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WORKING PAPER

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(Information Paper)

English and Chinese only

THIRTEENTH AIR NAVIGATION CONFERENCE

Montréal, Canada, 9 to 19 October 2018

COMMITTEE A

Agenda Item 3: Enhancing the global air navigation system

3.5: Other ATM issues

DCL & D-ATIS SERVICE IN CHINA

(Presented by China)

EXECUTIVE SUMMARY

This paper presents CAAC started to offer DCL and D-ATIS services in 15 airports in China from 2008, according to the standards of ARINC 623, EUROCAE ED-85A, EUROCAE ED-89A, and finished the implementation in another 29 airports at the end of 2017. Today there are 44 airports in China which will have the service of DCL and D-ATIS. In addition, this paper presents the operation trail in Shenzhen airports to provide CTOT by ACARS in China following the standards of ARINC623, and CTOT information are available in 44 airports in the future after the operation trail.

1. INTRODUCTION

1.1 Data link Departure Clearance (DCL) service and Data link Automatic Terminal Information Service (D-ATIS) are most applications in Data link Flight Information Service (DFIS). Based on the successful trial and implementation of DFIS, and the efficiency & safety benefits it brings, Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) has announced on the 14th meeting in August 2003, that the applications of DFIS will be the key and preferential project of CNS/ATM.

1.2 CAAC started to offer DCL and D-ATIS services in 15 airports in China from 2008, according to the standards of ARINC 623, EUROCAE ED-85A, EUROCAE ED-89A, and finished the implementation in another 29 airports at the end of 2017. Today there are 44 airports in China which will have the service of DCL and D-ATIS.

¹ English and Chinese versions provided by China.



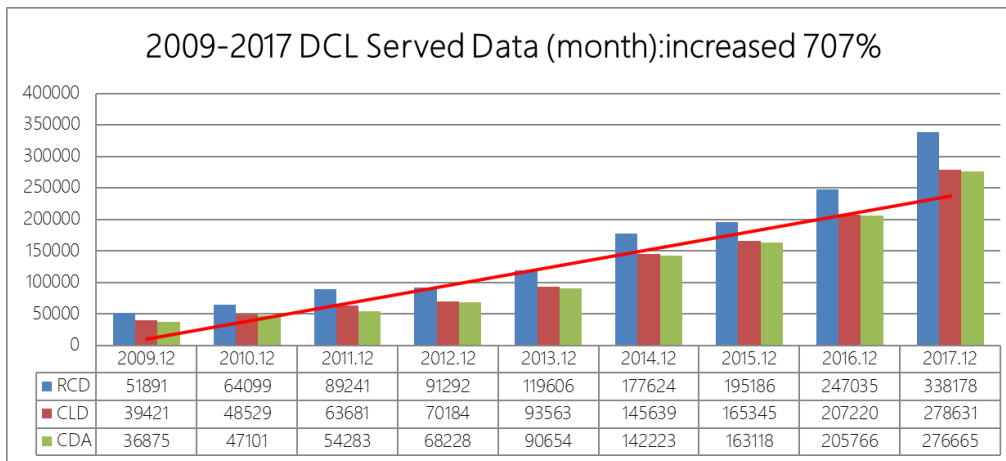
Pic - Airports in China which have DCL & D-ATIS in 2018

1.3 CTOT service is an innovative application in Data link Flight Information Service (DFIS). The CTOT service system installed at Shenzhen Bao'an International Airport have been equipped with datalink capability and dedicated datalink communication links have been set up with the ADCC AIRCOM Service to enable aircraft to access CTOT service via VHF datalink. The message to request and respond CTOT information follows the AEEC620, 622 and 623 specifications.

1.4 CAAC has launched CTOT services as trail operation at the Shenzhen Bao'an International Airport on July 16, 2018. The pilot can enter the Shenzhen airport code in the D-ATIS function and select the "Enroute INFO Service" option to get the CTOT information of the flight.

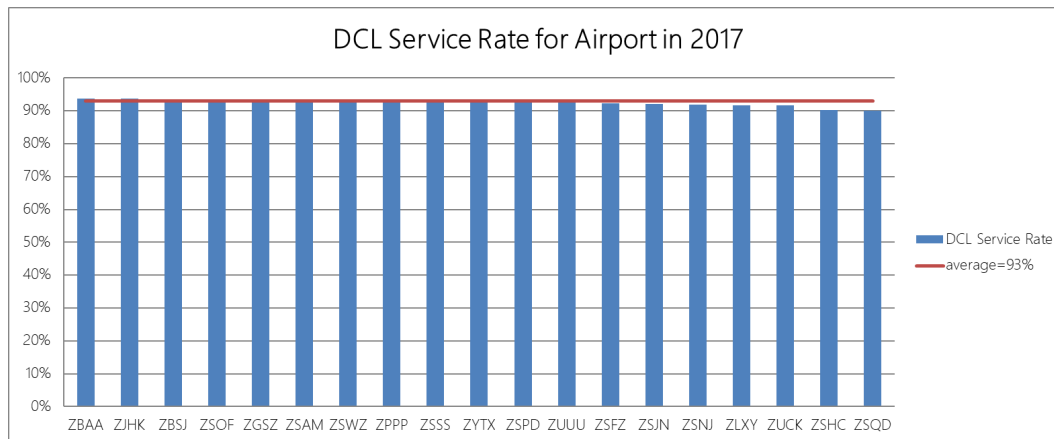
2. DISCUSSION

2.1 DCL had served 278,631 air-flights by December 2017, and had increased 707% from 39,421 air-flights by December 2009.



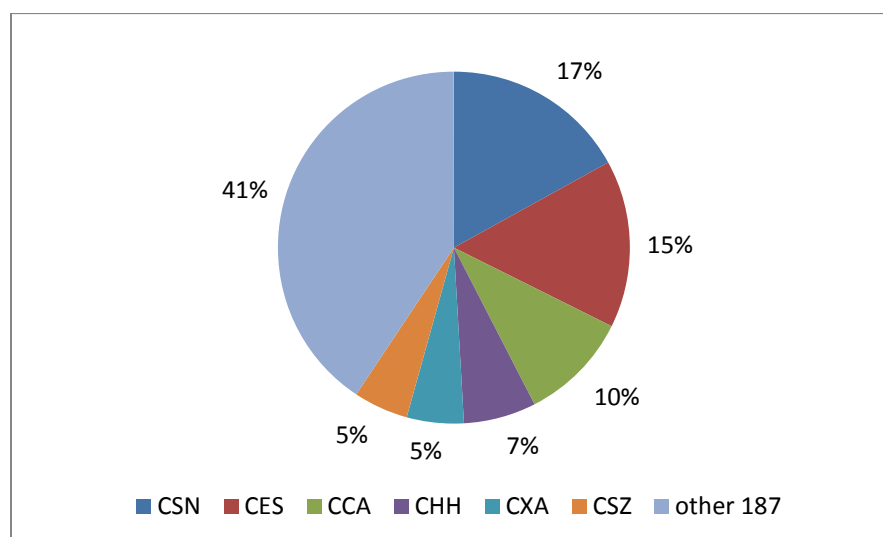
Pic Air-flights served by DCL from 2009 to 2017 in China

2.2 Until December of 2017, the average usage of DCL service in China's busiest airports is 92% (average replies of DCL per airport per day / average flights taking off per airport per day).



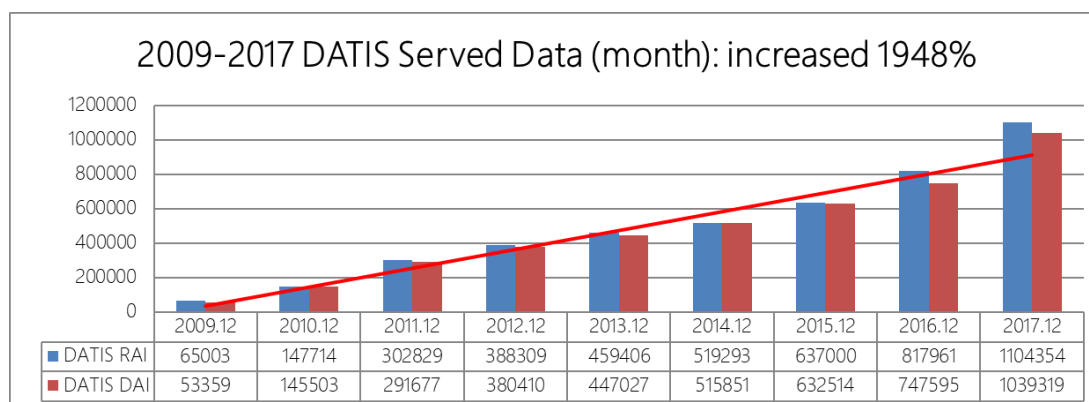
Pic - Average usage of DCL in 2017

2.3 From the aspect of airlines, 25 Chinese airlines and 102 international airlines were using DCL service by CAAC until December 2017.



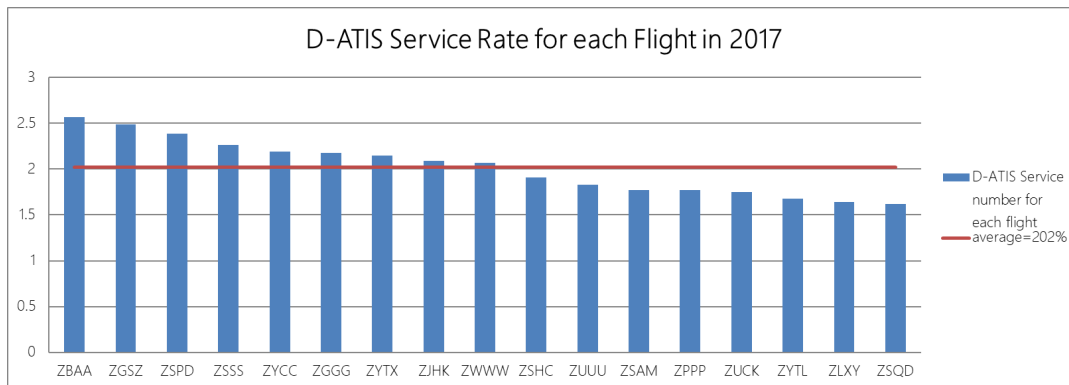
Pic - Statistic of main airlines served by DCL until Dec 2017

2.4 The replies of D-ATIS has been increased 1948%, from 53,359 flights in December 2009 to 1,039,319 flights in December 2017.



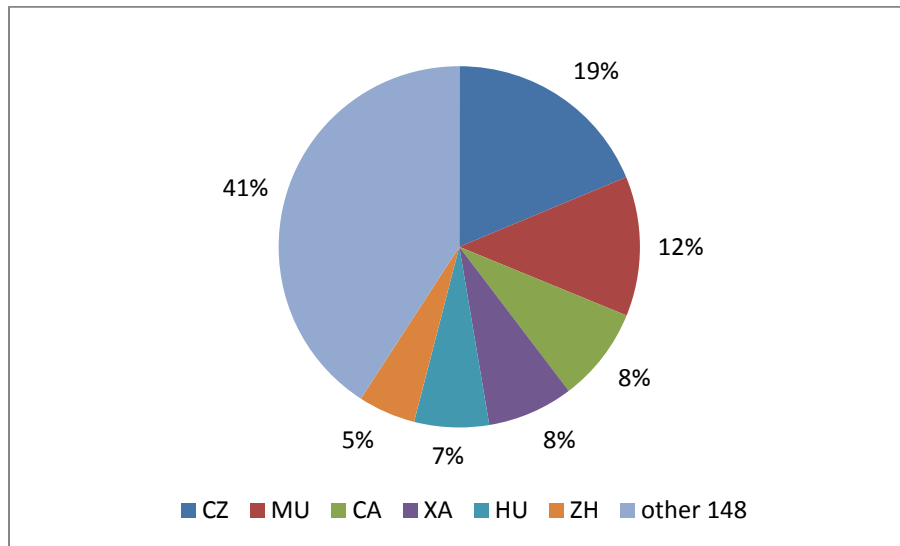
Pic - Statistic of D-ATIS from 2009 to 2017

2.5 Until December of 2017, within China's busiest airports which provides D-ATIS service, each flight used D-ATIS for 2.1 times (average replies of D-ATIS per airport per day / average air-flights per airport per day).



Pic - Average usage of D-ATIS for each flight in 2017

2.6 From the airlines side, 25 Chinese airlines and 104 international airlines were using D-ATIS service by CAAC until December 2017.



Pic - Statistic of main airlines served by D-ATIS until Dec 2017

2.7 As the effectiveness of DCL & D-ATIS has grown apparently, DCL has been the first choice of both Chinese and international crews to get the departure service. By the advantages of efficiency, safety comparing to the traditional voice service. D-ATIS is now the most important and necessary service for Chinese and international crews by its efficiency and large range coverage comparing to traditional ATIS. Meanwhile ATC controller & pilots' working strength and pressure has decreased markedly; D-ATIS decreases potential safety hazard caused by human mistake and increase the efficiency and safety of air traffic control.

2.8 In China, the collaborative decision making (CDM) system is constructed to improve the synergy between the related departments. The current problem is pilots do not have direct access to CTOT information and changes. At present, pilots need to know the CTOT information by asking the tower controller or the airline dispatcher. If the CTOT information is not acquired in time, it will directly affect the pre-flight preparation time and organization time, causing flight delay or passenger waiting for a long time. In special cases, such as large area delays at the airport, all flights CTOT time jump

frequently, the controller needs to respond to many pilots' inquiries, and the controllers and pilots spend a lot of time on it.

2.9 Based on the existing D-ATIS system, CTOT service uses existing avionics equipment and datalink technology, carries out the innovation and implement the flight CTOT real-time information on demand service. Specific methods: 1) the service provider of datalink (ADCC) and the CDM system of Shenzhen are connected to achieve the integration of the CTOT information; and 2) By extracting the key data of the "flight identify" and "the airport code" in the CTOT request message, the CTOT Service will reply the message back to the airplane.



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.B-8635 ZGSZ ZH9004      09NOV17 1300Z
ATC REQUEST STATUS
FSM YOUR COTD 1335Z, IF U GOT THIS MSG,
REPORT TO 121.95
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2.10 During the trial period, pilots will receive the CTOT service message with “TRAIL OPERATION”, which means that CTOT service is in period. Meanwhile, pilot should repeat calculated take off time on the appropriate frequency to the controller after receiving CTOT information by CTOT service, to ensure the service security.

2.11 As shown in the following example, the Shenzhen tower provides CSZ9004 with real-time information on COTD (flight departure time released by the central South Air Traffic Management Bureau): YOUR COTD 1335Z, IF U GOT THIS MSG REPORT TO 121.95. On the airplane side, it can be displayed by airborne multifunction control display unit (MCDU), and the airborne printer also prints relevant information, as shown in the figure.

3. CONCLUSION

3.1 The meeting is invited to note the information contained in this paper.

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