Regional Seminar on MMEL/MEL and Special Operations

[Airbus Amber]

Organized by ICAO Regional Office for Western and Central Africa (WACAF)

Dakar - Senegal - from 30 June to 5 July 2025

RNP (VPT)
Visual Prescribed Tracks

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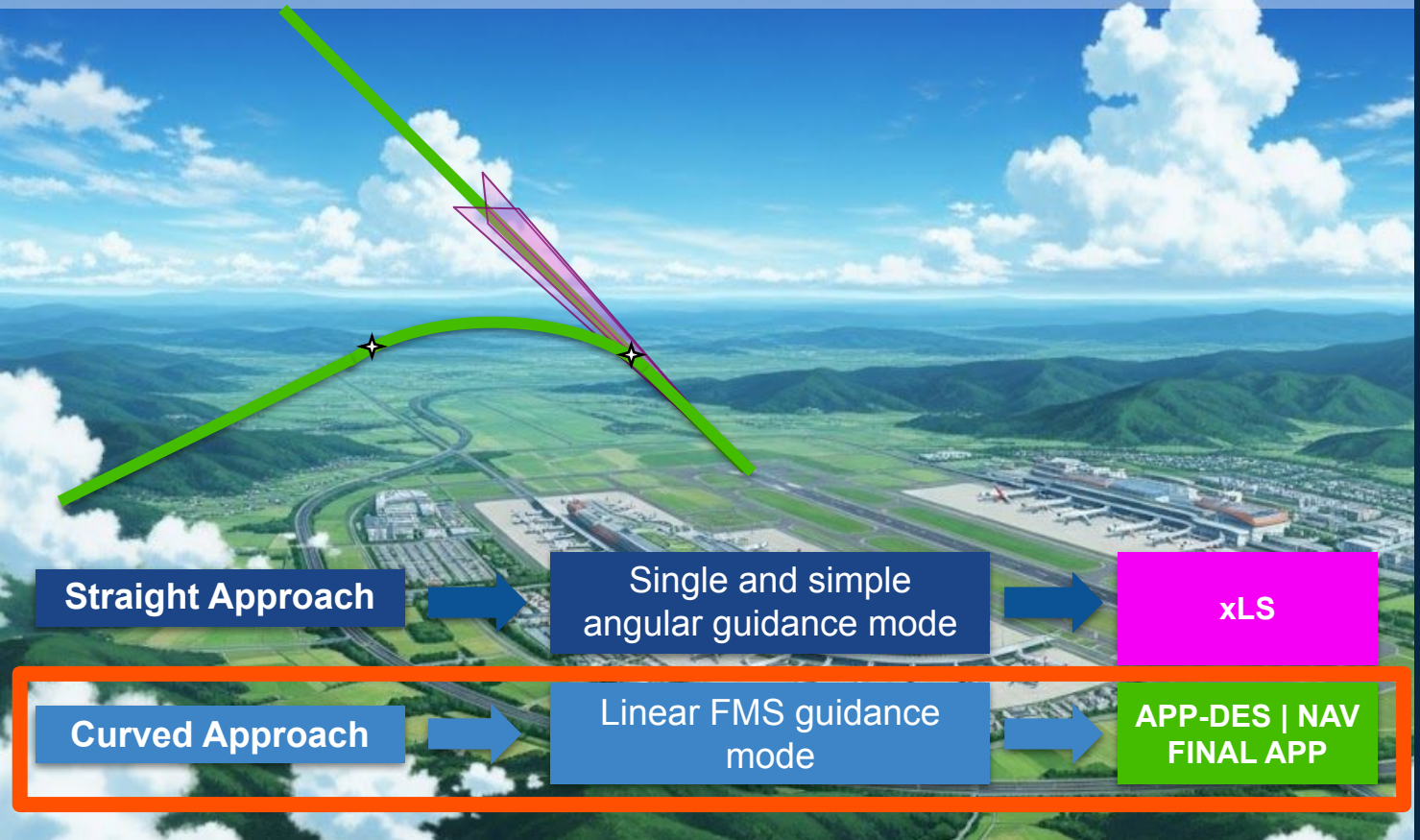
AIRBUS

Approach and landing strategy

Straight vs Curved approaches



Curved Approach - what's new?

RNP AR Procedures

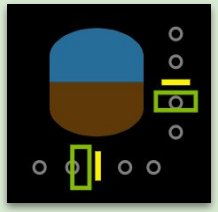
RNP(VPT)

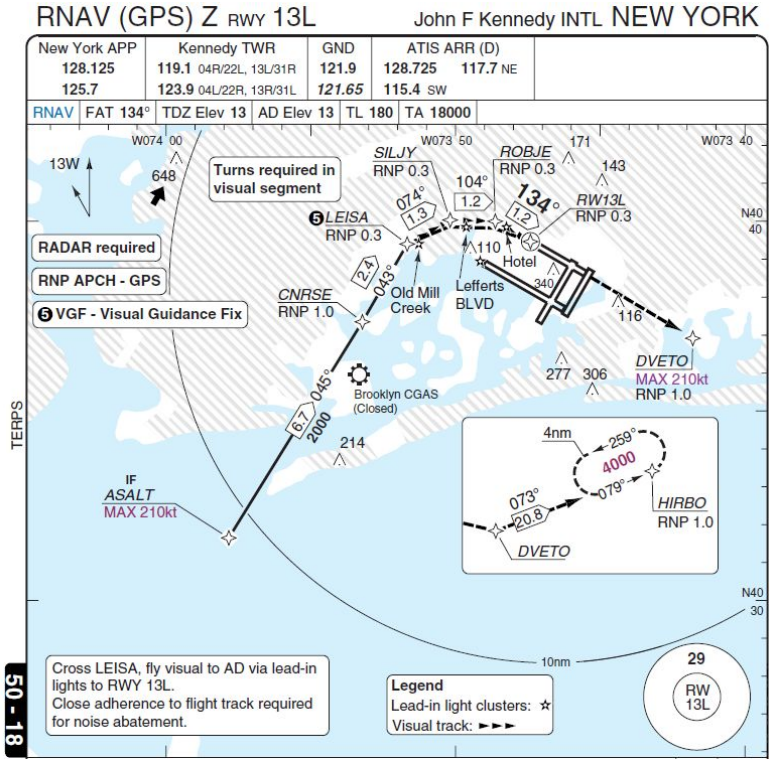
IMC Procedure (VOR/NDB/RNP APCH) followed by a Visual Prescribed Track

Linear FMS Guidance Mode

FINAL APP

APP-DES | NAV





New type of procedures to be covered

Visual Prescribed Track Introduction

[Airbus Amber]

Before RNP(VPT): RNAV Visual

[Airbus Amber]

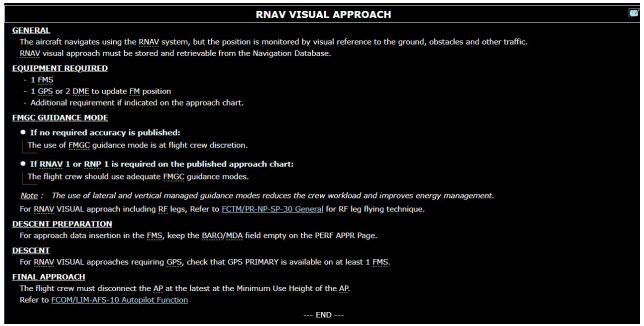
- No ICAO material
- No Airworthiness regulation
- No operational recommendations
- No harmonization for procedure design

→

No compliance status

or

Operational guidelines (e.g. guidance mode to be use)



RNAV VISUAL APPROACH

GENERAL

The aircraft navigates using the RNAV system, but the position is monitored by visual reference to the ground, obstacles and other traffic.
RNAV visual approach must be stored and retrievable from the Navigation Database.

EQUIPMENT REQUIRED

- 1 FMS
- 1 GPS or 2 DME to update FM position
- Additional requirement if indicated on the approach chart.

FMGC GUIDANCE MODE

- **If no required accuracy is published:**
  The use of FMGC guidance mode is at flight crew discretion.
- **If RNAV 1 or RNP 1 is required on the published approach chart:**
  The flight crew should use adequate FMGC guidance modes.

Note : The use of lateral and vertical managed guidance modes reduces the crew workload and improves energy management.

For RNAV VISUAL approach including RF legs, Refer to FCTM/PR-NP-SP-30 General for RF leg flying technique.

DESCENT PREPARATION

For approach data insertion in the FMS, keep the BARO/MDA field empty on the PERF APPR Page.

DESCENT

For RNAV VISUAL approaches requiring GPS, check that GPS PRIMARY is available on at least 1 FMS.

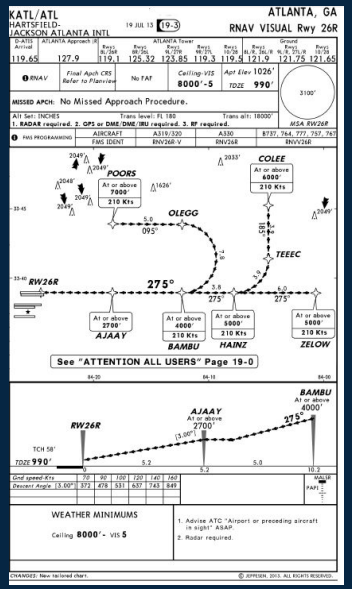
FINAL APPROACH

The flight crew must disconnect the AP at the latest at the Minimum Use Height of the AP.
Refer to FCOM/1/M-AFS-10 Autopilot Function

--- END ---

provides general information by not detailed SOPs

RNAV Visual



RNAV Visual **under the sole responsibility** of the operators and NAA

ICAO Circular 359

- ICAO released Circular 359 on RNP(VPT) concept
- Scope identical to former RNAV Visual
- Procedure design: identical to RNP AR
- ICAO circular provide a framework for SOPs and operational approval
- Operator should insure that Flight Crew are adequately trained on specificities of RNP(VPT) operations

RNP (VPT) Concept

ICAO Circular 359, RNP(VPT) vs OPP

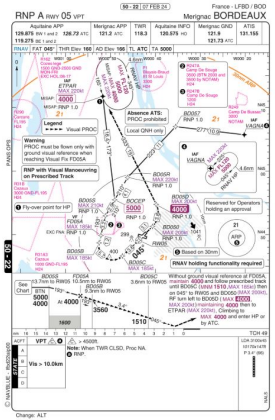
Published procedure RNP (VPT)

Created by ANSP with or without operator request

Specific Charting RNP(VPT)

Subject to ATC clearance

Based on RNP AR procedure design



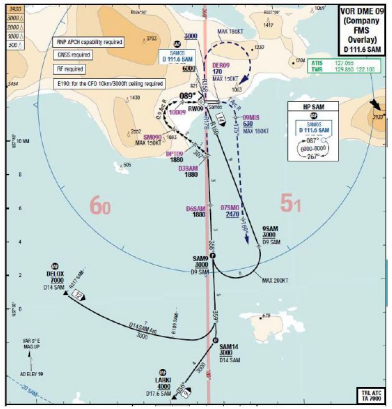
Operator Proprietary Procedures (OPP)

Operator procedure, internal use

RNAV Overlay of existing procedure

Facilitate complex visual maneuvers

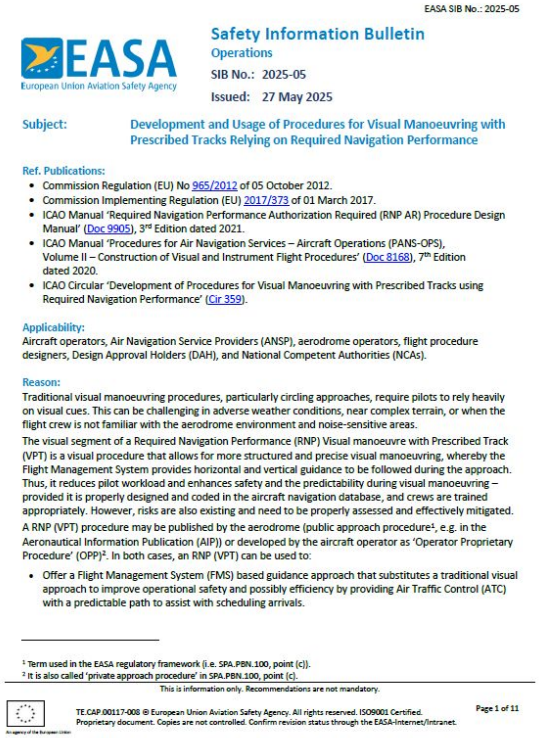
No Specific ATC clearance



RNP (VPT) Concept

EASA Safety Information Bulletin on VPT

- **Recommend conversion RNAV Visual to RNP(VPT)**
- **Risk assessment required by operator**
- **A/C capability for non RNP AR A/C**
- **SOPs adapted to the procedure**
- **Provide a Procedure evaluation Checklist for operator**



EASA SIB No.: 2025-05

EASA
European Union Aviation Safety Agency

Safety Information Bulletin
Operations
SIB No.: 2025-05
Issued: 27 May 2025

Subject: Development and Usage of Procedures for Visual Manoeuvring with Prescribed Tracks Relying on Required Navigation Performance

Ref. Publications:

- Commission Regulation (EU) No 965/2012 of 05 October 2012.
- Commission Implementing Regulation (EU) 2017/373 of 01 March 2017.
- ICAO Manual 'Required Navigation Performance Authorization Required (RNP AR) Procedure Design Manual' (Doc 9905), 3rd Edition dated 2021.
- ICAO Manual 'Procedures for Air Navigation Services – Aircraft Operations (PANS-OPS), Volume II – Construction of Visual and Instrument Flight Procedures' (Doc 8168), 7th Edition dated 2020.
- ICAO Circular 'Development of Procedures for Visual Manoeuvring with Prescribed Tracks using Required Navigation Performance' (Cir 359).

Applicability:
Aircraft operators, Air Navigation Service Providers (ANSP), aerodrome operators, flight procedure designers, Design Approval Holders (DAH), and National Competent Authorities (NCAs).

Reason:
Traditional visual manoeuvring procedures, particularly circling approaches, require pilots to rely heavily on visual cues. This can be challenging in adverse weather conditions, near complex terrain, or when the flight crew is not familiar with the aerodrome environment and noise-sensitive areas.

The visual segment of a Required Navigation Performance (RNP) Visual manoeuvre with Prescribed Track (VPT) is a visual procedure that allows for more structured and precise visual manoeuvring, whereby the Flight Management System provides horizontal and vertical guidance to be followed during the approach. Thus, it reduces pilot workload and enhances safety and the predictability during visual manoeuvring – provided it is properly designed and coded in the aircraft navigation database, and crews are trained appropriately. However, risks are also existing and need to be properly assessed and effectively mitigated.

A RNP (VPT) procedure may be published by the aerodrome (public approach procedure[1], e.g. in the Aeronautical Information Publication (AIP)) or developed by the aircraft operator as 'Operator Proprietary Procedure' (OPP)[2]. In both cases, an RNP (VPT) can be used to:

- Offer a Flight Management System (FMS) based guidance approach that substitutes a traditional visual approach to improve operational safety and possibly efficiency by providing Air Traffic Control (ATC) with a predictable path to assist with scheduling arrivals.

[1] Term used in the EASA regulatory framework (i.e. SPA.PBN.100, point (c)).
[2] It is also called 'private approach procedure' in SPA.PBN.100, point (c).

This is information only. Recommendations are not mandatory.

SIB 2025-05 published in May 2025

[Airbus Amber]

RNP(VPT): trajectory based on RNP AR criteria

IMC part of the procedure **RNP 1 criteria**

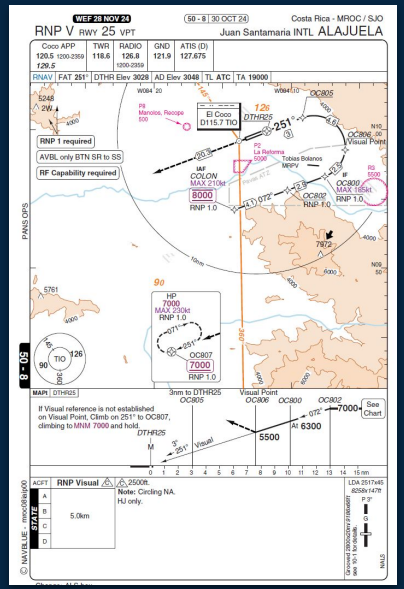
Visual Fix (VF)

IMC
Missed Approach

Visual procedure coded
in the same procedure

RNP AR procedure design

RNP (VPT) concept



Airbus A/C capability

No A/W regulation → No AFM Statement of compliance

RNP AR like trajectory with RF → The FMS should be able to decode and follow the trajectory

RNP(VPT) available on

A350XWB

A330

A320

equipped with FMS R1A and subsequent

No RNP AR capability / ops approval required

studies on going for A300, A380 and A220

Airbus A/C capability

RNP(VPT) Flight Operation Documentation Impact

AFM

No change ⇒ no A/W regulation, compliance with **RNP 1, RNP APCH, RF** already available

MMEL

No change ⇒ Aligned with IFR part

FCOM

Cross reference table

SOPs

use of FINAL APP for final descent

Visual Point

Monitoring / Management of degraded Navigation

Task Sharing

FCTM

Use of existing techniques for **approach using FINAL APP Guidance** and **use of RF legs**

Only FCOM change

FCOM introduction:
A350 ⇒ Oct 2025
A320/330/340 ⇒ Nov 2025

RNP(VPT) SOPs

Based on SOPs FINAL APP

New SOP

APPROACH USING FINAL APP GUIDANCE FOR RNP(VPT)

GENERAL

RNP(VPT) are instrument flight procedures composed of an instrument path followed by a visual path defined by waypoints.
On the visual path, the aircraft navigates using the RNAV system, but the position is monitored by visual reference to the ground, obstacles and other traffic.
RNP(VPT) approach must be stored and retrievable from the Navigation Database.
The following items are to be performed in addition to previous SOP chapters in the case of RNP(VPT) approaches using FINAL APP function
The procedures of the paragraph below are generic guidelines for RNP(VPT) approaches. These procedures may be tailored by the airline for specific airfields according to their OPS approval.

RNP(VPT) in FCOM

RNP(VPT) SOPs

Based on SOPs FINAL APP

Minimum equipment to start

AIRCRAFT EQUIPMENT
- One FMGC
- Two IRS
- One MCDU
- One FD
- One PFD on the PF side
- Two NDs (the temporary display of ND information via the PFD/ND switch is permitted on PM side)
- Two FCU channels.
- 1 GPS or 1 DME receiver to update FM position

Additional requirement if indicated on the approach chart.

RNP(VPT) in FCOM

[Airbus Amber]

RNP(VPT) SOPs

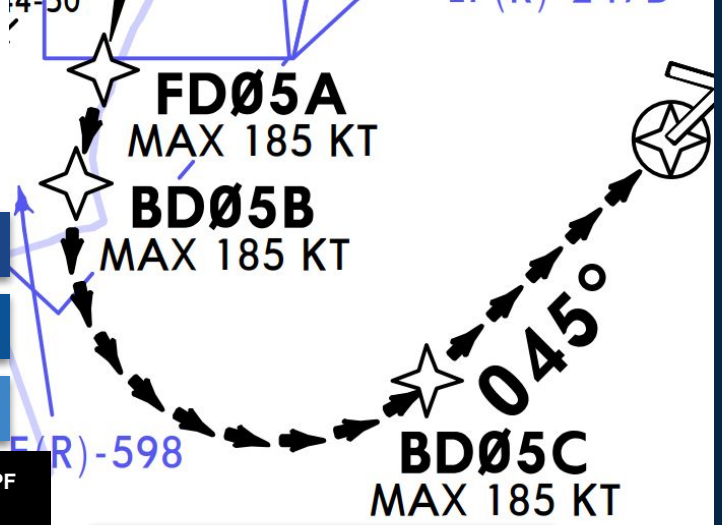
Based on SOPs FINAL APP

Minimum equipment to start

Specific Highlight on Visual Fix detection

GO-AROUND STRATEGY **REVIEW | PF**

The arrival briefing should include a review of the "Management of Degraded Equipment" chapter.
The identification of the Visual Fix point and the required visual reference at and from the Visual Fix point are to be included in the briefing.



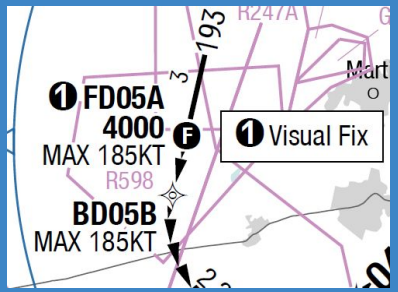
Arrow symbols for visual part

RNP(VPT) in FCOM

NAVBLUE chart

Warning
PROC must be flown only with ground visual reference when reaching Visual Fix FD05A

LIDO chart



JEPPESEN chart

VISUAL	Final Apch Crs **045°**

FDØ5A MANDATORY **4000′** (3840′)	No MDA(H) published

RNP(VPT) SOPs

- Based on SOPs FINAL APP
- Minimum equipment to start
- Specific Highlight on Visual Fix detection
- If coexistence: FLS Manual deselection required

RNP(VPT) in FCOM

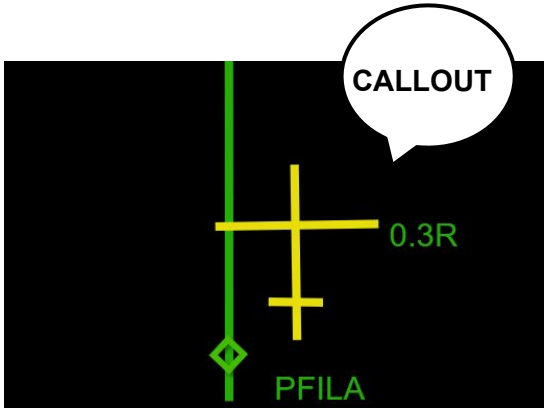
RNP(VPT) SOPs

- Based on SOPs FINAL APP
- Minimum equipment to start
- Specific Highlight on Visual Fix detection
- If coexistence: FLS Manual deselection required
- BARO field kept empty

RNP(VPT) in FCOM

RNP(VPT) SOPs

- Based on SOPs FINAL APP
- Minimum equipment to start
- Specific Highlight on Visual Fix detection
- If coexistence: FLS Manual deselection required
- BARO field kept empty
- Management of degraded navigation



NAV FM/GPS POS DISAGREE

NAV ACCUR DOWNGRAD

Go-around at flight crew discretion

depending on the circumstances

RNP(VPT) in FCOM

RNP(VPT) Operational Approval

A/C capability	Flyability check for non RNP AR A/C
Chart evaluation	Naming / requirements
Operational procedures: Normal, abnormal	OM updated based on FCOM
Operational procedure: Contingency	Adapted to the location if required
Flight crew training	Training lighter for RNP AR qualified crews
Monitoring program management	FDA, PIREP and reportable list

OPS APPROVAL DOSSIER SUBMITTED TO NAA*

Generic Operational approval, not specific

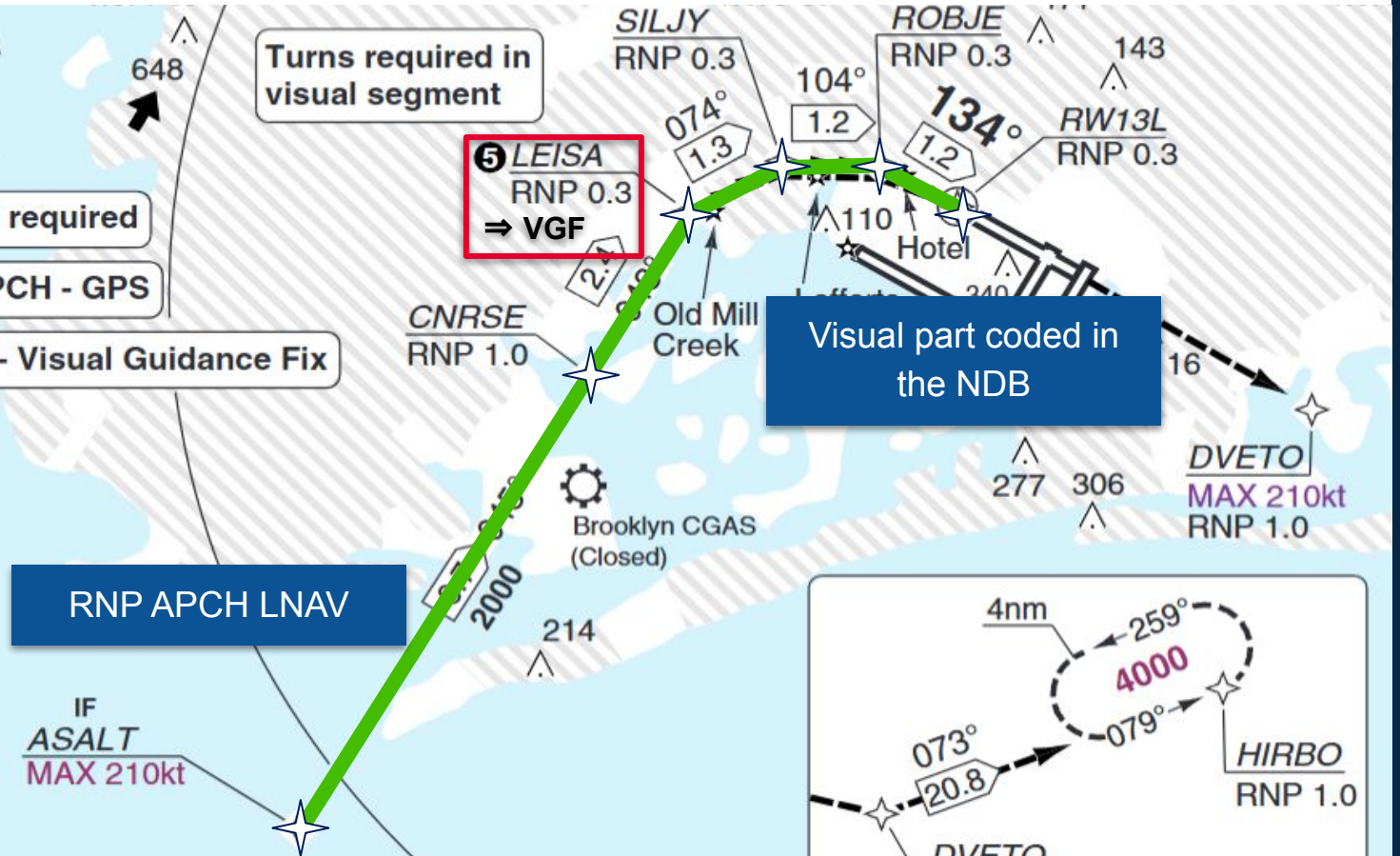
Airbus provides SOPs to help Operator

RNP(VPT) Ops Approval

Under operator responsibility

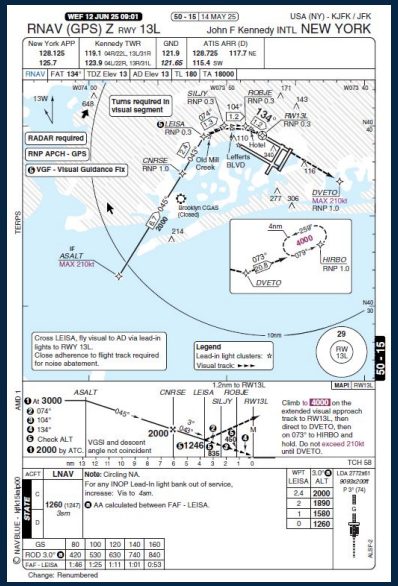
*Depending on NAA

VPT after a conventional procedure



KJFK

RNAV(GPS) 13L-Z



VPT after a RNP, VOR or NDB procedure

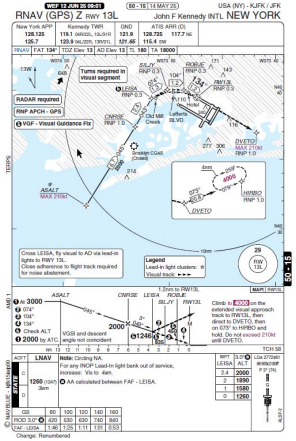
Published as such

Created by ANSP with or without operator request

Specific Charting RNP or VOR with suffix

Subject to specific ATC clearance

Visual part already coded in NDB



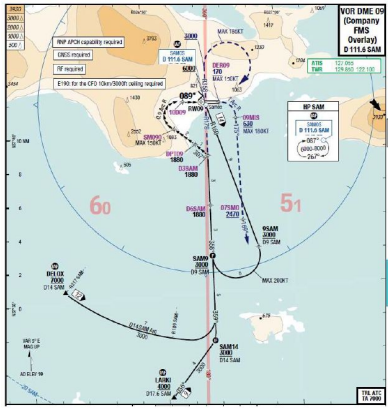
Operator Proprietary Procedures (OPP)

Operator procedure, internal use

RNAV Overlay of existing procedure

Coded to be done by Operator

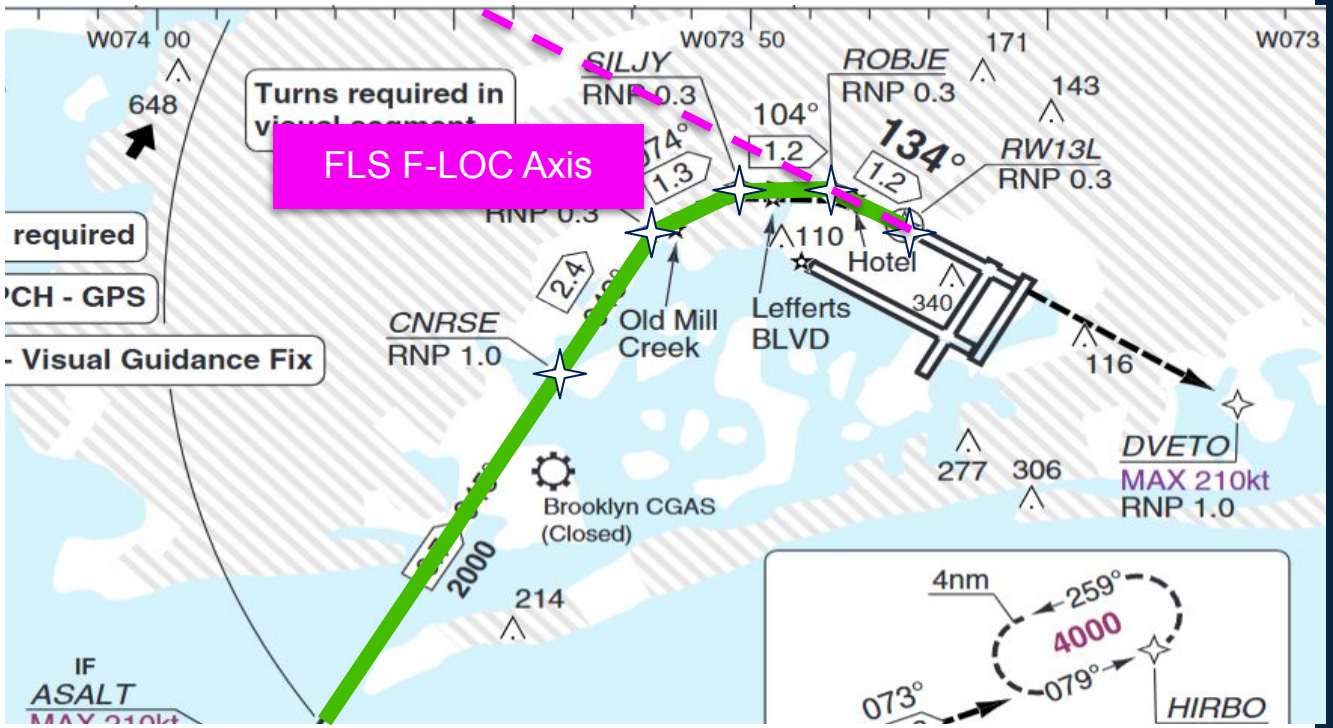
No Specific ATC clearance



Published procedure vs OPP

Under operator sole responsibility

SOPs - available guidance mode



FLS not appropriate

Use **FINAL APP**
Or **APP-DES | NAV**

SOPs

SOPs - available guidance mode

A330

A320

APPROACH USING FINAL APP GUIDANCE

GENERAL

The following items are to be performed in addition to previous SOP chapters in the following cases:
- RNAV(GNSS) approaches with LNAV and LNAV/VNAV minima
- Conventional approaches based on VOR or NDB using FINAL APP guidance.

Note : For RNAV(RNP), Refer to APPR using FINAL APP for RNAV(RNP)

AIRCRAFT EQUIPMENT

For RNAV(GNSS) approaches, Refer to FCOM/PRO-SPO-51 RNP APCH / RNAV(GNSS) - Required RNP APCH Equipment

Current FINAL APP SOPs can be used

FINAL APP selection required when coexistence

AP/FD provides guidance below the minima

AP must be disconnected at MUH = 250ft

SOPs On A320 & A330

Also applicable A340

SOPs - available guidance mode

A350 XWB

CROSS-REFERENCE TABLE

This table provides Guidance Modes that may be used depending on the Approach Types.

	Guidance Modes per Approach Types				
	XLS	NAV - APP DES	LOC FPA or LOC B/C FPA	NAV FPA	TRK FPA
ILS GLS	Refer to APPR using XLS	N/A	N/A	N/A	N/A
LOC ILS G/S OUT LOC B/C	Refer to APPR using XLS (1	N/A	Refer to APPR using FPA Guidance	N/A	N/A
RNP or RNAV(GNSS) with LNAV minima	Refer to APPR using XLS (1	Not authorized	N/A	Refer to APPR using FPA Guidance	Not authorized
RNP or RNAV(GNSS) with LNAV/VNAV minima	Refer to APPR using XLS	Not authorized	N/A	Not authorized	Not authorized
RNP or RNAV(GNSS) with LPV minima (with SLS option)	Refer to APPR using XLS	Not authorized	N/A	Not authorized	Not authorized
RNP or RNAV(GNSS) with LP minima (with SLS option)	Not authorized	Not authorized	Refer to APPR using FPA Guidance	Not authorized	Not authorized
RNP(AR) or RNAV(RNP) approach	Not authorized	Refer to APPR using APP DES	N/A	Not authorized	Not authorized
VOR VOR-DME NDB (with ADF option) NDB-DME (with ADF option)	Refer to APPR using XLS (1	Not authorized	N/A	Refer to APPR using FPA Guidance	Refer to APPR using FPA Guidance

(1) The XLS is the recommended guidance mode for this type of approach.

For Visual Approach, Refer to FCOM/PRO-NOR-SOP-180-C Visual Approach - General.
For Circling Approach, Refer to FCOM/PRO-NOR-SOP-180-C Circling Approach - General.

--- END ---

APP-DES only for RNP AR

New SOP Required

SOPs on A350

APP-DES outside RNP AR Documentation Impact

AFM	**AMC 20-27 compliance for APP-DES | NAV for RNP APCH LNAV**
MMEL	**No change**
FCOM	**Remove limitation of use of APP-DES** **Cross reference table** **SOP Use of APP-DES for RNP LNAV, VOR and NDB** **Task Sharing**
FCTM	Use of existing techniques for **approach using APP-DES Guidance** and **use of RF legs**

AFM + FCOM changes A350

[Airbus Amber]

FCOM introduction:
A350 ⇒ Oct 2025

SOPs - available guidance mode

New SOP

SOPs on A350

A350 XWB

APPROACH USING APP-DES GUIDANCE FOR RNP APCH with LNAV, VOR AND NDB

GENERAL

The following items are to be performed in addition to previous SOP chapters in the following cases:

- RNP APCH approaches with LNAV minima using APP-DES | NAV function
- Conventional approaches based on VOR or NDB using APP-DES | NAV function

The preferred guidance mode for these approaches is FLS, APP-DES|NAV can be used if FLS is not suitable (geometry).

Note : For RNAV(RNP), Refer to APPR using FINAL APP for RNAV(RNP)

AIRCRAFT EQUIPMENT

For RNP APCH approaches, Refer to FCOM/PRO-SPO-51 RNP APCH - Required RNP APCH Equipment

FLS deselection on POS/NAVAIDS page

AP/FD provides guidance below the minima

AP must be disconnected at MUH = 200ft

VPT after a RNP, VOR or NDB procedure

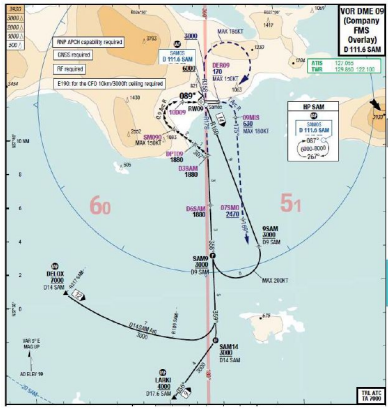
Operator Proprietary Procedures (OPP)

Operator procedure, internal use

RNAV Overlay of existing procedure

Coded to be done by Operator

No Specific ATC clearance

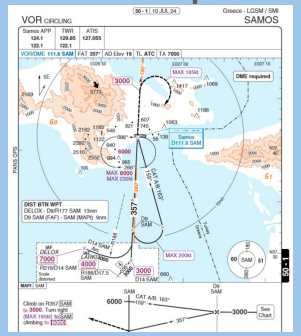


Published procedure vs OPP

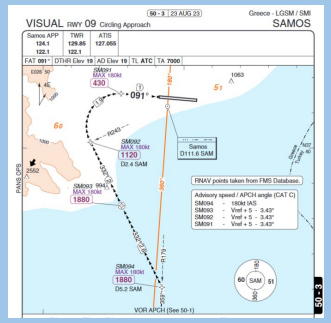
Under operator sole responsibility

Operator Proprietary Procedure

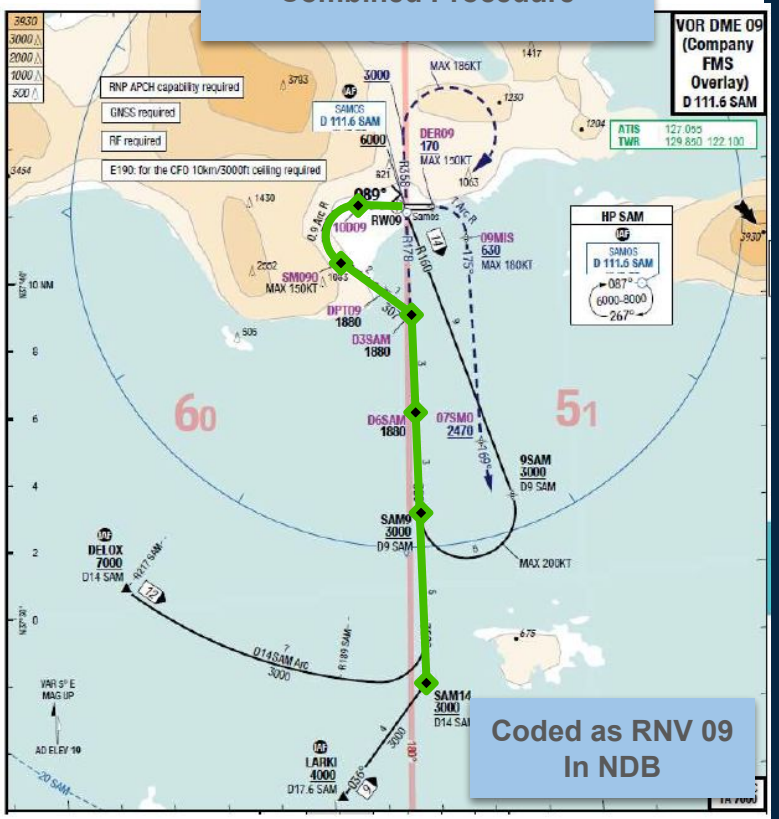
Published VOR procedure



Published Visual procedure



Combined Procedure



OPP Example

Under operator sole responsibility

OPPs Operational Approval

A/C capability	Flyability check
Overlay + Visual map existing charted procedures	Chart evaluation
Operational procedures: Normal	Procedure for the Visual part must be adapted, particularly guidance mode to be used (no managed on circling)
Operational procedure: abnormal and contingency	
Flight crew training	Training lighter for RNP AR qualified crews
Monitoring program management	FDA, PIREP and reportable list

OPS APPROVAL DOSSIER SUBMITTED TO NAA

Generic Operational approval, not specific

Airbus cannot provide adequate SOPs for all procedures

Operator must adapt and assess the procedures

OPP Ops Approval

Under operator sole responsibility

Depending on NAA

Threats of Visual Prescribed Track

Identification of the VF

Burst of minima / VF

Loss of visual reference in the visual part

AP OFF/FD ON on visual part ⇒ PF focussed on FD bars and not on obstacle clearance

Possible double missed approaches trajectory

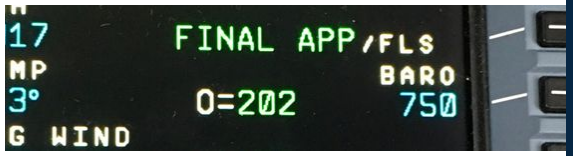
OPP and Circling :
- **Vertical trajectory not on a constant FPA**
- **Lateral trajectory not necessary in accordance with A/C capability**
- **Certification of the Procedure designer**
- **Representativity of flyability Check (FMS standard / A/C)**

Threats

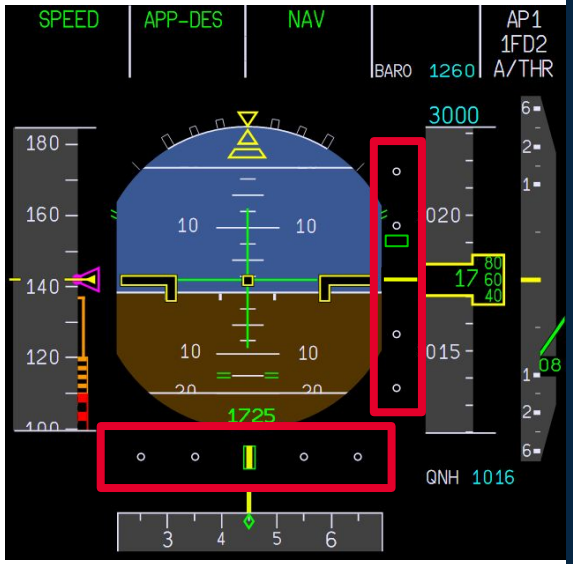
Evolutions in the Future

Specific tag for RNP(VPT)

Automatic selection of FINAL APP



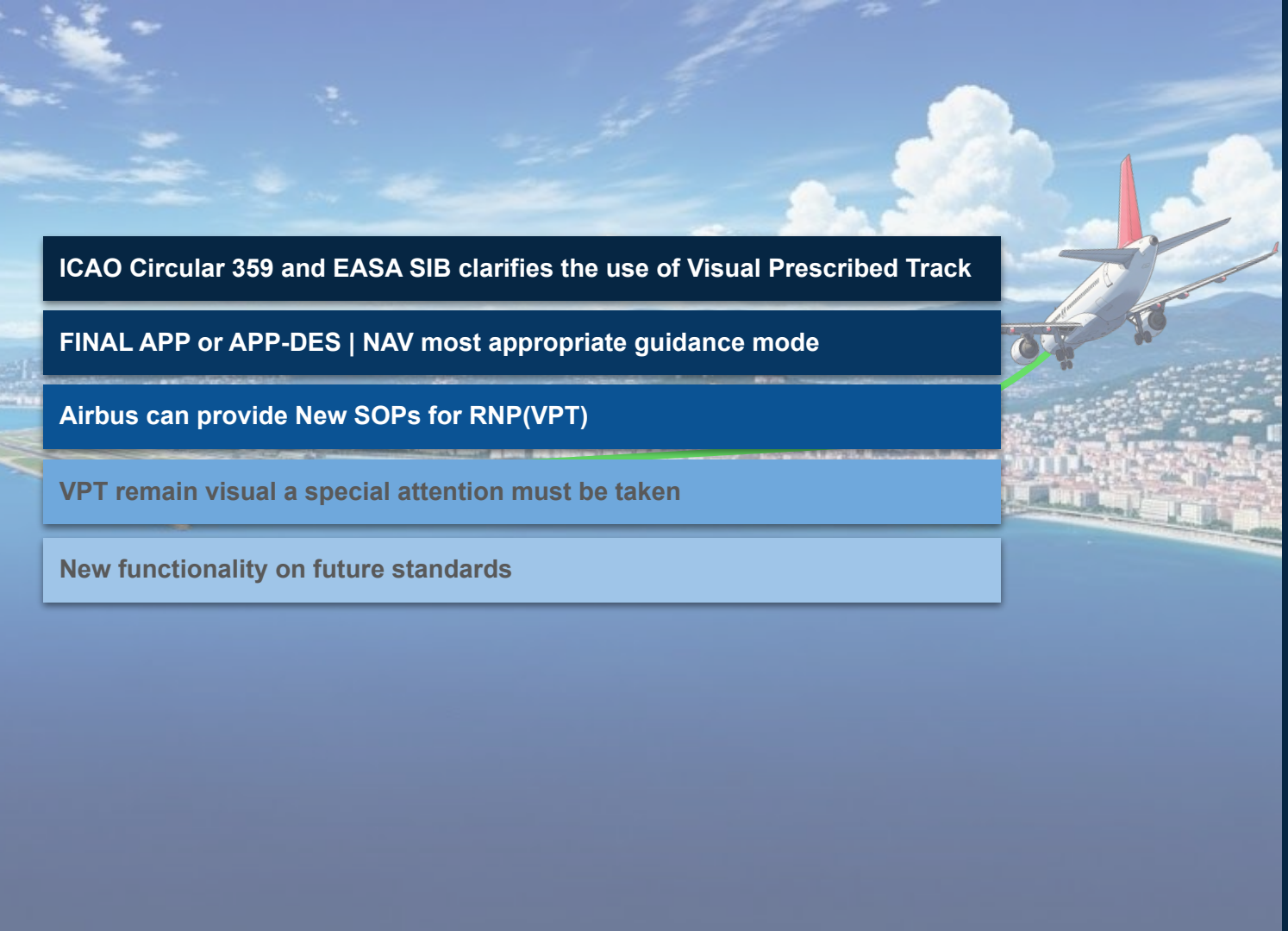
Display of L/DEV and V/DEV bricks as soon as FINAL APP or APP-DES | NAV is selected



Excess deviations
- **flashing of bricks**
- **pulsing of XTK on ND**

The Future

Conclusion



- ICAO Circular 359 and EASA SIB clarifies the use of Visual Prescribed Track
- FINAL APP or APP-DES | NAV most appropriate guidance mode
- Airbus can provide New SOPs for RNP(VPT)
- VPT remain visual a special attention must be taken
- New functionality on future standards

Thank you

AIRBUS