



International Civil Aviation Organization

The 10th Meeting of the FANS Implementation Team for South-East Asia (FIT-SEA/10) and the 17th Meeting of the South-East Asia ATS Coordination Group (SEACG/17)

Singapore, 24 – 27 May 2010

Agenda Item 6: Implementation of the CNS/ATM Systems in the Region

OUTCOMES OF THE SECOND MEETING OF FLIGHT PLAN & ATS MESSAGES IMPLEMENTATION TASK FORCE (FPL&AM/TF/2)

(Presented by the Secretariat)

SUMMARY

The Second Meeting of Flight Plan & ATS Messages Implementation Task Force and Seminar (FPL&AM/TF/2) was held at ICAO Asia and Pacific Office, Bangkok, Thailand from 17 to 20 November 2009. This paper presents relevant material from FPL&AM TF for review by the meeting.

1. INTRODUCTION

1.1 The Second Meeting of Asia/Pacific Flight Plan & ATS Messages Implementation Task Force and Seminar (FPL&AM/TF/2) was held at ICAO Asia and Pacific Office, Bangkok, Thailand from 17 to 20 November 2009. Full report is available at the ICAO Asia and Pacific Office website at http://www.icao.or.th/meetings/2009/fpl_amtf2/index.html.

2. DISCUSSION

Seminar on Implementation of New ICAO Flight Plan

2.1 The participants recognised that in addition to the obvious impacts on airline flight planning systems and ATC automation systems, many States had a large number of ancillary systems that would also be affected by the changes to flight plan and ATS messaging formats.

Review Available Documentation and Guidance Materials

Matters for Clarification Arising from FPL&AM/TF/1

2.2 FPL&AM TF/1 (March 2009, Bangkok) identified a number of items in respect to the Amendment 1 of the *Procedures for Air Navigation Services – Air Traffic Management* (PANS-ATM, Doc 4444) that warranted assistance/guidance from ICAO Headquarters. The meeting discussed the clarifying responses provided by ICAO HQ to the queries raised during FPL&AM TF/1 as follows:

FPL Field Sizes

2.3 The meeting learned that it was not possible for software coders to work with open ended fields and therefore in every case a field size had to be specified. In practice, this meant that coders in each State were obliged to individually decide and apply parameters for each field length.

Rather than ad-hoc local solutions, the meeting considered that agreeing on an Asia/Pacific requirement for a defined number of characters per field or sub-field that also complied with relevant Annex 10 Volume II AFTN provisions would result in worthwhile standardisation and economies for States. Accordingly, an ad-hoc FPL Parameters Working Group was established and tasked with working by correspondence to agree, amongst other things, a suitable number of characters for relevant flight plan fields.

RPL Equipment Notification

2.4 FPL&AM TF/1 had noted that neither the PRESENT or NEW provisions made allowance for an equipment field in Sections 6 and 7 of Appendix 2 of PANS-ATM in relation to Repetitive Flight Plans (RPL). The absence of such a field had led to local arrangements being agreed within and between some States in some instances to enable equipage to be notified in RPLs. Recognising that information in relation to equipage was of importance in RPL arrangements; clarification had been sought as to whether it was possible to include an equipment field in RPL.

2.5 The clarification recalled that historically it was assumed that aircraft filing a RPL were 'S' equipped for the route to be flown. However, an arrangement such as the use of EQPT/ to provide Field 10 info within Item Q of the RPL could be a regional solution if deemed necessary.

ATS Messages & Field 18 DOF

2.6 The meeting considered that the clarification relating to Item 18 and Date of Flight (DOF) has implications on the composition of ATS messages as published in the Amendment. The clarification provided for the requirement to include Field Type 18 in CHG, CNL, DLA, DEP and RQS messages states "*Field Type 18 with DOF specified is meant to uniquely identify the flight when the FPL is presented more than 24 hours in advance and there is no need to include all other Item 18 information*". The meeting adopted the following interpretation as an Asia/Pacific regional approach:

- Insert DOF/YYMMDD in Field 18 if that indicator has been previously specified
- If the DOF/ indicator has not been previously specified insert zero (0) in Field 18

Development of Asia/Pacific Regional Guidance Material

2.7 The meeting discussed the complexity of the matters at hand, noting that a standardised interpretation of Amendment 1 was absolutely critical to a successful implementation. It was evident that a number of different interpretations were already being made by States. A number of other issues had developed that would require interpretation/decision by the Task Force and it was likely that this would continue be the case as more States commenced implementation activities and sought to more clearly understand what was intended by Amendment 1.

2.8 In order to record the approaches, interpretations and resolutions agreed by the Task Force for use as Asia/Pacific guidance material, the meeting commenced work on a repository of coding guidelines and associated material for application in affected automation systems. A draft document titled *Asia/Pacific Guidance Material for the Implementation of Amendment 1 to Procedures for Air Navigation Service – Air Traffic Management, (PANS-ATM, DOC 4444), 15th Edition*, was prepared.

Conversion Table for NEW to PRESENT

2.9 The United States presented a development of the ICAO Conversion Table for review by the meeting. The ICAO Table had been modified in response to discussions at the Eurocontrol Task Force 1 meeting (September 2009) and bilateral discussions between the United States, and Canada and Mexico, respectively.

Flight Plan Implementation Tracking System

2.10 A demonstration of the ICAO Flight Plan Implementation Tracking System (FITS) website (<http://www2.icao.int/en/FITS/Pages/home.aspx>) was conducted by the Secretariat. The meeting offered the following comments/suggestions that may be useful in making FITs even more effective:

- a) Critical columns should be moved to the left, with less critical information in columns to the right (OK to access by scrolling):
 - o Examples of critical columns would be: Name of ANSP, and Status - “NEW” or “PRESENT”
 - o Examples of non-critical columns would be: POC, etc.
- b) Date of Implementation has a time value (currently 12.00 AM) – assume this is local time – should it be UTC?
- c) Could PRESENT add more value to cover a scenario where a State may be able to accept the new format but not be able to, or chooses not to, transmit the new format?

Aspects of Implementation in Asia/Pacific Region

Australia

2.11 Australia pointed out that one of the primary transition challenges to be managed was the effect on downstream ANSPs of the conversion of NEW to PRESENT. Once one ANSP had made the conversion, subsequent ANSPs could receive flight data with reduced information.

India

2.12 India recognized the critical need for regional coordination between States to develop appropriate guidelines and highlighted the need for in depth testing arrangements to be developed to facilitate testing between ANSPs, and between ANSPs and users. India was interested in understanding how other ANSPs would approach this issue and would appreciate feedback to the next meeting in this regard.

2.13 India noted that their geographic location would require coordination not only with States in Asia/Pacific Region but also with States in the Middle East and Eastern & South African Regions. India was concerned that unless these adjacent regions also adopt the same strategies for implementation, India will face problems, for example in handling date of flight (DOF) issues. In this context, India expressed that the coordination efforts between regions were of paramount importance and the FPL&AM TF must play a primary role in initiating coordination.

Japan - General

2.14 In regard to handling the 120 hour submission, Japan informed that Japan Civil Aviation Bureau (JCAB) planned to establish a new data base in front end systems receiving the flight plans from airspace users to enable acceptance and holding of flight plans 120 hours in advance. However, the systems behind the front end systems ('backside systems') won't be modified and will continue to handle flight plans less than 24 hours before departure. A timer will be added to the front

end systems which will release flight plans from the new storage data base to the backside systems about 24 hours in advance of the flight.

Japan - AIDC

2.15 Analysis by JCAB had indicated that the 120 hour submission is not likely to have a significant impact on AIDC messaging because this system messaging occurs with the actual conduct of the flight and AIDC messaging essentially does not begin until the flight has actually commenced. However, there is a significant issue with AIDC messaging in NEW format as JCAB will have to update the interface with AIDC connected States to include the item 10 and 18 changes that are utilized in at least messages for CPL, ABI, PAC, MAC and CDN as an option field.

2.16 Consequently, JCAB was exploring whether it would be possible to simultaneously switch over the systems to NEW AIDC between connecting area control centres as Anchorage, Incheon, Oakland and Taipei, and will commence coordination with affected them shortly. However, as it is anticipated that such an approach will require significant coordination and management to be successful, JCAB is also investigating an alternative whereby the JCAB systems are configured to handle both PRESENT and NEW AIDC messaging simultaneously.

Thailand

2.17 It is anticipated that the Flight Data Strip Printing System (FDSS) will eventually be modified to be compatible with NEW, probably after November 2012. AEROTHAI is also considering upgrading one of the two proprietary systems to handle NEW but the business case has not been developed and any upgrade is unlikely to adhere to the Amendment 1 implementation date and would take place after November 2012, if at all. The timeline is unlikely to be able to be reliably linked to the Amendment 1 effective date.

2.18 In this respect, in order to implement some NEW capability AEROTHAI will establish a Flight Data Management Center (FDMC) as a front-end system that will centralize and pre-process ATS messages before distributing them to AEROTHAI's existing flight data processing systems (end systems) and downstream ATS units. The FDMC will distribute the messages to the end systems according to their current PRESENT capabilities, both in terms of format and filing time. AEROTHAI has commenced work on defining the operational concept and system requirements for the FDMC to meet Amendment 1 provisions, and is expecting to commence initial stages of implementation during the first quarter of 2010.

Thailand - Outstanding Issues

2.19 AEROTHAI system developers have raised a number of concerns in relation to the implementation of NEW. At the moment, concern was experienced regarding the fact that there was no explicit way to distinguish between NEW and PRESENT. AEROTHAI would like to know how other ANSPs plan to address this issue.

United States – Impact on ATC Automation Systems

2.20 The United States highlighted that it was possible to file numerous combinations of PBN capabilities and considered that some of these may be redundant. They posed the question as to whether it could be assumed the lowest RNAV or RNP specification for a particular phase of flight meant that it could be automatically assumed that the greater specification was also authorised.

2.21 The meeting noted that the PBN manual specifically precludes the assumption that one specification automatically assumed a higher capability but recognised the logic expressed by the United States and agreed that such an outcome would be very beneficial. The Secretariat would bring the matter to the attention of ICAO Headquarters for consideration.

IATA's Concerns

2.22 IATA noted that nearly 18 months has passed and while Asia/Pacific Region was now conducting FPL&AM TF/2, IATA was concerned that the corresponding effort in other regions was not as apparent. As such IATA believed it was vital for the implementation of the amended FPL provisions to be very carefully managed on a global basis. While coordination could be undertaken on a regional basis, the necessary guidance, controls, coordination and motivation must be controlled on a global basis. IATA noted that the meeting had already discussed the effects on flight safety arising from ATC automation failures.

2.23 From IATA's perspective, unfortunately there is already enormous variation in preparation and approach to the FPL amendment, with some States already identifying that they have no intention of meeting the effective date. At the first meeting of the European FPL TF in Sep 09, NATS UK and AENA Spain announced they would not be capable of accepting the NEW format in 2012 with NATS expecting late 2013/early 2014 and AENA indicating early 2013. In the AFI region, no specific group has been established with little progress expected before APIRG in mid 2010. The MID ATM/AIS/SAR group has only this month established a Study Group which does not plan to conduct their first meeting until February 2010.

IATA - Consistency and Accuracy of Guidance

2.24 IATA strongly endorsed the establishment of Asia/Pacific FPL & AM TF and the efforts made thus far. However, in proposing that the meeting endorse the concept that no regional variations should occur, IATA recognised that it had already been necessary for Asia/Pacific Region to adopt a number of regional interpretations and approaches to facilitate progress toward implementation. In IATA's view, this was highly regrettable and suggested that ambiguity did exist; it was therefore likely that other regions would also need to make interpretations and that these could also be different for the different areas.

Lack of Robustness in Global Coordination

2.25 The meeting was strongly of the view that a suitably robust coordination arrangement was not yet in place and that this would work against achieving a smooth implementation.

Regional Strategies for Implementation

IATA – Implementation Strategy

2.26 The meeting expressed strong concern at the prospect that a large number of operators would cutover to the NEW format on a single day, creating significant potential risks in implementation. IATA acknowledged these concerns and agreed that the situation was much less than ideal. However, users are entirely reliant on the State's ability to accept NEW format FPL and so users cannot switch to NEW until after the States are ready. Unfortunately with some States in regions outside the Asia/Pacific reportedly targeting implementation by all ANSPS and users on 15 November 2012, there was little else that could be planned by users at present.

FPL&AM TF – Adopt Phased Implementation

2.27 The meeting recalled discussions during FPL&AM TF/1 in relation to airspace users targeting a fixed transition date of 15 November 2012 globally. The meeting expressed concern that such an approach would not allow adequate testing of the interfaces between airline and ground systems and would represent a critical risk to transition.

2.28 The meeting considered that the implementation strategy being considered by IATA, whereby all user switchovers occurred on the same day, would result in an unmanageable impact on ANSPs systems with a very real risk of system crashes. As such, ANSP safety case hazard analysis was likely to find that mitigation of some kind was necessary. Under the phased arrangements, users would have the opportunity to switch to the NEW format at a time of their choosing during an identified users testing and implementation period, supported by operational ANSPs systems able to assist with testing and the user transition, whilst at the same time maturing their own systems.

2.29 In this regard, the meeting adopted an Asia/Pacific approach using a phased transition, where ANSPs would implement NEW, followed by users. A transition period was declared, commencing 1 January 2012 and ending 15 November 2012. The transition period is subdivided as follows:

- **Phase 1** - ANSPs software delivery and internal testing
 - 1 January to 31 March 2012,
- **Phase 2** – ANSPs external testing and implementation
 - 1 April to 30 June 2012, and
- **Phase 3** – Airspace users testing and implementation.
 - 1 July to 15 November 2012

2.30 Following 30 June 2012, airspace users would be invited by AIC or NOTAM to commence testing with ANSPs from 1 July 2012.

Date of Flight (DOF) – Five Day (120 Hour) Issues

2.31 The meeting recalled that FPL&AM TF/1 had expressed strong reservations about the NEW provision under which flight plans could be lodged up to five days (120 hours) in advance of EOBT. Present experience in the Asia/Pacific region with plans submitted well in advance of EOBT (within the present 24 hour window) is that this practice precipitates a large number of CHG messages as operators changed aircraft type, or tail number on a same type but with different equipage, or varied the ETD, or a variety of other modifications to what had originally been filed. As meteorological conditions change after the FPL has been filed, route changes and altitude changes also manifest, requiring modification messages as well. The extension of the filing period from 24 hours to 120 hours is expected to compound these effects, particularly in respect to meteorology factors as changes to the flight plan become necessary on the basis of updated weather reports received within the 5 day period before departure.

2.32 Consequently, FPL&AM TF/1 had included a constraint in the Interim Strategy – “*....consider a regional constraint on requiring acceptance of flight plans more than 24 hours prior to EOBT....*” – which strategy had subsequently been adopted by APANPIRG. FPL&AM TF/1 had been unable to identify situations where FPL lodgement earlier than 24 hours was necessary and requested that States and users in the Asia/Pacific conduct studies into the circumstances in which it was essential that a flight plan be submitted more than 24 hours in advance of EOBT.

2.33 Following significant discussion, the meeting did not support a compulsion on all States to meet the 120 hour lodgement provision by 15 November 2012 and strengthened the position previously adopted by FPL&AM TF/1 in the regional implementation strategy from “*..consider a constraint...*” to “*...adopt a regional approach that does not require processing of flight plans more than 24 hours prior to EOBT during the declared transition period...*”. This is expected to mitigate the transition issues associated with DOF/ matters and reduce transmission of superfluous modification messages and corresponding load on messaging systems. DOF complexities will be further considered

by States after the November 2012 implementation and would be incorporated into new systems as they were specified, procured and commissioned.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) review related discussions from FPL&AM/TF/2, and
 - b) identify any actions arising for SEACG/17.
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