

ANS implementation in Asia-Pacific as at 04 July 2018

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the ten Asia-Pacific Regional Priorities adopted by APANPIRG/25 in 2014

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the implementation status of the 45 objectives of the Seamless ATM plan v1 (target date of implementation for phase 1: November 15, target date of implementation for phase 2: November 19)

APAC States/Administrations are presented in alphabetical order. The date of the latest report submitted is given in the second column to indicate the freshness of information (format Year-Quarter).

No data

"No data" means that no data was provided by the reporting State/Administration about its progress.

Not yet analyzed

"Not yet analyzed" means that the applicability of this specific seamless ATM item in the national context was not yet analyzed by the reporting State/Administration.

Not applicable

"Not applicable" means that the reporting State/Administration found this item not applicable in its national plans, as a result of its gap analysis.



The green colour reflects a change in the information submitted to ICAO since the previous version of the regional picture. Example: **2016-1** means that a new report was submitted by the State in the first quarter of 2016



Seamless Item	Related ASBU module	Target
80 - Air Traffic Flow Management / Collaborative Decision-Making (ATFM/CDM)	B0-NOPS	1. All High Density FIRs supporting the busiest Asia/Pacific traffic flows and high-density aerodromes should implement ATFM incorporating CDM using operational ATFM platform/s. <i>Note: High Density FIRs are defined as:</i> a) South Asia: Delhi, Mumbai; b) Southeast Asia: Bangkok, Hanoi, Ho Chi Minh, Jakarta, Kuala Lumpur, Manila, Sanya, Singapore, Vientiane; and c) East Asia: Beijing, Fukuoka, Guangzhou, Hong Kong, Kunming, Incheon, Shanghai, Shenyang, Taipei, Wuhan. [APANPIRG Conclusion 22/8 and 23/5 refer]
110 - PBN Approach	B0-APTA	2. Approach: Where practicable, all high-density aerodromes with instrument runways serving aeroplanes should have precision approaches or APV or LNAV. <i>Note 1: High density aerodrome is defined by Asia-Pacific Seamless ATM Plan as aerodromes with scheduled operations in excess of 100,000/year.</i> <i>Note 2: the Asia/Pacific PBN Plan Version 3 required RNP APCH with Baro-VNAV or APV in 100% of instrument runways by 2016</i>
180 - ATS Surveillance	B0-ASUR	3. 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.
270 - ATS surveillance with data integrated	B0-ASUR	4. ADS-B or MLAT or radar surveillance systems should be used to provide coverage of all Category S-capable airspace as far as practicable, with data integrated into operational ATC aircraft situation displays.
280 - ADS-C and CPDLC	B0-TBO	5. Within Category R airspace, ADS-C surveillance and CPDLC should be enabled to support PBN-based separations.
220 - ATS Inter-facility Data-link Communications (AIDC)	B0-FICE	6. All States between ATC units where transfers of control are conducted have implemented the messages ABI, EST, ACP, TOC, AOC as far as practicable.
300 - Aeronautical Information Management	B0-DATM	7. ATM systems should be supported by digitally-based AIM systems through implementation of Phase 1 and 2 of the AIS-AIM Roadmap.
360 - Civil Military use of SUA	B0-FRTO	8. Enhanced En-Route Trajectories: All States should ensure that SUA are regularly reviewed by the appropriate Airspace Authority to assess the effect on civil air traffic and the activities affecting the airspace.
370 - Strategic Civil Military coordination	Strategic Civil Military coordination (Regional)	9. Enhanced En-Route Trajectories: All States should ensure that a national civil/military body coordinating strategic civil-military activities is established.
380 - Tactical Civil Military coordination	Tactical Civil Military coordination (Regional)	10. Enhanced En-Route Trajectories: All States should ensure that formal civil military liaison for tactical response is established.



Seamless Item ASBU	Air Traffic Flow Management/ Collaborative Decision-Making (ATFM/CDM)	Performance-based Navigation (PBN) Approach	ADS-B airspace	ATS surveillance with data integrated	ADS-C and CPDLC	ATS Inter-facility Data-link Communications (AIDC)	Aeronautical Information Management	Civil Military use of SUA	Strategic Civil Military coordination	Tactical Civil Military coordination
	80 BO-NOPS	110 BO-APTA	180 BO-ASUR	270 BO-ASUR	280 BO-TBO	220 BO-FICE	300 BO-DATM	360 BO-FRTO	370 Regional	380 Regional

THE 10 ASIA-PACIFIC REGIONAL PRIORITIES (APANPIRG/25, 2014)

Target = 100% in Nov. 2015

Australia	2016 - 3	100%	100%	100%	100%	100%	76.90%	100%	100%	100%
Bangladesh	2018 - 1	Not applicable	60%	100%	Not applicable	Not applicable	61.50%	No data	No data	100%
Bhutan	2018 - 2	Not applicable	80%	Not applicable	10%	Not applicable	No data	23%	Not applicable	Not applicable
Cambodia	2016 - 3	Not applicable	100%	100%	100%	Not applicable	0%	23%	0%	Not applicable
China	2018 - 1	55.50%	100%	33.30%	100%	22.20%	100%	46.20%	100%	100%
Democratic People's Republic of Korea	2016 - 2	100%	Not applicable	100%	100%	Not applicable	100%	No data	100%	100%
Fiji	2017 - 4	100%	70%	100%	100%	100%	100%	38.50%	Not applicable	Not applicable
French Polynesia, France	2017 - 4	Not applicable	100%	100%	100%	100%	100%	7.70%	100%	100%
Hong Kong, China	2017 - 2	100%	100%	100%	100%	Not applicable	100%	84.60%	100%	100%
India	2017 - 3	100%	100%	0%	100%	100%	100%	100%	100%	100%
Indonesia	2016 - 3	100%	40%	100%	Not yet analysed	100%	5%	23%	0%	0%
Japan	2017 - 4	100%	0%	0%	100%	100%	100%	84.60%	100%	100%
Lao People's Democratic Republic	2017 - 1	100%	20%	100%	30%	Not applicable	100%	15.40%	100%	No data
Macao, China	2017 - 1	Not applicable	100%	Not applicable	Not applicable	Not applicable	Not applicable	38.50%	Not applicable	Not applicable
Malaysia	2016 - 4	5%	70%	0%	100%	5%	100%	100%	100%	100%
Maldives	2017 - 4	Not yet analysed	100%	0%	100%	0%	100%	0%	Not applicable	Not applicable
Mongolia	2016 - 1	100%	Not applicable	100%	40%	No data	100%	No data	Not yet analysed	Not yet analysed
Nepal	2016 - 1	Not yet analysed	No data	100%	No data	Not applicable	100%	Not yet analysed	Not applicable	Not applicable
New Caledonia, France	2015 - 2	Not applicable	0%	Not applicable	Not applicable	Not applicable	Not applicable	Not yet analysed	Not applicable	Not applicable
New Zealand	2018 - 2	5%	100%	5%	100%	5%	100%	7.70%	100%	100%
Pakistan	2017 - 3	5%	90%	100%	100%	Not yet analysed	100%	69.20%	100%	Not yet analysed
Papua New Guinea	2017 - 4	Not yet analysed	Not yet analysed	No data	Not yet analysed	Not yet analysed	Not yet analysed	Not yet analysed	Not yet analysed	Not yet analysed
Philippines	2016 - 4	100%	100%	100%	5%	100%	0%	46.20%	100%	100%
Republic of Korea	2016 - 3	100%	70%	No data	100%	Not applicable	100%	84.60%	100%	100%
Singapore	2017 - 4	100%	100%	100%	100%	100%	100%	100%	100%	100%
Sri Lanka	2018 - 2	Not applicable	100%	100%	100%	100%	100%	38.50%	100%	100%
Thailand	2018 - 1	0%	100%	0%	100%	Not applicable	0%	84.60%	100%	100%
United States	2017 - 2	5%	100%	5%	Not applicable	100%	100%	No data	100%	100%
Viet Nam	2017 - 4	100%	40%	100%	80%	100%	100%	61.50%	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 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 FIRs where Category 5 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 5 airspace, and having data integrated into the ATC system situation display	% of FIRs utilising data link en-route in applicable airspace	% of FIRs within which all applicable ACCs have implemented at least one interface to use AIDC / OLDI with neighbouring ACCs	% of Phase 1 and 2 AIS-AIM elements completed (0-13)	% of FIRs in which FUA is implemented	Have you established a national civil/military body that performs strategic civil-military coordination?	Have you established a formal civil military liaison for tactical response?
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Implementation status of the 10 Regional Priorities (APANPIRG)

4-Jul-18



**ASBU B0 MODULES AND APAC SEAMLESS ATM ITEMS
AS SAFETY BARRIERS TO CFIT, RS AND LOC-I OCCURRENCES**

	CFIT	RS	LOC-I
ASBU Modules (B0)	B0-APTA Optimization of Approach Procedures		B0-ACAS Collision Avoidance Systems
	B0-SNET Safety Nets	B0-SURF Surface Operations	- Nil -
	B0-AMET - Advanced Meteorological Information [1]		
APAC Seamless ATM items (Seamless ATM Plan v1)	170 - Airborne Safety Systems (TAWS)	10 - Apron Management	170 - Airborne Safety Systems (TCAS 7.1)
	- Nil -	350 - ATM Operators' Performance	- Nil -
	340 - Safety Assessment of Changes		

[1] [Specifically for Runway safety: Aerodrome warnings](#)



Target = 100%
in Nov. 2015

Country	Seamless Item ASBU	Apron Management	Safety and Efficiency of Surface Operations	Performance-based Navigation (PBN) Approach	Safety assessment of changes	ATM Operators' performance	Meteorological Information	Safety Nets	Airborne Safety Systems	
		10	40	110	340	350	310	160	170	
		Regional	BO-SURF	BO-APTA	Regional	Regional	BO-AMET	BO-SNET	BO-ACAS - TCAS 7.1	Regional - TAWS
	Runway Safety	Runway Safety	PRIORITY CFIT and RS	CFIT, RS and LOC-I	Runway Safety	CFIT, RS and LOC-I	CFIT	LOC-I	CFIT	
Australia	2016 - 3	100%	100%	100%	100%	100%	100%	100%	100%	100%
Bangladesh	2018 - 1	50%	Not applicable	60%	100%	Not applicable	30%	100%	100%	100%
Bhutan	2018 - 2	Not applicable	Not applicable	80%	No data	No data	60%	Not applicable	Not yet analysed	Not yet analysed
Cambodia	2016 - 3	Not applicable	Not applicable	100%	Not yet analysed	Not yet analysed	Not applicable	100%	Not applicable	Not applicable
China	2018 - 1	20%	70%	100%	100%	100%	100%	Not yet analysed	100%	100%
Democratic People's Republic of Korea	2016 - 2	Not applicable	Not applicable	Not applicable	100%	100%	100%	100%	100%	100%
Fiji	2017 - 4	80%	70%	70%	Not yet analysed	Not yet analysed	Not yet analysed	100%	Not yet analysed	Not yet analysed
French Polynesia, France	2017 - 4	Not applicable	Not applicable	100%	100%	100%	Not applicable	100%	100%	No data
Hong Kong, China	2017 - 2	100%	90%	100%	100%	100%	100%	100%	0%	0%
India	2017 - 3	100%	100%	100%	100%	100%	100%	100%	100%	100%
Indonesia	2016 - 3	Not yet analysed	Not yet analysed	40%	No data	No data	100%	100%	Not yet analysed	Not yet analysed
Japan	2017 - 4	100%	50%	0%	100%	100%	100%	No data	100%	100%
Lao People's Democratic Republic	2017 - 1	Not applicable	Not applicable	20%	0%	0%	30%	Not yet analysed	100%	100%
Macao, China	2017 - 1	Not applicable	Not applicable	100%	100%	100%	100%	Not applicable	Not applicable	Not applicable
Malaysia	2016 - 4	100%	100%	70%	100%	100%	100%	100%	100%	No data
Maldives	2017 - 4	Not yet analysed	Not yet analysed	100%	100%	0%	Not yet analysed	100%	100%	100%
Mongolia	2016 - 1	Not applicable	No data	Not applicable	100%	100%	90%	100%	Not applicable	Not applicable
Nepal	2016 - 1	Not applicable	Not applicable	No data	Not yet analysed	Not yet analysed	No data	No data	100%	No data
New Caledonia, France	2015 - 2	Not applicable	Not yet analysed	0%	100%	100%	100%	Not applicable	Not yet analysed	Not yet analysed
New Zealand	2018 - 2	100%	100%	100%	100%	100%	100%	100%	100%	No data
Pakistan	2017 - 3	80%	Not applicable	90%	100%	No data	100%	100%	100%	100%
Papua New Guinea	2017 - 4	Not applicable	Not yet analysed	Not yet analysed	Not yet analysed	Not yet analysed	No data	Not yet analysed	Not yet analysed	Not yet analysed
Philippines	2016 - 4	100%	Not yet analysed	100%	100%	100%	100%	100%	Not yet analysed	Not yet analysed
Republic of Korea	2016 - 3	100%	100%	70%	100%	100%	100%	Not applicable	100%	100%
Singapore	2017 - 4	100%	100%	100%	100%	100%	100%	100%	100%	100%
Sri Lanka	2018 - 2	Not applicable	Not applicable	100%	100%	100%	100%	100%	100%	100%
Thailand	2018 - 1	100%	30%	100%	100%	100%	100%	0%	100%	0%
United States	2017 - 2	Not applicable	Not applicable	100%	100%	100%	100%	100%	No data	100%
Viet Nam	2017 - 4	50%	100%	40%	100%	100%	100%	100%	100%	100%

Indicator

% of high density international aerodromes (100,000 scheduled movements per annum or more) providing an appropriate apron management service

% of applicable international aerodromes having implemented A-SMGCS Level 2

% 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)

Do you have safety teams comprising multidisciplinary operational staff and managers which review safety performance and assess significant proposals for change to ATM systems?

Do you have human performance-based training and procedures for staff providing ATS?

% of high density aerodromes providing meteorological forecasts, aerodrome warnings and alerts

Does your State implement ground-based safety-nets (STCA, APW, MSAW, etc.)?

Does your State/Administration require the carriage of ACAS (with TCAS 7.1 evolution) ?

Does your State/Administration require the carriage of TAWS?

Implementation status of ASBU B0 modules and APAC Seamless ATM items as safety barriers to CFIT, RS and LOC-I occurrences

4-Jul-18



	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/Departure Management (AMAN/DMAN)	ATC Horizontal separation	ATC Sector Capacity	Automated Transfer of Control in an ATSU	Optimized wake turbulence separation
		80 BO-NOPS	10 Regional	30 Regional	40 BO-SURF	20 Regional	70 BO-ACDM	50 BO-SEQ	260 Regional	60 Regional	230 Regional	440 BO-WAKE
		PRIORITY 1										
Australia	2016 - 3	100%	100%	100%	100%	100%	100%	5%	100%		100%	
Bangladesh	2018 - 1	Not applicable	5%	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	100%		Not applicable	
Bhutan	2018 - 2	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not yet analysed		Not yet analysed	
Cambodia	2016 - 3	Not applicable	Not applicable	No data	Not applicable	Not applicable	Not applicable	Not applicable	100%		100%	
China	2018 - 1	55.5%	20%	100%	70%	100%	70%	5%	100%		90%	
Democratic People's Republic of Korea	2016 - 2	100%	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	100%		100%	
Fiji	2017 - 4	100%	80%	80%	70%	80%	Not yet analysed	Not yet analysed	100%		100%	
French Polynesia, France	2017 - 4	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	30%	Not applicable	100%		100%	
Hong Kong, China	2017 - 2	100%	100%	100%	90%	100%	80%	100%	100%		80%	
India	2017 - 3	100%	100%	100%	100%	100%	100%	70%	100%		100%	
Indonesia	2016 - 3	100%	Not yet analysed	40%	Not yet analysed	80%	Not yet analysed	0%	Not yet analysed		5%	
Japan	2017 - 4	100%	100%	40%	5%	100%		10%	100%		100%	
Lao People's Democratic Republic	2017 - 1	100%	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	100%		10%	
Macao, China	2017 - 1	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable		Not applicable	
Malaysia	2016 - 4	5%	100%	100%	100%	90%	10%	20%	100%		80%	
Maldives	2017 - 4	Not yet analysed	Not yet analysed	Not yet analysed	Not yet analysed	Not yet analysed	Not yet analysed	Not applicable	100%		100%	
Mongolia	2016 - 1	100%	Not applicable	Not applicable	No data	Not applicable	0%	Not applicable	100%		No data	
Nepal	2016 - 1	Not yet analysed	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not yet analysed		Not yet analysed	
New Caledonia, France	2015 - 2	Not applicable	Not applicable	Not applicable	Not yet analysed	Not applicable	Not applicable	Not applicable	100%		Not applicable	
New Zealand	2018 - 2	5%	100%	100%	100%	100%	80%	100%	100%		100%	
Pakistan	2017 - 3	5%	80%	Not applicable	Not applicable	100%	Not yet analysed	Not applicable	100%		100%	
Papua New Guinea	2017 - 4	Not yet analysed	Not applicable	Not yet analysed	Not yet analysed	Not yet analysed	Not yet analysed	Not yet analysed	No data		Not yet analysed	
Philippines	2016 - 4	100%	100%	100%	Not yet analysed	100%	0%	0%	100%		30%	
Republic of Korea	2016 - 3	100%	100%	100%	100%	100%	100%	No data	100%		100%	
Singapore	2017 - 4	100%	100%	100%	100%	100%	100%	100%	100%		100%	
Sri Lanka	2018 - 2	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	100%		100%	
Thailand	2018 - 1	0%	100%	100%	30%	100%	10%	30%	100%		100%	
United States	2017 - 2	5%	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	100%		100%	
Viet Nam	2017 - 4	100%	5%	100%	100%	80%	30%	40%	100%		80%	
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 and high density 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-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 ?	% of ATC sectors with automated hand-off procedures in accordance with Seamless ATM Plan Phase 1		

Australia	2016 - 3	100%		100%			20%		70%	100%	Not yet analysed
Bangladesh	2018 - 1	Not applicable		Not applicable			Not applicable		Not applicable	Not applicable	Not applicable
Bhutan	2018 - 2	Not applicable		Not applicable			Not applicable		Not applicable	Not yet analysed	Not applicable
Cambodia	2016 - 3	Not applicable		No data			Not applicable		Not yet analysed	No data	Not yet analysed
China	2018 - 1	5%		100%			5%		100%	70%	No data
Democratic People's Republic of Korea	2016 - 2	100%		Not applicable			100%		5%	100%	Not yet analysed
Fiji	2017 - 4	100%		80%			Not yet analysed		Not yet analysed	90%	100%
French Polynesia, France	2017 - 4	Not applicable		Not applicable			Not applicable		Not applicable	70%	Not applicable
Hong Kong, China	2017 - 2	No data		No data			No data		100%	0%	Not yet analysed
India	2017 - 3	100%		100%			0%		100%	0%	No data
Indonesia	2016 - 3	No data		No data			No data		No data	No data	No data
Japan	2017 - 4	100%		80%			No data		100%	100%	Not yet analysed
Lao People's Democratic Republic	2017 - 1	100%		Not applicable			Not applicable		10%	10%	Not yet analysed
Macao, China	2017 - 1	Not applicable		Not applicable			Not applicable		Not applicable	Not applicable	Not yet analysed
Malaysia	2016 - 4	100%		No data			100%		100%	90%	Not yet analysed
Maldives	2017 - 4	Not yet analysed		Not yet analysed			Not applicable		Not yet analysed	0%	Not yet analysed
Mongolia	2016 - 1	No data		Not applicable			Not applicable		Not applicable	No data	0%
Nepal	2016 - 1	Not yet analysed		Not applicable			Not applicable		Not yet analysed	Not yet analysed	Not yet analysed
New Caledonia, France	2015 - 2	Not applicable		Not applicable			Not applicable		Not applicable	Not applicable	100%
New Zealand	2018 - 2	100%		5%			80%		30%	100%	Not yet analysed
Pakistan	2017 - 3	No data		Not applicable			Not applicable		80%	100%	Not yet analysed
Papua New Guinea	2017 - 4	Not yet analysed		Not yet analysed			Not yet analysed		Not yet analysed	Not yet analysed	Not yet analysed
Philippines	2016 - 4	100%		100%			0%		0%	0%	Not yet analysed
Republic of Korea	2016 - 3	100%		100%			No data		No data	No data	Not yet analysed
Singapore	2017 - 4	100%		100%			100%		0%	30%	0%
Sri Lanka	2018 - 2	Not applicable		Not applicable			Not applicable		100%	100%	100%
Thailand	2018 - 1	0%		100%			0%		0%	0%	Not yet analysed
United States	2017 - 2	5%		Not applicable			Not applicable		100%	No data	Not applicable
Viet Nam	2017 - 4	100%		100%			100%		100%	100%	100%
Indicator		% of FIRs supporting Major Traffic Flows Should implement ATFM incorporating CDM 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

Implementation status of Seamless ATM items relating to Optimal capacity



		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 (SID)	Standard Terminal Arrivals (STAR)	PBN Visual Departure and Arrival Procedures	ATM systems enabling optimal PBN/ATC operations	UPR and DARP	In-trail procedures
	Seamless Item ASBU	110 BO-AFTA	140 BO-FRTO	150 Regional	90 BO-CDO	100 BO-CCO	120 BO-CCO/BO-CDO	130 Regional	250 BO-AFTA	290 BO-FRTO	450 BO-OPFL	
	PRIORITY	PRIORITY 1										
Australia	2016-3	100%	100%	100%	Not applicable	Not applicable	100%	100%	90%	100%		
Bangladesh	2018-1	60%	10%	100%	40%	40%	40%	0%	Not applicable	Not applicable		
Bhutan	2018-2	80%	10%	No data	Not applicable	Not applicable	100%	70%	Not applicable	Not applicable		
Cambodia	2016-3	100%	Not yet analysed	100%	Not yet analysed	Not yet analysed	100%	100%	100%	100%		
China	2018-1	100%	40%	100%	10%	0%	80%	100%	70%	Not applicable		
Democratic People's Republic of Korea	2016-2	Not applicable	Not applicable	Not applicable	100%	100%	Not yet analysed	100%	100%	100%		
Fiji	2017-4	70%	100%	100%	Not yet analysed	Not yet analysed	Not yet analysed	Not yet analysed	Not yet analysed	100%		
French Polynesia, France	2017-4	100%	80%	Not applicable	Not yet analysed	Not yet analysed	100%	80%	100%	100%		
Hong Kong, China	2017-2	100%	100%	0%	100%	Not yet analysed	100%	100%	100%	Not applicable		
India	2017-3	100%	60%	0%	100%	100%	100%	100%	100%	25%		
Indonesia	2016-3	40%	40%	100%	20%	60%	No data	20%	Not yet analysed	0%		
Japan	2017-4	0%	100%	100%	30%	Not yet analysed	100%	100%	100%	100%		
Laos People's Democratic Republic	2017-1	20%	10%	100%	Not applicable	Not applicable	50%	50%	10%	Not applicable		
Macao, China	2017-1	100%	Not applicable	Not applicable	Not applicable	Not applicable	100%	100%	Not applicable	Not applicable		
Malaysia	2016-4	70%	50%	100%	100%	100%	100%	100%	100%	Not applicable		
Maldives	2017-4	100%	60%	Not yet analysed	100%	100%	100%	100%	100%	100%		
Mongolia	2016-1	Not applicable	0%	Not applicable	10%	10%	0%	0%	10%	100%		
Nepal	2016-1	No data	20%	Not yet analysed	Not yet analysed	Not applicable	Not applicable	Not applicable	20%	Not applicable		
New Caledonia, France	2015-2	0%	Not yet analysed	Not yet analysed	Not applicable	Not applicable	No data	100%	Not applicable	Not applicable		
New Zealand	2018-2	100%	100%	100%	100%	100%	100%	100%	100%	50%		
Pakistan	2017-3	90%	70%	Not yet analysed	Not yet analysed	Not yet analysed	70%	30%	100%	Not yet analysed		
Papua New Guinea	2017-4	Not yet analysed	Not yet analysed	Not yet analysed	Not yet analysed	Not yet analysed	Not yet analysed	Not yet analysed	Not yet analysed	No data		
Philippines	2016-4	100%	30%	0%	50%	10%	60%	100%	20%	0%		
Republic of Korea	2016-3	70%	70%	No data	30%	0%	100%	60%	100%	Not applicable		
Singapore	2017-4	100%	100%	100%	100%	0%	100%	100%	100%	Not applicable		
Sri Lanka	2018-2	100%	100%	100%	100%	100%	100%	100%	100%	100%		
Thailand	2018-1	100%	100%	0%	30%	0%	60%	100%	100%	Not applicable		
United States	2017-2	100%	100%	Not applicable	Not applicable	Not applicable	100%	100%	100%	100%		
Viet Nam	2017-4	40%	50%	100%	30%	30%	100%	100%	80%	100%		
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 SID 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		

Australia	2016-3	100%	30%	90%	Not yet analysed
Bangladesh	2018-1	40%	Not applicable	Not applicable	Not applicable
Bhutan	2018-2	100%	Not applicable	Not applicable	Not applicable
Cambodia	2016-3	Not yet analysed	Not yet analysed	No data	Not applicable
China	2018-1	100%	10%	100%	Not yet analysed
Democratic People's Republic of Korea	2016-2	Not applicable	100%	100%	Not yet analysed
Fiji	2017-4	100%	50%	Not yet analysed	100%
French Polynesia, France	2017-4	100%	Not applicable	No data	Not applicable
Hong Kong, China	2017-2	No data	Not applicable	No data	Not applicable
India	2017-3	100%	0%	0%	25%
Indonesia	2016-3	No data	No data	Not yet analysed	No data
Japan	2017-4	0%	0%	100%	Not yet analysed
Laos People's Democratic Republic	2017-1	10%	Not applicable	10%	Not yet analysed
Macao, China	2017-1	Not applicable	Not applicable	Not applicable	Not applicable
Malaysia	2016-4	100%	100%	100%	Not yet analysed
Maldives	2017-4	100%	Not applicable	100%	Not applicable
Mongolia	2016-1	No data	0%	No data	100%
Nepal	2016-1	0%	Not yet analysed	No data	Not yet analysed
New Caledonia, France	2015-2	Not yet analysed	Not applicable	Not applicable	Not applicable
New Zealand	2018-2	100%	100%	100%	Not yet analysed
Pakistan	2017-3	80%	Not applicable	100%	Not applicable
Papua New Guinea	2017-4	Not yet analysed	Not yet analysed	Not yet analysed	Not yet analysed
Philippines	2016-4	0%	Not yet analysed	0%	Not yet analysed
Republic of Korea	2016-3	100%	No data	100%	Not yet analysed
Singapore	2017-4	0%	Not applicable	70%	0%
Sri Lanka	2018-2	100%	100%	100%	Not yet analysed
Thailand	2018-1	0%	Not applicable	0%	0%
United States	2017-2	100%	Not applicable	100%	Not applicable
Viet Nam	2017-4	100%	100%	100%	100%
Indicator		% of ATS routes designated as PBN routes in accordance with Seamless ATM Phase 2	% 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

Implementation status of Seamless ATM items relating to Optimal trajectories



Target = 100%
in Nov-2015

Seamless Item ASBU	Airspace classification	Flight Level Orientation Schemes (FLOS)	Flight Level Allocation Schemes (FLAS)	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	ATM Managers' Performance	ATC simulators performance	Safety assessment of changes	ATM Operators' performance
	190 Regional	200 Regional	210 Regional	360 BD-FRTO	370 Regional	380 Regional	390 Regional	400 Regional	410 Regional	420 Regional	320 Regional	330 Regional	340 Regional	350 Regional
	PRIORITY			PRIORITY 1	PRIORITY 1	PRIORITY 1								
Australia	2016-3	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Bangladesh	2018-1	100%	100%	Not applicable	No data	No data	100%	Not applicable	100%	100%	Not applicable	100%	100%	Not applicable
Bhutan	2018-2	Not yet analysed	No data	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	No data	No data
Cambodia	2016-3	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
China	2018-1	Not applicable	100%	100%	100%	100%	100%	Not yet analysed	Not yet analysed	Not yet analysed	100%	No data	100%	100%
Democratic People's Republic of Korea	2016-2	No data	No data	No data	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Fiji	2017-4	Not yet analysed	Not yet analysed	Not yet analysed	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not yet analysed	Not yet analysed	Not yet analysed	Not yet analysed
French Polynesia, France	2017-4	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Hong Kong, China	2017-2	100%	100%	100%	100%	100%	100%	100%	Not applicable	Not applicable	100%	100%	100%	100%
India	2017-3	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Indonesia	2016-3	100%	100%	0%	0%	0%	0%	100%	Not applicable	100%	Not yet analysed	100%	No data	No data
Japan	2017-4	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Lao People's Democratic Republic	2017-1	100%	100%	100%	100%	No data	No data	Not yet analysed	Not yet analysed	100%	100%	100%	0%	0%
Macao, China	2017-1	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	No data	100%	100%
Malaysia	2016-4	100%	100%	No data	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Maldives	2017-4	100%	100%	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	0%	100%	0%
Mongolia	2016-1	100%	Not yet analysed	100%	Not yet analysed	Not yet analysed	Not yet analysed	No data	Not yet analysed	No data	No data	100%	100%	100%
Nepal	2016-1	Not applicable	100%	Not yet analysed	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not yet analysed	Not yet analysed	Not yet analysed	Not yet analysed	Not yet analysed
New Caledonia, France	2015-2	100%	100%	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	100%	100%	100%	100%
New Zealand	2018-2	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Pakistan	2017-3	100%	100%	100%	100%	Not yet analysed	No data	Not yet analysed	100%	100%	Not applicable	100%	100%	No data
Papua New Guinea	2017-4	No data	Not yet analysed	Not yet analysed	Not yet analysed	Not yet analysed	Not yet analysed	Not yet analysed	Not yet analysed	Not yet analysed	Not yet analysed	No data	Not yet analysed	Not yet analysed
Philippines	2016-4	100%	100%	100%	100%	100%	0%	Not yet analysed	100%	100%	100%	Not yet analysed	100%	100%
Republic of Korea	2016-3	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Singapore	2017-4	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Sri Lanka	2018-2	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%
Thailand	2018-1	100%	100%	0%	100%	100%	100%	0%	100%	0%	100%	100%	100%	100%
United States	2017-2	Not applicable	100%	Not applicable	100%	100%	100%	100%	Not applicable	Not applicable	100%	100%	100%	100%
Viet Nam	2017-4	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Indicator: Has your State/Administration harmonised 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?

Does your State/Administration use the ICAO Table of Cruising Levels based on FLAS level allocations to higher density ATS routes, and a lower priority to any aircraft that does not meet specified equipment?

% of FIRs in which FLA is implemented

Have you established a national civil/military body that performs strategic civil/military coordination?

Have you established a formal civil military liaison for tactical response?

Are civil ATS and military systems integrated?

Are there joint civil and military navigation aids?

Is Civil Military common training conducted in areas of common interest?

Are there common procedures for Civil Military operations where appropriate?

Does your Operations Manual require the human performance training for all ANSP managers?

Do you have a programme for enhancement and improved application of ATC simulators?

Do you have safety teams comprising multidisciplinary operational staff and managers which review safety performance and assess significant proposals for change to ATM systems?

Do you have human performance-based training and procedures for staff providing ATS?

Target = 100%
in Nov-2010

Australia	2016-3	100%
Bangladesh	2018-1	Not applicable
Bhutan	2018-2	No data
Cambodia	2016-3	Not yet analysed
China	2018-1	100%
Democratic People's Republic of Korea	2016-2	No data
Fiji	2017-4	Not yet analysed
French Polynesia, France	2017-4	0%
Hong Kong, China	2017-2	0%
India	2017-3	100%
Indonesia	2016-3	Not yet analysed
Japan	2017-4	100%
Lao People's Democratic Republic	2017-1	100%
Macao, China	2017-1	100%
Malaysia	2016-4	No data
Maldives	2017-4	No data
Mongolia	2016-1	No data
Nepal	2016-1	Not yet analysed
New Caledonia, France	2015-2	No data
New Zealand	2018-2	100%
Pakistan	2017-3	100%
Papua New Guinea	2017-4	Not yet analysed
Philippines	2016-4	Not yet analysed
Republic of Korea	2016-3	0%
Singapore	2017-4	0%
Sri Lanka	2018-2	100%
Thailand	2018-1	0%
United States	2017-2	No data
Viet Nam	2017-4	100%

Indicator: Is the prevention of fatigue systems established to support human performance in the delivery of your ATM services?

Implementation status of Seamless ATM items relating to Airspace

Implementation status of Seamless ATM items relating to Civil/Military integration

Implementation status of Seamless ATM items relating to Performing safely



		ATS Inter-facility Data-link Communications (AIDC)	ADS-C and CPDLC	Aeronautical Information Management	Meteorological Information	ADS-B airspace	ATS surveillance with data integrated	ATS Surveillance data sharing	Safety Nets	Airborne Safety Systems	Air traffic situational awareness
	Seamless Item ASBU	220 BO-FICE	280 BO-TBO	300 BO-DATM	310 BO-AMET	180 BO-ASUR	270 BO-ASUR	240 Regional	160 BO-SNET	170 BO-ACAS - TCAS 7.1	430 BO-ASEP
	PRIORITY	PRIORITY 1	PRIORITY 1	PRIORITY 1		PRIORITY 1	PRIORITY 1				
Australia	2016 - 3	100%	100%	76.50%	100%	100%	100%	100%	100%	100%	100%
Bangladesh	2018 - 1	Not applicable	Not applicable	63.50%	30%	100%	Not applicable	Not applicable	100%	100%	100%
Bhutan	2018 - 2	No data	Not applicable	2%	60%	Not applicable	10%	Not yet analysed	Not applicable	Not yet analysed	Not yet analysed
Cambodia	2016 - 3	0%	Not applicable	2%	Not applicable	100%	100%	Not applicable	100%	Not applicable	Not applicable
China	2018 - 1	100%	22.20%	44.20%	100%	31.30%	100%	100%	Not yet analysed	100%	100%
Democratic People's Republic of Korea	2016 - 2	100%	Not applicable	No data	100%	100%	100%	Not applicable	100%	100%	100%
Fiji	2017 - 4	100%	100%	38.50%	Not yet analysed	100%	100%	Not yet analysed	100%	Not yet analysed	Not yet analysed
French Polynesia, France	2017 - 4	100%	100%	7.70%	Not applicable	100%	100%	Not yet analysed	100%	100%	No data
Hong Kong, China	2017 - 2	100%	Not applicable	84.60%	100%	100%	100%	100%	100%	0%	0%
India	2017 - 3	100%	100%	100%	100%	0%	100%	100%	100%	100%	100%
Indonesia	2016 - 3	5%	100%	2%	100%	100%	Not yet analysed	5%	100%	Not yet analysed	Not yet analysed
Japan	2017 - 4	100%	100%	84.60%	100%	0%	100%	Not applicable	No data	100%	100%
Laos People's Democratic Republic	2017 - 1	100%	Not applicable	15.40%	30%	100%	30%	10%	Not yet analysed	100%	100%
Macao, China	2017 - 1	Not applicable	Not applicable	38.50%	100%	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Malaysia	2016 - 4	100%	50%	100%	100%	0%	100%	0%	100%	100%	No data
Maldives	2017 - 4	100%	0%	0%	Not yet analysed	100%	100%	0%	100%	100%	100%
Mongolia	2016 - 1	100%	No data	No data	90%	100%	40%	No data	Not applicable	Not applicable	Not applicable
Nepal	2016 - 1	100%	Not applicable	Not yet analysed	No data	100%	No data	Not yet analysed	No data	Not applicable	No data
New Caledonia, France	2015 - 2	Not applicable	Not applicable	Not yet analysed	100%	Not applicable	Not applicable	Not applicable	Not applicable	Not yet analysed	Not yet analysed
New Zealand	2018 - 2	100%	5%	7.70%	100%	5%	100%	Not applicable	100%	100%	No data
Pakistan	2017 - 3	100%	Not yet analysed	69.20%	100%	100%	100%	Not yet analysed	100%	100%	100%
Papua New Guinea	2017 - 4	Not yet analysed	Not yet analysed	Not yet analysed	No data	No data	Not yet analysed	Not yet analysed	Not yet analysed	Not yet analysed	Not yet analysed
Philippines	2016 - 4	0%	100%	46.20%	100%	100%	5%	0%	100%	Not yet analysed	Not yet analysed
Republic of Korea	2016 - 3	100%	Not applicable	84.60%	100%	100%	100%	No data	Not applicable	100%	100%
Singapore	2017 - 4	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Sri Lanka	2018 - 2	100%	100%	38.50%	100%	100%	100%	100%	100%	100%	100%
Thailand	2018 - 1	0%	Not applicable	84.60%	100%	0%	100%	0%	0%	0%	0%
United States	2017 - 2	100%	100%	No data	100%	5%	Not applicable	Not applicable	100%	No data	100%
Viet Nam	2017 - 4	100%	100%	63.50%	100%	100%	80%	40%	100%	100%	100%

Target = 100% in Nov. 2015

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 (D-13)

% of high density aerodromes providing meteorological forecasts, aerodrome warnings and alerts

% of FIRs where Category 5 airspace and Category 7 airspace supporting high density aerodromes are designated as ADS-B airspace?

% of ACCs with ATS Surveillance using ADS-B, MLAT or radar in Category 5 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.)?

Does your State/Administration require the carriage of ACAS (with TCAS 7.1 evolution)?

Does your State/Administration require the carriage of TAWS?

		% of FIRs within which all applicable ACCs have implemented full AIDC messaging, or alternate communication standard	% of Phase 3 AIS-AIM elements completed (D-8)	% of FIRs where Category 5 airspace and Category 7 airspace 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 implement air traffic situational awareness?
Australia	2016 - 3	100%	No data	100%	5%	No data	Not yet analysed
Bangladesh	2018 - 1	Not applicable	75%	100%	Not applicable	70%	Not applicable
Bhutan	2018 - 2	No data	100%	Not applicable	Not yet analysed	No data	No data
Cambodia	2016 - 3	No data	No data	No data	Not applicable	No data	Not yet analysed
China	2018 - 1	100%	37.50%	31.30%	100%	Not yet analysed	No data
Democratic People's Republic of Korea	2016 - 2	0%	No data	0%	Not applicable	100%	Not yet analysed
Fiji	2017 - 4	100%	12.50%	100%	Not yet analysed	100%	100%
French Polynesia, France	2017 - 4	100%	100%	100%	Not yet analysed	100%	100%
Hong Kong, China	2017 - 2	0%	12.50%	No data	100%	0%	Not applicable
India	2017 - 3	100%	100%	0%	0%	0%	No data
Indonesia	2016 - 3	No data	No data	No data	No data	No data	No data
Japan	2017 - 4	100%	25%	0%	Not applicable	0%	Not yet analysed
Laos People's Democratic Republic	2017 - 1	100%	25%	No data	10%	Not yet analysed	Not yet analysed
Macao, China	2017 - 1	Not applicable	No data	Not applicable	Not applicable	Not applicable	Not applicable
Malaysia	2016 - 4	No data	62.50%	5%	10%	100%	Not yet analysed
Maldives	2017 - 4	0%	0%	0%	5%	100%	100%
Mongolia	2016 - 1	No data	No data	100%	No data	No data	100%
Nepal	2016 - 1	100%	Not yet analysed	No data	Not yet analysed	0%	Not yet analysed
New Caledonia, France	2015 - 2	Not applicable	Not yet analysed	Not applicable	Not applicable	Not applicable	100%
New Zealand	2018 - 2	100%	12.50%	5%	Not applicable	100%	Not yet analysed
Pakistan	2017 - 3	No data	75%	100%	No data	No data	100%
Papua New Guinea	2017 - 4	Not yet analysed	Not yet analysed	No data	Not yet analysed	Not yet analysed	Not yet analysed
Philippines	2016 - 4	0%	0%	100%	0%	0%	Not yet analysed
Republic of Korea	2016 - 3	100%	25%	No data	No data	Not applicable	Not yet analysed
Singapore	2017 - 4	100%	75%	100%	50%	100%	Not yet analysed
Sri Lanka	2018 - 2	100%	37.50%	100%	100%	100%	100%
Thailand	2018 - 1	0%	12.50%	0%	0%	No data	Not yet analysed
United States	2017 - 2	No data	25%	0%	Not applicable	100%	100%
Viet Nam	2017 - 4	100%	100%	100%	100%	100%	100%

Target = 100% in Nov. 2010

Implementation status of Seamless ATM items relating to Communications & Information Management

Implementation status of Seamless ATM items relating to Surveillance