

Preliminary Agenda
Air Traffic Management Research and Development Seminar
June 27-30, 2017
Seattle, WA

Monday, June 26

18:30 Registration

Tuesday, June 27

07:00 Registration

08:00 Welcome to Seattle

08:15 Welcome to ATM2017 – Introduction, Program and Logistics
 Colin Meckiff (EUROCONTROL) and Eric Neiderman (FAA), ATM2017 Chairs

08:30 Opening Keynote
 Europe

09:15 Opening Keynote
 U.S.

10:00 Coffee

Tuesday, June 27 – Track 1: Performance Measurement and Management

Session Chair: Jose Miguel de Pablo (CRIDA)

Time	Paper	Title	Authors (presenter in <i>bold</i>)
10:30	110	Open source software and crowd sourced data for operational performance analysis	Rainer Koelle (EUROCONTROL)
11:15	123	A Comparative Analysis of Models for Predicting Delays in Air Traffic Networks	Karthik Gopalakrishnan , Hamsa Balakrishnan (MIT)
12:00	128	Predicting Performance of Ground Delay Programs	Alexander Estes , Michael Ball, David Lovell (University of Maryland)

12:45 Lunch

Session Chair: Joseph Post (FAA)

Time	Paper	Title	Authors (presenter in <i>bold</i>)
14:00	50	Causal Inference for ATM Counterfactual Estimation	Akhil Shah (RAND Corporation)
14:45	130	Causal Analysis of En Route Flight Inefficiency – the US Experience	Yulin Liu , Mark Hansen (University of California, Berkeley), David Lovell, Cara Chuang, Michael Ball (University of Maryland), John Gulding (FAA)

15:30 Coffee

Tuesday, June 27 – Track 1: Complexity and Big Data

Session Chair: *Jacco Hoekstra (TU Delft)*

Time	Paper	Title	Authors (presenter in <i>bold</i>)
16:00	52	A case study of non-linear dynamics of “human-flow” behavior in terminal airspace	Lei Yang , Suwan Yin, Minghua Hu (NUAA), Yan Xu (Technical University of Catalonia)
16:45	129	The Structure and Dynamics of the Multilayer Air Transport System	Yanjun Wang , Xinhua Xu, Minghua Hu (Nanjing University of Aeronautics and Astronautics, Jianming Zhan (Air Traffic Management Bureau, Civil Aviation Administration of China)

Tuesday, June 27 – Track 2: Integrated Airport/Airside Operations

Session Chair: *Miquel Angel Piera (Universitat Autònoma de Barcelona)*

Time	Paper	Title	Authors (presenter in bold)
10:30	3	Local and network impact assessment of Airport Collaborative Decision Making (A-CDM)	Denis Huet (EUROCONTROL), <i>Simon Pickup (Atlas Chase)</i>
11:15	105	Analysis of Saturation at the Airport-Airspace Integrated Operations	Alvaro Rodriguez-Sanz , <i>Fernando Gomez Comendador, Rosa Arnaldo Valdes (Technical University of Madrid), Jose Manuel Cordero Garcia and Lucia Meler Garcia (CRIDA)</i>
12:00	107	A novel machine learning model to predict abnormal Runway Occupancy Times and observe related precursors	Floris Herrema (EUROCONTROL AND TUDelft), <i>Vincent Treve and Bruno Desart (EUROCONTROL), Ricky Curran, Dries Visser (TUDelft)</i>

12:45 Lunch

Session Chair: *Hamsa Balakrishnan (MIT)*

Time	Paper	Title	Authors (presenter in bold)
14:00	23	What to say when: Guidelines to Decision Making	Anne Papenfuss , <i>Nils Carstengerdes, Sebastian Schier and Yves Günther (DLR)</i>
14:45	116	Aircraft Boarding – Data, Validation, Analysis	Michael Schultz (DLR e.V.)

15:30 Coffee

Tuesday, June 27 – Track 2: Human Factors

Session Chair: *Sandy Lozito (NASA Ames)*

Time	Paper	Title	Authors (presenter in bold)
16:00	20	Read Back Error Detection using Automatic Speech Recognition	Hunter Kopald , <i>Shuo Chen, Ronald Chong, Yuan-Jun Wei and Zachary Levonian (MITRE)</i>
16:45	22	Increasing ATM Efficiency with Assistant Based Speech Recognition	Hartmut Helmke , <i>Oliver Ohneiser (German Aerospace Center, DLR), Jörg Buxbaum (DFS Deutsche Flugsicherung GmbH), Christian Kern (Austro Control GmbH)</i>

Tuesday, June 27 – Track 3: Terminal Area Operations

Session Chair: *Eric Hoffman (EUROCONTROL)*

Time	Paper	Title	Authors (presenter in bold)
10:30	61	Analysis on the Impact of Pop-Up Flight Occurrence when Extending the Arrival Management Horizon	Alexander Vanwelsenaere , Joost Ellerbroek, Jacco M. Hoekstra (Delft University of Technology), Evert Westerveld (Air Traffic Control the Netherlands)
11:15	43	Measuring Performance of Initial Ground-based Interval Management - Spacing (GIM-S) Operations	Brock Lascara , Lesley Weitz, Thomas Monson (MITRE), Robert Mount (FAA)
12:00	30	Analysis of the Use of Estimated Time of Arrival Broadcast for Interval Management	Stephanie Priess , Lesley Weitz, Stuart Bowman (MITRE), Ian Levitt (FAA)

12:45 Lunch

Session Chair: *Hartmut Fricke (TU Dresden)*

Time	Paper	Title	Authors (presenter in bold)
14:00	57	Design Considerations of Vertically-Constrained PBN Procedures for Trajectory Management	Jesper Bronsvort (Airservices Australia), Greg McDonald (Independent), Jean Boucquey (EUROCONTROL), Sergio Torres (Leidos), Joachim Hochwarth (GE Aviation), Mike Paglione, Christina Young (FAA)
14:45	103	Toward the characterisation of sequencing arrivals	Raphael Christien , Eric Hoffman, Aymeric Trzmiel and Karim Zeghal (EUROCONTROL)

15:30 Coffee

Tuesday, June 27 – Track 3: Surveillance and Navigation

Session Chair: *Dirk Kuegler (DLR)*

Time	Paper	Title	Authors (presenter in bold)
16:00	27	PBN Hybrid Procedures as an Enabler for Airport Accessibility in Challenging Terrain	Philipp Daniel Schaad (Austro Control)
16:45	118	Using PBN for Terminal and Extended Terminal Operations	Dijana Trenevaska , David De Smedt, (EUROCONTROL), Geert Moek (Netherlands Aerospace Centre)

Wednesday, June 28

06:00 5K Fun Run

Wednesday, June 28 – Track 1: Complexity and Big Data

Session Chair: *Michael Ball (University of Maryland)*

Time	Paper	Title	Authors (presenter in bold)
07:45	66	Modeling Aircraft Performance Parameters with Open ADS-B Data	Junzi Sun , Joost Ellerbroek, Jacco Hoekstra (Delft University of Technology)
08:30	83	Large-Scale ADS-B Data and Signal Quality Analysis	Ted Verbraak , Joost Ellerbroek, Junzi Sun, Jacco Hoekstra (Delft University of Technology)
09:15	67	Modeling Airspace Stability and Capacity for Decentralized Separation	Emmanuel Sunil , Joost Ellerbroek, Jacco Hoekstra, Jerom Maas (Delft University of Technology)
10:00	97	Self-Reorganized Supporting Tools for Conflict Resolution in High-Density Airspace Volumes	Marko Radanovic , Miquel Angel Piera Eroles, Thimjo Koca (Universitat Autònoma de Barcelona), Francisco Javier Saez Nieto (Cranfield University)

10:45 Coffee

Wednesday, June 28 – Track 1: Trajectory Prediction

Session Chair: *Craig Wanke (MITRE)*

Time	Paper	Title	Authors (presenter in bold)
11:15	25	Bayesian Inference of Aircraft Initial Mass	Junzi Sun , Joost Ellerbroek, Jacco Hoekstra (Delft University of Technology)
12:00	94	Statistical Modeling of Aircraft Takeoff Weight	Yashovardhan Sushil Chati , Hamsa Balakrishnan (MIT)
12:45	121	A simple method to integrate Mode S Indicated Airspeed with Ground Based Trajectory Prediction	Bram Vandermeersch , Jonathan Marmont (NATS)

13:30 Lunch

Wednesday, June 28 – Track 2: Human Factors

06:00 5K Fun Run

Session Chair: *Billy Josefsson (LFV)*

Time	Paper	Title	Authors (presenter in <i>bold</i>)
07:45	33	Analysis of work patterns as a foundation for human-automation communication in multiple remote towers	Åsa Svensson , Camilla Forsell, Jimmy Johansson, Jonas Lundberg (Linköping University)
08:30	37	Learning Air Traffic Controller Workload from Past Sector Operations	David Gianazza (ENAC)
09:15	74	Assessment of Air Traffic Controller Acceptability of Aircrew Route Change Requests	Husni Idris , Kelly Burke, David Wing (NASA Langley), Gabriele Enea (Engility Corporation)
10:00	84	Effectiveness of the application of the Human Performance Assessment Process in SESAR 1	Sonja Biede (Airbus), Renee Pelchen-Medwed (EUROCONTROL)

10:45 Coffee

Wednesday, June 28 – Track 2: Network and Strategic Flow

Session Chair: *Nicolas Durand (ENAC)*

Time	Paper	Title	Authors (presenter in <i>bold</i>)
11:15	15	A Novel MIP-based Airspace Sectorization for TMAs	Christiane Schmidt , Tobias Andersson Granberg, Tatiana Polishchuk, Valentin Polishchuk (Linköping University)
12:00	80	An optimization model for assigning 4D-trajectories to flights under the TBO concept	Franklin Djeumou Fomeni , Konstantinos G. Zografos, Guglielmo Lulli (Lancaster University Management School)
12:45	139	Including Linear Holding in Air Traffic Flow Management for Flexible Delay Handling	Xavier Prats , Yan Xu (Technical University of Catalonia)

13:30 Lunch

Wednesday, June 28 – Track 3: Separation

06:00 5K Fun Run

Session Chair: *John Robinson (NASA Ames)*

Time	Paper	Title	Authors (presenter in <i>bold</i>)
07:45	134	A Constraint Programming Model with Time Uncertainty for Cooperative Flight Departures	Juan Jose Ramos , Nina Scheffers, Marko Radanovic, Miquel Angel Piera, (Universitat Autònoma de Barcelona), Pau Folch (ASLOGIC)
08:30	75	Agent-based Formation Flight Coalition under Incomplete Information	Linghang Meng , Yifei Zhao, Xiaohao Xu and Zengxian Geng (Civil Aviation University of China)
09:15	31	Large Scale 3D En-Route Conflict Resolution	Ruxing Wang , Cyril Allignol, Nicolas Durand, Alexandre Gondran, Nicolas Barnier (ENAC)
10:00	9	Methods of Aircraft Re-categorizations for Reducing Wake Vortex Separations	Zhiqiang Wei , Zhiyuan Li, Fei Liu, Wei Liu (CAUC)

10:45 Coffee

Wednesday, June 28 – Track 3: Safety and Resilience

Session Chair: *Anthony Smoker (IFATCA)*

Time	Paper	Title	Authors (presenter in <i>bold</i>)
11:15	46	A Bayesian Network Model of Pilot Response to TCAS Resolution Advisories	Edward Londner , Robert Moss (MIT Lincoln Laboratory)
12:00	68	Modeling the Intrinsic Safety of Unstructured and Layered Airspace Designs	Martijn Tra , Emmanuel Sunil, Joost Ellerbroek, Jacco Hoekstra (Delft University of Technology)
12:45	13	Topics and Trends in Incident Reports	Kenneth Kuhn (RAND Corporation)

13:30 Lunch

Thursday, June 29

Thursday, June 29 – Track 1: Environment and Energy

Session Chair: *Tom Reynolds (MIT LL)*

Time	Paper	Title	Authors (presenter in bold)
08:00	98	Fuel Burn Estimation Modeling for ATM Benchmark Applications Perspectives from an International Collaboration	Gabriele Enea (MITRE), Jesper Bronsvort (Airservices Australia), Hartmut Fricke, Christian Seiß, Judith Rosenow, (TU Dresden), Almira Ramadani, Mike Paglione (FAA)
08:45	138	Quantile Regression Based Estimation of Statistical Contingency Fuel	Lei Kang , Mark Hansen (University of California, Berkeley)
09:30	17	Have Descents really become more Efficient?	Daniel Howell , Rob Dean (Regulus Group)

10:15 Coffee

Session Chair: *Tom Reynolds (MIT)*

Time	Paper	Title	Authors (presenter in bold)
10:45	135	Analytical Approach for Quantifying Noise from Advanced Operational Procedures	Luke Jensen , Jacqueline Thomas, Calen Brooks, Morrissa Brenner, R. John Hansman (MIT)
11:30	113	Impact of Multi-criteria Optimized Trajectories on European Air Traffic Density, Efficiency and the Environment	Judith Rosenow , Stanley Förster, Martin Lindner, Hartmut Fricke (Technische Universität Dresden)

12:15 Lunch

Session Chair: *Karen Marais (Purdue)*

Time	Paper	Title	Authors (presenter in bold)
13:30	108	Operational Feasibility of Segmented Independent Parallel Approaches	Tobias Finck , Bernd Korn, Ana Paz Gonçalves Martins, Tim Stelkens-Kobsch (DLR – Institute of Flight Guidance)
14:15	124	Human-in-the-loop Performance Assessment of Optimized Descents with Time Constraints: Results from Full Motion Flight Simulation and a Flight Testing Campaign	Xavier Prats , Ramon Dalmau (Technical University of Catalonia), Ronald Verhoeven, Frank Bussink (Netherlands Aerospace Center)

15:00	119	Analyzing & Implementing Delayed Deceleration Approaches	<i>Tom Reynolds, Emily Clemons (MIT Lincoln Laboratory), John Hansman, Jacquie Thomas (MIT)</i>
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15:30 Coffee

Thursday, June 29 – Track 1: Weather in ATM

Session Chair: *Mark Weber (NOAA)*

Time	Paper	Title	Authors (presenter in <i>bold</i>)
16:15	99	Strategic planning of North Atlantic Oceanic air traffic based on a new wind-optimal route structure	<i>Imen Dhief</i> , <i>Nour Houda Dougui (ENSI), Daniel Delahaye (Ecole National D'Aviation Civile), Noureddine Hamdi (INSAT)</i>
17:00	72	Predicting & Quantifying Risk in Airport Capacity Profile Selection for Air Traffic Management	<i>James Jones</i> , <i>Richard Delaura, Margo Pawlak, Seth Troxel, Ngaire Underhill (MIT Lincoln Laboratory)</i>

19:00 Dinner

Thursday, June 29 – Track 2: Network and Strategic Flow

Session Chair: *Guglielmo Lulli (University of Lancaster)*

Time	Paper	Title	Authors (presenter in bold)
08:00	55	A Distributed Air Traffic Flow Management Model for European Functional Airspace Blocks	Sameer Alam (University of New South Wales), Supatcha Chaimatanan (Geoinformatics and Space Technology Development Agency), Daniel Delahaye (French Civil Aviation University), Eric Feron (Georgia Institute of Technology)
08:45	60	Probabilistic Occupancy Counts and Flight Criticality Measures for ATM	François Gonze , Andrea Simonetto, Etienne Huens, Raphaël M. Jungers (Université catholique de Louvain), Jean Boucquey (EUROCONTROL ATM/RDS/ATS)
09:30	125	A Distributed Framework for Traffic Flow Management in the Presence of Unmanned Aircraft	Hamsa Balakrishnan (MIT), Bala Chandran (Resilient Ops, Inc.)

10:15 Coffee

Session Chair: *Midori Tanino (FAA)*

Time	Paper	Title	Authors (presenter in bold)
10:45	51	Evaluation of Integrated Demand Management looking into Strategic & Tactical Flow Management	Christoph Moehlenbrink , Bonny Parke, Hyo-Sang Yoo, Connie Brasil, Nathan Buckley, Constantine Speridakos, Francisco Muro, Gita Hodell, Paul Lee and Nancy Smith
11:30	101	Generating Diverse Reroutes for Tactical Constraint Avoidance	Christine Taylor , Sheng Liu, Craig Wanke, Timothy Stewart (MITRE)

12:15 Lunch

Thursday, June 29 – Track 2: UAS and RPAS

Session Chair: *Peter Hecker (TU Braunschweig)*

Time	Paper	Title	Authors (presenter in bold)
13:30	16	A Path Planning Algorithm to Enable Well-Clear Low Altitude UAS Operation Beyond Visual Line of Sight	Swee Balachandran (National Institute of Aerospace), Anthony Narkawicz, Cesar Munoz, Maria Consiglio (NASA)
14:15	64	Assessing the Robustness of a UAS Detect & Avoid Algorithm	Cyril Allignol , Nicolas Barnier, Nicolas Durand, Guido Manfredi (ENAC), Éric Blond (DSNA/DTI)
15:00	140	Wind Efficient Path Planning and Reconfiguration of UAS in Future ATM	Leopoldo Rodriguez , Fotios Balampanis, Jose A. Cobano, Ivan Maza, Anibal Ollero (University of Seville)

15:30 Coffee

Session Chair: <i>Kenneth Allendoerfer (FAA)</i>			
Time	Paper	Title	Authors (presenter in <i>bold</i>)
16:15	54	Ensuring Interoperability between UAS Detect-and-Avoid and Manned Aircraft Collision Avoidance	David Thippavong , Andrew Cone (NASA), Seungman Lee (Crown Consulting, Inc.)
17:00	76	Flight Test Evaluation of an Unmanned Aircraft System Traffic Management (UTM) Concept for Multiple Beyond-Visual-Line-of-Sight	Marcus Johnson , Jaewoo Jung, Joseph Rios, Joey Mercer, Thomas Prevot, Daniel Mulfinger, Parimal Kopardekar (NASA)
19:00	Dinner		

Thursday, June 29 – Track 3: Safety and Resilience

Session Chair: *Natesh Manikoth (FAA)*

Time	Paper	Title	Authors (presenter in bold)
08:00	136	Vulnerability Metrics for the Airspace System	Sandip Roy , Mengran Xue (Washington State University), Banavar Sridhar (Independent)
08:45	104	Emergent Behaviour of Trajectory Based Operations Under Very High En-route Traffic Demand	Henk Blom (NLR and TUDelft), Bert Bakker (NLR)
09:30	59	A Quantitative Approach to Resilience Engineering for the Future ATM System: Case Studies Results	Roberto Palumbo , Edoardo Filippone (CIRA – Italian Aerospace Research Center)

10:15 Coffee

Thursday, June 29 – Track 3: Weather in ATM

Session Chair: *Mark Weber (NOAA)*

Time	Paper	Title	Authors (presenter in bold)
10:45	8	Translating Convective Weather Forecasts into Strategic Traffic Management Decision Aids	Michael Matthews , Mark Veillette, Joseph Venuti, Richard Delaura and James Kuchar
11:30	137	Modeling Ground Delay Program Incidence using Convective and Local Weather Information	Yi Liu , Mark Hansen, Danqing Zhang, Yulin Liu, Alexey Pozdnukhov (MIT)

12:15 Lunch

Thursday, June 29 – Track 3: Finance and Policy

Session Chair: *Mark Hansen (UC Berkeley)*

Time	Paper	Title	Authors (presenter in bold)
13:30	89	Balancing Reliability, Efficiency and Equity in Airport Scheduling Interventions	Alexandre Jacquillat (Carnegie Mellon University) Vikrant Vaze (Dartmouth College)
14:15	111	A Game-Theoretic Modeling Approach to Air Traffic Forecasting	Vikrant Vaze , Reed Harder (Dartmouth College)
15:00	70	A Step Towards Remote Tower Center Deployment: Optimizing Staff Schedules	Christiane Schmidt , Tatiana Polishchuk, Valentin Polishchuk, (Linköping University), Billy Josefsson (LFV)

15:30 Coffee

Session Chair: <i>Michael Standar (SJU)</i>			
Time	Paper	Title	Authors (presenter in <i>bold</i>)
16:15	91	Minimizing the Cost of Delay for Airspace Users	Stephen Kirby , <i>Nadine Pilon (EUROCONTROL)</i>
17:00	132	Service Level Expectation Setting for Air Traffic Flow Management: Practical Challenges and Benefits Assessment	Michael Ball , <i>Prem Swaroop (University of Maryland), Cynthia Barnhart, Chiwei Yan (MIT), Mark Hansen, Lei Kang, Yi Liu (University of California, Berkeley), Vikrant Vaze (Dartmouth College)</i>
19:00	Dinner		

Friday, June 30

08:00 Perspectives from SESAR and NextGen

SESAR Speaker

FAA Speaker

09:30 Coffee

09:30 Panel Session – Innovation, New Entrants, and ATM

11:30 Best Paper Awards and Closing

Colin Meckiff (EUROCONTROL) and Eric Neiderman (FAA), ATM2017 Chairs