Designated point type

Summary

In the CodeDesignatedPointType list of values, it is proposed to introduce dedicated entries for RNAV 5-alphanumeric terminal waypoint designators and for unnamed points identified by bearing/distance to other points .

Background

The "type" attribute of the DesignatedPoint indicates if the point has an ICAO 5 letter identifier or another kind of designator. The CodeDesignatedPointType data type provides the list of values for this attribute. Currently, it has the following entries:

- ICAO = ICAO 5 letter name code designator;
- COORD = Point with identifier derived from its geographical coordinates;
- CNF = Computer Navigation Fix - A point used for the purpose of defining the navigation track for an airborne computer system (i.e., GPS or FMS). CNFs include unnamed DME fixes, beginning and ending points of DME arcs and sensor final approach fixes (FAFs) on some GPS overlay approaches;
- DESIGNED = Designed Point - A computed point;
- MTR = Point used on a military training route
- OTHER.

Rationale for the change

RNAV waypoints for SID/STAR/Approach

According to the ICAO PANS-OPS document, RNAV SID/STAT/Approach waypoints shall be designated by either a unique, five-letter, pronounceable "name-code" or a five-alphanumeric name-code. The following principles apply:

" *a) waypoints shall be designated by a **five-alphanumeric name-code** only if they are used for waypoints unique to one aerodrome that has a properly assigned four-letter location indicator (in accordance with Doc 7910);*

*b) in the following cases a **unique, five-letter, pronounceable "name-code"**, in accordance with Annex 11, shall be applied:*
1) final waypoint of a SID;
2) initial waypoint of a STAR;
3) waypoints common to more than one terminal control area or used in a procedure common to more than one airport which are not used for en-route; and
4) waypoints for ATC purposes."

The category 'b)' of points mentioned above is what the CodeDesignatedPointType designates as "ICAO" type. But the enumerated list of values lacks an entry for points mentioned at item 'a)'. Such terminal waypoints do not have an ICAO 5-letter designator. Instead, they have an 5-character *alphanumeric* code, which is unique only in the terminal area.

When five-alphanumeric name-codes are used, the five-alphanumeric name-code should consist of no more than three numbers with the alphabetic characters being taken from the airport designator and shall be unique within

the terminal area in which it is used. As global uniqueness cannot be assured, all waypoints that have a five-alphanumeric name-code identifier should be clearly listed as terminal waypoints in the AIP.

The previous version AIXM 4.5 had a special "ADHP" type foreseen for such waypoints. It is proposed to re-introduce a similar value in AIXM 5 for this purpose, called "TERMINAL" points.

"Reference" points

There exist unnamed points that are located at a certain bearing/distance from a navaid and which may be used for flight planning or other navigation purpose. Their designator is composed by concatenation, using the navaid/waypoint designator followed by the distance in full nautical miles and the bearing in full degrees.

For such points, is it proposed to introduce a dedicated "BRG_DIST" value in the CodeDesignatedPointType list and to extend the length of the designator to maximum 5+3+3 = 11 characters. The designator of such points shall be composed following the rules for FMS databases, as detailed in ARINC 424. The full identifier+bearing+distance designator can be recorded using the name attribute.

Change proposal details

In the CodeDesignatedPointType list of values

- insert a new value "TERMINAL" = " *Point with a five-alphanumeric name-code, used as waypoint in RNAV procedures and which does not have a globally unique ICAO 5-letter designator.*"
- insert a new value "BRG_DIST" = " *Point with a five-alphanumeric name-code, composed according to the rules provided by the ARINC 424 Specification for unnamed bearing/distance reference waypoints. of eight to eleven characters, composed by the ICAO rules stated in DOC 4444, Appendix 2 (concatenating the designator of a reference significant point with 3 digits representing the bearing followed by 3 digits representing the distance in nautical miles .* "
- change the definition of the type "DESIGNED" = " *A point with bearing/distance designator used as control point for procedure design, which is not published.*"

In the DesignatedPoint:

- change the definition of the "type" attribute = " *The kind of point designator, indicating the rules by which the designator has been created.*"

Extend the maximum length of the CodeDesignatedPointDesignatorType to 11 characters.