

**10th AIAA Aviation Technology,
Integration and Operations
Conference 2010**

(ATIO)

**Ft. Worth, Texas, USA
13-15 September 2010**

Volume 1 of 3

ISBN: 978-1-61782-513-2

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

The contents of this work are copyrighted and additional reproduction in whole or in part are expressly prohibited without the prior written permission of the Publisher or copyright holder. The resale of the entire proceeding as received from CURRAN is permitted.

For reprint permission, please contact AIAA's Business Manager, Technical Papers. Contact by phone at 703-264-7500; fax at 703-264-7551 or by mail at 1801 Alexander Bell Drive, Reston, VA 20191, USA.

TABLE OF CONTENTS

VOLUME 1

2010-9000 Service Provider Feedback to Support Increased User Traffic Flow Management Responsibility	1
<i>J. Henderson, H. Idris, S. Ferguson, J. Krozel, R. Kicinger</i>	
2010-9001 Benefits from Collaborative Flow Planning of Alternative Route Options	19
<i>R. Kicinger, J. Krozel, J. Henderson, H. Idris, Pierrick Burgain</i>	
2010-9002 Predicting Sector Transit Times to Support Air Traffic Flow Modeling and Traffic Flow Management Decision-making	36
<i>A. Saraf, K. Griffin, D. Rappaport, P. Yu</i>	
2010-9003 Airport-Centered Flow Management	48
<i>Eike Rehwald, Peter Hecker</i>	
2010-9004 Controller Workload Models for Generic High-Altitude Airspace	54
<i>Michael Bloem, P. Gupta, Chok-Fung Lai</i>	
2010-9005 Aircraft-Based Complexity Assessment for Radar Controllers in the Multi-Sector Planner Experiment	66
<i>L. Li, HongSeok Cho, R. John Hansman, Rafael Palacios</i>	
2010-9006 Combining ATC Subjective Cognitive Complexity Evaluation Metrics in a Single Indicator	75
<i>E. de Albuquerque Filho, L. Trabasso, R. Scarpel, R. John Hansman, L. Li</i>	
2010-9007 Investigation of Strategies Used by Air Traffic Controllers to Reduce Cognitive Workload	84
<i>Keshava Sharma, R. Pant</i>	
2010-9008 User-Centric Evaluation of Voice over Internet Protocol Codecs for Use in Air Traffic Control Communications	100
<i>Atul Deshmukh, Ferne Friedman-Berg, Kenneth Allendoerfer</i>	
2010-9009 Fundamental Surface Trajectory Models for Air Traffic Automation	108
<i>Di Wu, Yiyuan J. Zhao, Brian Capozzi</i>	
2010-9010 The Effects of Speed Uncertainty on a Separation Assurance Algorithm	142
<i>T. Lauderdale</i>	
2010-9011 Improving Separation Assurance Stability Through Trajectory Flexibility Preservation	153
<i>H. Idris, Ni Shen, David Wing</i>	
2010-9012 Flight Option Generation for Traffic Management Decision Support	164
<i>Craig Wanke, James DeArmon, Christine Taylor, Daniel Greenbaum</i>	
2010-9013 One Engine Out Takeoff Trajectory Optimization	182
<i>Bastien Talgorn, Serge Laporte, Christian Bes, Stephane Segonds</i>	
2010-9014 What Would Industry Like to See Covered in the Capstone Design Course?	186
<i>Leland Nicolai, Eric Schrock</i>	
2010-9015 An Industry Perspective on Future Needs for Aircraft Design Education	193
<i>Paul Dees</i>	
2010-9016 Issues in Aerospace System Engineering Design Education – An Outside View from Within	202
<i>Armand Chaput</i>	
2010-9017 Generating Operationally-Acceptable Reroutes Using Simulated Annealing	214
<i>Christine Taylor, Craig Wanke</i>	
2010-9019 Effectiveness of Dynamic Airspace Configuration to Manage Airspace Capacity in Response to Highly Dynamic Changes in Traffic Demand and Weather Events	236
<i>Arash Yousefi, Babak Khorrami, Girishkumar Sabhnani, Robert Hoffman, Bert Hackney</i>	
2010-9020 Survey of Weather Impact Models used in Air Traffic Management	246
<i>J. Krozel</i>	
2010-9021 An Experimental Study of Terrain-Induced Airflow at the LPPI Airport	270
<i>Jorge Barata, Rui Medeiros, Andre Silva</i>	
2010-9051 Dynamic Allocation and Benefit Assessment of Next Gen Flow Corridors	278
<i>Arash Yousefi, Ali Zadeh</i>	
2010-9052 Estimating the En Route Efficiency Impacts of ADS-B Surveillance in Regions Without Radar	293
<i>Daniel Howell, Gary Paull, Jennifer King</i>	
2010-9053 Benefits Assessment Methodology for an Air Traffic Control Tower Advanced Automation System	315
<i>Tom Reynolds, Richard Jordan, Mariya Ishutkina, Robert Seater, James Kuchar</i>	

2010-9054 Enhancing the Value of Data through Effective Aggregate Analytical Techniques	325
<i>E. Silberg, D. Haas, J. Walker, L. Kough</i>	
2010-9055 Two Men in a Cockpit: Probabilistic Assessment of the Likelihood of a Casualty if One of the Two Navigators Becomes Incapacitated	339
<i>E. Suhir, R. Mogford</i>	
2010-9056 Assessment of the Risk to Ground Population Due to an Unmanned Aircraft In-Flight Failure	350
<i>A. Ford, K. McEntee</i>	
2010-9057 Modeling the Contribution of Accident Investigation to Aircraft Safety	362
<i>Taiki Matsumura, Chanyoung Park, Daniel Doyon, Raphael Haftka, Nam-Ho Kim</i>	
2010-9058 Application of Value-Driven Design to Commercial Aero-Engine Systems	374
<i>Julie Cheung, James Scanlan, James Wong, Jennifer Forrester, Hakki Eres, Paul Collopy, Peter Hollingsworth</i>	
2010-9059 Development of an Airline Revenue Capability Model for Aircraft Design	395
<i>Peter Sutcliffe, Peter Hollingsworth</i>	
2010-9061 Aircraft Valuation: A Network Approach to the Evaluation of Aircraft for Fleet Planning and Strategic Decision Making	409
<i>Cedric Justin, Elena Garcia, Dimitri Mavris</i>	
2010-9062 A Hybrid Optimization Approach to Air Traffic Management for Metroplex Operations	434
<i>Brian Capozzi, Stephen Atkins</i>	
2010-9063 Analysis of Factors for Incorporating users Preferences in Air Traffic Management: A Users' Perspective	447
<i>Sebastian Gutierrez-Nolasco, Kapil Sheh</i>	
2010-9064 Evaluation of User Gaming Strategies in the Future National Airspace System	460
<i>H. Gao, George Hunter</i>	
2010-9065 Reflections on Over 20 Years of Aircraft Design Class	473
<i>William Mason</i>	
2010-9066 Aerospace Design Education at RMIT University	499
<i>Cees Bil, Lachlan Thompson</i>	
2010-9067 Cranfield Graduate Aircraft Design Education	507
<i>John Fielding, Howard Smith, Phillip Stocking</i>	
2010-9068 Integrating Digital Manufacturing, Processing, and Design of Composite Structures	518
<i>M. Price, A. Murphy</i>	
2010-9069 Prediction of Structural Composite Part Shapes in Support of Manufacturing Simulation	529
<i>P. Han, J. Butterfield, S. Buchanan, R. McCool, Z. Jiang, M. Price, A. Murphy</i>	
2010-9070 Development of a Digital Methodology for Composite Process & Manufacture in Aerospace Assemblies	545
<i>W. McEwan, J. Butterfield, M. Price, A. Murphy</i>	
2010-9071 A Virtual Test System Integrating Materials and Manufacturing to Aid Design Choices	557
<i>M. Price, C. Gonzalez-Murillo, J. Butterfield, A. Murphy, R. McCool</i>	
2010-9072 Technology Assessment on Aircraft-Level: Modeling of Innovative Aircraft Systems in Conceptual Aircraft Design	571
<i>Tim Lammering, Eckhard Anton, Rolf Henke</i>	
2010-9074 Designing Redundant Metering Valves for Hydraulic Actuators Under Mixability and Low Cost-Constraints	588
<i>Thibaut Marger, Valerie Budinger, Jean-Charles Mare</i>	
2010-9106 A Study of Civil Tiltrotor Aircraft in NextGen Airspace	595
<i>L. Young, W. Chung, A. Paris, D. Salvano, R. Young, H. Gao, K. Wright, D. Miller, V. Cheng</i>	
2010-9107 Meeting Air Transportation Demand in 2025 by Using Larger Aircraft and Alternative Routing to Complement NextGen Operational Improvements	613
<i>J. Smith, N. Guerreiro, J. Viken, S. Dollyhigh, J. Fenbert</i>	
2010-9108 Safety Aspects of Automotive Child Restraint Systems in Aircraft	626
<i>Adam Shrimpton, Graham Clark, Cees Bil</i>	
2010-9109 Nested Modeling for Evaluating Hazards Associated with Off-Nominal Scenarios in the National Airspace System	633
<i>G. Calanni Fraccone, V. Volovoi, R. ValenzuelaVega, S. Siddique</i>	
2010-9110 Setting up a Company Performance Measurement Methodology for the Aerospace Industry: Deduction from the Automotive Industry	646
<i>Nicolaas Elferink, F. Van Der Zwan</i>	
2010-9111 Effects of the Design Mismatch Between Aircraft Capabilities and Actual Aircraft Utilization	661
<i>Rodrigo Martinez-Val, Javier Roa, Emilio Perez, Cristina Cuerno</i>	

2010-9112 Complexity Analysis of Traffic in Corridors-in-the-Sky	669
<i>Min Xue, Shannon Zelinski</i>	
2010-9113 Automated Flight Routing Using Stochastic Dynamic Programming.....	678
<i>H. Ng, A. Morando, S. Grabbe</i>	
2010-9114 Tactical Missile Design at the Naval Postgraduate School	695
<i>Christopher Brophy</i>	
2010-9115 Benefits of Continuous Descent Operations in High-Density Terminal Airspace Considering Scheduling Constraints	704
<i>John Robinson III, Maryam Kamgarpour</i>	
2010-9116 Predictability of Top of Descent Location for Operational Idle-Thrust Descents.....	725
<i>Laurel Stell</i>	
2010-9117 A Final Approach Trajectory Model for Current Operations.....	737
<i>Chester Gong, Alexander Sadovsky</i>	
2010-9118 Flight Test of the new Global Hawk Radar Using the Proteus Manned High Altitude Aircraft	750
<i>David Brown</i>	
2010-9119 Model Based Methodologies for the Assessment of More Electric Flight Control Actuators	758
<i>Marc Budinger, Jonathan Liscouet, Jean-Charles Mare</i>	
2010-9121 Advancement of a Robust and Reliability-Based Design Optimization Framework for Wing Design	770
<i>R. Paiva, C. Crawford, A. Suleman, L. Felix, A. Gomes</i>	
2010-9122 Structural Optimization Framework for Aircraft Subject to Transient Maneuver and Gust Loads.....	786
<i>O. Petersson, M. Leitner, F. Stroscher</i>	
2010-9137 Computational Queuing Analysis: An Application to Traffic Flow Analysis of the NAS	801
<i>Prasenjit Sengupta, Monish Tandale, P. Menon</i>	
2010-9138 The Trajectory Synthesizer Generalized Profile Interface	813
<i>Alan Lee, Xavier Boussounouse, James Murphy</i>	
2010-9139 Aircraft Trajectory Optimization and Contrails Avoidance in the Presence of Winds.....	826
<i>Banavar Sridhar, H. Ng, Neil Chen</i>	

VOLUME 2

2010-9140 Cruise Optimization Using Trajectory Patterns	839
<i>Alfonso Valenzuela, Damian Rivas, Antonio Franco</i>	
2010-9141 Characterization of Flight Management System (FMS) Intent from Operational Flights	850
<i>G. Lin, M. Kodzwa, M. Balakrishna, G. McNeill</i>	
2010-9143 Optimization of Aircraft Utilization by Reducing Scheduled Maintenance Downtime	861
<i>C. Senturk, M. Kavsaoglu, M. Nikbay</i>	
2010-9144 Trade-Off Between Facility Utilization and Service Level of an Airline MRO	886
<i>T. Sanyal, N. Rangaraj, R. Pant</i>	
2010-9145 Value Analysis of Engine Maintenance Scheduling Relative to Fuel Burn and Minimal Operating Costs	895
<i>R. Curran, F. van der Zwan, A. Ouwehand</i>	
2010-9146 Engine Management: A Decision Support Tool for Strategic Engine Maintenance Planning.....	902
<i>A. Figueira Mayordomo, A. Ghobbar, S. Ghijs, E. Cator</i>	
2010-9147 Aircraft Taxi Times at U.S. Domestic Airports.....	914
<i>Derek Robinson, Daniel Murphy</i>	
2010-9148 An Analytical Queuing Model of Airport Departure Processes for Taxi Out Time Prediction	930
<i>Ioannis Simaiakis, Nikolas Pyrgiotis</i>	
2010-9149 Optimization Models for Strategic Runway Configuration Management Under Weather Uncertainty.....	949
<i>Chris Provan, Stephen Atkins</i>	
2010-9150 Analysis of DFW Perimeter Taxiway Operations.....	965
<i>Shawn Engelland, Louise Morgan Ruszkowski</i>	
2010-9151 Optimization of Airport Taxiway Operations at Detroit Metropolitan Airport (DTW)	979
<i>Hanbong Lee, Hamsa Balakrishnan</i>	
2010-9152 A Global Aircraft Design Course Experience	995
<i>John Rutherford, Ignacio Dapic</i>	

2010-9153 The Flight Vehicle Design and Fabrication Course: Two Decades of Project-Based Learning at Penn State.....	1001
<i>Julia Cole, Mark Maughmer, Kathy Schmidt</i>	
2010-9154 The Philosophy of Design Education at the University of Manchester	1009
<i>Peter Hollingsworth, William Crowther</i>	
2010-9155 Aircraft Design Education at Queen's University Belfast: Philosophy, Framework, and Implementation.....	1019
<i>M. Price, A. Murphy, Juliana Early, Theresa Robinson, Danielle Soban</i>	
2010-9156 Closed-Form Takeoff Weight Estimation Model for Air Transportation Simulation	1028
<i>Hak-tae Lee, Gano Chatterji</i>	
2010-9157 Enhancing Location Privacy of Future Aircraft Wireless Communications.....	1041
<i>K. Sampigethaya</i>	
2010-9159 Generic Airspace Concepts and Research.....	1054
<i>R. Mogford</i>	
2010-9160 Assessment and Interpretation of En Route Weather Avoidance Fields from the Convective Weather Avoidance Model.....	1067
<i>Michael Matthews, Rich DeLaura</i>	
2010-9161 Dynamically Evolving Sectors for Convective Weather Impact.....	1086
<i>Michael Drew</i>	
2010-9163 Predicting Airspace Capacity Impacts Using the Consolidated Storm Prediction for Aviation	1095
<i>C. Russell</i>	
2010-9164 An Algorithm to Identify Robust Convective Weather Avoidance Polygons in En Route Airspace.....	1106
<i>Mikhail Rubnich, Rich DeLaura</i>	
2010-9166 National Air Traffic Rule Change 7110.308	1116
<i>Megan James, Ji'on Brown</i>	
2010-9167 Lateral-Directional Stability Investigation of a Blended-Wing Body.....	1127
<i>Paul Roysdon, Mahmood Khalid</i>	
2010-9168 Multi-Objective Optimization of Turbofan Design Parameters for an Advanced, Single-Aisle Transport	1137
<i>Jeffrey Berton, Mark Guynn</i>	
2010-9202 Investigation of the Impacts of Effective Fuel Cost Increase on the U.S. Air Transportation Network and Fleet	1154
<i>James Morrison, Philippe Bonnefoy, R. John Hansman, Sgouris Sgouridis</i>	
2010-9203 An Approximate Dynamic Programming Approach to Aircraft Allocation Incorporating Passenger Demand Models	1169
<i>Navindran Davendraingam, William Crossley, Antonius Nusawardhana</i>	
2010-9204 An Integrated Framework To Study The Interaction Between On-Demand Air Service And Existing Regional Intermodal Transportation System	1180
<i>Aditya Joshi, Daniel DeLaurentis, Srinivas Peeta</i>	
2010-9205 Impact of Future Generation Aircraft on Fleet-Level Environmental Emission Metrics	1196
<i>Isaac Tetzloff, William Crossley</i>	
2010-9206 System-wide Environmental Impact Analysis for Advanced Vehicle Concepts in the Next Generation Air Transportation System	1212
<i>Holger Pfaender, Dimitri Mavris</i>	
2010-9207 Fleet-Wide Environmental Impact of Future Aircraft Technologies	1224
<i>Muharrem Mane, Datu Agusdinata, William Crossley, Daniel DeLaurentis</i>	
2010-9208 MEDA Case Study for an MRO	1238
<i>Yuksel Bozkurt, M. Kavsaoglu</i>	
2010-9209 Feasibility Study of OBIGGS for Water Contamination Control in Aircraft Fuel Tanks	1258
<i>Marc Wetterwald, Craig Lawson, Joseph Lam</i>	
2010-9210 A Methodology for Development of Aircraft Base Maintenance Just in Time Tool and Material Support	1269
<i>Yuksel Bozkurt, M. Kavsaoglu, Fuat Oktay</i>	
2010-9211 Generation of Optimized Routes and Schedules for Surface Movement of Aircraft on Taxiways.....	1281
<i>P. Gupta, H. Subramanian, R. Pant</i>	
2010-9212 Optimization of Taxiway Traversal at Congested Airports.....	1290
<i>Ross Anderson, Dejan Milutinovic</i>	

2010-9213 A Concept and Implementation of Optimized Operations of Airport Surface Traffic	1301
<i>Yoon Jung, Ty Hoang, Justin Montoya, Gautam Gupta, Waqar Malik, Leonard Tobias</i>	
2010-9214 Aviation Archeology of the Horten 229 v3 Aircraft	1312
<i>Thomas Dobrenz, Aldo Spadoni, Michael Jorgensen</i>	
2010-9217 Trends in Airline Passenger Trip Delays (2007): A Multi-Segment Itinerary Analysis	1321
<i>L. Sherry, A. Samant, G. Calderon-Mesa</i>	
2010-9218 A Bayesian Analysis (Gaussian Process Model) for Air Traffic Demand Forecast at a Commercial Airport	1332
<i>SeungYeob Han, Daniel DeLaurentis</i>	
2010-9219 The Relationship Between Rationalized Schedules and Reduced Arrival Variability	1345
<i>John Shortle, L. Sherry</i>	
2010-9220 Fast Estimation of Top-Level Aircraft Requirement Impact on Conceptual Aircraft Designs	1354
<i>Eckhard Anton, Tim Lammering, Rolf Henke</i>	
2010-9221 Mission Performance as Point Performance	1376
<i>Robert McDonald</i>	
2010-9222 An Intelligent Multi-Criteria Decision Support System for Systems Design	1383
<i>Xiaoqian Sun, Yongchang Li</i>	
2010-9223 Design System for Managing Complexity in Aerospace Systems	1394
<i>S. Becz, A. Pinto, L. Zeidner, R. Khire, H. Reeve, A. Banaszuk</i>	
2010-9224 Design Issues for a Bottom-Up Complexity Metric Applied to Hierarchical Systems	1401
<i>L. Zeidner, H. Reeve, R. Khire, S. Becz</i>	
2010-9225 Assessing Performance Uncertainty in Complex Hybrid Systems	1416
<i>R. Khire, Sandor Becz, H. Reeve, Larry Zeidner</i>	
2010-9246 Development and Evaluation of Market-Based Traffic Flow Management Concepts	1426
<i>H. Gao, George Hunter, Frank Berardino, Karla Hoffman</i>	
2010-9247 A Surrogate Model for NextGen Portfolio Analysis	1448
<i>Yuri Gawdiak, Gregory Carr, Stojan Trajkov, George Hunter, A. Huang, Kris Ramamoorthy, M. Graham, Terence Thompson, C. Murphy, Jeremiah Pepper</i>	
2010-9248 Identification and Evaluation of Technology Transfer Benefits: Definition of a Registry in Support of the Strategic Development of NextGen Architecture	1464
<i>Olivia Pinon, Simon Briceno, Dimitri Mavris, Yuri Gawdiak</i>	
2010-9249 Evaluating Concepts for Metropolex Operations	1488
<i>John-Paul Clarke, Liling Ren, Evan McClain, David Schleicher, Sebastian Timar, A. Saraf, Donald Crisp, Richard Gutterud, Ryan Laroza, Terence Thompson, Carolyn Cross, Taryn Lewis, Michael D. Madson</i>	
2010-9250 The Impact of Economic Mitigation Measures on Global Aircraft Emissions	1511
<i>L. Dray, A. Evans, A. Schafer</i>	
2010-9251 Environmental Impact Analysis of Fleet and Policy Options of Aircraft Operators using System Dynamics	1522
<i>Hernando Jimenez, Holger Pfaender, Dimitri Mavris</i>	
2010-9252 Runway Operations Optimization in the Presence of Uncertainties	1531
<i>G. Solveling, J. Clarke, E. Johnson, S. Solak</i>	
2010-9253 A Two-Level Scheme for Network Selection and Schedule Optimization of Cargo Airlines	1546
<i>M. Agarwal, F. Maul, R. Pant</i>	
2010-9255 The Effects of Airline Adaptive Route Selection in NAS-Wide Performance	1552
<i>G. Calderon-Meza, L. Sherry</i>	
2010-9256 The Application of an Agent-Based Impact Analysis to a Complex Air Traffic Management System	1566
<i>Gary Davies, M. Price, Juliana Early, Patrick Connally</i>	
2010-9257 Developing a Model to Determine Called Rates at Airports	1587
<i>Stephanie Chung, Daniel Murphy</i>	
2010-9258 Discussion and Comparison of Metropolex-Wide Arrival Scheduling Algorithms	1600
<i>A. Saraf, John-Paul Clarke, Evan McClain</i>	
2010-9259 Generic Metropolex Airspace Comparison for Shared Resource Configurations	1621
<i>Evan McClain, John-Paul Clarke</i>	
2010-9260 Conceptual Design and Optimization of a UAV Using Simulated Annealing	1632
<i>R. Shastri, R. Pant</i>	
2010-9261 Methodology for Flying Qualities Prediction and Assessment in Preliminary Aircraft Design	1640
<i>Kristof Rissee, Eckhard Anton, Rolf Henke</i>	

VOLUME 3

2010-9262 Development of Airworthiness-Design Integration System for FAR 23 Class Aircraft.....	1657
<i>H. Lee, I. Kim, J. Yoon, T. Lwin, J. Lee, S. Kim</i>	
2010-9263 Correct-by-Construction Design of Aircraft Electric Power Systems.....	1669
<i>A. Pinto, Sandor Becz, H. Reeve</i>	
2010-9264 Architectural Enumeration and Evaluation for Identification of Low-Complexity Systems.....	1680
<i>L. Zeidner, H. Reeve, R. Khire, S. Becz</i>	
2010-9265 System Complexity Reduction via Spectral Graph Partitioning to Identify Hierarchical Modular Clusters.....	1694
<i>Lawrence Zeidner, A. Banaszuk, Sandor Becz</i>	
2010-9282 A Decision Support Tool for High Density Area Departure Traffic Management	1708
<i>Christine Taylor, Lixia Song</i>	
2010-9283 Improving Departure Capacity of Major U.S. Airports in Marginal Visual Conditions: Applications of Procedures Using Cockpit Display of Traffic Information.....	1722
<i>D. Zondervan, A. Smith, W. Cooper Jr., A. Mundra, D. Domino, H. Bateman</i>	
2010-9284 Reinventing High Density Area Departure Traffic Management.....	1747
<i>Lixia Song, H. Bateman, Sheng Liu, Gaea Payton, Emily Stelzer, Norma Taber</i>	
2010-9285 Capacity Improvement Potential for the New York Metroplex System	1759
<i>Alexander Donaldson, R. John Hansman</i>	
2010-9286 Evaluating Surface Optimization Techniques Using a Fast-time Airport Surface Simulation	1771
<i>K. Griffin, P. Yu, D. Rappaport, J. Clarke</i>	
2010-9288 Arrival Trajectory Optimization on Noise Impact Using Interval Analysis.....	1786
<i>H. Yu, J. Mulder</i>	
2010-9289 Investigating the Potential of Using Quota Count as a Design Metric	1804
<i>Peter Hollingsworth, D. Sulitzer</i>	
2010-9290 Design Considerations for a New Terminal Area Arrival Scheduler	1820
<i>Jane Thippavong, Daniel Mulfinger, Alexander Sadovsky</i>	
2010-9291 Quantitative Characterization of Strategic Solutions Impact on Terminal Area Operational-Environmental Performance.....	1834
<i>Hernando Jimenez, Dimitri Mavris</i>	
2010-9292 A Concept for Robust, High Density Terminal Air Traffic Operations.....	1849
<i>D. Isaacson, J. Robinson, H. Swenson, D. Denery</i>	
2010-9293 Comparison of Ground-Based and Airborne Function Allocation Concepts for NextGen Using Human-In-The-Loop Simulations.....	1872
<i>David Wing, T. Prevot, Jennifer Murdoch</i>	
2010-9294 Tactical Conflict Detection in Terminal Airspace.....	1912
<i>Huabin Tang, J. Robinson, D. Denery</i>	
2010-9295 Interaction of Airspace Partitions and Traffic Flow Management Delay	1927
<i>Kee Palopo, Gano Chatterji, Hak-Tae Lee</i>	
2010-9296 An Algorithm for Adaptable Dynamic Airspace Configuration.....	1940
<i>Mehernaz Savai, Jinhua Li, Tong Wang, Inseok Hwang</i>	
2010-9298 Multilevel Graph Partitioning Algorithm for Dynamic Airspace Configuration.....	1950
<i>Mehernaz Savai, Jian Wei, Jinhua Li, Tong Wang, Inseok Hwang</i>	
2010-9299 Dynamic Airspace Configuration Analysis for the Current and Future Traffic Scenarios.....	1958
<i>Tong Wang, Jian Wei, Mehernaz Savai, Inseok Hwang</i>	
2010-9300 Hang Glider Design and Performance	1968
<i>Paul Dees</i>	
2010-9301 Rapid Air System Concept Exploration – A Parametric Physics Based System Engineering Design Model.....	1981
<i>Armand Chaput</i>	
2010-9302 A Systems Engineering Approach to Unmanned Aerial Vehicle Design.....	1997
<i>Mohammad Sadraey</i>	
2010-9304 Multidisciplinary General Aviation Aircraft Design Optimizations Incorporating Airworthiness Constraints	2020
<i>J. Yoon, Nhu Nguyen, Seok-Min Choi, Jae-Woo Lee, Sangho Kim, Yung-Hwan Byun</i>	
2010-9306 Conceptual Design Studies of an Unmanned Combat Aerial Vehicle	2032
<i>A. Sathe, R. Pant</i>	
2010-9331 Investigation of the Fuel Efficiency of the U.S. Air Transportation Network Structure	2042
<i>Mark Azzam, Philippe Bonnefoy, R. John Hansman</i>	

2010-9332 Environmental Impact Evaluation Using an Agent-Based Simulation Framework	2054
<i>Marcel Schroijen, Michel VanTooren</i>	
2010-9333 On Estimating Mid-Air Collision Risk	2069
<i>Mykel Kochenderfer, Daniel Griffith, Jessica Olszta</i>	
2010-9334 Applications of Collision and TCAS Alerting Models in Parallel Runways Operations	2076
<i>K. Tong, S. Conway, M. Ulrey</i>	
2010-9335 Algorithmic Traffic Abstraction and its Application to NextGen Generic Airspace	2093
<i>Girishkumar Sabhnani, Arash Yousefi, Irina Kostitsyna, Joseph Mitchell, Valentin Polishchuk</i>	
2010-9336 The Monotonic Lagrangian Grid for Rapid Air-Traffic Evaluation	2103
<i>C. Kaplan, J. Dahm, E. Oran, N. Alexandrov, J. Boris</i>	
2010-9337 A Human-in-the-Loop Investigation of Multi-Sector Planning Operations for the NextGen Mid-Term	2111
<i>Nancy Smith, P. Lee, T. Prevot, C. Brasil, J. Homola, A. Kessell, Hwasoo Lee, M. Mainini, Joey Mercer</i>	
2010-9338 Airport Terminal Traffic Simulation Applying Reduced Wake Vortex Separation	2126
<i>Naoki Matayoshi, Yoshinori Okuno, Masahiko Sugiura, Mitsuru Kono, Tsutomu Yoshii, Terumitsu Hirata</i>	
2010-9339 Use of Data Comm by Flight Crew in High-Density Terminal Areas	2133
<i>B. Baxley, R. Norman, K. Ellis, K. Latorella, J. Comstock</i>	
2010-9340 Parameter Estimation Using Genetic Algorithms for Air Traffic Management Simulation Scenario Generation	2147
<i>S. Mondoloni, L. Litwin</i>	
2010-9341 Integrated Analysis of Airport Capacity and Environmental Constraints	2159
<i>S. Hasan, D. Long, G. Hart, M. Graham, Terence Thompson, C. Murphy</i>	
2010-9343 Aviation Frontiers - On Demand Aircraft	2183
<i>Mark Moore</i>	
2010-9344 Impacts of Design Characteristics on Market Demand of Vertical Takeoff and Landing Personal Air Vehicles	2195
<i>J. Lewe, T. Laughlin, Dimitri Mavris</i>	
2010-9345 NASA Puffin Electric Tailsitter VTOL Concept	2209
<i>Mark Moore</i>	
2010-9347 Benefit of a Raycast Weather Severity Metric for Estimating Transition Airspace Capacity	2220
<i>Joseph Prete, J. Krozel</i>	
2010-9348 A Stochastic Network Model for Uncertain Spatiotemporal Weather Impact at the Strategic Time Horizon	2232
<i>Sandip Roy, Yan Wan, Christine Taylor, Craig Wanke</i>	
2010-9370 Evaluation of Strategies for Reducing Taxi-out Emissions at Airports	2251
<i>Indira Deonandan, Hamsa Balakrishnan</i>	
2010-9372 Accelerated Monte Carlo Simulation for Safety Analysis of the Advanced Airspace Concept	2265
<i>David Thippavong</i>	
2010-9373 Efficiently Estimating Ambient Near Mid-Air Collision Risk for Unmanned Aircraft	2277
<i>Evan Maki, Andrew Weinert, Mykel Kochenderfer</i>	
2010-9375 Multi Sector Planning Tools for Trajectory-Based Operations	2285
<i>T. Prevot, M. Mainini, C. Brasil</i>	
2010-9376 Sector Design and Boundary Change Considerations for Flexible Airspace Management	2308
<i>P. Lee, T. Prevot, J. Homola, H. Lee, A. Kessell, N. Smith</i>	
2010-9377 Flow Conforming Operational Airspace Sector Design	2319
<i>Girishkumar Sabhnani, Arash Yousefi, Joseph Mitchell</i>	
2010-9378 Terminal Area Modeling in National Airspace System Performance Analysis Capability (NASPAC)	2338
<i>L. Vempati, H. Kaing, A. Kane, J. Bonn</i>	
2010-9379 A Terminal Area Analysis of Continuous Ascent Departure Fuel Use at Dallas/Fort Worth International Airport	2353
<i>Keenan Roach, J. Robinson</i>	
2010-9380 Ground Delay Program Modeling for the FAA's National Airspace System Performance Analysis Capability	2364
<i>C. Ermatinger, B. Manley, J. Post, P. Ramsey</i>	
2010-9381 Use of Runway Capacity at Secondary Airports to Address NextGen Goals	2375
<i>J. Eckhouse, R. Hemm, J. Hees, R. Golaszewski, A. Huang</i>	
2010-9382 Aggregate Statistics of National Trac Management Initiatives	2387
<i>Joseph Rios</i>	

2010-9383 Puffin Redundant Electric Propulsion Powertrain System.....	2403
<i>B. Seegers, B. Guthrie, R. Fontana</i>	
2010-9386 Separation Standards under Automated Separation Assurance	2425
<i>Steven Landry, Taehoon Kim</i>	
2010-9387 Analysis of a Real-Time Separation Assurance System with Integrated Time-in-Trail Spacing	2431
<i>A. Aweiss, A. Farrahi, T. Lauderdale, A. Thipphavong, C. Lee</i>	
2010-9390 A Methodology for Low-Cost, Rapid Implementation Solutions For Airframe Systems of UAV Prototypes	2439
<i>Guido Monterzino, Craig Lawson, John Fielding</i>	
Author Index	