



ICAO

*International Civil Aviation Organization*

**Twenty Fifth Meeting of the Communications/  
Navigation and Surveillance Sub-group (CNS SG/25) of  
APANPIRG**

Video Tele-Conference, 18 – 22 October 2021

- Agenda Item 8:** Review and updates
- 8.1 Seamless ANS Reporting Process including the ASBU regional performance dashboard/implementation plan
  - 8.2 National ANP and elements related to CNS;

**REVIEW OF REGIONAL CNS REQUIREMENTS IN ICAO  
APAC e-ANP, SEAMLESS ANS PLAN AND UPDATES ON NATIONAL AIR NAVIGATION  
PLAN (NANP)**

(Presented by the Secretariat)

**SUMMARY**

This paper consolidates CNS 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 CNS 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).

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**2. DISCUSSION****2.1 Regional e-ANP and its CNS-related Requirements***e-ANP Volumes I*

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 Volumes 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 on the information contained in the following tables in e-ANP Volume II:*

**General Regional Requirements**

**TABLE CNS II-1** AERONAUTICAL FIXED TELECOMMUNICATIONS NETWORK  
(AFTN) PLAN

**TABLE CNS II-2** REQUIRED ATN INFRASTRUCTURE ROUTING PLAN

**TABLE CNS II-3** ATS DIRECT SPEECH CIRCUITS PLAN

**TABLE CNS II-4** HF NETWORK DESIGNATORS

**Specific Regional Requirements**

**TABLE CNS II-APAC-1** ATS INTER-FACILITY DATA COMMUNICATION (AIDC)  
IMPLEMENTATION PLAN

**TABLE CNS II-APAC-2** RADIO NAVIGATION AIDS

**TABLE CNS II-APAC-3** SURVEILLANCE

*e-ANP Volume III*

2.1.4 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 (approval of Part II is under the responsibility of the relevant PIRG).*

*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 Seamless ANS Plan V3.0 is in process*.

## **2.2 Seamless ANS Plan and its CNS-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 6<sup>th</sup> 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;
- 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 CNS-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
	<b>ADS-B, SSR Mode S and PBN Airspace (PARS 7.8, 7.9, 7.10)</b>	<b>2</b>
	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
	<b>Electronic Flight Progress Strips (PASL 7.39)</b>	<b>2</b>
	Enhanced SAR systems (PASL 7.42)	1

<sup>1</sup> 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.

	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
<b>CNS Technology and Services</b>	<b>ATS surveillance data sharing (PASL 7.28)</b>	<b>2</b>
	<b>Civil-Military integrated systems and facilities (PASL 7.44)</b>	<b>2</b>
	<b>Departure Clearance (DCL) (PASL 7.49)</b>	<b>2</b>

**Blocks 0 & 1 ASBU elements with APAC Priorities**

Functional Category	Element	Priority
Information	<b>AMET-B0/1 – 4:</b> Meteorological observations, forecast, warning, climatological and historical products, and dissemination (PASL 7.41)	1
	<b>AMET-B1/1 – 4:</b> Meteorological products supported by automated decision systems or aids using IWXXM (PASL 7.56)	2
	<b>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)</b>	1
	<b>DAIM-B1/7:</b> Provision of digital NOTAM improvements (PASL 7.55)	2
	<b>FICE-B0/1: Automated basic AIDC (PASL 7.26)</b>	<b>1</b>
Operational	<b>ACDM-B0/1-2:</b> ACIS (PARS 7.3)	1
	<b>ACDM-B1/1 – 2:</b> Airport CDM Integration with ATM Network, AOP and APOC (PARS 7.18)	2
	<b>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)</b>	<b>1</b>
	<b>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)</b>	<b>3</b>
	<b>APTA-B0/4 – 5, 7 – 8:</b> CDO (Basic) and CCO (Basic), and performance-based aerodrome operating minima for advanced/basic aircraft (PARS 7.14, 7.19, 7.21)	2
	<b>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)</b>	<b>3</b>
	<b>CSEP-B1/1 – 4:</b> basic airborne situational awareness AIRB and VSA, and performance-based horizontal separations (PARS 7.20)	2
	<b>FRTO-B0/1 – 4:</b> Direct routing, Airspace Planning and FUA, Flexible Routings, and basic conflict detection and conformance monitoring (PASL 7.29, 7.31, 7.36)	1
	<b>FRTO-B1/1 – 7:</b> 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
	<b>NOPS-B0/1 – 5:</b> 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
	<b>NOPS-B1/1 – 10:</b> 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

	<b>OPFL-B0/1: ITP</b>	3
	<b>OPFL-B1/1: CDP</b>	3
	<b>RATS-B1/1 – Remotely Operated Aerodrome Air Traffic Services</b>	3
	<b>RSEQ-B0/1 – 2: Arrival and Departure Management (PASL 7.32)</b>	1
	<b>RSEQ-B0/3 – Point merge</b>	3
Operational (Con'd)	<b>RSEQ-B1/1 – Extended arrival metering (PASL 7.46)</b>	2
	<b>SNET-B0/1 – 4: STCA, MSAW, APW, APM (PASL 7.31)</b>	1
	<b>SNET-B1/1 – 2: Enhanced STCA with aircraft parameters and in complex TMAs (PASL 7.50)</b>	2
	<b>SURF-B0/1 – 3: Basic ATC surface operations tools, comprehensive situational awareness, situational awareness, alerting service (PASL 7.47)</b>	2
	<b>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)</b>	2
	<b>TBO-B0/1: Introduction of time-based management within a flow centric approach (PASL 7.52)</b>	2
	<b>TBO-B1/1 – Initial Integration of time-based decision making processes (PASL 7.52)</b>	2
CNS Technology and Services	<b>ASUR-B0/1 – 3: ADS-B, MLAT, SSR-DAPS (PARS 7.8, 7.11, PASL 7.26, 7.28, 7.30)</b>	1
	<b>ASUR-B1/1 – Reception of aircraft ADS-B signals from space (SB ADS-B) (PASL 7.54)</b>	2
	<b>COMI-B0/1 – 2, 4 – 6: ACARS, ATN/OSI, VDL Mode 2 Basic, SATCOM Class C Data, HFDL (PASL 7.54)</b>	2
	<b>COMI-B0/3, 7: VDL Mode O/A, AMHS (PASL 7.25)</b>	1
	<b>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)</b>	2
	<b>COMS-B0/1 – 2: CPDLC (FANS 1/A &amp; ATN B1) for domestic and procedural airspace and ADS-C (FANS 1/A) for procedural airspace (PARS 7.14, PASL 7.29, 7.53)</b>	2
	<b>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)</b>	2
	<b>NAVS-B0/1 – 4: SBAS, GBAS, ABAS, MON (PARS 7.7)</b>	2
	<b>NAVS-B1/1: Extended GBAS</b>	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 next review year for the Asia/Pacific Seamless ANS Plan is scheduled for 2022.*

### 2.3 National Air Navigation Plan

2.3.1 The Beijing Declaration of Asia Pacific Ministerial Conference on Civil Aviation formulated in February 2018 specified that *Ministers commit to implementation by 2022 of the Asia/Pacific Seamless Air Traffic Management (ATM) Plan to enhance ATM capacity and harmonization in the Region, including a focus on various aspects in air navigation services, including Air navigation in national planning frameworks such as National Development Plans (NDPs) supported by National Air Navigation Plans (NANP).*

2.3.2 Subsequently the **Conclusion APANPIRG/30/5** was endorsed in November 2019 to urge APAC States to consider utilizing the **Asia/Pacific Seamless ANS Plan to develop a National Air Navigation Plan (NANP)** after considering the NANP Template in the Plan to enable timely implementation of applicable Seamless ANS elements. Furthermore, the detail requirement for States to establish and maintain a National Air Navigation Plan (NANP), that supports implementation of the Global Air Navigation Plan and regional air navigation planning, was also incorporated in the latest version of *APAC e-ANP Volume II PART I – General Planning Aspects (GEN)*, under the section *Specific Regional Requirements*.

2.3.3 It was listed in the requirement of NANP to analyze all applicable ASBU and regional elements deemed to be applicable, including a statement of the State's priorities for implementation and elements that are deemed to be not applicable, and how these were determined. All applicable ASBU and regional elements, as summarized in the Seamless ANS Plan Version 3.0, are also included in the NANP template aforementioned. As such, States/Administrations should refer to the NANP Template in the Seamless ANS Plan Version 3.0 and provided in **Appendix A** to this paper and review its compliance and planning of their CNS-related elements and record in their NANP.

2.3.4 Noting the establishment of the requirement on NANP in the Asia/Pacific Seamless ANS Plan Version 3.0, ICAO APAC Regional Office organized a NANP Seminar on 31 July 2020 to share know-hows and experience to help States/Administrations to develop their own NANP to fulfill the commitments in Beijing Declaration. Useful information could be found in the seminar's webpage at <https://www.icao.int/APAC/Meetings/Pages/2020-NANP-Seminar.aspx>.

## **2.4 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>

## **2.5 Recommendations**

2.5.1 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 CNS requirements defined in section 2.1 of the paper.

2.5.2 The e-ANP Volume I Part II Table **AOP I-1 International Aerodromes Required In The Asia/Pacific Regions** and e-ANP Volume II Part II Table **AOP II-1 Requirements And Capacity Assessment In International Aerodromes in The Asia And Pacific Regions** have been updated in 2021. Subsequently, the CNS provisions to **newly added aerodromes** should be updated in **e-ANP Volume II Part III Table CNS II-APAC 2** for relevant facilities. The Member States/Administrations are requested to review and submit the updates to ICAO APAC Regional Office for the updates on various facilities listed in **e-ANP Vol II Part III Table CNS II-APAC 2** for **new international aerodromes added in 2021** by filling the PfA template specified in section 2.4 and send it to ICAO APAC Regional Office.

2.5.3 The Member States/Administrations are also invited to review **all CNS facilities listed and CNS 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 inconsistencies/incompleteness of any information, States should submit the updates to ICAO APAC Regional Office by following the procedure specified in section 2.4.

2.5.4 Lastly, the Member States/Administrations should take into consideration to update e-ANP CNS relevant section defined section 2.1 of the paper, when commissioning or decommissioning CNS systems in timely manner and should inform to ICAO to add/delete new/obsolete CNS facilities.

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**3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

- a) note the information in this paper;
- b) encourage States/Administrations to review on the information contained in the tables in e-ANP Volume II discussed in paragraph 2.1 in this paper;
- c) fill the PfA template specified in section 2.4 and send it to ICAO APAC office for new international aerodromes as mentioned in section 2.5.2
- d) take necessary action as specified in section 2.5.3 and 2.5.4
- e) urge States/Administrations the need to formulate their NANP to comply with commitments to Beijing Declaration by 2022; and
- f) discuss any matters as appropriate.

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## **[State] National Air Navigation Plan**

Template version 6.0

Note to States (delete this note) - The NANP doesn't need to be called a 'NANP'. It can be titled whatever the State wants, and could be several different documents depending on how the State does planning. It could even be in html form using an Internet-based portal instead of a traditional document, as long as it sets out key steps in the planning process.

NANP are primarily for the State and not the region, so ICAO is only interested that that State has a NANP, and that it addressed certain Basic Planning Elements (BPEs). The detail within each BPE is not really of interest to ICAO either, especially the security-related parts which should only be made available to State officials. NANP excerpts should be all that required to establish the structure of the NANP that addresses the BPEs.

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## Background

Specific regional blue text to be modified by other regions as required

States to modify the yellow text accordingly

1.1 The *Asia/Pacific Seamless ANS Plan*, which was first approved by the Twenty Fourth Meeting of the International Civil Aviation Organization (ICAO) Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/24, September 2013), is the regional air navigation planning framework for the civil aviation system. The *Asia/Pacific Seamless ANS Plan* also contains expectations for military and other State agencies whose activities interface with civil aviation.

1.2 This National Air Navigation Plan (NANP) is necessary to describe the State's planning arrangements to align with both regional and global objectives, to ensure the greatest degree of harmonization and interoperability with other States.

1.3 Insert here a brief introduction aimed at high level decision-makers that further describes the purpose for the NANP in the context of the State's aviation system, challenges to the aviation system such as increased passenger demand and how important aviation is to the State in terms of its economy, transport connectivity, etc. Some States may wish to include reference to the specific ICAO and governmental policies that determine objectives, priorities and development directions.

1.4 Describe the scope of what the National Air Navigation Plan (NANP) covers, who it affects, and what is expected to be achieved, including the necessity for global and regional harmonization and interoperability.

1.5 Provide a general (not necessarily quantitative) description of the Plan's benefits.

1.6 Provide a general description of the costs. It should be noted that this is a matter for the State to determine, and could be in terms of quantitative, qualitative, cost of implementation or cost of not implementation. ICAO does not require details of costs from States, as this is for the State's benefit.

1.7 Provide details of how the NANP connects to the global and regional planning hierarchy.

## Stakeholder Consultation

2.1 The *Asia/Pacific Seamless ANS Plan* was expected to be implemented by the use of a NANP that encompassed a whole-of-government approach. Key stakeholders were expected to include military agencies, heads of regulatory bodies and Air Navigation Service Providers (ANSPs), and users such as airlines.

2.2 Provide a high level description of the process used to consult the NANP with affected stakeholders, including military agencies.

2.3 Insert here statements from Heads of CAAs, ANSPs, military agencies, space launch agencies, airlines, major airports etc. At the end of this Section there should be a place for the Heads to sign the document to indicate their concurrence and their organisation's continued support for the agreed plans in the NANP.

## **Analysis**

3.1 Insert here Information on the State's analysis of all applicable Aviation System Block Upgrade (ASBU) and regional elements deemed to be applicable to the State, including a statement of the State's priorities for implementation. This assessment should be guided by the priorities determined by APANPIRG.

3.2 Describe the ASBU and regional elements that are deemed to be not applicable, and how these were determined.

## Planning

4.1 The following section contains descriptions of the implementation process for each planning element, such as how the different stakeholders will work together, design systems and provide feedback on implementation and post-implementation. Each applicable global and regional element’s implementation managers (those responsible for execution of the implementation) and the project timelines are provided, including regular review milestones.

4.2 Table X provides an overview of the planning elements that originate from the Global Air Navigation Plan and their priorities. Table Y provides an overview of the regionally-specific planning elements that originate from the Planning and Implementation Regional Group (PIRG).

Functional Category	Element	Regional Priority	State 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 7.55)	2	
	DATM-B1/1 – 7: Provision of quality-assured digital aeronautical data and information, including AIP, terrain and obstacle, aerodrome and instrument flight procedure data sets, and NOTAM improvements (PASL 7.40)	1	
	FICE-B0/1: Automated basic AIDC (PASL 7.26)	1	
	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)	1	
	APTA-B0/3 and 6: SBAS/GBAS CAT I precision approach procedures, and PBN Helicopter PinS Operations (PARS 7.6, 7.7)	3	
	APTA-B0/4 – 5, 7 – 8: CDO (Basic) and CCO (Basic), and performance-based aerodrome operating minima for advanced/basic aircraft (PARS 7.19)	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) (PASL 7.14, PARS 7.21, 7.22)	3	
	Operational	CSEP-B1/1 – 4: basic airborne situational awareness AIRB and VSA (PARS 7.20)	2

<b>Operational</b>	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	
	RSEQ-B1/1 – Extended arrival metering (PASL 7.46)	2	
	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	

<b>Operational</b>	TBO-B0/1: Introduction of time-based management within a flow centric approach (PASIL 7.52)	2	
	TBO-B1/1 – Initial Integration of time-based decision making processes (PASIL 7.52)	2	
<b>CNS Technology and Services</b>	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) (PASIL 7.54)	2	
	COMI-B0/1 – 2, 4 – 6: ACARS, ATN/OSI, VDL Mode 2 Basic, SATCOM Class C Data, HFDL (PASIL 7.54)	2	
	COMI-B0/3, 7: VDL Mode O/A, AMHS (PASIL 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 (PASIL 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	

**Table X:** Regional Planning Elements Related to the GANP

<b>Functional Category</b>	<b>Regional Seamless ANS Element</b>	<b>Regional Priority</b>	<b>State Priority</b>
<b>Operational</b>	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 7.12)	2	
	Civil/Military SUA management (PARS 7.13)	1	
	Adjacent ATS sector coordination (PASIL 7.19)	2	
	Airspace classification (PASIL 7.28)	2	
	ATC horizontal separation (PASIL 7.29)	2	
	Flight Level Allocation Schemes (FLAS) (PASIL 7.30)	2	
	ATC sector capacity (PASIL 7.32)	2	
	Electronic Flight Progress Strips (PASIL 7.34)	2	
	Enhanced SAR systems (PASIL 7.37)	1	
	ANSP human and simulator performance (PASIL 7.38)	1	

	Civil/Military strategic and tactical coordination (PASL 7.39)	1	
	Civil/Military common procedures and training (PASL 7.39)	2	
	Ballistic launches/space re-entry management (PASL 7.40)	1	
	Unmanned Aircraft Systems (PARS TBA)	2	
<b>CNS Technology and Services</b>	ATS surveillance data sharing (PASL 7.23)	2	
	Civil Military integrated systems and facilities (PASL 7.39)	2	
	Departure Clearance (DCL) (PASL 7.44)	2	

**Table Y:** Regional Planning Elements Related to Regionally-Specific Requirements

4.3

X

## **Progress**

5.1 The following section contains details of the progress of implementation of each element against the planning timelines. It should regularly updated to reflect the actual implementation of the applicable elements.

5.2 This section should also provide information on the results and lessons learnt from post-implementation reviews, including the effectiveness of any improvements against planning goals and Key Performance Indicators.