

IWAC2022 Program & Abstracts

Day 1 (Tuesday, 25 October) Hall A+B+C

Time	ID	Title	Presenter	Affiliation
10:30	Opening Remarks		Sonosuke Fukushima	Managing Director for Research Affairs, ENRI
<u>Keynote Speeches</u>				
Chair: Sonosuke Fukushima (Electronic Navigation Research Institute, MPAT)				
10:35	K-1	R&D Activities through Global Collaboration	Tatsuyuki Shimazu	Director General, ENRI
11:00	K-2	Global Positioning and Communication Network Accelerate Innovation in Aerospace Technology	Kojiro Suzuki	President, JSASS
11:40	Lunch Break			
<u>Keynote Speeches</u>				
Chair: Mark Brown (Electronic Navigation Research Institute, MPAT)				
13:20	K-3	The Evolution of CNS/ATM to tackle Resilience and Environmental Challenges (TBD)	Stephen Creamer	Director, Air Navigation Bureau, ICAO
14:00	K-4	Information-Centric Aviation – Global Opportunities for 2035.	Steve Bradford	Chief Scientist, Office of NextGen, FAA
14:40	K-5	Decarbonization and the Contribution of CARATS	Takashi Kudo	Director-General, Air Navigation Services Department, JCAB
15:20	Coffee Break			
<u>Keynote Speeches</u>				
Chair: Mark Brown (Electronic Navigation Research Institute, MPAT)				
15:40	K-6	Delivering the Digital European Sky	Andreas Boschen	Executive Director, SESAR 3 JU
16:20	K-7	Recent developments in European and International Aviation Standardisation	Anna von Groote	Director General, EUROCAE
17:00	K-8	Research Projects for Achieving Carbon Neutrality at National Institute of Maritime, Port and Aviation Technology (MPAT)	Yoshiaki Kuriyama	President, MPAT

IWAC2022 Program & Abstracts

Day 2 (Wednesday, 26 October) Hall A

Time	ID	Title	Presenter	Affiliation
<u>Technical Session 1 - Communication and Navigation Systems</u>				
Chair: Akiko Kohmura (Electronic Navigation Research Institute, MPAT)				
9:30	T1-1-A	A Secure Ground Handover Protocol for LDACS	Nils Mäurer	German Aerospace Center (DLR)
10:00	T1-2-I	LDACS Validation Activity in ENRI and Cooperation with DLR	Kazuyuki Morioka	Electronic Navigation Research Institute, MPAT
10:30	T1-3-I	Observation of sporadic E using aeronautical navigation radio for instrument landing system	Shumpei Tabuchi	University of Electro-Communications
11:00 Coffee Break				
<u>Technical Session 4 - Radio Propagation Analysis</u>				
Chair: Junichi Honda (Electronic Navigation Research Institute, MPAT)				
11:15	T4-1-A	Air-Ground SWIM Demonstration over Extended AeroMACS - Tracking, antenna placement and handover evaluations -	Kazuyuki Morioka	Electronic Navigation Research Institute, MPAT
11:45	T4-2-A	On the Imaging of Large Antenna Array Navigation Systems	Robert Geise	Technische Universität Braunschweig
12:15	T4-3-A	Investigating the Impact of Dynamic Scatterers on Transmission Channels - A Case Study of the Propeller Aircraft Airbus A400M in the context of the Instrument Landing System	Altan Akar	Technische Universität Braunschweig
12:45 Lunch Break				
Invited Speeches at Hall B				
16:00 Coffee Break				
<u>Technical Session 7 - Surveillance Systems</u>				
Chair: Junichi Naganawa (Electronic Navigation Research Institute, MPAT)				
16:15	T7-1-A	Airport Runway Area Segmentation in PolSAR Image Based D-Unet Network	Yufan Liang	Civil Aviation University of China
16:45	T7-2-A	Preliminary study on multilateration Performance for El Salvador's international Airport	Lizardo Arias	University of El Salvador

IWAC2022 Program & Abstracts

Day 2 (Wednesday, 26 October) Hall B

Time	ID	Title	Presenter	Affiliation
Technical Session 2 Airport 1				
Chair: Yoichi Nakamura (Electronic Navigation Research Institute, MPAT)				
9:30	T2-1-A	Variable Taxi-Out Time Prediction Based on Machine Learning with Interpretable Attributes	Yixiang Lim	Nanyang Technological University
10:00	T2-2-A	Synthetic Training of Neural Networks for Semantic Segmentation of LiDAR Point Clouds	Michael Schultz	Universität der Bundeswehr München
10:30	T2-3-A	Predicting Passenger Flow at Charles De Gaulle Airport using Dense Neural Networks	Alexis Brun	Ecole Nationale de l'Aviation Civile
11:00 Coffee Break				
Technical Session 5 Airport 2				
Chair: Midori Tanino (Federal Aviation Administration)				
11:15	T5-1-A	Air-rail timetable synchronization for a seamless passenger journey	Clara Buire	Ecole Nationale de l'Aviation Civile
11:45	T5-2-A	Machine Learned Prediction of Runway Configuration Transition Times for Capacity Analysis	Jun Guang Andy Lam	Saab-NTU Joint Research Lab
12:15	T5-3-A	Towards Greener Airport Surface Operations: A Reinforcement Learning Approach for Autonomous Taxiing	Sameer Alam	Nanyang Technological University
12:45 Lunch Break				
Invited Speeches				
Chair: Mark Brown (Electronic Navigation Research Institute, MPAT)				
14:30	I-1	JAL's DX initiatives at the Innovation Lab	Sachiko Hiramatsu	Japan Airlines Co.,Ltd
15:00	I-2	4D Trajectory Based Operations	Thierry Harquin	AIRBUS
15:30	I-3	Wake Energy Retrieval: an environmental opportunity for aviation	Philippe Masson	AIRBUS
16:00 Coffee Break				
Technical Session 8 Remotely Piloted Aircraft Systems				
Chair: Hamsa Balakrishnan (Massachusetts Institute of Technology)				
16:15	T8-1-A	Potential operational consequences of the use of ACAS Xu in controlled airspace	Christian Aveneau	Direction des Services de la Navigation Aérienne
16:45	T8-2-I	Risk-based Approach to UAS Traffic Management System Development in South Korea	Younsil Kim	Korea Aerospace Research Institute

IWAC2022 Program & Abstracts

Day 2 (Wednesday, 26 October) Hall C

Time	ID	Title	Presenter	Affiliation
Technical Session 3 Global Navigation Satellite Systems Chair: Keisuke Hosokawa (University of Electro-Communications)				
9:30	T3-1-A	Identification and Operational Impact Analysis of GNSS RFI Based on Flight Crew Reports and ADS-B Data	Patric Fol	Zurich University of Applied Sciences
10:00	T3-2-A	Impact of GNSS Outage on Mid-Air Collision Risk	Benoit Figuet	Zurich University of Applied Sciences
10:30	T3-3-A	Preliminary Evaluations of User Positioning Errors in DFMC SBAS Demo at Thailand Location	Somkit Sophan	King Mongkut's Institute of Technology Ladkrabang
11:00	Coffee Break			
Technical Session 6 Air Traffic Management 1 Chair: Dirk Kügler (German Aerospace Center)				
11:15	T6-1-A	Considering TMA holding uncertainty into in-flight trajectory optimisation	David de la Torre Sangrà	Universitat Politècnica de Catalunya
11:45	T6-2-A	A Study of Robustness Between Two Strategic 4D Trajectory Plannings	Paveen Juntama	Ecole Nationale d'Aviation Civile
12:15	T6-3-A	Slot allocation in a multi-airport system under flying time uncertainty	Chang Liu	Nanjing University of Aeronautics and Astronautics
12:45	Lunch Break			
Invited Speeches at Hall B				
16:00	Coffee Break			
Technical Session 9 Air Traffic Management 2 Chair: Daniel Delahaye (Ecole Nationale de l'Aviation Civile)				
16:15	T9-1-A	Dynamic Airborne Delay Buffer Selection for Efficient Air Traffic Flow Management	Adriana Andreeva-Mori	Japan Aerospace Exploration Agency
16:45	T9-2-A	Non-CO2 Market-Based Incentives Towards Robust Climate Optimal Aircraft Trajectories	Abolfazl Simorgh	Universidad Carlos III de Madrid
17:15	T9-3-A	Research on CDO Trajectory Optimization Based on Cost Index using Gaussian Pseudospectral Method	Gong Fengxun	Civil Aviation University of China

IWAC2022 Program & Abstracts

Day 3 (Thursday, 27 October) Hall A

Time	ID	Title	Presenter	Affiliation
Technical Session 10 Urban Air Mobility / Human Factor				
Chair: Naoki Matayoshi (Japan Aerospace Exploration Agency)				
9:30	T10-1-A	Automatic speech recognition in noise polluted cockpit environments for monitoring the approach briefing in commercial aviation	Jonas Füllgraf	Technische Universität Braunschweig
10:00	T10-2-I	UAM Vision Towards the 2030s in Japan	Yuki Horie	ANA HOLDINGS INC.
10:30	T10-3-I	NASA Sky For All Vision for 2045 NAS Transformation	Akbar Sultan	National Aeronautics and Space Administration
11:00 Coffee Break				
Organized Session 1 at Hall B				
12:45 Lunch Break				
Organized Session 2 at Hall B				
16:30 Coffee Break				
Closing Remarks at Hall B				

IWAC2022 Program & Abstracts

Day 3 (Thursday, 27 October) Hall B

Time	ID	Title	Presenter	Affiliation
Special Session SWIM Introductory Talk and Panel Discussion				
Chair: Navinda Kithmal Wickramasinghe (Electronic Navigation Research Institute, MPAT)				
9:30	T14-1-A	SWIM Based Trajectory Coordination to Achieve Strategic Planning and Collaborative Decision Making	Xiaodong Lu	Electronic Navigation Research Institute, MPAT
10:00	T14-2-I	Multi-Regional Trajectory Based Operations (MR TBO) Demonstrations – Selected Lessons Learned	Nabil Sandhu	Federal Aviation Administration
10:30	T14-3-I	Validating Trajectory-Based Operations (TBO) Operational Values and Capabilities	Daphne Cheong	Civil Aviation Authority of Singapore
11:00 Coffee Break				
Organized Session 1 Electromagnetic Analysis on Aeronautics				
Chair: Naruto Yonemoto (Electronic Navigation Research Institute, MPAT)				
11:15	O1-1	The Difference between Conventional and Doppler VOR – Some Missing Issues	Robert Geise	Leipzig University of Applied Science
11:45	O1-2	Large-scale Numerical Evaluation of Cabin-to-Exterior Propagation Characteristics for Sub-6GHz/5G Using Small Aircraft Model	Takashi Hikage	Hokkaido University
12:15	O1-3	Hybrid Electromagnetic Analysis Methods Suitable for Airport Surfaces in the VHF Band	Atsushi Kezuka	Electronic Navigation Research Institute, MPAT
12:45 Lunch Break				
Organized Session 2 Urban Air Mobility				
Chair: Ryota Mori (Electronic Navigation Research Institute, MPAT)				
14:30	O2-1	Cross fertilization between ATM and UTM	Daniel Delahaye	Ecole Nationale de l'Aviation Civile
15:00	O2-2	Traffic Management Challenges in Advanced Air Mobility	Hamsa Balakrishnan	Massachusetts Institute of Technology
15:30	O2-3	Estimation Methods of the Visual Flight Rules Planned Route for Sharing Preflight Information with Urban Air Mobility	Daichi Toratani	Electronic Navigation Research Institute, MPAT
16:00	O2-4	An Overview of Advanced Air Mobility Research at NASA	Marcus Johnson Jeffrey Homola	NASA Ames Research Center
16:30 Coffee Break				
16:45	Closing Remarks (Awards Ceremony)			

IWAC2022 Program & Abstracts

Day 3 (Thursday, 27 October) Hall C

Time	ID	Title	Presenter	Affiliation
Technical Session 11 Air Traffic Management 3				
Chair: Akinori Harada (Kochi University of Technology)				
9:30	T11-1-A	Exploiting spatio-temporal partial separability of large-scale airspaces	Julien Lavandier	Ecole Nationale de l'Aviation Civile
10:00	T11-2-A	Multi-Aircraft Trajectory Deformation for Uncertain Thunderstorm Avoidance and Conflict Resolution	Eduardo Andrés	Universidad Carlos III de Madrid
10:30	T11-3-A	A Multi-task Learning Approach for Facilitating Dynamic Airspace Sectorization	Wei Zhou	Nanyang Technological University
11:00		Coffee Break		
Technical Session 12 Air Traffic Management 4				
Chair: Hiroko Hirabayashi (Electronic Navigation Research Institute, MPAT)				
11:15	T12-1-I	Free Route Airspace Implementation Efforts in the Latin America and Caribbean Region through Collaboration	Midori Tanino	Federal Aviation Administration
11:45	T12-2-A	Demand Assessment for Climate Optimal Aircraft Trajectories at Network Scale	Fateme Baneshi	Universidad Carlos III de Madrid
12:15	T12-3-A	A Deep Neural Network Approach for Prediction of Aircraft Top of Descent	Qing Cai	Nanyang Technological University Singapore
12:45		Lunch Break		
Technical Session 13 Space Weather				
Chair: Shinji Saitoh (Electronic Navigation Research Institute, MPAT)				
14:30	T13-1-A	Anomalous Long-range Propagation of VHF NAV signals by the sporadic E	Keisuke Hosokawa	University of Electro-Communications
15:00	T13-2-I	DFMC GBAS testbed at Ishigaki, Japan	Susumu Saito	Electronic Navigation Research Institute, MPAT
15:30	T13-3-I	Recent domestic activities and NICT's efforts toward the advancement of space weather forecast	Takuya Tsugawa	National Institute of Information and Communications Technology
16:30		Coffee Break		
Closing Remarks at Hall B				