



INTERNATIONAL CIVIL AVIATION ORGANIZATION

**THIRD MEETING OF THE AERODROMES OPERATIONS AND
PLANNING – WORKING GROUP (AOP/WG/3)**

Putrajaya, Malaysia, 2 – 4 June 2015

Agenda Item 3: Regional Reporting

**REPORTING ON THE PROGRESS OF SEAMLESS
ATM IMPLEMENTATION**

(Presented by the Secretariat)

SUMMARY

This paper presents the status of the reporting process and the outcomes of the first year of reporting.

This paper relates to –

Strategic Objectives:

A: Safety – Enhance global civil aviation safety

B: Air Navigation Capacity and Efficiency – Increase Capacity and improve efficiency of the global civil aviation system

E: Environmental Protection – Minimize the adverse environmental effects of civil aviation activities

1. INTRODUCTION

1.1 In 2014, the APANPIRG/25 Meeting adopted Regional Priorities and Targets for the APAC Region through the following Conclusion:

Conclusion APANPIRG 25/2 – APAC Regional Air Navigation Priorities and Targets

That, the Regional Priorities and Targets contained in Appendix A to this Report on Agenda Item 3.0 be endorsed by APANPIRG.

1.2 Consequently, as tools setting milestones, targets, and metrics for each of the key planning elements Air Navigation Report Forms (ANRFs) corresponding to the 18 ASBU elements were adopted by APANPIRG, with the exception of B0-OPFL and B0-WAKE:

Conclusion APANPIRG 25/3 – Air Navigation Report Forms (ANRFs) and Responsibility Matrix

That, the ANRF regarding the Block 0 ASBUs (except B0-RSEQ, B0-OPFL, and B0-WAKE) provided in the APANPIRG/25/WP26 Appendices A to P together with the matrix of responsibilities placed at Appendices B and C to the Report on Agenda Item 3.0 be adopted for the APAC Region.

1.3 After the showcase of a web-based reporting tool developed by ICAO, the meeting adopted the following Draft Conclusion:

***Conclusion APANPIRG 25/5 – Web-based Seamless ATM Implementation
Progress Reporting Process***

That, States/Administrations be urged to report on their Seamless ATM implementation progress at least once a year through the ICAO online reporting process from November 2014 onwards.

1.4 This paper presents the status of the reporting process, the outcomes of the first year of reporting.

1.5 The same type of paper will be circulated to the other APANPIRG sub groups in 2015 so as to ensure a comprehensive and consistent approach throughout the APANPIRG bodies.

2. DISCUSSION

Status of the reporting process

2.1 As a follow-up to the Conclusion APANPIRG 25/5 a number of States/Administrations reported on their Seamless ATM implementation progress. The status of the reporting process as per 15 May 2015 is placed at **Appendix A**.

2.2 It shows that 13 States/Administrations have submitted at least one report online. No difficulty was reportedly encountered.

2.3 5 States/Administrations have prepared an initial form but have not submitted it yet.

2.4 26 States/Administrations have not prepared any report.

Points of Contact

2.5 As per Appendix A, 20 States/Administrations have nominated their seamless points of contact. 24 States/Administrations have not communicated any POC yet.

Matrix of responsibilities

2.6 As part of the Conclusion APANPIRG 25/3, a responsibility matrix was adopted and is placed at **Appendix B**.

2.7 If the creation of AOP Sub Group is confirmed, some of the seamless items may fall in the scope of the new Sub Group.

Relation with the eANP

2.8 The adoption of the APAC eANP (Electronic Air Navigation Plan) is planned for end 2015. The volumes 1 and 2 will include regional requirements. The Volume 3 will include the regional objectives. While a lack of implementation of any requirement in Volumes 1 or 2 would lead to a deficiency, the objectives of the volume 3 can be considered as a regional contract of performance that the States/Administrations endeavor to meet collectively.

2.9 All regional priorities and targets adopted through the Conclusion APANPIRG 25/2 will be stated in the eANP volume 3. All seamless ATM objectives will likewise be incorporated in the eANP volume 3.

2.10 The virtue of monitoring the implementation progress is to detect where the difficulties and issues lay, and take corrective actions at APANPIRG, Sub Group, and/or Task Force levels as appropriate. However, while the ratio of reporting States/Administrations having reported is encouraging, it is still too weak to monitor and solve the difficulties of implementation, and thus ensure that the regional targets and seamless objectives will be met with sufficient confidence. It is also too weak to ensure that any implementation would be seamless, even in subparts of the region.

Outcomes

2.11 Outcomes of the reporting process after a first year are placed at **Appendix C**. The grouping of items may be changed at a later date and is only meant to ease the reading of the figures.

2.12 Items of interest to AOP are mostly to be found in the first group named Optimal capacity. However all outcomes of the reporting process have been appended: Optimal Trajectories, Performing Safely, Airspace, Civil/Military Integration, Communications and Information Management and Surveillance.

Future evolutions

2.13 The reporting process will have to evolve and remain aligned with the new items being incorporated in the targets/objectives that will stem from ASBU block 1 elements (2018 - 2023) and from the future versions of the Seamless ATM Plan (the next version being planned for 2016).

2.14 Some items may also need a refined measurement, or need to be integrated with the existing practices. As an example, the PBN reporting form is currently being reviewed by PBNICG with the view to integrate it into the seamless web-based reporting process if feasible.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper;
- b) review the outcomes of the first cycle of reporting;
- c) urge States not having done so yet to nominate their POC and/or submit their first report online; and
- d) discuss any relevant matters as appropriate.

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Status of the reporting process

State/Administration	Status	Points of contact nominated	Latest submission
Australia	Submitted	Yes	Q 2014-4
Bangladesh	Submitted	Yes	Q 2015-2
Bhutan	Submitted	Yes	Q 2015-2
China	Submitted	Yes	Q 2014-1
French Polynesia, France	Submitted	Yes	Q 2014-1
Hong Kong, China	Submitted	Yes	Q 2014-1
India	Submitted	Yes	Q 2014-4
Japan	Submitted	Yes	Q 2014-4
Macao, China	Submitted	Yes	Q 2014-4
Singapore	Submitted	Yes	Q 2015-2
Sri Lanka	Submitted	Yes	Q 2014-3
Thailand	Submitted	Yes	Q 2014-4
United States	Submitted	Yes	Q 2015-1
Fiji	In preparation	Yes	-
Malaysia	In preparation	Yes	-
New Zealand	In preparation	Yes	-
Philippines	In preparation	Yes	-
Republic of Korea	In preparation	Yes	-
Afghanistan	No report	No	-
Brunei Darussalam	No report	No	-
Cambodia	No report	No	-
Macao, China	No report	No	-
Cook Islands	No report	No	-
Democratic People's Republic of Korea	No report	No	-
Indonesia	No report	No	-
Kiribati	No report	No	-

State/Administration	Status	Points of contact nominated	Latest submission
Lao People's Democratic Republic	No report	No	-
Maldives	No report	No	-
Marshall Islands	No report	No	-
Micronesia (Federated States of)	No report	No	-
Mongolia	No report	No	-
Myanmar	No report	No	-
Nauru	No report	No	-
Nepal	No report	Yes	-
New Caledonia, France	No report	No	-
Pakistan	No report	No	-
Palau	No report	No	-
Papua New Guinea	No report	No	-
Samoa	No report	No	-
Solomon Islands	No report	Yes	-
Democratic Republic of Timor-Leste	No report	No	-
Tonga	No report	No	-
Vanuatu	No report	No	-
Vietnam	No report	No	-

Responsibility matrix for all Seamless items

Seamless ATM Specification title	Seamless Reference	Regional Priority	Regional/ ASBU Module	ASBU - Module title	Endorsing body
Apron Management	10	3	Regional	-	ATM SG
ATM-Aerodrome Coordination	20	3	Regional	-	ATM SG
Aerodrome capacity	30	3	Regional	-	ATM SG
Safety and Efficiency of Surface Operations	40	3	B0-SURF	Safety and Efficiency of Surface Operations (A-SMGCS Level 1-2)	CNS SG
Arrival Manager/Departure Management (AMAN/DMAN)	50	2	B0-RSEQ	Improve Traffic flow through Sequencing (AMAN/DMAN)	ATM SG
ATC Sector Capacity	60	2	Regional	-	ATM SG
Airport Collaborative Decision-Making (ACDM)	70	2	B0-ACDM	Improved Airport Operations through Airport-CDM	ATM SG
Air Traffic Flow Management/Collaborative Decision-Making (ATFM/CDM)	80	1	B0-NOPS	Improved Flow Performance through Planning based on a Network-Wide view	ATM SG
Continuous Descent Operations (CDO)	90	2	B0-CDO	Improved Flexibility and Efficiency in Descent Profiles using Continuous Descent Operations (CDOs)	CNS SG

Seamless ATM Specification title	Seamless Reference	Regional Priority	Regional/ ASBU Module	ASBU - Module title	Endorsing body
Continuous Climb Operations (CCO)	100	2	B0-CCO	Improved Flexibility and Efficiency Departure Profiles – Continuous Climb Operations (CCO)	CNS SG
Performance-based Navigation (PBN) Approach	110	1	B0-APTA	Optimization of Approach Procedures including vertical guidance	CNS SG
Standard Instrument Departures/Standard Terminal Arrivals (SID/STAR)	120	2	B0-CCO B0-CDO	Optimization of Approach Procedures including vertical guidance	CNS SG
Performance-based Navigation (PBN) Visual Departure and Arrival Procedures	130	3	Regional	-	ATM SG
Performance-based Navigation (PBN) Routes	140	2	B0-FRTO	Improved Operations through Enhanced En- Route Trajectories	CNS SG
Performance-based Navigation (PBN) Airspace	150	2	Regional	-	ATM SG
Safety Nets	160	2	B0-SNET	Increased effectiveness of ground-based safety nets	CNS SG
Airborne Safety Systems	170	2	B0-ACAS	Airborne Collision Avoidance Systems (ACAS) Improvements	CNS SG
ATS Surveillance	180	1	B0-ASUR	Initial Capability for Ground Surveillance	CNS SG
Airspace classification	190	2	Regional	-	ATM SG

Seamless ATM Specification title	Seamless Reference	Regional Priority	Regional/ ASBU Module	ASBU - Module title	Endorsing body
Flight Level Orientation Schemes (FLOS)	200	2	Regional	-	ATM SG
Flight Level Allocation Schemes (FLAS)	210	2	Regional	-	ATM SG
ATS Inter-facility Data-link Communications (AIDC)	220	1	B0-FICE	Increased Interoperability Efficiency & Capacity through Ground-Ground Integration	CNS SG
Automated Transfer of Control	230	2	Regional	-	ATM SG
ATS Surveillance data sharing	240	2	Regional	-	CNS SG
ATM systems enabling optimal PBN/ATC operations	250	2	B0-APTA	Optimization of Approach Procedures including vertical guidance	CNS SG
ATC Horizontal separation	260	2	Regional	-	ATM SG
ATS surveillance with data integrated	270	1	B0-ASUR	Initial Capability for Ground Surveillance	CNS SG
ADS-C and CPDLC	280	1	B0-TBO	Improved Safety and Efficiency through the initial application of Data Link En-Route	CNS SG
UPR and DARP	290	3	B0-FRTO	Improved Safety and Efficiency through the initial application of Data Link En-Route	ATM SG

Seamless ATM Specification title	Seamless Reference	Regional Priority	Regional/ ASBU Module	ASBU - Module title	Endorsing body
Aeronautical Information Management	300	1	B0-DATM	Service Improvement through Digital Aeronautical Information Management	ATM SG
Meteorological Information	310	2	B0-AMET	Meteorological information supporting enhanced operational efficiency and safety	MET SG
ATM Managers' Performance	320	2	Regional	-	ATM SG
ATC simulators performance	330	2	Regional	-	ATM SG
Safety assessment of changes	340	2	Regional	-	ATM SG
ATM Operators' performance	350	2	Regional	-	ATM SG
Civil Military use of SUA	360	1	B0-FRTO	Improved Operations through Enhanced En-Route Trajectories	ATM SG
Strategic Civil Military coordination	370	1	Regional	Improved Operations through Enhanced En-Route Trajectories	ATM SG
Tactical Civil Military coordination	380	1	Regional	Improved Operations through Enhanced En-Route Trajectories	ATM SG

Seamless ATM Specification title	Seamless Reference	Regional Priority	Regional/ ASBU Module	ASBU - Module title	Endorsing body
Civil Military system integration	390	2	Regional	Improved Operations through Enhanced En-Route Trajectories	ATM SG
Civil Military nav aids joint provision	400	2	Regional	Improved Operations through Enhanced En-Route Trajectories	ATM SG
Civil Military common training	410	2	Regional	Improved Operations through Enhanced En-Route Trajectories	ATM SG
Civil Military common procedures	420	2	Regional	Improved Operations through Enhanced En-Route Trajectories	ATM SG
Nil	430	2	B0-ASEP	Air Traffic Situational Awareness (ATSA)	CNS SG
Nil	440	3	B0-WAKE	Improved Access to Optimum Flight Levels through Climb/Descent Procedures using ADS-B	ATM SG
Nil	450	3	B0-OPFL	Increased Runway Throughput through Optimized Wake Turbulence Separation	ATM SG



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APPENDIX C

FIRST APAC REGIONAL PICTURE OF THE IMPLEMENTATION OF THE SEAMLESS ATM OBJECTIVES

15 MAY 2015

Seamless Item	ASBU	Air Traffic Flow Management/ Collaborative Decision-Making (ATFM/CDM)	Apron Management	Aerodrome capacity	Safety and Efficiency of Surface Operations	ATM-Aerodrome Coordination	Airport Collaborative Decision-Making (ACDM)	Arrival Manager/Departure Management (AMAN/DMAN)	ATC Horizontal separation	ATC Sector Capacity	Automated Transfer of Control	Optimized wake turbulence separation
		80	10	30	40	20	70	50	260	60	230	440
		B0-NOPS	Regional	Regional	B0-SURF	Regional	B0-ACDM	B0-RSEQ	Regional	Regional	Regional	B0-WAKE
PRIORITY												
Nov. 2015	Australia	2014 - 4	100%	100%	100%	60%	100%	100%	0%	100%		100%
	Bangladesh	2015 - 2	N/A	10%	No data	N/A	50%	N/A	N/A	100%		N/A
	Bhutan	2015 - 2	N/A	N/A	N/A	N/A	0%	N/A	N/A	No data		No data
	China	2014 - 1	77.70%	100%	100%	100%	100%	100%	50%	100%		100%
	French Polynesia, France	2014 - 1	N/A	No data	N/A	N/A	N/A	10%	N/A	100%		No data
	Hong Kong, China	2014 - 1	100%	100%	100%	0%	100%	0%	0%	100%		0%
	India	2014 - 4	0%	100%	100%	100%	100%	50%	50%	100%		100%
	Japan	2014 - 4	100%	100%	40%	50%	100%	0%	0%	100%		100%
	Macao, China	2014 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A
	Singapore	2015 - 2	0%	100%	100%	100%	100%	0%	100%	100%		100%
	Sri Lanka	2014 - 3	No data	N/A	N/A	N/A	N/A	N/A	N/A	100%		100%
	Thailand	2014 - 4	0%	0%	100%	50%	100%	0%	0%	100%		0%
	United States	2015 - 1	14.30%	N/A	N/A	N/A	N/A	N/A	N/A	100%		100%
	Indicator	% of High Density FIRs supporting the busiest Asia/Pacific traffic flows and high density aerodromes using operational ATFM platforms incorporating CDM	% of high density international aerodromes (100,000 scheduled movements per annum or more) providing an appropriate apron management service	% of high density international aerodromes having declared capacity in accordance with the Seamless ATM Plan Phase 1	% of applicable international aerodromes having implemented A-SMGCS Level 2	% of high density international aerodromes having appropriate ATM coordination in accordance with the Seamless ATM Plan	% of applicable international aerodromes having implemented improved airport operations through airport-AMAN / DMAN (applicable to CDM (applicable-high density))	% of applicable international aerodromes having implemented AMAN / DMAN (applicable = high density)	Does your AIP authorise the use of the horizontal separation minima stated in ICAO Doc 4444 (PANS-ATM), or as close to the separation minima as practicable ? (1-yes, 0-no)		% of ATC sectors with automated hand-off procedures in accordance with Seamless ATM Plan Phase 1	
Nov. 2018	Australia	2014 - 4	No data		No data			No data		No data		No data
	Bangladesh	2015 - 2	N/A		No data			N/A		N/A		No data
	Bhutan	2015 - 2	N/A		N/A			N/A		No data		N/A
	China	2014 - 1	No data		No data			No data		No data		No data
	French Polynesia, France	2014 - 1	N/A		N/A			N/A		N/A		No data
	Hong Kong, China	2014 - 1	No data		No data			No data		100%	0%	No data
	India	2014 - 4	No data		No data			No data		No data	No data	No data
	Japan	2014 - 4	100%		100%			No data		100%	100%	No data
	Macao, China	2014 - 4	N/A		N/A			N/A	N/A	N/A	N/A	No data
	Singapore	2015 - 2	0%		100%			100%		0%	No data	No data
	Sri Lanka	2014 - 3	No data		N/A			N/A		100%	100%	No data
	Thailand	2014 - 4	No data		No data			No data		No data	No data	No data
	United States	2015 - 1	14%		N/A			N/A		100%	No data	N/A
	Indicator	% of FIRs supporting Major Traffic Flows should implement ATFM to enhance capacity, using bi-lateral and multi-lateral agreements		% of high density aerodromes having declared capacity in accordance with the Seamless ATM Plan Phase 2			% of applicable international aerodromes having implemented AMAN / DMAN (applicable = high density)		% of ATC sectors with capacity figures in accordance with Seamless ATM Phase 2	% of ATC sectors with automated hand-off procedures in accordance with Seamless ATM Plan Phase 2	% of applicable international aerodromes having implemented increased runway throughput through optimized wake turbulence separation	

Meeting the Seamless ATM objectives - Optimal capacity

Seamless Item	ASBU	Performance-based Navigation (PBN) Approach	Performance-based Navigation (PBN) Routes	Performance-based Navigation (PBN) Airspace	Continuous Descent Operations (CDO)	Continuous Climb Operations (CCO)	Standard Instrument Departures/Standard Terminal Arrivals (SID/STAR)	Performance-based Navigation (PBN) Visual Departure and Arrival Procedures	ATM systems enabling optimal PBN/ATC operations	UPR and DARP	In-trail procedures	
		110	140	150	90	100	120	130	250	290	450	
		B0-APTA	B0-FRTO	Regional	B0-CDO	B0-CCO	B0-CCO B0-CDO	Regional	B0-APTA	B0-FRTO	B0-OPFL	
PRIORITY												
Nov. 2015	Australia	2014 - 4	100%	100%	100%	N/A	N/A	100%		90%	100%	
	Bangladesh	2015 - 2	30%	10%	N/A	N/A	N/A	0%		0%	N/A	
	Bhutan	2015 - 2	No data	0%	No data	N/A	N/A	No data		N/A	N/A	
	China	2014 - 1	100%	10%	100%	0%	0%	100%		100%	N/A	
	French Polynesia, France	2014 - 1	50%	80%	N/A	N/A	N/A	80%		No data	100%	
	Hong Kong, China	2014 - 1	100%	100%	0%	100%	0%	100%		100%	N/A	
	India	2014 - 4	100%	40%	N/A	100%	100%	100%		100%	25%	
	Japan	2014 - 4	0%	100%	100%	30%	0%	100%		100%	100%	
	Macao, China	2014 - 4	No data	N/A	N/A	N/A	N/A	No data		N/A	N/A	
	Singapore	2015 - 2	100%	0%	100%	100%	0%	100%		0%	N/A	
	Sri Lanka	2014 - 3	No data	100%	N/A	N/A	N/A	No data		50%	100%	
	Thailand	2014 - 4	No data	0%	0%	0%	0%	50%		100%	N/A	
	United States	2015 - 1	N/A	100%	100%	N/A	N/A	N/A		100%	14.30%	
	Indicator		% of high density aerodromes with precision approaches or APV or LNAV (High density aerodrome is defined by Asia-Pacific Seamless ATM Plan as aerodromes with scheduled operations in excess of 100,000/year)	% of ATS routes designated as PBN routes in accordance with Seamless ATM Phase 1	Are all your Category R and S upper controlled airspace, and Category T airspace supporting high density aerodromes designated as non-exclusive or exclusive PBN airspace as appropriate.? (1-yes, 0-no)	% of international aerodromes/TMA where CDO is implemented	% of international aerodromes where CCO is implemented	% of international aerodromes / TMAs with PBN STAR implemented	% of ATC units with ATM systems enabling optimal PBN operations	% of FIRs using UPR and DARP within R airspace		
Nov. 2018	Australia	2014 - 4		100%				No data	No data	No data	No data	
	Bangladesh	2015 - 2		40%			50%	N/A	0%		No data	
	Bhutan	2015 - 2		0%				No data	N/A		N/A	
	China	2014 - 1		No data				No data	No data	No data	N/A	
	French Polynesia, France	2014 - 1		100%				100%	N/A	No data	100%	
	Hong Kong, China	2014 - 1		0%				100%	N/A	No data		
	India	2014 - 4		No data				No data	No data	No data	No data	
	Japan	2014 - 4		0%				100%	0%	100%	No data	
	Macao, China	2014 - 4		N/A				No data	N/A	N/A		
	Singapore	2015 - 2		0%				No data	0%	No data	No data	
	Sri Lanka	2014 - 3		100%				100%	No data	100%	No data	
	Thailand	2014 - 4		No data				No data	No data	No data	No data	
	United States	2015 - 1		No data				N/A	N/A	100%		14%
	Indicator		% of ATS routes designated as PBN routes in accordance with Seamless ATM Phase 2				% of international aerodromes / TMAs with PBN SID implemented	% of high density aerodromes with PBN procedures that overlay visual arrival and departure procedures	% of ATC units with ATM systems supporting optimal aerodrome capacity and using electronic flight progress strips	% of FIRs having implemented in-trail procedures		

Meeting the Seamless ATM objectives - Optimal trajectories

		ATM Managers' Performance	ATC simulators performance	Safety assessment of changes	ATM Operators' performance	
Seamless Item		320	330	340	350	
ASBU		Regional	Regional	Regional	Regional	
Nov. 2015	Australia	2014 - 4	100%	100%	100%	100%
	Bangladesh	2015 - 2	No data	N/A	No data	No data
	Bhutan	2015 - 2	No data	N/A	No data	No data
	China	2014 - 1	100%	100%	No data	100%
	French Polynesia, France	2014 - 1	100%	No data	100%	100%
	Hong Kong, China	2014 - 1	100%	100%	100%	100%
	India	2014 - 4	100%	100%	100%	100%
	Japan	2014 - 4	100%	100%	100%	100%
	Macao, China	2014 - 4	0%	0%	0%	100%
	Singapore	2015 - 2	100%	100%	100%	100%
	Sri Lanka	2014 - 3	100%	100%	100%	100%
	Thailand	2014 - 4	100%	100%	0%	0%
	United States	2015 - 1	100%	100%	100%	100%
		Indicator	Does your Operations Manual require the human performance training for all ANSP managers? (1- yes, 0-no)	Do you have a programme for enhancement and improved application of ATC simulators ? (1- yes, 0-no)	Do you have safety teams comprising multidisciplinary operational staff and managers which review safety performance and assess significant proposals for change to ATM systems? (1-yes, 0-no)	Do you have human performance-based training and procedures for staff providing ATS? (1- yes, 0-no)
Nov. 2018	Australia	2014 - 4	No data			
	Bangladesh	2015 - 2	No data			
	Bhutan	2015 - 2	No data			
	China	2014 - 1	No data			
	French Polynesia, France	2014 - 1	No data			
	Hong Kong, China	2014 - 1		0%		
	India	2014 - 4	No data			
	Japan	2014 - 4	100%			
	Macao, China	2014 - 4	100%			
	Singapore	2015 - 2	No data			
	Sri Lanka	2014 - 3	No data			
	Thailand	2014 - 4	No data			
	United States	2015 - 1	No data			
		Indicator	Is the prevention of fatigue systems established to support human performance in the delivery of your ATM services? (1- yes, 0-no)			

Meeting the Seamless ATM objectives - Performing safely

		Airspace classification	Flight Level Orientation Schemes (FLOS)	Flight Level Allocation Schemes (FLAS)	
Seamless Item		190	200	210	
ASBU		Regional	Regional	Regional	
Nov. 2015	Australia	2014 - 4	100%	100%	100%
	Bangladesh	2015 - 2	N/A	100%	N/A
	Bhutan	2015 - 2	N/A	No data	N/A
	China	2014 - 1	N/A	N/A	No data
	French Polynesia, France	2014 - 1	100%	100%	N/A
	Hong Kong, China	2014 - 1	100%	100%	100%
	India	2014 - 4	N/A	100%	100%
	Japan	2014 - 4	100%	100%	100%
	Macao, China	2014 - 4	N/A	N/A	N/A
	Singapore	2015 - 2	100%	100%	100%
	Sri Lanka	2014 - 3	100%	100%	N/A
	Thailand	2014 - 4	100%	100%	No data
	United States	2015 - 1	N/A	100%	N/A
		Indicator	Has your State/Administration harmonized the upper airspace classification 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.? (1- yes, 0-no)	Does your State/Administration use the ICAO Table of Cruising Levels based on feet as contained in Appendix 3a to Annex 2 ? (1- yes, 0-no)	Does your Operations Manual give priority for FLAS level allocations to higher density ATS routes over lower density ATS routes, and a lower priority to any aircraft that does not meet specified equipage ? (1- yes, 0-no)
Nov. 2018	Australia	2014 - 4			
	Bangladesh	2015 - 2			
	Bhutan	2015 - 2			
	China	2014 - 1			
	French Polynesia, France	2014 - 1			
	Hong Kong, China	2014 - 1			
	India	2014 - 4			
	Japan	2014 - 4			
	Macao, China	2014 - 4			
	Singapore	2015 - 2			
	Sri Lanka	2014 - 3			
	Thailand	2014 - 4			
	United States	2015 - 1			
		Indicator			

Meeting the Seamless ATM objectives - Airspace

Seamless Item	ASBU	Civil Military use of SUA	Strategic Civil Military coordination	Tactical Civil Military coordination	Civil Military system integration	Civil Military nav aids joint provision	Civil Military common training	Civil Military common procedures
		360	370	380	390	400	410	420
		BO-FRTO	Regional	Regional	Regional	Regional	Regional	Regional
		PRIORITY	PRIORITY	PRIORITY				
Australia	2014 - 4	100%	100%	100%	100%	100%	100%	100%
Bangladesh	2015 - 2	No data	No data	100%	No data	100%	No data	100%
Bhutan	2015 - 2	N/A	No data	No data	No data	N/A	No data	No data
China	2014 - 1	N/A	100%	100%	N/A	N/A	N/A	N/A
French Polynesia, France	2014 - 1	No data	N/A	N/A	N/A	N/A	N/A	100%
Hong Kong, China	2014 - 1	100%	N/A	100%	100%	N/A	N/A	N/A
India	2014 - 4	100%	100%	100%	0%	N/A	100%	100%
Japan	2014 - 4	100%	100%	100%	100%	100%	100%	100%
Macao, China	2014 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Singapore	2015 - 2	100%	100%	100%	100%	100%	100%	100%
Sri Lanka	2014 - 3	100%	100%	100%	N/A	N/A	100%	100%
Thailand	2014 - 4	100%	100%	100%	0%	0%	0%	0%
United States	2015 - 1	28.60%	100%	100%	100%	N/A	N/A	N/A
Indicator		% of FIRs in which FUA is implemented	Have you established a national civil/military body that performs strategic civil-military coordination? (1- yes, 0-no)	Have you established a formal civil military liaison for tactical response? (1- yes, 0-no)	Are civil ATS and military systems integrated? 1-yes, 0-no	Are there joint civil and military navigation aids? 1- yes, 0-no	Is Civil Military common training conducted in areas of common interest? 1-yes, 0-no	Are there common procedures for Civil Military operations where appropriate? 1-yes, 0-no
Australia	2014 - 4							
Bangladesh	2015 - 2							
Bhutan	2015 - 2							
China	2014 - 1							
French Polynesia, France	2014 - 1							
Hong Kong, China	2014 - 1							
India	2014 - 4							
Japan	2014 - 4							
Macao, China	2014 - 4							
Singapore	2015 - 2							
Sri Lanka	2014 - 3							
Thailand	2014 - 4							
United States	2015 - 1							
Indicator								

Meeting the Seamless ATM objectives - Civil/Military integration

		ATS Inter-facility Data-link Communications (AIDC)	ADS-C and CPDLC	Aeronautical Information Management	Meteorological Information		
Seamless Item		220	280	300	310		
ASBU		BO-FICE	BO-TBO	BO-DATM	BO-AMET		
		PRIORITY	PRIORITY	PRIORITY			
Nov. 2015	Australia	2014 - 4	100%	100%	76.90%	100%	
	Bangladesh	2015 - 2	No data	N/A	61.50%	30%	
	Bhutan	2015 - 2	No data	N/A	0%	0%	
	China	2014 - 1	100%	N/A	38.50%	80%	
	French Polynesia, France	2014 - 1	100%	No data	No data	N/A	
	Hong Kong, China	2014 - 1	0%	N/A	No data	100%	
	India	2014 - 4	75%	100%	100%	100%	
	Japan	2014 - 4	100%	100%	No data	100%	
	Macao, China	2014 - 4	N/A	N/A	38.50%	100%	
	Singapore	2015 - 2	100%	100%	100%	100%	
	Sri Lanka	2014 - 3	100%	100%	84.60%	N/A	
	Thailand	2014 - 4	0%	N/A	0%	0%	
	United States	2015 - 1	14.30%	14.30%	No data	100%	
		Indicator	% of FIRs within which all applicable ACCs have implemented at least one interface to use AIDC / OLDI with neighbouring ACCs		% of FIRs utilising data link en-route in applicable airspace		% of Phase 1 and 2 AIS-AIM elements completed (0-13)

Nov. 2018	Australia	2014 - 4	No data	No data	No data
	Bangladesh	2015 - 2	No data	No data	75%
	Bhutan	2015 - 2	No data	No data	0%
	China	2014 - 1	No data	No data	No data
	French Polynesia, France	2014 - 1	No data	No data	No data
	Hong Kong, China	2014 - 1	0%	No data	No data
	India	2014 - 4	No data	No data	No data
	Japan	2014 - 4	100%	No data	No data
	Macao, China	2014 - 4	N/A	No data	No data
	Singapore	2015 - 2	No data	No data	No data
	Sri Lanka	2014 - 3	100%	No data	100%
	Thailand	2014 - 4	No data	No data	No data
	United States	2015 - 1	No data	No data	25%
		Indicator	% of FIRs within which all applicable ACCs have implemented full AIDC messaging, or alternate communication standard		

Meeting the Seamless
ATM objectives -
Communications

Meeting the Seamless
ATM objectives -
Information
management

Seamless Item	ASBU	Ground-based Surveillance	ATS surveillance with data integrated	ATS Surveillance data sharing	Safety Nets	Airborne Safety Systems	Air traffic situational awareness
		180	270	240	160	170	430
		BO-ASUR	BO-ASUR	Regional	BO-SNET	BO-ACAS	BO-ASEP
		PRIORITY	PRIORITY				
Nov. 2015	Australia	2014 - 4	100%	100%	50%	100%	100%
	Bangladesh	2015 - 2	N/A	30%	N/A	100%	0%
	Bhutan	2015 - 2	N/A	No data	No data	N/A	No data
	China	2014 - 1	11.10%	100%	100%	100%	N/A
	French Polynesia, France	2014 - 1	100%	No data	No data	100%	N/A
	Hong Kong, China	2014 - 1	0%	No data	100%	0%	0%
	India	2014 - 4	N/A	80%	80%	No data	100%
	Japan	2014 - 4	0%	100%	N/A	No data	100%
	Macao, China	2014 - 4	N/A	N/A	N/A	N/A	N/A
	Singapore	2015 - 2	100%	100%	100%	No data	100%
	Sri Lanka	2014 - 3	100%	100%	No data	100%	100%
	Thailand	2014 - 4	0%	100%	0%	N/A	N/A
	United States	2015 - 1	14.30%	N/A	N/A	100%	No data
		Indicator	% of FIRs where Category S airspace and Category T airspace supporting high density aerodromes are designated as ADS-B airspace?	% of ACCs with ATS Surveillance using ADS-B, MLAT or radar in Category S airspace, and having data integrated into the ATC system situation display	% of ACCs within high density FIRs (as per the Seamless ATM Plan) sharing ATS surveillance data	Does your State implement ground-based safety-nets (STCA, APW, MSAW, etc.)? (1- yes, 0- no)	Does your State/Administration require the carriage of ACAS (with TCAS 7.1 evolution) ? (1- yes, 0-no)
Nov. 2018	Australia	2014 - 4	100%		No data	No data	No data
	Bangladesh	2015 - 2	N/A		N/A	10%	No data
	Bhutan	2015 - 2	N/A		No data	N/A	No data
	China	2014 - 1	No data		No data	No data	N/A
	French Polynesia, France	2014 - 1	100%		No data	No data	N/A
	Hong Kong, China	2014 - 1	0%		100%	0%	0%
	India	2014 - 4	N/A		No data	No data	No data
	Japan	2014 - 4	0%		N/A	0%	100%
	Macao, China	2014 - 4	N/A		N/A	N/A	N/A
	Singapore	2015 - 2	100%		No data	0%	100%
	Sri Lanka	2014 - 3	No data		100%	100%	100%
	Thailand	2014 - 4	No data		No data	N/A	N/A
	United States	2015 - 1	0%		N/A	100%	100%
		Indicator	% of FIRs where Category S airspace and Category T airspace supporting high density aerodromes are designated as ADS-B airspace?		% of ACCs sharing ATS surveillance data	% of ACCs using CPAR in R airspace in accordance with Seamless ATM Phase 2	Does your State/Administration require the carriage of TAWS? (1- yes, 0-no)

Meeting the Seamless ATM objectives - Surveillance