



International Civil Aviation Organization

**EIGHTEENTH MEETING OF THE COMMUNICATIONS/NAVIGATION
AND SURVEILLANCE SUB-GROUP (CNS SG/18) OF APANPIRG**

Asia and Pacific Regional Sub-Office, Beijing, China
(21 – 25 July 2014)

Agenda Item 5: Aeronautical Mobile Service (AMS)

5.3) Other AMS related issues

THE UPDATING OF DEPARTURE CLEARANCE TRIAL OPERATION IN JAPAN

(Presented by Japan)

SUMMARY

Japan Civil Aviation Bureau (JCAB) has implemented the trial operation of DEPARTURE CLEARANCE by DATA-LINK SERVICE (DCL) at Tokyo international airport (RJTT) and Narita international airport (RJAA) since June 28, 2012. Currently, the trial operation is in the Phase 2 of the 3-step process. We are going to expand applicable city-pairs of Operational trial on Phase 3. This paper provides the current status of the trial operation and calls all airlines which participate in Phase 3 trial operation.

1. INTRODUCTION

1.1.1 Japan Civil Aviation Bureau (JCAB) has implemented the trial operation of DEPARTURE CLEARANCE by DATA-LINK SERVICE (DCL) at Tokyo international airport (RJTT) and Narita international airport (RJAA) since June 28, 2012. Currently, the trial operation of DCL is in the Phase 2 of the 3-step process, which is relevant only to Domestic/International flights planned to depart from RJTT and RJAA for the arrival airport in a certain area in Asian and European region. We are going to expand applicable city-pairs of Operational trial on Phase 3 on August 21, 2014. JCAB has commenced the evaluation regarding DCL using data link since the trial operation was started.

1.2 The purpose of the trial operation

- To evaluate the validity of the operation method
- To determine the transition to the next phase based on the evaluation results at each stage
- To decide to move on full operation with the coordination with airlines after the evaluation of the validity of the operation method in all phases
- The target period of the trial operation will be three years.

Table 1.2 [Trial operation plan]

Phase	Targeting flights
Phase 1	Domestic flight
Phase 2	Addition of international flight, East Asian and European region
Phase 3	Addition of all Domestic/International Departures

2. DISCUSSION

2.1 Evaluation

2.1.1 Utilization Rate

JCAB moved to the phase 2 trial operation on June 27, 2013, after having finished the phase 1 trial operation which had started since June 28, 2012. In sheer numbers, the utilization rate of DCL has been gradually increasing as follows (Figure 2.1.1). This increase is because the target scope was expanded. Though the number of DCL request is declining from January and February, 2013, the reason is the suspension of B787 operation from January 16, 2013.

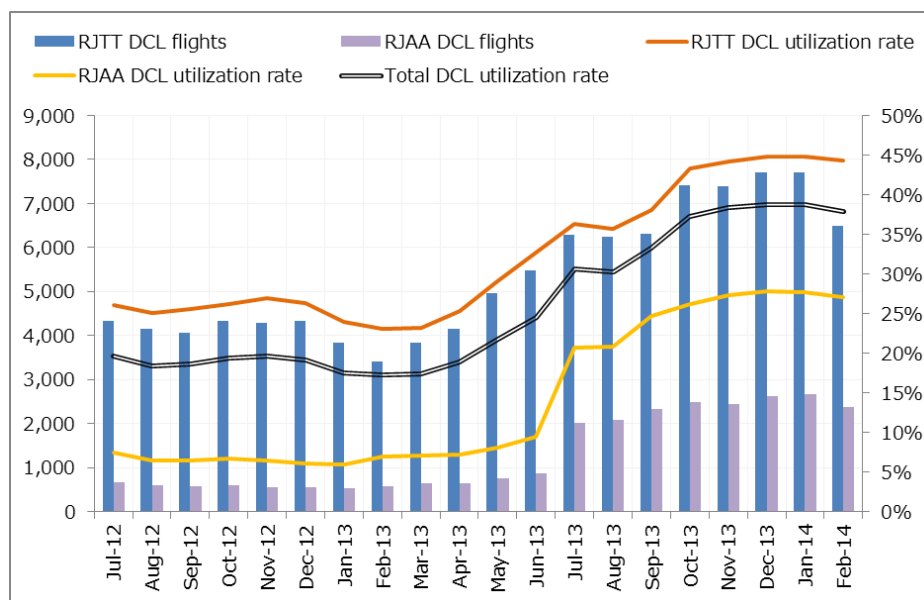


Figure 2.1.1 [Utilization rate of DCL]

2.1.2 Success Rate

The success rate of DCL has kept high level since DCL trial operation was started (Figure 2.1.2).

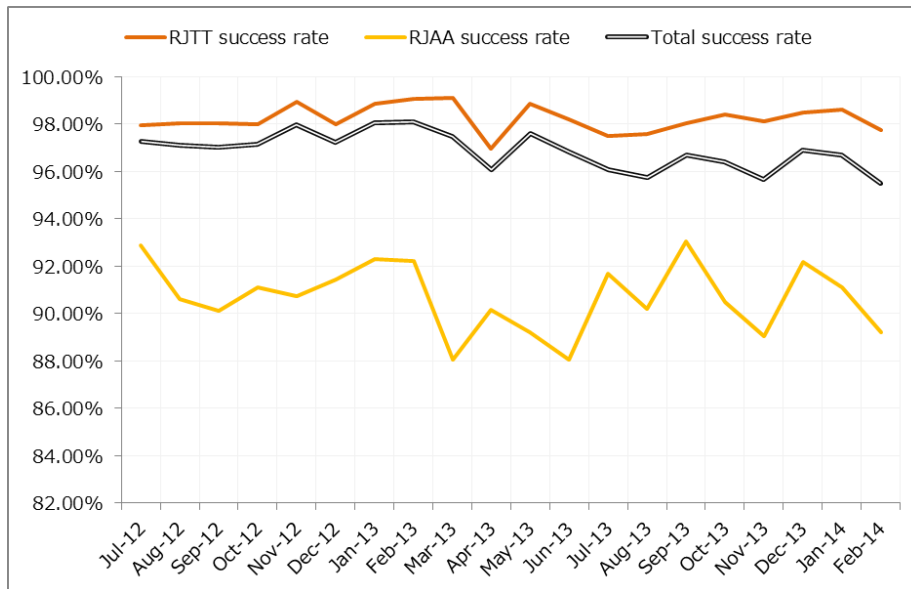


Figure 2.1.2 [Success rate of DCL]

2.1.3 Cause of Failure

In case of DCL process is interrupted by ATC or failed, the process is supposed to revert to voice. The causes of failure are summarized in Figure 2.1.3. There are cases that Air Traffic Controllers (ATCO) cancelled the request clearance to relieve traffic congestion appropriately at RJAA. In that case, ATCO reply “REVERT TO VOICE” message to change the voice communication.

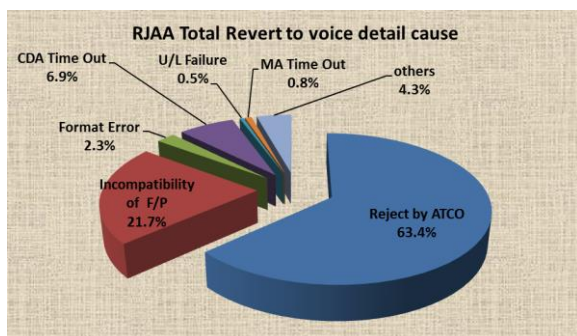
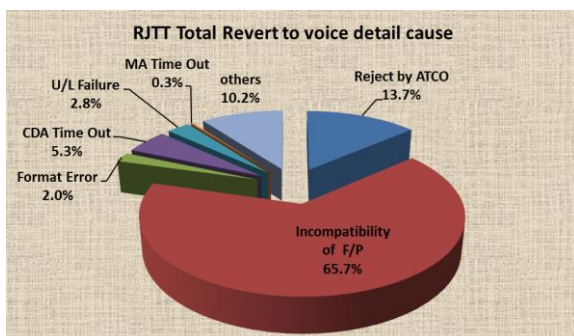
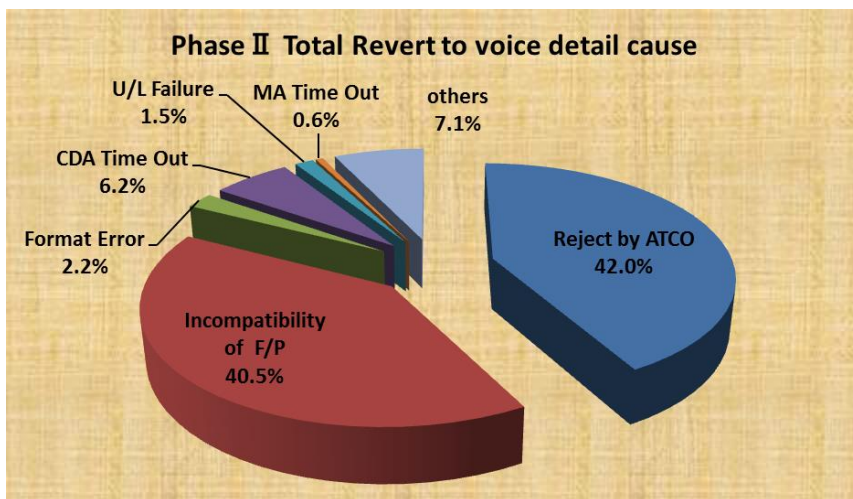


Figure 2.1.3 [Revert to voice detail cause]

2.1.4 Performance

We quantitatively evaluated the performance requirement which was provided in EUROCAE ED-85A (Table 2.1.4a). The measurement point is defined at Figure 2.1.4b. We checked all paths through VHF data link, INMARSAT and MTSAT and confirmed all to meet the performance requirement (Figure 2.1.4c).

Table 2.1.4a [Performance Requirement]

ED-85A requirement		Specified value	Measured figure
Time sequence diagram	t0	95% < 65s	5s
		Maximum value of t0 for 95 % of the total volume of delivered messages: t0<65s	
	t2	95% < 65s	4s
		Maximum value of t2 for 95 % of the total volume of delivered messages: t2<65s	
Corrupted message ratio		1x10 ⁻²	0
Lost message ratio		1x10 ⁻²	0

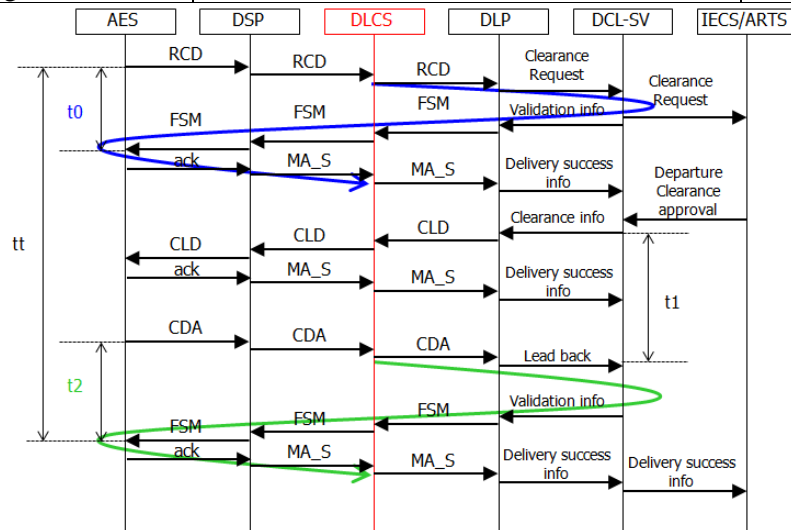


Figure 2.1.4b [Measurement Point]

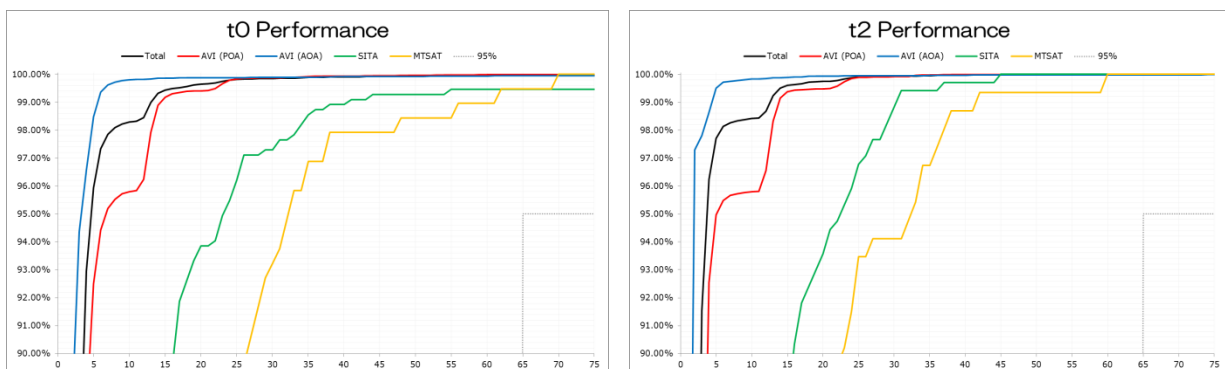


Figure 2.1.4c [Performance of DCL based on ED-85A]

2.1.5 Result

Departure clearance using voice takes 1 to 2 minutes so far. But using DCL is shortened to 10seconds and enables to check with text message. This contributes to the reduction of workload and prevention of human error. We hear good reputation from airline operators through the trial operations and they hope to expand DCL service to other airports.

2.2 Conclusion

2.2.1 Toward Phase 3

The trial operation is going to be transferred to Phase 3 on August 21, 2014. In the Phase 3 applicable city-pairs of Operational trial for Departure Clearance by data link will be expanded at Tokyo International Airport and Narita International Airport without providing limitation in the arrival airport. We would like to ask that the airlines, which will use Tokyo International airport and Narita International airport, participate in the Phase 3 trial operation. Please confirm the AIC Nr. 028/14 (issued on 26 June, 2014) about the detail information for the participation of trial operation.

2.2.2 Operational hours and Applicable aircraft in Phase 3

Operational hours and Applicable aircraft are as follows:

Hours:

Tokyo Intl.:24hrs

Narita Intl.:20:50-15:00(Z)

Applicable for:

Domestic/international flights which plan to depart from RJTT/RJAA.

2.2.3 Conditions on the trial operation

The trial operation is based on EUROCAE document ED-85A(“Data-Link Application System Document(DLASD) for the Departure Clearance Data-Link Service”) and ARINC specification 623-3. Aircraft participating the trial operation shall obey these specifications and procedures prescribed in the relevant items in the AIC-Japan.

2.2.4 Related information

AIC is posted in AIP.

AIS JAPAN : <https://aisjapan.mlit.go.jp/Login.do>

3. ACTION BY THE MEETING

3.1 The meeting is invited to: take note of the progress made by Japan in updating the DCL trial operation in Japan.
