

ARINC 424 NDB

**Draft 1 of Supplement 24
Proposal**

**Location St louis, Missouri
September 13-15, 2022**

ADD VPT RT QUAL 2 AND UPDATE PF RT QUAL NOTE FOR RNAV VISUAL PROCEDURE

V1.0

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SUMMARY
Add a new VPT RT Qual 2 to PF Rt qual table in 5.7. Also, clean up Note 2 in PF table in section 5.7

1.0 INTRODUCTION/ BACK GROUND

VPT (Visual Prescribed Tracks) procedures may start to become more prevalent as ICAO has now finalized a circular providing a framework around the design and implementation of VPT procedures. As of the writing of this proposal, the circular is in final draft state and is not yet published. While it is not new in France (ref LFMN), France will become the first state that appears to be using the circular guidance.

The procedure titles will be similar to other RNP based procedures with VPT in brackets at the end. Additionally, the procedures contain VPT minimums instead. The PBN Navspec for the IFR portion of the procedure may be RNP1. Regardless, during the IFR portion, the procedure will be a PBN procedure and only after passing the Visual Fix will the prescribed tracks be utilized (assuming mins are reached).

See section 5 for example of a proposed VPT procedure in France.

In addition to the VPT procedures, I would like to address note 2 as it pertains to qual 3 code “B” within this proposal.

2.0 DISCUSSION and or ACTION

I would like to propose the addition of a new “Procedure with VPT” qual 2. Originally, I thought this type of procedure may coded with a qual 2 of V, but the linking to a RNAV Visual in qual 3 based on note 10 made this less appealing. I thought about removing note 10, but then it loses the clarity and differentiation of a procedure with visual minimums and with a VPT procedure. While similar, they are different. No note needs to be associated to the new qual 2. This would then allow the usage of the VPT Qual in cases where the procedure has VPT but is not RNAV/RNP.

As part of the creation of this proposal to add VPT as a qual 2, I noticed note 2 on the “B” code within qual was not updated when the this was moved from Qual 1 to Qual 3. I would like to propose an update to note 2 which would clarify this Qual 3 is factored into the route type of R.

See the following page for 424-20 versus 424-23.

424-20:

Table 5-8 – Airport Approach (PF) and Heliport (HF) Records

Qualifier Description	Qualifier 1 Field Content (Note 1)	Qualifier 2 Field Content Note 2
RNAV Visual Procedure	B (Note 2)	
DME Required for Procedure	D (Note 5)	
GPS (GNSS) required, DME/DME to RNP xx.x not authorized	J (Note 2)	
RNP SAAAR/AR	F (Note 8)	
Advanced (RNAV RNP, SAAAR/AR not required)	A (Note 8)	
GBAS Procedure	L (Note 2)	
DME Not Required for Procedure	N (Note 5)	
GNSS Required	P	
GPS (GNSS) or DME/DME to RNP xx.x required	R (Note 2)	
DME/DME Required for Procedure	T (Note 2)	
RNAV, Sensor Not Specified	U (Note 2)	
VOR/DME RNAV	V (Note 2)	
RNAV Procedure that Requires FAS Data Block	W (Note 4)	
Primary Missed Approach		A (Note 6)
Secondary Missed Approach		B (Note 6)
Engine Out Missed Approach		E (Note 6)
Procedure with Circle-to-land Minimums		C (Note 3)
Helicopter with Straight-in Minimums		H (Note 6, 7)
Helicopter with Circle-to-land Minimums		I (Note 7)
Helicopter with Helicopter Landing Minimums		L (Note 6, 9)
Procedure with Straight-in Minimums		S
Procedure with VMC minimums		V (Note 10)

- Note 2: Route Type R is used for all types of RNAV procedure coding, excluding GLS and RNP Procedures that are coded as Route Type J and H. The type of RNAV Procedure is further defined through the content of Qualifier 1.
- Conventional Area Navigation Approach Procedures using RHO-RHO or RHO-THETA equipment are coded as Route Type R and Qualifier 1 of T or V.
 - GNSS based RNAV Approach Procedures are coded as Route Type R with Qualifier 1 set to J, R, **B**, or U as required by source publications and mapped to this table.

424-23:

Table 5-9 – Airport Approach (PF) and Heliport (HF) Records

Qualifier Description	Qualifier 1 Field Content (Note 1)	Qualifier 2 Field Content (Note 1)	Qualifier 3 Field Content (Note 1)
RNAV 1 PBN Nav Spec			X (Note 8)
RNP 1 PBN Nav Spec			E (Note 8)
RNP APCH PBN Nav Spec			H (Note 8)
RNP 0.3 PBN Nav Spec			G (Note 8)
A-RNP (Advance RNP) PBN Nav Spec			A (Note 8)
RNP AR PBN Nav Spec			F (Note 8)
RNAV Visual Procedure			B (Note 2)
DME Required for Procedure	D (Note 5)		
GPS (GNSS) required, DME/DME to RNP xx.x not authorized	J (Note 2)		
DME Not Required for Procedure	N (Note 5)		
GNSS Required	P (Note 2)		
GPS (GNSS) or DME/DME to RNP xx.x required	R (Note 2)		
DME/DME Required for Procedure	T (Note 2)		
RNAV or RNP, Sensor Not Specified	U (Note 2)		
VOR/DME RNAV	V (Note 2)		
Procedure that Requires SBAS FAS Data Block	W (Note 4)		
Primary Missed Approach		A (Note 6)	
Secondary Missed Approach		B (Note 6)	
Engine Out Missed Approach		E (Note 6)	
Procedure with Circle-to-land Minimums		C (Note 3)	
Helicopter with Straight-in Minimums		H (Note 6, 7)	
Helicopter with Circle-to-land Minimums		I (Note 7)	
Helicopter with Helicopter Landing Minimums		L (Note 6, 9)	
Procedure with Straight-in Minimums		S	
Procedure with VMC minimums		V (Note 10)	
PinS Procedure - Proceed Visually		W (Note 11)	
PinS Procedure - Proceed VFR		X (Note 11)	

- Note 2: Route Type R is used for all procedures titled RNAV. Route Type H is used for all types of RNP procedure coding titled RNP. The type of RNAV or RNP procedure is further defined through the content of Qualifier 1.
- Conventional Area Navigation Approach Procedures using RHO-RHO or RHO-THETA equipment are coded as Route Type H or R and Qualifier 1 of T or V.
 - GNSS based RNP Approach Procedures are coded as Route Type H or R with Qualifier 1 set to J, R, P, or U as required by source publications and mapped to this table.

3.0 Changes as depicted for 424-24 book

Table 5-9 – Airport Approach (PF) and Heliport (HF) Records

Qualifier Description	Qualifier 1 Field Content (Note 1)	Qualifier 2 Field Content (Note 1)	Qualifier 3 Field Content (Note1)
RNAV 1 PBN Nav Spec			X (Note 8)
RNP 1 PBN Nav Spec			E (Note 8)
RNP APCH PBN Nav Spec			H (Note 8)
RNP 0.3 PBN Nav Spec			G (Note 8)
A-RNP (Advance RNP) PBN Nav Spec			A (Note 8)
RNP AR PBN Nav Spec			F (Note 8)
RNAV Visual Procedure			B (Note 2)
DME Required for Procedure	D (Note 5)		
GPS (GNSS) required, DME/DME to RNP xx.x not authorized	J (Note 2)		
DME Not Required for Procedure	N (Note 5)		
GNSS Required	P (Note 2)		
GPS (GNSS) or DME/DME to RNP xx.x required	R (Note 2)		
DME/DME Required for Procedure	T (Note 2)		
RNAV or RNP, Sensor Not Specified	U (Note 2)		
VOR/DME RNAV	V (Note 2)		
Procedure that Requires SBAS FAS Data Block	W (Note 4)		
Primary Missed Approach		A (Note 6)	
Secondary Missed Approach		B (Note 6)	
Engine Out Missed Approach		E (Note 6)	
Procedure with Circle-to-land Minimums		C (Note 3)	
Helicopter with Straight-in Minimums		H (Note 6, 7)	
Helicopter with Circle-to-land Minimums		I (Note 7)	
Helicopter with Helicopter Landing Minimums		L (Note 6, 9)	
Procedure with Straight-in Minimums		S	
Procedure with VMC minimums		V (Note 10)	
Procedure with Visual Prescribed Tracks (VPT)		I	
PinS Procedure - Proceed Visually		W (Note 11)	
PinS Procedure - Proceed VFR		X (Note 11)	

Note 2: Route Type R is used for all procedures titled RNAV. Route Type H is used for all types of RNP procedure coding titled RNP. The type of RNAV or RNP procedure is further defined through the content of Qualifier 1.

- a. Conventional Area Navigation Approach Procedures using RHO-RHO or RHO-THETA equipment are coded as Route Type H or R and Qualifier 1 of T or V.
- b. GNSS based RNP Approach Procedures are coded as Route Type H or R with Qualifier 1 set to J, R, P, or U [and/or Qualifier 3 set to B](#) as required by source publications and mapped to this table.

4.0 Changes as depicted for 424 XML

Add new enumeration under ApproachQualifier2 in the Enumerations XSD.

```

<xs:enumeration value="VPT">
  <xs:annotation>
    <xs:documentation>Procedure with Visual Prescribed Tracks (VPT)
    </xs:documentation>
  </xs:annotation>
</xs:enumeration>
  
```

5.0 France proposed procedure example (disregard red question mark. Not relevant for this paper. Part of presentation from France I took this from)

