

# PBN IMPLEMENTATION UPDATE

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Performance-based navigation (PBN) has now been implemented at 17 controlled aerodromes in New Zealand. Gisborne and Napier will have PBN implemented in November 2020.



The New Southern Sky (NSS) National Airspace and Air Navigation Plan envisions a full PBN environment in New Zealand by 2023. There is no mandate for PBN, so Airways will accommodate a 'mixed-mode' of PBN and non-PBN aerodrome procedures for a number of years yet.

Already, more than 90 percent of New Zealand flights are PBN-capable.

More aviation operators are expected to upgrade to PBN together with ADS-B upgrades by 2022. This will contribute to greater safety and efficiency benefits.

## What are the benefits?

Safety benefits include consistent and predictable flight procedures that can be pre-programmed into flight management systems, and a standardisation of navigation terms. PBN designs can include traffic de-confliction, and reduce the need for tactical manoeuvring of aircraft.

ICAO data on CFIT (controlled flight into terrain) also indicates that approaches with lateral guidance are 25 times safer than those without, and vertical guidance makes them eight times safer than that.

PBN delivers the safety, environmental, economic and social benefits anticipated in the New Southern Sky plan. This is through improved and safer access to aerodromes in poor weather (low minima); fewer CO<sub>2</sub> emissions (flight time/fuel burn); reduced noise (continuous climb and descent); and greater aerodrome capacity (arrival/departure integration).

It also supports the move from procedural air traffic management to surveillance control in busy environments, enabling management of increasing traffic volumes.

Under the NSS aviation modernisation programme, PBN contributes to forecast wider economic benefits of \$904M by 2035.

## Background

In 2008, ICAO issued the Performance-based navigation concept in the PBN Manual (Doc 9613). This provides guidance to move aviation away from sensor-based navigation using ground-based beacons, to a performance-based system placing greater reliance on satellite-based technologies.

The CAA developed a PBN Implementation Plan in 2009 to meet the ICAO guidance. At the heart of the plan was the introduction by Airways of PBN implementations across controlled aerodromes in New Zealand.

## Stay up-to-date

You can receive email notifications when there are PBN updates on the CAA website. To subscribe, visit [www.caa.govt.nz/subscribe](http://www.caa.govt.nz/subscribe). You can select what lists you would like to subscribe to, including PBN and New Southern Sky. ➔

## PBN benefits per annum



**76,000**  
minutes  
avoided  
flight time



**\$2.5M**  
value of  
passenger  
time



**4.8M kg**  
reduced  
CO<sub>2</sub>  
emissions



**\$3.6M**  
direct  
financial  
benefit

## // WHO'S INVOLVED?

- **New Southern Sky** maintains oversight of, and addresses issues at the PBN Implementation Working Group meetings with Airways, Aeropath, CAA, and operators.
- **The CAA** – for procedure and airspace approvals, regulatory support and operator approvals for PBN.
- **Aerodrome operators** – for community engagement, and agreement to publish and use procedures.
- **Aircraft operators and airspace users** – for performance, PBN capability, and identification of needs.
- **Airways, including ATC** – for policy and standards, training, and software.
- **Aeropath** (an Airways company) – for procedure design, charting, and AIP updates.
- **The Ministry of Transport** continues to lead the ground-based navigation aids review panel.