AERONAUTICAL TELECOMMUNICATION NETWORK PANEL

Working Group 2

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Description of U.S. Validation Tools

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SUMMARY

This document contains a description on two of the U.S. validation tools using to Tools Identification Template. These tools are the OPNET ATN Simulation model, and the Aeronautical Telecommunication Engineering Testbed.

REVISION HISTORY

Section	Date	Issue	Reason for Change
	12 January 1996	Issue 1.0	Document Creation

TABLE OF CONTENTS

Description of U.S Validation Tools

1.   Scope and Purpose of this Paper

2.   References

None

3.   Acronyms

4.   Validation Tools

The following pages describe two tools the U.S. is using as part of the validation efforts. The first tool is the Aeronautical Communication Engineering Testbed (ACET) Prototyping effort. The second is a simulation tool using the OPNET simulation package.

4.1. Description of the ACET Validation Tool

Tool Identification	
Name	**ACET**
Full Name	Aeronautical Telecommunication Engineering Testbed (ACET)
Category	PROTOTYPE IMPLEMENTATION
Description	ACET is a prototype laboratory of over 40 machines consisting of End Systems and Intermediate systems with the ability to be configured in many scenarios and the ability to interconnect with various organisations around the world. ACET also contains many internetworking tools including subnetwork emulators and mobility emulation. ACET is developed by MITRE and funded by the US FAA
Contact Point and/or Supplier	MITRE Patrick D. Feighery Tel +1 703 883 3331 Fax +1 703 884 1251 Email feighery@mitre.org
Tool Version and Date	
Supporting Hardware	Intel 486 workstations
Supporting Operating System and/or Software	Mix of BSDI 1.1 Berkeley 4.4 with modification by MITRE
CNS/ATM-1 SARPs Scope	
ATN Systems	End Systems Ground-ground BIS Air-ground BIS Airborne BIS Access to Live Mode-S Subnetwork Access to Live Satellite Subnetwork

Protocols	ISO 8073
	ISO 8602
	ISO 8473
	ISO 9542
	ISO 8208 SNDCF
	ISO 8208 Mobile SNDCF
	ISO 8802 SNDCF
	AEEC-745
	BASIC CMA
	Mobility Emulators
	Mode-S and Satellite Emulators
CNS/ATM-1 Specifics	ATN Addressing
	ATN Routing Policy
	Air-Ground Routing Initiation
	ATN Security
	End-to-End Transit Delay
	TP4 Timers

Connectivity Information

Type	Connector Type and Number	Notes
ISO 8802-3 LAN	As per workstation configuration	
X.25	As per workstation configuration	

Notes

4.2. Description of Simulation Validation Tool

Tool Identification	
Name	**ACET**
Full Name	OPNET ATN Simulation Model
Category	SIMULATION MODEL
Description	The ATN simulation models the ATN environment from the physical layer to the application layer. The simulations models application traffic, the transport layer protocols, network layer protocols through the SNDCF, and a Mode–S subnetwork. The OPNET ATN simulation model is developed by MITRE/CAASD and funded by the US FAA.
Contact Point and/or Supplier	MITRE Edward G. Dillon Tel +1 703 883 5275 Fax +1 703 884 1251 Email edillon@mitre.org
Tool Version and Date	ATN simulation version 3.2 (November 1995)
Supporting Hardware	Sun 4 workstation (SPARC station 10)
Supporting Operating System and/or Software	Sun O/S release 4.1.3_U1 Simulation software: OPNET Release 2.5.B
CNS/ATM-1 SARPs Scope	
ATN Systems	End Systems Ground-ground BIS Air-ground BIS Airborne BIS
Protocols	ISO 8073 ISO 8473 ISO 9542 ISO 10747 ISO 8208 SNDCF ISO 8208 Mobile SNDCF
CNS/ATM-1 Specifics	ATN Addressing ATN Routing Policy Air-Ground Route Initiation

Connectivity Information		
Type	**Connector Type and Number**	**Notes**
Not Applicable		

Notes

The ATN simulation currently supports only the Mode–S air/ground subnetwork.