

6th USA/Europe Air Traffic Management Research and Development Seminar 2005

**Baltimore, Maryland, USA
27-30 June 2005**

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Day 1 – Monday – June 27, 2005

7:00 a.m. - 8:30 a.m. Breakfast (Atrium /Harborview)

8:00 a.m. Registration – Constellation Rooms D, E, F

9:00 a.m. Plenary - Welcome

Sabrina Saunders-Hodge – FAA (USA Chair)
Christian Pusch – EEC (Europe Chair)
Joan Bauerlein – FAA (Director, ATO-P R&D)
Pierre Andribet – EEC (Deputy Director, EEC)

9:30 a.m. Break (Atrium)

10:00 a.m. Tracks Begin – See attached Track Descriptions & Locations

11:45 a.m. Lunch (Atrium/Harborview)

1:15 p.m. Tracks Continue

2:45 p.m. Break (Atrium)

5:30 p.m. Adjourn

7:00 p.m. - 9:00 p.m. Reception – Hyatt Hotel – Pisces Lounge
Access to Pisces Lounge via Elevators 3 & 4 – Elevators accommodate 10 people at one time.
Please wear your badge.

(Monday Continued)

Track 1 – Metrics and Performance Management (Room- Constellation D)

Metrics Rapporteur: Wim Post – Eurocontrol HQ
Session Chair: Jean-Marc Pomeret – CENA

- | | | |
|-------------------|--|--|
| 10:15 a.m. | Economic Contribution and Productivity of ATM | Paula Leal de Matos – 108
Eurocontrol DAS |
| 11:00 a.m. | Extent and Impact of Future NAS Capacity Shortfalls in the United States: A Socio-Economic Demand Study | Shahab Hasan - LMI
David Ballard – GRA, Inc. 343 |

Session Chair: Ann Tedford - FAA

- | | | |
|------------------|--|---|
| 1:15 p.m. | Flight Efficiency Studies in Europe and the United States | Tarja Kettunen – ISA 265
Software
Dave Knorr – FAA |
| 2:00 p.m. | A Preliminary Analysis of the Impact of Mile-In-Trail Restrictions on NAS Flight Operations | Tim Myers – Metron
Aviation, Inc. 444 |

Session Chair: Mark Hansen – University of California at Berkeley

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|------------------|--|--|
| 3:15 p.m. | Modeling Delays and Cancellation Probabilities to Support Strategic Simulations | David Lovell - University
of Maryland 538 |
| 4:00 p.m. | Estimation of Arrival Capacity and Utilization at Major Airports | Husni Idris – Titan Corp.
Antony Evans – Titan
Corp. 528 |
| 4:45 p.m. | The Feasibility of Measuring Capacity in a Real-Time ATM Simulation Independent of Subjective Controller Workload Measurement | Mick van Gool -
Eurocontrol/Kevin Corker-
San Jose State Univ. 235 |

Track 2 – Airspace Management/Decision Support (Room - Constellation E)

Airspace Management Rapporteur: Vojin Tosic – University of Belgrade
Session Chair: Mark Hansen – University of California at Berkeley

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|-------------------|---|--|
| 10:15 a.m. | An Efficient Method for Airspace Analysis and Partitioning Based on Equalized Traffic Mass | Alexander Klein - George
Mason University 2 |
| 11:00 a.m. | Assessment of the 3D-Separation of Air Traffic Flows | David Gianazza - CENA/LOG 98 |
| 1:15 p.m. | Emergence and Impact of Secondary Airports in the United States | Philippe Bonnefoy - MIT 413 |

(Monday Continued)

2:00 p.m.	Analysis of Excess Flying Time in the National Airspace System	George Solomos - MITRE 148 Corp.
3:15 p.m.	The factors affecting airspace capacity in Europe: A Framework Methodology based on Cross Sectional Time-Series Analysis using Simulated Controller Workload Data	Arnab Majumdar – Imperial College London 586
Decision Support Rapporteur: Lluís Vinagre – ISDEFE Session Chair: Eric Hoffman – Eurocontrol EEC		
4:00 p.m.	Improvement on the Acceptance of a Conflict Resolution System by Air Traffic Controllers	Rainer Flicker - Technical University Berlin 116
4:45 p.m.	Impact of Factors, Conditions and Metrics on Trajectory Prediction Accuracy	Stephane Mondoloni – CSSI, Inc. 305

Track 3 – Safety (Room - Constellation F)

**Safety Rapporteur: George Donohue – George Mason University
Session Chair: Jan Terlouw – NLR**

10:15 a.m.	Preliminary Results from a European Safety R&D Program	Barry Kirwan – 204 Eurocontrol EEC
11:00 a.m.	The Link between Operational Performance and Operational Errors in the National Airspace System	Mark Hansen - University of California at Berkeley 454
Session Chair: Lance Sherry – George Mason University		
1:15 p.m.	Safety Analysis for Advanced Separation Concepts	John Andrews - MIT 609 Lincoln Laboratory
2:00 p.m.	Safety Analysis Methodology for Unmanned Aerial Vehicle (UAV) Collision Avoidance Systems	James Kuchar - MIT Lincoln Laboratory 30
Session Chair: George Donohue – George Mason University		
3:15 p.m.	Applying Qualitative Hazard Analysis to Support Quantitative Safety Analysis for Proposed Reduced Wake Separation Conops	John Shortle - George Mason University 392
4:00 p.m.	Quantitatively Estimating Wake Vortex Safety Using P2P Model	Yue Xie – George Mason 275 University
4:45 p.m.	A Method for Rating the Severity of Runway Incursions	Kim Cardosi – DOT/Volpe 474 Center

Day 2 – Tuesday – June 28, 2005

7:30 a.m. - 9:00 a.m Breakfast (Atrium / Harborview)

9:00 a.m. Tracks Begin – See Track Description and Locations

10:30 a.m. Break (Atrium)

12:30 p.m. Lunch (Atrium/Harborview)

2:00 p.m. Tracks Continue

3:30 p.m. Break (Atrium)

5:30 p.m. Adjourn

Track 1 – Airport Management (Room Constellation D)

**Airport Management Rapporteur: Christoph Meier – DLR
Session Chair: Sandy Lozito – NASA Ames Research Center**

9:00 a.m.	An Analysis of Potential Capacity Enhancements Through Wind Dependent Wake Turbulence Procedures	Jeff Tittsworth – MITRE Corp. 12
9:45 am.	Improving Flight Efficiency Through Terminal Area RNAV	Kevin Sprong - MITRE 40 Corp.
11:00 a.m.	Verification and Validation Results from the Operational A-SMGCS Field Trials of the Project BETA	Joern Jakobi-DLR 710
11:45 a.m.	Airline Operational Benefits of Surface Surveillance	Dan Howell-MCR, LLC 126
2:00 p.m.	Outbound Punctuality Sequencing by Collaborative Departure Planning	Eugene Tuinstra-NLR 169
2:45 p.m.	Tactical Departure Management with the Eurocontrol / DLR DMAN	Dietmar Bohme-DLR 672
4:00 p.m.	Linking Existing on Ground, Arrival and Departure Operations	Maria Mas-Isdef Patricia Pina-AENA 692
4:45 p.m.	Benefits Obtained from the Estimation and Distribution of Realistic Taxi Times	Jose Miguel de Pablo Guerro-AENA 651 Patricia Pina-AENA

Track 2 – Decision Support / Environmental Impacts and Mitigation (Room - Constellation E)

**Decision Support Rapporteur: Lluís Vinagre – ISDEFE
Session Chair: Gene Wilhelm – MITRE CAASD**

9:00 a.m. Air Ground Communications Miami Controller Pilot Data Link Communications Summary and Assessment John Gonda-MITRE-CAASD William Saumsiegle-MITRE 384

9:45 a.m. Integration of Downlink Aircraft Parameters in a French En Route ATC HMI Vincent Kapp-DSNA 630

Session Chair: Dres Zellweger – JPDO

11:00 a.m. Managing Sector Congestion Using Airspace Restriction Planner Parimal Kopardekar - NASA 489 Ames Research Center

11:45 a.m. Quantifying Convective Delay Reduction Benefits for Weather/ATM Systems James Evans-MIT Lincoln Laboratory 509

**Environmental Impacts and Mitigation Rapporteur: Lourdes Maurice – FAA
Session Chair: Cesare Bernabei – CEC DG TREN**

2:00 p.m. SOURDINE II Assessment Aspects of Noise Abatement Procedures Ruud den Boer-NLR 639

2:45 p.m. Human Factors Implications of Continuous Descent Approach Procedures for Noise Abatement in Air Traffic Control Hayley Davison Reynolds-MIT 374

4:00 p.m. Variability of Contrail Formation Conditions and the Implications for Policies to Reduce the Climate Impacts of Aviation Victoria Williams-Imperial College London 244

4:45 p.m. Environmental Tradeoffs Assessment Around Airports Kenny Martin-ISA Software 254

Track 3 – Innovative ATM Concepts (Room - Constellation F)

Rapporteur: Hartmut Fricke – Technical University Dresden
Session Chair: Hartmut Fricke – Technical University Dresden

- 9:00 a.m. Statistical Performance Evaluation Between Linear and Nonlinear Designs for Aircraft Relative Guidance Thierry Miquel-DSNA 60**
- 9:45 a.m. Estimation of Delay Propagation in the National Aviation System Using Bayesian Networks Chun-Hung Chen-George Mason University 353**
- 11:00 a.m. Route Charging Policy for a Functional Block of Airspace (CEATS) Lorenzo Castelli-University 70 of Trieste**
- 11:45 a.m. Analyzing Air Traffic Management Systems Using Agent-Based Modeling and Simulation Amy Pritchett-George Institute of Technology 661**

Session Chair: Patrizia Marti – DeepBlue

- 2:00 p.m. Interactive and Immersive 3D Visualization for ATC Matt Cooper-Linkopkings 197 Universitet**
- 2:45 p.m. Shifting the ATM Paradigm: From the Use of System Resources to the Management of Objectives Laurent Guichard-Eurocontrol EEC 684**

Session Chair: Gene Wilhelm – MITRE CAASD

- 4:00P p.m. Design for Innovation in ATM Patrizia Marti-DeepBlue 285**
- 4:45 p.m. Co-operative Air Traffic Management: A Technology Enabled Concept for the Next Generation Air Transportation System Everett Palmer-NASA Ames Research Center 548**

Day 3 – Wednesday – June 29, 2005

7:30 a.m. - 9:00 a.m Breakfast (Atrium /Harborview)

9:00 a.m. Tracks Begin – See Track Description and Locations

10:30 a.m. Break (Atrium)

12:30 p.m. Lunch (Atrium/Harborview)

2:00 p.m. Tracks Continue

3:30 p.m. Break (Atrium)

5:30 p.m. Adjourn

**7:00 pm. Dinner – James Joyce Restaurant, 616 President Street
(You may walk, taxi or use the water taxi to get to the restaurant)**

Track 1 – Air Ground Cooperation (Room - Constellation D)

Air Ground Cooperation Rapporteur: Steve Bussolari – MIT Lincoln Lab

Session Chair: Tom Edwards – NASA Ames Research Center

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|-------------------|--|--|
| 09:00 a.m. | Joint NASA Ames/Langley Experimental Evaluation of Integrated Air/Ground Operations for En Route Free Maneuvering | Richard Barhydt-NASA Langley Research Center 400 |
| 09:45 a.m. | Design of an Airborne Spacing Director to Minimize Pilot Speed Actions | Eric Hoffman-Eurocontrol EEC 187 |
| 11:00 a.m. | Pilot Perspective of ASAS Self-Separation in Challenging Environments | Rob Ruigrok-NLR 136 |
| 11:45 a.m. | Cockpit Display of Traffic Information (CDTI) Assisted Visual Separation (CAVS): Pilot Acceptability of a Spacing Task During a Visual Approach | Randall Bone-MITRE Corp. 620 |

Session Chair: Billy Josefsson - Luftfartsverket

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|------------------|---|---|
| 2:00 p.m. | Air and Ground Simulation of Terminal-Area FMS Arrivals with Airborne Spacing and Merging | Todd Callantine-San Jose State Univ./NASA Ames 88 Research Center |
| 2:45 p.m. | Spacing Instructions in Approach: Benefits and Limits from an Air Traffic Controller Perspective | Eric Hoffman-Eurocontrol EEC 295 |

4:00 p.m.	Airborne Precision Spacing in Merging Terminal Arrival Routes: A Fast-Time Simulation Study	(Wednesday Continued) Karthik Krishnamurthy- Titan Corporation 364
4:45 p.m.	Ground-Side Perspective on Mixed Operations with Self-Separating and Controller-Managed Aircraft	Paul Lee-San Jose State Univ./NASA Ames Research 424

Track 2 – Traffic Flow Optimization (Room Constellation E)

Rapporteur: Amy Pritchett – Georgia Institute of Technology
Session Chair: Fred Wieland-AEgis Technologies

9:00 a.m.	Probabilistic Congestion Management	Craig Wanke-MITRE Corp. 50
9:45 a.m.	Advance Planning Through Schedule Analysis	Michelle Somerday- 80 Metron Aviation, Inc.
11:00 a.m.	On the Feasibility of Traffic Synchronization in Central European Upper Airspace	Lenka Dravecka-CRDS, Budapest 180
11:45 a.m.	Airline Operations Managers: An Introduction to the Third Leg of the National Air Transportation System	Karen Feigh-Georgia Institute of Technology 214
2:00 p.m.	Expanding the Use of Time-Based Metering: Multi-Center Traffic Management Advisor	Steve Landry-NASA Ames Research Center 315
2:45 p.m.	Dynamic Stochastic Optimization Model for Air Traffic Flow Management with En Route and Airport of Capacity Constraint	Mark Hansen-University California at Berkeley 334
4:00 p.m.	Evaluating En Route Congestion Management Through Interactive Simulation	Michael Brennan-Metron Aviation, Inc. 519
4:45 p.m.	Response Mechanisms for Dynamic Air Traffic Flow Management	Michael Ball-University 558 of Maryland

Track 3 – Human Factors (Room - Constellation F)

**Human Factors Rapporteur: Paul Krois – FAA
Session Chair: Anthony Smoker – IFATCA**

- 9:00 a.m. As Rapid as Paper Strips? Evaluation of Vertidigi, a New Control Tool for Terminal Sectors Railane Benhacene-CENA 701**
- 9:45 a.m. Controller-Pilot Radio Channel Utilization and Cognitive Issues Jasenka Rakas – NEXTOR 434**
- 11:00 a.m. Organizational Issues and Safety Culture in ATM, Part 1: Stability Analysis Marcus Arvidsson-Lund University 224**
- 11:45 a.m. User Request Evaluation Tool (URET) Adoption and Adaptation; Three Center Case Study Tatjana Bolic-University of California at Berkeley 482**

Session Chair: Parimal Kopardekar – NASA Ames Research Center

- 2:00 p.m. Simulated Free Routing Operations in the Marseille UIR: Results and Issues from a Human Factors Perspective Thomas Kircher-DSNA 159**
- 2:45 p.m. On the Integration of Human Performance and Collision Risk Simulation Models of Runway Operation Henk Blom-NLP 464**
- 4:00 p.m. Conflict Perception by ATCS Admits Doubt But Not Inconsistency Philippe Averty-CENA 498**
- 4:45 p.m. Relationship of the Aircraft Mix Index with Performance and Objective Workload Evaluation Research (Power) Measures and Complexity Ratings Elaine Pfeleiderer-FAA 325**

Day 4 – Thursday – June 30, 2005
Plenary Session – Constellation Rooms D, E, F - N/A

7:30 a.m. - 9:00 a.m. Breakfast (Atrium/Harborview)

9:00 a.m.	Welcome Address / Best Papers	Charlie Keegan-FAA Vice President AT0-P
9:30 a.m.	JPDO Research Needs	Steve Bradford – JPDO Deputy Agile ATS IPT Lead
9:50 a.m.	European Research Needs	Bo Redeborn - Eurocontrol Director ATM Strategies
10:10 a.m.	Q&A	
10:30 a.m.	Break (Atrium)	
11:00 a.m.	Human Factors Rapporteur	Paul Krois - FAA
11:20 a.m.	Safety Rapporteur	George Donohue - George Mason University
11:40 a.m.	Innovative ATM Concepts Rapporteur	Hartmut Fricke - Technical University Dresden
12:00 p.m.	Traffic Flow Optimization Rapporteur	Amy Pritchett – Georgia Institute of Technology
12:20 p.m.	Lunch (Atrium/Harborview)	
1:30 p.m.	Decision Support Rapporteur	Lluís Vinagree - ISDEFE
1:50 p.m.	Airspace Management Rapporteur	Vojin Tosic – University of Belgrade
2:10 p.m.	Environmental Impacts and Mitigation Rapporteur	Lourdes Maurice – FAA
2:30 p.m.	Break (Atrium)	
3:00 p.m.	Metrics and Performance Management Rapporteur	Wim Post - Eurocontrol HQ
3:20 p.m.	Air Ground Cooperation Rapporteur	Steve Bussolari - MIT Lincoln Lab
3:40 p.m.	Airport Management Rapporteur	Christoph Meier – DLR
4:00 p.m.	Wrap-up	
4:30 p.m.	Seminar Adjourn	