INTERNATIONAL CIVIL AVIATION ORGANIZATION

TWENTY SIXTH MEETING OF THE ASIA/PACIFIC AIR NAVIGATION PLANNING AND IMPLEMENTATION REGIONAL GROUP (APANPIRG/26)

Bangkok, Thailand, 7 – 10 September 2015

Agenda Item 3: **Performance Framework for Regional Air Navigation Planning and Implementation**

3.2 & 3.4: **ATM & CNS**

DEVELOPMENT OF NEW CNS STRATEGY, IMPLEMENTATION OF PBN AND TRANSFORMATION FROM AIS TO AIM

(Presented by Pakistan)

SUMMARY

Pakistan Civil Aviation Authority (PCAA) has revised its CNS strategy and progressing phase wise making it in line with regional approach in order to support seamless ATM operations in APAC Region. PCAA is also working on PBN implementation in accordance with APAC Regional Plan. The work on transformation from AIS to AIM and AIDC implementation is also in progress.

1. INTRODUCTION

1.1 Pakistan Civil Aviation Authority (PCAA) is actively working to develop new Communication Navigation & Surveillance strategy to meet the present and future Air Traffic Growth requirements influenced by the tourism and trade activities in the Asia and Pacific Region.

1.2 PCAA is also working for implementation of AIDC as per ICAO timelines.

1.3 The implementation of Performance Based Navigation (PBN) for en-route and approach phases of flight is in progress. RNAV GNSS approach procedures with vertical guidance have been developed for different runways of ten international airports. Most international conventional ATS routes have been converted into RNAV routes.

1.4 The work on transformation from AIS to AIM is at advance stage. The contract has been executed and Factory Acceptance Tests for the required software has been completed.

2. DISCUSSION

2.1 Pakistan's present ATM surveillance capabilities are sufficient to support the Air Traffic Flow Management (ATFM) including miles-in-trail scheme with the application of 50 NM

longitudinal separation standards. The Longitudinal separation standard can be further lowered to 30 NM if regional / adjacent States agree to do so. The ATM System (AIRCON-2100) at both Area Control Centers (ACCs) at JIAP Karachi and AIIAP Lahore have been integrated with AMHS system. It has the capability for integration with ADS-B and CPDLC. It is highlighted that Pakistan Civil Aviation Authority (PCAA) is working on war footing basis to further upgrade its CNS capabilities which inter-alia include;

a. Replacement of present SSR system. At the first phase Karachi and Lahore radars (SSRs / PSRs) are being replaced and the project is expected to be completed by March, 2016 and June, 2016 respectively. In the second phase the replacement of three stand alone radars will be undertaken;

b. Acquiring of ADS-B as surveillance back up. Initially 05 ADS-B stations are being installed to cover surveillance grey areas and provide backup in the area of major traffic flows. Further extension will be made subsequently. The project may be completed by December, 2015;

c. Acquiring of CPDLC for back up to extended VHF. The contract has already been executed and it is expected that project will be completed by this year;

d. Phase wise replacement of Nav. Aids is in progress;

e. AIDC has been successfully implemented between Karachi and Lahore ACCs. There are some technical problems for AIDC implementation with India. The matter has already under coordination between the two countries to remove the impediments;

f. Transformation from AIS to AIM is at advance stage. After signing the contract, the Factory Acceptance Test (FAT) has been completed and installation of equipment will be completed in next couple of months to make system operational by December, 2015. PCAA has already implemented eAIP to provide updated information to the operators. The AIS integrated package (NOTAM Summary, AIRAC, AIP Supplement and AIC) is also available on Website;

g. The revised Letters of Agreement with Afghanistan, Iran and India have been executed. The implementation of 50 NM Horizontal separations however has been deferred due to non readiness of India. India has now shown her willingness to implement 50 NM longitudinal separations on six different routes which is being evaluated and will be agreed after consensus of Iran and Afghanistan. The 50 NH RHS on three international routes i.e. N636, P628 and L509 from FL 300 to FL 410 has already implemented; and

h. These measures would certainly enhance safe, regularized and efficient conduct of aircraft operation in Pakistan airspace and will also support traffic flows to / from Iran, Muscat, Afghanistan and India.

2.2 The work on PBN implementation both for en-route and approach phases of flight is in progress. The revised National PBN implementation Plan had already been submitted to APAC Regional office. PCAA is enhancing its capacity to expedite work on Instrument Flight Procedure Design. The Procedure Design software (Geo-Titan) is already in operation. Three new software Licences “Flight Procedure Design and Airspace Management” (FPDAM) are being acquired from Italy. The software system is expected to be installed by the end of this year. Following is the detail of RNAV (GNSS) Instrument Flight Procedures which have been implemented or in implementation phase;

S.No	RNAV PROCEDURE	Effective Date	MINIMA	REMARKS
1	RNAV GNSS APCH for RWY-18/36 and STAR Multan	-	LNAV/VNAV	Flight validation to be done.
2	RNAV (GNSS) APCH RWY-36L/36R and STAR AIIAP, Lahore	15th Oct 2015	LNAV/VNAV	Published 03rd Sep 2015
3	RNAV GNSS APCH for RWY-03/21 Faisalabad Int'l Airport	20th August 2015	LNAV/VNAV	Implemented
4	RNAV GNSS APCH for RWY-13/31 Moenjodaro	-	LNAV/VNAV	Flight validation done
5	RNAV (GNSS) APCH RWY-35 and STAR BKIAP, Peshawar	25th June 2015	LNAV/VNAV	Implemented
6	RNAV (GNSS) APCH RWY06/24 Gwadar	25th June 2015	LNAV	Implemented
7	RNAV (GNSS) APCH RWY-22 Sialkot	11th Dec 2014	LNAV/VNAV	Implemented
8	RNAV (GNSS) APCH RWY-14/32 Sukkur	21st August 2014	LNAV/VNAV	Implemented
9	RNAV (GNSS) APCH RWY-08/26 Bahawalpur	-	LNAV/VNAV	Flight Validation done.
10	Lahore RNAV STARs and Approaches RWY-18L / R	03rd April 2014	LNAV/VNAV	Implemented
11	RNAV (GNSS) RWY-07R & STAR Karachi	14th November 2103.	LNAV	Implemented
12	RNAV (GNSS) APCH RWY-07L JIAP Karachi	-	LNAV	Flight Validation to be done.
13	RNAV (GNSS) APCH RWY-12 BBIAP ISLAMABAD	-	LNAV	Implemented

ONGOING TASKs 2015

a) RNAV GNSS APCH for RWY-25L/R Karachi International.

b) RNAV GNSS APCH for RWY-08/26 Turbat International.

c) RNAV GNSS APCH FOR RWY-02/20 Nawabshah International.

TASKs for 2016

a) RNAV GNSS APCH for RWY-01/19 Rahim Yar Khan. Target date December, 2016.

b) RNAV GNSS APCH for RWY-13/31 Dalbandin. Target date December, 2016.

c) RNAV GNSS APCH for RWY-13/31 Panjgur. Target date December, 2016.

d) RNAV GNSS APCH for RWY-18/36 Dera Ghazi Khan International. Target date December, 2016.

e) RNAV GNSS APCH for RWY-12/30 Dera Ismail Khan Target date December, 2016.

2.3 Following fifteen international RNAV routes have been established in Pakistan airspace to facilitate international operation on main traffic flow routes. Presently these routes are available for RNAV operations in accordance with RNAV 10 PBN specifications during en-route

phase of flight. These routes will be changed to RNAV 5 PBN specification in future. The rest of international routes are under study for RNAV operation before publication in AIP Pakistan;

2.3.1.1 **RNAV ROUTES:**

2.3.1.1.1	L124	KEBUD – Panjgur (PG)
2.3.1.1.2	L509	SAMAR – LAJAK
2.3.1.1.3	L750	ROSIE – Zhob (ZB)
2.3.1.1.4	M504	ALPOR – TELEM
2.3.1.1.5	M638	DOSTI – SAPNA
2.3.1.1.6	M875	Dera Ismail Khan (DI) – GUGAL
2.3.1.1.7	M881	Dera Ismail Khan (DI) – LAJAK
2.3.1.1.8	N636	Nawabshah (NH) – SERKA
2.3.1.1.9	N644	Dera Ismail Khan (DI) – PAVLO
2.3.1.1.10	N893	Nawabshah (NH) – TELEM
2.3.1.1.11	N894	LATEM – TELEM
2.3.1.1.12	P500	Dera Ismail Khan (DI) – PADDY
2.3.1.1.13	P518	KABIM – Panjgur (PG)
2.3.1.1.14	P757	Nawabshah (NH) – Panjgur (PG)
2.3.1.1.15	P628	VIKIT – Rahim Yar Khan (RK

2.4 Pakistan is situated at the confluence of different regions and fully appreciates its responsibility to support the safety and efficiency of aircraft operating from Europe and Middle East Regions to Asia and Pacific Region and vice versa. Recognizing the importance of Seamless ATM operations in Asia and Pacific Region, PCAA would like to actively participate in Regional ATM Planning Group. The following officers of PCAA shall be responsible for coordination with APANPIRG on ATM matters;

a. Mr. Muhammad Ayaz Jadoon - Focal Point / Designated Member
Director Operations

b. Mr. Liaquat Ali Shahzad - Member / Coordinator
Senior Addl. Director (ATS)

c. Mr. Muhammad Aslam Awan - Member / Coordinator
Senior Joint Director (ATS)
Airspace & PBN / ICAO

3. ACTION BY THE MEETING

3.1 The Meeting is invited to note the information contained in this Paper.

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