Thirty First Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/31)

Video Teleconference - Bangkok, Thailand, 14 to 16 December 2020

Schedule: 10:00 – 13:15 Bangkok Time [UTC+7hrs]

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

3.0: **Regional and National Performance Framework**

IMPLEMENTATION OF PERFORMANCE MEASUREMENT IN ASIA PACIFIC

(Presented by Singapore)

SUMMARY

The use of a performance-based approach in the prioritisation and implementation of ATM initiatives provides States and organisations a data-driven and scientific method to achieve their targets. In view of the benefits reaped, it is proposed that Asia Pacific States should consider the implementation of the eight Stage 1 KPI listed in the Asia Pacific Performance Measurement Framework endorsed at the 30th APANPIRG in 2019.

Strategic Objectives:

B: ***Air Navigation Capacity and Efficiency*** *— Increase the capacity and improve the efficiency of the global aviation system*

1. INTRODUCTION

1.1 The eleventh Air Navigation Conference in 2003 saw the endorsement of a performance-based approach (PBA) for air navigation planning and implementation. Since then, PBA had been utilised extensively in ATM to prioritise future investments and system efficiency. By directing the focus of States and organisations to achieving their desired performance level without prescriptive solutions, PBA allows all stakeholders a better understanding of the current performance in a qualitative manner, thus facilitating informed decision-making based on the unique needs and requirements.

1.2 At a global level, the ICAO *Manual on Global Performance of the Air Navigation System* (Doc 9883) details the importance and benefits of adopting a PBA to meet the individual requirements of the State / organisation. Further indicating the global emphasis towards performance management, ICAO had included a revised performance management framework and introduced the Air Navigation System Performance Assessment (AN-SPA) tool to guide States / organisations in their implementation of the aviation system block upgrades (ASBUs) in the sixth edition of the *Global Air Navigation Plan* (GANP, Doc 9750)[1].

[1] Adopted by the 40th ICAO Assembly in 2019.

1.3 The GANP lists down nineteen (19) Key Performance Indicators (KPIs), grouped into the core KPIs (KPIs which can be produced while keeping data processing and archiving requirements to a minimum) and other additional KPIs (KPIs which require flight trajectory information and extensive data processing to produce), to enable States to assess the efficiency of their aviation ecosystem across three key performance areas[2] (KPAs). To advance performance measurement in Asia Pacific, the Regional ATM Performance Measurement Small Working Group (RAPMF/SWG) was established at the third meeting of the ATM Sub Group (ATM/SG/3) to develop the Asia Pacific Performance Measurement Framework (ATM/PMF).

1.4 The ATM/PMF is a crucial document to help Asia Pacific States leapfrog its data and performance measurement capabilities in a regionally-harmonised manner, therefore minimising occurrences of misunderstandings and discrepancies when referencing the various performance KPIs. Recognising this, APANPIRG endorsed the document in 2019, and urged States to consider tailoring the ATM/PFM according to their own conditions, as appropriate.

2. DISCUSSION

2.1 To facilitate the implementation of the ATM/PMF, RAPMF/SWG had classified the KPIs into three different stages. While Stage 1 consists of ten KPIs (see **Table 1**), we have identified eight KPIs (S/N 1 – 8 in **Table 1**) to be measured, taking into consideration of the ease of measurement by States using readily available data, as well as alignment to the ICAO GANP. The last 2 KPIs (S/N 9, 10 in **Table 1**) are not part of the ICAO GANP.

S/N	KPI	KPA	GANP
1	Airport peak arrival capacity	Capacity	KPI09
2	Airport peak departure capacity	Capacity	KPI09
3	Airport arrival throughput	Capacity	KPI10
4	Airport departure throughput	Capacity	KPI10
5	Additional taxi-in time	Efficiency	KPI13
6	Additional taxi-out time	Efficiency	KPI02
7	Flight arrival punctuality	Predictability	KPI14
8	Flight departure punctuality	Predictability	KPI01
9	Arrival delay	Efficiency	-
10	Departure delay	Efficiency	-

Table 1 – ATM/PMF Stage 1 KPIs

2.2 The 8 Stage 1 KPIs can be mapped to the KPAs of Capacity, Efficiency and Predictability. While the Safety KPA will continue to take centre stage, measuring these operational KPIs for capacity, efficiency and predictability will provide a balanced view and help States identify the areas requiring improvements and the potential trade-off to other KPAs when attention is skewed to any one KPA. A skewed focus on Safety with little regard for all other KPAs would bring about an inefficient and unsustainable aviation industry.

2.3 The measurement and benchmarking of these operational KPIs can bring great benefits to the aviation ecosystem. Punctuality, a consequence of predictability, is of paramount importance to airlines as well as ANSPs as the business focuses on moving people and goods in a timely and uncompromising manner. Efficiency is another key focus as enhanced efficiency will translate to less fuel burn and thereby reducing fuel costs whilst at the same time, makes flying more environmentally sustainable.

[2] The three KPAs are Capacity, Efficiency and Predictability.

2.4 For the airports, enhanced punctuality will increase predictability and help improve the planning of stands and ground handling resources. For ANSPs, enhanced capacity and efficiency will translate to better resource management, overall reduction in delays, reduction in ATCO workload and enhance ATCO's overall productivity and airport capacity.

2.5 In view of the multitude of benefits gained by the tracking of these operational KPIs, it is highly recommended that Asia Pacific States would heed the call of ICAO and can start to monitor these eight Stage 1 KPIs (S/N 1 – 8 in **Table 1**). States can implement this progressively in a stepwise manner by first identifying data of interest (e.g. of major airports), and thereafter, State-wide.

2.6 The low traffic level during this COVID-19 pandemic also provides an opportune moment for States to start this initiative, since the lower volume of traffic would offer States more time to familiarise themselves with the collection and processing of data. Once traffic picks up, States would already be comfortable with the tracking and processing of these KPIs and will be able to progress to more sophisticated data processing means to continue processing the larger data sets. This will in turn help States in managing the increased traffic in a safe, efficient and predictable manner.

3. ACTION BY THE MEETING

3.1 The Meeting is invited to:

a) Note the information in this paper;

b) Note the benefits of utilising a performance-based approach in the prioritisation of ATM initiatives, and in the establishment of a performance measurement framework; and

c) Consider the implementation of the eight Stage 1 KPIs (S/N 1 – 8 in **Table 1**) in the ATM/PMF for States.

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