



NAV10 — RNP Approach Procedures to instrument RWY

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Implement RNP Approach procedures with vertical guidance . The intention is to transition from conventional Non Precision Approach (NPA) procedures to RNP approach procedures with vertical guidance. RNP approach operations with vertical guidance using SBAS are flown to LPV minima, while the operations using Baro are flown to LNAV/VNAV minima. In addition, RNP approach operations using SBAS can be flown to LNAV/VNAV minima. The main incentive is to enhance safety but there are potential benefits in terms of reduced minima and better access to airports that do not have precision approach and landing capabilities.

This objective is in line with Regulation (EU) 2018/1048 on PBN. It also supports the Performance Based Navigation implementation and harmonisation strategy of the ICAO European Region. Individual ANSPs, airports and aircraft operators in ECAC area (in non-EU member states) should implement this functionality based on ICAO 37th Assembly resolution which recommends implementation of RNP approaches with vertical guidance to all instrument RWY ends.

At instrument runway ends where, due to terrain, obstacles or air traffic separation conditions, the implementation of RNP approach procedures to LNAV/VNAV and LPV minima is excessively difficult or not feasible, providers of ATM/ANS shall implement RNP Non-precision approach procedures (NPA) in accordance with the requirements of the RNP APCH specification, down to LNAV minima (See SLoA-ASP06 in this objective).

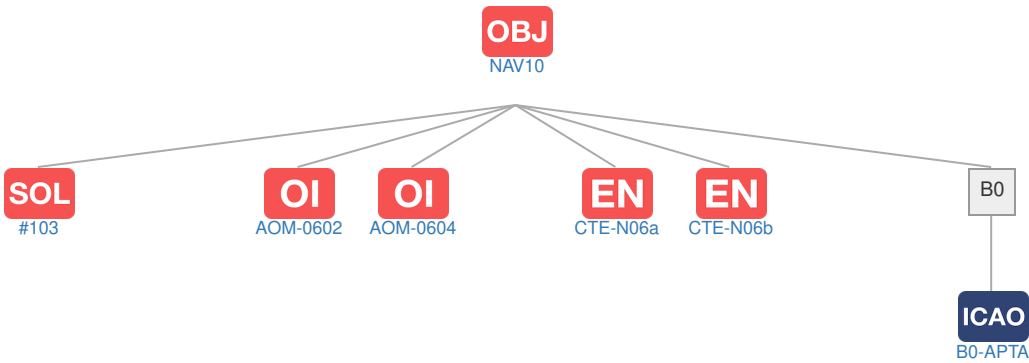
NOTE: The implementation of RNP approach procedures based on SBAS may be restricted by the coverage limitation of EGNOS satellite signal within the concerned airspace.

NOTE FOR MILITARY AUTHORITIES: It is the responsibility of each military authority to review this Objective IN ITS ENTIRETY and address each of the SLoAs that the military authority considers RELEVANT for itself. This has to be done on top and above of the review of "MIL" SLoAs which identify actions EXCLUSIVE to military authorities.

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|--------------|--|
| Edition | 2022 |
| Stakeholders | Regulator / Air Navigation Service Provider / Airspace Users |
| Type | SES |
| Scope | ECAC+ |
| Status | Active |

Context

Related Elements



Applicability Area(s) and Timescales

Applicability Area 1:

All EU SES States except: Maastricht UAC
(EU SES states instrument RWY ends.)

Applicability Area 2:

Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Georgia, Israel, Moldova, Montenegro, Morocco, North Macedonia, Serbia, Türkiye, Ukraine, United Kingdom
(Other ECAC+ instrument RWY ends, which are not listed in Applicability Area 1.)

| Timescales | From | By | Applicable to |
|--|------------|------------|---|
| Initial operational capability | 01-06-2011 | - | Applicability Area 1 + Applicability Area 2 |
| Instrument RWY ends without precision approach in EU SES States. | - | 03-12-2020 | Applicability Area 1 |
| Instrument RWY ends without precision approach at other ECAC+ instrument RWYs. | - | 25-01-2024 | Applicability Area 2 |
| Instrument RWY ends served by precision approach. | - | 25-01-2024 | Applicability Area 1 + Applicability Area 2 |

Links to ATM Master Plan Level 2

OI Operational Improvement Steps

| Code | Title | IOC | FOC | Related Elements |
|----------|---|------------|------------|--|
| AOM-0602 | Enhanced terminal operations with APV using Barometric VNAV | 31-12-2020 | 31-12-2024 | SOL OI EN OBJ DS ICAO |
| AOM-0604 | Enhanced terminal operations with LPV using SBAS | 19-10-2022 | 31-12-2026 | SOL OI EN OBJ DS ICAO |

EN Enablers

| Code | Title | IOC | Related Elements |
|----------|--------------|------------|--|
| CTE-N06a | EGNOS V2.4.X | 31-12-2020 | OI EN OBJ DS |
| CTE-N06b | EGNOS V3 | 31-12-2023 | OI EN OBJ DS |

SOL Links to SESAR Solutions

| Code | Title | Program | Related Elements |
|------|---|---------|--|
| #103 | LPV approaches using SBAS as alternative to ILS CAT I | SESAR1 | OI OBJ DS EOC ICAO |



Links to PCP ATM Sub-Functionalities

| Code | Title | Related Elements |
|-----------------|-------|------------------|
| No record found | | |



ICAO Block Modules

| Designator | Title | Related Elements |
|------------|--------------------------------|---------------------------------|
| B0 | | |
| B0-APTA | Improved Airport Accessibility | SOL OI OBJ |

References

Applicable legislation

Commission Implementing Regulation (EU) 2018/1048 of 18 July 2018 laying down airspace usage requirements and operating procedures concerning performance-based navigation

Applicable ICAO Annexes and other references

None

Deployment Programme 2022

-

Operating Environments

Airport

Terminal Airspace

Expected Performance Benefits

| | |
|-------------------------------|--|
| Safety | Reduction in Controlled Flight Into Terrain (CFIT) occurrences. Improved pilot situation awareness and reduced crew workload. |
| Capacity | Potential to enhance capacity due to lower minima than can be achieved through conventional NPA. |
| Operational efficiency | Improved thanks to shortened approaches, increased flexibility in the use of runways, reduced landing minima for runways with only conventional NPAs, fallback during precision approach system outages. |
| Cost efficiency | - |
| Environment | Emissions and noise nuisance reduced by use of optimal flight procedures and routings and the elimination of step-down approach procedures. |
| Security | - |

Stakeholder Lines of Action

| Code | Title | From | By | Related Enablers |
|-------|---|------------|--------------------------|------------------|
| REG01 | Apply EASA material to local national regulatory activities | 01-06-2010 | 25-01-2024 | |
| REG02 | Verify the transition plan for PBN in ANS provision | 03-12-2020 | 25-01-2024 | |
| ASP01 | Design and Publish RNP approach procedures to LNAV, LNAV/VNAV and LPV minima to RWYs served by precision approach | 01-06-2008 | 25-01-2024 | EN |
| ASP02 | Provide an approved SBAS Service to support APV/SBAS and declare the Service area | FINALISED | | |
| ASP03 | Develop National safety case for RNP approach down to LNAV/VNAV and LPV minima | 01-01-2009 | 25-01-2024 | |
| ASP04 | Publish in AIPs all coordinates data in WGS-84 in accordance with ICAO Annex 15 requirements and Article 14 of Regulation (EU) No 73/2010 | 01-01-2009 | 25-01-2024 | |
| ASP05 | Design and Publish RNP approach procedures to LNAV, LNAV/VNAV and LPV minima to RWYs without precision approach | 07-08-2018 | 03-12-2020 25-01-2024 | |
| ASP06 | Design and Publish RNP non-precision (NPA) approach procedures to LNAV minima | 07-08-2018 | 03-12-2020 25-01-2024 | |
| ASP07 | Establish the transition plan for PBN in ANS provision | 03-12-2020 | 25-01-2024 | |
| ASP08 | At PCP airport, Design and Publish RNP approach procedures to LNAV, LNAV/VNAV and LPV minima to RWYs without precision approach | DELETED | | |
| ASP09 | At PCP airport, Design and Publish RNP non-precision (NPA) approach procedures to LNAV minima | DELETED | | |
| USE01 | Equip aircraft with systems approved for RNP approach down to LNAV/VNAV and/or LPV minima operations | 01-04-2006 | 25-01-2024 | EN |
| USE02 | Get airworthiness certification and operational approval | 01-04-2006 | 25-01-2024 | |

Supporting Material

| Title | Related SLoAs |
|---|---|
| EASA - AMC 20-27 - Airworthiness Approval and Operational Criteria for RNP APPROACH (RNP APCH) Operations Including APV BARO- NAV Operations - ED Decision 2009/019/R / 12/2009 https://www.easa.europa.eu/agency-measures/docs/agency-decisions/2009/2009-019-R/Annex%20III%20-%20AMC%2020-27.pdf | REG01, USE01, USE02 |
| EASA - AMC 20-28 - Airworthiness Approval and Operational Criteria related to Area Navigation for Global Navigation Satellite System approach operation to Localiser Performance with Vertical guidance minima using Satellite Based Augmentation System ED Decision 2009/014/R 09/2012 http://www.easa.europa.eu/system/files/dfu/Annex II - AMC 20-28.pdf | REG01, USE01, USE02 |
| EASA - EASA Decision 2018/013/R - AMC & GM to Regulation (EU) 2018/1048 (PBN IR) – Annex II to EASA Decision 2018/013/R 11/2018 https://www.easa.europa.eu/sites/default/files/dfu/Annexes%20to%20EDD%202018-013-R.pdf | ASP01, ASP05, ASP06, ASP07, REG01, REG02 |

| Title | Related SLOs |
|---|---|
| EC - COMMISSION IMPLEMENTING REGULATION (EU) 2017/373 - (OJ L 62, 8.03.2017, p. 1) - COMMISSION IMPLEMENTING REGULATION (EU) 2017/373 of 1 March 2017 laying down common requirements for providers of air traffic management/air navigation services and other air traffic management network functions and their oversight, repealing Regulation (EC) No 482/2008, Implementing Regulations (EU) No 1034/2011, (EU) No 1035/2011 and (EU) 2016/1377 and amending Regulation (EU) No 677/2011 03/2017 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R0373&from=EN | ASP03 |
| EC - REGULATION (EU) 2020/469 of 14 February 2020 - COMMISSION IMPLEMENTING REGULATION (EU) 2020/469 of 14 February 2020 amending Regulation (EU) No 923/2012, Regulation (EU) No 139/2014 and Regulation (EU) 2017/373 as regards requirements for air traffic management/air navigation services, design of airspace structures and data quality, runway safety and repealing Regulation (EC) No 73/2010. 01/2010 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32020R0469 | ASP04 |
| EUROCONTROL - Air Navigation Systems Safety Assessment Methodology (SAM) - Version 2.1 / 11/2006 https://www.eurocontrol.int/tool/safety-assessment-methodology | ASP03 |
| EUROCONTROL - Airspace Concept Handbook for the Implementation of Performance Based Navigation (PBN) - Edition 4.0 / 04/2021 https://www.eurocontrol.int/publication/airspace-concept-handbook-implementation-performance-based-navigation-pbn | ASP07, REG02 |
| EUROCONTROL - EAM 4 - ESARR 4 - Risk Assessment and Mitigation in ATM - Edition 1.0 / 04/2001 https://www.eurocontrol.int/publication/esarr-4-risk-assessment-and-mitigation-atm | ASP03 |
| FAA - AC 20-138C - Airworthiness Approval of Positioning and Navigation Systems 05/2012 http://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.list/parentTopicID/101 | USE01 |
| FAA - AC 90-105 - Approval Guidance for RNP Operations and Barometric Vertical Navigation in the U.S. National Airspace System 01/2009 http://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.list/parentTopicID/128 | USE01 |
| ICAO - Doc 7030 - Regional supplementary Procedures - Edition 5 / 07/2011 https://www.icao.int/EURNAT/Pages/EUR-and-NAT-Documents.aspx | ASP07, REG02 |
| ICAO - Doc 8168-Volume II - Aircraft Operations - Volume II - Construction of Visual and Instrument Flight Procedures - Edition 5 / 11/2011 https://store.icao.int/ | ASP01, ASP05, ASP06, ASP07, REG02, USE02 |
| ICAO - Doc 9613 - Performance-based Navigation (PBN) Manual - Edition 4 / 03/2013 https://store.icao.int/en/performance-based-navigation-pbn-manual-doc-9613 | ASP07, REG02, USE02 |
| ICAO - Doc 9674 - World Geodetic System - 1984 (WGS-84) Manual - Edition 2 / 12/2002 https://store.icao.int/ | ASP04 |
| ICAO - Doc 9992 - Manual on the Use of Performance-based Navigation (PBN) in Airspace Design - First Edition / 01/2013 http://store1.icao.int/ | ASP07, REG02 |
| ICAO - EUR-Doc 025 - EUR RNP APCH Guidance Material - Second Edition / 01/2021 https://www.icao.int/EURNAT/EUR%20and%20NAT%20Documents/EUR%20Documents/EUR%20Documents/025%20-%20EUR%20RNP%20APCH%20Guidance%20Material.pdf | ASP01, ASP05, ASP06 |

Consultation & Approval

| | |
|--|---------------------------------|
| Working Arrangement in charge | NSG - Navigation Steering Group |
| Outline description approved in | - |
| Latest objective review at expert level | 06/2021 |
| Commitment Decision Body | Provisional Council (PC) |
| Objective approved/endorsed in | 07/2010 |
| Latest change to objective approved/endorsed in | 05/2019 |