

Presentation Titles

Organized Session **Future Radio Technologies (1)**

- [EN-A-082] **Wireless-optical signal converter utilizing stacked-patch antennas and electro-optic substrates**
[†]H. Murata, H. Aya, T. Inoue, A. Sanada *Osaka University*
Y. N. Wijayanto *Indonesian Institute of Sciences*
A. Kanno *NICT*
T. Kawanishi *Waseda University*
- [EN-A-075] **Frequency Steerable 60 GHz Multibeam Antennas for 5G Hot-Spots**
[†]M. Steeg *University of Duisburg-Essen*
M. Szczęsny *Exatel*
A. Stöhr *University of Duisburg-Essen*
- [EN-A-060] **ADS-B latency estimation technology for surveillance performance assessment**
[†]Y. Kakubari, Y. Kosuge, T. Koga *ENRI*
- [EN-A-065] **Jamming and Spoofing Protection for ADS-B Mode S Receiver through Array Signal Processing**
C. Chomel *ENAC*
[†]J. Naganawa, T. Koga, H. Miyazaki, Y. Kakubari *ENRI*
- [EN-I-080] **90GHz-band FOD detection Radar system for Runway Surveillance**
[†]Y. Sato, H. Ido, K. Ishikawa, K. Kashima, N. Shibagaki *Hitachi Kokusai Electric Inc.*

Technical Session **ATM Performance**

- [EN-A-004] **Air Traffic Management Performance Benchmarking - A disaggregated approach**
[†]T. Standfuss *DLR*
F. Fichert *Worms University of Applied Sciences*
M. Schultz *DLR*
- [EN-A-032] **Future airspace design by dynamic sectorization**
[†]M. Schultz, I. Gerdes, T. Standfuss, A. Temme *DLR*
- [EN-I-014] **Data-Driven Modeling of the Air Traffic Departure Flow Analysis in Multi-Airport Systems**
[†]Z. Zhao, L. Yuan, Y. Jin *NCAA*
- [EN-A-026] **An approach for attribute- and performance-based evaluation of interdependent critical infrastructures**
P. Förster, P.M. Schachtebeck, [†]T. Feuerle, P. Hecker *Technische Universität Braunschweig*
M. Branlat, I. Herera *SINTEF Digital*
R. Woltjer *Swedish Defense Research Agency - FOI*
- [EN-I-061] **Operational resilience of airport network**
[†]X. Xu, Y. Wang, M. Hu *NCAA*

Organized Session **Future Radio Technologies (2)**

- [EN-A-079] **Interference mitigation in linear cell FOD radar by using FMCW signal source with different sweep speed**
⁺K. Akama *Waseda University*
A. Kanno, K. Inagaki *NICT*
T. Kawanishi *Waseda University*
- [EN-A-027] **Millimeter-wave Imaging for FOD Detection**
F. Nsengiyumva, C. Migliaccio, ⁺Ch. Pichot *Université Côte d'Azur*
- [EN-A-067] **Simulation Evaluation of the Number of MmWave Access Points to Cover the Passenger Car of High Speed Trains**
⁺F. Lu, A. Yamaguchi, T. Fukuhara, H. Shinbo *KDDI Research, Inc.*
- [EN-A-081] **Bistatic Radar System in Terahertz Bands Based on Radio Over Fiber Network**
⁺A. Kanno, N. Sekine, A. Kasamatsu, N. Yamamoto, T. Kawanishi *NICT*

Technical Session **Airport Management**

- [EN-I-034] **The role of research organizations in SESAR 2020**
⁺H. H. Toebben, D. Kuegler *DLR*
T. Bakken *SINTEF*
- [EN-A-023] **Europe's next step in Airport Performance Management Research**
⁺F. Piekert *DLR*
A. Marsden *EUROCONTROL*
O. Delain *Groupe ADP*
- [EN-A-017] **A Study of Tradeoffs in Airport Coordinated Surface Operations**
⁺J. Ma, D. Delahaye, M. Sbihi *ENAC*
P. Scala, M. Mujica Mota *Amsterdam University of Applied Sciences*
- [EN-A-011] **Reliable aircraft boarding for fast turnarounds**
⁺M. Schultz *DLR*

Technical Session **Trajectory Management**

- [EN-A-033] **Efficient Continuous Descents at Tokyo International Airport**
⁺K. Hayashi *The University of Tokyo*
A. Andreeva-Mori *JAXA*
T. Tsuchiya *The University of Tokyo*
- [EN-A-018] **Trajectory Mathematical Distance Applied to Airspace Major Flows Extraction**
⁺D. Delahaye, S. Puechmorel *ENAC*
S. Alam *Nanyang Technological University*
E. Feron *Georgia Technology Institute*
- [EN-A-074] **Optimization of military missions impact on civilian 4D trajectories**
⁺A. Islami, S. Chaimatanan, N. Wang *ENAC*
D. Delahaye *Geo-informatics and space development agency*

Technical Session **UAS**

- [EN-I-084] **Traffic Management of Unmanned Aircraft Systems (TM-UAS) in Urban Environment**
D. Y. Tan, M. F. B. M. Salleh, ⁺W. Chi *ATMRI, Nanyang Technological University*
K. H. Low *Nanyang Technological University*
- [EN-I-006] **The MoNIfly approach to an Unmanned Traffic Management System (UTM)**
⁺B.Blom, T.Feuerle *Technische Universität Braunschweig*
- [EN-I-035] **A Concept for Coordinated UAV Operations Based on Local-Area Differential GNSS Navigation and Guidance**
⁺S. Pullen *Stanford University*
J. Lee, M. Kim, D. Kim, J. Lee *Korea Advanced Institute of Science and Technology*
- [EN-A-050] **Simulation Techniques for Small Unmanned Aircraft Systems (sUAS) Trajectories including Signal Propagation**
⁺D. Toratani, H. Hirabayashi, A. Kohmura *ENRI*
- [EN-A-042] **The Effects of Alert Scoring and Alert Jitter on a Minimum Operations Performance Standards Unmanned Aircraft Systems Detect and Avoid System**
⁺R. W. Ghatas *NASA Langley Research Center*
D. Tsakpinis, R. R. Myer, J. L. Sturdy *SAIC, Inc.*

Technical Session **Aviation Safety**

- [EN-I-087] **What will air traffic controllers (ATCOs) be doing in the future, in a more automated ATM environment?**
⁺ K. Moebus *skyguide – swiss air navigation services, ltd.*
- [EN-A-022] **Analysis of Positive and Negative Effects of Saliency on the ATC Task Performance**
⁺H. Yoshida *The University of Tokyo*
H. Aoyama *ENRI*
D. Karikawa *Tohoku University*
S. Inoue *ENRI*
T. Kanno, K. Furuta *The University of Tokyo*
- [EN-A-028] **Aircraft Safety Analysis using Generalized Polynomial Chaos**
⁺J. Diepolder, P. Piprek, B. Grüter, T. Akman, F. Holzapfel *Technical University of Munich*
- [EN-A-029] **Preliminary analysis on safety assessment for off-set routes**
⁺J. Han, H. Cho *The Korea Transport Institute (KOTI)*
- [EN-A-059] **Performance Analysis of Shenzhen Airlines' 4D/15 Tracking Demonstration**
⁺Z. Zhang, X. Lu, P. Han *Civil Aviation University of China (CAUC)*
Y. Sun *Shenzhen Airlines*

Technical Session **Traffic Capacity & Congestion Management**

- [EN-I-071] **The Flow centric approach: an emerging concept from SESAR R&D**
[†]P. Souchu *DSNA*
- [EN-A-040] **Results from an Interval Management (IM) Flight Test and Its Potential Benefit to Air Traffic Management Operations**
[†]B. Baxley, K. Swieringa *NASA Langley Research Center*
R. Berckefeldt *Honeywell*
D. Boyle *Boyle Aviation Services*
- [EN-A-083] **Potential Benefits of Speed Control on Delay and Fuel Consumption**
[†]Y. Matsuno, A. Andreeva-Mori, T. Uemura, N. Matayoshi *JAXA*
- [EN-A-025] **Integrated Bi-level Arrival and Departure Time Assignment for Optimal Trajectories**
[†]B. Grüter, J. Diepolder, T. Akman, F. Holzapfel *Technical University of Munich*

Technical Session **ATM Modeling (1)**

- [EN-I-001] **Improving Airline Disruption Management through a Virtual Digital Airline Simulation**
[†]J. Westphal, A. Belinky, J. Schiefele *Boeing Global Services*
- [EN-A-003] **Integration of unmanned freight formation flights in the European air traffic management system**
[†]T. Luchkova, A. Temme, M. Schultz *DLR*
- [EN-A-051] **Design of a Multi-Agent System framework for Decentralized Decision Making in Air Traffic Management**
[†]Th. Koca, M. A. Piera, M. Radanovic *Autonomous University of Barcelona*
- [EN-I-020] **A Conceptual Approach for Efficient Arrival Operations via the Integration of Fixed-Flight Path Angle Descent and GBAS Landing System**
[†]N. K. Wickramasinghe, E. Itoh, D. Toratani *ENRI*
J. Westphal, H. Schoeniger *Jeppesen GMBH*
T. Feuerle, P. M. Schachtebeck, M. Stanisak *Technische Universität Braunschweig*
S. Fukushima, S. Saito, T. Yoshihara *ENRI*

Technical Session **Aviation Weather**

- [EN-A-048] **ATM Performance Analysis considering Minimum Climatology Impact Trajectories**
J. Garcia-Heras, M. Soler, G. Puellas, [†]D. González-Arribas, M. Sanz *Universidad Carlos III de Madrid*
- [EN-A-073] **Robust Optimal Trajectory Planning under Uncertain Winds and Convective Risk**
[†]D. González-Arribas, M. Soler, M. Sanjurjo-Rivo, J. Garcia-Heras *Universidad Carlos III de Madrid*
D. Sacher, U. Gelhardt, J. Lang *MeteoSolutions GmbH*
T. Hauf *Leibniz Universität Hannover*
J. Simarro *Agencia Estatal de Meteorología (AEMET)*

[EN-I-085] Development of 3D Rapid Scanning High Resolution X-Band Phased Array Weather Radar

⁺T. Kashiwayanagi, K. Morotomi, O. Sato, H. Sugawara *Japan Radio Co., Ltd.*

Organized Session SWIM

[EN-I-009] Collaboration to Implement Air Traffic Flow Management (ATFM) Capabilities in the Region with Multiple Air Navigation Service Providers (ANSPs)

⁺M. Tanino *Federal Aviation Administration (FAA)*

[EN-I-077] Geo-Informatics Platform for Aviation

T. Chailunka, P. Horma, W. Vonsantivanich, ⁺S. Chaimatanan *Geo-Informatics and Space Technology Development Agency*

[EN-A-053] Design of a software environment to support machine learning analysis of aircraft trajectories

⁺C. Morales *NATO Eurofighter and Tornado Management Agency*

J. Sanz *Airbus Defence & Space*

S. Moral *University of Granada*

[EN-A-056] Coordinated Validation for SWIM Concept-Oriented Operation to Achieve Interoperability

⁺X. Lu, T. Koga, Y. Sumiya *ENRI*

Technical Session ATM Modeling (2)

[EN-A-024] From Perfect to Possible: Two Trajectory Based Operation Concepts for Future Terminal Manoeuvring Areas

⁺J. Rataj, M. Temme *DLR*

[EN-A-044] Optimal location of temporary military zones within civil aviation traffic

⁺N. WANG, D. Delahaye, M. Mongeau, A. Gondran *Université de Toulouse*

[EN-A-055] Cost Index Estimation via Optimization based Trajectory Prediction

⁺A. Harada, T. Ezaki, T. Wakayama, K. Oka *Kochi University of Technology*

[EN-A-058] A Possibility of Continuous Descent Operation in the Congested Airspace

⁺T. Wakayama, T. Ezaki, A. Harada, K. Oka *Kochi University of Technology*

Technical Session CNS Systems

[EN-A-037] Estimation of 3-dimensional location and velocity using range with bias error and Doppler measurements

⁺Y. Kosuge, X. Lu, T. Koga, H. Miyazaki *ENRI*

[EN-A-072] Automatic Detection of Airport Runway Area Based on Super-Pixel PolSAR Image Classification

⁺P. Han, Z. Lin, X. Lu, Q. Shi, Z. Zhang *Civil Aviation University of China*

[EN-I-052] French DSNA approach to CNS rationalization & evolution

⁺Jean-Marc Loscos *DSNA/DTI*

Poster Session

- [EN-A-005] **Interactive prediction of airport noise monitoring data based on time-series similarity**
+L. Chen-hui, C. Hai-yan, X. Hua, Y. Li-gang *NCAA*
- [EN-A-010] **Research on the Measure and Division of the Busyness Level of Airspace Waypoints**
+X. Hua, C. Hai-yan, Z. Zheng *NCAA*
- [EN-I-012] **Dynamic En-route Diversion Approach under Convective Weather**
+Y. Peng, X. Dong, X. Jiang, B. Jiang *NCAA*
- [EN-A-030] **Design of Domain Specific Ontology to Avoid Miscommunication between Pilots and Ground Control Operator**
D. Abdullah *Dewan Air Express*
+H. Takahashi *DHA Suffa University*
U. Lakhani *DTS Inc.*
- [EN-A-054] **Research on the architecture of UAV-ATM information platform based on mobile 4G network**
+Z. Geng, +L. Ma, Y. Zhao, W. Li *Civil Aviation University of China*
- [EN-A-057] **Prediction of Flight Time Uncertainty for 4D Trajectory Management**
+A. Motodani, N. Takeichi *Tokyo Metropolitan University*
- [EN-A-068] **Online Trajectory Prediction through Updating Aircraft Position and Aircraft Intent**
J.F. Zhang, +J. Liu, H.B. Zhu, Q. Chen *NCAA*
- [EN-A-069] **Integrated Arrival & Departure Aircraft Sequencing under the Influence of Sequential Flights**
J. F. Zhang, Z. X. Zheng, +X. M. Dai, P. L. Zhao *NCAA*
- [EN-I-089] **Ground and on-board ATM procedures prototyping tools**
+K. Glagovskiy, T. Vladimir, A. Liudomir *State Research Institute of Aviation Systems (GosNIIAS)*