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# ICAO Provisions on Digital Data sets

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Abbas Niknejad

Regional Officer, Air Navigation System Implementation  
ICAO EUR/NAT Office

## Types of Digital Data sets (AN15)

- a) AIP data set;
- b) terrain data sets;
- c) obstacle data sets;
- d) aerodrome mapping data sets; and
- e) instrument flight procedure data sets.

## Metadata

- (AN15) 5.3.1.2 Each data set shall be provided to the next intended user together with at least the minimum set of metadata that ensures traceability.
- (P-AIM) Each data set shall include the following minimum set of metadata:
  - a) the names of the organization or entities providing the data set;
  - b) the date and time when the data set was provided;
  - c) period of validity of the data set; and
  - d) any limitations with regard to the use of the data set.

## Checklist of data sets

- (AN15) 5.3.1.3 A checklist of valid data sets shall be regularly provided.

# Digital Data sets Provision

- (P-AIM) 5.3.1.1 To facilitate and support the use of exchange of digital data sets between data providers and data users, the ISO 19100 series of standards for geographic information should be used as a reference framework.
- (P-AIM) 5.3.1.2 A description of available digital data sets shall be provided in the form of data product specifications on which basis air navigation users will be able to evaluate the products and determine whether they fulfil the requirements for their intended use (application).
- (P-AIM) 5.3.1.3 The content and structure of digital data sets shall be defined in terms of an application schema and a feature catalogue.
- (P-AIM) 5.3.1.4 The aeronautical information model used should encompass the aeronautical data and aeronautical information to be exchanged.
- (P-AIM) 5.3.1.7 Charts, maps or diagrams should be used to complement digital data sets.

# Applicability of Data sets (AN15)

Terrain Dataset							AIP Dataset	IFP Dataset
Area 1	Area 2a	Area 2b	Area 2c	Area 2d	Area 3	Area 4		
Obstacle Dataset							AD Mapping Dataset	
Area 1	Area 2a	Area 2b	Area 2c	Area 2d	Area 3	Area 4		

# Applicability of Data sets (AN15)

Terrain Dataset							AIP Dataset	IFP Dataset
Area 1	Area 2a	Area 2b	Area 2c	Area 2d	Area 3	Area 4		
SHALL	SHALL (For aerodromes regularly used by international civil aviation)					SHALL (all runways where precision approach Category II or III operations)		
Obstacle Dataset							AD Mapping Dataset	
Area 1	Area 2a	Area 2b	Area 2c	Area 2d	Area 3	Area 4		
SHALL	SHALL (For aerodromes regularly used by international civil aviation)					SHALL (all runways where precision approach Category II or III operations)		

# Applicability of Data sets (AN15)

Terrain Dataset							AIP Dataset	IFP Dataset
Area 1	Area 2a	Area 2b	Area 2c	Area 2d	Area 3	Area 4		
SHALL	SHALL (For aerodromes regularly used by international civil aviation)	Should	Should	Should	Should	SHALL (all runways where precision approach Category II or III operations)	Should	Should
Obstacle Dataset							AD Mapping Dataset	
Area 1	Area 2a	Area 2b	Area 2c	Area 2d	Area 3	Area 4		
SHALL	SHALL (For aerodromes regularly used by international civil aviation)	Should	Should	Should	Should	SHALL (all runways where precision approach Category II or III operations)	Should	

# AIP Data set

- (AN15) 5.3.2.1 **Recommendation.**— *An AIP data set should be provided covering the extent of information as provided in the AIP.*
- (AN15) 5.3.2.2 **Recommendation.**— *When it is not possible to provide a complete AIP data set, the data subset(s) that are available should be provided.*
- (AN15) 5.3.2.3 The AIP data set shall contain the digital representation of aeronautical information of lasting character (permanent information and long duration temporary changes) essential to air navigation.
- (P-AIM) The AIP data set shall include data about the following subjects:
  - ATS airspace
  - Special activity airspace
  - ATS routes and other route
  - Waypoints – en-route
  - Aerodrome/heliport
  - Runway & Declared distances
  - Final approach and take-off (FATO)
  - Touchdown and left-off (TLOF)
  - Radio navigation aid

# Removal of AIP Tables

- **(P-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 a reference to the data set availability shall be provided:

- |  |   |
|--|---|
| a) GEN 2.5 List of radio navigation aids;                | l) ENR 5.2 Military exercise and training areas and air defence identification zone (ADIZ); |
| b) ENR 2.1 FIR, UIR, TMA and CTA;                        | m) ENR 5.3.1 Other activities of a dangerous nature;  |
| c) ENR 3.1 Conventional navigation routes;               | n) ENR 5.3.2 Other potential hazards;   |
| d) ENR 3.2 Area navigation routes;                       | o) ENR 5.5 Aerial sporting and recreational activities;                                     |
| e) ENR 3.5 Other routes;                                 | p) ****AD 2.17 Air traffic services airspace;   |
| f) ENR 3.6 En-route holding;                             | q) **** AD 2.19 Radio navigation and landing aids;  |
| g) ENR 4.1 Radio navigation aids — en-route;             | r) **** AD 3.16 Air traffic services airspace; and  |
| h) ENR 4.2 Special navigation systems;                   | s) **** AD 3.18 Radio navigation and landing aids   |
| i) ENR 4.4 Name-code designators for significant points; |   |
| j) ENR 4.5 Aeronautical ground lights – en-route;        |   |
| k) ENR 5.1 Prohibited, restricted and danger areas;      |   |

- **(P-AIM)** 5.2.1.1.4 When the Obstacle Data Set (as specified in 5.3.3.2.2) is provided, the following sections of the AIP may be omitted and a reference to the data set availability shall be provided:

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

# Terrain Data set

- (AN15) 5.3.3.3.2 Terrain data shall be provided for Area 1.
- (AN15) 5.3.3.3.3 For aerodromes regularly used by international civil aviation, terrain data shall be provided for:
  - a) Area 2a;
  - b) the take-off flight path area; and
  - c) an area bounded by the lateral extent of the aerodrome obstacle limitation surfaces.
- (AN15) 5.3.3.3.8 For aerodromes regularly used by international civil aviation, terrain data shall be provided for Area 4 for all runways where precision approach Category II or III operations have been established and where detailed terrain information is required by operators to enable them to assess the effect of terrain on decision height determination by use of radio altimeters.

# Obstacle Data set

- (AN15) 5.3.3.4.2 Obstacle data shall not be included in terrain data sets.
- (AN15) 5.3.3.4.3 Obstacle data shall be provided for obstacles in Area 1 whose height is 100 m or higher above ground.
- (AN15) 5.3.3.4.4 For aerodromes regularly used by international civil aviation, obstacle data shall be provided for all obstacles within Area 2 that are assessed as being a hazard to air navigation.
- (AN15) 5.3.3.4.5 For aerodromes regularly used by international civil aviation, obstacle data shall be provided for:
  - a) Area 2a for those obstacles that penetrate an obstacle data collection surface outlined by a rectangular area around a runway that comprises the runway strip plus any clearway that exists. The Area 2a obstacle collection surface shall have a height of 3 m above the nearest runway elevation measured along the runway centre line, and for those portions related to a clearway, if one exists, at the elevation of the nearest runway end;
  - b) objects in the take-off flight path area which project above a plane surface having a 1.2 per cent slope and having a common origin with the take-off flight path area; and
  - c) penetrations of the aerodrome obstacle limitation surfaces.
- (AN15) 5.3.3.4.10 For aerodromes regularly used by international civil aviation, obstacle data shall be provided for Area 4 for all runways where precision approach Category II or III operations have been established.

# Aerodrome Mapping Data set

- (AN15) 5.3.4.1 Aerodrome mapping data sets shall contain the digital representation of aerodrome features.
- (AN15) *Note.*— *Aerodrome features consist of attributes and geometries, which are characterized as points, lines or polygons. Examples include runway thresholds, taxiway guidance lines and parking stand areas.*
- (AN15) 5.3.4.2 **Recommendation.**— *Aerodrome mapping data sets should be made available for aerodromes regularly used by international civil aviation.*
- (P-AIM) 5.3.3.3.1 *Aerodrome mapping data — requirements for provision*

Aerodrome mapping data should be supported by electronic terrain and obstacle data for Area 3 in order to ensure consistency and quality of all geographical data related to the aerodrome.

# Instrument Flight Procedure Data set

- (AN15) 5.3.5.1 Instrument flight procedure data sets shall contain the digital representation of instrument flight procedures.
- (AN15) 5.3.5.2 **Recommendation.**— *Instrument flight procedure data sets should be made available for aerodromes regularly used by international civil aviation.*
- (P-AIM) 5.3.3.4.1 The instrument flight procedure data set shall include data about the following data subjects, with the properties indicated in brackets being included as a minimum (if applicable):
  - a) procedure (all properties);
  - b) procedure segment (all properties);
  - c) final approach segment (all properties);
  - d) procedure fix (all properties);
  - e) procedure holding (all properties); and
  - f) helicopter procedure (all properties).



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Thank You!