Performance Based Navigation Has Increased Efficiency In Aviation

By VICTORY UGONWENYI

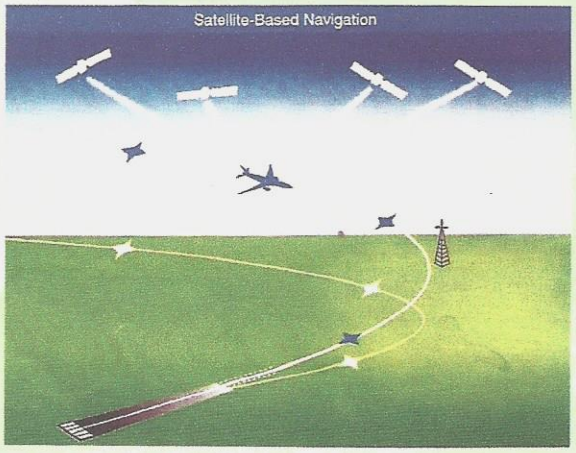
After two years of implementation of Performance Based Navigation (PBN) in four major airports in Nigeria, the procedure has provided increased capacity, efficiency, environmental improvements, greater access to airports and runways.

These airports are Nnamdi Azikiwe International Airport, Abuja, (NAIA), Murtala Mohammed International Airport, Lagos, (MMIA), Mallam Aminu Kano International Airport, Kano, (MAKIA) and Port Harcourt International Airport, Port Harcourt, (PHIA), Terminals Maneuvering Areas (TMA).

The initiative was a collaborative effort between the Regulatory Authority and Boeing International to ensure safety, efficiency and sustainable development of Air Traffic Management (ATM).

An order for the implementation was issued a couple of years ago by the Nigerian Civil Aviation Authority (NCAA) Order no.001/2013 section 30(5) Civil Aviation Act.2006 and published in the Aeronautical Information Circular (AIC) 19 series.

Furthermore, this order requires the cooperation of Air Operators to make their aircrafts PBN compliant. It also authorizes Flight Operations Inspectors and Airworthiness Inspectors of the NCAA Flight Safety Group (FSG) to use same for the purpose of assessing operational and airworthiness compliance during the Operational Approval process of domestic and foreign Air Operators



Initially, the aviation industry was experiencing costly ground based infrastructure of radio- navigation aids and surveillance radar. This allowed inefficient navigational use of airspace, characterized by inherent limitations to system input, rising congestion and flight delays.

Therefore against this background, the advent of PBN has brought a move toward a future Air Traffic Management (ATM) operating environment that is fundamentally safer, more capable and less costly, also relies primarily on satellite- based navigation.

Consequently, these four major international airports are considered in the near term (2010-2012) PBN Airport Implementation plan while other airports are integrated in the Medium term (2013-2016) and long term (2017-2025) respectively.

The Medium term phase will cover the eight airports which include Benin, Calabar, Enugu, Ilorin, Jos, Maiduguri, Sokoto and Yola airports.PBN implementation in these airports is on-going according to the implementation roadmap, also the long term phase will cover other airports.

Through the application of Area Navigation (RNAV) system performance and Required Navigation Performance (RNP) specifications, PBN provides the means for flexible routes and terminal procedures in terms of accuracy, integrity, availability, continuity and functionality needed for the proposed operations in the airspace.

Therefore, the authority has advised air operators and stakeholders of the industry to support the PBN concept considering the significant benefits it offers in all phases of flight and aircraft in the nation's civil aviation development.

This can be done by ensuring they meet NCAA operational requirements in accordance with the appropriate PBN specifications in order to make their aircraft compliant. TR

The Concept of PBN simply means navigation based on Performance. Whereby Aircraft can fly the most direct possible route increasing in efficiency, capacity, and low fuel consumption also better way to manage air traffic. PBN is the most practical solution for regulating the expanding domain of navigation system.

In addition, PBN Concept represents a shift from sensor-based to performance- based navigation with technological advancements which allowed global reconsideration of how air traffic should best be managed.

PBN brings greater precision to the navigation portion and has been collaboratively defined under the International Civil Aviation Organization (ICAO) as formalized in the ICAO PBN manual of 2007. (Doc.9613)

PBN encompasses two closely related navigation system concepts: Area navigation (RNAV) and required navigation performance (RNP) that aids accuracy, integrity, availability, continuity and functionality needed for operations.

Also PBN includes enroute and oceanic operations, standard terminal arrival routes (STAR), instrument approaches, and standard instrument departures (SID).

Benefits of PBN includes improved traffic with reduction in fuel consumption, increase in capacity, reduced flight delays and aircraft noise impacts on communities surrounding airports.

Also enhanced air safety through reduced operational errors and reduced controller- pilot workload through PBN's use of procedure clearances.

Minister Advises Airlines to Take Advantage of PBN

Chief Osita Chidoka, Minister of Aviation

By VICTORY UGONWENYI and RACHAEL OWOYEMI

The Honourable Minister of Aviation, Chief Osita Chidoka has advised the airline operators to take advantage of the Performance Based Navigation (PBN) and the benefits accruable from it.

Captain Victor Iruebe, Senior Special Assistant to the President on Aviation Reforms who represented the Minister, made this remark during the PBN Stakeholders Forum held at the Nigerian Civil Aviation Authority (NCAA) Training Center Annex recently.

He used this forum to stress that PBN implementation is in line with ICAO standards on safety, security, efficiency and environmental pressures.

Consequently, the advent of PBN has brought a move toward a future Air Traffic Management (ATM) operating environment that is fundamentally safer, more capable and less costly, also relies primarily on satellite-based navigation.

Capt. Iruebe reiterated the advantages of this approach to the air operators by stating that it enables harmonized and practicable flight paths which result in more efficient use of existing aircraft capabilities as well as improved safety, greater airspace capacity, better fuel efficiency and resolution of noise issues.

Speaking further, he said, with all these benefits the government will require the co-operation of stakeholders in achieving the full implementation of PBN in Nigeria.

The Director General Nigerian Civil Aviation Authority (NCAA) Capt. Muhtar Usman who was represented by Capt. Abdullahi Sidi, the Director of Operations and Training (DOT) in his address said that Nigeria has recorded some laudable achievement.

However, we still have more to do as PBN remains, at present, the most valuable solutions to the complex issues of world air navigation going by its benefits and attributes of trajectory flight path, enhanced safety, fuel economy, elimination of flight delays and others. This is why NCAA has adopted this technology in Nigeria.

According to him, the Operational approval guidance material which will be launched today will be of immense benefit to operators. The industry must work together to ensure that Nigeria realizes the full benefits of PBN which is the highpoint of this stakeholders forum.

In addition, he urged all foreign and local airline operators; air navigation services providers, civil air transportation system, military and other stakeholders to join hands with NCAA to move aviation industry in Nigeria forward.

Present at the forum were aviation experts and practitioners, airline Operators, federal and state Government officials, Heads of Parastatals and Agencies, representatives of aviation organisations. TR

Dr. Joyce Nkemakolam, Dir. Airspace & Aerodrome Standards and Capt. Sidi Dir. Operations & Training and Capt. Victor Iruebe presiding over the meeting