Australian Government
Civil Aviation Safety Authority

SUMMARY OF PROPOSED CHANGE

Proposed amendment to Part 121 MOS to replace expiring provisions and make minor changes - some relevant to Part 135

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Acknowledgement of Country

The Civil Aviation Safety Authority (CASA) respectfully acknowledges the Traditional Custodians of the lands on which our offices are located and their continuing connection to land, water and community, and pays respect to Elders past, present and emerging.

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Introduction

At the commencement of Part 121 of the *Civil Aviation Safety Regulations 1998* (CASR) in December 2021, several legislative provisions introduced new or altered requirements that differed from the preceding *Civil Aviation Regulations 1988* (CAR) and Civil Aviation Orders (CAO). To support industry transition, some of these provisions were given delayed commencement dates. Additionally, certain requirements were retained temporarily to allow CASA and industry to establish future policy directions and develop the necessary legislation.

Part 135 operators, Subpart 121.Z operators and CASA EX74/24 operators should all review the proposed TAWS definition amendment.

Part 135 operators and CASA EX74/24 operators using multi-engine aeroplanes required by Part 135 to comply with the Part 121 performance rules should review the proposed take-off and landing performance amendments.

Two key transitional arrangements are proposed for removal or replacement:

- removal of the delayed commencement of the requirement for an extended diversion time operations (EDTO) en-route alternate aerodrome (ERA) in Australian territory to have rescue and firefighting services (RFFS) to at least MOS Part 139H RFF Category 4 or equivalent facilities, currently set to commence on 2 December 2025
- replacement of the transitional CAO-based method for engine-out departure procedure (EODP) design, also expiring on 2 December 2025, with contemporary RNP based design criteria that includes updated obstacle assessment area (OAA) parameters, including splay divergence and minimum splay half-widths, and introduces requirements for EODP designers and operator approvals for RNP-AR departure procedures with associated conditions.

Additionally, it is proposed to amend Part 121 MOS:

- section 4.11 to specify that if the values established under section 4.11 for a destination alternate aerodrome or an ERA aerodrome (non-EDTO) are more restrictive than those that would apply at the aerodrome if it were a destination aerodrome without a destination alternate aerodrome, then the values applicable to a destination aerodrome without a destination alternate aerodrome may instead be used at the destination alternate aerodrome or an ERA aerodrome (non-EDTO)
- Table 4.11 to insert an additional Item that would apply where the aerodrome approach facility configuration was at least 2 operational authorised instrument approach procedures, each of which provides a straight-in approach procedure to a single runway, without requiring the additives for circling presently specified
- section 4.12 to permit operators to choose not to apply the isolated destination aerodrome requirements where the flight is planned with a destination alternate aerodrome, subject to some changes to the destination alternate fuel requirement
- Table 4.19 to replace the existing column 1 instrument approach procedure (IAP) classifications of RNP APCH-LNAV/VNAV, RNP APCH-LPV or precision approach procedure with approach with vertical guidance (APV), non-precision approach procedure (NPA) or precision approach procedure (PA)
- section 9.11 to insert a provision permitting a flight to be planned to a wet or contaminated destination aerodrome, with the pre-flight planning requirements for those wet or contaminated runway conditions being 'one step' less with additional safety controls including the planning of a destination alternate aerodrome for the flight
- section 11.24, in the definitions of TAWS Class-A and TAWS-Class B, to correctly refer to (E)TSO-C151a (and subsequent versions) in place of (E)TSO-C151b.

Contents

Reference material

Acronyms

The acronyms and abbreviations used in this SPC are listed in the table below.

Table 1: Acronyms

Acronym	Description
AC	advisory circular
ADC	air data computer
AEO	all-engines-operating
AFM	aircraft flight manual
AMC/GM	acceptable means of compliance and guidance material
ANP	actual navigation performance
APV	approach with vertical guidance
ARFFS	aerodrome rescue and firefighting service
CAA	Civil Aviation Authority
CAR	*Civil Aviation Regulations 1988*
CASA	Civil Aviation Safety Authority
CASR	*Civil Aviation Safety Regulations 1998*
CP	critical point
EASA	European Union Aviation Safety Agency
EDTO	extended diversion time operations
EODP	engine-out departure procedure
ERA	en-route alternate
ETOPS	extended Operations
ETSO	European Technical Standard Order
FAA	Federal Aviation Administration of the United States of America
FMS	flight management system
GNSS	global navigation satellite system
IAP	instrument approach procedure
ICAO	International Civil Aviation Organization
IFP	instrument flight procedure
IFR	instrument flight rules

Acronym	Description
ISA	international standard atmosphere
LDA	landing distance available
LDF	landing distance factor
MOPS	minimum operational performance standards
NPA	non-precision approach procedure
OAA	obstacle assessment area
OEA	obstacle evaluation area
OEI	one-engine-inoperative
OEM	original equipment manufacturer
OIA	Office of Impact Analysis
OV	operational variation
PA	precision approach procedure
RADALT	radar altimeter
PBN	performance-based navigation
RE	runway excursion
RFFS	rescue and firefighting services
RNP	required navigation performance
RNP AR APCH	required navigation performance approval required approach
RNP AR DP	required navigation performance approval required departure procedure
RTCA	Radio Technical Commission for Aeronautics
SARPS	standards and recommended practices
TCCA	Transport Canada
TERPS	terminal instrument procedures
TSO	Technical Standard Order

Definitions

Terms that have specific meaning within this SPC are defined in the table below. Where definitions from the civil aviation legislation have been reproduced for ease of reference, these are identified by 'grey shading'. Should there be a discrepancy between a definition given in this SPC and the civil aviation legislation, the definition in the legislation prevails.

Table 2: Definitions

Term	Definition
alternate aerodrome	has the same meaning as in Annex 2 to the Chicago Convention
approach with vertical guidance (APV)	means any of the following approach procedures with vertical guidance: a. RNP APCH – LNAV/VNAV; b. RNP APCH – LPV (decision height at or above 250 ft); c. RNP AR APCH – RNP 0.x. Note: For a RNP AR APCH procedure the minima is represented as RNP 0.x where 0.x refers to the RNP value specific to the final approach segment.
ARFFS	provider has the meaning given by subregulation 139.705(1).
contaminated runway	a runway is contaminated if more than 25% of the surface area required for a take-off or landing is covered by any of the following: a. water or slush more than 3 mm deep; b. loose snow more than 20 mm deep; c. compacted snow or ice.
critical point (CP)	means a point en route during a flight of an aeroplane, determined by the operator or the pilot in command for the flight before the flight commences, at which the aeroplane can: a. if it arrives at the point with adequate fuel to complete the flight to the planned destination aerodrome while maintaining the fuel required by subsection 7.05(3) of the Part 121 MOS—continue to that aerodrome; or b. otherwise—divert to an en-route alternate aerodrome while maintaining the fuel required by subsection 7.05(3) of the Part 121 MOS.
destination alternate aerodrome	means an alternate aerodrome that is a destination alternate (within the meaning of Annex 2 to the Chicago Convention).
dry runway	a runway is dry if the surface area required for a take-off or landing: a. has no visible moisture; and b. is not contaminated.
extended diversion time operation (EDTO)	means an operation in which an aeroplane is flown further from an adequate aerodrome for the aeroplane than the threshold distance for the aeroplane
EDTO en-route alternate aerodrome	means an adequate aerodrome that is selected as an EDTO en-route alternate aerodrome under section 4.19 of the Part 121 MOS for use in the event of a diversion during an EDTO.
(E)TSO	followed by an identifying letter and number, is a shorthand reference to both the TSO and the ETSO, each of which has the same identifying letter and number.
(E)TSO-C151	the technical standard for Terrain Awareness and Warning Systems (TAWS).
GNSS	means the global navigation satellite system.

Term	Definition
instrument approach procedure (IAP)	means a series of predetermined manoeuvres by reference to flight instruments with specified protection from obstacles 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, to a position at which holding or en-route obstacle clearance criteria apply.
instrument flight procedure (IFP)	means the visual and instrument procedures for use by aircraft operating under the IFR.
IFR	means the rules and procedures set out in Subdivision 91.D.4.3 of CASR.
ISA	means International Standard Atmosphere.
landing minima	means the minimum values of the following that are used for the purpose of determining whether an aerodrome may be used for landing aircraft: a. visibility, including runway visibility and runway visual range; b. cloud ceiling height.
landing distance available (LDA)	means: a. for landing an aeroplane at a certified aerodrome—the distance declared by the aerodrome operator as available and suitable for the ground run of the aeroplane when it lands at the aerodrome; and b. for landing an aeroplane at an aerodrome other than a certified aerodrome—the distance established by the aeroplane operator as available and suitable for the ground run of the aeroplane when it lands at the aerodrome.
LDF	means the value necessary for a landing distance required for an aeroplane to remain within the specified percentage of LDA (i.e. to stop with 60% of LDA the LDF would be 1.67 and to stop within 70% the LDF would be 1.43).
non-precision approach procedure (NPA)	means an instrument approach procedure designed for 2D instrument approach operations.
precision approach procedure (PA)	means an instrument approach procedure based on an ILS, an MLS, a GLS or an SBAS CAT 1, and which is designed for 3D instrument approach operations.
performance based navigation (PBN)	means area navigation based on performance requirements for aircraft operating: a. along ATS routes; or b. on an IAP; or c. in designated airspace.
RTCA/DO-161A	means document RTCA/DO-161A titled Minimum Performance Standards - Airborne Ground Proximity Warning Equipment, dated 27 May 1976, of the RTCA Inc. of Washington D.C. USA (RTCA Inc.).
RTCA/DO-367	means document RTCA/DO-367 titled Minimum Operational Performance Standards (MOPS) for Terrain Awareness and Warning Systems (TAWS) Airborne Equipment, dated 31 May 2017, of the RTCA Inc. of Washington D.C. USA (RTCA Inc.).
TAWS	means terrain awareness and warning system.
TAWS Class-A	means a terrain awareness and warning system that: a. meets the performance requirements for Class A equipment in

Term	Definition
	(E)TSO-C151b; and b. is authorised in writing by CASA or the national aviation authority of a recognised country.
TAWS Class-B	means a terrain awareness and warning system that: a. meets the performance requirements for Class B equipment in (E)TSO-C151b; and b. is authorised in writing by CASA or the national aviation authority of a recognised country.
wet runway	a runway is wet if the surface area required for a take-off or landing: a. is not dry; and b. is not contaminated.

References

Legislation

Legislation is available on the Federal Register of Legislation website https://www.legislation.gov.au/

Table 3: Legislation references

Document	Title
Regulation 91.045 of CASR	Approvals by CASA for Part 91
Regulation 91.287 of CASR	IFR flights
Regulation 91.307 of CASR	IFR take - off and landing minima
Regulation 91.660 of CASR	Performance - based navigation
Regulation 119.205 of CASR	Content of exposition
Regulation 121.035 of CASR	Flights further than the threshold distance
Regulation 121.170 of CASR	Flight preparation (Part 121 alternate aerodromes) requirements
Regulation 121.390 of CASR	Performance data
Regulation 121.420 of CASR	Landing performance
Regulation 121.460 of CASR	Requirements relating to equipment

Document	Title
Regulation 121.775 of CASR	Terrain awareness and warning system
Part 173 of CASR	Instrument flight procedure design
Regulation 179A of CAR	Navigation of aircraft on I.F.R. flight
Part 91 MOS	Part 91 (General Operating and Flight Rules) Manual of Standards 2020
Part 91 MOS Amendment Instrument	Part 91 MOS Amendment Instrument 2025 (No. 1)
Part 121 MOS	Part 121 (Australian Air Transport Operations—Larger Aeroplanes) Manual of Standards 2020
MOS Part 139H	Manual of Standards Part 139H - Standards Applicable to the Provision of Aerodrome Rescue and Fire Fighting Services
CASA EX161/21	CASA EX161/21 — Miscellaneous Flight Operations Exemptions and Approvals (Transitional) Instrument 2021
CAO 20.7.1B	Civil Aviation Order 20.7.1B - Aeroplane weight & performance limitations - Aeroplanes above 5 700kg - All operations (turbine & piston-engined)
CAO 20.91	Civil Aviation Order 20.91 (Instructions and directions for performance-based navigation) Instrument 2014

International Civil Aviation Organization documents

International Civil Aviation Organization (ICAO) documents are available for purchase from http://store1.icao.int/

Many ICAO documents are also available for reading, but not purchase or downloading, from the ICAO eLibrary (https://elibrary.icao.int/home).

Table 4: ICAO references

Document	Title
Annex 6 to the Convention on International Civil Aviation	Operation of Aircraft — Part I — International Commercial Air Transport — Aeroplanes
Annex 8 to the Convention on International Civil Aviation	Airworthiness of Aircraft
Annex 14 to the Convention on International Civil Aviation	Aerodromes
Doc 8168	ICAO Procedures for Air Navigation Services — Aircraft Operations (PANS OPS), Volume I — Flight Procedures
Doc 8168	ICAO Procedures for Air Navigation Services — Aircraft Operations (PANS OPS), Volume II — Construction of Visual and Instrument Flight Procedures

Document	Title
Doc 9365	ICAO Manual of All Weather Operations
Doc 9613	ICAO Performance-based Navigation (PBN) Manual
Doc 9905	ICAO Required Navigation Performance Authorization Required (RNP AR) Procedure Design Manual
Doc 9976	ICAO Flight Planning and Fuel Management (FPFM) Manual
Doc 9997	ICAO Performance-based Navigation (PBN) Operational Authorization Manual
Doc 10064	ICAO Aeroplane Performance Manual
Doc 10085	ICAO Extended Diversion Time Operations (EDTO) Manual

Advisory material

CASA's advisory materials are available at https://www.casa.gov.au/publications-and-resources/guidance-materials

Table 5: Advisory material references

Document	Title
AC 121-11	Part 121 alternate aerodromes (yet to be published)

Other references

Table 6: Other references

Document	Title
FAA AC 91-79B	FAA Advisory Circular 91-79B - Aircraft Landing Performance and Runway Excursion Mitigation
FAA AC 120-42B	FAA Advisory Circular 120-42B - Extended Operations (ETOPS and Polar Operations)
FAA AC 120-91A	FAA Advisory Circular 120-91A Airport Obstacle Analysis

Purpose and scope of the proposed amendments

This section outlines the specific key change proposals contained in this consultation. The proposals encompass:

- provisions replacing the delayed commencement provisions and their associated expiring transitional provisions
- certain other proposed amendments intended to align with intended policy outcomes and, where possible, enable increased efficiency of Part 121 operations whilst retaining an acceptable level of aviation safety.

Change 1 - Remove RFFS requirements at EDTO ERA aerodromes within Australian territory

Proposal

It is proposed to remove the Part 121 MOS subsection 4.19(2) requirement, scheduled to commence on 2 December 2025, for an EDTO en-route alternate (ERA) aerodrome in Australian territory to have rescue and firefighting services (RFFS) to at least MOS Part 139H RFF Category 4 or equivalent facilities available.

Transitional arrangements

As the proposal is to remove a requirement that is yet to commence, there are no proposed transitional arrangements.

Change 2 - Replace transitional RNP-based engine-out departure procedure design (EODP) criteria for obstacle assessment area (OAA) (also relevant to some Part 135 and CASA EX74/24 operations)

Proposal

It is proposed to replace the transitional CAO 20.7.1B based method that expires on 2 December 2025, contained in Part 121 MOS subsection 9.04(5), with a contemporised RNP-based engine out departure procedure (EODP) design criteria for OAA, including specifying splay divergence and minimum splay half-widths. It is proposed to include requirements for EODP design to be performed by accredited designers and for operators to hold required navigation performance authorisation required departure procedure (RNP AR DP) approvals with associated conditions.

This proposal is also relevant to Part 135 operators and CASA EX74/24 operators required to comply with Division 2 of Chapter 10 of the Part 135 MOS (sections 10.16 and 10.17 of the Part 135 MOS).

The proposed amendments would include the following conditions as safety controls:

a. underlying competencies of the operator and the designer of the EODP:
    i. the operator must hold a Part 91 RNP AR DP approval (i.e. regulation 91.045 approval for the purposes of paragraph 91.660(1)(b) with a prescribed navigation specification of RNP AR DP)
    ii. the designer must be an instrument flight procedure (IFP) design organisation authorised to design RNP-based instrument departure procedures that holds a CASR Part 173 authorisation (authorised

or certified designer) or an equivalent authorisation issued by US FAA, EASA, UK CAA, NZ CAA or TCCA (Transport Canada).

b. EODP design requirements must include:

   i. flight track designed for use by aeroplanes using performance-based navigation (PBN) course guidance

   ii. consideration of the following matters in relation to flight track:

      A. the ability of a pilot to initiate and maintain a desired speed and bank angle in a turn

      B. the effect of wind on the take-off flight path

      C. the effect of temperature on turns

      D. the effect of terrain proximity on TAWS warning.

> **Note:** The requirements referred to above are similar to the flight track analysis method described in section 15 of US FAA Advisory Circular (AC) 120-91A Airport Obstacle Analysis, modified to incorporate elements of AC sections 16 and 17. These requirements will be explained to operators in the Part 121 AMC/GM.

   iii. width of the start of the obstacle assessment area to be consistent with MOS subsection 9.04(2A) to ensure that the width is at least 90 m, or for aeroplanes with wingspan of less than 60 m, the resultant distance of half-wingspan + 60 m

   iv. obstacle assessment area splay divergence rate must be not less than 0.0625 x D [6.25%]

   v. obstacle assessment area half-width must be not less than the larger of:

      A. 1x RNP (of the intended aeroplane's certified RNP capability in the one-engine-inoperative (OEI) condition)

      or

      B. 370 m (irrespective of whether an aeroplane's RNP capability is better than RNP 0.1 nm [i.e. RNP 0.05]).

c. operational requirements:

   i. where obstacle clearance after take-off for a flight is based on this method, the aeroplane must not take-off if, immediately before commencing the take-off roll, the aircraft actual navigation performance (ANP) is greater than EODP design half-width RNP value

   ii. aeroplane must have operative TAWS Class-A.

d. consequential and minor amendments to Part 121 MOS subsections 9.04(3) and (4), including:

   i. amending the paragraph 9.04(3)(b) distance limit to 370 m from 300 m. This will remove the existing inconsistency where RNP 0.2 nm exceeds the 300 m limit (which is actually 0.16 nm)

   ii. amending paragraphs 9.04(3)(b) and 9.04(4)(b) to be include a conditional element that requires that the portion of the flight from the departure end of the runway to the lowest safe altitude for the route must be conducted while maintaining the required navigational accuracy of RNP 0.2 nm or better through the obstacle accountability area (370 m (3b) / 600 m (4b)).

Transitional arrangements

As the proposal is to replace the transitional CAO based method that expires on 2 December 2025 with a contemporised RNP-based EODP design criteria OAA, and that the conditions necessary for its use have been assessed as being satisfied by the operators currently using the expiring transitional provision, including the embedded RNP AR DP approval requirement, there are no proposed transitional arrangements.

Operator feedback is however requested from operators whether a transitional period should be implemented in relation to the proposed Part 121 MOS subsection 9.04(3) and (4) changes (replacing 300m with 370m).

Change 3 - Permit reduced destination aerodrome wet or contaminated pre-flight landing performance (also relevant to some Part 135 and CASA EX74/24 operations)

Proposal

It is proposed to amend Part 121 MOS section 9.11 to insert a provision permitting a flight to be planned to a wet or contaminated destination aerodrome where the pre-flight planning requirements for those wet or contaminated runway conditions are permitted to be 'one step' less with additional safety controls including the planning of a destination alternate aerodrome for the flight.

This proposal is also relevant to Part 135 operators and CASA EX74/24 operators required to comply with Division 2 of Chapter 10 of the Part 135 MOS (sections 10.16 and 10.17 of the Part 135 MOS).

The operational outcome of this proposal is that an aeroplane could dispatch to a destination aerodrome runway forecast to be wet or contaminated at an aircraft weight higher than presently permitted.

The proposed amendment would include the following safety controls:

a. when the forecast indicates the destination aerodrome may be wet or contaminated, dispatch is permitted if the following conditions are satisfied:
    i. the destination aerodrome landing performance for an aeroplane without available aircraft flight manual (AFM) wet or contaminated landing performance information is constrained to being not less than:
        A. for wet runway conditions: dry landing distance factor (LDF) 1.67 (a reduction from wet LDF 1.92)
        B. for contaminated runway conditions: wet LDF 1.92 (no reduction).
    ii. the destination aerodrome landing performance for an aeroplane with available AFM wet or contaminated landing performance information is constrained to being not less than:
        A. for wet runway conditions: dry LDF 1.67 (a reduction from AFM wet x1.0 for the wet runway conditions, not less than dry LDF 1.67 where the AFM wet is greater than dry LDF 1.67)
        B. for contaminated runway conditions: AFM contaminated x1.0 for the contaminated runway conditions, not less than Dry x1.67 (a reduction from AFM contaminated x1.15, not less than AFM wet x1.0 or dry LDF 1.67).
b. in both cases above, the proposed pre-flight destination aerodrome landing distance available (LDA) requirements would be effectively ‘1-step’ less than the current MOS requirements, mitigated by the following additional conditions:
    i. a suitable destination alternate aerodrome is planned that can satisfy the unaltered MOS provisions for LDA requirements
    ii. use of these more flexible provisions is not permitted in circumstances where two destination alternate aerodromes are required for a flight
    iii. use of these more flexible provisions is not permitted at isolated destination aerodromes.

Transitional arrangements

As the proposal alleviates an existing requirement, albeit with different requirements in relation to planning a destination alternate aerodrome, and it does not impose any approval requirements, there are no proposed transitional arrangements.

Change 4 - Permit alternate aerodrome minima to be no more restrictive than destination aerodrome minima

Proposal

It is proposed to amend Part 121 MOS section 4.11 to limit the calculated values of cloud ceiling and visibility for destination alternate aerodromes or en-route alternate (ERA) aerodromes (non-EDTO) to be no greater than those that would apply if the aerodrome were planned as a destination aerodrome without a destination alternate.

Transitional arrangements

As the proposal alleviates an existing requirement and does not impose any approval requirements, there are no proposed transitional arrangements.

Change 5 - Add Table 4.11 Item for aerodromes with at least 2 straight-in instrument approaches to a single runway

Proposal

It is proposed to amend Part 121 MOS Table 4.11 to insert an additional Item that would apply where the aerodrome approach facility configuration was at least 2 operational authorised instrument approach procedures, each of which provides a straight-in approach procedure to a single runway, without requiring the current additives for circling.

The proposed additional Item in Table 4.11 would specify that where an aerodrome is planned for use as a destination alternate aerodrome, en-route alternate (ERA) aerodromes (non-EDTO) or isolated destination aerodrome, then if the aerodrome has at least 2 operational authorised instrument approach procedures, each of which provides a straight-in approach procedure to a single runway, the additives of 400 ft and 1.5 km should be added to the IAP minima of the second lowest IAP.

Transitional arrangements

As the proposal alleviates an existing requirement and does not impose any approval requirements, there are no proposed transitional arrangements.

Change 6 - Permit isolated destination aerodromes to be planned with a destination alternate aerodrome

Proposal

It is proposed to amend Part 121 MOS section 4.12 so that operators can choose not to apply the isolated destination aerodrome requirements if the flight is planned with a destination alternate aerodrome in accordance with a minor change to the destination alternate fuel requirement.

The proposed amendments would include the following conditions and safety controls:

- Operators may choose not to apply the isolated destination aerodrome requirements in the circumstances where:
  - the destination aerodrome is isolated, as defined by MOS section 4.03, and
  - the flight is planned with a fully compliant section 4.11 (Table 4.11) destination alternate aerodrome, and
  - fuel planning is conducted in accordance with a proposed amendment to Part 121 MOS section 7.05 (this section specifies the amount of fuel that must be carried for a flight).
- The fuel amendment would specify that when a destination aerodrome would otherwise be isolated, the minimum fuel for the flight to have on board at the missed approach point at the destination aerodrome is sufficient to allow an aeroplane that suffers engine failure or loss of pressurisation, whichever results in the greater subsequent fuel consumption, to proceed to an alternate aerodrome and fly for 15 mins at a holding speed at 1,500 ft above the aerodrome elevation in international standard atmosphere (ISA) conditions and make an approach and landing. This additional requirement, compared to the current MOS, is intended to address the level of safety necessary to protect diversion distances to destination aerodromes beyond 90 mins.

Transitional arrangements

As the proposal alleviates an existing requirement, albeit with different requirements in relation to fuel requirements for the destination alternate aerodrome leg and does not impose any approval requirements, there are no proposed transitional arrangements.

Change 7 - Replace IAP classifications to reflect updated Part 91 MOS changes

Proposal

It is proposed to amend Part 121 MOS Table 4.19 Column 1 (IAP planned to be used) to replace the existing descriptions of RNP APCH-LNAV/VNAV, RNP APCH-LPV and precision approach procedure with the terms APV, NPA or PA. These terms are proposed to be defined in Part 121 MOS section 1.04, and the definitions are the same as those used in the Part 91 MOS. These proposed amendments arise from the amendments made earlier in 2025 to Part 91 MOS sections 15.02 and 15.10.

An additional effect of using these new terms is that Table 4.19 will clearly include the use of required navigation performance authorisation required (RNP AR APCH) IAPs for the planning of EDTO ERA aerodrome minima.

Transitional arrangements

As the proposal alleviates an existing requirement and does not impose any additional approval requirements, there are no proposed transitional arrangements.

Change 8 - Amend definition of TAWS Class-A and TAWS Class-B (also relevant to Part 135, Subpart 121.Z and CASA EX74/24 operations)

Proposal

It is proposed to amend the Part 121 MOS section 11.24 definitions of TAWS Class-A and TAWS-Class B to enable the use of (E)TSO-C151a and subsequent versions in place of the current (E)TSO-C151b and subsequent versions.

As the CASR Dictionary relies on these definitions for use across the CAR and CASR, the proposed change will affect every occurrence of the defined terms ‘TAWS Class-A’ and ‘TAWS Class-B’ within these sets of regulations and their subordinate instruments (such as Civil Aviation Orders, Manuals of Standards, exemptions, directions, approvals, authorisations, permissions, etc).

Relevant to the flight operations regulations, the terms TAWS Class-A and TAWS Class-B, in addition to the Part 121 MOS, are also used in the Part 135 MOS, the 10-13 seat aeroplane exemption CASA EX74/24 and the Subpart 121.Z TAWS regulations.

Transitional arrangements

As the proposal enables the use of an earlier TAWS technical standard and does not impose any approval requirements, there are no proposed transitional arrangements.

Safety risk analysis

Change 1 - Remove RFFS requirements at EDTO ERA aerodromes within Australian territory

Australia complies with the relevant International Civil Aviation Organization (ICAO) Annex 11 and 14 aerodrome facilities and services standards and recommended practices (SARPs) for aerodromes that intended to be used by international air transport operators flying into or out of Australia. This includes the provision of RFFS to the capability required of the aeroplanes operating to those aerodromes.

However, this is not the case for other aerodromes inside Australia which are not held to the same standards of RFFS.

This policy decision recognises Australian infrastructure challenges and the difficulty in providing RFFS at many aerodromes where large air transport operations routinely occur.

There are several points of argument in relation to removing the RFFS Category 4 EDTO ERA requirement at aerodromes within Australian territory:

a. the primary argument being that a diversion to an EDTO ERA is a very unlikely occurrence. Imposing a requirement for level of RFFS at an aerodrome that is unlikely to be used, that exceeds the minimum RFFS requirements (none) at most departure and destination aerodromes is not consistent with the safety requirements established for those operations. For example – it is acceptable to conduct Part 121 operations to/from Mount Isa many times a day with no RFFS at the aerodrome, but an EDTO flight cannot plan it as an EDTO ERA.

b. the imposition of the EDTO ERA RFFS cat 4 requirement will drive industry to dispatch non-EDTO in compliance with the legislation whenever able, rather than dispatch EDTO, with the higher overall level of safety that EDTO delivers.

Assessment by CASA is that the removal of the EDTO ERA RFFS Cat 4 requirement would not change the acceptable level of safety already required for operations, it simply would not elevate the standard to a higher aspirational level. It would also not introduce an additional incentive for operations to avoid dispatching flights as EDTO.

Change 2 - Replace transitional RNP-based engine-out departure procedure (EODP) design criteria for obstacle assessment area (OAA) (also relevant to some Part 135 and CASA EX74/24 operations)

In determining an appropriate target level of safety for a proposed amendment to the MOS that affects net take-off flight path requirements, CASA must consider operational risk factors relevant to lateral path design and obstacle clearance. This includes evaluating the suitability of using RNP AR navigation specifications to ensure accurate lateral guidance during the initial climb segment. The assessment must account for the potential consequences of deviations from the intended flight path, particularly in complex terrain or obstacle heavy environments, and ensure that the lateral containment and navigation accuracy provided by RNP AR supports compliance with the net take-off flight path criteria under performance-limited conditions.

The target level of safety for the Part 121 MOS section 9.04 take-off performance requirements that the prescriptive provisions intend to ensure that an aeroplane does not take off at a weight that would prevent it from vertically clearing obstacles within a safely navigable lateral departure path, should the aeroplane experience an engine failure on or after take-off. The level of safety acceptable is also predicated on several other factors including degradation of climb performance (gross to net), navigation capability and environmental variations.

Therefore, the basis for assessing safety is to a level equivalent to the pre-existing level, that is updated and specified slightly differently.

The risk analysis of this proposal for alternative net take-off flight path obstacle clearance requirements contemplates the key safety hazards needing to be controlled. They include:

a. there are no established global standards for RNP-based EODP that can be appropriately adopted.
    i. there are sufficient global examples in relation to prescriptive OAA dimensions for RNP-based EODP, but none contain the specificity sought to develop standards that can be used by aeroplanes with RNP capability in the OEI case that are RNP 0.2 nm or better (i.e. RNP 0.1 nm).
    ii. the uplift of RNP AR DP design criteria established under ICAO PANS-OPS or FAA terminal instrument procedures (TERPS) might provide insight, however:
        A. none have been developed to a publishable standard
        B. if consistent with established RNP departure design criteria (non-RNP AR), will likely be limited to RNP 0.3 nm as the minimum navigation capability for a an RNP AR DP
        C. will likely use 2xRNP as the minimum obstacle evaluation area
        D. would be designed where the obstacle evaluation area (OEA) required is based on normal (all-engines-operating (AEO)) operations.
    iii. current procedure use is non-standardised. There are known instances where operators have RNP AR DP procedures and also RNP-based EODP as standalone procedures or from ‘branch’ points on published (private or public) RNP AR DP procedures, often designed with differing criteria.
b. the existing prescriptive Part 121 MOS subsections 9.04(3) and (4) where an aeroplane has a navigation specification of RNP 0.2 nm or better, the lateral OAA minimum limit can be reduced by 300 m (from 600 m and 900 m for departures with ≤15degree or >15degree heading changes respectively) to 300 m and 600 m. The navigation specification of RNP 0.2 nm or better is given its 'approval' power under the Part 91 MOS paragraph 14.02(1)(a) where the AFM describes the navigation performance achievable. Consequently, the already narrow OAA minimum limit and the absence of formal approval requirements to use the smallest prescriptive minimum OAA lateral boundaries provides an established starting point from which additional risk treatments must be developed and applied.
c. without acceptable examples from foreign NAA legislation to adopt, analysis of underlying hazards necessary to support the proposed amendment include:
    i. prescribing in detail the requirements for permitted OAA assessment methodology(s).
    ii. determining acceptable OAA dimensions and limits, including (as necessary):
        A. longitudinal and lateral commencement point
        B. splay divergence rate/angle
        C. lateral expansion minimum half-width
        D. need for accommodation of track changes
        E. flyability in OEI condition
        F. environmental variations (i.e. wind & temperature).
    iii. determining the necessary elements of procedure design necessary to permit alternative RNP-based EDOP
    iv. determining the necessary requirements for procedure designer authorisation (if any)
    v. determining what (if any) specific authorisation is required by an operator conducting permit alternative RNP-based EDOP
    vi. specifying requirements in relation to acceptable forms of obstacle data.

Having reviewed the available international standards and variations permitted in relation to alternative RNP-based EDOP, certain common aspects have emerged.

The proposed collective safety controls for each of the key safety hazards associated with the alternative RNP-based EDOP are:

a. operator RNP AR DP approval required:
    i. The operator must hold an approval under regulation 91.045 for paragraph 91.660(1)(b) with a prescribed navigation specification of RNP AR DP. This provides multiple safety enhancing controls. Critically, the elements necessary to be satisfied to be approved to conduct RNP AR DP are well established and standardised globally. Due to the design of RNP-based EODP often commencing from a branch point on an RNP AR DP IFP, the necessary precursor would be the RNP AR DP approval.
    ii. it is unlikely that an operator that is neither RNP AR APCH nor RNP AR DP approved would seek to use an alternative RNP-based EODP. If they were to seek an approval to do so, the necessary safety case elements would amount to the same as are required to be approved for RNP AR DP.
    iii. the operator, by holding an RNP AR DP approval can be reasonably taken to:
        A. ensure that successfully flying the aircraft within the obstacle assessment area would be achieved within the pilot competency in specific skills and appropriate operator procedures,
        B. have satisfied CASA that they understand how to design pilot competency programs and exposition procedures relating to high accuracy RNP departure procedures and therefore the operator's programs and procedures for these alternative engine out departure procedures are reasonably likely to preserve the desired level of aviation safety,
        C. avoids CASA needing to create a bespoke approval for this alternative obstacle assessment area, noting that existing operational experience has identified that many RNP-based engine out departure procedures begin from a branch point on an RNP AR DP authorised instrument departure procedure.
b. RNP-based instrument departure procedures designer approval required:
    i. the designer of the alternative RNP-based EDOP must be an IFP design organisation authorised to design RNP-based instrument departure procedures that holds a CASR Part 173 authorisation (could be an authorised or certified designer) or an equivalent authorisation issued by US FAA, EASA, UK CAA, NZ CAA or TCCA.
    ii. the alternative RNP-based EDOP procedure design organisation requiring being authorised to design RNP-based instrument departure procedures provides the following:
        A. assurance the very small obstacle assessment area can be satisfactorily calculated
        B. that the obstacles are accurately assessed and accounted for in the procedure design
        C. as CASA's proposal intends to establish a set of alternative safety controls where no pre-assessment would be required by CASA before an operator implements these procedures
        D. sufficient assurance that the desired safety level will be achieved is assessed to require qualified persons to design these procedures. From a global perspective, instrument approach design organisations are recognised as having the required skills
        E. use of qualified instrument approach design organisations aligns with the FAA AC requirements, that are the basis of the design methodology requirements proposed.
c. alternative RNP-based EDOP design requirements must include:
    i. the flight track be designed for use by aeroplanes using PBN-based course guidance.
    ii. consideration of the following matters in relation to flight track:
        A. the ability of a pilot to initiate and maintain a desired speed and bank angle in a turn
        B. the effect of wind on the take-off flight path

C. the effect of temperature on turns

D. the effect of terrain proximity on TAWS warning.

Note: The requirements referred to above are similar to the flight track analysis method described in section 15 of US FAA Advisory Circular (AC) 120-91A Airport Obstacle Analysis, modified to incorporate elements of AC sections 16 and 17. These requirements will be explained in the relevant sections of the Part 121 AMC/GM.

iii. the minimum width of the start of the obstacle assessment area to be consistent with MOS subsection 9.04(2A) to ensure that 90 m or for aeroplanes with wingspan of less than 60 m, the resultant distance of half-wingspan + 60 m

iv. the obstacle assessment area splay divergence rate must be not less than 0.0625 x D [6.25%]. The narrower divergence rate is mitigated by the necessary use of flight track assessment methodology

v. the obstacle assessment area half-width must be not less than the larger of:

A. 1x RNP (of the intended aeroplane's certified RNP capability in the OEI condition)

or

B. 370 m (irrespective of aeroplane RNP capability better than RNP 0.1 nm [i.e. RNP 0.05]).

vi. There is a practical minimum width, irrespective of aeroplane navigation performance, within which safe obstacle clearance can be achieved. The proposed minimum obstacle assessment area 370 m half-width irrespective of track change is sufficient to safely accommodate the largest foreseeable aeroplane wingspans and narrow enough to permit high accuracy aeroplanes with capable flight crew to take advantage of the higher weights for departure.

vii. The CASA assessment that 'narrower than 370 m half-width (such as 1xRNP 0.1nm [185m]) should be permitted such as 300 ft' is not supported.

d. operational use of the alternative RNP-based EODP:

i. require where obstacle clearance after take-off for a flight is based on the use of an alternative RNP-based EDOP the aeroplane must not take-off if, immediately before commencing the take-off roll, the aircraft ANP is greater than engine out departure procedure design half-width RNP value. [i.e. 370 m is equivalent to RNP 0.2, hence where ANP ≥ 0.21 nm the take-off cannot be commenced.]. Navigation accuracy is critical to maintaining safety during these departure procedures, however there would be significant adverse consequences if occasionally occurring temporary ANP degradations between push-back/taxi and the commencement of the take-off roll could not be accommodated.

ii. the aeroplane must have an operative TAWS Class-A. Noting that not all operations to which subsection 9.04(5) could apply would be conducted in aeroplanes that require TAWS Class-A as 'baseline' equipment. The reason for requiring a functional TAWS Class-A is based on TAWS Class A providing a more comprehensive and accurate solution for terrain and obstacle awareness, leading to a higher level of safety. Some of the aspects that account for the enhanced elements of TAWS Class A are:

A. Forward-Looking Terrain Avoidance (FLTA), allowing the system to predict potential conflicts with terrain and obstacles along the flight path

B. TAWS Class A utilises a worldwide terrain and obstacle database, expanding coverage and improving accuracy compared to TAWS Class B

C. enhanced situational awareness due to the display element required under TAWS Class A

D. better range of system inputs over TAWS Class B, such as radalt altimeter (RADALT), air data computer (ADC) and flight management system (FMS) position, reducing susceptibility to single source position errors from the global navigation satellite system (GNSS) alone.

Assessment by CASA is that the alternative RNP-based EODP would not change the acceptable level of safety already required for operations under the expiring transitional provisions. The controls suggested would also allow new adopters of the provision to do so in a manner that is at least the equivalent of the transitional provisions.

Additionally, amending the maximum distance limitation value of 300 m in Part 121 MOS paragraph 9.04(3)(b) to 370 m is necessary for safety assurance. There existed an inconsistency that RNP 0.2 nm could use 300 m for maximum half-width despite not being able to ensure that RNP navigation accuracy would remain within that distance. Where the RNP 0.2 nm limit is 600 m for track changes greater than 15 degrees, then the RNP navigation accuracy would be assured within that distance.

Change 3 - Permit reduced destination aerodrome wet or contaminated pre-flight landing performance (also relevant to some Part 135 and CASA EX74/24 operations)

The target level of safety for landing performance is currently established in the Part 121 MOS where it treats the destination aerodrome alone and if required by the flight planning policy, the destination alternate aerodrome alone. The landing performance requirements at the different aerodromes are treated as unrelated requirements.

The proposed amendment does not alter the target level of safety established for destination aerodromes when there is no requirement otherwise prescribed necessitating the planning of a destination alternate aerodrome.

The target level of safety established for the use of destination aerodromes in the Part 121 MOS accommodates an interrelationship between the destination aerodrome and the requirement to plan or not plan a destination alternate aerodrome. This inter-relationship is not presently applied in relation to landing performance requirements.

In determining an appropriate target level of safety for a proposed amendment to the Part 121 MOS that affects pre-flight landing distance requirements for wet and contaminated destination aerodrome runways, CASA must consider operational risk factors relevant the differences in pre-flight and in-flight landing distance performance data and the circumstances where the proposed amendment should not be permitted.

The proposed Part 121 MOS amendment therefore, applies as the basis for assessing safety at a level equivalent to the existing level, that would be specified slightly differently, in so far as the risk of dispatching with slightly reduced landing performance at the destination aerodrome in wet or contaminated forecast conditions would be mitigated by the need to plan for a fully complaint (unvaried) landing performance capable destination alternate aerodrome.

The risk analysis of this proposal for permitting dispatch to a destination aerodrome runway that is forecast to be wet or contaminated at a weight higher than presently permitted contemplates the key safety hazards needing to be controlled. They include:

a. the pre-eminent risk associated with pre-flight landing distance performance requirements arises from the variability of meteorological forecasts and the imprecision of predictions in relation to runway surface condition (dry, wet, or contaminated) at the estimated time of arrival:
    i. the imprecision of weather forecasts as directly relate to precipitation beginning and the point at which ‘wet’ conditions prevail or the time at which a runway reverts to being dry following precipitation
    ii. the inability to predict the time at which passing precipitation ceases ‘wetting’ a runway and then determining a time at which a runway would become dry, of if flooded become wet (unflooded)
    iii. the risk can be exacerbated by flight durations to the extremities of aerodrome forecast durations (i.e. 18 hours).

b. meteorological variability in relation wind direction and velocity can also be risks in relation to landing distance performance where the pre-flight performance predictions use a forecast wind value to establish the required landing safety performance. This risk is mitigated to a degree by the wind factoring (Credit for only 50% of headwind or 150% of tailwind).

c. weather variability at the destination aerodrome after the flight has commenced. Including:

   i. cloud ceiling or visibility reducing below planning thresholds

   ii. wind direction, velocity, gusts

   iii. turbulence.

d. changes in destination aerodrome runway availability after the flight has commenced including:

   i. instrument approach procedure unavailability, such as navaid failure or GNSS disruption

   ii. runway changes, with shorter LDA

   iii. runway blockages.

e. differences in aeroplane manufacturer furnished pre-flight landing performance data. Including differences in original equipment manufacturer (OEM) data from the regulatory definitions of what constitutes dry, wet or contaminated runway conditions.

f. flights being planned to destination aerodromes with no destination alternate aerodromes available. (Isolated destination aerodromes).

g. flights being planned to destination aerodromes that require two destination alternate aerodromes due to destination aerodrome relevant weather forecast below landing minima.

h. the risk of runway excursion (RE) overrun due to other factors or combinations of factors such as:

   i. excess threshold crossing height

   ii. increased landing speed

   iii. runway slope (downhill but less than necessary for inclusion in certification data)

   iv. late/long flare

   v. late use of deceleration devices

   vi. less than maximum braking.

The proposed collective safety controls for each of the key safety hazards associated with dispatch to a destination aerodrome runway that is forecast to be wet or contaminated at a weight higher than presently permitted are:

a. the requirement to only permit dispatch in the circumstances where the forecast indicates that the destination aerodrome may be wet or contaminated if the following conditions are satisfied:

   i. the destination aerodrome landing performance for an aeroplane without AFM wet or contaminated landing performance information available is constrained to being not less than:

      A. for wet runway conditions: dry LDF 1.67 (a reduction from wet LDF 1.92)

      B. for contaminated runway conditions: wet LDF 1.92 (no reduction).

   ii. the destination aerodrome landing performance for an aeroplane with AFM wet or contaminated landing performance information available is constrained to being not less than:

      A. for wet runway conditions: dry LDF 1.67 (a reduction from AFM wet x1.0 for the wet runway conditions, not less than dry LDF 1.67 where the AFM wet is greater than dry LDF 1.67)

      or

      B. for contaminated runway conditions: AFM contaminated x1.0 for the contaminated runway conditions, not less than dry x1.67 (a reduction from AFM contaminated x1.15, not less than AFM wet x1.0 or dry LDF 1.67).

b. in both cases above, the proposed pre-flight destination aerodrome LDA requirements would be effectively '1-step' less than the unvaried MOS requirements, mitigated by the additional conditions required, expressed that are:

   i. a suitable destination alternate aerodrome is planned for a flight that can satisfy the unaltered MOS provisions for LDA requirements

   ii. not permitted in circumstances where two destination alternate aerodromes are required for a flight

   iii. not permitted at isolated destination aerodromes without a destination alternate aerodrome being planned.

c. the conditions ensure the provision of a second safe landing option be made available at pre-flight. When coupled with the protection provided by the in-flight landing distance performance check for the destination aerodrome, they combine to ensure that the operations are conducted within the target level of safety.

d. there is a practical limit to the additional dispatch weight anticipated under the proposed amendment. Operators would be expected to determine the breakeven point for use of the proposed amendment as there is a diversion distance to a destination aerodrome beyond which it is counterproductive to plan a flight on the basis of the increase in landing weight at the destination aerodrome brought about by alternate aerodrome fuel carriage requirements.

Assessment by CASA is that the proposed amendment would not change the acceptable level of safety already permitted for operations in relation to destination alternate aerodrome providing a means of accepting reductions in safety margins at the planned destination aerodrome. The safety controls established for in-flight landing distance performance checks provide a means of ensuring that a dispatched flight anticipating better than worst-case forecast weather can safely land at a second landing option with the decision being made at a time proximity to landing far closer than in the pre-flight load planning case.

Change 4 - Permit alternate aerodrome minima to be no more restrictive than destination aerodrome minima

The proposed amendments to the Part 121 MOS in relation to qualifying minima being limited to no higher than determining minima are assessed by CASA as providing an equivalent level of safety to the established policy. Despite the strict application of qualifying minima at some aerodromes where the aerodrome approach facility configuration has limited infrastructure resulting in values higher than determining minima, there are circumstances embedded in the MOS that already accept the equivalence.

This concept is already expressed in Part 121 MOS subsection 4.10(3):

> …two destination alternate aerodromes for a flight, where it is an exception to the requirement to have two destination alternate aerodromes for a flight that are above qualifying minima if one destination alternate aerodrome for the flight is better than determining minima.

Change 5 - Add Table 4.11 Item for aerodromes with at least 2 straight-in instrument approaches to a single runway

The proposed amendments to the Part 121 MOS in relation to inserting an additional item in Table 4.11 are assessed as not retaining the equivalent level of safety. This assessment stems from the clear, but minor reduction in ceiling and visibility minima additives that would otherwise apply. It must be noted however, that the level of safety is assessed as acceptable as the construction of the additional item for Table 4.11 retains all of the protections envisaged in baseline legislation as the risks for runway availability, IAP redundancy and forecast ceiling and visibility variability are retained but applied in more supported aerodrome approach configuration circumstances than Item 3 is built to protect.

Change 6 - Permit isolated destination aerodromes to be planned with a destination alternate aerodrome

The target level of safety for operations to isolated destination aerodromes remains unchanged and is the basis of the target level of safety necessary to be retained by the proposed amendment.

The safety basis for the Part 121 alternate aerodrome rules is that flights must plan for, and retain, 2 safe landing options until arriving at the destination aerodrome. This requirement mitigates the safety hazard of one landing location becoming unsafe or unavailable due to unforeseen circumstances.

Isolated destination aerodromes are an alleviation from the 2 safe landing option requirement, provided extra fuel is carried until overhead the aerodrome and the forecast weather meets certain requirements. The 2 safe landing options after the critical point (CP) are taken to be the likelihood of at least 2 landing attempts at the isolated destination aerodrome being available within the endurance provided by the isolated destination aerodrome fuel (90 mins) in addition to fixed fuel reserve.

When the weather is worse than the relevant requirement at the CP, flights to isolated destination aerodromes cannot continue to the destination irrespective of how much fuel is carried, even if the fuel carried is greater than the isolated destination requirement and it is sufficient to meet normal destination alternate requirements. This circumstance limits the desired commercial certainty for air transport flights to these kinds of destinations, often leading to flights not departing unless there is some certainty that the forecast weather will be amended for the better prior to the CP.

The proposed amendment would permit flights to a destination normally classified as an isolated destination being able to be planned subject to satisfying certain conditions—including sufficient fuel to mitigate the potential risks arising from extended diversion distances and the possibility of engine failure or depressurisation on or immediately prior to that extended diversion.

Where a B-to-C leg exceeds the 90 mins ‘isolated distance’ then the additional fuel requirements above the baseline B-to-C leg expressed in Part 121 MOS subsections 7.05(5) and 7.05(6) will be required. The fuel requirements as consequential amendments would effectively reinstate the fuel requirement that would otherwise be alleviated on the B-to-C leg in normal circumstances. This re-instatement ensures that the aeroplane is required to have on board at the missed approach point at the destination aerodrome sufficient fuel to allow an aeroplane that suffers engine failure or loss of pressurisation, whichever results in the greater subsequent fuel consumption, to proceed to an alternate aerodrome and fly for 15 mins at a holding speed at 1,500 ft above the aerodrome elevation in ISA conditions and make an approach and landing.

Noting the amendment of appliable fuel requirements, the amendments to the destination aerodrome planning for isolated destinations aerodromes are assessed to preserve the target level of safety.

Change 7 - Replace IAP classifications to reflect updated Part 91 MOS changes

The target level of safety for planning minima for EDTO ERA aerodromes is established in the Part 121 MOS Table 4.19 as being determined based on instrument approach capability of the aeroplane at the planned aerodrome when considering the type of approach anticipated. Then with the appropriate visibility and if necessary, ceiling additives, results in a planning minima for the aerodrome.

The risk analysis of this proposal for inclusion of RNP-AR APCH as a permissible IAP type for an EDTO ERA aerodrome and for characterising IAP in the manner adopted in the Part 91 MOS contemplates safety hazards needing to be controlled. They include:

a. that an RNP AR APCH is not presently specifically included as an applicable IAP type for planning minima at an EDTO ERA aerodrome

b. that classifying the IAP types in the same manner as the Part 91 MOS amendment may introduce incorrect minima additive requirements.

Assessment by CASA is that the inclusion of RNP-AR APCH as a permissible IAP type for an EDTO ERA aerodrome and for characterising IAP in the manner adopted in the Part 91 MOS would not change the

acceptable level of safety already required for operations under existing Table 4.19 criteria. The controls applied in the approval to conduct RNP AR APCH surpass the minimum requirements necessary for equivalent level of safety performance for the other IAP types included in the unamended Table 4.19 IAP types.

Change 8 - Amend definition of TAWS Class-A and TAWS Class-B (also relevant to Part 135, Subpart 121.Z and CASA EX74/24 operations)

CASA has reviewed the detailed wording of TSO-C151 to compare TSO-C151a with TSO-C151b and the underlying standards of the TSO with the minimum operational performance standards (MOPS) of RTCA/DO-161A and RTCA/DO-367.

This review identified that (E)TSO-C151a, (E)TSO-C151b and (E)TSO-C151c all reference the same underlying RTCA/DO-161A MOPS dated 27/5/76, whereas the later TSO ‘d’ version references RTCA/DO-367.

CASA has assessed that the safety control effectiveness of TAWS Class-A, TAWS Class-B and TAWS Class-B+ is unchanged whether the TAWS meets the performance specification of (E)TSO-C151b or the earlier initial (E)TSO-C151a.

Impact on industry

Summary

CASA considers that the amendments will reduce the cost of compliance for industry whilst maintaining an appropriate level of safety assurance.

CASA will prepare and submit a Preliminary Assessment to the Office of Impact Analysis (OIA) and prepare an Impact Analysis document if required.

Change 1 - Remove RFFS requirements at EDTO ERA aerodromes within Australian territory

CASA assesses that removing the EDTO ERA RFFS category 4 requirement at aerodromes within Australian territory would avoid introducing increased cost, fuel burn and associated emissions. It would not introduce requirements that may lead to reductions in service to remote or regional areas.

If the proposal was not supported and the requirement was to commence as presently prescribed then the cost to industry of conducting domestic EDTO would likely increase, should they dispatch flights EDTO with compliant ERA aerodromes being planned. The cost increase arises from the likely EDTO fuel buildup necessary to ensure that compliant EDTO ERA with RFFS could meet the EDTO critical fuel scenarios from a point along the planned route to an EDTO ERA that may be at the fullest extent of the EDTO MDT for the aeroplane and a significant cross-track or along track distance from the destination aerodrome.

There are some routes within Australian territory that may not be able to be conducted if the EDTO ERA RFFS requirement was to commence as currently specified in the MOS as the flights must be conducted as EDTO and the available ERA do not have RFFS. Examples include flights to service Christmas Island and Cocos (Keeling) Island in the Indian Ocean, depending on the MDT of the aeroplanes selected for the services.

There would also be an associated, albeit limited, cost to operators to conduct management of change procedures within their operational documents if the MOS provision were to remain and commence as currently specified in the MOS.

Change 2 - Replace traditional RNP-based engine-out departure procedure (EODP) design criteria for obstacle assessment area (OAA) (also relevant to some Part 135 and CASA EX74/24 operations)

The proposed amendment incentivises operators to invest in higher navigation specification aeroplanes and adopt higher specification operational approvals such as RNP AR APCH and RNP AR DP, thereby enabling them to take advantage of higher operational departure weights at otherwise constrained aerodromes. The adoption of these higher specification capabilities is likely to enhance overall safety performance of the operations generally.

CASA assesses that the immediate cost to industry of replacing the legacy CAO 20.7.1B alternative PBN-based EODP with this proposal would likely be minimal, as operators with legacy EODP should meet the proposed new safety controls. Conversely, not providing a replacement, noting the legacy alleviation is due to end on 1 December 2024, would increase industry costs due to reduced operational capability from otherwise constrained departure aerodromes.

There may be increased cost of compliance if the legacy EODP have not been designed by an organisation or individual that cannot satisfy the proposed condition in relation to Part 173 or equivalent. Industry feedback has been that this condition is likely to be satisfied in the known cases of EODP design.

The proposed replacement provision would likely reduce industry costs over time as it provides a mechanism for non-legacy EODP approved operators to adopt the benefits brought by being able to depart from otherwise constrained aerodromes.

The proposed changes to Part 121 MOS subsections 9.04(3) and (4), to align the distance in metres with the specified RNP capability (i.e. change 300m to be 370m), would impact operators who have calculated take-off performance at frequently used aerodromes based on the 300m lateral distance.

Change 3 - Permit reduced destination aerodrome wet or contaminated pre-flight landing performance (also relevant to some Part 135 and CASA EX74/24 operations)

The proposed amendment would provide a means for operators to dispatch from aerodromes at higher weights in some limiting circumstances, subject to the conditions proposed being satisfied. This higher weight dispatch could translate to higher passenger numbers or additional freight uplift or additional fuel uplift capacity for a given passenger/freight load.

The cost of implementing the proposed amendment, which is optional for operators, is assessed to be minimal compared to the potential benefits. Operators seeking to use the increased dispatch weight and associated conditions would be required to amend their exposition contents to permit such operations. This significant change to their expositions would be at their expense.

Change 4 - Permit alternate aerodrome minima to be no more restrictive than destination aerodrome minima

The proposed amendment would provide a means for operators to plan destination alternate aerodromes that have weather minima lower than presently prescribed. This is likely to result in lower costs as destination alternate aerodromes may be able to be planned that are in closer proximity to the destination aerodrome than would otherwise be the case.

It is unlikely that the change would result in any negative impacts for operators.

Change 5 - Add Table 4.11 Item for aerodromes with at least 2 straight-in instrument approaches to a single runway

The impacts for key change 5 are the same as for key change 4.

Change 6 - Permit isolated destination aerodromes to be planned with a destination alternate aerodrome

The proposed amendment would provide a means for operators to safely operate flights to aerodromes that would otherwise be isolated destination aerodromes in weather conditions that would otherwise not be permitted.

The associated benefit to people in those locations in relation to increased likelihood of service is likely to have a positive outcome on public and social interests.

The proposed amendment is assessed as not likely to increase cost to industry.

Change 7 - Replace IAP classifications to reflect updated Part 91 MOS changes

The proposed amendment would align the terminology used for IAP types in Chapter 4 of the Part 121 MOS with Chapter 15 of the Part 91 MOS. It would also provide clarity that RNP AR APCH is an acceptable IAP for use in establishing the EDTO ERA aerodrome planning minima.

The proposed amendment would only impact Part 121 operators approved to conduct EDTO and that elect to use RNP AR APCH for EDTO ERA aerodrome planning minima.

CASA assesses the cost to these operators is minimal and offset by the savings for such operators being able to use RNP AR APCH for use in establishing the EDTO ERA aerodrome planning minima.

Change 8 - Amend definition of TAWS Class-A and TAWS Class-B (also relevant to Part 135, Subpart 121.Z and CASA EX74/24 operations)

The proposed amendment would enable operators required to fit TAWS Class-A, TAWS Class-B or TAWS Class-B+ equipment to use equipment that meets the earlier initial (E)TSO-C151a standard as well as the currently allowed (E)TSO-C151b and subsequent versions, thereby, for some operators, enabling the use of aeroplanes which may have TAWS fitted of this earlier standard.

As the CASR Dictionary relies on the definitions of TAWS Class-A and TAWS Class-B contained in the Part 121 MOS for use across the CAR and CASR, the proposed change will affect every occurrence of these defined terms within these sets of regulations and their subordinate instruments, such as Civil Aviation Orders, Manuals of Standards, exemptions, directions, approvals, authorisations, permissions, etc.

Relevant to the flight operations regulations, the defined terms TAWS Class-A and TAWS Class-B are used in the Part 121 MOS, the Part 135 MOS, the 10-13 seat aeroplane exemption CASA EX74/24 and the Subpart 121.Z TAWS regulations.

Previous consultations

Change 1 - Remove RFFS requirements at EDTO ERA alternate aerodromes within Australian territory

Key previous consultation milestones include:

a. the 'Technical Draft' of the proposed Part 121 MOS Version 1.0 developed in 2015

b. the Part 121 Aviation Safety Advisory Panel (ASAP) Technical Working Group (TWG) were involved detailed discussions regarding Part 121 MOS provisions throughout 2020, with an initial delayed commencement period, for this matter, of two years (2 December 2023)

c. most recently this matter was discussed at an ASAP TWG meeting held on 6 December 2024, with TWG members providing initial feedback at the meeting about the issues associated with this requirement and then providing further feedback in the following months.

Change 2 - Replace transitional RNP-based engine-out departure procedure (EODP) design criteria for obstacle assessment area (OAA) (also relevant to some Part 135 and CASA EX74/24 operations)

Key previous consultation milestones include:

a. the 'Technical Draft' of the proposed Part 121 MOS Version 1.0 developed in 2015 section 3.2 Take-off performance provided alternative take-off area requirements

b. the Part 121 MOS amendment which arose from industry feedback and occurred just before initial commencement that inserted alternative take-off area requirements carried over from CAO 20.7.1B subsection 12A, with an initial expiry of one year later (2 December 2022)

c. in November 2023 the expiry date was extended for a further two years (2 December 2024) to enable policy discussions with Part 121 operators about an enduring provision

d. in November 2024 the expiry date was extended by a further one year (2 December 2025) as other priorities precluded the intended policy discussions from occurring in sufficient time before the deadline

e. most recently this matter was discussed at the ASAP TWG meeting held 6 December 2024, with TWG members discussing CASA's proposal and providing feedback at the meeting and in the following months.

Change 3 - Permit reduced destination aerodrome wet or contaminated pre-flight landing performance (also relevant to some Part 135 and CASA EX74/24 operations)

This proposal has not previously been the subject of industry consultation.

It arises from an individual exemption application requesting alleviation to the prescriptive pre-flight landing performance requirements when the destination aerodrome is forecast to be wet or contaminated, on the basis that a destination alternate aerodrome would be planned.

Change 4 - Permit alternate aerodrome minima to be no more restrictive than destination aerodrome minima

This proposal has not previously been the subject of industry consultation.

It arises from industry feedback and questions sent to the CASA Regulatory Guidance section (formerly the Guidance Delivery Centre). There has also been industry feedback provided during CASA's assessment of applications for Part 121 MOS section 4.21 operational variation (OV) approvals.

Change 5 - Add Table 4.11 Item for aerodromes with at least 2 straight-in instrument approaches to a single runway

This proposal has not previously been the subject of industry consultation.

It arises from industry feedback and questions sent to the CASA Regulatory Guidance section (formerly the Guidance Delivery Centre). There has also been industry feedback provided during CASA's assessment of applications for Part 121 MOS section 4.21 OV approvals.

Change 6 - Permit isolated destination aerodromes to be planned with a destination alternate aerodrome

This proposal has not previously been the subject of industry consultation.

It arises from an application for a Part 121 MOS section 4.21 OV approval.

Change 7 - Replace IAP classifications to reflect updated Part 91 MOS changes

This proposal has not previously been the subject of industry consultation.

It arises from the Part 91 MOS amendment of earlier in 2025.

Change 8 - Amend definition of TAWS Class-A and TAWS Class-B (also relevant to Part 135, Subpart 121.Z and CASA EX74/24 operations)

This proposal has not previously been the subject of industry consultation.

It arises from an individual exemption application which identified that the MOS definitions of TAWS Class-A and TAWS Class-B should enable the use of (E)TSO-C151a as well as the currently prescribed (E)TSO-C151b and subsequent versions.

Submitting your view and what next

We would like to hear your views on the amendments we have presented. Please review the proposal and provide your feedback.

Your feedback will make a valuable contribution to CASA's policy decision-making process and help to fully inform CASA of the perceived impacts (positive and negative) on the aviation community regarding the proposals.

CASA will consider all comments received as part of this consultation process and incorporate changes as appropriate. Comments on this consultation should be submitted through the online response (CASA Consultation Hub) form by close of business 10 November 2025.