International Civil Aviation Organization

Sixth Meeting of the Asia/Pacific ATS Inter-facility Data-link Communication Implementation Task Force (APA TF/6) of APANPIRG

Web-Conference, 14 – 16 July 2020.

Agenda Item 3: Status of implementation plan focusing those connections identified with priorities

THE LAUNCH AND PROMOTION OF AIDC HANDOVER BETWEEN CHINA AND LAOS

(Presented by China)

SUMMARY

This paper presents the launch and promotion of AIDC handover between China and Laos (Kunming ACC and Vientiane ACC).

1. INTRODUCTION

1.1 At present, there is an international route (A581) between Kunming FIR and Vientiane FIR, and the coordination point is SAGAG. Since the opening of the route, the number of flights flying over SAGAG has grown rapidly. According to statistics, there are roughly 184 flights flying over SAGAG every day.

1.2 Now, Kunming FIR transfers flights to Vientiane FIR by the way of telephone. It has obvious disadvantages, to some extent, such as semi-automation, all coordination works need to be manually operated, low accuracy, using English with accent for voice communication, some important information may be misunderstood, poor real-time, controllers need to type related information into the automation system, and high cost, the coordination though voice call will generate relevant telephone charges.

1.3 AIDC is a common agreement. It supports the notification, coordination and handover process of flights between different air traffic service units. Promoting the application of AIDC between China and Laos can help to improve the accuracy and timeliness of aircrafts handover, enhance the safety of navigation in border areas and increase the efficiency of control work. At present, some problems have been solved in the test of AIDC between China and Laos, including the conversion of metric and imperial altitude, the lack of route in ABI message and Optional Data Field (ODF-3) missing issue. But some problems such as transmission latency are still unsolved.

2. DISCUSSION

2.1 Introduction to previous test

2.1.1 The AIDC handover test between China and Laos started in December 2018. While Kunming uses NUMEN-2000 test platform, Vientiane uses TopSky backup system. Kunming and

Vientiane carry out AIDC handover test in simple mode by using AFTN link. ABI, EST and ACP messages are sent automatically in NUMEN-2000 system manufactured by LES company. TOC and AOC messages are sent manually. ABI message is sent 15 minutes away from SAGAG, and EST is sent 80 km or 10 minutes away from SAGAG.

2.2 Problem found and solved in AIDC test between China and Laos

2.2.1 For outbound flights, Laos reported they couldn't deal with the metric altitude in ABI and EST messages. Later, LES company upgraded the system. By configuring the programs, the altitudes sent to Laos are imperial and other domestic areas are metric. Whereas, the altitudes displayed on controllers' positions are metric, which is convenient for the controllers.

2.2.2 For outbound flights, Laos replied LRM after receiving EST sent by Kunming. Also, FPL NOT PREAC was displayed in LRM. At present, there is no ABI in the AIDC handover between Kunming and adjacent control areas, because the route in ABI could be modified wrongly by the opposite end system. However, due to the limitation from TopSky, ABI is indispensable to activate the flight plan. After that, LES company upgraded related programs and added routes in ABI.

2.2.3 For inbound flights, Laos replied LRM due to lack of ODF-3 in AOC after receiving AOC sent by Kunming. TopSky can't process AOC without ODF-3. Later, LES company added ODF-3 in AOC and solved this problem successfully.

2.3 Problems unsolved in AIDC test between China and Laos

2.3.1 During AIDC handover test we found serious transmission latency through AFTN link. The minimum was 5 seconds, and the maximum was up to 320 seconds. The average during the statistical test was 68 seconds. Long latency will cause handover failure. Current message exchange diagram is shown as Figure 2.

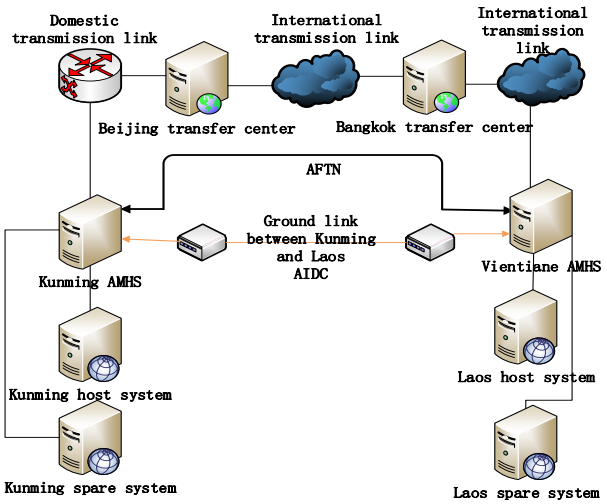

Figure 2 current message exchange

2.4 Next Step

2.4.1 Next, Kunming and Vientiane will make joint efforts with further analysis to seek the solution to the problem of transmission latency. At the same time, we will carry out AIDC handover test with neighboring countries such as Myanmar and Vietnam so as best as to promote AIDC application, improve border navigation safety, increase control efficiency and reduce workload.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper; and

b) discuss any relevant matter as appropriate

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