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

PROJECT FOR CENTRALIZED FLIGHT PLAN PROCESSING SYSTEM (CFPP) IN CHINA'S CIVIL AVIATION

(Presented by China)

REVISION NO. 1

EXECUTIVE SUMMARY

This information paper presents the background, the purpose, the operational concept and the systematic efficiency of China's civil aviation Centralized Flight Plan Processing System (CFPP). With the development of technology, it needs to reconsider the rules and procedures of air navigation service, in order to meet the needs for safer and more effective operation.

Strategic Objectives:	This information paper relates to Strategic Objectives：Air Navigation Capability and Efficiency
Financial implications:	N/A
References:	N/A

[1] English and Chinese versions provided by China.

1. INTRODUCTION

1.1 The Integrated Initial Flight Plan Processing System (IFPS), which was first proposed and implemented by EUROCONTROL in 1995, has been tested by practice for about 24 years. It is demonstrated that the IFPS not only helps to improve the efficiency and quality of flight plan data processing, but also reduce operational costs and improve the predictability and inter-operability of operation. The best practices in IFPS conducted by Europe have been recognized by many countries. In the Asia-Pacific region, Thailand and China have successively implemented the system on the basis of drawing upon Europe's experience and combining with our own national conditions.

1.2 With the rapid development of China's civil aviation, it has gradually become one of the largest international air transport markets. By the end of 2018, in China's Mainland, there are 239 civil transport airports, 28 area control zones, 15 high altitude control areas and 432 control sectors, as well as approximately 11000 air traffic controllers who provide air traffic services for 18500 flights per day to and from 130 countries and regions. Like Europe before implementing IFPS, the decentralized flight plan acceptance, processing and dispatching models at individual airport made it difficult to manage the flight plan data, which was adverse to improving processing efficiency, predictability and interaction, and to some extent affected the implementation of central traffic flow management.

1.3 To improve the efficiency and quality of flight plan processing, reduce the operational costs and improve the operational predictability and interoperability plan, the Air Traffic Management Bureau of CAAC, by learning from Europe's best practices in IFPS, launched the project for Centralized Flight Plan Processing (CFPP) in 2015, and completed the CFPP at 235 civil airports nationwide on December 13, 2017 and the unified processing of incoming flight plan on December 6, 2018.

2. DISCUSSION

Some shortcomings in the traditional flight plan operating model

2.1 The airspace users submit flight plans to disperse flight service reporting offices at different airports, which are handled and distributed by the flight service reporting office at individual airport. That is the traditional flight plan model and its shortcomings are as follows:

- The use of different systems by the flight services reporting office at individual airport resulted in different levels of competence;
- Due to the diversity of various systems, the flight service reporting office at individual airport needs to maintain its database with various different formats and standards, resulting in a large number of repetitive tasks, and it is difficult to achieve unified and effective management;
- Due to the decentralized operating model, when revising flight plan message standards, its adaptability is poor and a large number of system updates are required, a prominent problem of the adaptability to development and the safety of the overall transformation;
- Due to a large amount of repetitive tasks, resulting in increased human labour costs;

- Due to the decentralized operating model and style, resulting in poor predictability and interaction as a whole.

Centralized Flight Plan Processing (CFPP) operational concepts in China's civil aviation

2.2 A centralized entity is responsible for accepting, processing and distributing flight plans to form a 3-2 operational model, which comprises 2 centers, 2 addresses (SITA+ATFN) and 2 levels of data usage structure, an entirely new operating model.

2.3 The flight service reporting office at individual airport uses a unified processing system to maintain a uniformity of operating environment data and standards in China's civil aviation, in order to reduce repetitive tasks and improve the overall capabilities for coordination and management. Normally, the flight plan processing center is responsible for receiving, processing and distributing. In case of emergency, the backup center is responsible for the above tasks. If there are disasters, the individual airport flight service reporting office resumes the traditional operating model.

Current achievements from CFPP in China's Civil Aviation

2.4 Civil Aviation Air Traffic Flight Plan Processing Center, locating in Shanghai and with 66 staff members, is responsible for the unified processing for the flight plans of departure and incoming flights from 235 airports nationwide. It is equipped with the most advanced flight plan processing system and has established a backup center in Beijing.

2.5 China's civil aviation CFPP project changed the traditional operational model of flight plan, thus greatly improving the efficiency and quality of flight plan processing, and enhancing the safety, predictability and interaction of the operation.

2.6 According to the statistics of Beijing Area Control Center, from January 1 to December 31, 2016, a total of 2732 foreign flights landed in Beijing or flied over Beijing area airspace, of which flight plan information were not submitted. However, after implementing the unified processing for the flight plans of incoming flights nationwide on December 6, 2018, only 8 flight plans per month in Mainland China have been omitted, and it is expected that the omitting flight plans will below 100 in 2019.

2.7 China's Civil Aviation CFPP project has saved large amount of human resources, reduced a lot of repetitive work, and greatly improved the processing efficiency of flight plan data and its quality. The automatic processing efficiency of this system is as high as 97.15% and the manual processing rate is less than 2.85%; in 2018, over 13 million SITA messages are processed by the system, and the manual processing rate of SITA is less than 4.3%.

3. CONCLUSION

3.1 The traditional flight plan management model is prone to various types of systems, with low efficiency of human labour, repetitive tasks and unbalanced capabilities.

3.2 With the rapid development of computer technology, the centralized processing of flight plan can greatly reduce duplication of labour, improve processing efficiency and data quality, save human resources and enhance the operational predictability and interaction, therefore, improving the safety of air traffic management.

3.3 At present, China's civil aviation has realized the transformation from the traditional flight plan operational model to the new one, but it still needs to learn from Europe's best practice and experience, and further improve the operating rules and procedures on this basis, in order to improve the predictability and interoperability.

3.4 Finally, with the progress of technology, we hope that ICAO will be able to review existing standards and recommended practices and promptly revise relevant documents, so that the new operating model of CFPP could be further promoted, thus enabling service of the technology, the rules, and the standards for the operation more effectively.

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