INTERNATIONAL CIVIL AVIATION ORGANIZATION

The Twelfth Meeting of the AIM Sub-Group (AIM SG/12) (Virtual, 22-23 April 2026)

Radio Navigation Aids: Publication and Operational Role

ICAO MID

ICAO Standards and Guidelines for Publishing NAVAIDs Information in State AIP

GEN 2.5 List of radio navigation aids
#AIP-DS# A list of radio navigation aids arranged alphabetically, containing:
1) identifier;
2) name of the station;
3) type of facility/aid; and
4) indication whether aid serves en-route (E), aerodrome (A) or dual (AE) purposes.

ENR 4.1 Radio navigation aids — En-route

#AIP-DS# A list of stations providing radio navigation services established for en-route purposes and arranged alphabetically by name of the station, including:
1) name of the station and magnetic variation to the nearest degree and for VOR, station declination to the nearest degree used for technical line-up of the aid;
2) identification;
3) frequency/channel for each element;
4) hours of operation;
5) geographical coordinates in degrees, minutes and seconds of the position of the transmitting antenna;
6) elevation of the transmitting antenna of DME to the nearest 30 m (100 ft); and
7) remarks.

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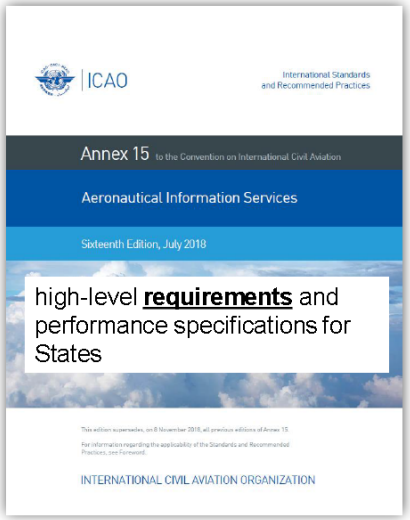

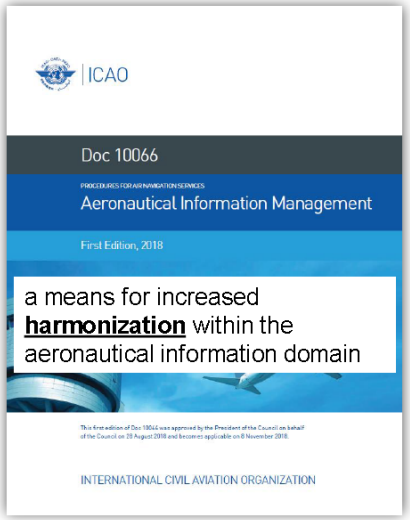

ICAO Standards and Guidelines for Publishing NAVAIDs Information in State AIP

AD 2.19 Radio navigation and landing aids

#AIP-DS# Detailed description of radio navigation and landing aids associated with the instrument approach and the terminal area procedures at the aerodrome, including:

1) type of aids, magnetic variation to the nearest degree, as appropriate, and type of supported operation for ILS/MLS, basic GNSS, SBAS, and GBAS, and for VOR/ILS/MLS also station declination to the nearest degree used for technical line-up of the aid;

2) identification, if required;

3) frequency(ies), channel number(s), service provider and reference path identifier(s) (RPI), as appropriate;

4) hours of operation, as appropriate;

5) geographical coordinates in degrees, minutes, seconds and tenths of seconds of the position of the transmitting antenna, as appropriate;

6) elevation of the transmitting antenna of DME to the nearest 30 m (100 ft) and of DME/P to the nearest 3 m (10 ft); elevation of GBAS reference point to the nearest meter or foot, and the ellipsoid height of the point to the nearest meter or foot. For SBAS, the ellipsoid height of the landing threshold point (LTP) or the fictitious threshold point (FTP) to the nearest meter or foot;

7) service volume radius from the GBAS reference point to the nearest kilometer or nautical mile; and

8) remarks.

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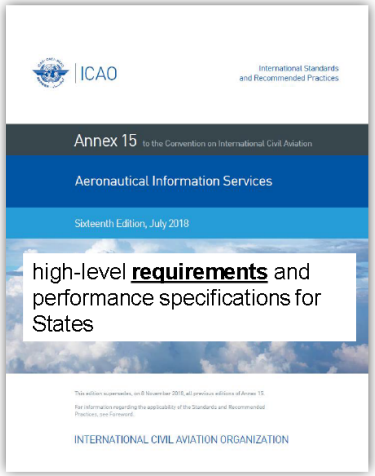
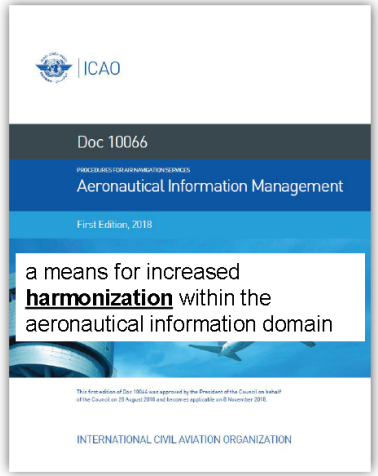




ICAO Standards and Guidelines for Publishing NAVAIDs Information in State AIP

GEN 2.5 List of radio navigation aids: This list consists of two tabulations, each containing four columns. Both tables are in alphabetical order, with one table listing the aids by “identification (ID)” and the other by “station name”.

GEN 2.5 LIST OF RADIO NAVIGATION AIDS

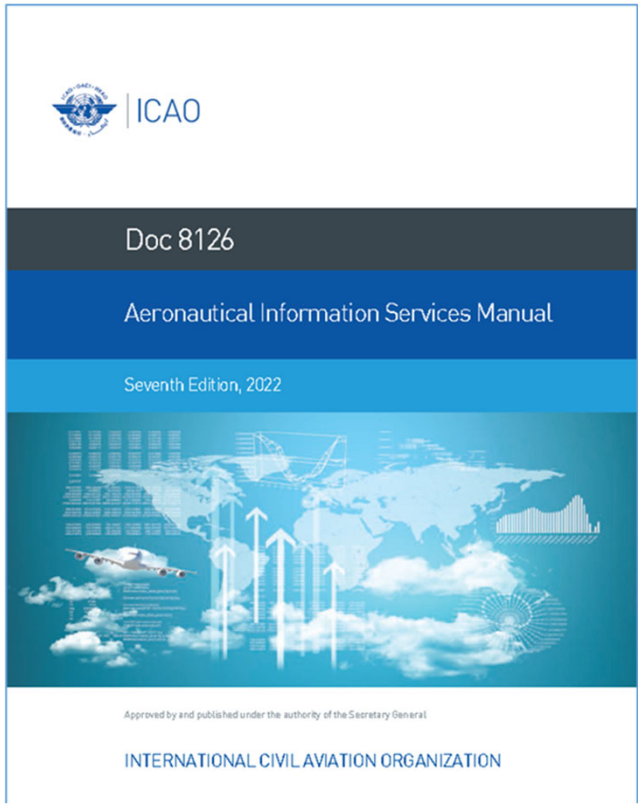
ID	*Station name*	*Aid*	*Purpose*	*Station name*	*Aid*	*ID*	*Purpose*
AK	Akvin	NDB	AE	Akvin	NDB	AK	AE
BOR	Boorspijk	VOR/DME	E	Boorspijk	VOR/DME	BOR	E
DN	Donnord	NDB	E	Donest	NDB	DS	E
DS	Donest	NDB	E	Donlon	ILS	OXS	A
EKO	Ekcombe	VOR	E	Donlon	L	KL	A
KL	Donlon	L	A	Donnord	NDB	DN	E
LG	Ugo	CON	E	Ekcombe	VOR	EKO	E
LMD	Limador	VOR	AE	Limador	VOR	LMD	AE
NHS	Nieuhans	VOR	E	Nieuhans	VOR	NHS	E
OXS	Donlon	ILS	A	Ugo	CON	LG	E

ICAO Standards and Guidelines for Publishing NAVAIDs Information in State AIP

NavAids published in ENR 4.1 Radio navigation aids — En-route will be used 'ENROUTE' per definition.

ENR 4.1 RADIO NAVIGATION AIDS — EN-ROUTE

Name of station (Variation (VAR)) (VOR: Declination)	*ID*	*FREQ (CH)*	*Hours of operation*	*Coordinates*	*ELEV distance-measuring equipment (DME) antenna*	*Remarks*
1	2	3	4	5	6	7
BOORSPIJK VOR/DME (7°W)	BOR	115.500 MHZ (CH 102X)	H24	522206N 0322230W	30 M	Coverage 350 KM
DONLON VOR/DME (7°W)	DON	116.400 MHZ (CH 111X)	H24	522636N 0320003W	60 M	Coverage 250 KM
EKCOMBE NDB (7°W)	EKO	334 KHZ	H24	470812N 0283830E		Coverage 45 KM



ICAO Standards and Guidelines for Publishing NAVAIDs Information in State AIP

NavAids published in AD 2.19/AD 3.18 Radio navigation and landing aids are per definition of 'TERMINAL' usage.

EADD AD 2.19 RADIO NAVIGATION AND LANDING AIDS

Type of aid, MAG VAR, Type of supported OPS (for VOR/ILS/MLS, give declination)	*ID*	*Frequency*	*Hours of operation*	*Position of transmitting antenna coordinates*	*Elevation of distance-measuring equipment (DME) transmitting antenna*	*Service volume radius from the GBAS reference point*	*Remarks*
1	2	3	4	5	6	7	8
VOR/DME (3°W/1990)	BOR	116.900 MHz	H24	522206.2N 0322230.8W	60 M		NIL
VOR/DME (3°W/1990)	CAA	114.300 MHz	H24	522254.4N 0314436.1W	30 M		
VOR/DME (3°W/1990)	KAV	115.000 MHz CH 97X	H24	523218.3N 0315512.6W	30 M		
L	KL	411 KHz	H24	522301.2N 0315102.3W			087° MAG/5.7 KM to RWY 27R. Coverage 45 KM
LLZ 27R (3°W/1990) ILS CAT II (3°W or 357°)	OXS	109.100 MHz	H24	522232.1N 0315754.8W			
GP 27	Dots/Dashes	331.400 MHz	H24	522242.4N 0315536.4W			2.75°, RDH 51 FT

NAVAIDs Information in States AIP

ENR 4 RADIO NAVIGATION AIDS/SYSTEMS

ENR 4.1 RADIO NAVIGATION AIDS - EN-ROUTE

NAME OF STATION	ID	FREQUENCY	HOURS	COORDINATES	ELEV DME ANTENNA	REMARKS
1	2	3	4	5	6	7
ELGENIENA DVOR-DME (2°E - 2015)	GNA	116.3 MHZ (CH 110X)	H24	13°28'24.39"N 022°32'07.30"E	2636.8 ft	VORCO-LOCATEDWITH DME
DAMAZIN NDB (33°E - 2018)	DMZ	343 KHZ	HJ	11°47'27.34"N 034°20'24.47"E	NIL	NIL
PORT SUDAN VOR-DME (3°E - 2015)	PSD	113.1 MHZ (CH 78X)	H24	19°24'04.12"N 037°14'30.21"E	159.2 ft	VORCO-LOCATEDWITH DME

HSPN AD 2.19 RADIO NAVIGATION AND LANDING AIDS

Type of aid, MAG VAR. Type of supported OPS (for VOR/ILS/MLS, give declination)	ID	Frequency	Hours of operation	Position of transmiting antenna coordinates	Elevation of DME transmiting antenna	Remarks
1	2	3	4	5	6	7
ILS/DME CAT I						
LOC 34	PIS	110.3 MHz	NIL	19°26'48.02"N 037°13'51.63"E	NIL	NIL
GP 34	PIS	335 MHz	NIL	19°25'30.18"N 037°14'05.77"E	NIL	NIL
DME 34	PIS	CH78X	NIL	19°25'30.18"N 037°14'05.77"E	52.81m	NIL

NAVAIDs Information in States AIP

ENR 4. RADIO NAVIGATION AIDS/SYSTEMS

ENR 4.1 RADIO NAVIGATION AIDS-EN-ROUTE

Name of station (VAR) (VOR: Declination)	ID	FREQ (CH)	Hours of operation	Coordinates	ELEV DME Antenna	Remarks
AMMAN DVOR/DME	AMN	116.3 MHz CH110X	H24	320014.65N 360357.55E	690M	Elevation including antenna
QUEEN ALIA DVOR/DME	QAA	115.2 MHz CH99X	H24	314423N 360927E	834M	Elevation including antenna
QATRANEH DVOR/DME	QTR	112.9 MHZ CH76X	H24	311454.41N 360334.31E	801M	Elevation including antenna

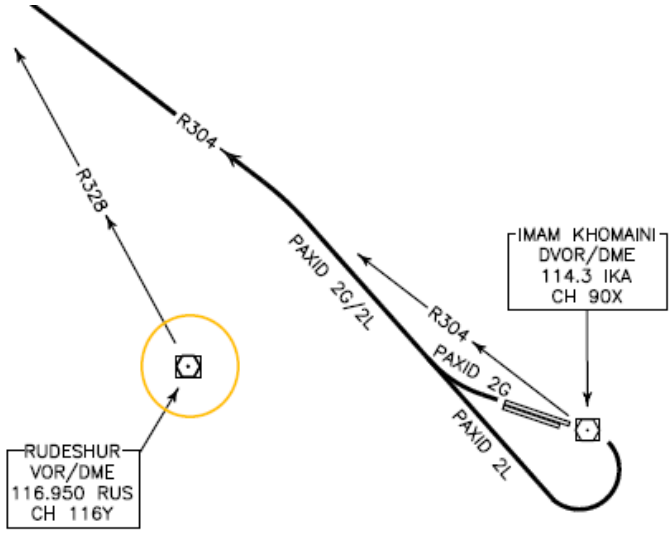
EN 2.5 LIST OF RADIO NAVIGATION AIDS

ID	Station Name	Aid	Purpose	STATION NAME	Aid	ID	Purpose
AMN	AMMAN	DVOR/DME	AE	AMMAN	DVOR/DME	AMN	AE
AQB	KING HUSSEIN	DVOR/DME	AE	AMMAN	ILS	IAMN	A
IAMN	AMMAN	ILS	A	KING HUSSEIN	DVOR/DME	AQB	AE
IAQA	KING HUSSEIN	ILS	A	KING HUSSEIN	ILS	IAQA	A
IKHA	KING HUSSEIN	ILS	AE	KING HUSSEIN	ILS	IKHA	AE
IQA	QUEEN ALIA	ILS	A	MADABA	NDB	MDB	A
IQAN	QUEEN ALIA	ILS	A	QATRANEH	DVOR/DME	QTR	AE
IQAR	QUEEN ALIA	ILS	A	QUEEN ALI	ILS	IQA	A
MDB	MADABA	NDB	A	QUEEN ALIA	ILS	IQAN	A
QAA	QUEEN ALIA	DVOR/DME	AE	QUEEN ALIA	ILS	IQAR	A
QTR	QATRANEH	DVOR/DME	AE	QUEEN ALIA	DVOR/DME	QAA	AE

NAVAIDs Information in States AIP

OIIE AD 2.19 RADIO NAVIGATION AND LANDING AIDS

Type of aid, CAT of ILS (For VOR/ILS, give VAR)	*ID*	*Frequency*	*Hours of operation*	*Site of transmitting antenna coordinates*	*Elevation of DME transmitting antenna*	*Remarks*
1	2	3	4	5	6	7
DVOR/DME 5° E (2017)	IKA	114.300 MHZ CH90X	H24	352434.8N 0511042.5E	3271 FT	
NDB	IKA	201KHZ	H24	352428.5N 0511105.1E		
LLZ 29R ILS CAT II 5°' E (2017)	IIKA	110.300 MHZ	H24	352534.4N 0510708.5E		
ILS GP RWY 29R		335.000 MHZ	H24	352454.2N 0510947.9E		3°, RDH 57 FT
ILS DME RWY 29R	IIKA	CH 40X	H24	352454.2N 0510947.9E	3275 FT	



NAVAIDs Information in States AIP

ENR 4.1 RADIO NAVIGATION AIDS - EN-ROUTE

Name of station (VAR) (VOR: Declination)	*ID*	*FREQ (CH)*	*Hours of operation*	*Coordinates*	*ELEV DME antenna*	*Remarks*
1	2	3	4	5	6	7
BAGHDAD D-VOR (4°E)	BGD	112.900 MHZ (CH 76)	H24	331731N 0441331E	100 FT	150 NM
BASRAH VOR-DME (3°E)	BSR	112.300 MHZ CH 70X	H24	303132N 0474112E	100 FT	150 NM

ORMM AD 2.19 RADIO NAVIGATION AND LANDING AIDS

Type of aid, MAG VAR, Type of supported OP (for VOR/ILS/MLS, give declination)	*ID*	*Frequency*	*Hours of operation*	*Position of transmitting antenna coordinates*	*Elevation of DME transmitting antenna*	*Remarks*
1	2	3	4	5	6	7
VOR/DME —	BSR	112.3 MHz CH 70X	H24	303132.3N 474112.1E	100 FT	NIL
LOC32 (3°E/2010) ILS CAT II (3°E or 003°)	I-BIA	111.7 MHz	H24	303353.1N 0473844.4E		
GP32		333.5 MHz CH 54X	H24	303212.3N 0474023.3E	0 FT	NIL
LOC14 (3°E/2010) ILS CAT II	I-BSR	111.3 MHz	H24	303158.0N 0474045.2E		
GP14		332.3 MHz CH 50X	H24	303332.9N 0473858.7E	0 FT	NIL
ASR/PAR	Basrah Final		H24	303251.7N 0473928.3E		RWY 14/32

Type of aid, MAG VAR, Type of supported OP (for VOR/ILS/MLS, give declination)	*ID*	*Frequency*	*Hours of operation*	*Position of transmitting antenna coordinates*	*Elevation of DME transmitting antenna*	*Remarks*
1	2	3	4	5	6	7
DVOR/DME (4°E/—)	BGD	112.9 MHz CH76	H24	331731.0N 0441331.0E	100 FT	NIL

NAVAIDs Information in States AIP

ENR 4. RADIO NAVIGATION AIDS/SYSTEMS

ENR 4.1 RADIO NAVIGATION AIDS – EN-ROUTE

Name of station.	ID	Frequency (CH)	Hours of operation	Coordinates	ELEV antenna FT	Remarks
1	2	3	4	5	6	7
BOD NDB	BOD	351.0 KHZ	H24	335413N 0352855E	186	Coverage : 100 NM
CHEKA VOR/DME	CAK	116.2 MHZ CH 109X	H24	341802N 0354200E	763	DVOR/DME Coverage; APRX. 200NM
KALDE VOR/DME	KAD	112.6 MHZ CH 073X	H24	334827N 0352910E	53	KAD-VOR/DME unusable between radial 090 degrees and 130 degrees due to terrain
Kleyate NDB	RA	450.0 KHZ	H24	343510N 0360010E		500M from CL and 800M of begining of RWY24 Power : 500 Watts Height of mast : 8M

OLBA AD 2.19 RADIO NAVIGATION AND LANDING AIDS

Type of aid, CAT of ILS/MLS	ID	frequency	Hours of operation	Site of transmitting antenna coordinates	Elevation of transmitting antenna	Remarks
1	2	3	4	5	6	7
ILSLLZ CAT I DME/17 GP/17	BIL	109.5MHZ CH 32X 332.6KHZ	H24 H24 H24	334825.918N 0352920.334E 335006.728N 0352919.462E 335006.776N 0352919.844E	42.50 FT 88.60 FT 66.00 FT	LLZ coverage is restricted to (+/-) 30 degrees ISO 35 degrees. At 25 NM coverage it is restricted to 7 degrees ISO 10 degrees on left side.
ILSLLZ CAT I DME/16 GP/16	IBB	110.1MHZ CH 38X 334.4KHZ	H24 H24 H24	334830.4203N 0352915.675E 335009.789N 0352852.837E 335009.654N 0352853.003E	43.52 FT 28.00 FT 9.93 FT	Nil
ILSLLZ CAT I DME/03 GP/03	IKK	110.7MHZ CH 44X 330.2KHZ	H24 H24 H24	334942.718N 0353015.658E 334818.522N 0352904.936E 334818.703N 0352904.914E	51.00 FT 63.00 FT 44.60 FT	DME coverage at 17 NM is limited to 30 degrees on the right side of the RWY due to terrain.
ILSLLZ CAT I GP/21	IDD	111.9MHZ 331.1KHZ	H24 H24	334749.170N 0352847.781E 334902.766N 0352939.175E	41.40 FT 32.00 FT	Unusable at the time
NDB OM	BOD	351 KHZ	H24	335412.683N 0352854.732E	186 FT	Coverage : 100 NM
VOR / DME	CAK	CH 109X 116.200 MHZ	H24	341801.814N 0354159.641E	763 FT	Coverage; APRX. 200NM DVOR/DME
VOR / DME	KAD	CH 073X 112.600 MHZ	H24	334826.699N 0352909.534E	53 FT	Nil

ICAO Standards and Guidelines for Publishing GNSS Information in State AIP

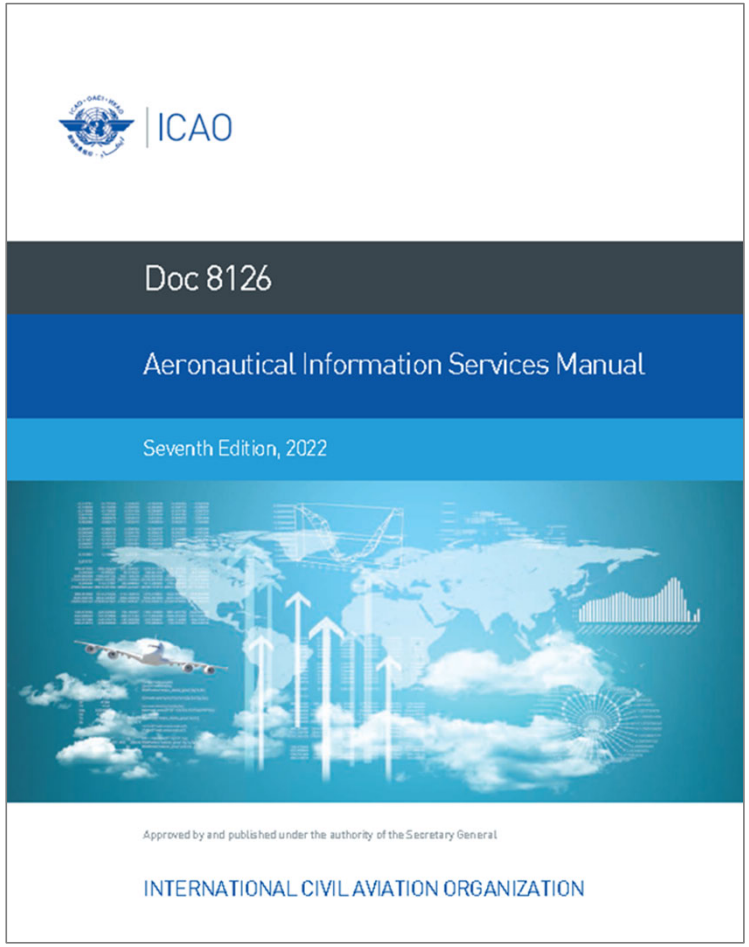
A State Aeronautical Information Publication (AIP) covering the implementation and uses of GNSS should include the following aspects:

- a clear statement of terms and conditions, procedures and such things as training requirements;
- background information about GNSS technology and its operational applications.
- Current information that can assist AOs in planning for the acquisition of avionics
- Information updates
- WGS-84 coordinate system

ICAO Standards and Guidelines for Publishing GNSS Information in State AIP

ENR 4.3 GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS)

Name of GNSS element	*Frequency*	*Coordinates Nominal SVC area Coverage area*	*Remarks*
1	2	3	4
GPS	1 575.42 MHz	Statewide	En-route, terminal and non-precision approaches (NPA). No GPS NOTAM has been published.
WAAS	1 575.42 MHz	Statewide to approximately N600	Subject to availability of at least one WASS satellite.



Publishing GNSS Information in State AIP

MIDANPIRG 22 noted that a Secretariat review of MID States' Aeronautical Information Publications (AIPs) revealed only Saudi Arabia had published GNSS information. The meeting called on States to promptly update their AIPs, specifically sections AD 2.19 (Radio Navigation and Landing Aids) and ENR 4.3 (GNSS) to align with ICAO Standards and Recommended Practices (SARPs) and guidelines. Consequently, the meeting endorsed the following Conclusion:

MIDANPIRG CONCLUSION 22/23: PUBLICATION OF GNSS-RELATED INFORMATION IN STATES' AIPS

That,

a) States that have not yet done so are urged to promptly publish GNSS information in the relevant sections of their AIPs, including AD 2.19 (Radio Navigation and Landing Aids) and ENR 4.3 (Global Navigation Satellite System - GNSS), ensuring compliance with ICAO Standards and Recommended Practices (SARPs) and associated guidelines; and

b) ICAO MID monitor the publication status of GNSS-related information in States' AIPs and regularly report progress to the relevant subsidiary bodies of MIDANPIRG.

GNSS Information in States AIP

AIP JORDAN — ENR 4.3-1 01 MAY 2007

ENR 4.3 GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS)

Name of GNSS elements	Frequency	Coordinates Nominal SVC area / Coverage area	Remarks

ENR 4.3 GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS)

(To be developed)

ENR 4.3 GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS)

AIP SUDAN — ENR 4.3-1 12 SEP 2019

ENR 4.3 GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS)

INCOURSE OF PREPARATION

ENR 4.3 GLOBAL NAVIGATION SATELLITE SYSTEM - GNSS

Note : see GEN 1.5.5

AIP SYRIA — ENR 4.3.1 01 NOV 2020

ENR 4.3 GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS).

AIP LEBANON — ENR 4.3-1 21 JUL 2016

ENR 4.3 GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS)

-NIL

ENR 4.3 GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS)

NIL.

ICAO

ENR 4.3 GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS)

Name of GNSS element	*Frequency*	*Coordinates Nominal SVC area Coverage area*	*Remarks*
1	2	3	4
GPS	1575.420 MHZ 1227.600 MHZ	Jeddah FIR airspace	En-route, terminal and non presicion approaches (NPA).

Inconsistencies identified in NavAids publication within the AIPs

Lack of detailed information about the facility as per ICAO requirements including but not limited to Facility coverage in the remarks column.

NavAids are frequently referenced in the AIP AD 2.19 section for an airport, yet do not appear on the relevant airport charts, creating ambiguity regarding their operational status.

Several NavAids are documented as supporting multiple airports, but this cross-support is not consistently reflected or explained in the AIP publications.

There are noticeable discrepancies between the listings in AIP GEN 2.5 and airport-specific AIP AD 2.19 sections—NavAids may be included in one section but omitted or inconsistently represented in the other.

Certain NavAids are described as actively supporting airport operations, even when their presence is not formally indicated in the AIP documentation for those airports.

Action by the meeting

The meeting is invited to:

a) take note of the information contained in this presentation and discuss any relevant matters as appropriate; and

b) call on States to promptly update and harmonize their AIPs, specifically sections GEN 2.5 List of radio navigation aids, AD 2.19 (Radio Navigation and Landing Aids) ENR 4.1 Radio navigation aids — En-route and ENR 4.3 (GNSS) to align with ICAO Standards and Recommended Practices (SARPs) and guidelines.

Thank You

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