



International Civil Aviation Organization

Asia/Pacific Seamless ATM Plan

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Introduction

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 - Introduction
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Trans-Regional Issues

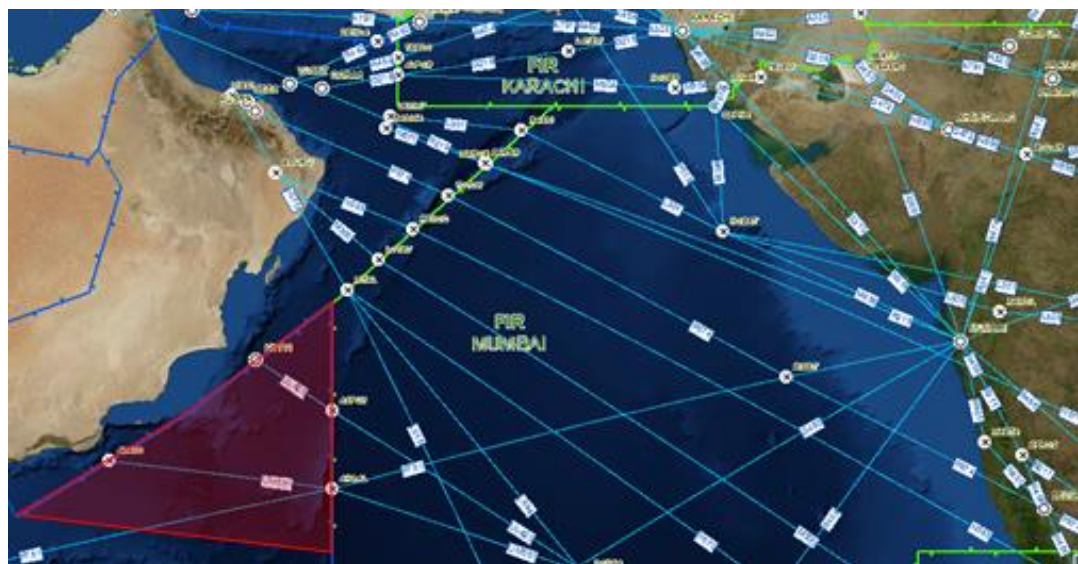
Europe – Asia/Pacific Trans-Regional Issues

- Limited number of entry/exit points on the Mongolian-Chinese Flight Information Region Boundaries (FIRBs).
- Restrictions on ATS route development (entry/exit waypoints) between China-Mongolia-DPRK .
- OLDI (On-Line Data Interchange) to AIDC (ATS Inter-facility Data Communications) lack of interoperability.
- Differences in horizontal separation (early 2013: Russia 16NM, Mongolia 80NM - ATS surveillance data-sharing possible?).
- Afghanistan-Pakistan airspace military restrictions and Flight Level Allocation Scheme (FLAS) affecting Central Asian routes.

Trans-Regional Issues

Middle East/Africa – Asia Trans-Regional Issues

- Indian Ocean FLAS affecting African flights.
- Oman procedural longitudinal separation in radar airspace.
- OLDI (On-Line Data Interchange) to AIDC (ATS Inter-facility Data Communications) lack of interoperability.
- Oman-Sana'a-Mumbai FIRB complexity and service levels.



Seamless ATM Plan PARS/PASL

PERFORMANCE IMPROVEMENT PLAN

Preferred Aerodrome/Airspace and Route Specifications (PARS)

Note: prior to implementation, the applicability of PARS should be verified by analysis of safety, current and forecast traffic demand, efficiency, predictability, cost effectiveness and environment to meet expectations of stakeholders.

PARS Phase I (expected implementation by 12 November 2015)

Aerodrome Operations

7.1 All high density international aerodromes (100,000 scheduled movements per annum or more) should:

- a) provide an appropriate apron management service in order to regulate entry of aircraft into and coordinate exit of aircraft from the apron;
- b) have appropriate ATM coordination (including meetings and agreements) related to:
 - airport development and maintenance planning;
 - coordination with local authorities regarding environmental, noise abatement, and obstacles;
 - ATM/PBN procedures for the aerodrome;
- c) conduct regular airport capacity analysis, which included a detailed assessment of passenger, airport gate, apron, taxiway and runway capacity; and
- d) provide electronic surface movement guidance and control.

Note 1: the 100,000 movement benchmark must not be viewed as lessening more stringent existing requirements and criteria established by the State, or superseding ICAO Annex 14 Volume I requirements, especially with regard to aerodrome certification.

Note 2: the provision of A-SMGCS should be subject to economic analysis (ASBU Priority 3).

(‘High density’ includes New Delhi and Mumbai Airports)

Seamless ATM Plan PARS/PASL

Terminal Operations (Category T airspace)

7.3 CCO and CDO operations should be considered for implementation at all high density international aerodromes after analysis, based on a performance-based approach (ASBU Priority 2).

Note: this does not preclude a State considering implementation of CCO/CDO at other aerodromes as appropriate.

7.4 All international high density aerodromes should have **RNAV 1** (ATS surveillance environment) or **RNP 1** (ATS surveillance and non-ATS surveillance environments) SID/STAR.

7.5 Where practicable, all high density aerodromes with instrument runways serving aeroplanes should have (ASBU Priority 2):

- a) precision approaches; or
- b) Approaches with Vertical Guidance (APV), either RNP APCH with Barometric Vertical Navigation (Baro-VNAV) or augmented GNSS (SBAS or GBAS); or
- c) if an APV is not practical, straight-in RNP APCH with Lateral Navigation (LNAV).

En-route Operations

7.6 All Category S upper controlled airspace and Category T airspace supporting high density aerodromes should be designated as non-exclusive or exclusive as appropriate ADS-B airspace requiring operation of ADS-B using 1090ES with DO-260/260A and 260B capability, with priority implementation for the following high density FIRs (**Figure 9**) supporting the busiest Asia/Pacific traffic flows (APANPIRG Conclusion 22/8 and 23/5 refer):

- a) South Asia: Delhi, Mumbai;
- b) Southeast Asia: Bangkok, Hanoi, Ho Chi Minh, Jakarta, Kota Kinabalu, Manila, Sanya, Singapore, Vientiane; and
- c) East Asia: Beijing, Fukuoka, Guangzhou, Hong Kong, Kunming, Incheon, Shanghai, Shenyang, Taipei, Wuhan.

8 NOV 18:

RNP 0.3 arrival/departure, approach and/or en-route transiting procedures should be considered at high density aerodromes with rotary wing operations.

8 NOV 18:

All international aerodromes should have **RNAV 1** (ATS surveillance environment) or **RNP 1** (ATS surveillance and non-ATS surveillance environments) SID/STAR.

(‘R’ airspace = remote, ‘S’ airspace = surveilled by radar, MLAT or ADS-B), ‘T’ airspace = terminal airspace)

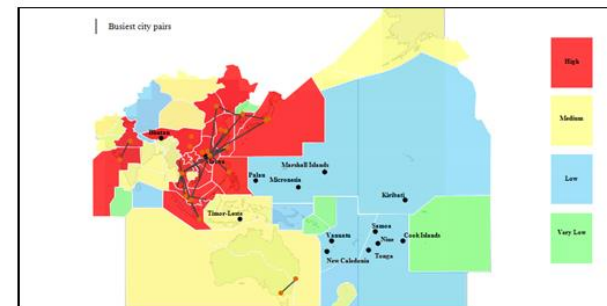


Figure 9: High Density FIRs

Note 1: in areas where ADS-B based separation service was provided, the carriage of ADS-B OUT using 1090ES with DO260/60A and 260B is recommended.

Note 2: States should refer to the ADS-B implementation in the ICAO ADS-B Implementation and Guidance Document (AIGD).

Seamless ATM Plan PARS/PASL

7.7 All Category R and S upper controlled airspace, and Category T airspace supporting high density aerodromes should require the carriage of an operable mode S transponder within airspace where Mode S radar services are provided; and ACAS and Terrain Awareness Warning Systems (TAWS), unless approved by ATC (ASBU Priority 2).

8 NOV 18:
All Category R and S upper controlled airspace, and Category T airspace should, unless approved by the State, a) require the carriage of an operable: mode S transponder within airspace where Mode S radar services are provided; and b) ACAS and TAWS (ASBU Priority 2).

7.8 All Category R and S upper controlled airspace, and Category T airspace supporting high density aerodromes should be designated as non-exclusive or exclusive PBN airspace as appropriate. This is to allow operational priority for PBN approved aircraft, harmonised specifications and to take into account off-track events such as weather deviations, with priority implementation for high density FIRs.

Note: Non-exclusive means that non-PBN aircraft may enter the airspace, but may be accorded a lower priority than PBN aircraft, except for State aircraft.

7.9 All ATS routes should be designated with a navigation performance specification to define the CNS/ATM operational environment. The ATS route navigation performance specification selected should be harmonised and utilise the least stringent requirement needed to support the intended operation. When obstacle clearance or ATC separation requirements demand, a more stringent navigation specification may be selected. ATS routes should be established in accordance with the following PBN specifications:

8 NOV 18:
Category R and S airspace – **RNP 2**

- Category R airspace – **RNP 4, RNP 10** (RNAV 10) (other acceptable navigation specifications – RNP 2 oceanic); and
- Category S airspace – **RNAV 2** or **RNP 2** (other acceptable navigation specifications – RNAV 5).

8 NOV 18:
All Category S upper controlled airspace and Category T airspace should be designated as non-exclusive or exclusive as appropriate ADS-B airspace requiring operation of ADS-B using 1090ES with DO-260/260A and 260B capability.

Note 1: RNP 2 is expected to be utilised before Phase 2, when the RNP 2 instrument procedure design, ATC separation standards and operational approval are in place.

Note 2: within Category R airspace, transition to RNP 4 or RNP 2 oceanic specifications is recommended at the earliest opportunity. RNP 2 oceanic requires dual independent installations, plus CPDLC and ADS-C.

In areas where ADS-B based separation service is provided, the mandatory carriage of ADS-B OUT using 1090ES with DO260/60A and 260B should be prescribed

7.10 The ICAO Table of Cruising Levels based on feet as contained in Appendix 3a to Annex 2 should be used.

Seamless ATM Plan PARS/PASL

Civil/Military Cooperation

7.11 Civil/Military Airspace expectations are as follows:

- a) SUA should only be established after due consideration of its effect on civil air traffic by the appropriate Airspace Authority to ensure it will be:
 - used for the purpose that it is established;
 - used regularly;
 - as small as possible, including any internal buffers, required to contain the activity therein;
 - if applicable, operated in accordance with FUA principles (ASBU Priority 1); and
 - activated only when it is being utilised; and
- b) SUA should be regularly reviewed to ensure the activities that affect the airspace, and size and timing of such activity are accurately reflected by the SUA type, dimensions, activation notice and duration of activation.

(‘SUA = Special Use Airspace designated for military purposes)

Seamless ATM Plan PARS/PASL

Preferred ATM Service Levels (PASL)

Note: prior to the implementation, the applicability of PASL should be verified by analysis of safety, current and forecast traffic demand, efficiency, predictability, cost effectiveness and environment to meet expectations of stakeholders.

PASL Phase I (expected implementation by 12 November 2015)

Aerodrome Operations

7.25 All high density aerodromes should have **AMAN/DMAN facilities** (ASBU priority 2).

Terminal Operations

7.26 All high density aerodromes should provide meteorological forecasts, aerodrome warnings and alerts that support **efficient terminal operations** (ASBU Priority 2).

18 NOV 18:

All AMAN systems should take into account airport gates for runway selection and other aircraft departures from adjacent gates that may affect arriving aircraft

18 NOV 18:

ATM system design should be planned and implemented to support optimal aerodrome capacity expectations for the runway(s) concerned.

18 NOV 18:

All terminal ATC Sectors should have a nominal aircraft capacity figure based on a scientific capacity study and safety assessment, to ensure safe and efficient aircraft operations

Seamless ATM Plan PARS/PASL

En-route Operations

7.27 **High density FIRs** (refer **Figure 9**) supporting the busiest Asia/Pacific traffic flows and high density aerodromes should implement ATFM incorporating CDM to enhance capacity, using bi-lateral and multi-lateral agreements (ASBU Priority 1).

7.28 Harmonization of upper airspace classification should be as follows:

- a) Category R controlled airspace– **Class A**; and
- b) Category S controlled airspace– **Class A**, or if there are high level general aviation or military VFR operations: **Class B** or **C**.

7.29 Where practicable, all ATC Sectors **within the same ATC unit** with ATS surveillance capability should have automated hand-off procedures that allow the TOC of aircraft without the necessity for voice communications, unless an aircraft requires special handling.

18 NOV 18:

All FIRs supporting Major Traffic Flows should implement ATFM incorporating CDM to enhance capacity, using bi-lateral and multi-lateral agreements.

18 NOV 18:

Where practicable, all ATC Sectors with adjacent ATC Centres using ATS surveillance capability should have automated hand-off procedures that allow the TOC of aircraft without the necessity for voice communications, unless an aircraft requires special handling.

18 NOV 18:

To ensure the safety and efficiency of aircraft operations, a nominal aircraft capacity figure based on a scientific capacity study and safety assessment should be available for all enroute ATC sectors.

Seamless ATM Plan PARS/PASL

ATM Systems

7.30 The delivery of CNS/ATM services should be based primarily on the CNS/ATM capability. All ATC units should authorise the use of the horizontal separation minima stated in ICAO Doc 4444 (PANS ATM), or as close to the separation minima as practicable, taking into account such factors as:

- a) the automation of the ATM system;
- b) the capability of the ATC communications system;
- c) the performance of the ATS surveillance system, including data-sharing or overlapping coverage at TOC points; and
- d) ensuring the competency of air traffic controllers to apply the full tactical capability of ATS surveillance systems.

7.31 The efficacy, continuity and availability of ATM services should be supported by adherence with regional planning and guidance material regarding ATM automation and ATM contingency systems.

7.32 ADS-B (using 1090ES) or MLAT or radar surveillance systems should be used to provide coverage of all Category S-capable airspace as far as practicable (ASBU Priority 1). Data from ATS surveillance systems should be integrated into operational ATC aircraft situation displays (standalone displays of ATS surveillance data should not be used operationally).

7.33 Within Category R airspace, ADS-C surveillance and CPDLC should be enabled to support PBN-based separations, as well as UPR and DARP (ASBU Priority 1).

7.34 Subject to appropriate filtering, ATS surveillance data, particularly from ADS-B, should be shared with neighbouring ATC units within high density FIRs (refer Figure 5). Direct speech circuits and appropriate handoff procedures should be implemented between controllers providing ATS surveillance in adjacent airspace.

18 NOV 18:
Electronic flight progress strips should be utilised wherever practicable.

ATS surveillance systems should enable STCA, APW and MSAW (ASBU Priority 2). Route Adherence Monitoring (RAM) should be utilised when monitoring PBN route separations. Cleared Level Adherence Monitoring (CLAM) should be utilised to monitor RVSM airspace.

18 NOV 18:
ATM systems providing services within Category R airspace should enable appropriate ATC capabilities including CPAR, which is a key enabler for UPR and DARP operations.

18 NOV 18:
Subject to appropriate filtering, ATS surveillance data, particularly from ADS-B, should be shared with all neighbouring ATC units.

Seamless ATM Plan PARS/PASL

7.35 ATM systems should enable AIDC (version 3 or later) between ATC units where transfers of control are conducted unless alternate means of automated communication of ATM system track and flight plan data are employed (ASBU Priority 1). As far as practicable, the following AIDC messages types should be implemented:

- Advanced Boundary Information (ABI);
- Coordinate Estimate (EST);
- Acceptance (ACP);
- TOC; and
- Assumption of Control (AOC).

Note: the 18th Meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMA/18) determined that the following interface areas required AIDC priority implementation in order to reduce Large Height Deviations:

- a) Indonesia: between Jakarta and Chennai/Ujung Pandang/Brisbane/Melbourne FIRs;*
- b) India: between Chennai and Kuala Lumpur FIRs;*

7.36 Priority for FLAS level allocations should be given to higher density ATS routes over lower density ATS routes. FLAS should comply with Annex 2, Appendix 3a unless part of an OTS. FLAS other than OTS should only be utilised for safety and efficiency reasons within:

- a) Category R airspace with the agreement of all ANSPs that provide services:
 - within the airspace concerned; and
 - within adjacent airspace which is affected by the FLAS; or
- b) Category S airspace with the agreement of all ANSPs that provide services:
 - where crossing track conflicts occur within 50NM of the FIRB; and
 - ATS surveillance coverage does not overlap the FIRB concerned, or ATS surveillance data is not exchanged between the ATC units concerned.

18 NOV 18:
ATM systems should enable AIDC, or an alternative process that achieves at least the same level of performance as AIDC, between en-route ATC units and terminal ATC units where transfers of control are conducted

Seamless ATM Plan PARS/PASL

7.37 ATM systems, including communication and ATS surveillance systems and the performance of those systems, should support the capabilities of PBN navigation specifications and ATC separation standards applicable within the airspace concerned.

Note: guidance on the performance of ATS communication and surveillance systems is available in the Global Operational Data-link Document.

7.38 ATM systems should be supported by digitally-based AIM systems (using Aeronautical Information Exchange Model version 5.1 or later) through implementation of Phase 1 and 2 of the AIS-AIM Roadmap in adherence with ICAO and regional AIM planning and guidance material (ASBU Priority 1).

18 NOV 18:
ATM systems should be supported by complete implementation of AIM Phase 3.

7.39 ATM systems should be supported by implementation of appropriate meteorological information reporting systems, providing, *inter-alia*, observations, forecasts, warnings and alerts, and also provide for information to meteorological authorities or offices where required.

Priority

7.40 Where a minimum aircraft equipage is specified, any aircraft that does not meet specified equipage requirements should receive a lower priority, except as prescribed (such as for State aircraft). States should require State aircraft to comply with equipage requirements as far as practicable.

18 NOV 18:
To ensure the safety and efficiency of aircraft operations, a nominal aircraft capacity figure based on a scientific capacity study and safety assessment should be available for all enroute ATC sectors.

Seamless ATM Plan PARS/PASL

Human Performance

7.41 The following should be established to support human performance in the delivery of a Seamless ATM service. The systems should consider all the elements of the SHELL Model (Software, Hardware, Environment and Liveware – humans), in accordance with the ICAO Human Factors Digest No. 1 and related reference material:

- a) human performance training for all ANSP managers, including:
 - assessment and management of risks related to human capabilities and limitations;
 - effective participation in a team and team management
 - effective safety reporting systems;
 - human factors in air safety investigation;
 - fatigue management approaches;
- b) enhancement and improved application of ATC simulators;
- c) safety teams comprising multidisciplinary operational staff and managers which review safety performance and assess significant proposals for change to ATM systems;
- d) human performance-based training and procedures for staff providing ATS, including:
 - the application of tactical, surveillance-based ATC separation;
 - control techniques near minimum ATC separation;
 - responses to ATM contingency operations and safety net alerts; and
 - the importance of an effective safety reporting culture.

18 NOV 18:
Prevention of fatigue systems should be established to support human performance in the delivery of a Seamless ATM service. The systems should be consistent with guidance within ICAO Doc 9966 FRMS – *Fatigue Risk Management System*.

Seamless ATM Plan PARS/PASL

Civil/Military Cooperation

7.42 Civil/Military ATM expectations are as follows:

- a) a national civil/military body should be formed to coordinate strategic civil-military activities (military training should be conducted in locations and/or at times that do not adversely affect civilian operations, particularly those associated with major aerodromes);
- b) formal civil-military liaison should take place for tactical responses by encouraging military participation at civil ATM meetings and within ATC Centres;
- c) integration of civil and military ATM systems using joint procurement, and sharing of ATS surveillance data (especially from ADS-B systems) should be provided as far as practicable;
- d) joint provision of civil/military navigation aids should be encouraged;
- e) common training should be conducted between civil and military ATM units in areas of common interest; and
- f) civil and military ATM units should utilize common procedures as far as practicable.

Effective Implementation

- The Regional Office has developed a set of guidance material that is informal in nature— that is, it has not been formally endorsed by APANPIRG... but in any case it may be of value to States given the need to start the implementation planning.
- The Seamless ATM Plan and informal Guidance Material is available on the Regional Office web site, under ‘APAC eDocuments’ at <http://www.icao.int/APAC/Pages/edocs.aspx>.

Seamless ATM Plan

[Asia/Pacific Seamless ATM Plan](#)

version 1, June 2013

[Seamless ATM Implementation *Informal* Guidance](#)

version 4.0, June 2013

[State Seamless ATM Implementation Plan Template](#) - (MS Word)

[Regional Seamless ATM Reporting Form](#) - (MS Excel)

[Template for comments – Implementation Guidance](#) - (MS Excel)

Effective Implementation

- Phase 1 Seamless Elements (12 November 2015, 1st Priority)

Seamless ATM Plan reference, paragraph	Aerodrome	Terminal	En-route	Specification title	ASBU traceability Block 0	APAC Priority
80 (7.27)		√	√	Air Traffic Flow Management/Collaborative Decision-Making (ATFM/CDM)	B0-NOPS	1
140 (7.9)			√	Performance-based Navigation (PBN) Routes	B0-FRTO	1
180 (7.7)		√	√	ADS-B OUT	B0-ASUR	1
220 (7.35)		√	√	ATS Inter-facility Data-link Communications (AIDC)	B0-FICE	1
270 (7.32)	√	√	√	Multi-sensor integrated surveillance (ADS-B, MLAT, radar)	B0-ASUR	1
280 (7.33)		√	√	ADS-C, CPDLC	B0-TBO	1
360 (7.11)		√	√	Civil Military use of SUA (FUA)	B0-FRTO	1
90 (7.3)		√		Continuous Descent Operations (CDO)	B0-CDO	2*
100 (7.3)		√		Continuous Climb Operations (CCO)	B0-CCO	2*
110 (7.5)		√		Performance-based Navigation (PBN) Approach	B0-APTA	2*
*ICAO HQ affords a high priority to this item						

Note 1: Priority 1 = critical upgrade, Priority 2 = recommended upgrade, Priority 3 = may not be universally implemented.

Note 2: Priority 3 includes - B0-WAKE (Enhanced Wake Turbulence Separations), B0-SURF: (Improved Runway Safety), B0-OPFL: Climb/Descent Procedures using ADS-B In-trail Procedure (ITP). B0-WAKE is not included in the Seamless ATM Plan Phase 1 and 2 as there are no current standards.

Effective Implementation

- Phase 1 Seamless Elements (12 November 2015, 2nd Priority)

Seamless ATM Plan reference, paragraph	Aerodrome	Terminal	En-route	Specification title	ASBU traceability Block 0	APAC Priority
50 (7.25)	√	√		Arrival Manager/Departure Management (AMAN/DMAN)	B0-RSEQ	2
70 (7.2)	√			Airport Collaborative Decision-Making (ACDM)	B0-ACDM	2
120 (7.4)		√		Standard Instrument Departures/Standard Terminal Arrivals (SID/STAR)	B0-CCO/CDO	2
170 (7.7)		√	√	Airborne Safety Systems	B0-ACAS	2
250 (7.37)	√	√	√	ATM systems enabling optimal PBN/ATC operations	B0-APTA	2
290 (7.33)	√	√	√	UPR and DARP	B0-FRTO	2
300 (7.38)	√	√	√	Aeronautical Information Management	B0-DATM	2
310 (7.26, 39)	√	√	√	Meteorological Information	B0-AMET	2

Effective Implementation

- Phase 1 Seamless Elements (12 November 2015, 3rd Priority)

Seamless ATM Plan reference, paragraph	Aerodrome	Terminal	En-route	Specification title	ASBU traceability Block 0	APAC Priority
40 (7.1)	✓			Safety and Efficiency of Surface Operations (A-SMGCS)	B0-SURF	3
10 (7.1)	✓			Apron Management	Regional	-
20 (7.1)	✓	✓		ATM-Aerodrome Coordination	Regional	-
30 (7.1)	✓			Aerodrome capacity	Regional	-
150 (7.8)			✓	Performance-based Navigation (PBN) Airspace	Regional	-
190 (7.28)			✓	Airspace classification	Regional	-
200 (7.10)			✓	Flight Level Orientation Scheme (FLOS)	Regional	-
210 (7.36, 40)			✓	Flight Level Allocation Schemes (FLAS)	Regional	-
230 (7.29)	✓	✓	✓	Automated Transfer of Control in an ATSU	Regional	-
240 (7.34)		✓	✓	ATS Surveillance data sharing	Regional	-
260 (7.30)	✓	✓	✓	ATC Horizontal separation	Regional	-
320 (7.41)	✓	✓	✓	ATM Managers' human performance	Regional	-
330 (7.41)	✓	✓	✓	ATC simulators performance	Regional	-
340 (7.41)	✓	✓	✓	Safety assessment of human performance changes	Regional	-
350 (7.41)	✓	✓	✓	ATM Operators' human performance	Regional	-
370 (7.42)		✓	✓	Strategic Civil Military coordination	Regional	-
380 (7.42)		✓	✓	Tactical Civil Military coordination	Regional	-
390 (7.42)	✓	✓	✓	Civil Military system integration	Regional	-
400 (7.42)	✓	✓	✓	Civil Military nav aids joint provision	Regional	-
410 (7.42)	✓	✓	✓	Civil Military common training	Regional	-
420 (7.42)	✓	✓	✓	Civil Military common procedures	Regional	-

Effective Implementation

- Phase 2 Seamless Elements (08 November 2018, 1st Priority)

Seamless ATM Plan reference, paragraph	Aerodrome	Terminal	En-route	Specification title	ASBU traceability Block 0	APAC Priority
80 (7.47)		√	√	Air Traffic Flow Management/Collaborative Decision-Making (ATFM/CDM)	B0-NOPS	1
140 (7.22)			√	Performance-based Navigation (PBN) Routes	B0-FRTO	1
180 (7.23, 24)		√	√	ADS-B OUT	B0-ASUR	1
300 (7.51)	√	√	√	Aeronautical Information Management	B0-DATM	1
110 (7.14, 16)		√		Performance-based Navigation (PBN) Approach	B0-APTA	2*
120 (7.15)		√		Standard Instrument Departures/Standard Terminal Arrivals (SID/STAR)	B0-CCO/CDO	2*

*ICAO HQ affords a high priority to this item

Effective Implementation

- Phase 2 Seamless Elements (08 November 2018, 2nd Priority)

Seamless ATM Plan reference, paragraph	Aerodrome	Terminal	En-route	Specification title	ASBU traceability Block 0	APAC Priority
50 (7.45)	✓	✓		Arrival Manager/Departure Management (AMAN/DMAN)	B0-RSEQ	2
160 (7.52, 54)		✓	✓	Safety Nets	B0-SNET	2
170 (7.21)		✓	✓	Airborne Safety Systems	B0-ACAS	2
250 (7.43, 53)	✓	✓	✓	ATM systems enabling optimal PBN/ATC operations	B0-APTA	2
30 (7.13)	✓			Aerodrome capacity	Regional	-
60 (7.44, 50)		✓	✓	ATC Sector Capacity	Regional	-
130 (7.19)		✓		Performance-based Navigation (PBN) Visual and Arrival Procedures	Regional	-
230 (7.46)	✓	✓	✓	Automated Transfer of Control in an ATSU	Regional	-
240 (7.48)		✓	✓	ATS Surveillance data sharing	Regional	-
320 (7.55)	✓	✓	✓	ATM Managers' Performance	Regional	-

Effective Implementation

- In the early planning for effective implementation of Seamless ATM, there were three key areas of focus, that required a close engagement with:
 - top decision-makers and regional bodies to ensure that Seamless ATM Planning was supported politically, and resourced appropriately;
 - military agencies to establish enhanced civil/military cooperation; and
 - ATS managers, staff and unions, to ensure all parties understood the benefits of Seamless ATM to Air Navigations Service Providers (ANSPs) and those actually delivering the services.

Effective Implementation

- Seamless ATM is designed to improve ATC tools and ensure harmonised and interoperable systems with a clear focus on human performance; thus it will be beneficial to managers and staff in delivering services.
- The promotion of ATS surveillance-based separations instead of procedural standards should reduce ATC workload; however...

ANSPs need to train controllers to use ATS surveillance in an optimal manner, such as the application of positive control techniques when the spacing between aircraft reduced towards minimum separation.

- An important factor will be the application of 'Just Culture' and an open ('no blame') reporting culture, so that human error was managed in a modern context.

Conclusion

- States, ANSPs and aircraft operators (civil and military) all need to start Seamless ATM Planning now, in order to align objectives and milestones with other States in the region.
- Prioritisation of the implementation effort in terms of:
 - the regional priorities;
 - PARS/PASL phases; and
 - which determination of which elements are applicable will be crucial.
- Without effective regional Seamless ATM implementation, there will be a significant economic and environmental penalty, as well as safety implications.

Questions



Questions?