Aeronautical Telecommunication Network Panel
Working Group 1/2/3
Banff, Alberta, Canada

CNS/ATM-1 Package Registration Authority

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Abstract
ATNP/WG1 has held detailed discussions on Naming and Addressing for the CNS/ATM-1 Package. The group concluded that a Registration Authority was needed in WG2/WG3. A proposal for a Registration authority is developed.

1.   Introduction

The ATNP/WG1 meeting held in Banff from 9-11 October 1995 concluded the need for a naming and addressing registration authority. The paper presents requirements for naming and addressing for application layer entities, transport layer entities, and network layer entities.

The paper then presents initial registration lists and offers contact points for further registration.

2.   Application Names and Addresses

2.1   Names

As indicated in CNS/ATN-1 SARPs, Subvolume IV, section 2.4, for Data Link Applications (DLAs) the application name (the AE-title) comprises the AP-title and the AE-qualifier. The AP-title is a) the 24-bit ICAO code for aircraft or b) the 4-character ICAO code for ground systems[1]. The AE-qualifier is a three-character code currently allocated as follows:

(0) ADS (Automatic Dependent Surveillance)
(1) CPC (Controller-Pilot Data Link Communication)
(2) FIS (Flight Information Services)
(3) CMA (Context Management Application)
(4) IDC (ATS Interfacility Data Communication)

2.2   Addresses

The address of the DLA is the Presentation Service Access Point (PSAP) address with absent (i.e., NIL) selectors; thus, this has the form of the Transport Service Access Point (TSAP) address. The MHS application uses the full presentation and session selectors.

3. Transport Layer Addresses

The Transport Service Access Point (TSAP) address is the Network Service Access Point (NSAP) address plus the TSAP selector. The ATN follows OSI practice of avoiding "well-known selectors". The TSAP selector is dynamically assigned as per the draft CNS/ATM-1 SARPs, Subvolume V, section 4.5.2[2]. The TSAP selector for an application is constant throughout the flight (generally considered as power-on to power-off of the Flight Management System (FMS)).

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[1] The location code denotes airports, and will have to be extended for all ESs.
[2] The Context Management Application (CMA) may have a constant selector.

4. Network Layer Names and Addresses

4.1 Names

The name of the network entity is the network entity title (NET). The NET is syntactically indistinguishable from the NSAP address.

4.2 Addresses

As defined in CNS/ATM-1 SARPs, Part V, section 4.5, the NSAP address comprises the Initial Domain Part (IDP) and the Domain Specific Part (DSP).

The IDP is fixed for ATN.

The DSP comprises the Version (VER), Administration (ADM), the Routing Domain Format (RDF), Administration Region Selector (ARS), the Location Identifier (LOC), System Identifier (SYS), NSAP Selector (SEL). The VER field is selectable for fixed/mobile Air Traffic Services Communication/Aeronautical Industry Service Communications (ATSC/AINSC). The ADM field is selectable for ATSC/AINSC. The ADM is International Organization for Standardization (ISO) 3166 country code for ATSC and International Air Transport Association (IATA) Airline Coding Directory for AINSC. The RDF field is reserved. The ARS field is the 24-bit ICAO code for aircraft[3]. The LOC and SYS field are under local control of the ADM entity. The SEL field is ICAO-defined to indicate router capability.

This indicates that the NSAP address has taken full advantage of existing registries. To support an efficient routing structure, fixed-platform values for the ARS field should be allocated through a central body, since the ARS completes the definition of the system's Routing Domain Identifier (RDI).

5. Proposal for Registration Authorities

The registration authority is proposed as a two-part job.

The NSAP address (specifically the ARS field) shall be administered by ATNP/WG2 (specifically Mr. Akhil Sharma).

The application name (specifically the AE-qualifier) shall be administered by ATNP/WG3/SG3 (specifically Mr. Stephen Van Trees).

The current list shall be held at the WG2 server at CENA.

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[3] It is noted that the ULA can extract the aircraft AP-title from the ARS field.