

Track F - Air Traffic Mgmt Systems
Digital Avionics Systems

17th D A S C
The AIAA/IEEE/SAE
Digital Avionics Systems
Conference

Bellevue, WA
Oct. 31 – Nov. 7, 1998

Proceedings

Volume II

VWGoA - Ex. 1005

TL693
D55
1998
copy

Copyright and reprint permission: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923. For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Operations Center, 445 Hoes Lane, PO Box 1331, Piscataway, NJ 08855- 1331. All rights reserved, Copyright © 1998 by the Institute of Electrical and Electronics Engineers, Inc.

IEEE Catalog Number 98CH36267
ISBN: 0-7803-5086-3 (Softbound)
ISBN: 0-7803-5087-1 (Casebound)
ISBN: 0-7803-5088-X (Microfiche)
ISBN: 0-7803-5089-8 (CD-Rom)
LIBRARY OF CONGRESS: 98-86916

Prepress Production By:

ISOGEN International Corp.
2760 N. Academy Blvd, Suite 301
Colorado Springs, CO 80917
719 572-1706
sgmi@isogen.com

Printed in USA by:

Lucent Technologies
Customer Information Center
2833 N. Franklin Road
Indianapolis, IN 80917

RESERVED

17th DASC Presentations

Track F - Air Traffic Mgmt Systems

Session F1: Air Traffic Management

- | | | |
|---|----------------------------------------------------------------------------------------------------------------------|--------------------|
| 1 | Vertical Path Trajectory Prediction for Next Generation ATM | Mr. Anthony Warren |
| 2 | Advances in Flight Data Acquisition and Management Systems | Mr. Tom McDade |
| 3 | CNS/ATM Aircraft Customization Task (Not Published) | Mr. Arnold Oldach |
| 4 | USAF Initiatives for Global Air Traffic Management and Navigation Safety | Mr. Leo La Forge |
| 5 | A Simplified Aeronautical Telecommunications Network (ATN) Avionics Router | Mr. T. Signore |
| 6 | Avionics Architecture For Air Force Mobility Command Aircraft To Meet Cns/Atm And GATM Requirements | Mr. Donald Happel |
| 7 | A Pseudo Ramp Manager Workstation for the Laboratory Development of Airline-ATC Collaborative Arrival Planning Tools | Ms. Susan Dorsky |

Session F2: Surface Movement 1: Display & Datalink

- | | | |
|---|---------------------------------------------------------------------------------------------------|----------------------------|
| 1 | Airport Surface Movement Technologies - Atlanta Demonstration Overview | Ms. Denise R. Jones |
| 2 | Description and Flight Test of a Rollout and Turnoff (ROTO) Head-Up Display (HUD) Guidance System | Mr. Richard Hueschen |
| 3 | Field Evaluation Of T-NASA: Taxi Navigation And Situation Awareness System | Mr. Anthony D. Andre Ph.D. |
| 4 | Airport Surface Operations Data Link Communications and DGPS | Mr. Steve Koczo |
| 5 | Controller-Pilot Data Link Statistics from NASA's 1997 Atlanta Flight Test | Dr. James Rankin |

Session F3: Surface Movement 2: Surveillance

- | | | |
|---|-------------------------------------------------------------------------------------------------------|-----------------------|
| 1 | Runway Incursion Reduction Program (RIRP) Surveillance System - NASA / FAA Atlanta Demonstration | Mr. Vincent Capezzuto |
| 2 | Development of Airport Surface Surveillance Performance Requirements | Mr. Rick Cassell |
| 3 | Analysis of ADS-B, ASDE-3 and Multilateration Surveillance Performance -- NASA Atlanta Demonstration | Mr. Carl Evers |
| 4 | Application of ADS-B for Airport Surface Surveillance | Mr. Dan Hicok |
| 5 | Comparison of A-SMGCS Requirements with Observed Performance of an Integrated Airport CNS System | Mr. Steven Young |
| 6 | What's Next for LVLASO: Status of Plans for a Year 2000 Flight Test and Demonstration (Not Published) | Mr. Wayne H. Bryant |

Session F4: Communication, Navigation, Surveillance

- | | | |
|---|------------------------------------------------------------------------------------------------------------|------------------------|
| 1 | Bancroft's Algorithm for Solving Passive Multilateration Equations | Dr. Michael Geyer |
| 2 | An Integral Flight Director and Surveillance System for Helicopters in Metropolitan Service | Prof. Chin Lin |
| 3 | Data Processing Methods For Autonomous On-Board Surveillance And Collision Avoidance | Mr. Juan Besada Portas |
| 4 | Implementation of a Low-Cost SSR/ADS-B Aircraft Receiver Decoder | Mr. Alex Smith |
| 5 | Loop Technology (LOT) as an Alternative Surface Surveillance System | Mr. Vern Edwards |
| 6 | Broadcast Data Link Range Performance as a Function of Aircraft Size- Experimental Results (Not Published) | Robert Strain |

Session F5: CNS/ATM Human Factors

- | | | |
|---|-----------------------------------------------------------------------------------------------------------|----------------------------|
| 1 | How Data Link Communication Might Affect Controller Workload in a Terminal Option | Dr. O. Veronika Prinzo PhD |
| 2 | Simulation Study of Vocoder Communication In Air Traffic Control | Dr. Earl S. Stein |
| 3 | Survey of In-Flight Replanning Performed on the Flight Deck | Mr. James K. Kuchar |
| 4 | Introducing New Technology to the Air Traffic Controller: Implications for Skill Acquisition and Training | Mr. Alfred L. Smith Jr. |
| 5 | Human Factors Issues in a Future Air Traffic Management System | Mr. Philip J. Smith |
| 6 | Man-In-The-Loop Part Of A Study Looking At A Free Flight Concept | Jacco Hoekstra |

17th DASC Presentations

Track G Aircraft Systems

Session G1: InFlight Entertainment

- 1 Total Integrated Management (TIM) (Not Published) Mr. Joseph R. Winston
- 2 Availability, Reliability, and Maintainability Prediction Model Mr. James M. Hansen
- 3 Reality in Certification of IFE and Telephone Equipment Mr. Ritch L. Triplett
- 4 A New Approach to Data Communications Utilizing the North American Terrestrial System (Not Published) Mr. Mike O'Meara
- 5 Real-World Implementations of Intra-Aircraft Infrared Data Communications Networks Mr. Patrick Potega
- 6 In-Flight Entertainment - Getting From Wishlist To Reality Mr. Donald B. Lee
- 7 High Speed Networking of Multimedia Data for Passenger Entertainment (Not Published) Mr. Greg Henrikson
- 8 Packet-based Networks Mr. Steven W. Russert

Session G2: Aircraft & Satellite Avionics

- 1 Airborne Reception of Data and Direct Broadcast TV using a Phased Array Antenna (Not Published) Mr. David C. Vacanti
- 2 Guidance Characteristics of GNSS Landing Systems Dr. Alex Stratton
- 3 Managing Aircraft Airworthiness Through Information Technology (Not Published) Mr. William E. Larsen
- 4 Pro Line 21 Advanced Avionics System Architecture Mr. Timothy Rayl
- 5 Techniques for Improved Reception of 1090 MHz ADS-B Signals Mr. William Harman
- 6 Enhanced Ground Proximity Warning System (Not Published) Mr. Barry C. Breen

Session G3: Commercial-Off-The-Shelf & Open Systems

- 1 COTS Based Open Systems for Military Avionics Mr. John Paul
- 2 Reducing Avionics Software Cost Through Component Based Product Line Development Mr. David Sharp
- 3 Introduction to the Electronic Power Specification Standardization Activity Mr. Sergio Navarro
- 4 Open System Design for CNI Avionics Dr. George Mitschang
- 5 The Application of Commercial Processing Technologies to the Airborne Military Environment Mr. Hugh S. Perry
- 6 Telecom Technologies (Not Published) Brian Graber

Session G4: Unmanned Airborne Vehicles

- 1 Redundant Control Systems for UAV's (Not Published) Graham Gyattt
- 2 Flight Testing Perseus-B (Not Published) Mr. Tom Clancy
- 3 Flight Testing a Large, Autonomous, Unmanned Aircraft (Or Global Hawk Begins to Soar) (Not Published) Robert Ettinger
- 4 Flight Testing DarkStar (Not Published) Mr. John Straub
- 5 X-36 Tailless Agility Aircraft Subsystem Integration (Not Published) Willard J Harris
- 6 X-36 Tailless Agility Aircraft Subsystems Integration (Not Published) Mr. Bill Harris
- 7 X-38 Avionics System (Not Published) Christopher Nagy

Track H - Spacecraft Systems

Session H1: Commercial & Defense Space Systems

- 1 IRIDIUM Low Earth Orbit Satellite Constellation Mr. Peter Lemme
- 2 ATM Mobile Switch Requirements, Issues, and Concerns (Not Published) Mr. Richard H. Paine
- 3 The 'Take-Off' of MOTS Avionics System for Space/Launch Vehicle Applications Joe Cecchini
- 4 Rapid Development of avionic systems Randy Black
- 5 Space-Based Wind-Sensing Lidar Design (Not Published) Dr. Daniel Novoseller
- 6 Multifunctional Structures: A New Concept For Spacecraft Design Integrating Electronics, Structure And Thermal Control (Not Published) Mr. Dave Barnett

17th DASC Presentations

Track H - Spacecraft Systems (Continued)

Session H2: Space Exploration

- 1 Deep Space One Integration and Test Challenges: Getting to the Launch Pad in the Faster, Better, Cheaper World Ms. Paula J. Pingree
- 2 The Mars Microprobe Mission Advanced Micro-Avionics for Exploration of the Martian Surface (Not Published) Mr Randel Blue
- 3 From the Sun to Pluto Ms. Karla B. Clark
- 4 NASA/JPL Mars Surveyor Program: New Challenges in a New Era (Not Published) Mr. Robert L. Bunker
- 5 Interferometer Real Time Control for the Space Interferometry Mission (Not Published) Mr. Charles E. Bell

Session H3: Microelectronics for Space

- 1 Ultra Low Power Rad Hard 12 Bit A/D Converter for Space-Based EO Sensors Sven Nystrom
- 2 Integrating PWA Design and Analysis Using a Unix-Based Durability Toolset (Not Published) Mr. Mostafa Rassaian
- 3 Amecom Direct Chip Attach Project Tracey Clay
- 4 Digital Control of the MIDEX Spacecraft Power System (Not Published) Ms. Karen Castell
- 5 Issues To Address In Use of Composite Materials for Electronic Packaging Mr. Gary Trembley

Session H4: Space System Elements

- 1 X2000: Avionics for A Multi-Mission Spacecraft Mr. Savio Chau
- 2 Applications For A Spacecraft Avionics Functional Model Mr. Joseph F. Smith
- 3 A Table-Driven Control Method To Meet Continuous, Near-Real-Time Observation Requirements For The Solar X-Ray Imager Mr. Kevin Shawn Wallace
- 4 The TRWIS III Hyperspectral Imager: Instrument Performance and Remote Sensing Applications Dr. Stephanie Sandor-Leahy
- 5 Fault Protection Design of the Quikscat and Seawinds Instruments Mr. Matthew B. Bennett
- 6 Development of a Low Cost Data Acquisition System for the Space Shuttle Solid Rocket Booster Program Mr. Kevin Crawford

Track I - Automotive Systems

Session I1: Ground Vehicle Electronics

- 1 Software Process Improvement in an Automotive Electronics Organization Mr. Gregory McHugh
- 2 Automotive System Design: Today and Tomorrow Dr. Peter Hofmann
- 3 Specification and Testing of Automotive Powertrain Control System Software Using CACSD Tools Mr. Steve Toeppe
- 4 Active Control of Vehicle Dynamics Mr. Mike Fodor
- 5 The Next Generation Automotive Electrical Power System Architecture: Issues and Challenges. Dr. John P. Miller PE, PhD
- 6 Automotive & Aerospace Circuit Fault Analysis Mr. Craig Siegel
- 7 Requirements For A Real-Time Local Area Network Architecture In Land Combat Vehicles Mr. Paul Richardson

Session I2: Intelligent Transportation System (1)- Vehicle Electronics

- 1 The Network Vehicle - A Glimpse into the Future of Mobile Multi-Media Huan-Wun Yen
- 2 A Demonstration Project for the ITS Data Bus Prototype Mr. Philip Spelt Ph.D.
- 3 Signal Processing and Waveform Generation in the Side Zone Automotive Radar Mr. John C. Reed
- 4 Adapting Radar and Tracking Technology to an On-Board Automotive Collision Warning System Dr. Edward Jocoy
- 5 Use of Map Data Information in an On-board Intersection Violation Detection System Mr. John Pierowicz
- 6 SWIFT Project Results Mr. Larry Senn

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.