

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						
	Plain Language Designation									
		Basic Indicator	Text	The basic indicator shall be the name or name-code of the significant point where the standard departure route terminates.	SID, STAR					
		Validity Indicator	Text	The validity indicator shall be a number from 1 to 9.	SID, STAR					
		Route Indicator	Text	The route indicator shall be one letter of the alphabet. The letters "I" and "O" shall not be used.	SID, STAR					
		Visual Indication	Text	Indication if the route has been established for use by aircraft operating in accordance with the visual flight rules (VFR)	VFR only					
	Coded Designation									
		Significant Point	Text	The coded designator or name-code of the significant point	SID, STAR					
		Validity Indicator	Text	The Validity Indicator of the procedure	SID, STAR					
		Route Indicator	Text	The Route Indicator of the procedure	SID, STAR					
	Procedure Type		Code list	Indication of the type of procedure (departure, arrival, approach, other)						
	PBN or Conventional		Code list	Indication if the procedure is PBN or Conventional	IFR only					
	Precision Type		Text	The instrument procedure type. Instrument approach procedures are classified as follows: Non-precision approach (NPA) procedure. - An instrument approach procedure which utilizes lateral guidance but does not utilize vertical guidance. Approach procedure with vertical guidance (APV). - An instrument procedure which utilizes lateral and vertical guidance but does not meet the requirements established for precision approach and landing operations. Precision approach (PA) procedure. - An instrument approach procedure using precision lateral and vertical guidance with minima as determined by the category of operation.	APCH					
	Aircraft Category		Code list	Indication of which aircraft categories the procedure is intended for						
	Magnetic variation		Angle	The magnetic variation considered for the procedure design						
	OCA/H			Obstacle clearance Altitude (Height)	APCH					
		Aircraft category	Code list	Aircraft category according to ICAO Doc 8168 Vol I or II	APCH					
		Approach type	Code list	Approach type (e.g. Straight-in Cat I, Cat II, LLZ, Circling ...) or specific navigation aid (e.g. stepdown fixes), or a specific navigation specification	APCH					
		Altitude	Altitude	The lowest altitude used in establishing compliance with appropriate obstacle clearance criteria.	APCH	as specified in Doc 8168	essential			as specified in Doc 8168
		Height	Height	The lowest height above the elevation of the relevant runway threshold or the aerodrome elevation as applicable, used in establishing compliance with appropriate obstacle clearance criteria.	APCH	as specified in Doc 8168	essential			as specified in Doc 8168
	DA/H			Decision Altitude (Height)	APCH					
		Aircraft category	Code list	Aircraft category according to ICAO Doc 8168 Vol I or II	APCH					
		Approach type	Code list	Approach type (e.g. Straight-in, Circling ...) or specific navigation aid (e.g. stepdown fixes), or a specific navigation specification	APCH					

	Altitude	Altitude	A specified altitude in a 3D instrument approach operation at which a missed approach must be initiated if the required visual reference to continue the approach has not been established	APCH							
	Height	Height	A specified height in a 3D instrument approach operation at which a missed approach must be initiated if the required visual reference to continue the approach has not been established	APCH							
MDA/H			Minimum Descent Altitude (Height)	APCH							
			Aircraft category	Code list	Aircraft category according to ICAO Doc 8168 Vol I or II	APCH					
			Approach type	Code list	Approach type (e.g. Straight-in, Circling ...) or specific navigation aid (e.g. stepdown fixes), or a specific navigation specification	APCH					
			Altitude	Altitude	A specified altitude in a 2D instrument approach operation or circling approach operation below which descent must not be made without the required visual reference.	APCH					
	Height	Height	A specified height in a 2D instrument approach operation or circling approach operation below which descent must not be made without the required visual reference.	APCH							
MSA			Minimum sector altitude - The lowest altitude which may be used which will provide a minimum clearance of 300 m (1 000 ft) above all objects located in an area contained within a sector of a circle of 46 km (25 NM) radius centred on a radio aid to navigation.	IFR only							
			Sector start angle	Angle	Start angle of a sector						
			Sector end angle	Angle	End angle of a sector						
			Based on Fix	Text	Center of the MSA						
			Altitude	Altitude	The minimum altitude for each sector						
			Restrictions	Text	Minimum sector altitude - The lowest altitude which may be used which will provide a minimum clearance of 300 m (1 000 ft) above all objects located in an area contained within a sector of a circle of 46 km (25 NM) radius centred on a radio aid to navigation.						
	Radius	Value	The radius of each sector								
TAA			Terminal arrival altitude - The lowest altitude that will provide a minimum clearance of 300 m (1 000 ft) above all objects located in an arc of a circle defined by a 46 km (25 NM) radius centred on the initial approach fix (IAF), or where there is no IAF on the intermediate approach fix (IF), delimited by straight lines joining the extremity of the arc to the IF. The combined TAAs associated with an approach procedure shall account for an area of 360 degrees around the IF.	APCH, PBN only							
			Reference point	Text	TAA reference point (IAF or IF)						
			IAF	Text	TAA Initial Approach Fix reference point						
			IF	Text	TAA Intermediate Fix reference point						
			Dist To IAF	Distance	The distance of the TAA area boundary from the IAF						
			Altitude	Altitude	The terminal arrival altitude value						
			Sector start angle	Angle	Start angle of a sector (bearing to TAA reference point						
	Sector end angle	Angle	End angle of a sector (bearing to TAA reference point)								
	Stepdown arc	Distance	Radius of inner area with lower altitude.								
Nav Spec Name		Text	A set of aircraft and flight crew requirements needed to support performance-based navigation operations within a defined airspace. There are two kinds of navigation specifications: Required navigation performance (RNP) specification. A navigation specification based on area navigation that includes the requirement for performance monitoring and alerting, designated by the prefix RNP, e.g. RNP 4, RNP APCH. Area navigation (RNAV) specification. A navigation specification based on area navigation that does not include the requirement for performance monitoring and alerting, designated by the prefix RNAV, e.g. RNAV 5, RNAV 1.	PBN only							
Operating minima		Text	Aerodrome Operating Minima - The limits of usability of an aerodrome for: a) take-off, expressed in terms of runway visual range and/or visibility and, if necessary, cloud conditions; b) landing in precision approach and landing operations, expressed in terms of visibility and/or runway visual range and decision altitude/height (DA/H) as appropriate to the category of the operation; c) landing in approach and landing operations with vertical guidance, expressed in terms of visibility and/or runway visual range and decision altitude/height (DA/H); and d) landing in non-precision approach and landing operations, expressed in terms of visibility and/or runway visual range, minimum descent altitude/height (MDA/H) and, if necessary, cloud conditions	APCH, DEP							
Temperature											
	Minimum temperature	Value	Minimum temperature reference	APCH, PBN only							
	Maximum temperature	Value	Maximum temperature reference	APCH, PBN only							

	Remote Altimeter Source		Text	Cautionary note indicating the altimetry source	APCH					
	Proc Ref Datum		Text	Airport or landing threshold	APCH					
	PBN Requirements			Specific requirements related to a PBN procedure	PBN					
			Code list	Identification of the navigation specification (RNAV 5, PBN 0.3 ...)						
		Navigation specification	Text	Any navigation sensor limitations (GNSS required ...)						
	Functional requirements	Text	Any required functionalities that are described as options in the navigation specification, that is, not included in the core navigation specification (RF required ...)							
Procedure Segment					SID, STAR, APCH					
	Start		Text	Identification of the start point of the segment						
	End		Text	Identification of the end point or a description of the end of the segment						
	End fix functionality		Code list	Indication if the end fix is a fly-by point (A waypoint which requires turn anticipation to allow tangential interception of the next segment of a route or procedure) or fly-over point (A waypoint at which a turn is initiated in order to join the next segment of a route or procedure)	PBN					
	End fix role		Code list	Indication of the role of the end fix (MAPt, IF, IAF, FAF, MAHF...)						
	Procedure altitude/height		Altitude/Height	A specified altitude/height flown operationally a tor above the minimum altitude/height and established to accommodate a stabilized descent ata prescribed descent gradient/angle in the intermediate/final approach segment.	SID, STAR, APCH certain segments only	as specified in Doc 8168	essential			as specified in Doc 8168
	MOCA		Altitude	The minimum altitude for a defined segment that provides the required obstacle clearance.	SID, STAR, APCH					
	Distance		Distance	Geodesic distance to the nearest tenth of a kilometer or tenth of a nautical mile between each successive designated significant point;		1/100 km	essential	calculated	1/100 km or 1/100 NM	1 km or 1 NM
	True bearing		Bearing	True track to the nearest tenth of a degree to the nearest degree between each successive significant point;	SID, STAR, APCH	1/10 degree	routine	calculated	1/10 degree	1 degree
	Magnetic bearing		Bearing	Magnetic track to the nearest tenth of a degree to the nearest degree between each successive significant point;	SID, STAR, APCH	1/10 degree	routine	calculated	1 degree	1 degree
	Gradient		Value		APCH, DEP					
	Speed		Value	Speed limit at a significant point, expressed in units of 10 knots applicable						
	Controlling obstacle				APCH, DEP					
		Type	Text	Indication if the obstacle is lit/unlit, type of obstacle (church/windturbine,...)						
		Position	Point	Coordinates of the controlling obstacle		see obstacles				
		Elevation:	Elevation	Elevation of the top of the controlling obstacle		see obstacles				
Final Approach Segment				That segment of an instrument approach procedure in which alignment and descent for landing are accomplished.	SBAS APCH GBAS APCH					
	Operation type		Text	A number that indicates the type of the final approach segment (e.g "0" is coded for a straight-in approach procedure including offset procedures.)						
	Approach performance designator		Text	A number that identifies the type of an approach. ("0" is used to identify an LPV approach procedure and a "1" indicates a Category I approach procedure)						
	SBAS provider		Text	Identifier of a particular satellite-based approach system service provider	SBAS only					
	RPDS		Text	Reference path data selector (RPDS) - A numerical identifier that is unique on a frequency in the broadcast region and used to select the FAS data block.	GBAS only					
	RPI		Text	Reference Path Identifier - A four-character identifier that is used to confirm selection of the correct approach procedure.						
	LTP/FTP			Landing threshold point (LTP) or fictitious threshold point (FTP)						
		Position	Point	Latitude and Longitude of the LTP/FTP		0.3 m (1 ft)	critical		0.0005" (0.01")	
		Ellipsoid height	Elevation	The height of the LTP/FTP above the WGS-84 ellipsoid		0.25 m	critical		0.1 m	
		Orthometric height	Elevation	The height of the LTP/FTP as related to the geoid and presented as an MSL elevation						
	FPAP			Flight path alignment point (FPAP)						
		Position	Point	Latitude and Longitude of the FPAP		0.3 m (1 ft)	critical		0.0005" (0.01")	
		Orthometric height	Elevation	The height of the FPAP as related to the geoid and presented as an MSL elevation						
	TCH		Height	Approach Threshold Crossing Height (TCH) - The designated crossing height of the flight path angle above the LTP (or FTP).		0.5 m	critical	calculated	0.05 m	

	GPA		Value	Glide Path Angle (GPA) - The angle of the approach path (glide path) with respect to the horizontal plane defined according to WGS-84 at the LTP/FTP.		0.01°	N/A		0.01°	
	Course Width at threshold		Value	The semi-width of the lateral course width at the LTP/FTP, defining the lateral offset at which the receiver will achieve full-scale deflection.		N/A	critical		0.25 m	
	Delta Length Offset		Distance	The distance from the stop end of the runway to the FPAP.It defines the location where lateral sensitivity changes to the missed approach sensitivity.		N/A	N/A		8 m	
	HAL		Value	Horizontal Alert Limit	SBAS only					
	VAL		Value	Vertical Alert Limit	SBAS only					
	FAS Data Block		Text	Binary string describing the Final Approach Segment (FAS) data block generated with an appropriate software tool. The FAS data block is set of parameters to identify a single precision approach or APV and define its associated approach						
	CRC Remainder		Text	An 8-character hexadecimal representation of the calculated remainder bits used to determine the integrity of the FAS data block data during transmission and storage.						