



## **Agenda Item 5.2**

# **Implementation Status of the A37-11 and APTA Thread B0 & B1 in MID**



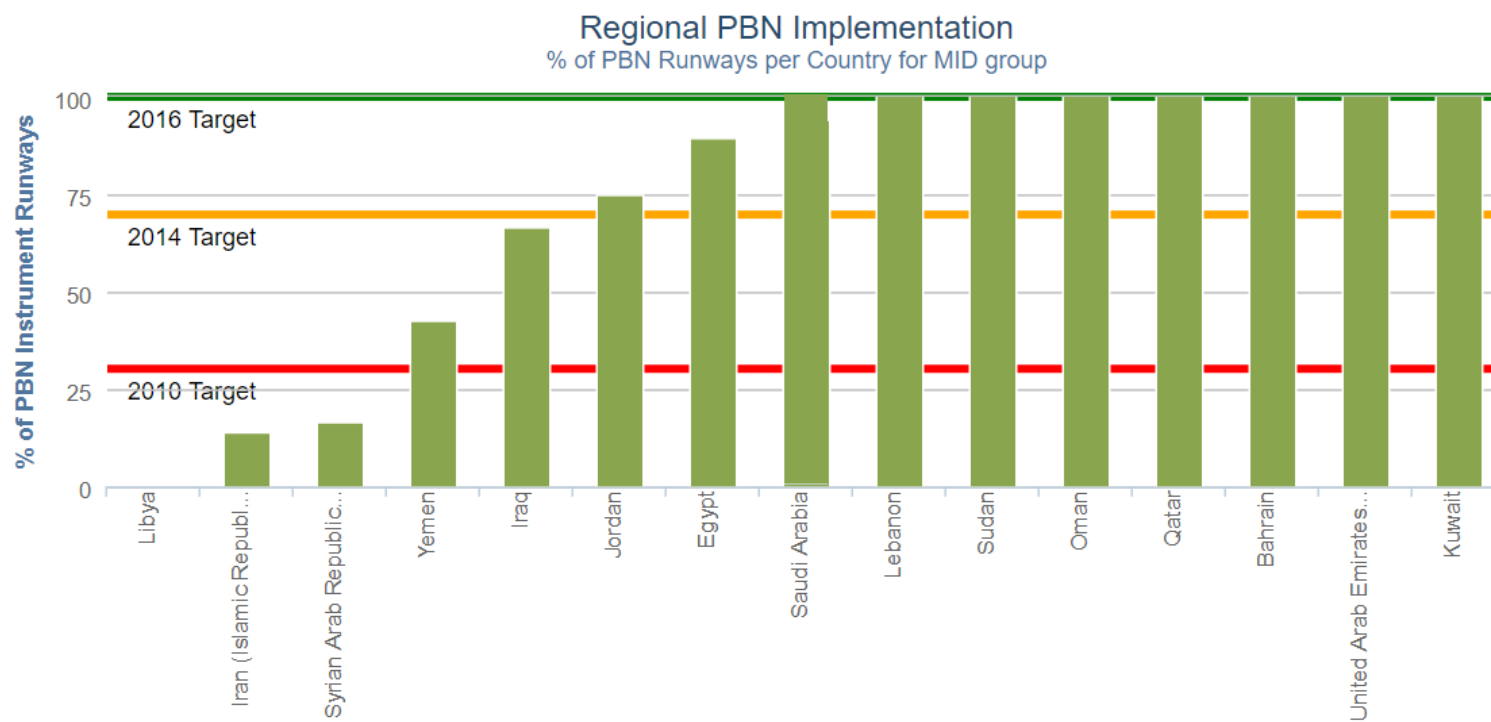


## ICAO Assembly Resolution A37-11 - PBN Global Targets

- Approach procedures with vertical guidance (APV (Baro-VNAV) including LNAV-only minima for all instrument runway ends by 2016.
- Straight-in LNAV only procedures as an exception to the above where there is:
  - no local altimeter setting; and
  - no aircraft equipped for APV with max certified mass of 5700kg or more



# Percentage of States in MID meeting the resolution Targets





## Details on PBN Implementation by State for MID

State	▲ PBN Runways	◆ Instrument Runways	◆ PBN Runways (%)
Bahrain	4	4	100
Egypt	34	38	89.5
Iran (Islamic Republic of)	3	21	14.3
Iraq	8	12	66.7
Jordan	6	8	75
Kuwait	4	4	100
Lebanon	4	4	100
Libya	0	8	0
Oman	4	4	100
Qatar	6	6	100
Saudi Arabia	18	18	100
Sudan	4	4	100
Syrian Arab Republic	1	6	16.7
United Arab Emirates	21	21	100
Yemen	3	7	42.9



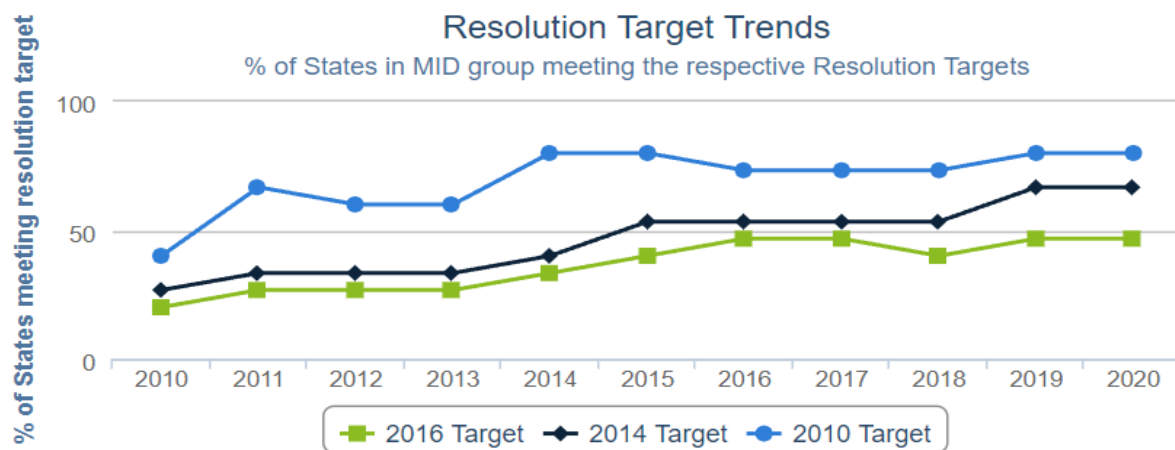
States in MID PBN Runway group      Ends      Intr. Runway Ends      PBN Runway Ends (%)

15

119

165

72.1%





## APTA THREAD/ELEMENTS PRIORITY 1 (Block 0 & 1 IN THE MID REGION)

APTA-B0/1 PBN Approaches (with basic capabilities)

APTA-B0/2 PBN SID and STAR procedures (with basic capabilities)

APTA-B0/4 CDO (Basic)

APTA-B0/5 CCO (Basic)

APTA-B0/7 Performance based aerodrome operating minima – Advanced aircraft



### APTA: priority 1 Elements, applicability, performance Indicators, supporting Metrics, and Targets

Elements	Applicability	Performance Indicators/Supporting Metrics	Targets
<b>APTA B0/1 PBN Approaches (with basic capabilities)</b>	All RWYs ENDS at International Aerodromes	Indicator: % of runways ends at international aerodromes provided with Baro-VNAV approach procedures (LNAV/VNAV)  Supporting metric: Number of runways ends at international aerodromes provided with Baro-VNAV approach procedures (LNAV/VNAV)	100% by Dec. 2017
<b>APTA B0/2 PBN SID and STAR procedures (with basic capabilities)</b>	All RWYs Ends at International Aerodromes	Indicator: % of runway ends at international aerodromes provided with PBN SID and STAR (basic capabilities).  Supporting Metric: Number of runways ends at international aerodromes provided with PBN SIDs and STAR (basic capabilities).	70% by Dec 2022
<b>APTA B0/4 CDO (Basic)</b>	OBBI, OIIE, OIKB, OIFM, OJAI, OLBA, OOMS, OTHH, OTBD, OEJN, OEMA, OEDF, OERK, HSSK, HSPN, OMAA, OMAL, OMAD, OMDW, OMDB, OMSJ, OMRK and OMFJ	Indicator: % of International Aerodromes/TMA with CDO implemented as required.  Supporting Metric: Number of International Aerodromes/TMAs with CDO implemented as required.	100% Dec 2021



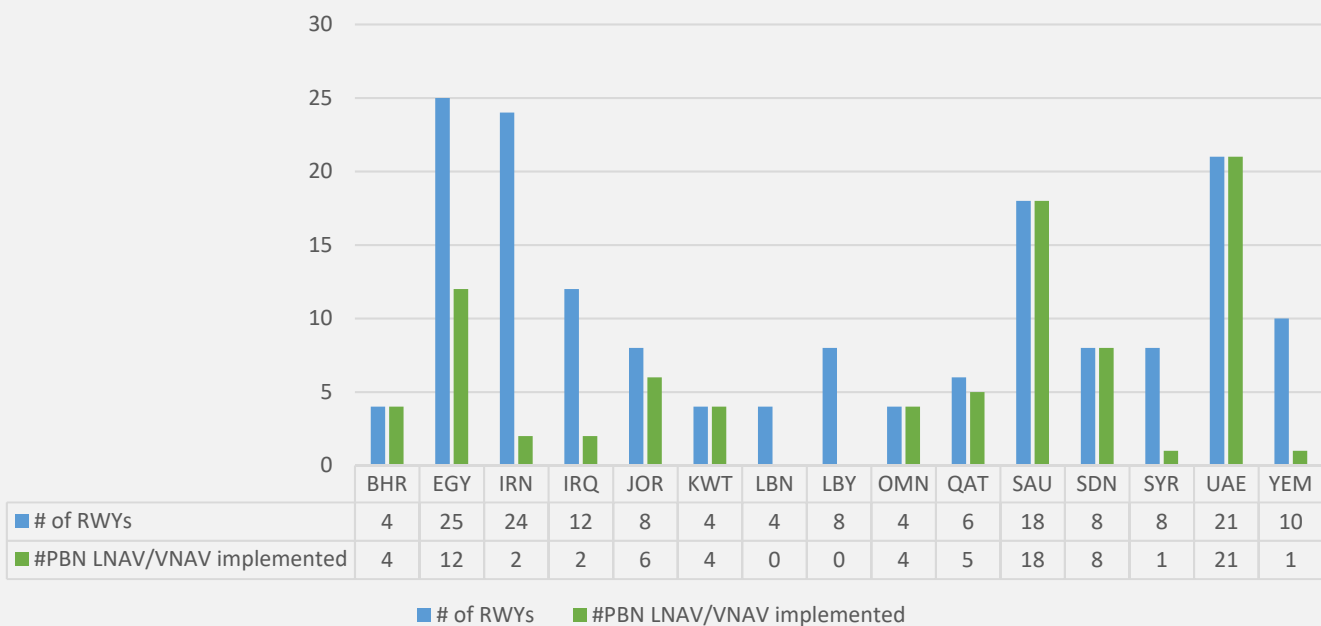
**APTA: priority 1 Elements, applicability, performance Indicators, supporting Metrics, and Targets**

Elements	Applicability	Performance Indicators/Supporting Metrics	Targets
<b>APTA B0/5 CCO (Basic)</b>	OBBI, OIIE, OIKB, OIFM, OJAI, OLBA, OOMS, OTHH, OTBD, OEJN, OEMA, OEDF, OERK, HSSK, HSPN, OMAA, OMAL, OMAD, OMDW, OMDB, OMSJ, OMRK and OMFJ	Indicator: % of International Aerodromes/TMA with CDO implemented as required.  Supporting Metric: Number of International Aerodromes/TMAs with CDO implemented as required.	100% Dec 2021
<b>APTA B0/7 Performance based aerodrome operating minima – Advanced aircraft</b>	All States	Indicator: % of States authorizing PB-OM for Air operators operating Advanced aircraft.  Supporting Metric: Number of States authorizing PB-OM for Air Operators operating Advanced aircraft.	50% Dec 2021

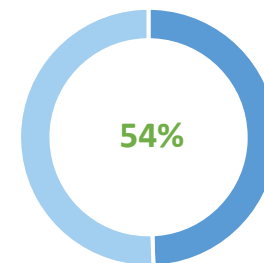




### Implementation status of the APTA B0/1

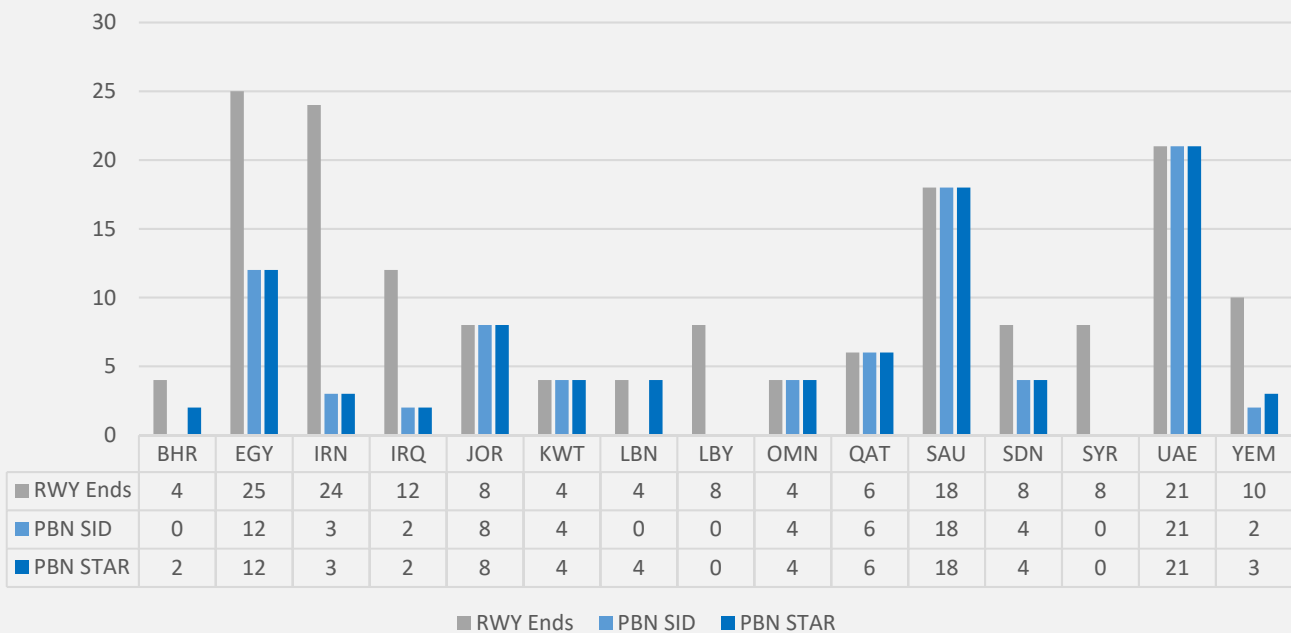


Target vs Actual

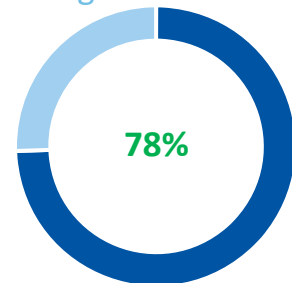




### Implementation status of the APTA B0/2

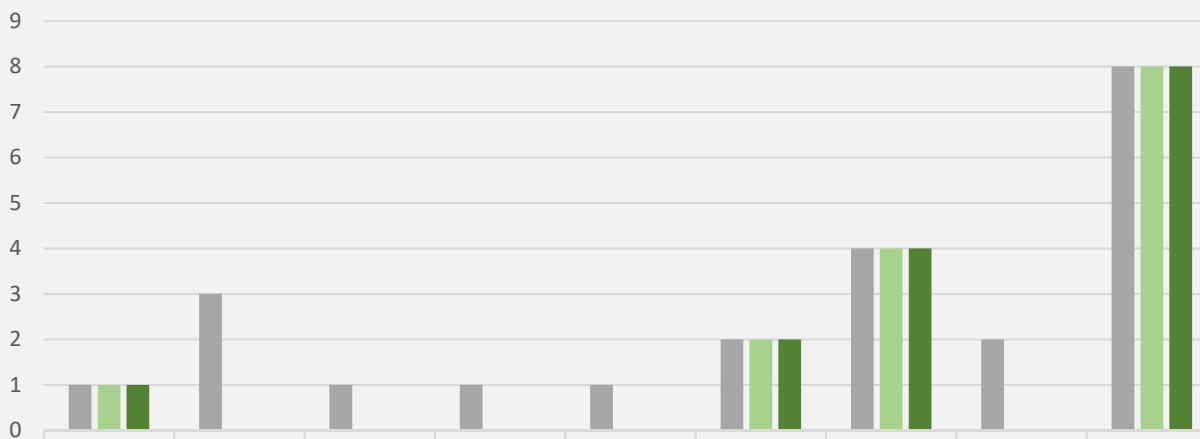


### Target vs Actual





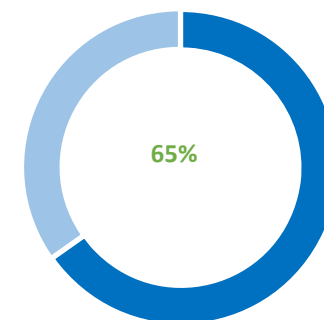
### Implementation status of the APTA B0/4 & B0/5



	BHR	IRN	JOR	LBN	OMN	QAT	SAU	SDN	UAE
#AP/TMA	1	3	1	1	1	2	4	2	8
#CCO	1	0	0	0	0	2	4	0	8
#CDO	1	0	0	0	0	2	4	0	8

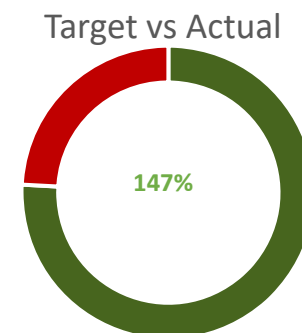
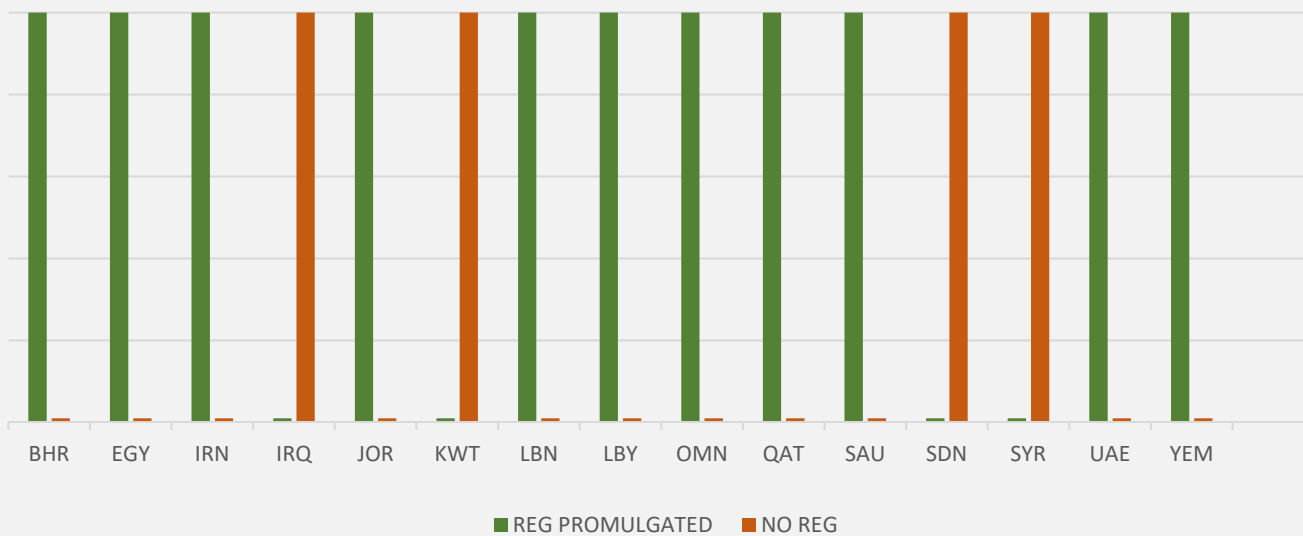
■ #AP/TMA ■ #CCO ■ #CDO

Target vs Actual





### Implementation status of the APTA B0/7





## PBN implementation - Challenges

- Some States are generally behind schedule in the implementation of the PBN;
- Sanctions;
- Investment to implement PBN projects or purchasing systems/tools;
- PBN Resources: Limited/scarce funding for Regulator/ANSP;
- Lack of training and qualified human resources :
  - Lack of Air Traffic Control/ Air Traffic Management (ATC/ATM) training for PBN implementation,
  - Lack of airspace and procedure design training,
  - Lack of operational approval expertise to obtain proper operational approval and to oversee operators for PBN operations,
  - Lack of regulatory expertise to oversee the process leading to procedure publication.
- Insufficient number of procedure designers;
- Attention and higher level of involvement in managerial levels in monitoring and planning the PBN implementation;
- The States' priorities have been changing (COVID-19 pandemic worsens the economic situation).



## Action by the meeting

- note the information provided in this presentation;
- review and update, as necessary, the status of PBN implementation, at Appendix A; and
- urge States to expedite implementation of PBN to achieve targets of the MID Air Navigation Strategy.



# ICAO | UNITING AVIATION



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Central African  
(WACAF) Office  
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North Atlantic  
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Paris

Middle East  
(MID) Office  
Cairo

Eastern and  
Southern African  
(ESAF) Office  
Nairobi

Asia and Pacific  
(APAC) Sub-office  
Beijing

Asia and Pacific  
(APAC) Office  
Bangkok



THANK YOU

**MID REGION PBN IMPLEMENTATION STATUS**

Updated on 01<sup>st</sup> October 2021

<b>Legend</b>		Not implemented
		Not feasible
		Not applicable
		Data not available
		Implemented

State	Airport	RWY ends	LNAV	LNAV/ VNAV	RNAV SID	RNAV STAR	CDO	CCO	PB-AOM
Bahrain	OBBI	RWY 12R							
		RWY 12L							
		RWY 30R							
		RWY 30L							
Egypt	HEBA	RWY 14R							
		RWY 32L							
		RWY 32							
	HESN	RWY 17							
		RWY 35							
	HECA	RWY 05L							
		RWY 23R							
		RWY 05C							
		RWY 23C							
		RWY 05R							
		RWY 23L							
	HEGN	RWY 16L							
		RWY 34R							
RWY 16R									



State	Airport	RWY ends	LNAV	LNAV/ VNAV	RNAV SID	RNAV STAR	CDO	CCO	PB-AOM	
		RWY 34L								
	HELX	RWY 02								
		RWY 20								
		RWY 02L								
		RWY 20R								
	HEMA	RWY 15								
		RWY 33								
	HESH	RWY 04L								
		RWY 22R								
		RWY 04R								
		RWY 22L								
	Iran	OIKB	RWY 03R							
			RWY 21L							
OIFM		RWY 08L								
		RWY 26R								
		RWY 08R								
		RWY 26L								
OIMM		RWY 13L								
		RWY 31R								
		RWY 13R								
		RWY 31L								
OISS		RWY 29L								

State	Airport	RWY ends	LNAV	LNAV/ VNAV	RNAV SID	RNAV STAR	CDO	CCO	PB-AOM
		RWY 29R							
	OITT	RWY 12L							
		RWY 30R							
	OIIE	RWY 11L							
		RWY 29R							
	OIII	RWY 11R							
		RWY 29L							
		RWY 11L							
		RWY 29R							
	OIYY	RWY 13							
		RWY 31							
	OIZH	RWY 17R							
		RWY 35L							
	Iraq	ORNI	RWY 28						
RWY 10									
ORBI		RWY 15R							
		RWY 33L							
		RWY 15L							
		RWY 33R							
ORMM		RWY 32							
		RWY 14							
ORER		RWY 18							
		RWY 36							
ORSU		RWY 31							

State	Airport	RWY ends	LNAV	LNAV/ VNAV	RNAV SID	RNAV STAR	CDO	CCO	PB-AOM
		RWY 13	Green	Red	Red	Red	Orange	Orange	Grey
Jordan	OJAM	RWY 06	Green	Green	Green	Green	Orange	Orange	Green
		RWY 24	Green	Green	Green	Green	Orange	Orange	
	OJAI	RWY 08R	Green	Green	Green	Green	Red	Red	
		RWY 26L	Green	Green	Green	Green	Red	Red	
		RWY 08L	Red	Red	Green	Green	Red	Red	
		RWY 26R	Red	Red	Green	Green	Red	Red	
	OJAQ	RWY 01	Green	Green	Green	Green	Orange	Orange	
		RWY 19	Green	Green	Green	Green	Orange	Orange	
Kuwait	OKBK	RWY 15R	Green	Green	Green	Green	Orange	Orange	Grey
		RWY 33L	Green	Green	Green	Green			
		RWY 15L	Green	Green	Green	Green			
		RWY 33R	Green	Green	Green	Green			
Lebanon	OLBA	RWY 03	Green	Red	Red	Green	Red	Red	Green
		RWY 21	Green	Red	Red	Green	Red	Red	
		RWY 16	Green	Red	Red	Green	Red	Red	
		RWY 17	Green	Red	Red	Green	Red	Red	
Libya	HLLB	RWY 15L	Red	Red	Red	Red	Orange	Orange	Green
		RWY 33R	Red	Red	Red	Red			
		RWY 15R	Red	Red	Red	Red			
		RWY 33L	Red	Red	Red	Red			

State	Airport	RWY ends	LNAV	LNAV/ VNAV	RNAV SID	RNAV STAR	CDO	CCO	PB-AOM
	HLLS	RWY 13							
		RWY 31							
	HLLT	RWY 09							
		RWY 27							
Oman	OOMS	RWY 08L							
		RWY 26R							
	OOSA	RWY 07							
		RWY 25							
Qatar	OTBD	RWY 15							
		RWY 33							
	OTHH	RWY 16L							
		RWY 34R							
		RWY 16R							
		RWY 34L							
Saudi Arabia	OEDF	RWY 16L							
		RWY 34R							
		RWY 16R							
		RWY 34L							
	OEJN	RWY 16R							
		RWY 34L							
		RWY 16C							
		RWY 34C							

State	Airport	RWY ends	LNAV	LNAV/ VNAV	RNAV SID	RNAV STAR	CDO	CCO	PB-AOM		
		RWY 16L									
		RWY 34R									
	OEMA	RWY 17									
		RWY 35									
		RWY 18									
		RWY 36									
	OERK	RWY 15L									
		RWY 33R									
		RWY 15R									
		RWY 33L									
	Sudan	HSOB	RWY 01								
			RWY 19								
HSSK		RWY 18									
		RWY 36									
HSNN		RWY 04									
		RWY 22									
HSPN		RWY 16									
		RWY 34									
Syria	OSAP	RWY 09									
		RWY 27									
	OSDI	RWY 05L									
		RWY 23R									
		RWY 05R									

State	Airport	RWY ends	LNAV	LNAV/ VNAV	RNAV SID	RNAV STAR	CDO	CCO	PB-AOM	
	OSLK	RWY 23L								
		RWY 17								
		RWY 35								
UAE	OMAA	RWY 13 R								
		RWY 31 L								
		RWY 13 L								
		RWY 31 R								
	OMAD	RWY 13								
		RWY 31								
	OMAL	RWY 01								
		RWY 19								
	OMDW	RWY 12								
		RWY 30								
		RWY 13								
		RWY 31								
	OMDB	RWY 12L								
		RWY 30R								
		RWY 12R								
		RWY 30L								
	OMFJ	RWY 11								
		RWY 29								
	OMRK	RWY 16								
		RWY 34								

State	Airport	RWY ends	LNAV	LNAV/ VNAV	RNAV SID	RNAV STAR	CDO	CCO	PB-AOM
	OMSJ	RWY 12							
		RWY 30							
Yemen	OYAA	RWY 08							
		RWY 26							
	OYHD	RWY 03							
		RWY 21							
	OYRN	RWY 06							
		RWY 24							
	OYSN	RWY 18							
		RWY 36							
	OYTZ	RWY 01							
		RWY 19							

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