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.

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.

ACRONYMS

ABAS	Aircraft-based augmentation system
AC	Advisory circular (FAA)
AFM	Aircraft flight manual
AIP	Aeronautical information publication
AIRAC	Aeronautical information regulation and control
ANSP	Air navigation service provider
AP	Automatic pilot
APV	Approach procedure with vertical guidance
ARP	Aerodrome reference point
ATC	Air traffic control
ATM	Air traffic management
ATS	Air traffic service
Baro-VNAV	Barometric vertical navigation
CA	Course to an altitude
CDI	Course deviation indicator
CDU	Control and display unit
CF	Course to a fix
Doc	Document
DF	Direct to a fix
DME	Distance-measuring equipment
EASA	European Air Safety Agency
EGPWS	Enhanced ground proximity warning system
EHSI	Electronic horizontal situation indicator
FAA	Federal Aviation Administration (United States)
FAF	Final approach fix
FAP	Final approach point
FD	Flight director
FD	Fault detection
FDE	Fault detection and exclusion
FM	Course from a fix to a manual termination
FMS	Flight management system
FOI	Flight Operations Inspector
FOSA	Flight Operational Safety Assessment

FTE	Flight technical error
GBAS	Ground-based augmentation system
GNSS	Global navigation satellite system (ICAO)
GLONASS	Global navigation satellite system (Russia)
GPS	Global positioning system (US)
GS	Ground speed
HAL	Horizontal alert limit
HIL	Horizontal integrity limit
HPL	Horizontal Protection Level
HSI	Vertical status indicator
HUGS	Head up guidance system
ICAO	International Civil Aviation Organization
IF	Initial fix
IFR	Instrument flight rules
IMC	Instrument meteorological conditions
LAAS	Local area augmentation system
LNAV	Lateral navigation
LOA	Letter of authorisation/letter of acceptance
LPV	Localizer Performance with Vertical Guidance
MCDU	Multi-function control and display
MEL	Minimum equipment list
MOC	Minimum Obstacle Clearance
NM	Nautical miles
NAVAIDS	Navigation aids
NOTAM	Notice to airmen
NPA	Non-precision approach
NSE	Navigation system error
OM	Operations manual
OEM	Original equipment manufacturer
OPSPEC	Operations specification
PA	Precision approach
PANS-ATM	Procedures for Air Navigation Services - Air Traffic Management
PANS-OPS	Procedures for Air Navigation Services - Aircraft Operations
PBN	Performance-based navigation

PDE	Path definition error
PEE	Position estimation error
PF	Pilot flying
PNF	Pilot not flying
PM	Pilot monitoring
POH	Pilot operating handbook
P-RNAV	Precision area navigation
PSE	Path steering error
QAR	Quick access recorder
RAIM	Receiver autonomous integrity monitoring
RNAV	Area navigation
RNP	Required navigation performance
RNP APCH	Required navigation performance approach
RNP AR APCH	Required navigation performance authorisation required approach
RTCA	Radio Technical Commission for Aviation
SBAS	Satellite-based augmentation system
SID	Standard instrument departure
SRVSOP	Regional Safety Oversight Cooperation System
STAR	Standard instrument arrival
STC	Supplemental type certificate
TAWS	Terrain awareness system
TF	Track to fix
TSE	Total system error
TSO	Technical standard order
VA	Heading to an altitude
VI	Heading to an intercept
VM	Heading to a manual termination
VMC	Visual meteorological conditions
WAAS	Wide area augmentation system
WGS	World geodetic system
WPR	Waypoint Precision Error
WPT	Waypoint