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:   **ATM**

CROSSING FIR BOUNDARIES

(Presented by CANSO)

SUMMARY

This paper presents the CANSO *Best Practice Guide to Crossing Flight Information Region Boundaries*. The Guide supports CANSO's vision to transform Air Traffic Management (ATM) performance and its objective to harmonise airspace so that aircraft can fly seamlessly across the globe.

Strategic Objectives:
   A : **Safety** – *Enhance global civil aviation safety*
   B: **Air Navigation Capacity and Efficiency**—*Increase the capacity and improve the efficiency of the global aviation system*
   E***: Environmental Protection*** *— minimize the adverse environment effects of civil aviation activities.*

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1.   INTRODUCTION

1.1   CANSO has published a *Best Practice Guide to Crossing Flight Information Boundaries*. The objective of this best practice guide is to assist Air Navigation Service Providers (ANSPs) to deliver seamless service across Flight Information Region (FIR) boundaries and optimise the seamless and efficient flow of long-haul international air traffic across all regions. It provides a basic framework for achieving a technically and procedurally interoperable system as it relates to airspace users transitioning between FIRs. Recommendations in the Guide are aligned with and complement guidance material provided by ICAO and IATA.

2.   DISCUSSION

2.1   The Guide has identified a number of impediments to the safe and efficient crossing of Flight Information Region (FIR) boundaries, including disparities in separation standards; procedures in filing flight-plans; Air Traffic Flow Management (ATFM) measures; and pilot-to-controller and controller-to-controller communication capabilities. Other impediments include incompatibilities between adjacent automation platforms; and inconsistent airspace structures.

2.2   It focuses on two of the higher priority disparities viz. inconsistencies in filing flight plans; and problems in transitioning between surveillance and non-surveillance airspaces. The Guide recommends best practices that will improve the quality of flight plans by mitigating the introduction of duplicate or multiple flight plans, or flight plans containing erroneous information. It also provides guidance which addresses the inefficiencies and safety concerns involving the transition of aircraft between surveillance and non-surveillance airspace.

2.3   Quality of flight plans is a high priority item because of the detrimental effect that erroneous, missing, duplicate, and multiple flight plans can have on the service provided by ANSPs. These inaccuracies affect every phase of a flight as it transitions from the tower, terminal, en-route, and oceanic environments. The recommendations regarding flight-planning are based on the review and analysis of errors commonly found in filing, transmitting, processing, and transferring flight plans and associated messages across FIR boundaries.

   (a)   Flight-planning processes are still performed manually by some ANSPs in various parts of the world. These manual processes, such as handwritten information on flight progress strips, landline voice coordination, and manual computer inputs, introduce the potential of human error that may have implications to the safety and operation of the flight as it transitions from departure aerodrome to destination aerodrome.

   (b)   Flight plan content, including understanding which fields are mandatory and which are not; transmission and processing of flight plans, including the appropriate delegation of authority and duty; and communication and coordination are key areas that ANSPs should consider to improve flight plan quality. Current and emerging technologies provide ANSPs and operators with an opportunity to reduce errors associated with filing flight plans and sending movement messages.

2.4   The second area addresses the inefficiencies and errors that often occur when an aircraft transitions from surveillance to non-surveillance airspace, particularly due to the change in required separation standard.

   (a)   Errors and inefficiencies often occur in the transit of aircraft from surveillance to non-surveillance airspace in the vicinity of FIR boundaries due to the lack of robust, bilateral agreements between neighbouring states, incompatible communication technologies, or differences between procedures and airspace classifications. These errors may include applying incorrect longitudinal separation when entering a non-surveillance environment from a surveillance environment; issuing incorrect communications transfer instructions; or not providing sufficient airway width protection for airway structures that exist in neighbouring non-surveillance airspace. These inefficiencies could lead to optimum and desired vertical and/or lateral route profiles not being available to operators during and after the transition across an FIR boundary.

   (b)   With increasing levels of air traffic, the introduction of surveillance capabilities can provide measurable efficiencies for operations involving aircraft transiting from oceanic areas to higher-volume domestic routes and vice-versa especially during the climb and descent phases of flight. Technologies such as Automatic Dependent Surveillance Broadcast (ADS-B) and Multilateration (MLAT) enable ANSPs to provide surveillance capabilities in non-surveillance areas at a significantly lower cost than conventional modes of surveillance.

   (c)   ANSPs should consider building surveillance capabilities, sharing data, developing regional plans, and the continuation of separations standards and procedures across FIR boundaries as key areas to improve operations in surveillance /non-surveillance environments.

2.5   The application of this guidance document will help ANSPs reduce or eliminate some of the factors that contribute to operational inefficiencies, unnecessary fuel burn, CO_2 emissions, and loss of required separation standards as aircraft cross FIR boundaries. It will assist ANSPs to work with their neighbouring FIRs and stakeholders to identify and address inter-dependencies and inconsistencies in operations across FIR boundaries.

2.6   This publication therefore addresses two of the most problematic impediments to the safe and efficient crossing of FIR boundaries. There are other discrepancies associated with crossing FIR Boundaries which are not covered and would need to be examined next for example incompatibilities between automation platforms.

2.7   The CANSO *Best Practice Guide to Crossing Flight Information Boundaries* can be downloaded from the CANSO website at www.canso.org.

3.   ACTION BY THE MEETING

3.1   The Meeting is invited to:

(a) Note the information contained in the paper;

(b) Encourage States and ANSPs to avail themselves of the CANSO *Best Practice Guide to Crossing Flight Information Boundaries;*

(c) Discuss any relevant matter as appropriate.

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