



International Civil Aviation Organization

**THE TWELFTH MEETING OF PERFORMANCE BASED NAVIGATION
IMPLEMENTATION COORDINATION GROUP (PBNICG/12)**

Beijing, China, 16-18 December 2025

Agenda Item 4: States' PBN Implementation Progress and the challenges faced by the States and lessons learnt.

UPDATE ON PBN IMPLEMENTATION IN AUSTRALIA
(Presented by Australia)

SUMMARY

This paper presents a brief update on Australia's activities related to:

- Ground Based Augmentation System (GBAS) implementation
- Continuous Descent Operations (CDO) implementation progress
- ICAO compliant Waypoint renaming progress

1. INTRODUCTION

1.1 This information paper provides an update on PBN implementation activities in Australia, in particular:

- Ground Based Augmentation System (GBAS) implementation update,
- Further Continuous Descent Operations (CDO) implementation progress update,
- ICAO compliant Waypoint renaming progress,

2. DISCUSSION

Ground Based Augmentation System (GBAS) implementation update

2.1 Australia continues to operate two Honeywell SLS-4000 GBAS systems, at Sydney and Melbourne airports, supporting Category I GBAS Landing System (GLS) approaches to all runway ends (six (6) at Sydney and four (4) at Melbourne).

2.2 GBAS Landing System (GLS) continues to be the expected approach method for capable aircraft flying into Sydney or Melbourne. Generally, a GLS approach is seen as a more stable approach to fly from a pilot perspective. The vast majority of pilots flying equipped aircraft elect to fly the GLS approach at the two airports where it is available.

2.3 To enable Air Traffic Control (ATC) to identify which aircraft are GLS equipped, a change was made to the current Australian air traffic management system (Eurocat). The system automatically scans the Flight Plan for arriving aircraft and searches for GLS capability. When GLS capability is detected, the arrival runway field of the surveillance track label for that aircraft is highlighted in a different colour to the Approach Controllers. Procedures dictate that any aircraft that the system indicates as eligible for GLS will be cleared for a GLS approach. ATC is able to manually override the colour change to ensure that the flight data record is correct if an operator did not wish to fly the GLS approach.

2.4 In Australia's next-generation air traffic management system currently under development (Civil Military Air Traffic System (CMATS)) an indication is also provided to Approach controllers via a different method. CMATS includes an 'Aircraft Capabilities Management' (ACM) whereby an airspace volume and corresponding equipment rule can be defined in Terminal Approach Airspace. When an aircraft enters the relevant airspace volume, the system searches the flight plan for GLS capability. When GLS capability is detected an alphanumeric indication appears on the surveillance track label for that aircraft. The approach controller may then clear the aircraft for the GLS approach, which on readback is indicated in the 'cleared flight level' field of the label via a drop-down menu.

Continuous Descent Operations (CDO) implementation progress update

2.5 Australia has been conducting a 'Managed Descent' form of CDO since a trial commenced in December 2022, progress was previously reported at the eleventh (11th) meeting of the PBNICG. There has been positive uptake of the trial both by domestic airline pilots as well as the Air Traffic Controllers from the trial areas.

2.6 To recap, the trial uses published routes that achieve a predictable delay through additional track miles (predictable sequencing) prior to the aircraft top of descent, with finer adjustment achieved through speed control. Pilots are issued with a waypoint (feeder fix - published on charts) crossing time requirement e.g. CROSS BULLA AT 0123. Crossing times are generated by the MAESTRO arrivals system. All aircraft fly at 250KT from the feeder fix.

2.7 Following successful implementation of the procedure for all enroute ATC groups managing arrivals inbound to Melbourne, the CDO model that was successfully trialed has been expanded to Perth, Brisbane and Sydney airports. Further details on the latest trial expansions may be located at:

- AIC H40/25: [Melbourne Airport \(YMLL\) Predictable Sequencing Trial Amendment](#)
- AIP SUP H04/25: [Perth Airport \(YPPH\) Predictable Sequencing Trial Expansion](#)
- AIP SUP H35/25: [Sydney Continuous Descent Operations \(CDO\) Trial Expansion](#)
- AIP SUP H83/25: [Brisbane Aerodrome \(YBBN\) Predictable Sequencing Trial Expansion](#)

2.8 Post implementation reviews have been completed for all locations. Feedback from Australian domestic operators has been generally favorable, the continued expansion to additional state capital city airports has been primarily because of demand from industry. Limited feedback from international airlines has been received, and the procedure is used less often with these operators. Anecdotally, the need to use more non-standard phraseologies has been a barrier for wider used by operators for whom English is a second language.

2.9 Additionally, feedback has been received from industry related to promulgation of the procedures. Currently, the waypoints necessary for use of CDO are published (via AIP SUP) as amendments to the Australian Designated Airspace Handbook (DAH) (see extracts below). DAH is not a document that is readily available to pilots in the cockpit, as such, operators have requested that the additional waypoints be added to Australian Aeronautical Information Publication Maps (AIP MAP) as a type of arrival plate within Australian Departure and Approach Procedures (DAP) for ease of access. This feedback is currently being actioned.

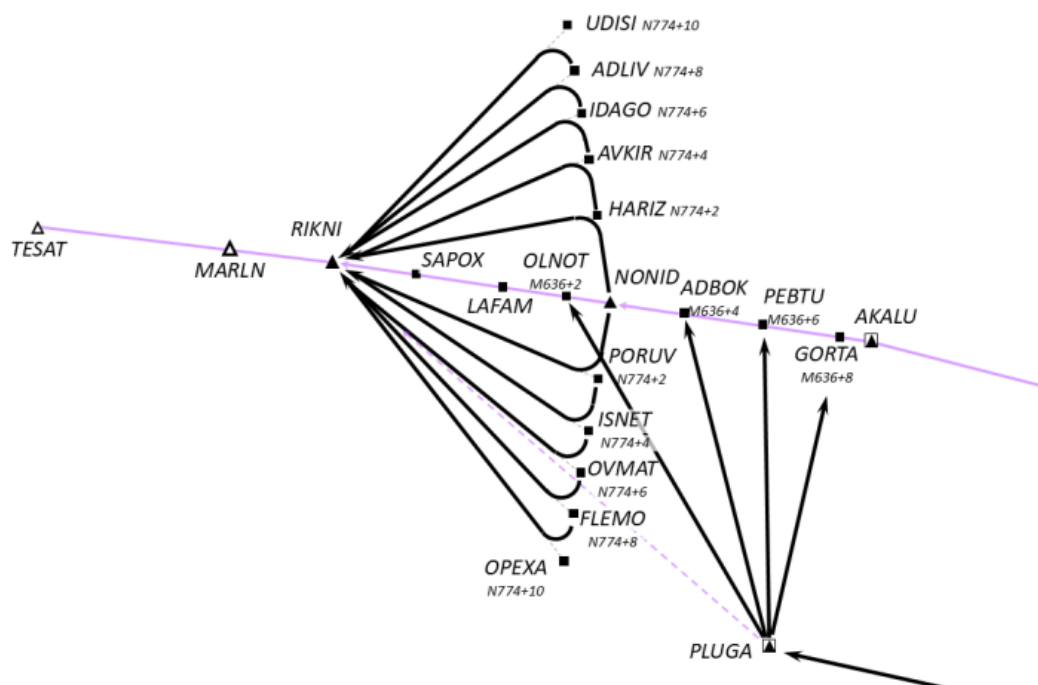
2.9.2 AIP SUP H35/25 (Sydney implementation) DAH amendment

3.2 DAH Section 23 - AIR ROUTES

ATS ROUTE N774 O/W

4 OLREL	353903.0S 1630000.0E 262/262	379.2	0/0 H
4 AKALU	342230.5S 1550950.1E 269/263	393.6	0/0 H
2 NONID	341428.6S 1535449.2E 264/264	62.7	0/0 H
1 SAPOX	340750.0S 1525745.0E 265/265	47.8	0/0 H
2 RIKNI	340455.6S 1523355.8E 265/263	20.0	0/0 H
3 MARLN	340205.0S 1520402.1E 264/264	25.0	0/0 H
3 TESAT	335637.7S 1511057.3E 265/---	44.5	0/0 H

2.9.3 AIP SUP H35/25 (Sydney implementation) CDO route diagram



2.10 Safety and Human factors assessments in accordance with the Australian Safety Management System have continued to be completed prior to each of the implementations. No additional safety

hazards have been identified, however post the Melbourne implementation, a human factors related item was identified. For the additional locations, to make it easier for ATC to enter the appropriate CDO route into an aircraft's flight data record, we have ensured that the additional DAH published waypoints are included in the air traffic management system (Eurocat) adaptation data prior to commencement of the procedure. Positive feedback has been received from ATC regarding this additional control.

2.11 In Australia's update at PBNICG11, the potential implications of the adoption of CDO with 'open' STARs in Sydney was noted, with an emphasis on how they impact on procedure effectiveness and uptake. (Open STARs are STARs that terminate without joining an instrument approach procedure. These are used at Sydney to facilitate vectoring onto parallel approaches.) It has been established that the use of open STARs has not detrimentally affected the industry uptake of CDO procedures.

2.11.1 It was noted however, that due to the location of Flight Data Region/Flight Information Region (FDRG/FIR) boundary to the north of Sydney Terminal Approach Area (TMA), it would not be obvious to the Sydney approach controllers (due lack of indication via the ATM system route function) that an aircraft had been issued CDO deviations by ATC in Brisbane Centre. As a result, in some cases Sydney Approach would provide additional sequencing instructions to affected aircraft. This in no way affected safety but could potentially compromise the efficiency gains associated with the CDO procedures. To resolve this issue, an additional electronic coordination message template was added to the Sydney Arrivals Management (AMAN) software (Thales Maestro). This message is sent by Brisbane Enroute ATC to Sydney Approach whenever an aircraft is issued CDO routing.

2.12 Environmental benefits (fuel savings) were mentioned in Australia's update to PBNICG11. As an update, since commencement of the original Melbourne trial, it has been calculated that approximately 415,000 kg of fuel has been saved across all four locations where CDO has been implemented. As mentioned previously, noise benefits continue to be difficult to quantify due to lack of noise monitors in areas that would expect most benefit.

ICAO compliant Waypoint renaming progress

2.13 Australia's program to rename all duplicated waypoint names in compliance with ICAO conventions is nearing completion. Australian began with 784 waypoint names duplicated in other states, and that number has now been reduced to 59. The remaining duplicated waypoints are located within the Sydney, Canberra, Brisbane and Coolangatta (Gold Coast) TMA volumes.

2.14 The remaining duplicated waypoints have not yet been replaced for three main reasons:

- Shortage of specialist operational ATC subject matter experts (SME) to assess the changes – Australia has prioritized airspace/air route design associated with the implementation of the new Western Sydney International Airport (WSIA);
- Shortage of suitable replacement waypoint names on the Australian high density east-coast due to high Five-Letter Naming Code (LNC) waypoint density and very high failure rate of 'sounds-like' proximity checks; and
- ATC SME advice that a large portion of remaining duplicated IDENTs are operationally significant points. ATC have advised that the replacement of well-known and pronounceable

IDENTs with a less pronounceable one for significant points may pose a greater risk than operating with a duplicated 5LNC.

3. ACTION REQUIRED BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper; and
- b) discuss any relevant matters as appropriate.

Summary of the paper to be included in the meeting report-

Australia provided an update on PBN implementation activities in Australia. Ground Based Augmentation System (GBAS) is now the expected approach at Sydney and Melbourne airports, supporting Category I GBAS Landing System (GLS) approaches to all runway ends. The Continuous Descent Operations (CDO) trial for managed descent has continued to be successful and has expanded to capture arrivals to Melbourne, Sydney, Brisbane and Perth international airports. Progress on the removal of duplicated Five-Letter Naming Code (5LNC) waypoint continues, with small proportion of duplicated names remaining.