



International Civil Aviation Organization

AIDC Review Task Force Meeting

Brisbane, Australia, 27-28 March 2003

Agenda Item 2: Review of experience gained and lessons learned in the implementation of the AIDC

AIDC OPERATION EXPERIENCE IN JAPAN

SUMMARY

This paper presents Japanese experience of ATS Inter-facility Data Communication (AIDC) service between Tokyo ACC and Oakland ARTCC.

(Prepared by Japan)

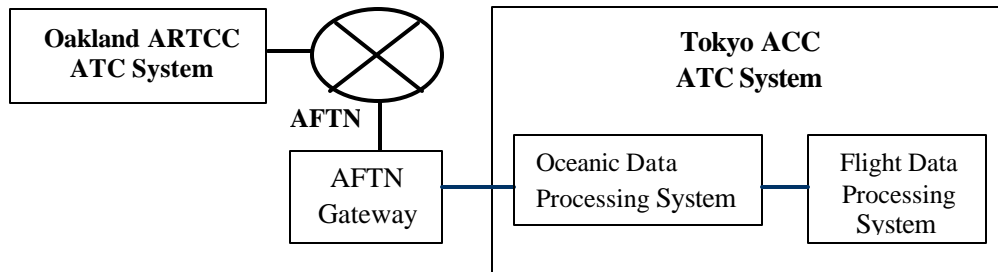
1. Introduction

The ATS Inter-facility Data Communication (AIDC) of APANPIRG has been implemented and is being operated for the transfer of control of aircraft in the Pacific oceanic area between automated ATS systems at Tokyo ACC and Oakland ARTCC. This information paper reports on the experience of Japan with this AIDC service and on future AIDC services between Japan and other states. Possible extensions to the AIDC message set for future operational use are also proposed.

2. Background

The AIDC service between Tokyo ACC and Oakland ARTCC was initiated in 1998. This provides a message exchange service for controller communications regarding oceanic flights. The operational message set is compliant with the Asia/Pacific Regional Interface Control Document (ICD) for AIDC, but is a reduced subset thereof.

The Japan Civil Aviation Bureau (JCAB) has two types of flight data processing system which exchange data for ATC purposes: the FDP (Flight Data Processing) system which provides ATC data of all flights in Japan, and the ODP (Oceanic Data Processing) system which carries out data processing for all flights in the oceanic control area of the Tokyo FIR. The AIDC circuit from Oakland ARTCC is connected to the ODP System at Tokyo ACC through an AFTN Gateway as shown Figure 1.

Figure 1

3. AIDC operation between Tokyo ACC and Oakland ARTCC

3.1 The ATS automation system in Japan supports all of the core messages defined in the ICD. However, the actual operational exchange of messages is carried out in accordance with a bi-lateral agreement between JCAB and FAA. The following messages are used operationally.

CPL (Current Flight Plan):

This message is transmitted automatically to the other automated ATS system for a specific flight 80 minutes prior to its crossing the FIR boundary. Manual transmission is also available.

EST (Coordination Estimate)

ATS system sends this message automatically when:

- a) The estimated time of a flight crossing the FIR boundary differs by four minutes or more from previous information, and/or,
- b) The cruising altitude of a flight is changed.

Manual transmission is also available.

MAC (Coordination Cancellation)

This message is transmitted both automatically and manually.

ACP (Acceptance)

This message is transmitted automatically in response to receipt of CPL and/or EST messages according to the procedure defined in the ICD.

LAM (Logical Acknowledgement Message) and LRM (Logical Rejection)

These messages are transmitted automatically according to the ICD-defined procedures.

3.2 Once a CPL message regarding a flight has been sent, any subsequent coordination of route and/or altitude change of the flight is made by direct voice telephony using landline, rather than by the AIDC function between the ATS units.

4. AIDC services in the future

4.1 The JCAB system also has the capability to provide an AIDC service between Tokyo ACC and Anchorage ARTCC. The timing of the implementation of such a service is under currently discussion at bi-lateral meetings.

4.2 JCAB started bi-lateral coordination with Republic of Korea's Civil Aviation Safety Authority for the implementation of AFTN based AIDC. This AIDC service will be started in the near future, possibly in 2006.

5. Conclusion

Based on the operational experience of the AIDC service between Tokyo ACC and Oakland ARTCC, JCAB has drawn the following conclusions.

5.1 The number of datalink-equipped aircraft operating on Pacific routes is gradually increasing. Automatic Dependent Surveillance (ADS) downlink data can be utilized for ATC surveillance with great potential benefits, such as allowing reduced separation and an increase in the capacity of oceanic routes. To help realize these benefits, a more detailed ADS message format should be defined in the AIDC ICD that the present one.

5.2 The Tokyo-Oakland AIDC service is currently used to exchange and transfer information between oceanic control units. However, AIDC is applicable not only to oceanic control but also to interstate ATC data transfer and coordination for RADAR handoff. In most cases, transfer between enroute control units depends on RADAR control. Therefore, it is necessary to consider the addition of RADAR handoff data format to the current AIDC ICD.

6. Action by the Meeting

The meeting is invited to note information and conclusions provided in this paper.
