

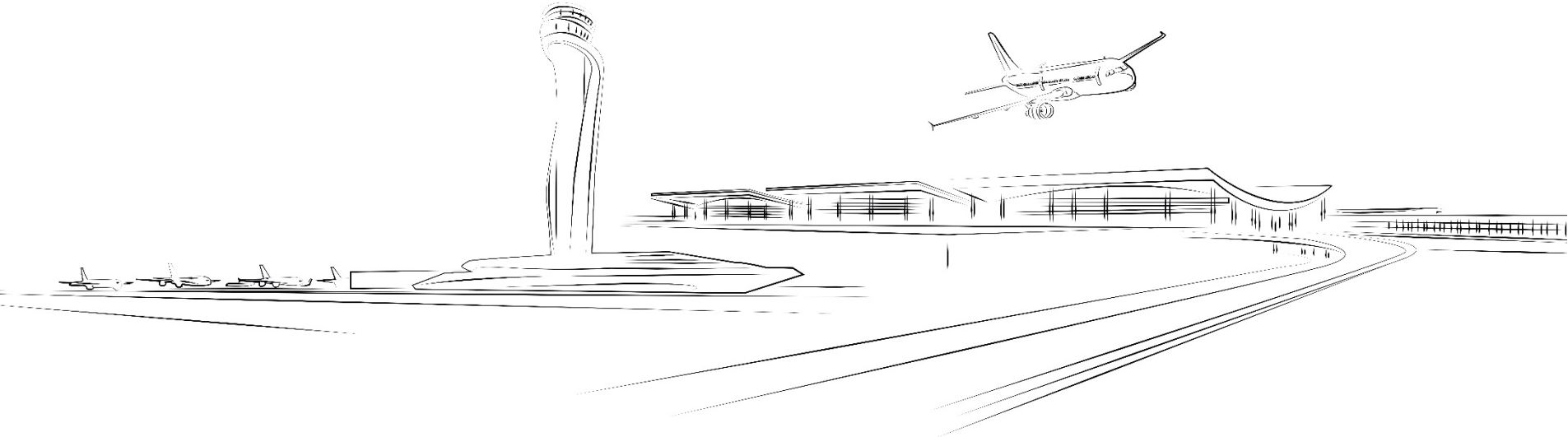


Experiences of Türkiye on AIM Digital Datasets

SAFFET ÖZTÜRK

AIM CHIEF

DHMI- ANSP OF TÜRKİYE



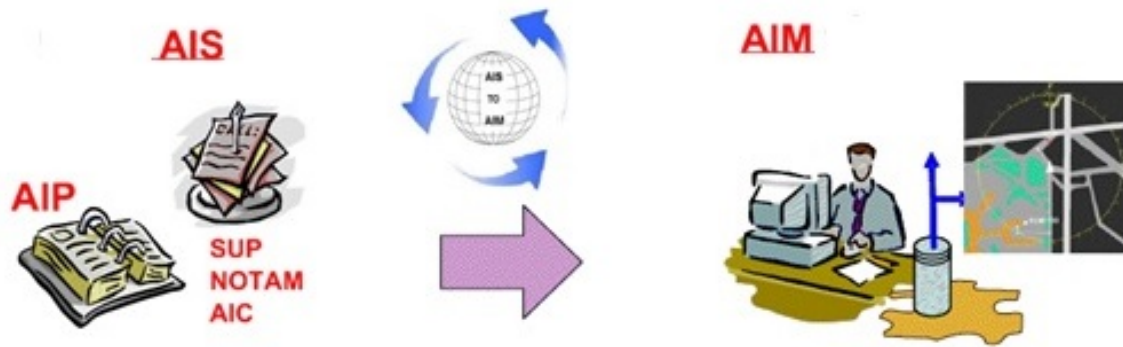
Content



- Digital AIS Data Sets
 - AIP data set
 - DHMI AISPORTAL
 - Terrain data set
 - Obstacle data set
 - AMDB
 - IFP data set



AIS to AIM

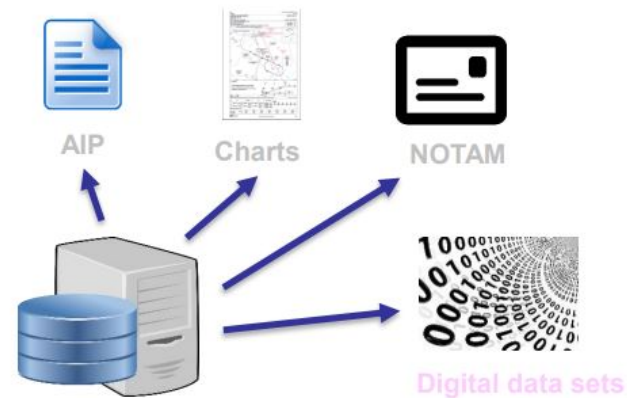


- Paper Products
 - Manuel Processing

Applicable since NOV 2018

5.1.1 Aeronautical information shall be provided in the form of aeronautical information products and associated services.

- Automated data-centric environment
 - Digital Data Sets
 - Visualization



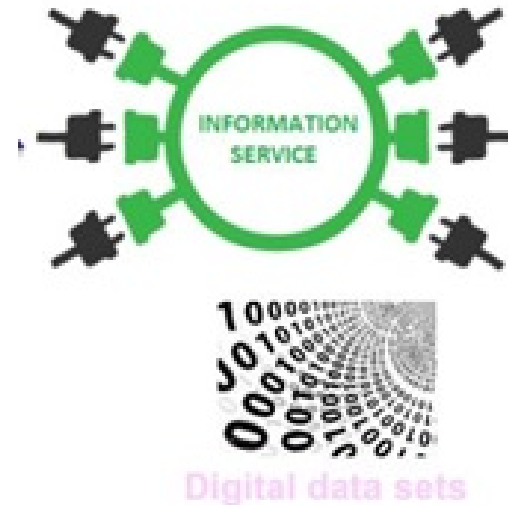
Digital Data Sets



Annex 15:

5.3.1. Digital data shall be in the form of the following data sets:

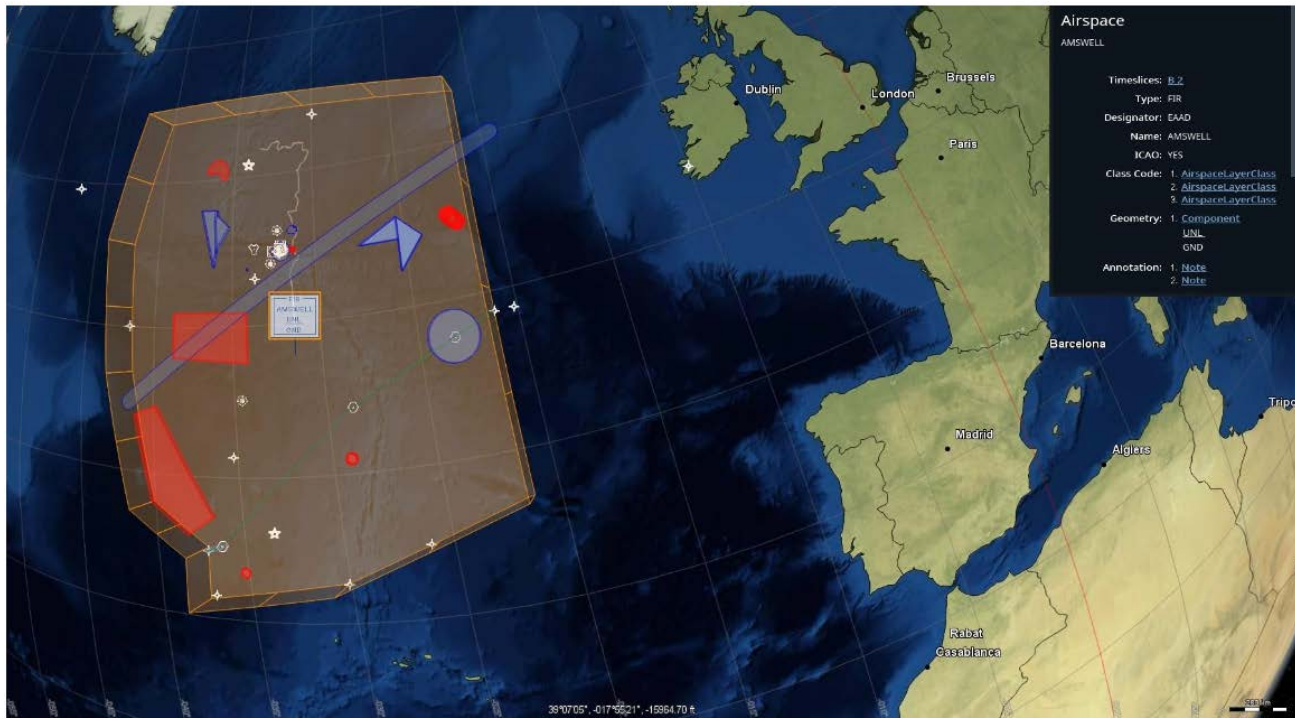
- a) AIP data set;
- b) Terrain data sets;
- c) Obstacle data sets;
- d) Aerodrome mapping data sets; and
- e) Instrument flight procedure data sets.



AIP Data Set



- The AIP data set shall contain the digital representation of aeronautical information of lasting character essential to air navigation.
- to support the transition of the ATM domain towards the use of digital data sets instead of paper products.



AIP Data Set



- GEN 2.5 List of radio navigation aids;
- ENR 2.1 FIR, UIR, TMA and CTA;
- ENR 3.1 Lower ATS routes;
- ENR 3.2 Upper ATS routes;
- ENR 3.3 Area navigation routes;
- ENR 3.4 Helicopter routes;
- ENR 3.5 Other routes;
- ENR 3.6 En-route holding;
- ENR 4.1 Radio navigation aids — en-route;
- ENR 4.2 Special navigation systems;
- ENR 4.4 Name-code designators for significant points;
- ENR 4.5 Aeronautical ground lights – en-route;
- ENR 5.1 Prohibited, restricted and danger areas;
- ENR 5.2 Military exercise and training areas and air defence identification zone (ADIZ);
- ENR 5.3.1 Other activities of a dangerous nature;
- ENR 5.3.2 Other potential hazards;
- ENR 5.5 Aerial sporting and recreational activities;
- ****AD 2.17 Air traffic services airspace;
- **** AD 2.19 Radio navigation and landing aids;
- **** AD 3.16 Air traffic services airspace; and
- **** AD 3.18 Radio navigation and landing aids.

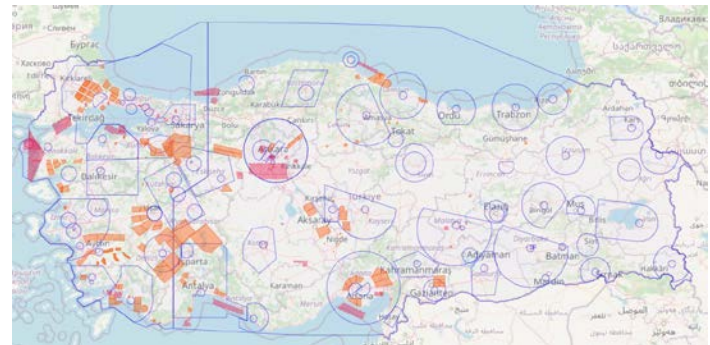
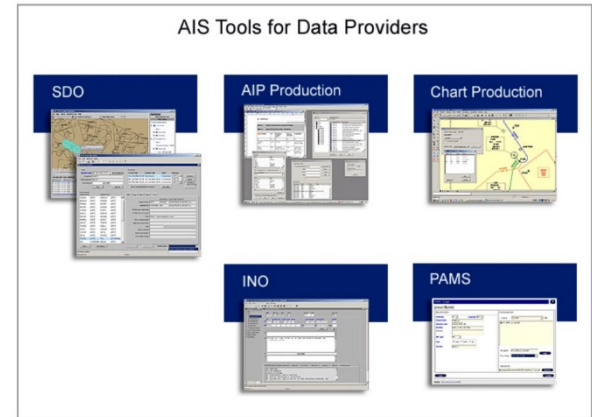
PANS-AIM 5.2.1.1.3:

When the AIP data set (as specified in 5.3.3.1) is provided, the following sections of the AIP may be omitted and reference to the data set availability shall be provided.

AIP Data Set



- AIP data sets available in AIXM 5.1 through EAD
 - Some AD 2 Sections
 - ENR 2, 3, 5 Sections
 - Nav Aids
 - RNAV flight procedures
- All data uploaded to SDO and downloaded in AIXM 5.1, NOTAMs displayed on webportal, called DHMI AISPORTAL
- AIP data sets in AIXM 5.1 and NOTAMs in XML shared through webservice with CAA, military units.



DHMI AIS PORTAL



<https://ais.dhmi.gov.tr>

NOTAMs

FROM (UTC): 29.3.2023 10:13

TO (UTC): 30.3.2023 10:13

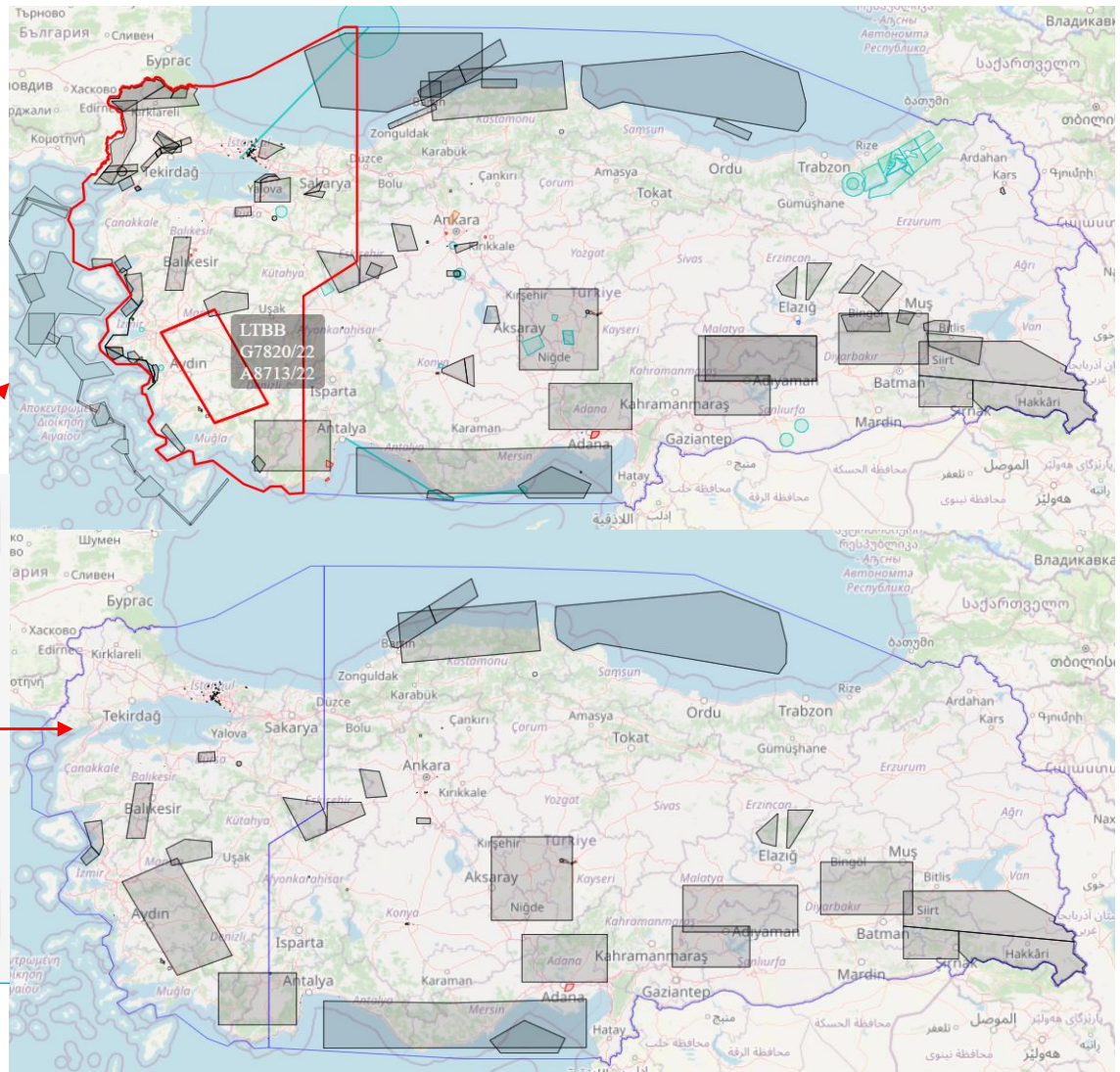
RELOAD NOTAMS

Jandarma XML

KMZ (2D) KMZ (3D)

KML (2D) KML (3D)

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<input checked="" type="checkbox"/> NAT	<input checked="" type="checkbox"/> INT
<input checked="" type="checkbox"/> NAT	<input checked="" type="checkbox"/> INT
<input checked="" type="checkbox"/> NAT	<input checked="" type="checkbox"/> INT
<input checked="" type="checkbox"/> NAT	<input checked="" type="checkbox"/> INT
<input checked="" type="checkbox"/> NAT	<input checked="" type="checkbox"/> INT



DHMI AIS PORTAL

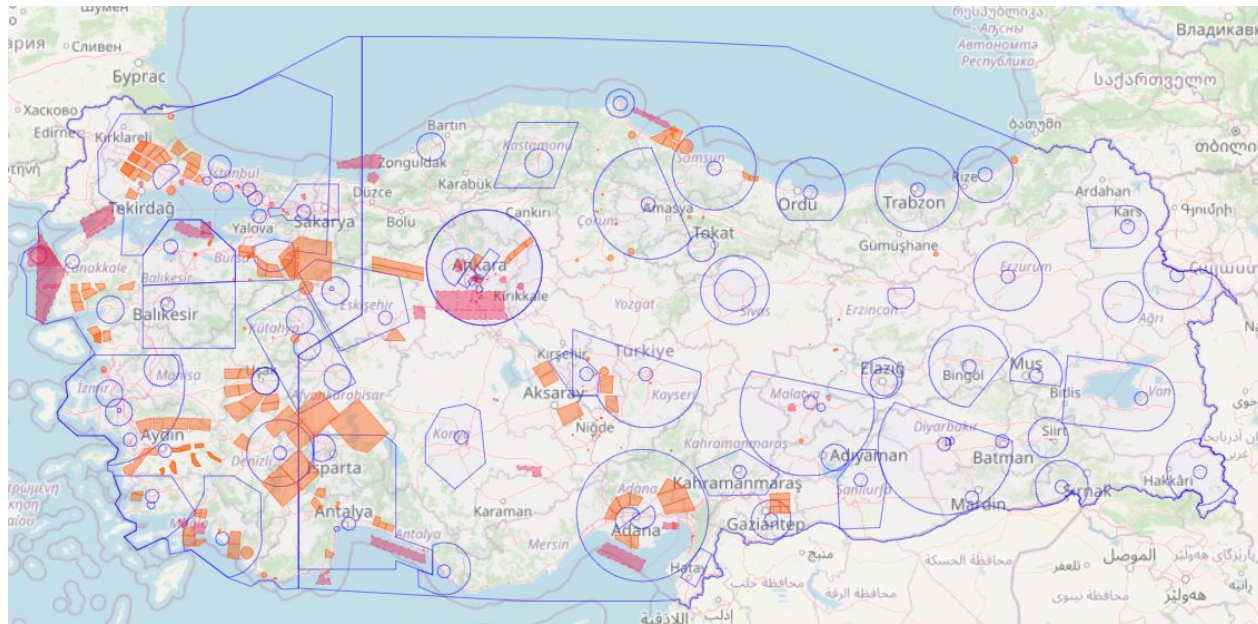


NAVAIDs

- VOR
- DME
- NDB
- TACAN
- VOR/DME
- VORTAC

ROUTES

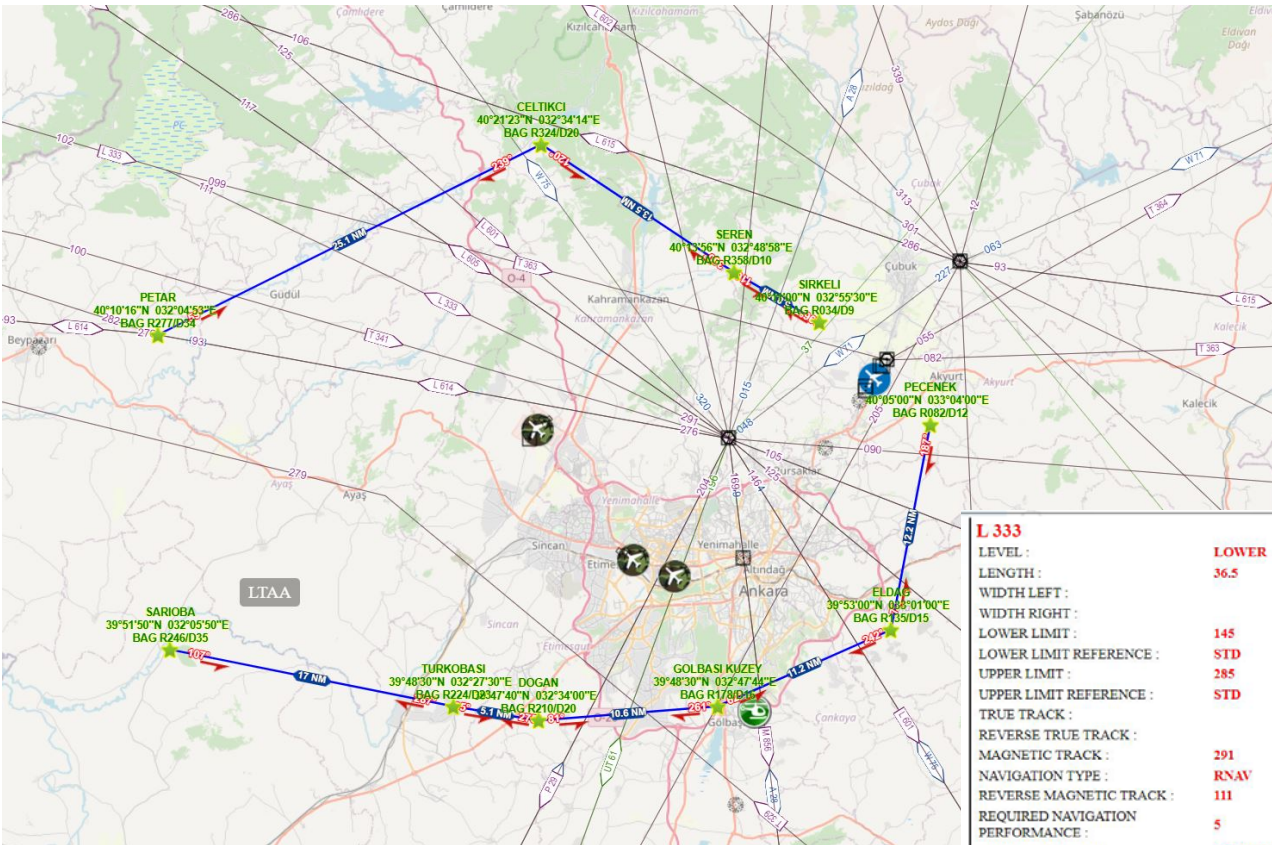
- Upper ATS
- Lower ATS
- Upper RNAV
- Lower RNAV
- VFR Routes



AREA

- FIR TR FIR Other
- TMA / MTMA
- CTR
- Prohibited Area
- Restricted Area
- Dangerous Area
- Potential Hazards
- RAS - IHA - Training Zones

DHMI AIS PORTAL



ICAO :	LTAC
NAME :	ANKARA ESEBGOA
CITY :	
Show NOTAMs	
METAR / TAF	
POSITION :	40°07'41"N 032°59'42"E
IATA :	ESB
TYPE :	AD
MAGNETIC VAR. :	5.6
DATE MAGNETIC VAR. :	2017
MAGNETIC VAR. CHANGE :	0.095
REFERENCE TEMPERATURE :	32
TRANSITION ALTITUDE :	10000

L 333	LOWER
LEVEL :	36.5
LENGTH :	
WIDTH LEFT :	
WIDTH RIGHT :	
LOWER LIMIT :	145
LOWER LIMIT REFERENCE :	STD
UPPER LIMIT :	285
UPPER LIMIT REFERENCE :	STD
TRUE TRACK :	
REVERSE TRUE TRACK :	
MAGNETIC TRACK :	291
NAVIGATION TYPE :	RNAV
REVERSE MAGNETIC TRACK :	111
REQUIRED NAVIGATION PERFORMANCE :	5
START POINT NAME :	BAGLUM
START POINT REPORTING ATC :	COMPULSORY
END POINT NAME :	LATGA
END POINT REPORTING ATC :	COMPULSORY
START POINT COORDINATES :	40.07 32.809889
END POINT COORDINATES :	40.33139 32.09222

Pre-Flight Information Bulletin

UTC Period :3/29/2023 10:35 AM TO 3/30/2023 10:35 AM
Flight Rules :IFR/VFR

For the instant valid NOTAM information consult to the responsible briefing (AIS) Office

ANKARA ESEBGOA

SNOWTAM

JAC
J3290625 03R 5/5/5 100/100/100 NR/NR/NR WET/WET/WET
J3290625 03L 5/5/5 100/100/100 NR/NR/NR WET/WET/WET

RR808/22 NOTAMR A7098/22

Q) LTAA/QOBC/IV/M/AE/0/36/4004003256E001

A) LTAC

B) 2212301000 C) 2303301100

E) PRESENCE A BUILDING AND MOBIL CRANE ON THE BUILDING:

6663.13 M DIST TO THR RWY 03R

7032.10 M DIST TO THR RWY 03L

COORDINATE (MOBIL CRANE): 400353.03M0325619.16E

ELEV AT TOP: 3538FT

COORDINATE (BUILDING): 400352.90M0325619.52E

ELEV AT TOP: 3462FT

NOTE: PILOTS MUST BE CAUTIOUS. ADVISE TWR INSTRUCTIONS.

Terrain and obstacle data sets



- Published at AIP GEN 3.1.6, eTOD list and how to provided
- Area 1 terrain and obstacles data sets available as of December 2014
- Terrain in DTED, geotiff format
- Obstacles in AIXM 5.1 and at spread sheet in excel format

Aerodromes	Electronic					
	Terrain Datasets			Obstacle Datasets		
	Area 2a	Area 3	Area 4	Area 2a	Area 3	Area 4
LTFH	AVBL	NIL	AVBL	AVBL	NIL	AVBL
LTBJ	AVBL	NIL	AVBL	AVBL	NIL	AVBL
LTFE	AVBL	NIL	AVBL	AVBL	NIL	AVBL
LTAI	AVBL	AVBL	AVBL	AVBL	AVBL	AVBL
LTAC	AVBL	AVBL	AVBL	AVBL	AVBL	AVBL
LTBA	AVBL	AVBL	AVBL	AVBL	AVBL	AVBL
LTCE	AVBL	AVBL	AVBL	AVBL	AVBL	AVBL
LTCS	AVBL	AVBL	AVBL	AVBL	AVBL	AVBL
LTCG	AVBL	AVBL	AVBL	AVBL	AVBL	AVBL
LTBS	AVBL	AVBL	AVBL	AVBL	AVBL	AVBL
LTAJ	AVBL	AVBL	AVBL	AVBL	AVBL	AVBL
LTAJ	AVBL	AVBL	AVBL	AVBL	AVBL	AVBL
LTAJ	AVBL	AVBL	AVBL	AVBL	AVBL	AVBL
LTBR	AVBL	AVBL	AVBL	AVBL	AVBL	AVBL
LTCI	AVBL	AVBL	AVBL	AVBL	AVBL	AVBL
LTAL	AVBL	NIL	NIL	AVBL	NIL	NIL
LTFM	NIL	NIL	AVBL	AVBL	NIL	AVBL

Not: İstanbul Havalimanı (LTFM) Saha 2 ve İstanbul Sabiha Gökçen Havalimanı (LTFJ) Saha 2b, 2c mania verileri mevcuttur.

Note: İstanbul Airport (LTFM) Area 2 and İstanbul Sabiha Gökçen Airport (LTFJ) Area 2b, 2.c Obstacle datasets are available.

"Obstacles" bölümüne bakınız

See "Obstacles" folder.

Terrain and obstacle data sets



LTFM AD 2.10 AERODROME OBSTACLES

Due to huge amount of obstacles; an electronic file of AD obstacles is available from the link LTFM AD 2.10 under obstacle folder via AIP Türkiye link on <https://www.dhmi.gov.tr>

ENR 5.4 HAVA SEYRÜSEFER MANİALARI Saha-1 (Yükseklik 100 M AGL veya üzeri)

1. En-route maniaları (saha-1) <https://www.dhmi.gov.tr> web sitesi üzerinden "AIP Türkiye" bağlantısında "Obstacles" klasörü altında yayınlanmıştır. Ayrıntılı bilgi için GEN 3.1 bölümüne bakınız.

ENR 5.4 AIR NAVIGATION OBSTACLES Area-1 (Height 100 M AGL or more)

1. An electronic file of En-route obstacles is available from the "Obstacles" folder via "AIP Türkiye" link on <https://www.dhmi.gov.tr> For detailed information see GEN 3.1.



- AIP AD 2.10 section is left by a note refer to <https://dhmi.gov.tr> in a obstacle folder via AIP Türkiye link

✓ Annex 15- 5.2.1.1.4 ...the following sections of the AIP may be omitted and a reference to the data set availability shall be provided:

- a) ENR 5.4 Air navigation obstacles;
- b) AD 2.10 Aerodrome obstacles; and
- c) AD 3.10 Heliport obstacles.

TR EN

- > Contact Information
- > AIP
- > AIP AMDT
- > AIP SUP
- > AIC A
- > AIC B
- > **Obstacles**
- > Sunrise - Sunset Tables
- > AIP Subscription

- > AERODROME OBSTACLES
- > AREA 1 OBSTACLES
- > AREA 2A TERRAIN AND OBSTACLE DATASET
- > AREA 3 TERRAIN AND OBSTACLE DATASET
- > AREA 4 TERRAIN AND OBSTACLE DATASET

Terrain and obstacle data sets



- Obstacles of 58 ADs provided by AIXM 5.1 at the AIP webpage and updated alignment with ICAO AIRAC cycles.

➤ AERODROME OBSTACLES

ADANA - LTAF AD 2.10 OBSTACLES - AIRAC 02/20 EFF DATE 30 JAN 20

ADIYAMAN - LTCP AD 2.10 OBSTACLES - AIRAC 02/23 EFF DATE 23 MAR 23
AGRI/AHMEDI HANI - LTKO AD 2.10 OBSTACLES - AIRAC 03/19 EFF DATE 28 FEB 19
AMASYA/MERZIFON - LTAP AD 2.10 OBSTACLES - AIRAC 04/21 EFF DATE 12 AUG 21
ANKARA/ESENBAGA - LTAC AD 2.10 OBSTACLES - AIRAC 12/20 EFF DATE 31 DEC 20
ANTALYA - LTAI AD 2.10 OBSTACLES - AIRAC 12/20 EFF DATE 31 DEC 20
AYDIN/ÇILDIR - LTBD AD 2.10 OBSTACLES - AIRAC 10/15 EFF DATE 10 DEC 15
BALIKESIR KOCA SEYIT - LTFD AD 2.10 OBSTACLES - AIRAC 02/19 EFF DATE 31 JAN 19
BALIKESIR MERKEZ - LTBF AD 2.10 OBSTACLES - AIRAC 04/21 EFF DATE 12 AUG 21
BATMAN - LTCJ AD 2.10 OBSTACLES - AIRAC 11/22 EFF DATE 29 DEC 22
BİNGÖL - LTCU AD 2.10 OBSTACLES - AIRAC 01/20 EFF DATE 02 JAN 20
BURSA/YENİSEHIR - LTBR AD 2.10 OBSTACLES - AIRAC 09/22 EFF DATE 06 OCT 22
ÇANAKKALE - LTBH AD 2.10 OBSTACLES - AIRAC 05/22 EFF DATE 19 MAY 22

The electronic terrain and obstacles datasets for Areas 2a, 3 and 4 as indicated in the table below can be downloaded from the Turkish AIP website. (<https://www.dhmi.gov.tr>)
See obstacle folder at Turkish AIP web page for AD 2.10 Aerodrome Obstacles digital data sets.

➤ AREA 4 TERRAIN AND OBSTACLE DATASET

ADANA AIRPORT (LTAF) - AIRAC 03/19 - EFF DATE 28 FEB 19
ANKARA ESENBAGA AIRPORT (LTAC) - AIRAC 08/17 - EFF DATE 17 AUG 17
ANTALYA AIRPORT (LTAI) - AIRAC 08/17 - EFF DATE 17 AUG 17
BURSA AIRPORT (LTBR) - AIRAC 03/19 - EFF DATE 28 FEB 19
ERZURUM AIRPORT (LTCE) - AIRAC 04/18 - EFF DATE 29 MAR 18
GAZIANTEP AIRPORT (LTAJ) - AIRAC 03/19 - EFF DATE 28 FEB 19
ISTANBUL ATATÜRK AIRPORT (LTBA) - AIRAC 08/17 - EFF DATE 17 AUG 17
ISTANBUL AIRPORT (LTFM) - AIRAC 01/23 - EFF DATE 23 FEB 23
IZMIR ADNAN MENDERES AIRPORT (LTBJ) - AIRAC 12/16 - EFF DATE 08 DEC 16
MILAS BODRUM AIRPORT (LTFE) - AIRAC 02/16 - EFF DATE 04 FEB 16
MUĞLA DALAMAN AIRPORT (LTBS) - AIRAC 03/19 - EFF DATE 28 FEB 19
SAMSUN ÇARŞAMBA AIRPORT (LTFH) - AIRAC 10/15 - EFF DATE 10 DEC 15
SANLIURFA GAP AIRPORT (LTCS) - AIRAC 04/18 - EFF DATE 29 MAR 18
TRABZON AIRPORT (LTCG) - AIRAC 03/19 - EFF DATE 28 FEB 19
VAN AIRPORT (LTCI) - AIRAC 03/19 - EFF DATE 28 FEB 19

➤ AREA 3 TERRAIN AND OBSTACLE DATASET

ADANA AIRPORT (LTAF) - AIRAC 03/19 - EFF DATE 28 FEB 19
ANKARA ESENBAGA AIRPORT (LTAC) - AIRAC 08/17 - EFF DATE 17 AUG 17
ANTALYA AIRPORT (LTAI) - AIRAC 08/17 - EFF DATE 17 AUG 17
BURSA AIRPORT (LTBR) - AIRAC 03/19 - EFF DATE 28 FEB 19
ERZURUM AIRPORT (LTCE) - AIRAC 04/18 - EFF DATE 29 MAR 18
GAZIANTEP AIRPORT (LTAJ) - AIRAC 03/19 - EFF DATE 28 FEB 19
ISTANBUL ATATÜRK (LTBA) - AIRAC 08/17 - EFF DATE 17 AUG 17
MUĞLA DALAMAN AIRPORT (LTBS) - AIRAC 03/19 - EFF DATE 28 FEB 19
SANLIURFA GAP AIRPORT (LTCS) - AIRAC 04/18 - EFF DATE 29 MAR 18
TRABZON AIRPORT (LTCG) - AIRAC 03/19 - EFF DATE 28 FEB 19
VAN AIRPORT (LTCI) - AIRAC 03/19 - EFF DATE 28 FEB 19

Terrain and obstacle data sets- Area 1



- LT_ENR 5.4_EXCEL.xlsx
- LT_ENR_5_4_Obstacles_AIXM_5_1.xml
- Obstacles.csv

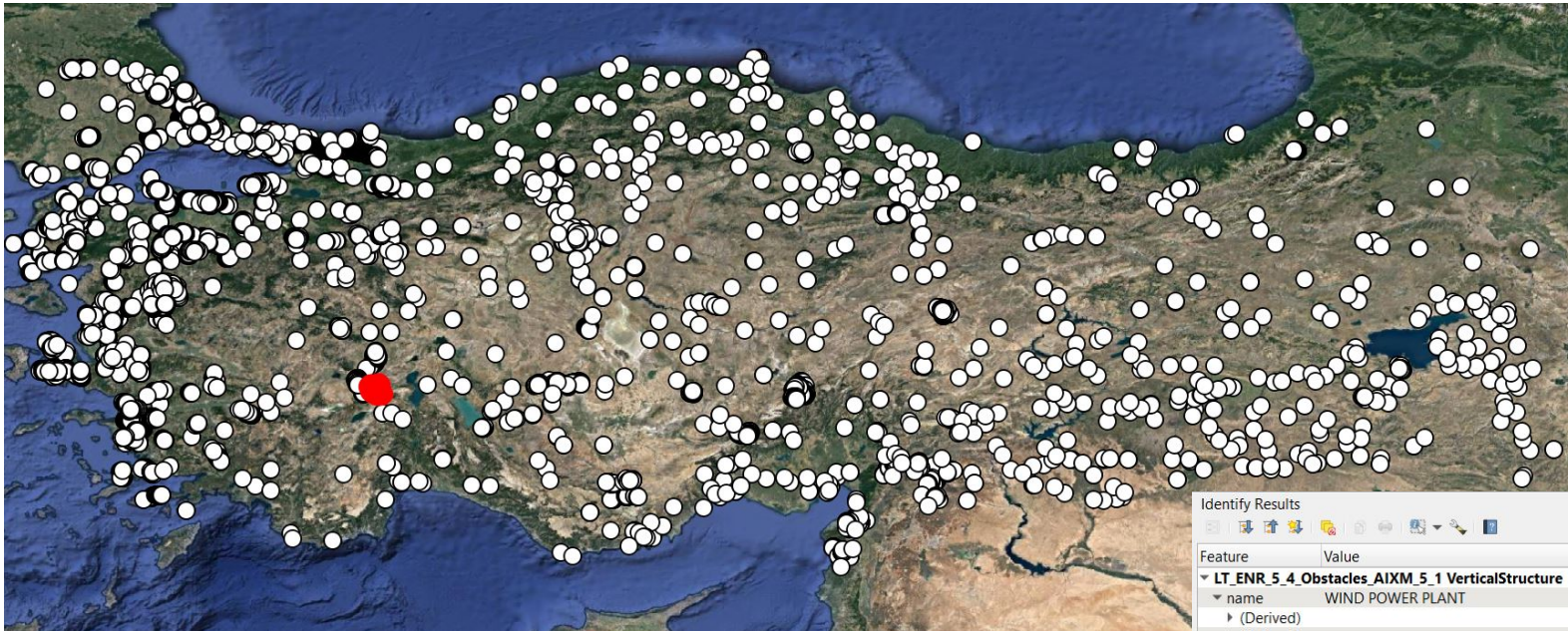
- The law Nr.657 for Area 1 obstacle data collection.

Obstacle_designator	AIXM_NAME	OTHER Type(AIXM)	Latitude(N)	Longitude(E)	Elevation at Top (FT)	Height (FT)	Lighting	color of lighting	Group
ENR1	KORFEZ BRIDGE TOWER	BRIDGE	404452.78N	0293053.39E	827	827	NO INFO		NO
ENR2	WIND POWER PLANT	WINDMILL	383817.12N	0262417.65E	1739	427	YES	OTHER	NO
ENR3	WIND POWER PLANT	WINDMILL	403136.66N	0290845.27E	2575	407	YES	OTHER	NO
ENR4	WIND POWER PLANT	WINDMILL	383401.93N	0262741.62E	1993	589	YES	OTHER	NO
ENR5	WIND POWER PLANT	WINDMILL	374622.94N	0284836.00E	5943	438	YES	OTHER	NO
ENR6	WIND POWER PLANT	WINDMILL	395344.23N	0261034.72E	512	407	YES	OTHER	NO
ENR7	WIND POWER PLANT	WINDMILL	395456.58N	0301026.02E	4193	427	YES	OTHER	NO
ENR8	KORFEZ BRIDGE TOWER	BRIDGE	404540.94N	0293101.56E	827	827	NO INFO		NO
ENR9	WIND POWER PLANT	WINDMILL	411513.35N	0281616.64E	1237	535	YES	OTHER	NO
ENR10	WIND POWER PLANT	WINDMILL	383816.67N	0262406.20E	1732	427	YES	OTHER	NO
ENR11	WIND POWER PLANT	WINDMILL	403305.91N	0290618.42E	2743	407	YES	OTHER	NO
ENR12	WIND POWER PLANT	WINDMILL	405715.21N	0353356.48E	4282	592	YES	OTHER	NO
ENR13	WIND POWER PLANT	WINDMILL	395258.15N	0261115.90E	633	407	YES	OTHER	NO
ENR14	WIND POWER PLANT	WINDMILL	370427.95N	0271653.33E	1578	489	YES	OTHER	NO
ENR15	WIND POWER PLANT	WINDMILL	382931.27N	0302112.20E	6875	589	YES	OTHER	NO
ENR16	WIND POWER PLANT	WINDMILL	411521.33N	0281610.44E	1276	535	YES	OTHER	NO

Obstacles | New Data | Updated Data | Withdrawn Data

Obstacle_Designator	AIXM_NAME	ObstacleType(AIXM)	Latitude(N)	Longitude(E)	Elevation at Top (FT)	Height (FT)	Lighting	Group	AIRAC cycle
ENR645	BUILDING	BUILDING	410507.91N	0290021.31E	918	508	NO INFO	NO	20 APR 2023
ENR684	BUILDING	BUILDING	410404.01N	0286910.00E	895	535	NO INFO	NO	20 APR 2023
ENR690	BUILDING	BUILDING	410408.04N	0285932.17E	862	505	NO INFO	NO	20 APR 2023
ENR4353	WIND POWER PLANT	WINDMILL	394450.53N	0280549.60E	1634	390	YES	NO	20 APR 2023
ENR4354	WIND POWER PLANT	WINDMILL	394456.00N	0280604.61E	1765	390	YES	NO	20 APR 2023

Area-1



ENR 5.4 AIR NAVIGATION OBSTACLES Area-1 (Height 100 M AGL or more)

1. An electronic file of En-route obstacles is available from the "Obstacles" folder via "AIP Türkiye" link on <https://www.dhmi.gov.tr> For detailed information see GEN 3.1.

Feature	Value
LT_ENR_5.4.Obstacles_AIXM_5.1.VerticalStructure [53]	
name	WIND POWER PLANT
▸ (Derived)	
▸ (Actions)	
gml_id	gml.id3614
identifier	DA2FCC14-47D6-42CD-9C0E-4DABDD95D270
beginPosi...	2023-04-20T00:00:00
interpreta...	BASELINE
sequence...	1
correction...	0
timeSlice[...	2023-04-20T00:00:00
name	WIND POWER PLANT
type	WINDMILL
lighted	OTHER
group	NO
verticalExt...	431
verticalExt...	FT
timeSlice[...	WINDMILL
designator	ENR543
elevation	5582
elevation_...	FT

Obstacle data sets



Obstacle_Designator	AIXM_NAME	Obstacle Type (AIXM)	Latitude (N)	Longitude (E)	Elevation at Top (FT)	Height (FT)	Lighting	Color of Lighting	Group	SURVEY_DATE
4	DVOR	NAVAID	411834.1809N	0284331.9548E	282,5	14,4	YES	RED	NO	1.07.2021
5	DVOR_LC	NAVAID	411834.3596N	0284332.4360E	291,3	25,2	YES	RED	NO	1.07.2021
6	DVOR_MONITOR	NAVAID	411834.2002N	0284327.6198E	276,9	22,6	YES	RED	NO	1.07.2021
8	PAPI_COVER	OTHER	411743.3311N	0284235.5485E	228,0	3,5	NO		NO	1.07.2021

AREA2 & OLS & STRIP

New Updated Withdrawn Metadata

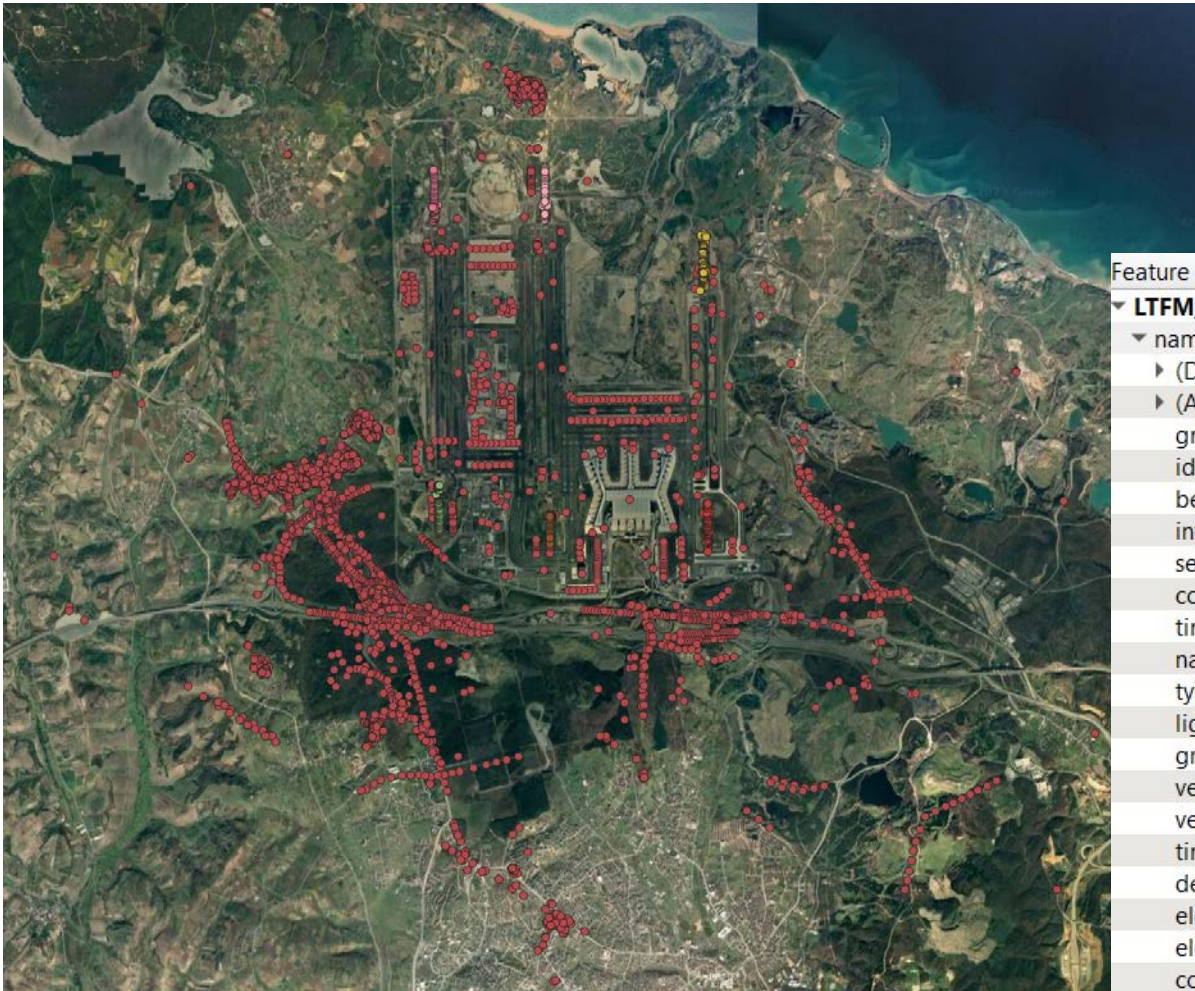
Obstacle_Designator	AIXM_NAME	Obstacle Type (AIXM)	Latitude (N)	Longitude (E)	Elevation at Top (FT)	Height (FT)	Lighting	Color of Lighting	Group	SURVEY_DATE
4	DVOR	NAVAID	411834.1809N	0284331.9548E	282.5	14.4	YES	RED	NO	1.07.2021
5	DVOR_LC	NAVAID	411834.3596N	0284332.4360E	291.3	25.2	YES	RED	NO	1.07.2021
6	DVOR_MONITOR	NAVAID	411834.2002N	0284327.6198E	276.9	22.6	YES	RED	NO	1.07.2021
8	PAPI_COVER	OTHER	411743.3311N	0284235.5485E	228.0	3.5	NO		NO	1.07.2021

```

<aixm:VerticalStructure gml:id="gml.id2">
  <gml:identifier codeSpace="urn:uuid:">511946EE-3812-4474-B735-C52D24093949</gml:identifier>
  <aixm:timeSlice>
    <aixm:VerticalStructureTimeSlice gml:id="gml.id3">
      <gml:validTime>
        <gml:TimePeriod gml:id="gml.id4">
          <gml:beginPosition>2023-02-23T00:00:00</gml:beginPosition>
          <gml:endPosition indeterminatePosition="unknown"/>
        </gml:TimePeriod>
      </gml:validTime>
      <aixm:interpretation>BASELINE</aixm:interpretation>
      <aixm:sequenceNumber>1</aixm:sequenceNumber>
      <aixm:correctionNumber>0</aixm:correctionNumber>
      <aixm:featureLifetime>
        <gml:TimePeriod gml:id="gml.id5">
          <gml:beginPosition>2023-02-23T00:00:00</gml:beginPosition>
          <gml:endPosition indeterminatePosition="unknown"/>
        </gml:TimePeriod>
      </aixm:featureLifetime>
      <aixm:name>DVOR</aixm:name>
      <aixm:type>NAVAID</aixm:type>
      <aixm:lighted>YES</aixm:lighted>
      <aixm:group>NO</aixm:group>
      <aixm:part>
        <aixm:VerticalStructurePart gml:id="gml.id6">
          <aixm:verticalExtent uom="FT">14.4</aixm:verticalExtent>
          <aixm:type>NAVAID</aixm:type>
          <aixm:designator>4</aixm:designator>
          <aixm:horizontalProjection_location>
            <aixm:ElevatedPoint gml:id="gml.id7" srsName="urn:ogc:def:crs:EPSG:4326">
              <gml:pos>41.3094946944 28.725543</gml:pos>
              <aixm:elevation uom="FT">282.5</aixm:elevation>
            </aixm:ElevatedPoint>
          </aixm:horizontalProjection_location>
          <aixm:lighting>
            <aixm:lightElement gml:id="gml.id8">
              <aixm:colour>RED</aixm:colour>
            </aixm:lightElement>
          </aixm:lighting>
        </aixm:VerticalStructurePart>
      </aixm:part>
    </aixm:VerticalStructureTimeSlice>
  </aixm:timeSlice>
</aixm:VerticalStructure>
  
```

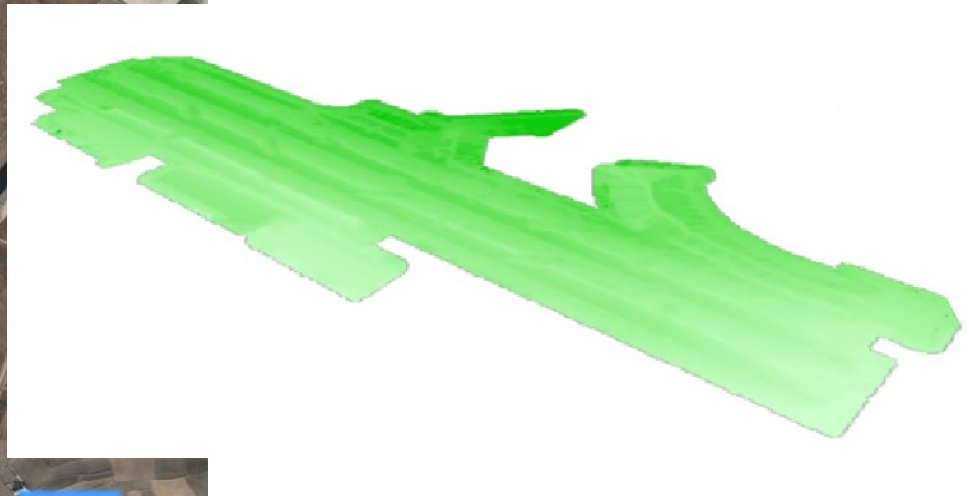
TABLE - 1	
Area of coverage:	Area 2 & OLS & Stip_Area
Data originator identifier:	IGA
Data source identifier:	N/A
Acquisition Method:	Photogrammetric Survey
Horizontal reference system:	WGS84 - Geographical
Horizontal resolution :	1 Meters
Horizontal accuracy:	5 Meters
Elevation reference:	MSL
Vertical reference system:	EGM-96
Vertical resolution :	0.1 Meters
Vertical accuracy:	3 Meters
Date and Time Stamp:	Variable (Survey Dates are individually written in each Obstacle List)
Unit of measurement used:	Meters (Elevation & Height values converted to Feet for final delivery)

LTFM Area 2



Feature	Value
LTFM_AREA_2_Obstacles_AIXM_5_1 VerticalStructure	
name	STREETLIGHT
(Derived)	
(Actions)	
gml_id	gml.id25643
identifier	8893D732-D4E3-4B35-A488-C27E826C86BA
beginPosi...	2023-02-23T00:00:00
interpreta...	BASELINE
sequence...	1
correction...	0
timeSlice ...	2023-02-23T00:00:00
name	STREETLIGHT
type	POLE
lighted	NO
group	NO
verticalExt...	83,4
verticalExt...	FT
timeSlice ...	POLE
designator	700556
elevation	384,1
elevation_...	FT
colour	NULL

Area-3 terrain and obstacles of LTAC



LTAC Area-4



Obstacle Collection Database and Form



Obstacle_Designator	AIXM_NAME	ObstacleType(AIXM)	Latitude(N)	Longitude(E)	Elevation at Top (FT)	Height (FT)	Lighting	Color of Lighting	Group	Surface*	Penetrate OLS Surface*	survey Date*
LTX_1	BUILDING	BUILDING	123456.00N	0123456.00E	123,00	34,00	NO INFO		NO	Area 2a RWY 18/36	Yes	7.01.2021
LTX_2	BUILDING	BUILDING	123456.78N	0123456.78E	123,45	34,50	NO INFO		NO	Area 2b RWY 18	No	7.01.2021
LTX_3	BUILDING	BUILDING	123456.78N	0123456.78E	123,45	34,50	NO INFO		NO	Area 2c RWY18/36	Yes	7.01.2021
LTX_4	MINARET	BUILDING	123456.78N	0123456.78E	123,45	34,50	YES	RED	NO	Area 2d RWY 18/36	No	7.01.2021
LTX_5	ELECTRICAL TRANSMISSION MAST	POLE	123456.78N	0123456.78E	123,45	34,50	NO INFO		NO			
LTX_6	ANTENNA	ANTENNA	123456.78N	0123456.78E	123,45	34,50	NO INFO		NO			
LTX_7	MAST		123456.78N	0123456.78E	123,45	34,50	NO INFO		NO			

Veri Dosyası / Web Servis

Veri Dosyası Oluştur

Katman: Mülferli

Zemin Kota: D1R02

Silinen Veri:

Tarih Aralığı:

Projeksiyon: WGS84 - World Geodetic System (EPSG:4326)

Çıktı Formatı: Lütfen Seçiniz

- AutoCAD DXF
- Microstation DGN v7
- GML
- PostgreSQL SQL dump
- ESRI Shapefile / DBF
- KML
- KMZ
- MapInfo File Tab
- MapInfo File Mif
- CSV
- NLSX
- GeoJSON
- GDB
- NetCDF
- GMT

Anasayfa / Veri İndirme

Veri Dosyası Oluştur / Web Servis Bilgi

Veri Dosyası Oluştur

Özel veri dosyası oluşturmak için lütfen aşağıdaki alanları doldurun. İndir

Katman: Mülferli

Zemin Kota: D1R02

Silinen Veri:

Tarih Aralığı:

Projeksiyon: WGS84 - World Geodetic System (EPSG:4326)

Çıktı Formatı: Lütfen Seçiniz

AutoCAD DXF

Microstation DGN v7

GML

PostgreSQL SQL dump

ESRI Shapefile / DBF

KML

KMZ

MapInfo File Tab

MapInfo File Mif

CSV

NLSX

GeoJSON

GDB

NetCDF

GMT

WGS84 - World Geodetic System (EPSG:4326)

Lütfen Seçiniz

Lütfen Seçiniz

AutoCAD DXF

Microstation DGN v7

GML

PostgreSQL SQL dump

ESRI Shapefile / DBF

KML

KMZ

MapInfo File Tab

MapInfo File Mif

CSV

NLSX

GeoJSON

GDB

NetCDF

GMT



Engel Adı

T45

Engel Tipi Kodu

Rüzgâr Enerji Santrali

Durum Kategorisi Kodu

Faal

Güncelleme Tarihi

06.01.2014

Işık Durumu Kodu

Bilinmiyor

Boylam

30,23175

Enlem

38,02753

Bina Yüksekliği

0

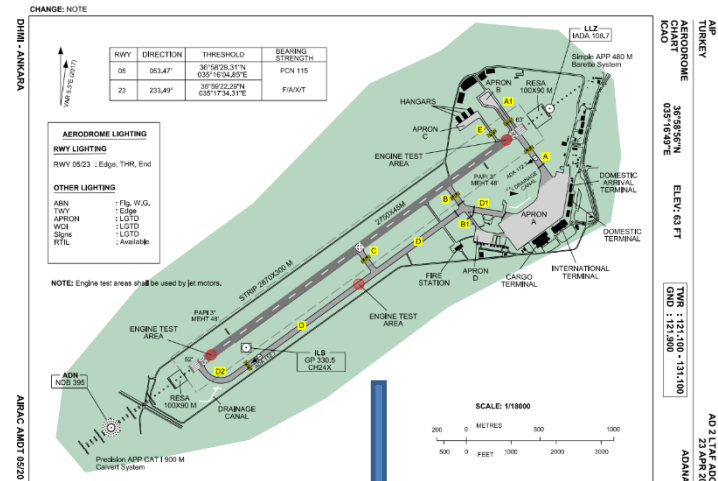
Engel Yüksekliği

134

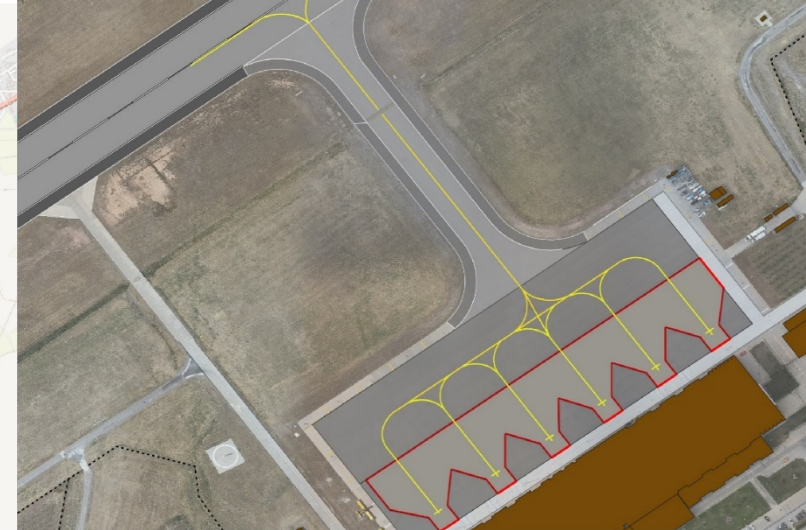
Aerodrome mapping data set, AMDB



- AMDB is part of the modern AIM system that replaces the traditional AIS
- It is a Geographic Information System (GIS) database describing the spatial layout of an airport consisting AD features
- Mostly used in EFBs.
- It primarily aims to improve the user's situational awareness and/or support surface movements, thus increasing safety margins and operational efficiency.



AMDB – LTFD (Balıkesir-Kocaseyit)



GEN 1.7 Publication

Annex - 15 Aeronautical Information Services

Chapter 5

5.3.3.4.3 Electronic obstacle data sets for Area 1 are available, but not all data attributes, as contained in PANS AIM, are provided

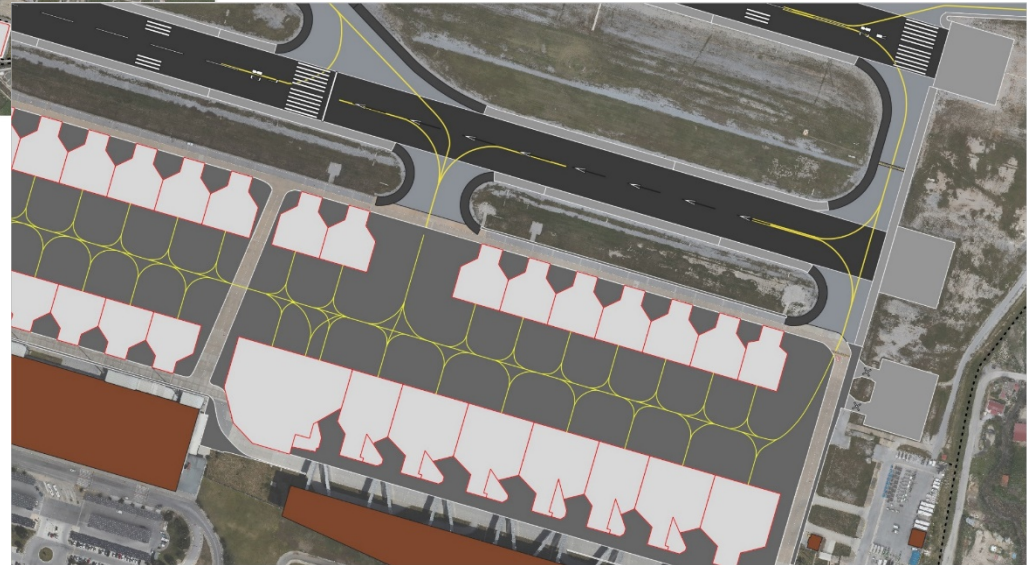
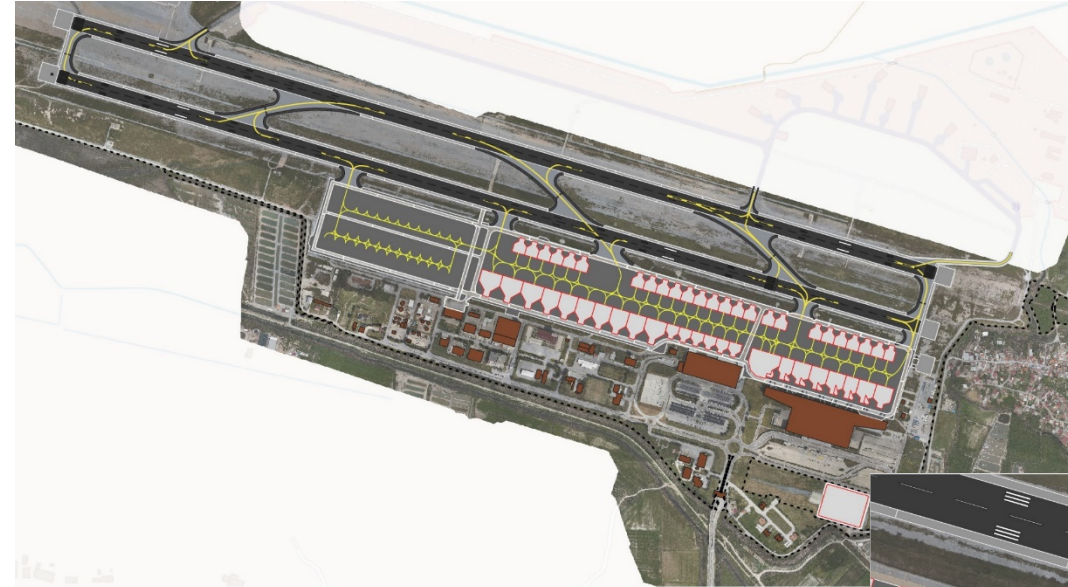
5.3.4.2 Aerodrome mapping data sets are not available.

5.3.5.2 Instrument flight procedure data sets are not available.

AMDB-LTAL (Kastamonu)



AMDB- LTFE (Milas Bodrum)



Instrument flight procedure data sets



- Instrument flight procedure data sets shall contain the digital representation of instrument flight procedures.

The instrument flight procedure data includes;

- procedure
- procedure segment
- final approach segment
- procedure fix
- procedure holding

GEN 1.7 Publication

Annex - 15 Aeronautical Information Services

Chapter 5

5.3.3.4.3 Electronic obstacle data sets for Area 1 are available, but not all data attributes, as contained in PANS AIM, are provided.

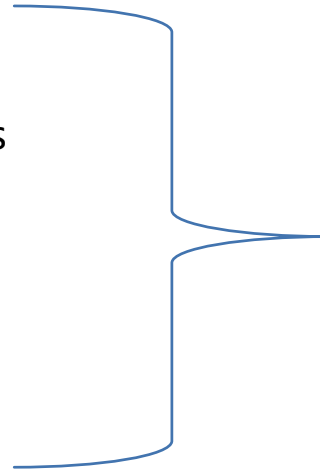
5.3.4.2 Aerodrome mapping data sets are not available.

5.3.5.2 Instrument flight procedure data sets are not available.

Conclusion



- AIP data sets
- Terrain and obstacle data sets
- AMDB
- IFP
- Digital NOTAM



Thank you for attention!

