



CAMEROON CIVIL AVIATION AUTHORITY – DIRECTION OF AVIATION SAFETY		
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PERFORMANCE BASED NAVIGATION OPERATIONAL APPROVAL HANDBOOK	ED	01 DU 01/11/2014
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DEFINITIONS

Aircraft-based augmentation system (ABAS) - A system which augments and/or integrates the information obtained from the other GNSS elements with information available on board the aircraft. The most common form of ABAS is the receiver autonomous integrity monitoring (RAIM).

Area navigation (RNAV) - A navigation method that allows aircraft to operate on any desired flight path within the coverage of ground- or space-based navigation aids, or within the limits of the capability of self-contained aids, or a combination of both methods.

Flight technical error (FTE) - The FTE is the accuracy with which an aircraft is controlled as measured by the indicated aircraft position with respect to the indicated command or desired position. It does not include blunder errors.

Global navigation satellite system (GNSS) - A generic term used by the International Civil Aviation Organization (ICAO) to define any global position, speed, and time determination system that includes one or more main satellite constellations, such as GPS and the global navigation satellite system (GLONASS), aircraft receivers and several integrity monitoring systems, including aircraft-based augmentation systems (ABAS), satellite-based augmentation systems (SBAS), such as the wide area augmentation systems (WAAS), and ground-based augmentation systems (GBAS), such as the local area augmentation system (LAAS).

Global positioning system (GPS) - The global positioning system (GPS) of the United States is a satellite-based radio navigation system that uses precise distance measurements to determine the position, speed, and time in any part of the world. The GPS is made up by three elements: the spatial, the control, and the user elements. The GPS spatial segment nominally consists of, at least, 24 satellites in 6 orbital planes. The control element consists of 5 monitoring stations, 3 ground antennas, and one main control station. The user element consists of antennas and receivers that provide the user with position, speed, and precise time.

Navigation specifications - Set of aircraft and flight crew requirements needed to support performance-based navigation operations in a defined airspace. There are two kinds of navigation specifications:

Required Navigation Performance (RNP) Specification - Area navigation specification that includes the performance control and alerting requirement, designated by the prefix RNP; e.g., RNP 4, RNP APCH, RNP AR APCH.

Area Navigation (RNAV) Specification - Area navigation specification that does not include the performance control and alerting requirement, designated by the prefix RNAV; e.g., RNAV 5, RNAV 2, RNAV 1.



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Navigation system error (NSE) - The difference between the true position and the estimated position.

Path definition error (PDE) - The difference between the defined path and the desired path at a given place and time.

Performance-based navigation (PBN) - Performance-based area navigation requirements applicable to aircraft conducting operations on an ATS route, on an instrument approach procedure, or in a designated airspace.

Receiver autonomous integrity monitoring (RAIM) - A technique used in a GPS receiver/processor to determine the integrity of its navigation signals, using only GPS signals or GPS signals enhanced with barometric altitude data. This determination is achieved by a consistency check between redundant pseudo-range measurements. At least one additional available satellite is required with respect to the number of satellites that are needed for the navigation solution.

RNP operations - Aircraft operations that use an RNP system for RNP applications.

RNP system - An area navigation system that supports on-board performance control and alerting.

Standard instrument arrival (STAR) - A designated instrument flight rules (IFR) arrival route linking a significant point, normally on an air traffic service (ATS) route, with a point from which a published instrument approach procedure can be commenced.

Standard instrument departure (SID) - A designated instrument flight rule (IFR) departure route linking the aerodrome or a specified runway of the aerodrome with a specified significant point, normally on a designated ATS route, at which the en-route phase of a flight commences.

Total system error (TSE) - The difference between the true position and the desired position. This error is equal to the sum of the vectors of the path definition error (PDE), the flight technical error (FTE), and the navigation system error (NSE).

Note. - FTE is also known as path steering error (PSE), and the NSE as position estimation error (PEE).

Way-point (WPT) - A specified geographical location used to define an area navigation route or the flight path of an aircraft employing area navigation. Way-points area identified as either:

Fly-by way-point - A way-point which requires turn anticipation to allow tangential interception of the next segment of a route or procedure.

Fly over way-point - A way-point at which a turn is initiated in order to join the next segment of a route or procedure.