

MIDANPIRG PBN SG/4 Meeting

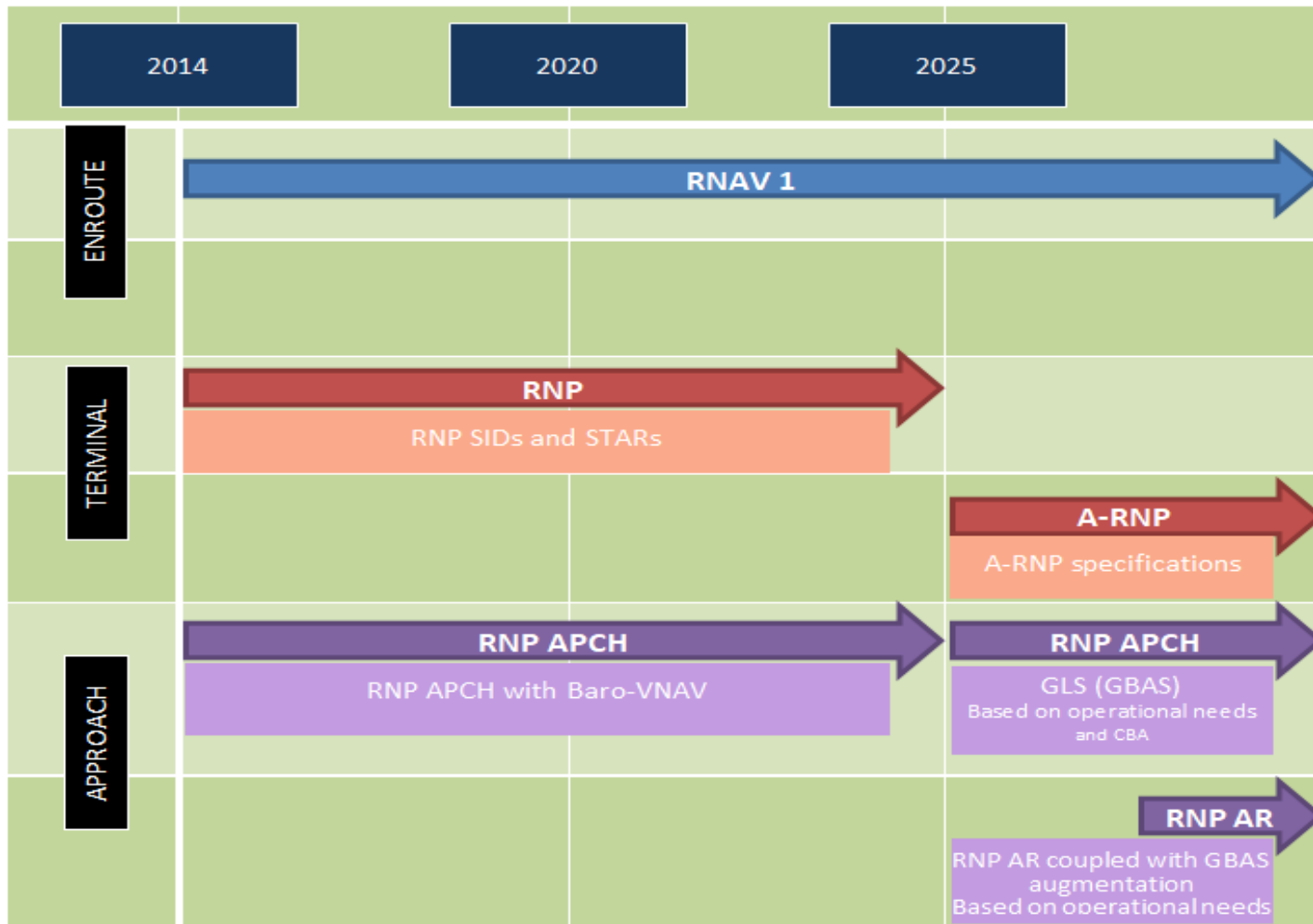
Cairo Egypt, 19 - 21 January 2020

State of Qatar

PRESENTATION OUTLINE

- **Brief of the State of Qatar PBN Implementation Plan**
- **Status of Implementation**
- **Post assessment results of the PBN Implementation**
- **Lessons Learned**
- **Challenges**
- **Thoughts/Recommendations**

Qatar PBN Implementation Plan



Status of Implementation

Aerodrome	RWY ENDS	ILS CAT I	ILS CAT I, II, III	Conventional Non-Precision	LNAV	LNAV / VNAV	RNAV SID	RNAV STAR	Conventional SID
OTHH (Hamad)	16R		(1)	(2)	(1)	(1)	(8)	(3)	(1)
	34R		(1)	(2)	(1)	(1)	(8)	(3)	(1)
	16L		(1)	(2)	(1)	(1)	(8)	(3)	(1)
	34L		(1)	(2)	(1)	(1)	(9)	(3)	(1)
OTBD (Doha)	15	(1)		(2)	(1)		(8)	(3)	(1)
	33		(1)	(4)	(1)	(1)	(8)	(3)	(1)

Status of Implementation

REGULATIONS AND PANS-OPS INSPECTORATE

Regulations and Guidance Material:

- Qatar Civil Aviation Regulation - Air Traffic Services (QCAR ATS) provides the provision for PBN operations/applications.
- Acceptable Means of Compliance and Guidance Material (Decree 14 - 2018) to Qatar Civil Aviation Regulation - Air Operations (QCAR No. 002/2016) provides the provision for operational approvals.
- Qatar Civil Aviation Regulations on Air Navigation Services (QCAR No. 026/2017 amending QCAR 009/2017) provides the provision for the instrument flight procedure design service that incorporates PBN.

PANS-OPS:

- Regulated under Air Navigation Service Inspectorate (ANSI)

Status of Implementation

AIRSPACE CONCEPT

- **Airspace concept is developed to satisfy strategic objectives of Safety, Capacity, Efficiency, Environment and Accessibility.**
- **CNS/ATM enablers are used to**
 - **airspace design, operational procedures, instrument flight procedure designs to allow envisaged capacity.**
 - **Allow the airspace to support the anticipated traffic growth**
 - **Facilitate SIDs and STARs for OTBD and OTHH Airports**
 - **Facilitate military and general aviation activities**
 - **Facilitate Contingency routing requirements**

Status of Implementation

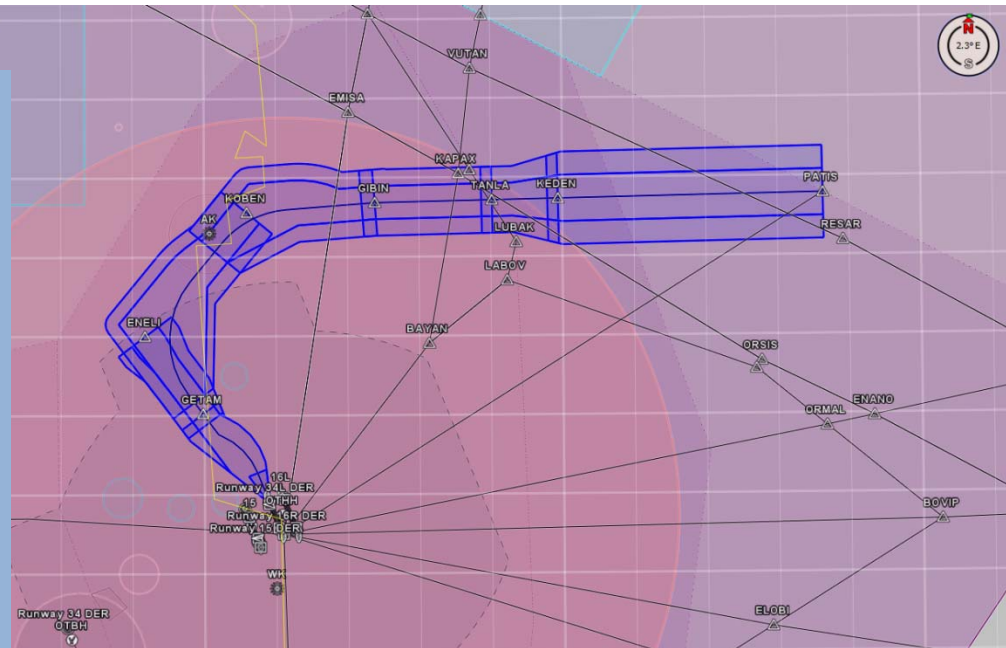
PROCEDURE DESIGN ENTITY

- **PANS-OPS unit is established under Qatar AIM of Air Navigation Department and perform the following tasks:**
 - design and documentation, validation, maintenance and periodic review of instrument flight procedures for Doha and Hamad International Airport
 - conduct obstacle analysis according to PANS-OPS standards to maintain flight safety and support the integrity of flight procedures
 - provide technical expertise encompassing PANS-OPS criteria for aeronautical study and airspace planning requirements
- **A total of three (3) procedure designers are in place.**
- **The PANS-OPS unit implemented the Flight Procedure Design Operations Manual (AN-AIC-AIM-MNL-002 revision 2.0, 18 November 2019) that serves as a guidance to be used by the Flight Procedure Designer to sustainably provide the appropriate level of technical expertise necessary to meet PANS-OPS regulatory requirements for Flight Procedure Design of QCAA.**

Status of Implementation

AUTOMATED TOOLS

- **Flight Procedure Design and Airspace Management (FPDAM)** used for the following:
 - Design, Maintenance and Periodic Review of Flight Procedures
 - Airspace Management



- **Procedures for Air Navigation – Design and Analysis (PANDA)** for creating IFP digital data set.

Post Assessment of PBN Implementation

- The brief assessment results of PBN implementation shows the airlines and air traffic service providers are highly benefitted with PBN implementation.
- A detailed study to be conducted identifying key performance indicators and the results will be served insight for future developments.
- The on-going mandatory Periodic Review is considering the criteria updates and user requirements relating to PBN.

Lessons learned during PBN Implementation

- Importance of proper coordination with stakeholders (Regulator, Aircraft Operators, Aerodrome Operator, ATS units, Flight Procedure Designers, Airspace Planners etc.) for successful PBN solutions.
- Importance of detailed planning by keeping the PBN Roadmap in accordance with MID Region plan/timelines.
- Importance of continuous review of PBN implementation goals and rectifying issues for uninterrupted process.
- Quality assurance on all aspects ensures safety.
- Significance of post implementation reviews to monitor project objectives and if there are deviations, mitigation strategies to be planned to reach the goals.

Challenges on PBN Implementation

- Limited Airspace due to restrictions and military activities within the State of Qatar
- Additional routes to facilitate aircraft operators requirement
- Lack of awareness of stakeholders on the advantages of PBN and its optimal use.
- Accommodation and consolidation of urgent stakeholders requirements with short time frames

Thoughts / Recommendations

- Improved cooperation and mutual agreements between stakeholders (civil and military) for the continuous implementation of PBN and its future plans to cope up with the international standards and current updates
- Organize workshops and seminars on PBN updates and trends
- Enhanced cooperation between States with regards to airspace management

AIR NAVIGATION DEPARTMENT, QCAA

Thank You

