ICAO APAC Webinars – Safety and Air Navigation Services

ATS Route Implementation

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Objectives

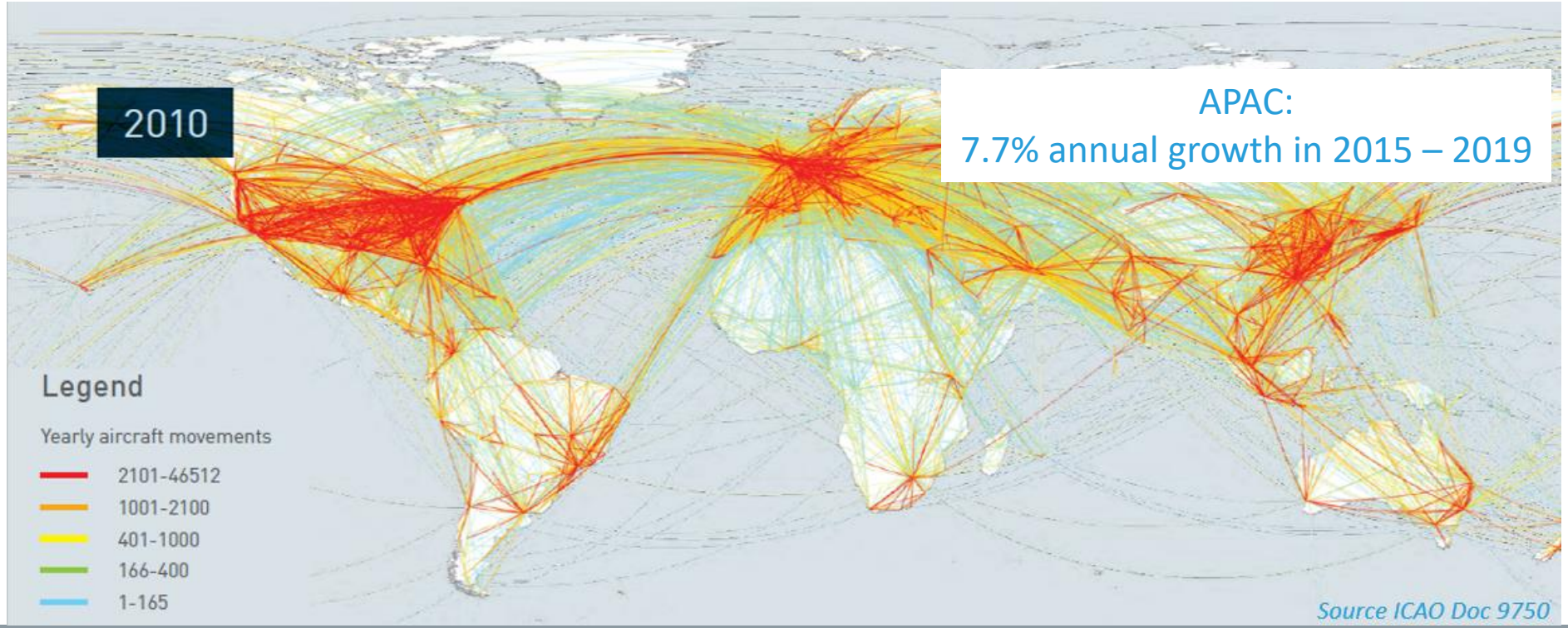
- To introduce:
  - key aspects about the establishment of the correct PBN navigation specifications (NavSpecs) for ATS routes;
  - promulgation process for ATS route amendment; and
  - *Asia/Pacific Region ATS Route Catalogue*.

Agenda

- Airspace capacity
- Regional requirements
- Implementation activities
- Asia/Pacific Region ATS Route Catalogue
- Q&A session

AIRSPACE CAPACITY

Air Traffic Growth

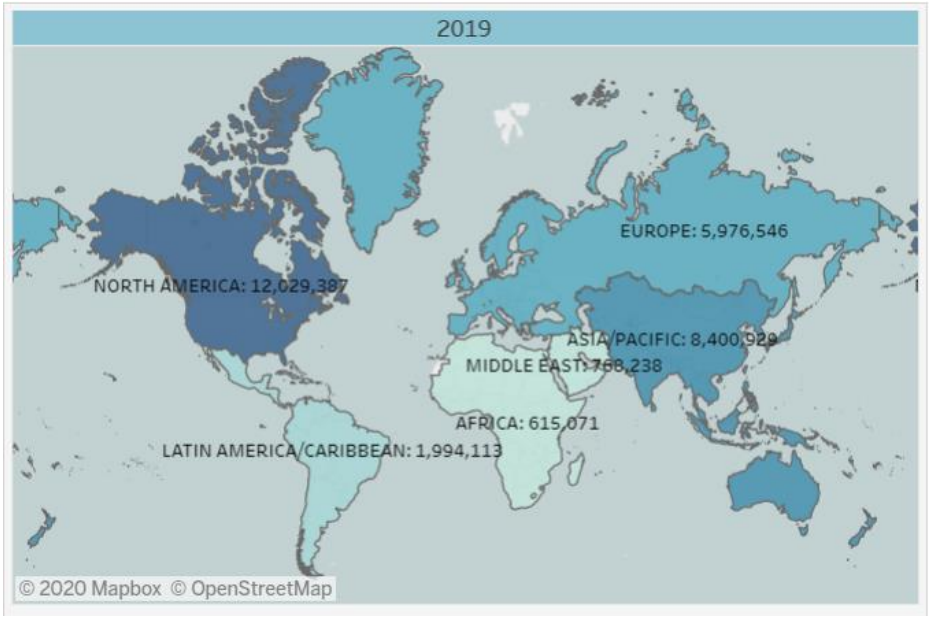


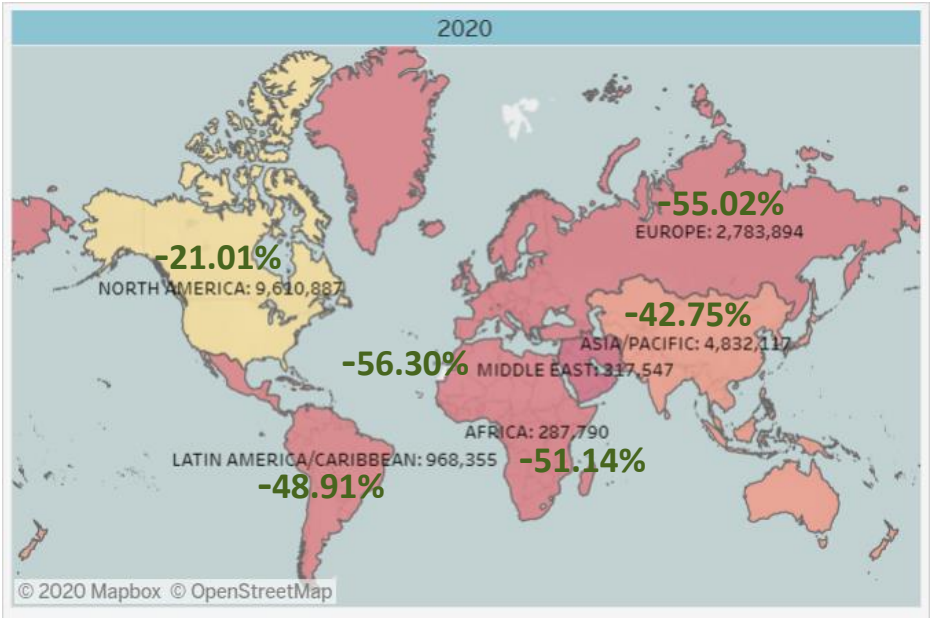
APAC:
7.7% annual growth in 2015 – 2019

Air Traffic Growth

COVID-19 Operational Impact on Air Transport

https://data.icao.int/coVID-19/operational.htm





Total flight reduction (worldwide): -37.38%

How to Enhance Airspace Capacity?

Separation minima defined by ICAO

5 NM (9.3 km)

Can be reduced in some contexts

Reduced Separation Minima

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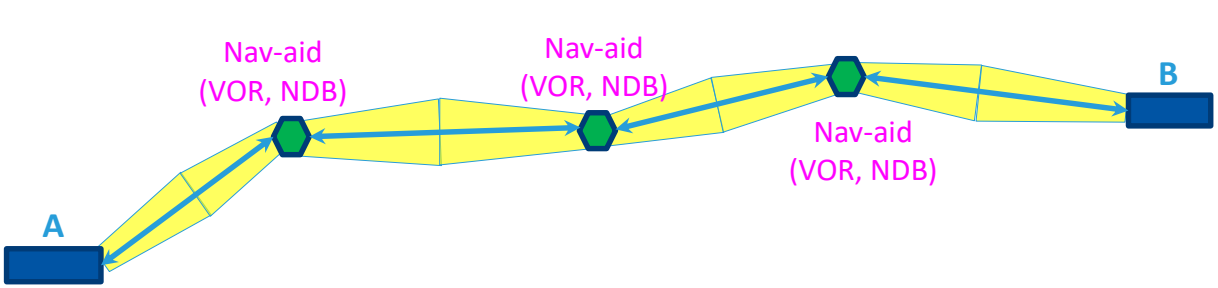
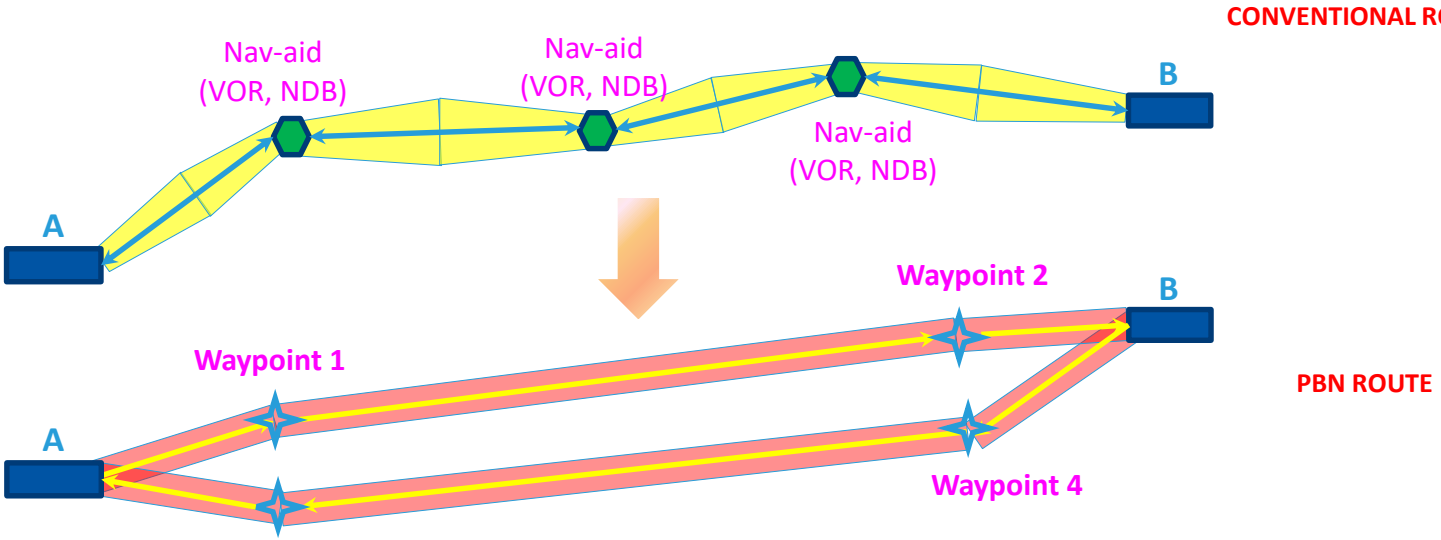
Reduced Separation Minima

How to Enhance Airspace Capacity?



How to Enhance Airspace Capacity?



Traffic Flow Review Group Meeting

- ICAO Meeting:
  - South China Sea Traffic Flow Review Group
  - Bay of Bengal Traffic Flow Review Group

- Objectives:
  - identify requirements and improvements for optimising airspace capacity and maintaining an efficient route network across the concerned airspace; and
  - monitor the status of implementation of the agreed ATS routes and airspace improvement projects.

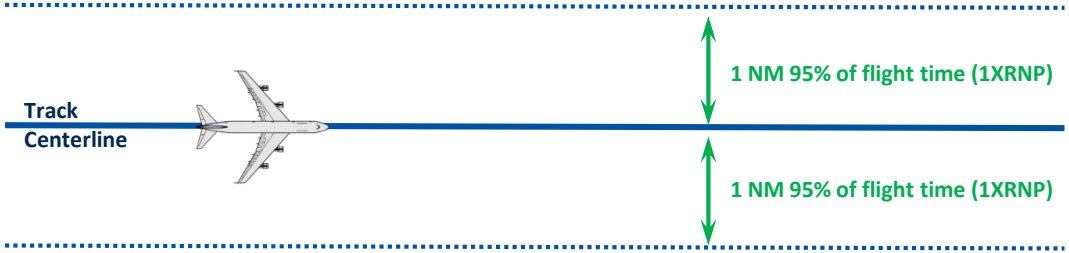
Performance-based Navigation (PBN)

- PBN is area navigation based on performance requirements for aircraft operating along an ATS route, on an instrument approach procedure or in a designated airspace.

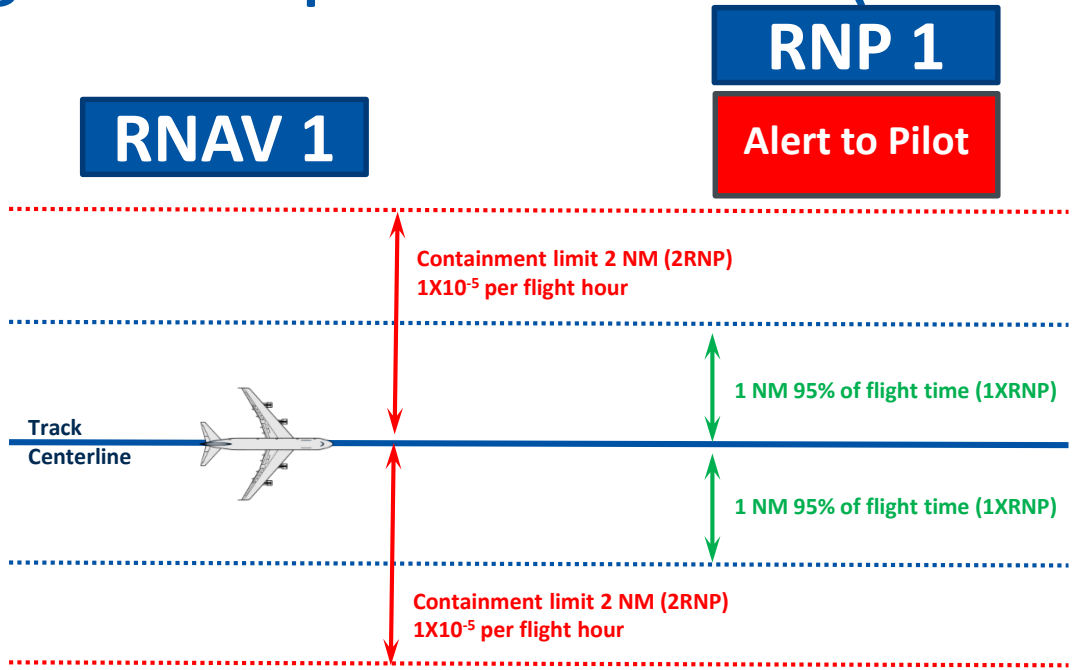
- Comprises of RNAV and RNP
  - RNAV – Area Navigation
  - RNP – Area Navigation with on-board performance monitoring and Alerting requirement.

Navigation Specifications (NavSpecs)

RNAV 1



Navigation Specifications (NavSpecs)



The Key Difference : On-Board Performance Monitoring and Alerting (OPMA)

https://www.icao.int/APAC/Documents/edocs/PBN-in-a-page%20V2.pdf

PBN NavSpecs and Route Spacing

Nav Specs	Flight Phase								Supporting Nav. Infrastructure	Route Spacing (NM)	Additional Functionality (Required or Optional)					Operational Requirements				
	En-route Remote	En-route Continental	Arrival	Approach				Departure			RF	FRT	TOAC[2]	Baro VNAV	Nav DB	Communication	Navigation	Surveillance	AIM	Others
				Initial	Intermediate	Final	Missed[4]													
RNAV 10 (RNP 10)	10								Not require ground based Naviad Dual LRNS (INS, IRS FMS, GNSS)	Lateral 5 between RNAV10, RNP4, or RNP2 Longitudinal 5 with DCPC, procedureal position report Distance verification : at least every 2 min 5 with reporting interval 27min 5min with reporing interval 14min			TBD[2]		O	Voice com through 3rd party, DCPC in some areas. Longitudinal 50 with RCP240 (ADS-C)	RNAV 10 (RNP 10) Approval, lateral deviation less than 7NM (same direction)/6NM (opposite direction)	Longitudinal Procedureal pilot position report (max 24min) 50 with RSP 180 (CPDLC)	WGS-84; QMS for AIS; AIRAC Compliance for publication (42 days, recommended 56 days); ICARD for new waypoint names; Air Navigation Plan Amendment for Regional ATS Routes; Regional Supplementary Procedures (Doc 7030) for application in airspace over the high seas; PBCS	System safety and datalink performance (PBCS) must be monitored, TLS $5X10^{-9}$ accident per flight hour Max ADS-C periodic reporting interval - 27min for 50NM - 14min for 5min
RNAV 5		5	5[3]						VOR/DME DME/DME INS or IRS GNSS	Lateral 1.5 - straight unidirectional racks (same direction route-ECAC) 1 - straight bidirectional tracks (opposite direction route- ECAC) 1 - ATC intervention capability (ECAC) 3 - No ATS Surveillance in high traffic density (ECAC)			TBD		O	DCPC- VHF	RNAV 5 OPS Approval (BRNAV)	Procedureal pilot position report Surveillance (RNAV 5)	WGS-84; QMS for AIS; AIRAC Compliance for publication (42 days, recommended 56 days; ICARD for new waypoint names; Air Navigation Plan Amendment for Regional ATS Routes	
RNAV 2		2	2					2	GNSS DME/DME DME/DME/IRU	Lateral 8 to 9 - straight tracks in high traffic density (en-route) (FAA)			TBD		R	DCPC- VHF	RNAV 2 OPS Approval (PRNAV, US RNAV AC 90-100)	surveillance	Same as RNAV 5	
RNAV 1		1	1	1	1		1	1	GNSS DME/DME DME/DME/IRU	Lateral For SIDs/STARs (PANS-ATM) Between RNAV1 and RNAV1, RNP1. RNP APCH, or RNP AR APCH			TBD	O	R	DCPC- VHF	RNAV 1 OPS Approval (PRNAV, US RNAV AC 90-100)	surveillance	WGS-84; QMS for AIS; AIRAC Compliance for publication (42 days, recommended 56 days	

https://www.icao.int/APAC/Documents/edocs/PBN-in-a-page%20V2.pdf

RNP 4	4								Not require ground based Naviad GNSS	Lateral 50 between RNAV10, RNP4 or RNP2 23 between RNP4 or RNP2 (SLOP up to 2NM) - 12 for climbs/descends through aircraft in level 20 between RNP4 or RNP2 (No SLOP or SLOP up to 0.5NM) - 9 for climbs/descends through aircraft in level Longitudinal 50 with reporting interval 32min 30 with reporitn interval 12min 5 min with reporting intercal 14min		O	TBD		R	DCPC or CPDLC. Requires PBCS (RCP240)	RNP 4 OPS Approval	ADS with a lateral deviation contract having 5NM. Requires PBCS (RSP180)	WGS-84; QMS for AIS; AIRAC Compliance for publication (42 days, recommended 56 days; ICARD for new waypoint names; Air Navigation Plan Amendment for Regional ATS Routes; Regional Supplementary Procedures (Doc 7030) for application in airspace over the high seas; PBCS	Conformance monitoring shall be ensured by establishing an ADS-C event contract specifying a lateral deviation change event with a maximum of 5 NM threshold and a waypoint change event Max ADS-C periodic reporting interval - 32min for 50NM - 12min for 30NM - 14min for 5min
RNP 2	2	2							GNSS	Lateral Apply minima in RNP4 if RNP2 is related Between RNP2 or GNSS equipage - 23 for SLOP up to 2NM, climbs/descends through aircraft in level - 20 for No SLOP or SLOP up to 0.5NM, climbs/descends through aircraft in level - 18 for SLOP up to 2 NM with VHF DCPC - 15 for No SLOP or SLOP up to 0.5NM with VHF DCPC - 10 for SLOP up to 2 NM with VHF DCPC, climbs/descends through aircraft in level - 7 for No SLOP or SLOP up to 0.5NM with VHF DCPC, climbs/descends through aircraft in level Longitudinal 30 with reporitn interval 12min 5 min with reporting intercal 14min		O	TBD		R	Requires PBCS (RCP240) for Oceanic/Remote; For other areas, depends on operational considerations (route spacing, traffic density, complexity, contingency procedures)	RNP 2 OPS Approval (Oceanic/Remote/continental)	Requires PBCS (RSP180) for Oceanic/Remote	Same as RNP 4	Conformance monitoring shall be ensured by establishing an ADS-C event contract specifying a lateral deviation change event with a maximum of 5 NM threshold and a waypoint change event Max ADS-C periodic reporting interval - 12min for 30NM - 14min for 5min
RNP 1			1	1	1		1	1	GNSS	Lateral For SIDs/STARs (PANS-ATM) 5 between RNP1 and RNP1, RNP APCH, or RNP AR APCH	O		TBD	O	R	DCPC (RNP 1 SIDs/STARs)	RNP 1 OPS Approval	Not required except reduced route spacing	WGS-84; QMS for AIS; AIRAC Compliance for publication (42 days, recommended 56 days	
A RNP[4]	2	2 or 1	1 - 0.3	1 - 0.3	1 - 0.3	0.3	1 - 0.3	1 - 0.3	GNSS Multi-DME may be provided	Lateral 7 - straight and turning tracks (<90°) in high traffic density (en-route, Terminal, Eurocontrol) 6 to 7 NM with an RNP 0.5 (terminal, Eurocontrol)	R	O	TBD	O	R	DCPC- VHF	A-RNP OPS Approval (Navigation accuracy at least ±1NM, 95% of the flght time)	surveillance (may not be required to certain navigation application)	WGS-84; QMS for AIS; AIRAC Compliance for publication (42 days, recommended 56 days	

RNP APCH (Part A)[5]				1	1	0.3	1		GNSS (Missed App - RNAV or Conv.)	Lateral For SIDs/STARs (PANS-ATM) 7 between RNAV1 and RNP APCH 5 between RNP1 and RNP APCH	O		TBD	O	R	Not required	RNP APCH OPS Approval	Not required	WGS-84, QMS for AIS, AIRAC, Compliance for publication (42 days, recommended 56 days)	
RNP APCH (Part B)[5]				1	1	Angular	1 or 0.3 (Initial Straight MISAP)		GNSS	Lateral For SIDs/STARs (PANS-ATM) 7 between RNAV1 and RNP APCH 5 between RNP1 and RNP APCH	O		TBD		R	Not required	RNP APCH OPS Approval	Not required	WGS-84, QMS for AIS, AIRAC, Compliance as above.	
RNP AR APCH				1 - 0.1	1 - 0.1	0.3 - 0.1	1 - 0.1		GNSS (DME/DME may b authorized	Lateral For SIDs/STARs (PANS-ATM) 7 between RNAV1 and RNP AR APCH 5 between RNP1 and RNP AR APCH	R[6]		TBD	R[6]	R	Not required	RNP AR APCH OPS Approval	Not required	WGS-84; QMS for AIS; AIRAC Compliance for publication (42 days, recommended 56 days	
RNP 0.3		0.3	0.3	0.3	0.3		0.3	0.3	GNSS	Lateral (no clear reference) For SIDs/STARs (PANS-ATM) 7 between RNAV1 and RNP0.3 5 between RNP1, RNP APCH and RNP AR APCH	O		TBD	O	R	Not required	RNP 0.3 OPS Approval	Not required	WGS-84; QMS for AIS; AIRAC Compliance for publication (42 days, recommended 56 days	

1) RNP requirements do not apply to initial and intermediate missed approach segments.
2) TOAC (Time of Arrival Control), TBD (To Be Determined)
3) RNAV 5 may be used for initial parts of STARs outside 30 NM from the ARP.
4) Advanced RNP core requirements are limited to RNP 1 in all flight phases except final approach (RNP 0.3) and RNP 2 in oceanic/remote and en-route continental. A scaleability option will allow accuracy values between 0.3 and 1.0, in 0.1 NM increments, in all flight phases except oceanic/remote/en-route continental (RNP 1 and RNP 2) and final approach (RNP 0.3).
5) Part A and B refer to the Performance-based Navigation (PBN) Manual (Doc 9613), Volume II, Part C, Chapter 5, Part A — RNP APCH operations down to LNAV and LNAV/VNAV minima and Part B — RNP APCH operations down to LP and LPV minima, respectively.
6) Specific requirement for RF and VNAV

Note: These information are contained in the PBN-in-a-page, Version 2, provided on the ICAO Asia/Pacific website under 'APAC eDocuments'
https://www.icao.int/APAC/Documents/edocs/PBN-in-a-page%20V2.pdf

Longitudinal Separation Minima

- Longitudinal distance-based separation minima in an RNP RNAV environment not using ADS-C

Separation minimum	*RNP type*	*Communication requirement*	*Surveillance requirement*	*Distance verification requirements*
93 km (50 NM)	10	Direct controller-pilot communications	Procedural position reports	At least every 24 minutes

Note: may be used within designated airspace, or on designated routes, subject to regional air navigation agreements

Longitudinal Separation Minima

- Performance-based longitudinal separation minima

Separation minima	*RNP*	*RCP*	*RSP*	*Maximum ADS-C periodic reporting interval*
93 km (50 NM)	10	240	180	27 minutes
	4	240	180	32 minutes
55.5 km (30 NM)	2 or 4	240	180	12 minutes
5 minutes	2 or 4 or 10	240	180	14 minutes

Note: may be used within designated airspace, or on designated routes, subject to regional air navigation agreements

Separation Minima Based on ATS Surveillance Systems

8.7.3.1 Unless otherwise prescribed in accordance with 8.7.3.2, 8.7.3.3 or 8.7.3.4, or Chapter 6 (with respect to independent and dependent parallel approaches), the horizontal separation minimum based on radar and/or ADS-B and/or MLAT systems shall be 9.3 km (5.0 NM).

8.7.3.2 The separation minimum in 8.7.3.1 may, if so prescribed by the appropriate ATS authority, be reduced, but not below:

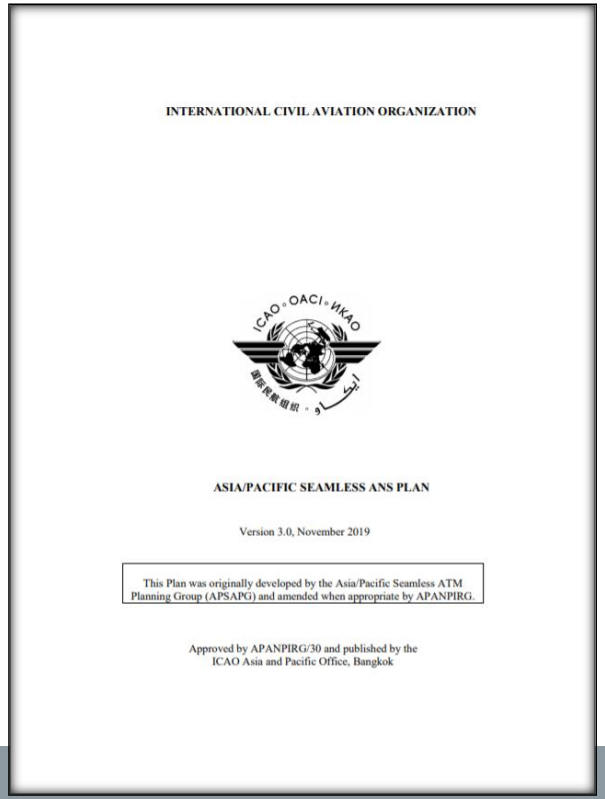
a) 5.6 km (3.0 NM) when radar and/or ADS-B and/or MLAT systems'capabilities at a given location so permit; and

b) 4.6 km (2.5 NM) between succeeding aircraft which are established on the same final approach track within 18.5 km (10 NM) of the runway threshold. A reduced separation minimum of 4.6 km (2.5 NM) may be applied, provided:

ICAO Doc 4444 (PANS ATM)

REGIONAL REQUIREMENTS

ICAO Asia/Pacific Seamless ANS Plan



INTERNATIONAL CIVIL AVIATION ORGANIZATION

ASIA/PACIFIC SEAMLESS ANS PLAN

Version 3.0, November 2019

This Plan was originally developed by the Asia/Pacific Seamless ATM Planning Group (APSAPG) and amended when appropriate by APANPIRG.

Approved by APANPIRG/30 and published by the ICAO Asia and Pacific Office, Bangkok

The *ICAO Asia/Pacific Seamless ANS Plan, Version 3.0* is provided on the ICAO Asia/Pacific website under 'APAC eDocuments' https://www.icao.int/APAC/Documents/edocs/Asia%20Pacific%20Seamless%20ATM%20Plan%20V%203.0.pdf

Airspace Category

- Categorises airspace by reference to its CNS capability as:
  - Category R: remote en-route airspace with Air Traffic Services (ATS) HF or CPDLC communications and outside the coverage of ground-based surveillance coverage; or
  - Category S: serviced (or potentially serviced) en-route airspace – by direct ATS communications and surveillance; or
  - Category T: terminal operations serviced by direct ATS communications and surveillance.

ATS Route (Terminal Operations)

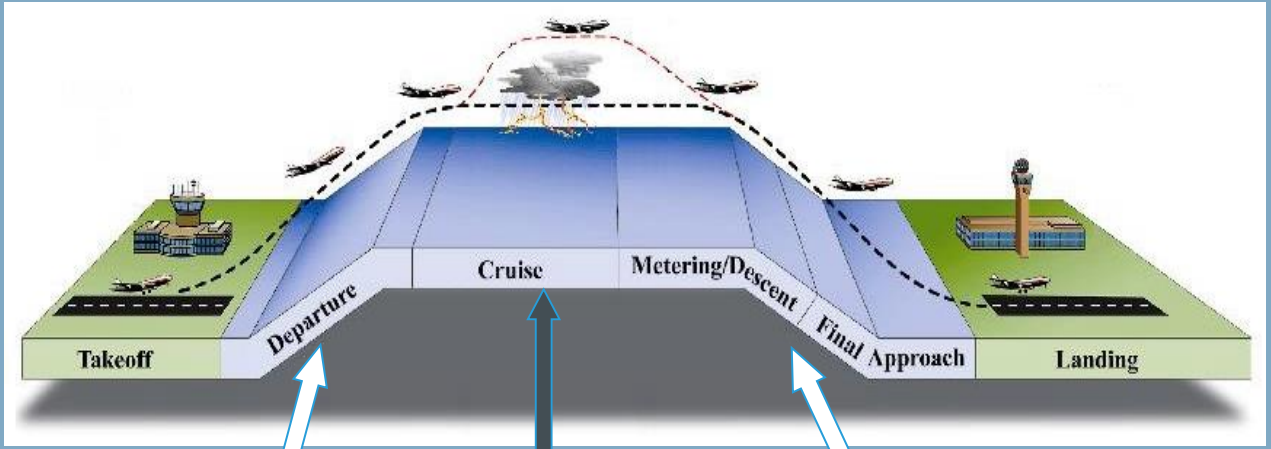
- SID/STAR procedures (*expected implementation by 07 November 2019*)
  - **RNAV 1** (ATS surveillance environment); or
  - **RNP 1** (ATS surveillance and non-ATS surveillance environments).

ATS Route (En-route Operations)

- Expected implementation by 03 November 2022
  - Category R airspace – **RNP 2 Oceanic** (other acceptable navigation specification – **RNP 4**); and
  - Category S airspace – **RNAV 2** or **RNP 2.**

Note: The Asia/Pacific recognises an equivalency for RNP 2 as being an aircraft approved for RNAV 2, RNP 1 and GNSS.

Navigation Application



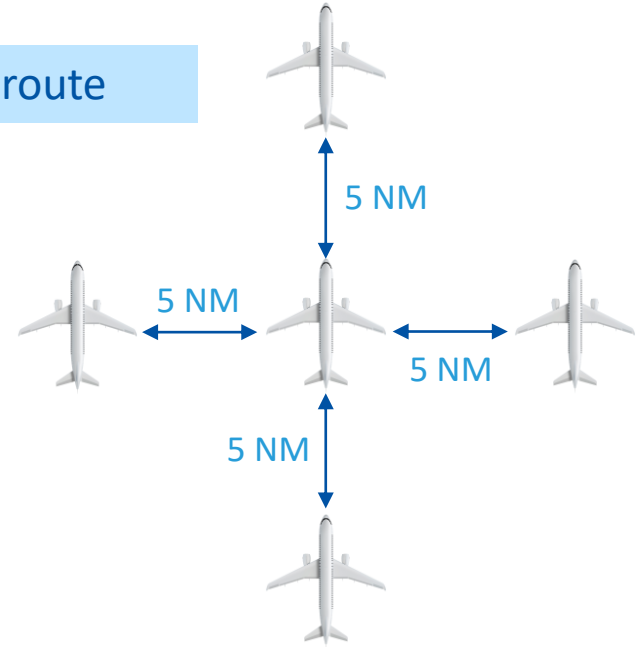
RNAV 1 or RNP 1
SIDs

Category R:
RNP 2 Oceanic or RNP 4
Category S:
RNAV 2 or RNP 2

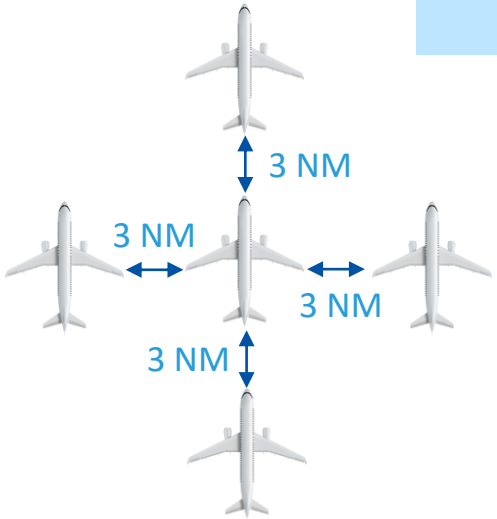
RNAV 1 or RNP 1
STARs

Surveillance-based Separation

En-route



Terminal



Surveillance-based Separation

En-route

Terminal

Taking into account:

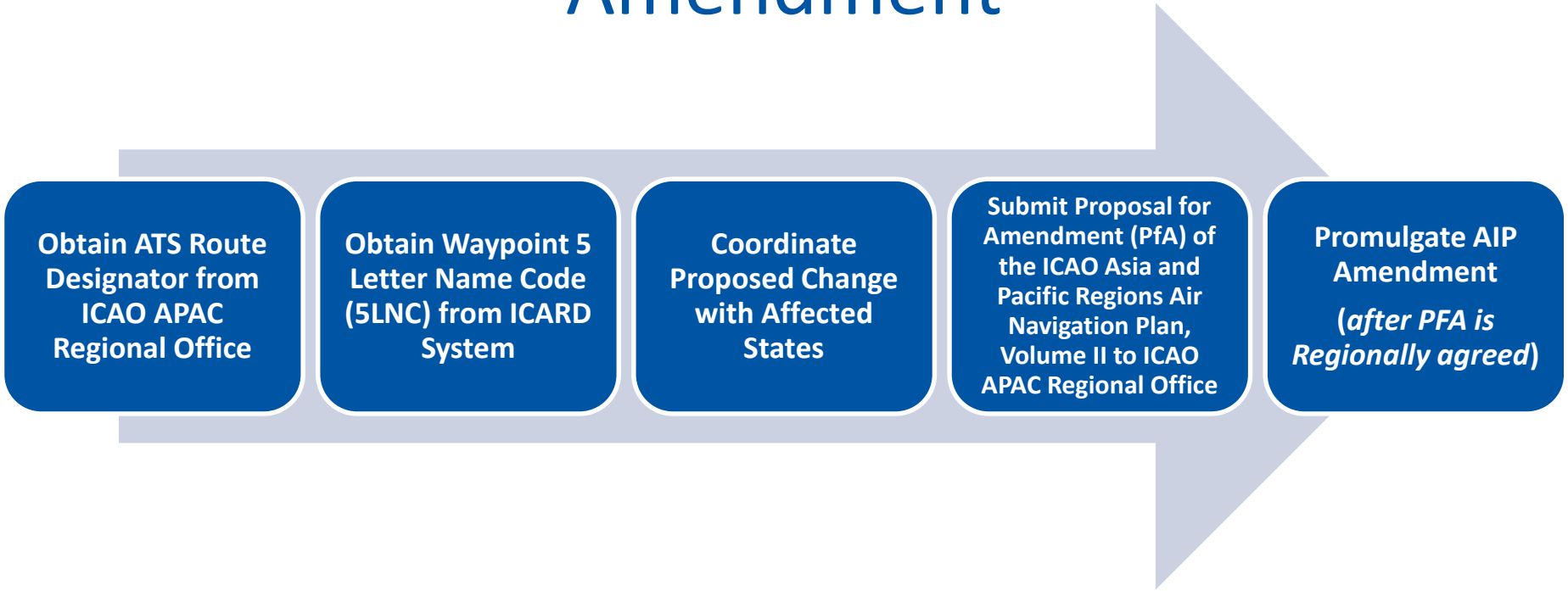
- the automation of the ATM system, including automated hand-off between sectors;
- the capability of the ATC communications system;
- the performance of the ATS surveillance system, including data-sharing or overlapping coverage at TOC points; and
- ensuring the competency of air traffic controllers to apply the full tactical capability of ATS surveillance systems.

IMPLEMENTATION ACTIVITIES

Establishing the Correct PBN Specifications for ATS Routes

- Key aspects
  - Before establishing a PBN specification for routes or airspace, determine the aircraft equipage that supports the specification.
  - There is no need to re-designate a conventional ATS route to allow a PBN-capable aircraft to use that route.
  - Surveillance-monitored longitudinal spacing may be implemented within Category S airspace without changing the designation of the ATS route. Thus, within Category S airspace, the main reason for a PBN route specification is for obstacle appraisal and navigation, not for ATC separation (as surveillance-based separation should be applied).

Promulgation Process for ATS Route Amendment



Obtain ATS Route Designator

- Email request to ICAO APAC RO (apac@icao.int):
  - purpose (e.g. new ATS route from X to Y).
  - specify whether RNAV or Non-RNAV (*note: ATS route proposals shall be considered for designation as RNAV routes and not conventional routes, whenever practicable*).
  - RNP specification not required when requesting a designator.

Obtain Waypoint 5 Letter Name Code

- Where a significant point is required at a position not marked by the site of a radio navigation aid, and is used for ATC purposes, it shall be designated by a unique five-letter pronounceable “name-code”.

- The unique five-letter pronounceable name-code designator assigned to a significant point shall not be assigned to any other significant point.

Obtain Waypoint 5 Letter Name Code

- If an ATS route is realigned, the ATS route designator may be retained but any waypoint (significant point not marked by the site of a radio navigation aid) that is relocated must be renamed with a new 5LNC selected from ICARD.

Obtain Waypoint 5 Letter Name Code

- State shall obtain the waypoint 5LNC from the ICAO International Routes and Route Designators (ICARD) system through the ICARD_5LNC_PLANNERs.

  Note: Each State must nominate at least one, and preferably two ICARD_5LNC_PLANNERs

Obtain Waypoint 5 Letter Name Code

- ICARD:
  - A database of 230,000 5LNC used for global air navigation.
  - Allows the reservation and allocation of 5LNC used for the identification of significant points not marked by the site of a radio navigation aid and designators for ATS routes.
  - Ensuring uniqueness in compliance with ICAO Annex 11, Annex 15 and Doc 8168.
  - Accessible through the ICAO Secure Portal at: http://portallogin.icao.int

Coordinate Proposed Change

- Determine route specifications:
  - navigational capability required.
  - alignment, and spacing from other ATS routes.
  - technical details: altitude, tracks, distances etc.

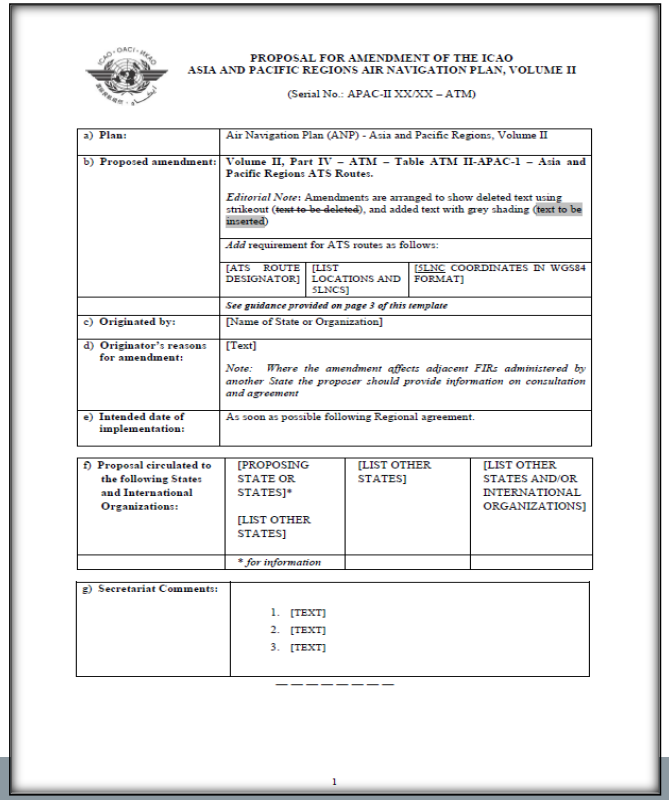
- Industry consultations:
  - fleet capability and readiness.
  - implementation date.

- Plan implementation date:
  - common implementation date in AIP Supplement to be published by affected States/Administrations.
  - effective date must be an AIRAC Date.

Coordinate Proposed Change

- States must complete appropriate bilateral coordination with affected States (neighbouring States/FIRs) before submitting a regional ATS route proposal for change, deletion or addition to the ICAO APAC Regional Office.

Submit PfA of the ICAO APAC ANP, Vol. II



PROPOSAL FOR AMENDMENT OF THE ICAO ASIA AND PACIFIC REGIONS AIR NAVIGATION PLAN, VOLUME II

(Serial No.: APAC-II XX/XX – ATM)

a) Plan:	Air Navigation Plan (ANP) - Asia and Pacific Regions, Volume II
b) Proposed amendment:	**Volume II, Part IV – ATM – Table ATM II-APAC-1 – Asia and Pacific Regions ATS Routes.** *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) *Add* requirement for ATS routes as follows: [ATS ROUTE DESIGNATOR] | [LIST LOCATIONS AND 5LNCS] | [5LNC COORDINATES IN WGS84 FORMAT] ***See guidance provided on page 3 of this template***
c) Originated by:	[Name of State or Organization]
d) Originator's reasons for amendment:	[Text] *Note: Where the amendment affects adjacent FIRs administered by another State the proposer should provide information on consultation and agreement*
e) Intended date of implementation:	As soon as possible following Regional agreement.

f) Proposal circulated to the following States and International Organizations:	[PROPOSING STATE OR STATES]* [LIST OTHER STATES]	[LIST OTHER STATES]	[LIST OTHER STATES AND/OR INTERNATIONAL ORGANIZATIONS]
	** for information*		

g) Secretariat Comments:	1. [TEXT] 2. [TEXT] 3. [TEXT]

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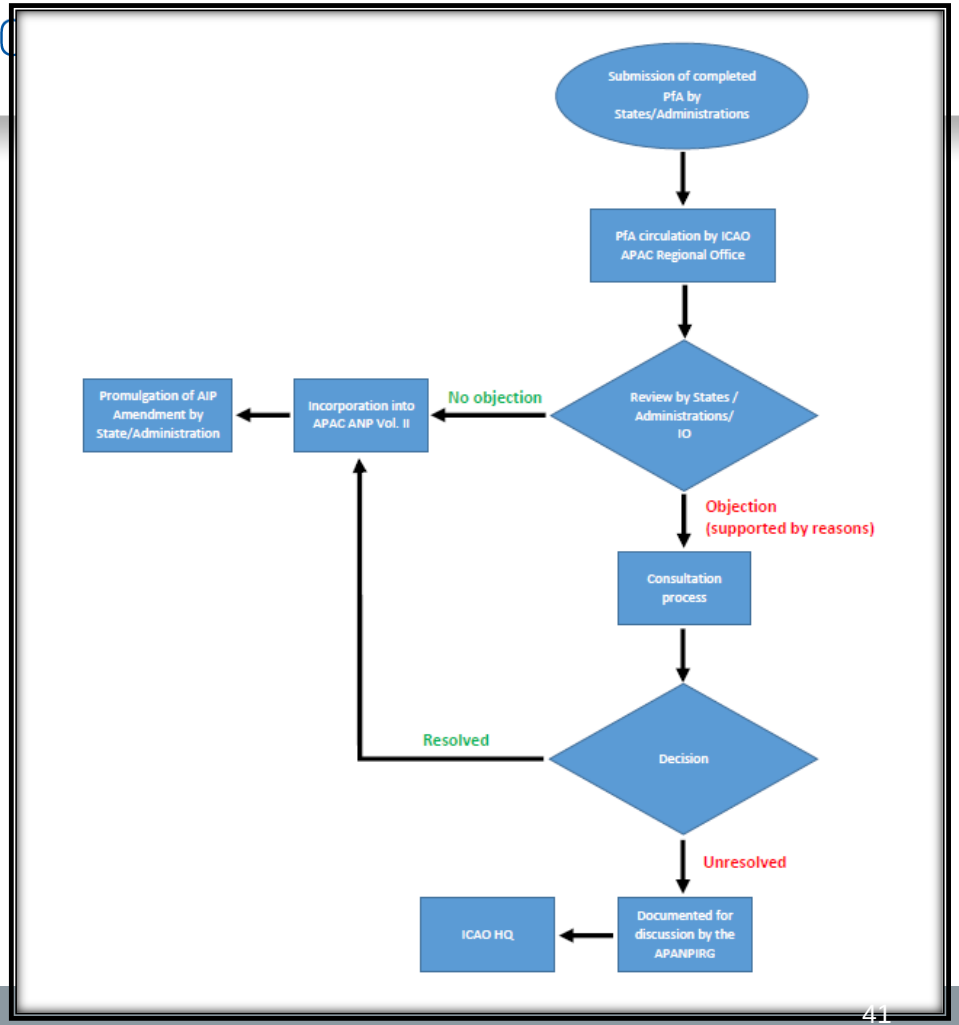
1

The template is provided on the ICAO Asia/Pacific website under 'APAC ANP' https://www.icao.int/APAC/Pages/APAC-eANP.aspx

PROPOSAL FOR AMENDMENT OF THE ICAO ASIA AND PACIFIC REGIONS AIR NAVIGATION PLAN, VOLUME II FLOWCHART



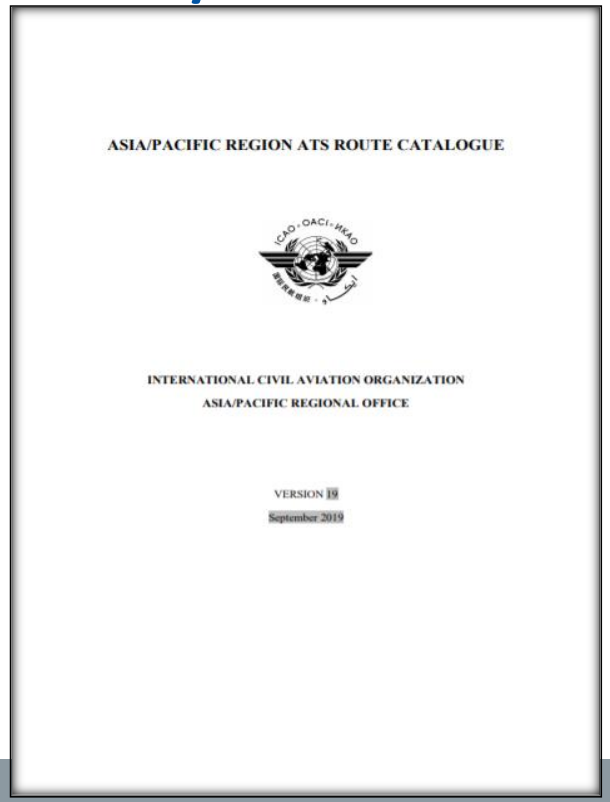
Promulgate AIP Amendment

- Common implementation date in AIP Supplement to be published by affected States/Administrations.

- Effective date must be an AIRAC Date. Annex 15 requirements for prior promulgation must be met, minimum 70 days before effective AIRAC Date.

ASIA/PACIFIC REGION ATS ROUTE CATALOGUE

Asia/Pacific Region ATS Route Catalogue



ASIA/PACIFIC REGION ATS ROUTE CATALOGUE

INTERNATIONAL CIVIL AVIATION ORGANIZATION
ASIA/PACIFIC REGIONAL OFFICE

VERSION 19
September 2019

- Records the current status of route proposals, which may not have reached the stage of the formal proposal stage through the Regional Air Navigation Plan Proposal for Amendment (PfA) process.
- The most recent Version 19 of the Catalogue is available at the ICAO Asia/Pacific website under the menu ‘APAC eDocuments’

https://www.icao.int/APAC/Documents/edocs/Asia-Pacific%20Region%20ATS%20Route%20Catalogue%20Version%2019.pdf

Asia/Pacific Region ATS Route Catalogue

- States/Administrations or qualified International Organisations should complete the template (except “State Priority” and/or “IATA Priority”).
- Regional ATS route proposals affecting Asia/Pacific airspace should be presented as part of a paper to ATM coordination groups (e.g. ATM/SG, SAIOACG and SEACG) or other suitable bodies.
- Then may be entered into the *Asia/Pacific Region ATS Route Catalogue* by the Regional Office.

ATS Route Name	MEKONG 01 (or other explanatory title)
State Priority	A/B/C/D
IATA Priority	HIGH/MEDIUM/LOW
Requested by (when)	
States/Administrations Involved	Names of States or Administrations (Name of FIRs)
Route Description	
Flight Level Band	
Benefit (fuel, environmental)	
Operational Information (potential airlines, flight frequency)	
Remarks:	Image to be provided

Note 1: The ATS Route Proposal Template is provided on the ICAO Asia/Pacific website under ‘APAC eDocuments’ https://www.icao.int/APAC/Pages/eDocs.aspx#tabs-3

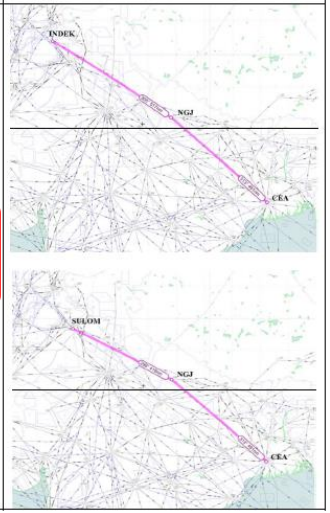
Asia/Pacific Region ATS Route Catalogue

- The APAC Regional Office or Regional Sub-Office will periodically present to appropriate ATM coordination groups or other suitable bodies the proposals within their geographical area of interest for review.

- States in APAC were required to reclassify the routes as:
  - Priority A – Short Term i.e. it could be implemented within 12 months;
  - Priority B – Medium Term i.e. it could be implemented within 13 to 36 months;
  - Priority C – Long term i.e. more than 36 months; and
  - Priority D – Cannot be implemented (reasons to be provided).

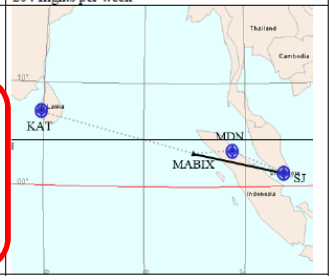
Asia/Pacific Region ATS Route Catalogue

- After review, the *Asia/Pacific Region ATS Route Catalogue* may be updated by:
  - deletion of the proposal when the proposal has been agreed and entered into the eANP; or

~~ATS Route Name~~	~~HIMALAYA 01~~
~~State Priority~~	~~←~~
~~IATA Priority~~	~~LOW~~
~~Requested by (when)~~	~~Nepal (01/09/2018)~~
~~States/Administrations Involved~~	~~India, Nepal, Pakistan (Kolkata, Delhi, Kathmandu, Lahore FIRs)~~
~~Route Description~~	~~Kolkata (CEA) 2238.7N 08827.2E – Nepalgunj (NGJ) 2806.1N 08139.1E – INDEK 3246.0N 7316.0E or Kolkata (CEA) 2238.7N 08827.2E – Nepalgunj (NGJ) 2806.1N 08139.1E – SULOM 312047N 0743357E~~
~~Flight Level Band~~	
~~Benefit (fuel, environmental)~~	
~~Operational Information~~ (potential airlines, flight frequency)	
~~Remarks: The extension to L509 serves the purpose at present although is only available for limited hours daily. The availability of another route to the north will provide extra capacity but will need to be amended to link with a new transit route through Kabul. At SAIOACG/9: as this route would traverse military SUAs, India required more time to coordinate with its military authority; and Pakistan counter proposed for this route via SULOM instead of INDEK.~~ Update from India on 02/08/2019: ATS route L509 implemented from Gaya (GGC) to SULOM. India propose for deletion. At ATMSG/7: Nepal agreed for deletion.	

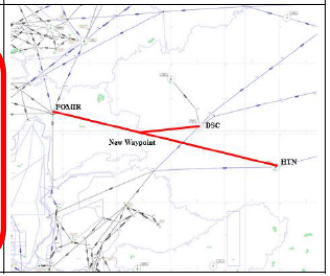
Asia/Pacific Region ATS Route Catalogue

- After review, the *Asia/Pacific Region ATS Route Catalogue* may be updated by:
  - deletion of the proposal when it has been decided that there is no possibility of implementation in the foreseeable future; or

~~ATS Route Name~~	~~IDO 01~~
~~State Priority~~	~~D~~
~~IATA Priority~~	~~HIGH~~
~~Requested by (when)~~	~~IATA (01/09/2018)~~
~~States/Administrations Involved~~	~~Indonesia, Malaysia, Singapore (Jakarta, Kuala Lumpur, Singapore FIRs)~~
~~Route Description~~	~~MABIX 0316.0N 09450.9E – Sinjon (SJ) 0113.4N 10351.3E~~
~~Flight Level Band~~	~~28,000 – 46,000 ft~~
~~Benefit~~ (fuel, environmental)	~~46 NM / 6 minutes, 500 kg fuel, 1,575 kg CO_2 per flight, 5,304 tonnes fuel, 16,708 tonnes CO_2 annually~~
~~Operational Information~~ (potential airlines, flight frequency)	~~EK, EY, QR, SQ, UL~~ 204 flights per week
~~Remarks: This route supports traffic from SIN to CBI, TVM and an alternative to the Middle East. It provides a 10 NM reduction in track mileage (10 NM if traffic route via MDN). Not implementing due PfA on L762. However, airlines still see the proposal as priority particularly for Middle East traffic.~~ At SEACG/26 (WP23), IATA agreed to the deletion of this route proposal, noting that a future iteration of the proposal could be re-inserted in the catalogue should the need be identified. Malaysia also agreed to the deletion.	

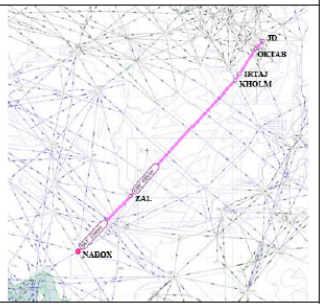
Asia/Pacific Region ATS Route Catalogue

- After review, *the Asia/Pacific Region ATS Route Catalogue* may be updated by:
  - amendment with the addition of supplementary information; or

ATS Route Name	**FE0032 / RDGE 17.005**
State Priority	C
IATA Priority	
Requested by (when)	Tajikistan, IATA (01/09/2018)
States/Administrations Involved	Tajikistan, China (Dushanbe, Urumqi FIRs)
Route Description	Implementation of new bi-directional ATS route segment: ~~TOPAZ~~ POMIR 383500N 0713800E – New Waypoint (FIR BDRY between Dushanbe and Urumqi) – Yarkant (DSC) 381318N 0770418E; or ~~TOPAZ~~ POMIR 383500N 0713800E – New Waypoint (FIR BDRY between Dushanbe and Urumqi) – Hotan (HTN) 370212N 0795206E
Flight Level Band	
Benefit (fuel, environmental)	
Operational Information (potential airlines, flight frequency)	
Remarks: Further improve ATS route network in the interface between China and Tajikistan. ~~Waypoint TOPAZ need to be verified (PAMIR?). RDGE to review and provide the missing data.~~ At ATMSG/7: Tajikistan amended its proposal to: POMIR 383500N 0713800E – New Waypoint (FIR BDRY between Dushanbe and Urumqi) – Yarkant (DSC) 381318N 0770418E; or POMIR 383500N 0713800E New Waypoint (FIR BDRY between Dushanbe and Urumqi) – Hotan (HTN) 370212N 0795206E.	

Asia/Pacific Region ATS Route Catalogue

- After review, the *Asia/Pacific Region ATS Route Catalogue* may be updated by:
  - addition of a new ATS route proposal.

ATS Route Name	**MID 03**
State Priority	A
IATA Priority	
Requested by (when)	Afghanistan (03/08/2019: AIRARD TF/4)
States/Administrations Involved	Iran, Afghanistan, Tajikistan (Tehran, Kabul, Dushanbe FIRs)
Route Description	NABOX 281630N 0582600.96E – Zabol (ZAL) 310543.90N 0613230.80E – KHOLM 364300N 0674100E – IRTAJ 370050N 0675550E – OKTAB 381012N 0685248E – Fayzobod (JD) 383238N 0691850E
Flight Level Band	
Benefit (fuel, environmental)	
Operational Information (potential airlines, flight frequency)	
Remarks: Afghanistan and Tajikistan has agreed to the implementation of segments within their FIRs. Pending agreement from Iran. B904 BUDBO – HOLM – IRTAJ – JD to Tajikistan (G1380/19 NOTAMN-AFG. O0431/19 NOTAMR -TAJ) was implemented on 7 July 2019. At ATMSG/7: Iran provided its agreement to this route proposal, and would discussed the implementation plan with the respective States.	

CONCLUSION

Conclusion

- To consider:
  - implement more efficient routes (PBN route) that allows for shorter and straighter route, increased capacity due to closely spaced routes;
  - if COVID-affected systems allow, it's an ideal time to test more efficient ATC separations and procedures with less air traffic and training may be easier to conduct, with less needed on some ATC sectors.
  - continuously review the route proposals in the *Asia/Pacific Region ATS Route Catalogue* with a view to implementation in the current low air traffic environment.

Q&A SESSION

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THANK YOU