



ASSEMBLY — 40TH SESSION

TECHNICAL COMMISSION

Agenda Item 30: Other issues to be considered by the Technical Commission

IMPLEMENTATION OF A PROCEDURE TO MITIGATE FLIGHT PLAN ERRORS

(Presented by the Dominican Republic)

EXECUTIVE SUMMARY

This working paper outlines the experience gained by the Dominican Republic in implementing a procedure based on agreements with users of the airspace of the Dominican Republic and designed to diminish errors in, and duplication of, flight plans originating in FIR Santo Domingo and subsequent FIRs until the first destination airport.

Owing to improvements achieved after the procedure was implemented, it is undoubtedly worthy of being tested by States that constantly encounter system problems generated flight plan duplication.

Action: The Assembly is invited to urge States to take the flight plan dispatching procedure into consideration in order to diminish flight plan errors and duplication.

<i>Strategic Objectives:</i>	This working paper relates to Strategic Objectives – <i>Air Navigation Capacity and Efficiency.</i>
------------------------------	---

<i>Financial implications:</i>	Not applicable.
--------------------------------	-----------------

<i>References:</i>	Doc 9750, <i>Global Air Navigation Plan</i>
--------------------	---

1. INTRODUCTION

1.1 Flight plan (FPL) duplication and errors have been a long-standing aviation problem and constitute a significant flight operation risk. As the number of flights increase worldwide year after year, semantic and syntactic mistakes, omissions and FPL duplication continue to pose a latent safety threat.

1.2 The Standards and Recommended Practices (SARPs) have long specified the way in which flight plans must be managed and should, in theory, prevent the current proliferation or errors. The procedures are based, however, on physical form filling, which is counterproductive, given the technological advances that make it possible to handle the very steep daily rise in air operations by means, perforce, of electronic and automated processing.

¹ Spanish version provided by the Dominican Republic.

1.3 In order to comply with the *Procedures for Air Navigation Services — Air Traffic Management* (PANS-ATM, Doc 4444) and other ICAO documents on flight plans, the Dominican Civil Aviation Institute (IDAC) in the Dominican Republic requires air operators to follow a procedure based on guidelines therein.

1.4 The current FPL management procedure requires:

- a) the airspace user to send an FPL from its dispatching centre to its local representative in the Dominican Republic;
- b) the local representative to transcribe the FPL data onto the FPL form;
- c) the representative to file the duly filled FPL form at least one hour before the flight departs;
- d) aeronautical information service (AIS)/air traffic services reporting office (ARO) staff to review the document to ensure that there are no FPL errors and, if there errors, to act under f));
- e) the valid FPL form to be transcribed in the messaging system, generating an FPL message addressed to each flight information region (FIR) on the flight route and local flight-relevant air traffic services (ATS) facilities; and
- f) the filed FPL form to be returned, if there is a mistake, to the representative for correction.

1.5 It is obvious that this procedure entails a strong likelihood of errors and is of limited efficiency in a large volume of flights, in terms of human resources and/or processing time.

1.6 As both airspace users and air navigation service providers have for a long time now been considering changes to their FPL data processing management systems, their desire for electronic FPL filling has gradually come to fruition. Owing to the dearth of regionally harmonized procedures, however, progress in error mitigation has been below expectations.

1.7 In view of the foregoing, a procedure has been designed and proposed to harmonize FPL processing in the North American, Central American and Caribbean (NACC) Region Member States. The procedure laid the foundation for the experience gained in implementing autonomous processing agreements on FPL messaging, in particular acceptance of FPL filing directly by users, in the Dominican Republic's endeavour to mitigate the problem, as outlined below.

2. DISCUSSION

2.1 **Background:** The NACC Air Navigation Implementation Working Group (ANI/WG) is subdivided into teams, according to the task in hand. One such team is the AIDC working group, which has an *ad hoc* Flight Plan (FPL) Monitoring Group, whose responsibilities include the formulation of guidelines on FPL error mitigation, statistical monitoring and analysis of those errors (this procedure is depicted in the appendix).

2.2 The procedure was devised by members of the FPL Monitoring Group, to which participating industry representatives International Air Transport Association (IATA) and individual

airline companies) made contributions. The key idea was to institute an entity to review information provided in the electronic FPL and associated ATS messages (generally the AIS/ARO office) and, after vetting the data, to give feedback to airspace users, if any error has been found, or to transmit the data to the relevant local ATS facilities, if the data are certified as valid. This contrasts with the usual practice of direct transmission by users of their FPL messages to ATS facilities.

2.3 In an endeavour to avoid current FPL filing constraints, as outlined in 1.2, and, moreover, maintain consistency with ICAO documents, the procedure has been designed to resemble examples of Document 9965, *Manual on Flight and Flow — Information for a Collaborative Environment (FF-ICE)*, which describes the future method for exchanging FPL information electronically.

2.4 **Implementation:** The procedure has been in operation in the Dominican Republic since January 2019 and, to that end:

- a) internal meetings were held to discuss the technical feasibility of adopting this change of procedure and to decide on a single aeronautical fixed telecommunication network (AFTN)/ATS message handling system (AMHS) address for FPL filing; the system accommodates the use of this single address and of the old address for parallel operations during the trial period;
- b) a bilateral agreement between the airlines and IDAC was drawn up, setting out the conditions under which FPL information must be received electronically;
- c) a staff training and awareness-raising seminar was held in order to lessen the impact;
- d) three stages were set for transition to operationalization of the new procedure, thus effecting gradual change and providing feedback; and
- e) meetings were held with airspace users in order to elucidate, and agree on, concepts.

2.5 The procedure was well received. To date, agreements have been signed with Jet Blue, Delta, American Airlines, Copa, United Airlines, Air Canada/Air Canada Rouge and WestJet, and with the Flightplan.com and Foreflight.com platforms.

2.6 **Procedure implementation results:** The procedure has had outstanding results. ARO keeps statistics on FPL errors, in particular on the error percentage per shift (EPT), which shows the percentage of FPL errors detected during work shifts. Results for the past twelve months are shown in the appendix. It is evident that the incidence of error fell from just under 2 per cent to less than 1 per cent after the procedure became operational.

2.7 **Success factors:** Several factors can be highlighted as keys to such implementation.

- a) Total support and involvement of senior management in the attainment of this objective.
- b) AIS/ARO, with adequate and trained staff, to achieve the desired result.
- c) Software adaptable to the new procedure, enabling flexible routing and retransmission of messages to ATS facilities and requiring minimal human intervention.

- d) Trained technical support staff capable of configuring software, as necessary.

2.8 **Pending matters:** Matters pending adaptation in order to complete the automation of FPL and related messaging management processes are as important as the success factors and include the following:

2.8.1 Doc 4444 refers to explicit acceptance of the FPL form in section 4.4.3 d), but, as no form is being dispatched, airspace users have requested receipt of some form of acknowledgement confirming acceptance of the message. An electronic confirmation message (ACK), which is not covered in Doc 4444, is generally used in the NACC Region for this purpose. As the messaging software in the Dominican Republic does not generate this acknowledgement automatically, but manually, it must be modified by the manufacturer.

2.8.2 In the event of errors, the airlines wait for a rejection message (REJ) indicating the error and, in passing, non-acceptance of the FPL. This message, which is commonly used in the NACC Region and is not specified in the SARPS, also requires software changes to generate the message automatically, further streamlining the procedure.

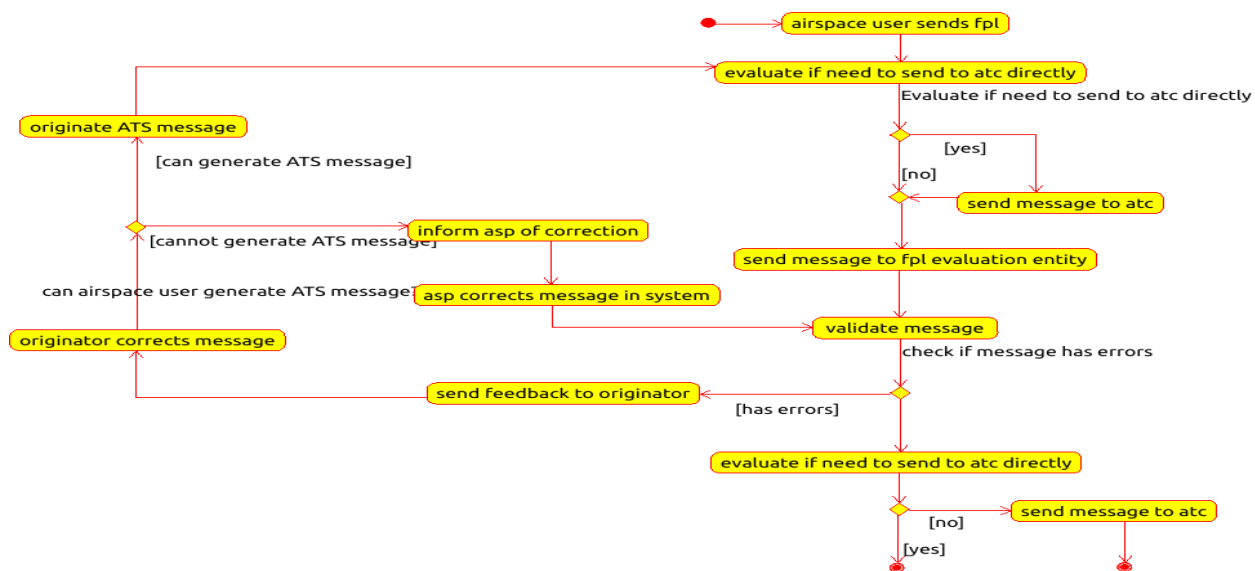
2.8.3 Users do not send additional information originally provided on the FPL form (apart from general aviation data processed by the fltplan.com platform). Under the agreement with commercial aviation users, the AIS/ARO Office will, if need be, make an information request (RQS) by any of the means predefined in the agreement. In the great majority of cases, this is managed by telephone because the airlines' FPL management systems do not recognize RQS. In a bid to automate this process, the FPL Monitoring Group has made approaches to specific industry system providers, without much progress to date. Accordingly, the Dominican Republic wishes to collaborate with IATA and, in particular, the airlines, to discuss the automation of this operation with their providers and complete process optimization and automation, which would redound to the benefit of all parties involved.

3. CONCLUSION

3.1 Owing to improvements achieved after the procedure was implemented, it is undoubtedly worthy of being tested by States that constantly encounter system problems generated by flight plan duplication.

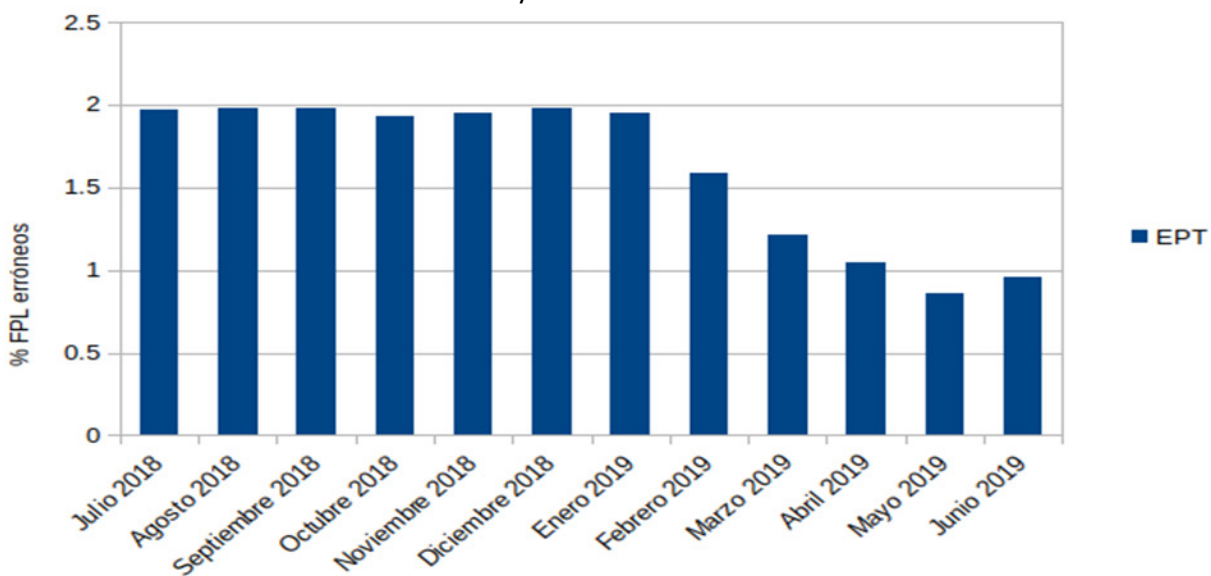
APPENDIX

New flight plan management procedure



Error Percentage per Shift

July 2018 - June 2019



— END —