ICAO MID NCLB AIM Workshop

Cairo, Egypt

September 2017

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ICAO Annex 15, Aeronautical Information, 16th Edition and ICAO Document 10066 PANS AIM

Documents Changing

- **Annex 15, Aeronautical Information, 16th Edition**
  - November 2018 Applicability
- **Document 10066, PANS AIM**
  - November 2018 Applicability

Background
AIS-AIM Study Group

- **AIS-AIMSG tasked to develop SARPs & GM**
  - Support the transition from AIS to AIM
  - Enable the digital exchange of aeronautical data

- **New SARPS and Guidance Material**
  - Incorporates AIM concepts
  - Facilitate transition from product-centric to data-centric
  - Facilitate transition from information services to information management

Automation and Data Exchange

- **Globally interoperable aeronautical information exchange models and data exchange models shall be used for the provision of data sets[1]**
- **Automation shall be applied[2]**
- **In order to meet data quality requirements, automation shall:[3]**
  - Enable digital aeronautical data exchange between parties in the data processing chain
  - Use aeronautical information exchange models designed to be globally interoperable

Digital Data Sets

- **Each data set shall be provided to the next intended user together with a minimum set of metadata that ensures traceability from the end user to the originator[4]**
- **When provided, digital data shall be in the form of the following data sets:[5]**
  - AIP
  - Terrain
  - Obstacle
  - Aerodrome Mapping
  - Instrument Flight Procedure

Data Consistency and Synchronization

- **Where aeronautical data and aeronautical information are provided in multiple formats, processes shall be implemented to ensure data and information consistency between formats[6]**

- **Updates to AIP, AIP Data Sets and Instrument Flight Procedure Data Sets shall be synchronized[7]**

- **A data subject may appear in multiple data sets[8]**

PANS AIM

- Splits requirements for data origination from data publication
- Introduces Aeronautical Data Catalogue
- Introduces Digital Data Sets
- Aeronautical Information Product in either digital data sets or paper/electronic form
- Data Quality requirement characteristics for timeliness, completeness, traceability and format added to existing accuracy, resolution and integrity

PANS AIM

- Description of AIM functions, products and services
- Outlines data origination requirements
- Describes procedures for collecting data and transmitting to AIS
- Details on digital data sets for AIP, terrain, obstacle, aerodrome mapping and instrument flight procedures
- AIRAC requirements and how to update data sets
- Daily reference for AIS & AIM officers

Aeronautical Information Products & Services

- **When the AIP Data Set is provided, specific ENR and AD sections of the AIP may be left blank and a reference to the data set available shall be provided[9]**
- **When the Obstacle Data Set is provided, that section of the AIP… [10]**
- **The intent of using a commonly used data encoding format is to ensure interoperability of aeronautical data exchange between agencies and organizations involved in the data processing chain[11]**

PANS AIM, Appendix 1,Data Catalogue Table A1-1 Aerodrome Data

Table A 1-1 Aerodrome/Heliport data

Subject	Property	Sub-Property	Type	Description	Note	Accuracy	Integrity	Orig Type	Pub. Res.	Chart Res.
Aerodrome / Heliport				A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft.					-	-
	Designator			Designator of the aerodrome / heliport						
		ICAO location indicator	Text	The four letter ICAO location indicator of the aerodrome/heliport, as listed in ICAO DOC 7910 (Location Indicators).	if any					
		Designator IATA	Text	The identifier that is assigned to a location in accordance with rules (resolution 767) governed by the International Air Transport Association (IATA).	if any					
		Other	Text	A locally defined airport identifier, if other than an ICAO Location Indicator						
	Name		Text	The primary official name of an aerodrome as designated by an appropriate authority.						

PANS AIM, Appendix 1,Data Catalogue Table A1-2 Airspace Data

Table A1-2 Airspace data

Subject	Property	Sub-Property	Type	Description	Note	Accuracy	Integrity	Orig Type	Pub. Res.	Chart Res.
ATS Airspace				Airspaces of defined dimensions, alphabetically designated, within which specific types of flights may operate and for which air traffic services and rules of operation are specified.						
	Type		Text	Type of ATS airspace according to ICAO Annex 11.						
	Designation		Text	The designator given to an airspace by a responsible authority						
	Lateral limits		Polygon	The surface defining the horizontal shape of the Airspace		see Note 1)				
	Vertical limits									
		Upper limit	Altitude	The upper limit of the airspace						
		Lower limit	Altitude	The lower limit of the airspace		50 m	routine	calculated	50 m or 100 ft	50 m or 100 ft
	Class of airspace		Code list	A categorisation of airspace which determines the operating rules, flight requirements, and services provided.						

PANS AIM, Appendix 1,Data Catalogue Table A1-3 ATS Routes

Table A1-3 ATS and other routes data

Subject	Property	Sub-Property	Type	Description	Note	Accuracy	Integrity	Orig Type	Pub. Res.	Chart Res.
En-route Holding				A predetermined manoeuvre which keeps an aircraft within a specified airspace while awaiting further clearance.						
	Identification		Text	Identification of the holding procedure						
	Fix		Text	Identification of the holding procedure fix						
	Waypoint		Point	Geographical location of the holding waypoint		100m	essential	surveyed calculated	1 sec	1 sec
	Inbound track		Bearing	The inbound track of the holding procedure						
	Turn Direction		Text	Direction of the procedure turn						
	Speed		Value	Maximum indicated airspeed						
	Level									
		Minimum holding level	Altitude	Minimum holding level of the holding procedure						
		Maximum holding level	Altitude	Maximum holding level of the holding procedure						
	Time/distance outbound		Value	Time/distance value of the holding procedure						

PANS AIM, Appendix 1,Data Catalogue Table A1-4 Instrument Flt Procedure

Table A1-4 Instrument flight procedure data

Subject	Propoerty	Sub-Property	Type	Description	Note	Accuracy	Integrity	Orig Type	Pub. Res.	Chart Res.
Procedure										
	Identification									
		FAS Guidance	Code list	The name describing the type of radio navigation aid providing the final approach lateral guidance. This could be: ILS, VOR, RNAV, etc	APCH				-	-
		Runway	Text	The runway designator of the landing and take-off direction. Examples: 27, 35L, 01R.						
		Circling	Code list	Indication if a procedure is/ is not a circling approach	APCH					
		Multiple Code	Text	A single letter suffix, starting with the letter z following the radio navigation aid type shall be used if two or more procedures to the same runway cannot be distinguished by the radio navigation aid type only. For example: VOR y Rwy 20 VOR z Rwy 20	APCH					
		NS Limiter	Text	Sensor specific information in case of a limitation of use	PBN only					
		Name	Text	Name of the instrument flight procedure						

PANS AIM, Appendix 1,Data Catalogue Table A1-5 Navaids

Table A1-5 Radio navigation aids/systems data

Subject	Property	Sub-Property	Type	Description	Note	Accuracy	Integrity	Orig Type	Pub. Res.	Chart Res.
Special navigation system				Stations associated with special navigation systems (DECCA, LORAN, etc.).						
	Type		Text	Type of service available (master signal, slave signal, colour).						
	Designator		Text	The code assigned to uniquely identify to the special navigation system						
	Name		Text	The textual name assigned to the special navigation system						
	Frequency		Value	Frequency (channel number, basic pulse rate, recurrence rate, as applicable) of the special navigation system						
	Hours of operations		Schedule	The hours of operation of the special navigation system						
	Position		Point	Geographical location of the special navigation system		100m	essential	surveyed / calculated		
	Operating authority		Text	Name of the operating authority of the facility						
	Facility coverage		Text	Description of special navigation system faciity coverage						

PANS AIM, Appendix 1,Data Catalogue Table A1-6 Obstacle Data

Table A1-6 Obstacle data

Subject	Property	Sub-Property	Type	Description	Note	Accuracy	Integrity	Orig Type	Pub. Res.	Chart Res.
Obstacle				All fixed (whether temporary or permanent) and mobile obstacles or parts thereof.						
	Obstacle identifier		Text	Unique identifier of obstacle						
	Operator / Owner		Text	Name and Contact information of obstacle operator or owner						
	Geometry type		Code list	An indication whether the obstacle is a point, line or polygon.						
	Horizontal position		Point Line Polygon	Horizontal position of obstacle		See Note 1)				
	Horizontal extent		Distance	Hoizontal extent of the obstacle						
	Elevation		Elevation	Elevation of the highest point of the obstacle.		See Note 2)				
	Height		Height	Height of the obstacle above ground						

PANS AIM, Appendix 1,Data Catalogue Table A1-7 Geographic Data

Table A1-7 Geographic data

Subject	Property	Sub-Property	Type	Description	Note	Accuracy	Integrity	Orig Type	Pub. Res.	Chart Res.
Buildings				Buildings (of operational significance) and other salient/prominent (aerodrome) features						
	Name		Text	Name of the building						
	Geometry		Polygon	Geographical location of the building						

PANS AIM, Appendix 1,Data Catalogue Table A1-8 Terrain

Table A1-8. Terrain data numerical requirements

	Area 1	Area 2	Area 3	Area 4
Post spacing	3 arc seconds	1 arc second	0.6 arc seconds	0.3 arc seconds
	(approx. 90 m)	(approx. 30 m)	(approx. 20 m)	(approx. 9 m)
Vertical accuracy	30 m	3 m	0.5 m	1 m
Vertical resolution	1 m	0.1 m	0.01 m	0.1 m
Horizontal accuracy	50 m	5 m	0.5 m	2.5 m
Confidence level	90%	90%	90%	90%
Integrity classification	routine	essential	essential	essential

PANS AIM, Appendix 1,Data Catalogue Table A1-9 Data Types

Table A1-9. Data types

Type (1)	Description (2)	Data elements (3)
Point	A pair of coordinates (latitude and longitude) referenced to the mathematical reference ellipsoid which define the position of the point on the surface of the Earth.	Latitude
		Longitude
		Horizontal reference system
		Units of measurement
		Horizontal accuracy achieved

PANS AIM, Appendix 1,Data Catalogue Table A1-10 Other

Table A1-10 Information about national and local regulation, services and procedures	
1	National regulations and requirements
1.1	Civil aviation regulation
1.1.1.	Name, contact information and description of the civil aviation authorities concerned with the facilitation of international air navigation.
1.1.2	National regulations and international agreements / conventions ratified by the State affecting air navigation
1.1.3.	Differences between national regulations and practices of the State and related ICAO provisions, including:
	a) Provision concerned (Annex number, title, edition number and paragraph)
	b) The complete text of the difference.

Footnotes

- [1] ICAO Annex 15, 16th Edition (Draft), para 2.3.10
- [2] Ibid, para 3.5.1
- [3] Ibid, para 3.5.2
- [4] Ibid, para 5.3.1.2
- [5] Ibid, para 5.3.1.1
- [6] Ibid, para 5.1.2
- [7] Ibid, para 6.3.3.5
- [8] ICAO Doc 10066, PANS AIM (Draft), para 5.3.3
- [9] Ibid, para 5.2.1.1.3
- [10] Ibid, para 5.2.1.1.4
- [11] Ibid, para 5.3.1.5