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AERONAUTICAL TELECOMMUNICATION NETWORK PANEL

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VALIDATION ACTIVITIES FOR THE AIR-GROUND SARPS

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SUMMARY

This document presents details on the FAA sponsored validation program for the CM, CPDLC, ADS, and FIS SARPs.

Report on the FAA Sponsored Validation Program for the ATN Air-Ground SARPs

1. Introduction

The FAA is sponsoring the implementation and testing of the four air-ground application SARPs for the purpose of validation the technical specifications. This paper describes the program and presents the latest details.

2. Background

Open Network Solutions, Inc. (ONS) is under contract to develop implementations of Context Management (CM), Controller - Pilot Data Link Communication (CPDLC), Automatic Dependent Surveillance (ADS), and Flight Information Services (FIS). The purpose of the implementations is the validation of the SARPs through interoperability testing.

3. Implementation Architecture

The ONS implementations operate on the Sun Solaris system. The OSI communication software and X.25 software are standard SunLink products and not ATN compliant. The applications operate over the ONS Upper Layer Communication System (ULCS) that implements the Dialogue Service, ACSE, fast byte Presentation Layer, and fast byte Session Layer. The ONS ULCS is compliant with the draft ULCS SARPs as approved at the Montreal ANTP/2 meeting.

All implementations of the air - ground applications are based on the SARPs documents presented as the output of the Montreal ANTP/2 meeting.

4. Current Status

At the present time, ONS has completed the implementation of CM, CPDLC, and ADS. The FIS implementation is nearly complete.

CM has undergone significant local loop-back testing to validate the SARPs in a local environment. This testing is now complete.

CPDLC has also undergone significant local loop-back testing and has tested the protocol state machine.

ADS has undergone complete state transition testing in a local loop-back mode. The ADS implementation has yet to be tested using the actual ULCS protocol stack. Testing has been completed using direct connection between the air and ground implementations.

FIS has undergone partial local loop-back testing.

5. Interoperability Testing

During the month of February, ONS has been performing interoperability testing with Eurocontrol. The detailed report of this testing is presented in the individual validation testing papers.

However, of particular interest is the difficulty of achieving test results based on the PER encoding.