



International Civil Aviation Organization

The Third Meeting of the Asia/Pacific ICAO Flight Plan and ATS Messages Implementation Task Force (FPL&AM/TF/3)

Bangkok, Thailand, 23 – 24 August 2010

Agenda Item 4: Aspects of implementation in Asia/Pacific region

**IMPLEMENTATION PLAN OF
NEW ICAO FLIGHT PLAN AND ATS MESSAGES
IN HONG KONG, CHINA**

(Presented by Hong Kong, China)

SUMMARY

This paper provides an outline on the Strategy and Plan adopted by the Civil Aviation Department, Hong Kong, China, on the Implementation of NEW ICAO Flight Plan and ATS Message Formats

1 INTRODUCTION

- 1.1 In June 2008, ICAO announced the approval of Amendment 1 to ICAO PANS-ATM Doc 4444 which promulgated new requirements on Flight Plan and ATS Message formats with an applicability date of 15 November 2012. As the Air Navigation Service Provider (ANSP) for the Hong Kong Flight Information Region (FIR), the Hong Kong Civil Aviation Department (CAD) initiated a project in 2010 to undertake the necessary system provision and change management on the implementation of NEW Flight Plan and ATS Message formats.
- 1.2 The existing flight plan and flight data processing systems of CAD are not capable of handling the NEW Flight Plan and ATS Messages as stipulated in the PANS-ATM Doc 4444 Amendment 1. Despite CAD is already in the process of replacing our existing ATM and AIM systems to incorporate such functions, the ready-for-service date is scheduled for late 2013, i.e. beyond the above-mentioned applicability date. Therefore, an interim solution has to be provided to ensure uninterrupted processing and distribution of flight plans and ATS messages in their new formats starting from November 2012 until full operations of our replacement ATC systems. This paper will describe the strategy and implementation of the transition plan.

2 STRATEGY

2.1 Front End Processors

- 2.1.1 Currently, the Hong Kong ATM system utilizes Aeronautical Information Database (AIDB) and Flight Data Processing (FDPS) systems to manage and process flight plan and ATS messages data. To enable the processing of mixed format messages by the existing AIDB and FDPS after 2012, two Front End Processors (FEPs) will be deployed to recognise and convert NEW FPL and ATS MSG to PRESENT format. PRESENT format messages will bypass the FEP and processed by the existing systems as per present practice.

- 2.1.2 The AIDB performs AIS functions and also processes and distributes outbound flight plans. One FEP(AIDB) will be developed to check all outbound flight plans submitted by airline operators and on recognizing the NEW format flight plan and ATS messages, it will automatically convert them to PRESENT format before distributing them to the AIDB and further downstream ANSPs which only accept PRESENT format.
- 2.1.3 The FDPS processes all inbound and overflight flight plans and also the data of all flights operating within the entire Hong Kong FIR. The data are used for radar code/callsign correlation, flight progress strips printing, etc. Another discrete FEP(FDPS) will be developed to convert all NEW format flight plan and ATS messages so received to the PRESENT format before sending them to the FDPS.

2.2 Conversion of NEW Flight Plan Items 10 and 18 to PRESENT Format

- 2.2.1 The conversion table utilised by the FEP(AIDB) to convert NEW Items 10 and 18 to PRESENT format is generally based on the guidelines stipulated by ICAO “Guidance for implementation of flight plan information to support Amendment 1 of the Procedures for Air Navigation Services-Air Traffic Management, Fifteenth Edition (PANS-ATM Doc 4444)”. However, we will also adopt conversion rules stipulated by the “Asia/Pacific Guidance Material for Implementation of Amendment 1 to the 15th Edition of the Procedures for Air Navigation Services-Air Traffic Management (PANS-ATM, Doc 4444)” drafted by the FPL&AM Task Force in converting some of the NEW items to PRESENT format to minimise data loss. The Items are as follows:
- E1 E2 E3 (ACARS category)
 - R (PBN capability)
 - B1 B2 U1 U2 V1 V2 (ADS-B category)
- 2.2.2 Information provided under NEW Item 18 indicators which do not exist in the PRESENT format would be inserted in free text after a PRESENT Item 18 indicator, such as NAV/, COM/ and RMK/, thus eliminating a rejection by ANSP that can only accept flight plans in PRESENT format.
- 2.2.3 Since the FDPS also processes flight data to be used internally for radar display, procedure evaluation and traffic statistics analysis, etc, a separate conversion table which is customized for local requirements and procedures will be used by the FEP(FDPS).

2.3 Date Of Flight

- 2.3.1 To mitigate complexities resulting from the relaxation of Date Of Flight (DOF) window to 120 hours, members of the FPL&AM Task Force made a joint decision to adopt a regional strategy that ANSPs are not obliged to process flight plans which are more than 24 hours prior to the Estimated Off Block Time (EOBT) during the declared transition period. Our FEPs will therefore be designed to hold flight plans received more than 24 hours before EOBT until the time as specified in the system parameter between 0 and 150 hours from EOBT. It is anticipated the system parameter will be set to 24 hours as default value, with a desired maximum value of 150 hours to allow for flexibility.
- 2.3.2 Related ATS messages such as CHG, DLA and CNL for flights beyond 24 hours will be processed by the FEP but the modified flight plan would be held in abeyance to avoid confusion to the system that may still be handling active flights of the day having the same identification. When the system parameter has reached e.g. 24 hrs prior to EOBT, the flight plan will then be dispatched to the back end systems and downstream ANSPs.

3 IMPLEMENTATION PLAN

- 3.1 A timeline has been drawn up to meet the target dates of the Asia/Pacific regional transition plan i.e. a 3-phase approach with transition period commencing 1 January 2012 and ending 15 November 2012. The 3-phase is described as below:-
- Phase 1 - 1 January to 31 March 2012 - FEP(AIDB) and FEP(FDPS) delivery and internal testing
 - Phase 2 - 1 April to 30 June 2012 - External testing with other ANSPs and announcement of the capability to accept NEW format
 - Phase 3 - 1 July to 15 November 2012 - Testing with airspace users and implementation
- 3.2 Presently, preparation work on operational requirements and technical specifications has been completed and detailed system design has commenced. We would monitor the latest development closely during the transition period and review the operational requirements as necessary.
- 3.3 Safety assessment on this project was conducted in April 2010. Based on the results, technology control measures have been duly incorporated into the system specifications. Other relevant mitigating measures have been identified and will be implemented accordingly to ensure that the new system functions and implementation will achieve the required level of safety.
- 3.4 These two FEPs should be ready for test in mid 2011. Preliminary review on procedures is on-going and fine-tuning of the procedures would be carried out closer to the time of system testing and implementation. Sufficient time should be allowed for problem identification and rectification before April 2012.
- 3.5 Moreover, adequate training will be provided to flight data operators in mid 2012. Comments so collected from operational staff during training sessions will be reviewed for further improving the system functions and workflow.
- 3.6 Due to the large number of new flight data and equipment codes introduced by Amendment 1 to PANS-ATM, Doc 4444, phraseologies of these data to be used during controller-to-controller and controller-to-pilot communications should be coordinated among ANSPs, aircraft operators and flight planning services to effect precise communications. An Aeronautical Information Circular (AIC) will be published in time to highlight the changes and issues of concern. ATC staff should also be thoroughly briefed.

4 DISCUSSION

- 4.1 The readiness of ANSPs within this region as well as in other regions would be critical to a smooth global implementation of the NEW flight plan & ATS messages. With the requirement for all Contracting States to inform the ICAO APAC Regional Office by 1 July 2010 of their scheduled transition date, more information on the readiness of ANSPs in our region could be attained.
- 4.2 As for other regions, there is no deadline published by the ICAO for contracting states to notify their implementation date. It could therefore be at a very late stage when certain States declare non-compliance affecting a smooth global transition. Nevertheless, it is encouraging to learn that an "ICAO New Flight Plan Format Study Group" has been established in the Middle East region and the first meeting was held in Cairo, Egypt in February 2010.

- 4.3 In addition to the readiness of ANSPs, Hong Kong, China has concerns over a view that airlines would file PRESENT flight plans until the last day of the transition period. The subsequent switching over to NEW flight plan format on the same day by all airlines with insufficient testing may pose a high risk of serious and widespread coordination problem on that day. This problem might induce interruption of flight data availability to ATC, with airline operators eventually suffering from long ground delay.
- 4.4 Hong Kong, China would have no problem in meeting the target dates of the phased transition plan adopted by the FPL&AM Task Force with a tentative transition date on 30 June 2012. Hong Kong, China would continue to provide support to the Task Force and keep track of the regional progress with a view to contributing to a harmonised implementation among ANSPs and airspace users.

5 ACTION BY THE MEETING

- 5.1 The meeting is invited to note the strategy and implementation plan adopted by Hong Kong, China.
- 5.2 Members of the meeting are invited to share their experience on the implementation of NEW ICAO Flight Plan and ATS Message Formats.

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