

ATNP/WG3

WP/7-15B
28/06/1996

Draft WP to ATNP/2
on the presentation of the Draft ICC (AIDC) SARPs

Presented by the SG1 Chairman

The attached draft working paper is proposed for submission from WG3 to ATNP/2.

AERONAUTICAL TELECOMMUNICATION NETWORK PANEL (ATNP)

SECOND MEETING

Montreal, 4 to 15 November 1996

Agenda Item 3: Development of the ATN SARPs

Overview of Inter-Centre Communication (ICC) SARPs Material

(Presented by the ATNP WG3 Rapporteur)

WORKING PAPER

Summary

This working paper provides an overview of the Inter-Centre Communication (ICC) Application. ICC is a ground-ground which defines a set of ATN applications. The first of these applications is the ATS Interfacility Data Communication (AIDC). This working paper recommends that the AIDC material be included in the ATN SARPs.

References

Draft Inter-Centre Communication Application SARPs.

1. INTRODUCTION

The Draft SARPs proposed as Sub-Volume 3, Part 2 of the initial ATN SARPs are entitled:

Draft SARPs for Inter-Centre Communication (ICC).

These Draft SARPs have been produced as a deliverable of the ATN Ground-Ground Applications Subgroup (SG1) of the Applications and Upper Layers Working Group (WG3) set up by ATNP/1.

2. BACKGROUND

2.1 The ICC application defines a set of ATN applications making use of a generic communications stack that will support a number of high level operational services. The first of the applications developed for ICC and for which SARPs have been produced is the ATS Interfacility Data Communication (AIDC).

2.2 The development of the AIDC application SARPs and guidance material was based on the operational requirements defined in the “ICAO Manual on Air Traffic Services Data Link Applications” produced by the Automatic Dependent Surveillance (ADS) Panel.

2.3 The AIDC application supports the following operational services:

- Flight Notification;
- Flight Co-ordination;
- Transfer of Executive Control;
- Transfer of Communication;
- Transfer of Surveillance Data (Surveillance Reports from conventional radar systems); and
- Transfer of Flight related General Data (free text - unstructured - messages).

3. DISCUSSION

3.1 Functional Description of the AIDC Application SARPs

3.1.1 The AIDC Application

AIDC is an ATN application which allows to exchange information for an active flight between two Air Traffic Service (ATS) units, not with other offices or facilities.

The AIDC application exchanges tactical control information between ATS Units (ATSUs) in support of critical ATC functions, such as notification of flights approaching a Flight Information Region (FIR) boundary, co-ordination of boundary crossing conditions and transfer of communication or control.

Transfer of Communication, is typically used to effect the transfer of a flight when there is full surveillance coverage (Radar or ADS) at an FIR boundary.

Transfer of Control is typically used to effect the transfer of a flight when there is partial or no surveillance coverage at an FIR boundary.

3.1.2 AIDC Functionalities

3.1.2.1 Flight Notification

This function allows the Controlling ATS Unit (C-ATSU) to notify the Downstream ATS Unit (D-ATSU) of a flight's cleared profile some time before the flight enters the D-ATSU's area of interest. This function may be initiated a multiple number of times for the same flight, depending on the number and type of changes made to the flight's cleared profile.

3.1.2.2 Flight Co-ordination

This function allows the C-ATSU to co-ordinate the conditions of transfer for a flight with a D-ATSU.

3.1.2.3 Transfer of Control

This function allows the C-ATSU to transfer control authority for a flight to the Receiving ATSU (R-ATSU) and allows the R-ATSU to accept the control authority for the flight.

3.1.2.4 Transfer of Communication

This function allows one of the following to take place:

- the C-ATSU to offer the control authority and communications authority for a flight to the R-ATSU and the R-ATSU to accept the control and communications authority for the flight; or
- the R-ATSU to take the control authority and communications authority for a flight.

3.1.2.5 Transfer of Surveillance Data

This function allows an ATSU1 to transfer surveillance data to an ATSU2.

3.1.2.6 Transfer of General Data

This function allows an ATSU1 to exchange flight related free text messages (i.e. unstructured) with an ATSU2.

3.2 System Level Requirements fulfilled by the AIDC Application SARPs

The following System Level Requirements are fulfilled by the Draft SARPs for ATS Interfacility Communication (AIDC):

OSI Standard	The Draft SARPs for AIDC are based on ISO OSI Standards, using the ATN Upper Layer Architecture which itself meets this requirement;
Authorised Paths	The Draft SARPs for AIDC enables the exchange of tactical control information between two ATSUs when an authorised path exists between these ATSUs;
ATSC Traffic Classes	As allowed by the ATN, the AIDC application does not express any preference in terms of ATS Traffic Class since this application makes only use of ground subnetworks which are not subject to major bandwidth limitations;
Communications Priorities	The communication priority assigned to AIDC is: “Normal Priority, Flight Safety Messages”;
Peer Information Exchange	The Draft SARPs for AIDC enables the exchange of tactical control information between peer AIDC applications when an authorised path exists between these applications;
Lack of Path Notification	The AIDC application is notified when no authorised path exists between peer applications by means of a Service Provider Abort indication;
Unambiguous Addressing	AIDC is an ATN application which relies on the ATN naming and addressing plan;
Originator Identification	The AIDC application maintains a strict correspondence between originator and recipient within a given flight related dialogue;

Addressing and Name Assignments	AIDC is an ATN application which relies on the ATN naming and addressing plan;
Fixed and Mobile Systems	AIDC is strictly an ATN ground application between fixed systems;
Exchange of Address	The AIDC application relies on the ATN Upper Layer Communication Services which enables the exchange of application address information;
AIDC Association	The AIDC application is capable of establishing, maintaining, releasing and aborting peer-to-peer application associations;
UTC Reference	All dates and times referenced in the AIDC application are expressed as UTC.

3.2.1 Interrelation with other SARPs

The AIDC application as specified in the Draft SARPs for AIDC makes use of:

- the Upper Layer Communication Services as specified in Sub-Volume 4;
- the Internet Communication Services as specified in Sub-Volume 5.

4. RECOMMENDATION

It is recommended that the ATN Panel accept the proposed Inter-Centre Communication Application material for inclusion in the ATN SARPs.