



International Civil Aviation Organization

**Eight Meeting of the Communications/Navigation/Surveillance and
Meteorology Sub-Group (CNS/MET SG/8) of APANPIRG**

Bangkok, Thailand, 12-16 July 2004

Agenda Item 3: Aeronautical Fixed Service

AIDC PERFORMANCE MONITORING

(Presented by JAPAN)

SUMMARY

This paper provides information on the experience of Japan in regards to the AIDC services between Oakland ARTCC in the United States and Tokyo ACC in Japan, and prepares the material on an approach to methodologies for monitoring AIDC performance. JCAB presents this paper using slides. (See Attachment of this Information Paper) JCAB also suggests standardizing of the methodology for monitoring of the AIDC Performance.

AIDC Performance Monitoring

(Attachment of CNS/MET SG/8 IP/6)

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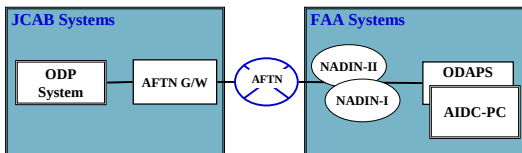
(Presented by JAPAN)

Contents

- AIDC System & Network Configuration
- Monitoring Items and Methodology
- Result of Monitoring Activity
- Conclusion & Action by the Meeting

AIDC System & Network Configuration

- AIDC service between Tokyo ACC and Oakland ARTCC was initiated in 1998.
- AIDC services comply with Asia/PAC AIDC ICD ver1.



System configuration will be changed when:

- Oakland Center introduces ATOP system;
- ATM Center will be established in Japan; and,
- ATN-based AIDC will be implemented in the near future.

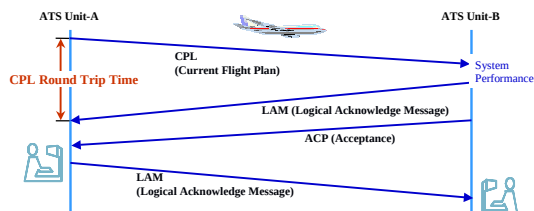
Methodology for monitoring AIDC performance (1)

Factors affecting AIDC operational performance

- Network capability including circuit baud-rate between two end-systems
- System capability and acceptable performance
- Capacity and performance of AIDC end system dealing each messages to controller's display or printer
- Error rate of End system in receiving AIDC messages
- Duration of the outage of AIDC message handling system, relevant circuit and end-system

Methodology for monitoring AIDC performance (2)

End-to-End round trip time

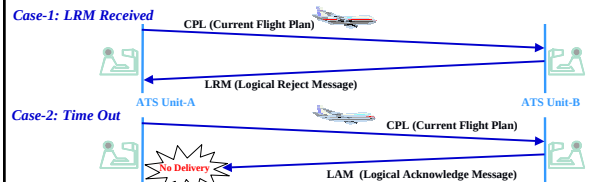


Calculation formula to get value of CPL Round Trip Time

CPL Round Trip time =
Reception-time of LAM for response of CPL – Transmission time of CPL

Methodology for monitoring AIDC performance (3)

Failure of exchanging AIDC messages (success rate)



Calculation formula to get value of CPL Success rate

Success Rate =

$$1 - \frac{\text{Number of received LRMs responding to CPLs} + \text{Number of Time Out occurrences for CPLs}}{\text{Total Number of CPL messages sent from RJTG}}$$

Result of Monitoring Activity

Duration of monitoring: 1 - 30 Apr. 2003 (1 month)

Round Trip Time	
Number of successful CPL Message with LAM	3227
Average	0:00:20
Maximum	0:02:57
Minimum	0:00:13
95 Percentile	0:00:30
99 Percentile	0:00:30
Message Delivery Success Rate	
Total Number of CPL sent from Tokyo ACC	3255
Number of LRM received	26
Number of Time out	2
Number of LAM received	3227
Success Rate	99.1%

Conclusion & Action by the Meeting

Conclusion

- Monitoring activity should be considered not only operational field, but also performances of infrastructures (AFTN line, System, etc)
- JCAB supposes that the methodology of monitoring AIDC performance should be standardized.
- JCAB expects that Asia/Pacific States or ICAO consider the necessity to develop relevant guideline.
- JCAB will continue AIDC monitoring and will report further information in this regard.

Action by the Meeting

The group is invited to note the information presented by Japan. JCAB also welcomes some comments to the information consisted in this presentation.

Thank You!



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Civil Aviation Bureau
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