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AERONAUTICAL TELECOMMUNICATION NETWORK PANEL

WORKING GROUP 3 (APPLICATIONS AND UPPER LAYERS)

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Use of Interoperability Testing as a Validation Tool

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SUMMARY

This paper requests WG3 to take a number of actions which are specifically required to progress the validation of draft SARPs through interoperability testing using pre-defined scenarios.

Introduction

The paper "Proposed Scenarios for CNS/ATM-1 Package Draft SARPs Validation" (ATNP/WG3/WP4-16) describes a series of eight scenarios that can be used in validation exercises based on interoperability testing between prototype developments of ADS, CM, CPDLC and the upper layers. This paper received general approval at the fourth meeting of ATNP/WG3 (Banff), which requested SG2 to consider it. Due to pressure of other work, SG2 has not yet performed a detailed examination of the requirements for validation, and therefore has not had time to examine this paper.

Proposed Scenarios

In summary, the eight scenarios described in the paper are as follows:

- Aircraft takes-off and lands in a single FIR, using CM, ADS and CPDLC;
- Aircraft enters FIR and lands, using ADS and CPDLC;
- Aircraft takes-off within an FIR and leaves it, using CM, ADS and CPDLC;
- Aircraft enters FIR, crosses it and leaves it, using CM, ADS and CPDLC;
- Aircraft takes-off, has an emergency situation and lands in a single FIR, using CM, ADS and CPDLC;
- Aircraft takes-off within an FIR and leaves it, using CM and CPDLC only;
- Aircraft travels through one FIR using ADS and CPDLC and transfers to another FIR which only uses CPDLC;
- Several aircraft and FIRs, multiple contracts, emergencies and CPDLC communication.

The paper proposes a set of tests based on these scenarios.

Purpose

The purpose of the scenarios and the tests is to perform interoperability testing between prototype systems developed separately, but according to the specification in the draft SARPs. The results will demonstrate where the draft SARPs are ambiguous, since ambiguities may result in different interpretations and therefore different implementations.

Recommendation

In order to progress with this approach to validation through interoperability trials, WG3 is requested to take the following action:

- confirm that the WG endorses this approach to validation, to be undertaken by states and organisations that are willing to participate.
- pass the document ATNP/WG3/WP4-16 to the ADS Panel Working Group meetings in March, with a request for their comment on the adequacy of the scenarios to validate (from an operational viewpoint) the content of the draft SARPs.
- Seek volunteers from attendees at WG3 or their organisations to cooperate in the development of the scenarios (2 or 3 scenarios per volunteer) with a view to having the scenarios completely documented by the June meeting of WG3.