



International Civil Aviation Organization

**The Third Meeting of the APANPIRG ATM Sub-Group
(ATM /SG/3)**

Bangkok, Thailand, 03-07 August 2015

Agenda Item 4: ATM Systems (Modernization, Seamless ATM, CNS, ATFM)

NEW TECHNOLOGY TO IMPROVE THE EFFICIENCY OF BUSY AIRPORTS

(Presented by China)

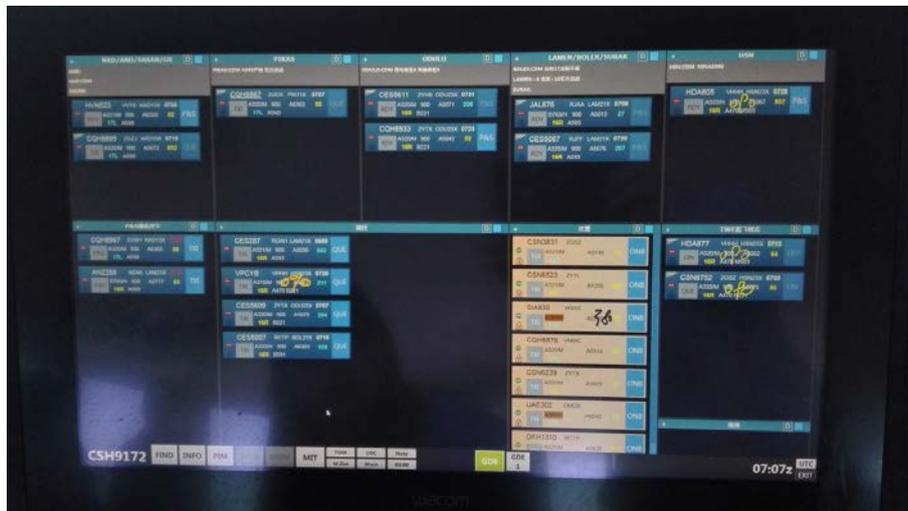
SUMMARY

This paper presents the new research on the D-TAXI and the Weather Forecast System by the East China Regional ATMB.

1. DISCUSSION

D-Taxi

1.1 In order to deal with the growing number of flights at two airports Pudong and Hongqiao, the East China Regional ATMB has its own researches and development of the Electronic Flight Strips (EFS) and Airport Surface Monitoring System ASMS. This system improves the capabilities of the tower controllers for processing information; effectively enhance the management of operation risks.



EFS system interface



ASMS system interface (the green line is the route planning for an aircraft)



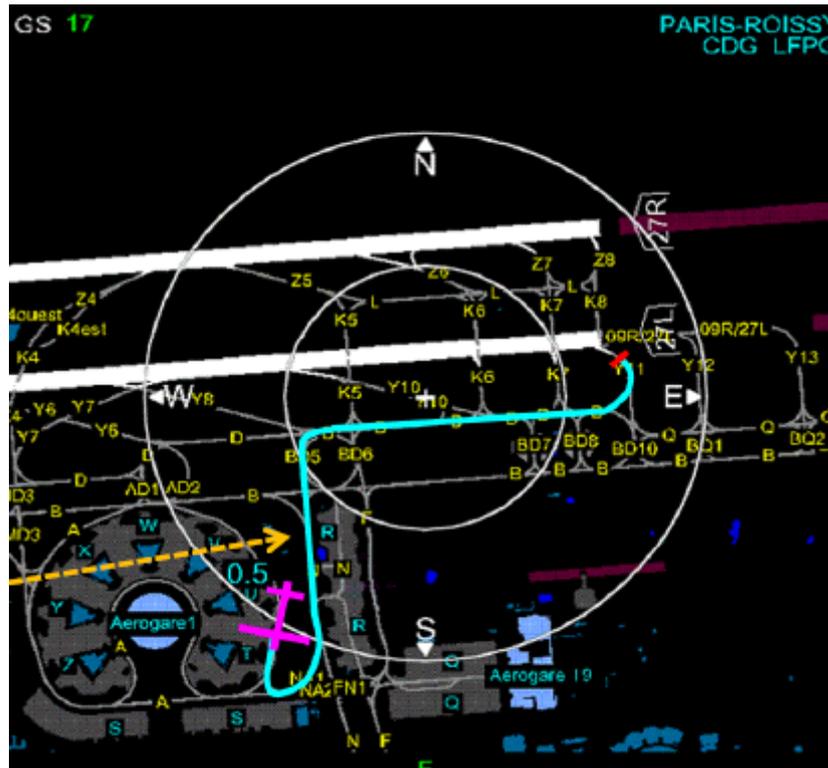
This is the EFS and ASMS on the ZSPD TWR.

1.2 However, with the increase of the amount of ground activities, the complexity of ground conflicts is increasing. The frequency of ground control will sometimes increase. A longer reply and being unable to timely release new instructions will often lead to passive way of command. Therefore, it is necessary to find a better way to release and confirm the sliding path.

1.3 We have also noted the case of aircraft navigation through airport guiding lights. This is a big improvement for airport hardware facilities, but also has difficulties in the maintenance.

1.4 With the continuous upgrading of airborne equipment, we find that the ADS-B IN technology has made a big progress. If you can pass the ADS-B IN as a data transmission channel, the glide instruction of the EFS can directly reach the EHSI in the cockpit, and then everything becomes smooth.

1.5 We also note that Europe and the United States have been led by the aircraft manufacturer for the researches of the D-TAXI technology.



Airbus D-TAXI clearance demo display in the cockpit.

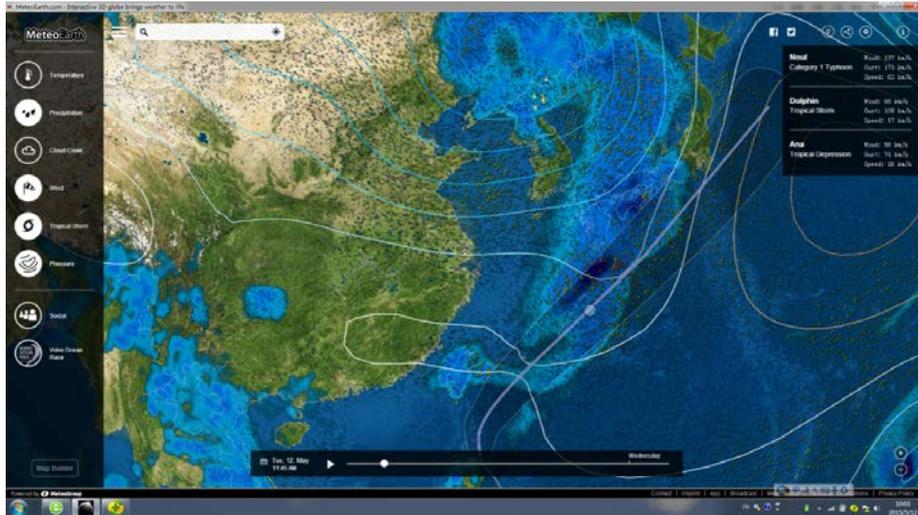
1.6 While China now also have aircraft manufacturers; therefore, the East China Regional ATMB and China commercial aircraft, the second research institute of Civil aviation, Honeywell, and other companies were the initial intention of exchange, reached the intention of joint researches and test.

1.7 We hope to have more companies to participate in the program, and that ICAO will give us greater support in the near future.

Weather Forecast System

1.8 The weather forecast is very important for tactical flow management or pre-tactical flow management. With further development of flow management in East China, developing to predict longer and having situational awareness of numerical forecast products become the most important requirements.

1.9 We work with Europe's largest weather company METEO GROUP. On the basis of their original products, we have been developing to meet the air traffic flow management functions.



This is METEO EARTH forecast system interface

1.10 We will put the airways on the map, and the play functions can display 24 hours animation of the weather from current time.

1.11 The flow management expert can easily watch the further weather information just like watching a “story film”. All the staff in the same hall can create the same situational awareness at the same time. It’s quite different from the way that they read the weather information from the paper.

1.12 We are working together to improve the system, to make it more adaptive to the work of flow management.

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