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PBCS Overview Objective

The performance-based communication and surveillance (PBCS) concept provides objective operational criteria to evaluate different and emerging communication and surveillance technologies, intended for evolving air traffic management (ATM) operations. The PBCS also provides a framework in which all stakeholders (regulators, air traffic service providers, operators, communication service providers (CSP), and manufacturers) continue to collaborate in optimizing the use of available airspace while identifying and mitigating safety risks.

PBCS Vs PBN

The PBCS concept is aligned with that of performance-based navigation (PBN). While the PBN concept applies required navigation performance (RNP) and area navigation (RNAV) specifications to the navigation element, the PBCS concept applies required communication performance (RCP) and required surveillance performance (RSP) specifications to communication and surveillance elements, respectively. However, there are some differences between the PBCS and PBN concepts:

a) the PBCS concept applies RCP and RSP specifications, which allocate criteria to ATS provision, including communication services, aircraft capability, and the aircraft operator; whereas the PBN concept applies RNP/RNAV specifications, which allocate criteria only to the aircraft capability and the aircraft operator; and

b) the PBCS concept includes post-implementation monitoring programmes, on a local and regional basis, with global exchange of information; whereas the PBN concept includes real time monitoring and alerting functionality in the aircraft capability.

Framework

The PBCS concept provides a framework to apply RCP and RSP specifications to ensure acceptable levels of communication and surveillance capabilities and performance of an operational system. These specifications are applied using the following methods:

a) **prescription** of an RCP specification for a communication capability and/or an RSP specification for a surveillance capability, either of which is required for air traffic services (ATS) provision in a particular airspace;
b) **operational authorization** to file the flight plan RCP/RSP capabilities including aircraft equipage where RCP and/or RSP specifications are prescribed for the communications and/or surveillance capabilities supporting the ATS provision; and
c) **local and regional monitoring programmes** to assess actual communication and surveillance performance against RCP and RSP specifications, thereby determining corrective action, as applicable, for the appropriate entity.

When RCP/RSP specifications are not prescribed, the ANSP may still apply appropriate RCP/RSP specifications to identify the continuing compliance criteria for PBCS monitoring programmes when employing new technology for communication and surveillance capabilities.

Performance-based separation

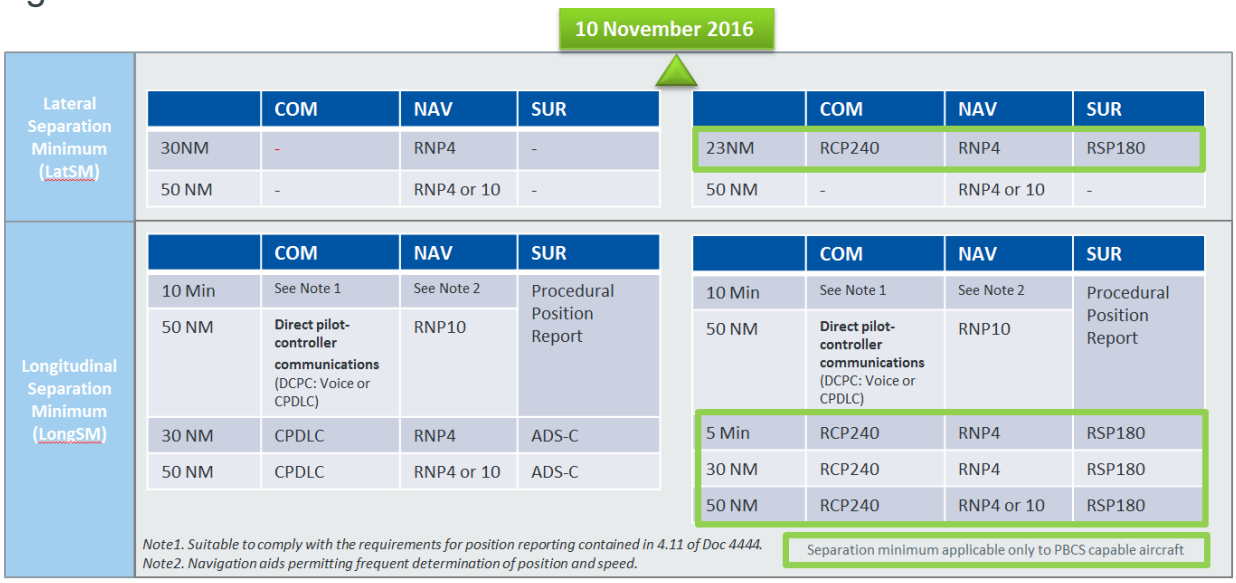
Global standards

As of 10 November 2016, certain separation minima shall be applied only to those pairs of aircraft meeting required communication performance (RCP) and a required surveillance performance (RSP) specifications in accordance with provisions in:

- Annex 6 — Operation of Aircraft;
- Annex 11 — Air Traffic Services;
- Procedures for Air Navigation Services — Air Traffi c Management (PANS-ATM, Doc 4444);

- Regional Supplementary Procedures (Doc 7030).

In particular, Amendment 7 to the PANS-ATM (Doc 4444) made changes to the 30NM lateral and 30NM/50NM longitudinal separation standards and introduced a new time-based longitudinal separation as described in in Figure below.



Regional implementation

The Asia and the Pacific (APAC) and North Atlantic (NAT) R egions, which had applied 30NM lateral and 30/50 NM longitudinal sep aration minimu m, agreed to transition to the implementation of these new requirements from **29 March 2018** in part of their airspace. For more information, click here - APAC and NAT .

Operational Authorization

Global requirements and guidance

Operators that wish to continue to take advantage of performance-based lateral and longitudinal separation standards, in airspace where they are available, will need to obtain a PBCS operational authorization for applicable RCP and RSP specifications. This PBCS authorization will certify that the aircraft and operator meets both the communication and surveillance requirements allocated to them. This will require the State to have a PBCS policy based on the requirements of Annex 6 and guidance

contained in Doc 9869. A PBCS operationl authorizataion should be obtained from an assessment of the required elements in the operations manual (OM). However, this requirement does not preclude a State to issue a specific approval and document it in the Operations Specifications (Ops Spec), associated with the air operator certificat (AOC) .

For more details, please download the PBCS Operational Authorization Guide_V1.0_Final.pdf

State regulatory and/or implementation documents

- Federal Aviation Administration of the United States.pdf
- Civil Aviation Authority of New Zealand.pdf
- Civil Aviation Authority of the United Kingdom.pdf
- Transport Canada.pdf