International Civil Aviation Organization

MIDANPIRG AIM Sub-Group

Second Meeting (AIM SG/2)
(Kish Island, Iran, 31 August-2 September 2015)

Agenda Item 4:   **Performance Framework for AIM implementation in the MID Region**

PUBLICATION OF FIR BOUNDARY COORDINATES IN AIP

(Presented by the Secretariat)

SUMMARY
This working paper highlights the criteria for the publication of FIR Boundary points in AIP.
Action by the meeting is at paragraph 3.

REFERENCES
- ICAO Annex 15 - MID eANP Volume I

1.   INTRODUCTION

1.1   In accordance with Annex 15, Appendix 7, Table A7-1, Publication **Resolution** for Flight Information Region (FIR) boundary points is **1 minute**. However, in accordance with Annex 11, Appendix 5, Table 1, the accuracy for FIR boundary points is 2 Km.

1.2   The MIDANPIRG/15 meeting (Bahrain, 8-11 June 2015) endorsed the MID eANP Volume I, II and III.

2.   DISCUSSION

2.1   The meeting may wish to note that the population of the MID eANP Tables ATM I-1 *MID Region Flight Information Regions (FIRs)/* Upper *Information Regions (UIRs)* and SAR I-1 *MID Region Search and Rescue Regions (SRRs)* is a challenging process that requires the cooperation of all concerned States. In this regard, the MIDANPIRG/15 meeting reviewed the ATM I-1 and SAR I-1 Tables, as developed by the ANP WG/2 meeting (Cairo, Egypt, 16-18 December 2015), based on the following process:

a) The Amendments to the MID ANP approved by the ICAO Council.
b) The MID RAN Meetings Reports.
c) Agreements between States communicated to ICAO.
d) AIS publications when descriptions coincide with the current Charts ATS-1 and there are no differences between the States' information (inconsistencies, if any, will be noted in the remarks column).

2.2   The meeting may wish to recall that, as a follow-up action to the ANP WG/2 Draft Conclusion 2/1, the ICAO MID Regional Office issued State Letter Ref.: AN 9/2.2-15/029, urging States to provide their inputs/updates related to the Tables of the MID eANP Volumes I, II and III before 15 March 2015. Updates were received from twelve (12) States (Bahrain, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Sudan and UAE). States did not report any inconsistency in the published lateral limits coordinates of their FIR/UIR compared to adjacent States published coordinates (in AIPs).

2.3   The MIDANPIRG/15 meeting further agreed that during the process of endorsement/approval of the MID eANP, ICAO (HQ) would identify the inconsistencies, if any, in the lateral limits coordinates of the different FIRs/UIRs (Tables ATM I-1 and SAR I-1) and the MID Regional Office would coordinate with the concerned States to seek a resolution. Table ATM I-1 *MID Region Flight Information Regions (FIRs)/ Upper Information Regions (UIRs)*, as reviewed by ICAO, highlighting the inconsistencies is at **Appendix A**. In accordance with the ICAO HQ Guideline for the publication of FIR boundary points, the following should be taken into consideration for the delineation of FIRs/UIRs:

1) Where FIR is a list of geographical coordinates:

    a) The list of points and their coordinates must follow a clockwise sequence.

    b) The list must have a beginning point and an ending point that are the same coordinate.

    c) The latitude and longitude coordinates must be reported in **DMS (degrees, minutes and seconds)**.

    d) Where an FIR shares a common point with another neighbouring FIR, coordinates should be mutually agreed.

        Note: *Transfer of Control Points, ATS route significant points or waypoints may not necessarily be aligned with boundaries delineation.*

    e) Where delineation of FIR/UIR follows an arc of specific dimension, it should be defined as follows:

        [starting point of ARC] *following an arc of a circle at a **radius of [distance]** NM centered on **[coordinates in DMS]** and ending at point **[coordinates in DMS]**.*

2) Where FIR is described using "sovereign" boundaries

    a) The description should be simple

        i)   *Follow sovereign boundary between [State 1] and [State 2]).* [1]

    b) Where delineation of FIR/UIR is made by reference to sovereign boundaries common to neighbouring FIR/UIR, the delineation shall be mutually agreed upon.

    c) Where an FIR/UIR follows a sovereign boundary, the United Nations international boundary data set is referred to by ICAO.

3) Where reference is made to territorial waters, use "sovereign boundaries."

    a) The description should be simple.

        i)   *Follow sovereign boundary between [State 1] and [State 2].*

3.   ACTION BY THE MEETING

3.1   The meeting is invited to:

            a. note the information provided in this paper; and

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[1] Use short names of States as shown at: http://www.icao.int/about-icao/pages/member-states.aspx

b. discuss the Guidelines provided in para. 2.3 for the publication of FIR boundary
    points and take action, as appropriate.

Review of MID Table ATM I-1

The table below shows columns from the MID ATM table, with two additional columns in gray: 1) "Comments" notes the clarification needed with regards to the lateral limits coordinates, and 2) # of FIR/UIR Description Requirements refers to the description of FIRs as listed in the Guidelines.

NOTE: The MID Table for the eANP will not include the additional columns.

MID TABLE ATM I-1

FIR/UIR Location Indicator	Lateral limits coordinates	COMMENTS FROM IAA	# of FIR/UIR Description Requirement	Remarks
1	2		See FIR/UIR Definition #	3
Amman (OJAC)	FIR/UIR Amman 292125N 0345743E On the Gulf of Aqaba 291102N 0360420E 293002N 0363021E 295203N 0364521E 300003N 0373021 302003N 0374021E 303003N 0380021E 313003N 0370021E 320002N 0390021E TO 320911N 0391206E At Jordan, Saudi Arabia and Iraqi boundaries. Then the point 321349N 0391804E At the Southern corner of the Jordanian-Iraqi boundaries and along Jordanian-Syrian-Israeli-boundaries then back to starting point 292125N 0345743E.	Coordinates should match with FIR JEDDAH	1a 1d 2c 2a	Source: the State's AIS Publication
Baghdad (ORBB)	FIR/UIR Baghdad Along the Iraqi boundaries with Iran, Kuwait, Saudi Arabia, Syria and Turkey. See coordinate description FIR Jeddah and FIR Kuwait	Coordinates should be defined in the description for Baghdad FIR for perfect alignment of FIRs delineation shared with FIRs Jeddah and Kuwait	1a 1d 2a	Source: the State's AIS Publication
Bahrain (OBBB)	FIR/UIR Bahrain 284400N 0494000E 270500N 0505500E 265500N 0511000E 260400N 0535700E 254900N 0530600E 240300N 0514700E thence along the Saudi Arabia / UAE national borders to the point where			MID ANP PfA 00/1 ATS approved 7 March 2005 and Source: the

FIR/UIR Location Indicator	Lateral limits coordinates	COMMENTS FROM IAA	# of FIR/UIR Description Requirement	Remarks
1	2		See FIR/UIR Definition #	3
	the national borders of Oman, Saudi Arabia and UAE meet to 224200N 0551200E, then the Saudi Arabia / Oman territorial boundary to 190000N 0520000E 253000N 0490000E 263330N 0452130E 275000N 0455500E 275000N 0490800E thence along the limit of the Saudi Arabia territorial waters to 281500N 0485200E then back to starting point 284400N 0494000E	Description should match with the one in FIR Jeddah and Muscat This coordinate should match with FIR Kuwait and add starting point coordinate	1a 1d 2b 2d 2c 3a	State's AIS Publication (AIP ENR 2.1-1 dated 17 October 2013) PfA (Serial MID Basic ANP 13/03 – ATM/SAR)- realignment of Bahrain and Jeddah FIRs pending approval
Beirut (OLBB)	FIR/UIR Beirut The geographical Lebanese/Syrian borders, then along the Lebanese/Palestinian borders, and a semicircular Arc, radius 45 NM centered KAD VOR		1d 2b 2c 2a 1e	Not Source: the State's AIS Publication
Cairo (HECC)	FIR/UIR Cairo *Northern border 340000N 0241000E 340000N 0271000E 333000N 0300000E *Eastern border 315000N 0335900E 313600N 0343000E then follow the International border to: 293000N 0345500E 293000N 0350000E 280600N 0343500E 220000N 0380000E *Southern border 220000N 0380000E 220000N 0250000E *Western border 220000N 0250000E 314000N 0251000E 340000N 0241000E	Coordinate should match with FIR Tripoli	1d 2a	Source: the State's AIS Publication
Damascus (OSTT)	FIR/UIR Damascus From 355500N 0354000E to 355600N 0355500E then along the national border of Syria with Turkey and Iraq to a point 332200N 0384800E, then along the national border of Syria with Jordan to 324100N 0353800E then along the		1a 1d 2b 2c 2a	Source: the State's AIS Publication

FIR/UIR Location Indicator	Lateral limits coordinates	COMMENTS FROM IAA	# of FIR/UIR Description Requirement	Remarks
1	2		See FIR/UIR Definition #	3
	Western Syrian border to 331500N 0353700E then along the Lebanese Syrian border to a point 343800N 0355700E then to a point 343800N 0354300E then northwards along a line maintaining 12 NM from the coastline, to 355500N 0354000E			
Emirates (OMAE)	FIR/UIR Emirates 262100N 0560600E 253600N 0561300E 250000N 0563500E 240000N 0553500E 224200N 0551200E to the point where the national borders of Oman, Saudi Arabia and UAE meet, then along the national border between Saudi Arabia and UAE to 240300N 0514700E 254900N 0530600E 260400N 0535700E 253800N 0552000E 262100N 0560600E		2d 2b 2e	Source MID ANP Serial No. EUR 85/02-ATS/88-COM/400-MET/75-SAR/16-AIS/1 dated 9 December 1986 and PfA Serial 00/1 ATS approved 7 march 2005
Jeddah (OEJD)	FIR/UIR Jeddah 292124N 0345718E 291131N 0360356E 293001N 0362956E 295201N 0364456E 300002N 0372956E 302002N 0373956E 303002N 0375956E 313002N 0365956E 320002N 0385956E 320915N 0391203E 315653N 0402447E 312223N 0412627E 310642N 0420508E 291155N 0444318E 290340N 0462534E 290604N 0463311E then along the national boundary between Kuwait and Saudi Arabia and then along the limit of Saudi Arabian territorial waters to: 275000N 0490800E 275000N 0455500E 263330N 0452130E 253000N 0490000E 190000N 0520000E clockwise to 184720N 0504700E 183700N 0490700E 181000N 0481100E 172700N 0473600E 170700N 0472800E 165700N 0471100E 165700N 0470000E 171700N 0464500E 171400N 0462200E 171500N 0460600E 172000N 0452400E 172600N 0451300E 172600N 0443900E 172420N	Coordinates do not match with neighboring FIR Amman Coordinates should be defined as in this description within Baghdad FIR for perfect alignment with Jeddah FIR This coordinate does not match with shared FIR Kuwait and Baghdad Coordinates should be defined as in this description within Sanaa' FIR for perfect alignment with Jeddah FIR	1a 1d 2b 2c 2a 3a	Source: the State's AIS Publication (AIP ENR 2.1-1 dated 11 March 2010) PfA (Serial MID Basic ANP 13/03 – ATM/SAR) realignment of Bahrain and Jeddah FIRs pending approval

FIR/UIR Location Indicator	Lateral limits coordinates	COMMENTS FROM IAA	# of FIR/UIR Description Requirement	Remarks
1	2		See FIR/UIR Definition #	3
	0443400E 172600N 0442800E 172600N 0442158E then follow Saudi Arabia and Republic of Yemen international boundaries in accordance with Jeddah treaty to the coast line boundary: 162415N 0424620E 162415N 0420900E 161724N 0414700E 160000N 0420000E 154700N 0415300E 153955N 0413947E 160000N 0410000E 200000N 0383000E 220000N 0380000E 280600N 0343500E then back to starting point 292124N 0345718E	This coordinate does not match with shared FIR Asmara coordinate

Coordinates should match with FIR Amman and FIR Cairo | | |
| Khartoum (HSSS) | FIR/UIR Khartoum

154500N 0240000E 200000N 0240000E   200000N 0250000E 220000N 0250000E   220000N 0380000E 200000N 0383000E 125500N 0360000E 080000N 0330000E   040000N 0360500E 040000N 0301200E   Common national boundary: SUDAN /KINSHASA SUDAN/CONGO DROF SUDAN /BRAZZAVILLE SUDAN/CENTRAL AFRICA SUDAN/NDJMENA. | Replace text with the following to be consistent with the other MID FIR descriptions: Example: Then follow international boundary between Sudan and Congo, DRC, Central Africa and Chad then back to starting point 154500N 0240000E. | 1a 2a | Source: the State's AIS Publication |
| Kuwait (OKAC) | FIR/UIR Kuwait

290604N 0463319E 291502N 0464211E   294319N 0470024E 295105N 0470454E   300001N 0470920E 300613N 0472217E 300613N 0474228E 300113N 0475528E   295924N 0480042E 300146N 0480434E   300120N 0480952E 295110N 0482451E 295121N 0484503E 291300N 0494000E   290000N 0492700E 284400N 0494000E   281500N 0485203E then following the Saudi Arabia territorial waters and Kuwait / Saudi Arabia International boundary to the point 290604N 0463319E | This coordinate does not match with shared FIR Jeddah and Baghdad

These highlighted FIR Kuwait coordinates define the border shared with Baghdad FIR

Shared coordinate with FIR Tehran and along FIR boundary of Baghdad

Coordinates should match with FIR Bahrain

As above in GREEN. | 1a 1b 2b 2d 2c 2a 3a | Source:

Limited MID RAN Jan 1996

the State's AIS Publication |
| Muscat (OOMM) | FIR/UIR Muscat

250000N 0563500E 253600N 0561300E   262100N 0560600E 264100N 0562700E   261000N | | | Source: the State's AIS Publication |

FIR/UIR Location Indicator	Lateral limits coordinates	COMMENTS FROM IAA	# of FIR/UIR Description Requirement	Remarks
1	2		See FIR/UIR Definition #	3
	0564500E 253500N 0564500E 250000E 0573000E 244000N 0612000E 233000N 0612000E 233000N 0643000E 194800N 0600000E 174000N 0570000E 154000N 0533000E 163800N 0530400E 172200N 0524400E 190000N 0520000E thence along the common national boundary Sultanate of Oman/Kingdom of Saudi Arabia and along the common national boundary Sultanate of Oman/United Arab Emirates to 224200N 0551200E 240000N 0553500E 250000N 0563500E	Coordinate should match with Sanaa' FIR Description should match with BAHRAIN FIR	1d 2d 2b 2c 2a	
Sanaa' (OYSC)	FIR/UIR Sanaa' 190000N 0520000E 173000N 0443500E 173500N 0430800E 164100N 0430800E 160800N 0412900E 145106N 0422354E 141542N 0423630E 123600N 0431800E 123142N 0432712E 121036N 0440206E 114500N 0441100E 114730N 0444348E 115900N 0470800E 121100N 0504500E 120718N 0510242E 120000N 0513000E 120000N 0600000E 161400N 0600000E 194800N 0600000E 174000N 0570000E 164618N 0552436E 160718N 0541648E 154000N 0533100E 163324N 0530612E 190000N 0520000	Add Coordinates should be defined in the description within Sana'a FIR for perfect alignment as in descriptions of Jeddah FIR and AFI FIR Asmara, Addis Ababa, Mogadishu See Appendix C for an example of this issue. Please verify with FIR Mogadishu coordinates for perfect alignment Coordinate should match with Muscat FIR for perfect alignment	1a 1d 2b 2c 2a 2e	Source: the State's AIS Publication MID ANP
Tehran (OIIX)	FIR/UIR Tehran 372100N 0535500E 382630N 0485230E thence along the Islamic Republic of Iran / Azerbaijan, Armenia, Turkey and Iraq territorial borders to Persian gulf to 295110N 0484500E 291300N 0494000E 290000N 0492700E 270500N 0505500E 265500N 0511000E 253800N 0552000E 264100N 0562700E 261000N 0564500E 253500N 0564500E 250000N 0573000E 244000N 0612000E, thence along the Islamic Republic of Iran / Pakistan,	Coordinates are not consistent with FIR Kuwait	1d 2b 2c 2a	Source: the State's AIS Publication

FIR/UIR Location Indicator	Lateral limits coordinates	COMMENTS FROM IAA	# of FIR/UIR Description Requirement	Remarks
1	2		See FIR/UIR Definition #	3
	Afghanistan and Turkmenistan territorial borders to 372100N 0535500E			
Tripoli (HLLL)	FIR/UIR Tripoli 342000N 0113000E 342000N 0233500E 340000N 0241000E 314100N 0250800E 200000N 0250000E 200000N 0240000E 193000N 0240000E 220000N 0190000E 220000N 0113000E to Western Border Libya-GSPAJ along Western Border Libya-GSPAJ to 322200N 0113000E 342000N 0113000E	This coordinate should match with FIR Cairo	1d 2b 2c 2a	Source: the State's AIS Publication

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