

AERONAUTICAL TELECOMMUNICATION NETWORK PANEL

WORKING GROUP 3: ATN APPLICATIONS AND UPPER LAYERS

Tokyo, 1 - 3 December 1999 - Eighteenth Meeting

Agenda item 5: Interoperability and the development of Protocol Implementation Conformance Statement (PICS) proforma for all applications

ATS Interfacility Data Communication (AIDC)
ADSP Profile PICS/OICS Proforma

Guidance Material

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SUMMARY

The attached working draft provides the Guidance Material for the AIDC ADSP Profile PICS/OICS Proforma.

Working Group 3 is invited to review this document and to provide comments for inclusion as section 6.7 of working paper WG3/WP18-38.

1 GENERAL

The attached material is the draft specific guidance material for the AIDC ADSP Profile PICS/OICS Proforma.

This material is intended to be appended as section 6.7 in the ADSP PICS/OICS Guidance Material contained in working paper WG3/WP18-38.

2 RECOMMENDATION

Working Group 3 is invited to review this document and to provide comments for inclusion in the next version.

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6.7 GUIDANCE FOR AIDC

6.7.1 Introduction

The AIDC application uses the standard set of proforma tables.

6.7.2 Proforma Tables

The technical provisions for AIDC do not distinguish any specific role for an implementation. Thus a single set of tables is used.

Information Section

Table I-1: PICS/OICS Identification

Table I-2: Supplier and Implementation Identification

Table I-3: AIDC Protocol Identification

Configuration and Services Section

Table S-1: AIDC Protocol Options

Table S-2: AIDC Conformant Configurations

Table S-3: Supported AIDC Service Primitives

Table S-4: Abstract Service - Common Parameters

Table S-5: User-confirmation Service Parameters

Table S-6: Notifying Regime Service Parameters

Table S-7: Coordinating Regime Service Parameters

Table S-8: Transferring Regime Service Parameters (Transfer of Communications)

Table S-9: Transferring Regime Service Parameters (Transfer of Control)

Table S-10: Asynchronous Services Service Parameters (Surveillance)

Table S-11: Asynchronous Services (General) Service Parameters

Table S-12: Termination Services Service Parameters

Table S-13: User Requirements

Table S-14: Operational Timers

Table S-15: Technical Timers

Messages Section

Table M-1: AIDC Messages

Table M-2: AIDC Messages (Miscellaneous)

Table M-3: AIDC Messages (Notification/Coordination)

Table M-4: AIDC Messages (Transfer of Communications)

Table M-5: AIDC Messages (Transfer of Control)

Parameters Section

Table P-1: AIDC Parameters (Notification, End)

Table P-2: AIDC Parameters (Coordination 1)

Table P-3: AIDC Parameters (Coordination 2)

Table P-4: AIDC Parameters (Transfer of Communications)

Table P-5: AIDC Parameters (Transfer of Control)

Table P-6: AIDC Parameters (Info-transfer)

Table P-7: AIDC Parameters (basic elements)

Table P-8: AIDC Parameters (basic elements - errors)

6.7.3 Rationale

6.7.3.1 Subsetting

The requirements of Doc 9075 for AIDC include no explicit subsetting rules. The statuses shown in Tables S-1 and the resulting configurations in Table S-2 are proposed as reasonable interpretations of the 9075 requirements.

It was considered to make use of the ATSU roles in defining subsets (C-ATSU, D-ATSU, T-ATSU, R-ATSU, and so on). However any single implementation will have to perform several of these roles from time to time. For the same reason a single proforma is provided rather than separate initiator and responder proformas.

The receiver statuses (in Table S-3 on) have been set following the principle that, if a system supports a given subset (as per Table S-1), it should be capable of receiving all primitives in the subset. Otherwise two administrations could buy AIDC packages supporting the same subset and not be able to communicate. As a result the ATN profile makes all optional ASN.1 elements mandatory for decoding (see Tables P-n). Profile writers should note that according to the normal profiling rules a derived profile may not relax these requirements.

6.7.3.2 Status of 'Flight Notification'

Notification (item 31) is mandatory, but this requirement may need to be revisited in future. In current (eg, OLDI) operations, Notification may be omitted where the flight's origin aerodrome is close to the FIR boundary. Although an implementation cannot expect this to apply for all flights, the Notification phase may not be required in a future system that can perform flight-plan association sufficiently fast (or avoids it altogether).

If this becomes so, the mandatory status will need to be reconsidered. If Notification were made optional, the following changes would need to be made to the proformas:

1. setting C.3: C.3: if Coord then O else M
2. changing C.1: C.1: if TCntl or TComm then M else O
3. defining three further configurations.
 - IIa. Coord;
 - IIIa. Coord + TComm; and
 - IVa. Coord + Tcntl.

6.7.3.3 Configurations

In Table S-2, configurations are defined corresponding to all combinations of the protocol options, except that the predicates TSurv and GInfo are not considered sufficiently significant to define a separate set of configurations.

6.7.3.4 Notes on detailed requirements

In Table S-3 predicates C.1 and C.3 reflect that Notify.req and Coordinate-start.req are the two recognised ways of starting a dialogue (ignoring Info-transfer). If Coordinate-start is not available, Notify must be used, and vice versa.

In Table M—1 onwards, predicates such as C.14 are included instead of excluding the use of extensibility encodings, as is done for the air-ground applications.

6.7.4 Guidance for Implementers

The use of AIDC to support coordination and transfer of flights across a FIR boundary will

be based on a regional or bilateral agreement that selects a subset of the AIDC service and protocol in accordance with the operational needs of the ATSUs.

A single implementation may be configurable to support several incompatible profiles corresponding to different such bilateral agreements. Separate copies of the proformas may need to be completed to document the conformance of the implementation to each profile.