Technical and Professional Activities 2004
Contributing to Aviation Every Day

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The MITRE Corporation’s
Center for Advanced Aviation System Development
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Our Perspective on the Art and Science of Aviation

At The MITRE Corporation’s Center for Advanced Aviation System Development (MITRE/CAASD), our mission is to serve the public interest by advancing the safety, effectiveness, efficiency, and security of aviation in the United States and around the world. We conduct a continuing program of research, development, and engineering in collaboration with the aviation community.

One way to capture the impact of our work is to produce high-quality publications that present our findings. Works published by MITRE/CAASD staff reach a large audience and provide significant insight and influence on both the domestic and international aviation communities. The list of published works in this booklet is a reflection of our broad and deep exploration of many aspects of aviation system modernization.

Collaboration is an integral part of our strategy to achieve our mission for aviation. We promote staff involvement in professional societies and encourage participation in technical and standards committees. Listed in this booklet are all the professional societies to which our staff members belong and contribute. You also will find a list of staff serving on technical and standards committees and the roles they play.

We pride ourselves in always offering the best that MITRE/CAASD has to offer. These efforts have been recognized throughout our community for their high standards and for the significant contributions made to aviation, at home and abroad. In this booklet, you will find a list of the work for which we have been recognized and honored, not only by our sponsors but by industry peers as well. Along with the list of awards presented to MITRE/CAASD, you also will find a list of patents awarded over the past year for some of our more innovative work.

We are proud of the contributions our employees make to the state-of-the-art and science of aviation.

Amr A. ElSawy
Senior Vice President, The MITRE Corporation
General Manager, CAASD
Congratulations! On behalf of MITRE and CAASD's Senior Management Team, I offer you our congratulations and thanks for a job well done. I have every confidence that your continued energy and intellect will reach even greater heights in the future.  

Amr
Books, Journals, and Periodicals


Conference Papers and Presentations


[34] “Airspace Overview - Presentation to the Japan Civil Aviation Bureau,” Lillian Z. Ryals. RNAV/RNP, Airspace and ATM Seminar for Japan Aviation Community, November 8, 2004, Tokyo, Japan.


[98] “Special Presentations to The Japan Aviation Community,” Chih-Chia Vanessa Fong, Lillian Z. Ryals, Celia Fu Fremberg and Gregory F. Tennille. RNAV/RNP, Airspace and ATM Seminar for Japan Aviation Community, November 9, 2004, Tokyo, Japan.


RTCA Standards


Awards


[111] Knowledge Management Trendsetters Award presented to a CAASD team by The MITRE Corporation’s Knowledge Management program, March 2004.


[113] Program Recognition Award “Accelerating Airspace Redesign with the GRAIL Real-Time Infrastructure Laboratory” presented to a CAASD team at MITRE’s 20th Annual Awards dinner, June 2004.


Special Recognitions

[118] FAA Recognition award presented by Sabra Kaulia to CAASD Staff, for their key contribution to High Altitude Redesign Phase 1, which is part of the High Altitude Redesign of the National Airspace Redesign program, March 2004.


[121] Safe Flight 21 Program Office Recognition Award presented to CAASD staff in recognition of their outstanding commitment and dedication to the ongoing efforts of the Safe Flight 21 Program, April 2004.
Brian Blake was recognized as one of the nation’s brightest young engineers by being invited to participate in the National Academy of Engineering’s (NAE) 10th Annual Frontiers of Engineering symposium, September 2004.

The Royal Institute of Navigation (RIN) honored Ronald Braff for his many contributions and achievements during a lengthy career focusing on aviation safety, by making him a Fellow of the Institute, during their Annual Meeting awards ceremony, October 2004.

Patents


This patent covers a new algorithmic technique to assist in cockpit-based spacing on final approach using ADS-B. Co-inventors Jonathan Hammer and Ganghuai Wang invented this approach which does not require constant monitoring by the flight crews, and according to their modeling analysis, performs better than previously known solutions. The utility of the algorithm is that it supports an application that could result in improved runway throughput during periods of high demand under instrument meteorological conditions.
Professional Society Memberships

Air Traffic Control Association (ATCA)
Air Transport Research Society (ATRS)
Aircraft Owners and Pilots Association (AOPA)
Airline Dispatchers Federation (ADF)
American Association for Artificial Intelligence (AAAI)
American Association of Airport Executives (AAAE)
American Chemical Society (ACS)
American Economic Association (AEA)
American Helicopter Society (AHS)
American Institute of Aeronautics and Astronautics (AIAA)
American Mathematical Society (AMS)
American Meteorological Society (AMS)
American Physical Society (APS)
American Statistical Association (Amstat)
Armed Forces Communications & Electronics Association (AFCEA)
Association for Computing Machinery (ACM)
ETA KAPPA NU (The National Electrical and Computer Engineering Honor Society)
Experimental Aircraft Association (EAA)
Human Factors and Ergonomics Society (HFES)
International Council on Systems Engineering (INCOSE)
International Union Of Radio Science (URSI)
Institute for Operations Research and the Management Sciences (INFORMS)
Institute of Navigation's Washington Section (ION-DC)
International Air Transport Association (IATA)
International Federation for Automatic Control (IFAC)
International Society of Air Safety Investigators (ISASI)
International Union of Radio Science (URSI)
Mathematical Association of America (MAA)
Project Management Institute (PMI)
RTCA
Royal Institute of Navigation (RIN)
SIGMA Xi (The Scientific Research Society)
Society of Logistics Engineers (SOLE)
Society of Women Engineers (SWE)
Special Interest Group on Computer Human Interaction (SIG CHI)
TAU BETA Pi (The Engineering Honor Society)
The Advanced Computing Systems Association (USENIX)
The Institute of Electrical and Electronics Engineers (IEEE)
The Institute of Navigation (ION)
The Society for Modeling and Simulation International (SCS)
The System Administrator's Guild (SAGE)
Transportation Research Board (TRB)
Worldwide TAAM Users’ Group (WWTUG)
Technical Committee Memberships

American Institute of Aeronautics and Astronautics (AIAA)

Information System Group
  James E. Dieudonne – Deputy Director

Network Centric Operations Program Committee
  James E. Dieudonne

New Initiatives Subcommittee of TAC
  James E. Dieudonne

Professional Members Education Committee
  James E. Dieudonne

Standing Committees
  Emerging Technologies Committee (ETC)
    Glenn F. Roberts

Technical Activities Committee (TAC)
  James E. Dieudonne
  Satish C. Mohleji – Deputy Director

Technical Committees
  Air Transportation Systems
    David R. Maroney

  Digital Avionics
    James E. Dieudonne - Honorary Member
    John C. Gonda III

  Economics
    Dipasis Bhadra – Deputy Chair
    Gregory M. Nelson

General Aviation Systems
  Doyle Peed

Guidance, Navigation, and Control
  Daniel B. Kirk

Federal Aviation Administration (FAA)

Aging Transport Systems Rulemaking Advisory Committee (ATSRAC)
  Kent V. Hollinger – Chairman

Research, Engineering and Development Advisory Committee (REDAC)
  Amr A. ElSawy

  REDAC Subcommittee: Air Traffic Systems
    Andrew R. Lacher

  REDAC’s Transition Working Group
    Andrew R. Lacher
Technical Committee Memberships (Concluded)

RTCA

Policy Board
  Amr A. ElSawy – Chairman

Air Traffic Management Advisory Committee (ATMAC)
  Amr A. ElSawy

Air Traffic Management Steering Group
  Amr A. ElSawy

Program Management Committee
  Christopher J. Hegarty

Safe Flight 21 System Engineering Council
  Stanley R. Jones
  John C. Moody Jr.

Select Committee on Free Flight
  Deborah A. Kirkman

Transportation Research Board

Aviation Group
  Agam N. Sinha – Chair

Aviation Forecasting Group
  Dipasis Bhadra

Technical Activities Council
  Agam N. Sinha

Worldwide TAAM User’s Group (WWTUG)
  Jonathan H. Hoffman
  Michael J. Yablonski

Americas-Pacific TAAM User’s Group (APTUG)
  Jonathan H. Hoffman
  Michael J. Yablonski
Standards Committee Memberships

RTCA

MITRE Corporate Representative
James E. Dieudonné

SC-147 Traffic Alert & Collision Avoidance System (TCAS)
Andy Zeitlin – RWG Chair

SC-159 Global Positioning System (GPS)
Young C. Lee – Secretary
Ronald Braff
M. Bakry El-Arini
James P. Fernow
Christopher J. Hegarty – WG1 Co-Chair
Taehwan Kim
Ronald O. Lejeune
Donald R. Owen
Curtis A. Shively
Michael Tran

SC-172 VHF Air-Ground Communication
Brian T. Hung
Robert M. Morgenstern

SC-186 (ADS-B)
Randall S. Bone – WG1 Chair
Roxaneh Chamlou
Jonathan B. Hammer – Secretary / WG4 Chair
Stanley R. Jones
John C. Moody Jr.
Robert C. Strain
Andrew D. Zeitlin – WG2 Chair

SC-189 Air Traffic Services (ATS) Safety and Interoperability Requirements
Stephen L. Giles

SC-200 Modular Avionics
Kent V. Hollinger

SC-202 Portable Electronic Devices
D. James Chadwick
Kent V. Hollinger

SC-203 Unmanned Aircraft Systems and Unmanned Aircraft
Alfred H. Anderegg
Robert C. Boetig
Matthew T. DeGarmo
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