-ANP Volume I

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2.1.1 e-ANP Volume I **Part III CNS** constitutes the agreed **regional requirements** considered to be the minimum necessary for effective planning and implementation of CNS facilities and services in the Asia and Pacific Region and complements the provisions of ICAO SARPs related to CNS. It contains **stable** plan elements related to the assignment of responsibilities to States for the provision of CNS facilities and services within the ICAO Asia and Pacific Regions in accordance with Article 28 of the Convention on International Civil Aviation (Doc 7300) and **mandatory** requirements related to the CNS facilities and services to be implemented by States in accordance with regional air navigation agreements. *The amendments to e-ANP Volume I necessitates approval by the Council.*

e-ANP Volume II

2.1.2 e-ANP Volume II **Part III CNS** complements the provisions in ICAO SARPs and PANS related to CNS. It contains **dynamic** plan elements related to the **assignment of responsibilities to States for the provision of CNS facilities and services** within a specified area in accordance with Article 28 of the Convention on International Civil Aviation (Doc 7300) and the **current to medium term mandatory** requirements related to **CNS facilities and services to be implemented by States** in accordance with regional air navigation agreements involving the APANPIRG. Such agreement indicates a commitment on the part of the State(s) concerned to implement the requirement(s) specified. *The amendment of these elements does not require approval by the Council.*

2.1.3 Additionally, e-ANP Volume II contains the **General Regional Requirements and Specific Regional Requirements** related to CNS from Member States. As such, Member States are encouraged to review **TABLE CNS II-APAC-3 SURVEILLANCE** in the Specific Regional Requirements in e-ANP Volume II.

e-ANP Volume III

2.1.4 e-ANP Volume III contains **dynamic/flexible plan elements** providing implementation planning guidance for air navigation systems and their modernization taking into consideration emerging programmes such as the ICAO Aviation System Block Upgrades (ASBUs) and associated technology roadmaps described in the Global Air Navigation Plan (GANP) (Doc 9750). The ANP Volume III would also include appropriate **additional guidance**, particularly with regard to **implementation**, to complement the material contained in the ANP Volumes I and II. *The amendment of Volume III would not require approval by the Council and the approval of Part II is under the responsibility of the relevant PIRGs.*

Updates on current status of e-ANP

2.1.5 Following the Twelfth Air Navigation Conference (AN-Conf/12) **Recommendation 6/1 - Regional performance framework** - planning methodologies and tools to align the ANSPs with the fourth edition of the Global Air Navigation Plan (GANP) (Doc 9750), ICAO conducted since 2013 and 2014 several activities through the ad-hoc of the e-ANP Working Group that resulted in the adoption of regional Air Navigation Plan (ANP) template on 22 April 2014 that included changes to the regional ANPs with a *new structure, format, and content.*

2.1.6 Following this, the development of the new APAC e-ANP was adopted via the **Decision APANPIRG/25/1** (2014) to invite APANPIRG and its Sub-groups to *present the relevant Parts of the APAC e-ANP* to APANPIRG/26. The APANPIRG/26 meeting in 2015, through **Conclusion APANPIRG/26/2- Adoption of the ASIA/PAC e-ANP**, endorsed the proposed text parts and tables of Volume I and Volume II related to **AOP, ATM, CNS, and MET field** of the APAC e-ANP and Volume III of e-ANP was adopted. APANPIRG/26 also invited ICAO to process the PFAs (Proposal for amendments) for Volume I and Volume II of e-ANP in accordance with the established procedures.

2.1.7 The e-ANP containing Volume I, II, and III can be accessed at <http://www.icao.int/APAC/Pages/APAC-eANP.aspx>. The initial version of e-ANP came from Proposal for Amendment (PFA) APAC-I 16/05. *The bottom right of e-ANP will mention from which Pfa did that page/table came from.* Subsequently, amendments are updated with new PFA number, if there are any

amendments to that page/table.

2.1.8 It should be noted that e-ANP Volume III should be used as a tool for monitoring and reporting the status of implementation of the elements planned, through the use of tables/databases and/or references to online monitoring tools, as endorsed by APANPIRG. The status of implementation is updated on a regular basis as endorsed by APANPIRG. APAC Regional Objectives defined in former Seamless ATM Plan V2.0 (now Seamless ANS Plan) were incorporated in the e-ANP Volume III and supporting documents within the APAC main planning table in accordance with the e-ANP template adopted by the Council in 2014. *Updating of e-ANP Vol III by incorporating latest requirements defined in latest Seamless ANS Plan is in process.*

2.2 Seamless ANS Plan and its Surveillance-related Elements

Updates on current status of Seamless ANS Plan

2.2.1 The Asia/Pacific Seamless ANS Plan (formerly known as Seamless ATM Plan) defines goals and the means of meeting State planning objectives for a Regional Seamless ANS Performance Framework, with a focus on technological and human performance.

2.2.2 The version 1.0 of Asia/Pacific Seamless ATM Plan was adopted as **APANPIRG Conclusion 24/54 Asia/Pacific Seamless ATM Plan** in 2013. The **ten** regional priorities and targets was adopted through the Conclusion **APANPIRG 25/2 - APAC Regional Air Navigation Priorities and Target** in 2014. With reviews and updates in 2016 following the updates in GANP and ASBU framework implementation and referencing to the new Block 1 ASBU and new regional elements, the version 2.0 of the Plan adopted as **APANPIRG Conclusion 27/16 Asia/Pacific Seamless ATM Plan Update** in 2016.

2.2.3 To match the 6th Edition of GANP, APANPIRG/30 in 2019 reviewed and adopted the Asia/Pacific Seamless ANS Plan Version 3.0 as **APANPIRG Conclusion 30/5 Asia/Pacific Seamless ANS Plan**.

2.2.4 In the latest version 3.0 of the Plan, there are **16 Priority-1 Regional Seamless ANS Elements** identified, an increase from 10 elements compared to version 2.0. Priority-1 items are critical upgrade assignment based on whether the implementation of an element could bring most benefit to the region or regional upgrade by States and is essential to achieve the service level required globally. These 16 Elements are listed as follows, with CNS-related element highlighted:

- a) Aeronautical Meteorology: AMET-B0/1 – 4;
- b) Aeronautical Information Management: DAIM-B1/1 – 6;
- c) Airport CDM: ACDM-B0/1 – 2;
- d) ANSP human and simulator performance (Regional);
- e) ATS Inter-facility Datalink Communications: FICE-B0/1;
- f) Ballistic launches/space re-entry management (Regional);
- g) Civil-Military Special Use Airspace (SUA) management (Regional);
- h) Civil-Military strategic and tactical coordination (Regional);
- i) Core data communications: VDL Mode O/A and AMHS COMI-B0/3, 7;
- j) Direct and Free Route Operations: FRTO-B0/1 – 4;
- k) Enhanced SAR systems (Regional);
- l) Ground-based Surveillance: ASUR-B0/1 – 3;**
- m) Network Operations: NOPS-B0/1 – 5;

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- n) Performance-based Navigation Approach Procedures: APTA-B0/1 – 2;
- o) Runway Sequencing: RSEQ-B0/1 – 2; and
- p) Safety Nets SNET-B0/1 – 4.

2.2.5 Details of ASBU elements could be referred on GANP portal (<https://www4.icao.int/ganportal/ASBU>).

2.2.6 Other Surveillance-related priorities 2 & 3 Regional and Blocks 0 & 1 ASBU elements from the Plan are highlighted below for reference. Details of each item below could be referred to the corresponding PARS/PASL paragraphs stated in the Plan.

Regional Seamless ANS Element

| Functional Category | Regional Seamless ANS Element | Priority |
|--|---|----------|
| Operational | Aerodrome management and coordination (PARS 7.1) | 2 |
| | Optimization of runway capacity facilities (PARS 7.2) | 3 |
| | ADS-B, SSR Mode S and PBN Airspace (PARS 7.8, 7.9, 7.10) | 2 |
| | Flight Level Orientation Scheme (FLOS) (PARS 7.15) | 2 |
| | Civil-Military SUA management (PARS 7.16) | 1 |
| | Unmanned Aircraft Systems (PARS 7.17) | 2 |
| | Adjacent ATS sector coordination (PASL 7.24) | 2 |
| | Airspace classification (PASL 7.33) | 2 |
| | ATC horizontal separation (PASL 7.34) | 2 |
| | Flight Level Allocation Schemes (FLAS) (PASL 7.35) | 2 |
| | ATC sector capacity (PASL 7.37) | 2 |
| | Electronic Flight Progress Strips (PASL 7.39) | 2 |
| | Enhanced SAR systems (PASL 7.42) | 1 |
| | ANSP human and simulator performance (PASL 7.43) | 1 |
| | Civil-Military strategic and tactical coordination (PASL 7.44) | 1 |
| | Civil-Military common procedures and training (PASL 7.44) | 2 |
| Ballistic launches/space re-entry management (PASL 7.45) | 1 | |
| CNS Technology and Services | ATS surveillance data sharing (PASL 7.28) | 2 |
| | Civil-Military integrated systems and facilities (PASL 7.44) | 2 |
| | Departure Clearance (DCL) (PASL 7.49) | 2 |

Blocks 0 & 1 ASBU elements with APAC Priorities

| Functional Category | Element | Priority |
|---------------------|--|----------|
| Information | AMET-B0/1 – 4: Meteorological observations, forecast, warning, climatological and historical products, and dissemination (PASL 7.41) | 1 |
| | AMET-B1/1 – 4: Meteorological products supported by automated decision systems or aids using IWXXM (PASL 7.56) | 2 |
| | DAIM-B1/1 – 6: Provision of quality-assured digital aeronautical data and information, including AIP, terrain and obstacle, aerodrome and instrument flight procedure data sets (PASL 7.40) | 1 |

¹ Preferred Aerodrome/Airspace and Route Specifications (PARS) and Preferred ANS Service Levels (PASL) are the performance objectives developed by Asia/Pacific Seamless ATM Planning Group (APSAPG) to facilitate Seamless ANS operation in accordance with the expectations of The Manual on Global Performance of the Air Navigation System (ICAO Doc 9883) which provides guidance on implementing a performance-oriented ATM System, and The Manual on ATM System Requirements (ICAO Doc 9882) which contains eleven Key Performance Area (KPA) system expectations, as well as a number of general performance-oriented requirements.

| | | |
|---|---|--|
| | DAIM-B1/7: Provision of digital NOTAM improvements (PASL 7.55) | 2 |
| | FICE-B0/1: Automated basic AIDC (PASL 7.26) | 1 |
| Operational | ACDM-B0/1-2: ACIS (PARS 7.3) | 1 |
| | ACDM-B1/1 – 2: Airport CDM Integration with ATM Network, AOP and APOC (PARS 7.18) | 2 |
| | APTA-B0/1 – 2: Basic PBN SID and STAR procedures, PBN non-precision approaches (PARS 7.4, 7.5, 7.10, 7.13, 7.14, 7.21) | 1 |
| | APTA-B0/3 and 6: SBAS/GBAS CAT I precision approach procedures, and PBN Helicopter PinS Operations (PARS 7.5, 7.6, 7.10, 7.14, 7.21) | 3 |
| | APTA-B0/4 – 5, 7 – 8: CDO (Basic) and CCO (Basic), and performance-based aerodrome operating minima for advanced/basic aircraft (PARS 7.14, 7.19, 7.21) | 2 |
| | APTA-B1/1 – 5: advanced capability PBN approaches, PBN SID and STAR procedures and performance-based aerodrome operating minima for advanced aircraft with SVGS, CDO and CCO (Advanced) (PARS 7.14, 7.21, 7.22, 7.23) | 3 |
| | CSEP-B1/1 – 4: basic airborne situational awareness AIRB and VSA, and performance-based horizontal separations (PARS 7.20) | 2 |
| | FRTO-B0/1 – 4: Direct routing, Airspace Planning and FUA, Flexible Routings, and basic conflict detection and conformance monitoring (PASL 7.29, 7.31, 7.36) | 1 |
| | FRTO-B1/1 – 7: Free Route Airspace, RNP routes, Advanced FUA and Airspace Management (ASM), Dynamic Sectorisation, Enhanced Conflict Detection Tools and Conformance Monitoring, and Multi-Sector Planner Function (PASL 7.29, 7.51) | 2 |
| | NOPS-B0/1 – 5: Initial integration of ASM with ATFM, Collaborative Network Flight Updates, Basic Network Operation Planning and Initial Airport/ATFM slots, A-CDM Network Interface and Dynamic Slot Allocation (PASL 7.38) | 1 |
| | NOPS-B1/1 – 10: Short Term ATFM measures, Enhanced NOPS Planning, Enhanced integration of airport operations and NOPS planning, Enhanced Traffic Complexity Management, Full integration of ASM with ATFM, Initial Dynamic Airspace configurations, Enhanced ATFM slot swapping, Extended Arrival Management, ATFM Target Times and Collaborative Trajectory Options Programme (PASL 7.52) | 2 |
| | OPFL-B0/1: ITP | 3 |
| | OPFL-B1/1: CDP | 3 |
| | RATS-B1/1 – Remotely Operated Aerodrome Air Traffic Services | 3 |
| | RSEQ-B0/1 – 2: Arrival and Departure Management (PASL 7.32) | 1 |
| | RSEQ-B0/3 – Point merge | 3 |
| | Operational (Con'd) | RSEQ-B1/1 – Extended arrival metering (PASL 7.46) |
| SNET-B0/1 – 4: STCA, MSAW, APW, APM (PASL 7.31) | | 1 |
| SNET-B1/1 – 2: Enhanced STCA with aircraft parameters and in complex TMAs (PASL 7.50) | | 2 |
| SURF-B0/1 – 3: Basic ATC surface operations tools, comprehensive situational awareness, situational awareness, alerting service (PASL 7.47) | | 2 |
| SURF-B1/1 – 5: Advanced surface traffic management visual aids, pilot comprehensive awareness and runway alerting, enhanced ATC alerting, routing service to support ATC and EVS for taxiing (PASL 7.48) | | 2 |
| TBO-B0/1: Introduction of time-based management within a flow centric approach (PASL 7.52) | | 2 |
| TBO-B1/1 – Initial Integration of time-based decision making processes (PASL 7.52) | | 2 |

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|-----------------------------------|--|---|
| CNS Technology and Services | ASUR-B0/1 – 3: ADS-B, MLAT, SSR-DAPS (PARS 7.8, 7.11, PASL 7.26, 7.28, 7.30) | 1 |
| | ASUR-B1/1 – Reception of aircraft ADS-B signals from space (SB ADS-B) (PASL 7.54) | 2 |
| | COMI-B0/1 – 2, 4 – 6: ACARS, ATN/OSI, VDL Mode 2 Basic, SATCOM Class C Data, HFDDL (PASL 7.54) | 2 |
| | COMI-B0/3, 7: VDL Mode O/A, AMHS (PASL 7.25) | 1 |
| | COMI-B1/1 – 4: VDL Mode 2 Multi-Frequency, SATCOM Class B (SB-S) Voice and Data, ATN/IPS and AeroMACS Ground-Ground (PASL 7.53) | 2 |
| | COMS-B0/1 – 2: CPDLC (FANS 1/A & ATN B1) for domestic and procedural airspace and ADS-C (FANS 1/A) for procedural airspace (PARS 7.14, PASL 7.29, 7.53) | 2 |
| | COMS-B1/1 – 3: PBCS approved CPDLC (FANS 1/A+), ADS-C and SATVOICE for domestic and procedural airspace (PARS 7.14, PASL 7.53) | 2 |
| | NAVS-B0/1 – 4: SBAS, GBAS, ABAS, MON (PARS 7.7) | 2 |
| | NAVS-B1/1: Extended GBAS | 3 |

2.2.7 Given that the overall implementation progress of former Seamless ATM/Block 0 elements had been slow, the Asia/Pacific Seamless ANS Plan V3.0 proposed to place greater emphasis on ‘robust’ status National Air Navigation Plans (NANPs), developed by a whole-of-government approach, which was dependent on whether the NANP included the expected NANP Basic Planning Elements (BPEs) of the Regional Air Navigation Plan.

2.2.8 *The review process Asia/Pacific Seamless ANS Plan has started for 2022.*

2.3 PfA Process

2.4.1 The template for PfA to the ICAO Asia and Pacific Regions Air Navigation Plan (e-ANP) all volume can be accessed at the link: <https://www.icao.int/APAC/Pages/APAC-eANP.aspx>

2.4 Recommendations

2.4.1 ICAO APAC Regional Office has been working to keep up-to-date and relevant information in the e-ANP. The Member States/Administrations are requested to provide updates in timely manner for requirements in section 2.1 of the paper.

2.4.2 The Member States/Administrations are invited to review all facilities listed and surveillance requirements specified in the e-ANP to verify that the information provided for their States/Administration is up-to-date and correct. In case of updates of any information required, States should submit the updates to ICAO APAC Regional Office via PfA Process.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information in this paper;
- b) discuss any matters as appropriate.