Visual Guided Approach
/
RNAV VISUAL

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PBN SG/2 Sharm El Sheikh, 22–25 February 2016
What is VGA / Rnav Vis?
- Definition
- Existing published procedures.

Do we need it?
- VGA within the framework of PBN & RNP AR Design

Way forward
- Existing guidelines and open questions.
- Conclusion and Recommended action by the meeting.
Advanced aircraft avionics integrating technologies such as GNSS & Baro Vnav that led to a significant improvement in lateral and vertical accuracy was the foundation for the PBN concept.

PBN has significantly improved Instrument Approach Procedure design. What about visual approach procedures?

ICAO guidelines on visual approach procedures (doc 8168 part II APP, chap 7 VPT+ doc 4444) remained unchanged.

Why not take advantage and make smart use of modern jets PBN capabilities in good weather conditions?
Why fly Visual

**Visual Approach benefits**

- Typical Vis. Pattern: 3nm final
- Efficient for operators and from ATM perspective
- Encouraged by many Airlines
- Requirements for manual flying; FAA SAFO 13002
- EASA SIB No: 2013-05

**Risks due to lack of guidance**

- Unstablized approach
- ATM perspective; Unpredictable flight path
Definitions

✓ **Visual approach.** An approach by an IFR flight when either part or all of an instrument approach procedure is not completed and the approach is executed in visual reference to terrain.

✓ **Visual approach procedure.** A series of predetermined manoeuvres by visual reference, from the initial approach fix, or where applicable, from the beginning of a defined arrival route to a point from which a landing can be completed and thereafter, if a landing is not completed, a go-around procedure can be carried out.

✓ **Visual Guided Approach.** A charted approach procedure requiring meteorological conditions as published on the chart to continue the approach after a published position. They are established at specific aerodromes for environmental/noise considerations or when necessary for safety and efficiency.

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PANS-ATM, Doc 4444
Annex 4
Proposed definition
VGA RNAV; A VGA approach procedure charted using area navigation waypoints and path terminators to 102 describe the arrival route.
What is VGA / Rnav Vis.

Published Procedures

VPT Public proced.

Vert. Guidance

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Published Procedures

What is VGA / Rnav Vis.

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Published Procedures
Details

Min. Track miles
What is VGA / Rnav Vis.

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Do we need it ??

PBN Merits;

✓ Better use of airspace.
✓ All what follows; route placement, fuel, environment, noise, etc..

RNP AR, the summit of PBN, can facilitate advances in ATM and can provide significant operational and safety benefits.

But what about the COST?

Implementation complexities?
IAP FAS Design

- **Doc 8168**
  - FAF Optimum length 5NM
  - Other than 5NM, Alignment, Dimensions and MOC will vary.
  - Specific criteria for each type of approach.
  - RNAV Y or T FAS segment 5NM

- **RNP AR Design**
  - FAS Alignment criteria including RF legs with FROP.
  - FROP min straight segment to LTP/FTP; the greater of 492ft or a min dist. to be calculated
Examples VGA vs RNP AR

VGA can simply be a shortcut from an existing instrument appch

No vert. guid. No missed appch
VGA / RNAV Vis.
Existing Regulatory Guidelines

Way Forward
Scope of existing guidelines and open questions

Efforts for a broad concept definition in terms of:

- Process of Development and Operational Approval
- Design Considerations
- Operational Considerations
- Equipment Requirements & Procedure Flyability/Validation
- Wx Requirements (Visibility & Ceiling)
- Charting and Naming
- Database and Waypoints

Guidance Documents

- FAA order 8260.55 3/8/2010
- ICAO OPSP/WG-WHL/16 WP/19 Montreal, 9 to 13 Dec 2013
- ICAO FLTOPSP/WG/2-WP18 ROME, 4 to 8 May 2015
- FLTOPSP/2-WP/10 Draft for Visual Guided Approaches and Manoeuvring with Prescribed Track CONOPS 2016
Conclusion

✓ Visual Approach is commonly used at many international airports.
✓ Operators & States are developing and publishing visual approach procedures supported by RNAV.
✓ VGA/ RNAV Vis. Improves the efficiency, predictability, repeatability and safety of these operations.
✓ Efforts to define and standardise the concept and it's use.
✓ VGA/ RNAV VIS can be defined as a new concept in between RNP AR and Visual approach in good WX.
✓ It is an effective cheap transition to RNP AR (Pilots & ATC training, local procedure design)
1. The meeting to get an update on the VGA work and time line from the concerned ICAO WG.

2. ICAO MID to adopt the concept and proceed in parallel to the concerned WG in order to use and integrate the ideas available in the guidance materials.
Thank you