

# IWAC2024

2024 International Workshop on ATM/CNS

## Workshop Program

November 19-20, 2024

Nakano Central Park Conference, Tokyo, JAPAN



Organizer



Electronic Navigation Research Institute  
ENRI Website >> <https://www.enri.go.jp>

Co-Organizer



The Japan Society for Aeronautical and Space Sciences  
JSASS Website >> <https://www.jsass.or.jp>

## Welcome Message



**Sonosuke Fukushima**

Chair of IWAC2024 Organizing Committee,  
Director General, ENRI

### Welcome to the IWAC2024 International Workshop on ATM/CNS

I am delighted to extend my warmest welcome to all participants of the 2024 International Workshop on ATM/CNS (IWAC2024). It is a great honor to host esteemed attendees, including policymakers, operators, industry stakeholders, researchers, academics, and others committed to advancing global air transportation.

A market analysis shows that in the first quarter of 2024, the airline industry fully recovered, surpassing pre-pandemic passenger traffic levels from 2019. We anticipate that discussions at this workshop on carbon neutrality, next-generation air mobility, digital transformation, advancements in air traffic management, next-generation air traffic and navigation systems, and fundamental technologies will foster innovations that benefit society in the years to come.

Since 2022, this workshop has deepened its ties with the academic community through collaboration with the Japan Society for Aeronautical and Space Sciences (JSASS). In our previous workshop, nine outstanding papers were published in the Transactions of the Japan Society for Aeronautical and Space Sciences, edited by the JSASS. We are pleased to announce that excellent papers from this year's workshop will also be considered for publication in this journal.

On behalf of the organizing committee, I extend my heartfelt thanks to everyone who has supported this event and to all the companies participating in the exhibition. I wish you a productive and enjoyable experience at IWAC2024 and hope you enjoy the beautiful autumn season in Japan.

## Honorary Guest Remarks



**Toshiyuki Onuma**

Senior Deputy Director-General, JCAB

It is my great pleasure and honor to celebrate the holding of 2024 International Workshop on ATM/CNS (IWAC2024). The aviation industry is undergoing rapid transformations driven by technological advancements, emergence of new mobilities, further needs of safety and efficiency enhancement, and correspondence to climate change, security and resilience, and this workshop provides a crucial opportunity for policy makers, stakeholders from industry and academia from around the world to gather, share knowledge, and discuss the future of aviation systems.

This January, we experienced runway incursion accident occurred at Tokyo-Haneda Airport. This unfortunate event has reminded us of our responsibility to further enhance aviation safety and we felt the pressing need to expand the current limit of our aviation system by promoting innovation to prevent such accidents and incidents from recurring. The incorporation of AI technology including automated voice/image recognitions, conflict resolution technologies, and advancements in surveillance technologies are expected to prevent miscommunication and misunderstanding between air traffic controllers and pilots.

At this workshop, I hope that each participant will not only share the latest technological developments and research findings but also foster practical and innovative solutions through collaboration among industry, academia, and government.

I sincerely hope that this workshop will be fruitful for every participant and that you all have a meaningful and productive time here.

Once again, I express my gratitude for the successful organization of this wonderful workshop, and I look forward to your valuable contributions and cooperation.

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## Chair

<b>Naruto Yonemoto</b>	Electronic Navigation Research Institute, MPAT
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## Members

<b>Jesper Bronsvoort</b>	Airservices Australia
<b>Daniel Delahaye</b>	Ecole Nationale de l'Aviation Civile
<b>Shusaku Egami</b>	National Institute of Advanced Industrial Science and Technology
<b>Thomas Feuerle</b>	Technische Universität Braunschweig
<b>Mark Hansen</b>	University of California, Berkley
<b>Akinori Harada</b>	Kyushu University
<b>Keisuke Hosokawa</b>	The University of Electro-Communications
<b>Daisuke Karikawa</b>	Tohoku University
<b>Dirk Kuegler</b>	German Aerospace Center (DLR)
<b>Xiaodong Lu</b>	Electronic Navigation Research Institute, MPAT
<b>Naoki Matayoshi</b>	Japan Aerospace Exploration Agency
<b>Ryota Mori</b>	Kobe University
<b>Joseph Post</b>	University of South Florida
<b>Xavier Prats</b>	Universitat Politècnica de Catalunya
<b>Noboru Takeichi</b>	Tokyo Metropolitan University
<b>Midori Tanino</b>	Federal Aviation Administration
<b>Daichi Toratani</b>	Electronic Navigation Research Institute, MPAT
<b>Craig Wanke</b>	The MITRE Corporation
<b>Takayuki Yoshihara</b>	Electronic Navigation Research Institute, MPAT

# Program at a Glance

Day 1 : Tuesday, November 19

# Program at a Glance

Day 2 : Wednesday, November 20

	Hall
10:00-10:05	<b>Opening Remarks</b> <b>Sonosuke Fukushima</b> Chair, IWAC2024 Organizing Committee Director General, ENRI
10:05-10:10	<b>Honorary Guest Remarks</b> <b>Toshiyuki Onuma</b> Senior Deputy Director-General, JCAB
10:10-10:40	<b>Keynote 1</b> <b>Pascal Luciani</b> Deputy Director, Air Navigation and Aviation Safety, Air Navigation Bureau, ICAO
10:40-11:10	<b>Keynote 2</b> <b>Norihiro Ishizaki</b> Director-General, Air Navigation Services Department, JCAB
11:10-11:25	Coffee Break
11:25-11:55	<b>Keynote 3</b> <b>Jessica Sypniewski</b> Deputy Assistant Administrator for NextGen, FAA Headquarters
11:55-12:25	<b>Keynote 4</b> <b>David Batchelor</b> Chief External Affairs and Communication, SESAR 3 Joint Undertaking
12:25-14:00	Lunch
14:00-14:30	<b>Invited Speech 1</b> <b>Anna von Groote</b> Director General, EUROCAE
14:30-15:00	<b>Invited Speech 2</b> <b>Rebecca Morrison</b> Senior Director, Standards and Technologies, RTCA, Inc.
15:00-15:30	<b>Invited Speech 3</b> <b>Akbar Sultan</b> Director, Airspace Operations and Safety Program, Mary W. Jackson NASA Headquarters
15:30-15:45	Coffee Break
	Room 1      Room 2      Room 3
15:45-17:45	Technical Session 1 Advanced Air Traffic Operations and Management 1
	Technical Session 2 Prediction and Resilience
	Technical Session 3 Surveillance Systems
18:00-19:00	Welcome cocktail

	Hall A	Hall B	Hall C
9:30-11:00	Technical Session 4 Advanced Air Traffic Operations and Management 2	Technical Session 5 Human Factors	Technical Session 6 Communication and Navigation Systems 1
11:00-11:15	Coffee Break		
11:15-12:45	Technical Session 7 Advanced Air Traffic Operations and Management 3	Technical Session 8 Airport Operations	Technical Session 9 Communication and Navigation Systems 2
12:45-14:30	Lunch		
14:30-16:30	Organized Session 1 Trajectory Based Operations	Organized Session 2 Operational Safety for UAS and UAM	Organized Session 3 Space Weather
16:30-16:45	Coffee Break		
16:45-17:00	<b>Closing Remarks</b> Awards Ceremony		

**Presentation number stands for:**

**T3-1-A**

Technical Session 3      A: Academic Category  
Presentation order      I: Interchange Category

# Keynote Speakers

⟨ Keynote Speech 1 ⟩



## Pascal Luciani

Deputy Director, Air Navigation and Aviation Safety, Air Navigation Bureau, International Civil Aviation Organization, United Nations

Pascal Luciani is an engineer with 25 years of experience in transport in the civil administration of France and international organizations, 15 years of which in civil aviation.

Prior to joining ICAO as Deputy Director for Air Navigation and Aviation Safety, he served as Deputy Director for the French Safety Oversight Authority from 2018 to 2022. From 2014 to 2018 Pascal was the Aviation Counselor at the Permanent Representation for France with the European Union, covering all fields of aviation and was also responsible for Shipping. In 2008 he was tasked with creating the Sustainable Aviation Department, DGAC, France, which he headed from 2008 to 2013.

# Keynote Speakers

⟨ Keynote Speech 3 ⟩



## Jessica Sypniewski

Deputy Assistant Administrator for NextGen  
FAA Headquarters  
Washington D.C.

As the Deputy Assistant Administrator for NextGen, Jessica Sypniewski [sip-nyef-ski] provides executive leadership, direction, and oversight of the modernization of the National Airspace System. Ms. Sypniewski develops and delivers business

and strategic plans for FAA programs and operations; develops the architecture of the National Airspace System (NAS); analyzes system performance; engages in and oversees scientific research activities; and maintains liaison with stakeholders and international organizations. She also oversees the William J. Hughes Technical Center services, assures internal controls meet FAA standards, and provides leadership in overall resource planning for short and long-term organizational goals.

⟨ Keynote Speech 2 ⟩



## Norihiro Ishizaki

Director-General, Air Navigation Services Department, JCAB

ISHIZAKI Norihiro is the Director-General of the Air Navigation Services Department, Civil Aviation Bureau (JCAB), Ministry of Land, Infrastructure, Transport and Tourism (MLIT), Japan since July 2024. He graduated from University of Tokyo. After joining MLIT, he became Deputy Director of General Affairs Division, Senior Planning Officer for Policy Evaluation and Director of Air Navigation Services Planning Division in 2020 before taking over his present position. He is now responsible for aviation policy and implementation planning in the field of Air Navigation Services.

⟨ Keynote Speech 4 ⟩



## David Batchelor

Chief External Affairs and Communication, SESAR 3 Joint Undertaking

David Batchelor is Chief External Affairs & Communication at the SESAR Joint Undertaking, the European Union's air traffic management research and innovation partnership charged with delivering the Digital European Sky. He is responsible for communication activities, stakeholder relations and international

affairs.

He originally joined the SESAR JU in 2012 as Liaison Officer with the FAA NextGen programme, based in Washington DC. He worked previously at the European Commission on aviation and environment, and on air transport liberalisation. He began his career at the UK CAA as an economist, and graduated from Oxford University.

# Invited Speakers

## < Invited Speech 1 >



### Anna von Groote

Director General, EUROCAE

Anna von Groote was appointed EUROCAE Director General in 2022. She joined the EUROCAE Secretariat in 2011 as Technical Programme Manager, then became the Director Technical Programme overseeing and managing all EUROCAE standardisation activities and other responsibilities within the organisation. Before joining EUROCAE, Anna worked at the European Committee for Standardization (CEN) since 2006, where she assumed responsibilities for the organisation's work programme in different sectors. In her role as Programme Manager she was responsible amongst others for the aerospace and air traffic management sectors.

## < Invited Speech 2 >



### Rebecca Morrison

Senior Director, Standards and Technologies, RTCA, Inc.

Rebecca Morrison joined RTCA in 2016 and is currently Senior Director of Standards and Technologies at RTCA. She leads a team of program directors who are responsible for managing technical committees who develop global, enduring, consensus-based standards which support regulators' certification requirements. Among her responsibilities, Ms. Morrison serves as the program director for committees who develop foundational RTCA standards notably DO-160, DO-254, and DO-178. She is also supporting the creation of a new guidance document for capturing requirements for spectrum use in aviation standards.

## < Invited Speech 3 >



### Akbar Sultan

Director, Airspace Operations and Safety Program, Mary W. Jackson NASA Headquarters

Mr. Sultan is Director of the Airspace Operations and Safety Program, responsible for senior executive leadership of NASA's research portfolio in airspace operations, vehicle command and control, sustainability, and safety technologies on commercial aviation, Advanced Air Mobility, Autonomy, and Wildfire Management. He is also responsible for aviation safety for aircraft state awareness, prevention of loss of control, verification and validation of complex systems, prognostic safety, and in-time system wide safety assurance. He is leading mid-century NASA Sky For All vision to transition to a digital service-oriented architecture that is prognostic, collaborative, scalable, and dynamically adaptive for all future users.

# Technical Sessions

Day 1 : Tuesday, November 19  
15:45 - 17:45

## Technical Session 1 Room 1 Advanced Air Traffic Operations and Management 1

### T1-1-A Air traffic classification using convolutional neural networks

\*Adrien Marque<sup>1</sup>, Daniel Delahaye<sup>2</sup>, Pierre Maréchal<sup>3</sup>, Isabelle Berry<sup>1</sup>

<sup>1</sup> Cerveau et Cognition (CerCo UMR5549) (France), <sup>2</sup> Ecole Nationale de l'Aviation Civile (ENAC) (France), <sup>3</sup> Institut de Mathématiques de Toulouse (France)

### T1-2-I CADENA's Contingency Management Approach

\*Midori Tanino<sup>1</sup>

<sup>1</sup> Federal Aviation Administration (United States of America)

### T1-3-I A Co-simulation Environment for ATM/UTM Demonstrations

\*Yan Xu<sup>1,2</sup>, Junjie Zhao<sup>1</sup>, Tingyu Gong<sup>1</sup>, Christantus Nnamani<sup>1</sup>, Antonios Tsourdos<sup>1</sup>

<sup>1</sup> Cranfield University (UK), <sup>2</sup> Beihang University (China)

### T1-4-I Air Traffic Flow Management and Collaborative Decision-Making in the United States of America

\*Almira Ramadani<sup>1</sup>

<sup>1</sup> Federal Aviation Administration (United States of America)

## Technical Session 2 Room 2

## Prediction and Resilience

### T2-1-A Classification prediction of air traffic flow based on CNN-GRU model driven by multi-source data

\*Yang Zeng<sup>1</sup>, Minghua Hu<sup>1</sup>, Ligang Yuan<sup>1</sup>, Haiyan Chen<sup>2</sup>, Ranran Shang<sup>1</sup>, Huipeng Liu<sup>1</sup>

<sup>1</sup> College of Civil Aviation, Nanjing University of Aeronautics and Astronautics (China), <sup>2</sup> College of Computer Science and Technology, Nanjing University of Aeronautics and Astronautics (China)

### T2-2-A Strategic Path Change Maneuvers for Weather Obstacle Avoidance in Aviation

\*Jean-Claude Lebègue<sup>1</sup>, Andréas Guitart<sup>2</sup>, Daniel Delahaye<sup>2</sup>, Jacco Hoekstra<sup>3</sup>

<sup>1</sup> Sopra Steria (France), <sup>2</sup> Ecole Nationale de l'Aviation Civile (ENAC) (France), <sup>3</sup> TU Delft (Netherlands)

### T2-3-A RecovAir: Model-Driven Airline Scheduling Tool for Disruption Recovery

\*Michael Peng<sup>1</sup>, Max Zhaoyu Li<sup>1</sup>

<sup>1</sup> University of Michigan (United States of America)

## Technical Session 3 Room 3

## Surveillance Systems

### T3-1-A Test Equipment for TDOA-based ADS-B Position Verification

\*Junichi Naganawa<sup>1</sup>, Yasuyuki Kakubari<sup>1</sup>, Tadashi Koga<sup>1</sup>

<sup>1</sup> Electronic Navigation Research Institute (Japan)

### T3-2-A An Evaluation Process of ADS-B Message and Statistical Evaluation

\*Keisuke Matsunaga<sup>1</sup>, Junichi Honda<sup>1</sup>

<sup>1</sup> Electronic Navigation Research Institute (Japan)

### T3-3-A A Study on a Multistatic Radar System with Software Defined Radio

\*Nikolai Mareev<sup>1</sup>, Ola Bidhan<sup>1</sup>, Konstantin Schmidt<sup>1</sup>, Robert Geise<sup>1</sup>, Michael Einhaus<sup>1</sup>

<sup>1</sup> Hochschule für Technik, Wirtschaft und Kultur Leipzig (Germany)

### T3-4-I RCS measurement of small drones for future airport surveillance radar

\*Gaku Sato<sup>1</sup>, Naruto Yonemoto<sup>1</sup>, Junichi Honda<sup>1</sup>, Kazuyuki Morioka<sup>1</sup>

<sup>1</sup> Electronic Navigation Research Institute (Japan)

# Technical Sessions

Day 2 : Wednesday, November 20  
9:30 - 11:00

## Technical Session 4 / Hall A Advanced Air Traffic Operations and Management 2

### T4-1-A High-fidelity aircraft trajectory generation using flow-based generative model

\*Haruki Matsuda<sup>1,2</sup>, Naoya Takeishi<sup>2</sup>, Takehisa Yairi<sup>2</sup>

<sup>1</sup> Aviation Technology Directorate, Japan Aerospace Exploration Agency (JAXA) (Japan), <sup>2</sup> Department of Aeronautics and Astronautics, The University of Tokyo (Japan)

### T4-2-A Voronoi diagrams and Simulated Annealing for airspace block optimization

\*Andréas Guitart<sup>1</sup>, Julien Lavandier<sup>1</sup>, Daniel Delahaye<sup>1</sup>

<sup>1</sup> Ecole Nationale de l'Aviation Civile (ENAC) (France)

### T4-3-A Terminal area flight trajectory clustering based on deep autoencoding gaussian mixture model

\*Huipeng Liu<sup>1,2</sup>, Minghua Hu<sup>1,2</sup>, Yi Zhou<sup>1,2</sup>, Ranran Shang<sup>1,2</sup>, Yumeng Ren<sup>1,2</sup>, Yang Zeng<sup>1,2</sup>, Lei Yang<sup>1,2</sup>

<sup>1</sup> Nanjing University of Aeronautics and Astronautics (China), <sup>2</sup> State Key Laboratory of Air Traffic Management System (China)

## Technical Session 5 / Hall B

### Human Factors

#### T5-1-A Evaluating Air Traffic Complexity via Human-In-The-Loop Simulation Experiments: Novel Metrics for Air Traffic Controllers

\*Daiki Iwata<sup>1</sup>, Katsuhiro Sekine<sup>2</sup>, Philippe Bouchaudon<sup>3</sup>, Eri Itoh<sup>1,4</sup>

<sup>1</sup> The University of Tokyo (Japan), <sup>2</sup> Tokyo University of Science (Japan), <sup>3</sup> EUROCONTROL (France), <sup>4</sup> Electronic Navigation Research Institute (Japan)

#### T5-2-A Team Task Modeling on En-route Air Traffic Controllers with Communicative NGOMSL

\*Sungju Maeng<sup>1</sup>, Haruhi Nishida<sup>1</sup>, Hiroko Hirabayashi<sup>2</sup>, Takashi Imuta<sup>2</sup>, Makoto Itoh<sup>3</sup>

<sup>1</sup> Degree Program in Risk and Resilience Engineering, University of Tsukuba (Japan), <sup>2</sup> Electronic Navigation Research Institute (Japan), <sup>3</sup> Institute of Systems and Information Engineering, Center for Artificial Intelligence Research, University of Tsukuba (Japan)

#### T5-3-I A Modeling of the Relationship between Severe Weather and Controller Workload with Gaussian Process Regression

\*Atsushi Senoguchi<sup>1</sup>, Hiroko Hirabayashi<sup>1</sup>

<sup>1</sup> Electronic Navigation Research Institute (Japan)

## Technical Session 6 / Hall C

### Communication and Navigation Systems 1

#### T6-1-A Assessment of Ionospheric modelling for Multi-Constellation GNSS based on the time-step method and a CORS Network

\*Efren Martin Alban Cuestas<sup>1</sup>, Pornchai Supnithi<sup>1</sup>, Susumu Saito<sup>2</sup>, Jirapoom Budtho<sup>1</sup>

<sup>1</sup> King Mongkut's Institute of Technology Ladkrabang (Thailand), <sup>2</sup> Electronic Navigation Research Institute (Japan)

#### T6-2-A DFMC GBAS Performance Evaluation by Flight Experiment

\*Susumu Saito<sup>1</sup>, Takayuki Yoshihara<sup>1</sup>

<sup>1</sup> Electronic Navigation Research Institute (Japan)

#### T6-3-I Utilizing DFMC SBAS broadcasted from QZSS in Polar Region

\*Toru Takahashi<sup>1</sup>, Takanori Nishiyama<sup>2,3</sup>, Mitsunori Kitamura<sup>1</sup>, Taishi Hashimoto<sup>2,3</sup>, Susumu Saito<sup>1</sup>, Takeyasu Sakai<sup>1,4</sup>

<sup>1</sup> Electronic Navigation Research Institute (Japan), <sup>2</sup> National Institute of Polar Research (Japan), <sup>3</sup> School of Multidisciplinary Sciences Department of Polar Science, The Graduate University for Advanced Studies, Sokendai (Japan), <sup>4</sup> Technology and Logistics, Graduate School of Marine Science and Technology, Tokyo University of Marine Science and Technology (Japan)

# Technical Sessions

Day 2 : Wednesday, November 20  
11:15 - 12:45

## Technical Session 7 / Hall A Advanced Air Traffic Operations and Management 3

### T7-1-A Early Design Validation Process for Flight Deck Display Format

\*Yoichi Yamai<sup>1</sup>, Makoto Itoh<sup>2</sup>, Marie-Pierre Pacaux-Lemoine<sup>3</sup>

<sup>1</sup> Degree Program on Risk and Resilience Engineering, Tsukuba University (Japan), <sup>2</sup> Institute of Systems and Information Engineering, Tsukuba University (Japan), <sup>3</sup> Polytechnique Hauts-de-France University (France)

### T7-2-A Enhancing Low Altitude Integrated Operations with Multi-layer Operation Volume Deviation Alerts

\*Adriana Andreeva-Mori<sup>1</sup>

<sup>1</sup> Japan Aerospace Exploration Agency (JAXA) (Japan)

### T7-3-A Investigating Moving Sectors and Complexity Metrics in Japanese Airspace

Simon Bruno Göppel<sup>1</sup>, Michael Schultz<sup>1</sup>, Koji Tominaga<sup>2</sup>, \*Eri Itoh<sup>2</sup>

<sup>1</sup> University of the Bundeswehr Munich (Germany), <sup>2</sup> The University of Tokyo (Japan)

## Technical Session 8 / Hall B

### Airport Operations

#### T8-1-A Go-Around Prediction Modelling: A Comparison of Two Airports

\*Mark Hansen<sup>2</sup>, Ke Liu<sup>2</sup>, Kaijing Ding<sup>2</sup>, Lu Dai<sup>2</sup>, Abigail Malakun<sup>2</sup>, John Schade<sup>1</sup>, Kennis Chan<sup>1</sup>

<sup>1</sup> ATAC Corporation (United States of America), <sup>2</sup> UC Berkeley (United States of America)

#### T8-2-A Reinforcement Learning for Collaborative Multi-Airport Slot Re-Allocation Under Reduced Capacity Scenarios

\*Anh Nguyen-Duy<sup>1</sup>, Duc-Thinh Pham<sup>1</sup>

<sup>1</sup> Nanyang Technological University (Singapore)

#### T8-3-A Effective Management of Airport Security Queues with Passenger Reassignment

Shangqing Cao<sup>1</sup>, Aparimit Kasliwal<sup>1</sup>, Masoud Reihanifar<sup>1,2</sup>, Francesc Robusté<sup>2</sup>, \*Mark Hansen<sup>1</sup>

<sup>1</sup> University of California, Berkeley (United States of America), <sup>2</sup> Technical University of Catalonia BarcelonaTech (UPC) (Spain)

## Technical Session 9 / Hall C

### Communication and Navigation Systems 2

#### T9-1-A Preliminary EMC test between LDACS and XPDR for small aircraft

\*Kazuyuki Morioka<sup>1</sup>, Akiko Kohmura<sup>1</sup>, Naruto Yonemoto<sup>1</sup>, Junichi Naganawa<sup>1</sup>, Junichi Honda<sup>1</sup>, Takuya Otsuyama<sup>1</sup>, Tadashi Koga<sup>1</sup>

<sup>1</sup> Electronic Navigation Research Institute (Japan)

#### T9-2-I Scribe NLP : Unleashing the potential of ATC Voice Communication

\*Fabien Betouret Candau<sup>1</sup>, Jeremi Carol<sup>1</sup>, Sylvain Martin<sup>1</sup>, Thomas Roques<sup>1</sup>

<sup>1</sup> DGAC / DSNA / DTI (France)

#### T9-3-A In-Situ Nearfield Flight Inspection of a Glide-Slope System with a UAV

\*Robert Geisel<sup>1</sup>, Bjoern Neubauer<sup>2</sup>, Altan Akar<sup>2</sup>, Alexander Weiss<sup>2</sup>, Torsten Fritzl<sup>3</sup>, Ruediger Strauss<sup>3</sup>

<sup>1</sup> University of Applied Science HTWK Leipzig (Germany), <sup>2</sup> University of Braunschweig, Institute for EMC (Germany),

<sup>3</sup> AeroXess GmbH (Germany)

# Organized Sessions

Day 2 : Wednesday, November 20  
14:30 - 16:30

# Exhibitions

## Organized Session 1 / Hall A

### Trajectory Based Operations

#### O1-1-A SWIM-based Collaborative Information Exchange to Ensure Consistency of Air-Ground 4D Trajectory for Connected Aircraft

\*Xiaodong Lu<sup>1</sup>, Kazuyuki Morioka<sup>1</sup>, Naoki Kanada<sup>1</sup>, Naruto Yonemoto<sup>1</sup>, Akiko Kohmura<sup>1</sup>

<sup>1</sup> Electronic Navigation Research Institute (Japan)

#### O1-2-I Exploration of Connected Aircraft Trajectory Information (CATI)

\*Richard Jehlen<sup>1</sup>, Diana Liang<sup>2</sup>, Nabil Sandhu<sup>2</sup>

<sup>1</sup> LS Technologies, LLC (United States of America), <sup>2</sup> FAA (United States of America)

#### O1-3-I EFB Innovations from Mission Support to Trajectory Based Operations

\*Sherry Yang<sup>1</sup>

<sup>1</sup> The Boeing Company (United States of America)

#### O1-4-I A Concept for Air Traffic Management Performance Balancing in Trajectory-Based Operations with Collaborative Decision Making

\*Mark Brown<sup>1</sup>, Akinori Murata<sup>1</sup>, Hiroko Hirabayashi<sup>1</sup>, Takashi Imuta<sup>1</sup>

<sup>1</sup> Electronic Navigation Research Institute (Japan)

## Organized Session 2 / Hall B

### Operational Safety for UAS and UAM

#### O2-1-I NASA's Advanced Air Mobility Research

\*Cheryl Quinn<sup>1</sup>

<sup>1</sup> NASA (United States of America)

#### O2-2-I Modeling Ground and Air Risk of Drone Operation under NEDO ReAMO Projects

\*Hiroko Nakamura<sup>1</sup>, Shinji Nakadai<sup>2</sup>

<sup>1</sup> The University of Tokyo (Japan), <sup>2</sup> Intent Exchange Inc. (Japan)

#### O2-3-I Collision Risk Model for Unmanned Aerial Systems

Junichi Naganawa<sup>1</sup>, \*Ryota Mori<sup>2</sup>

<sup>1</sup> Electronic Navigation Research Institute (Japan), <sup>2</sup> Kobe University (Japan)

#### O2-4-I Enhancing Safety in UAM Corridors: A Self-Separation Scheme Utilizing Estimated Arrival Times at Constraint Waypoints

\*Sasinee Pruekprasert<sup>1</sup>, Shinji Nakadai<sup>2</sup>

<sup>1</sup> National Institute of Advanced Industrial Science and Technology (Japan), <sup>2</sup> Intent Exchange, Inc. (Japan)

#### O2-5-I Ground Risk Assessment for Safety Operation of UAS

\*Shinji Nakadai<sup>1</sup>, Artur Goncalves<sup>2</sup>, Bastien Rigault<sup>2</sup>, Helmut Prendinger<sup>2</sup>

<sup>1</sup> Intent Exchange, Inc.(Japan), <sup>2</sup> National Institute of Informatics (Japan)

## Organized Session 3 / Hall C

### Space Weather

#### O3-1-I A Discussion of the Threshold for Issuing Space Weather Advisories at ICAO

\*Mamoru Ishii<sup>1,2</sup>, Michi Nishioka<sup>1</sup>, Takuya Tsugawa<sup>1</sup>

<sup>1</sup> National Institute of Information and Communications Technology (Japan), <sup>2</sup> Institute for Space-Earth Environmental Research, Nagoya University (Japan)

#### O3-2-I Status of ICAO Space Weather Advisory Issuances, Including Large-Scale Space Weather Events in May 2024

\*Chihiro Tao<sup>1</sup>, Takuya Tsugawa<sup>1</sup>, Mamoru Ishii<sup>1,2</sup>, Susumu Saito<sup>3</sup>

<sup>1</sup> National Institute of Information and Communications Technology (Japan), <sup>2</sup> Nagoya Univ. (Japan), <sup>3</sup> Electronic Navigation Research Institute (Japan)

#### O3-3-I Research Collaboration on Ionospheric Irregularities in Low-Latitude Region and Effects on Positioning and Navigation System

Pornchai Supnithi<sup>1</sup>, \*Jirapoom Budtho<sup>1</sup>, Lin Min Min Myint<sup>1</sup>, Keisuke Hosokawa<sup>2</sup>, Susumu Saito<sup>3</sup>, Septi Perwitasari<sup>4</sup>, Michi Nishioka<sup>4</sup>, Takuya Tsugawa<sup>4</sup>

<sup>1</sup> King Mongkut's Institute of Technology Ladkrabang (Thailand), <sup>2</sup> University of Electro-Communications (Japan), <sup>3</sup> Electronic Navigation Research Institute (Japan), <sup>4</sup> National Institute of Information and Communications Technology (Japan)

#### O3-4-I Observations of equatorial plasma bubble using aeronautical navigation radio waves at VHF frequencies

\*Keisuke Hosokawa<sup>1</sup>, Susumu Saito<sup>2</sup>, Hiroyuki Nakata<sup>3</sup>, Chien-Hung Lin<sup>4</sup>, Jia-Ting Lin<sup>4</sup>, Pornchai Supnithi<sup>5</sup>, Jirapoom Budtho<sup>5</sup>, Jun Sakai<sup>1</sup>, Toru Takahashi<sup>2</sup>, Ichiro Tomizawa<sup>1</sup>, Michi Nishioka<sup>6</sup>, Takuya Tsugawa<sup>6</sup>, Mamoru Ishii<sup>6</sup>

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## Booth 1

PCCW Global Limited

## Booth 2

VariFlight

## Booth 3

Hitachi Kokusai Electric Inc.

## Booth 4

Japan Radio Co., Ltd.

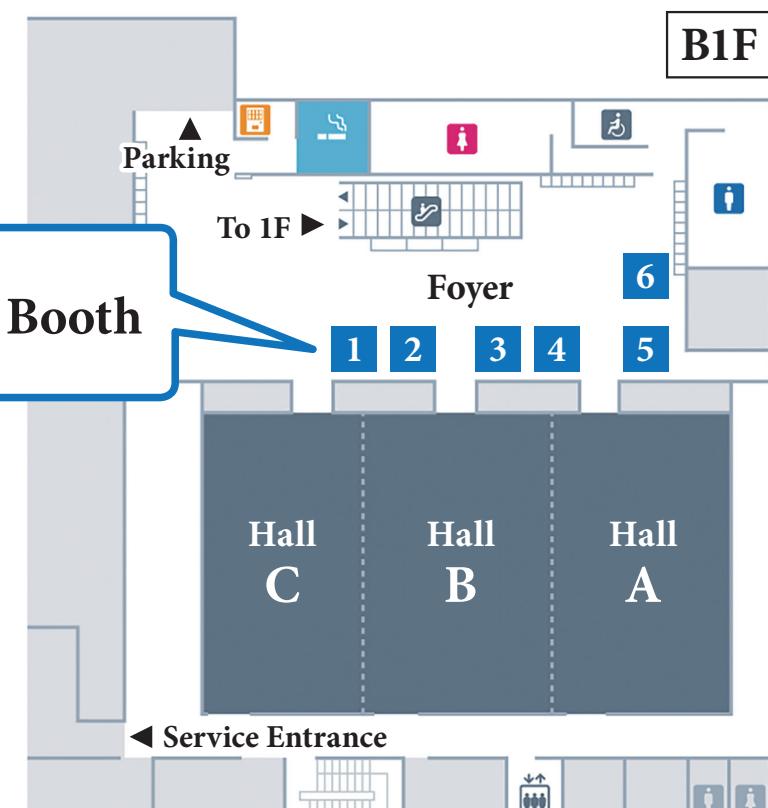
## Booth 5

DSNA - Direction des Services de la Navigation Aérienne

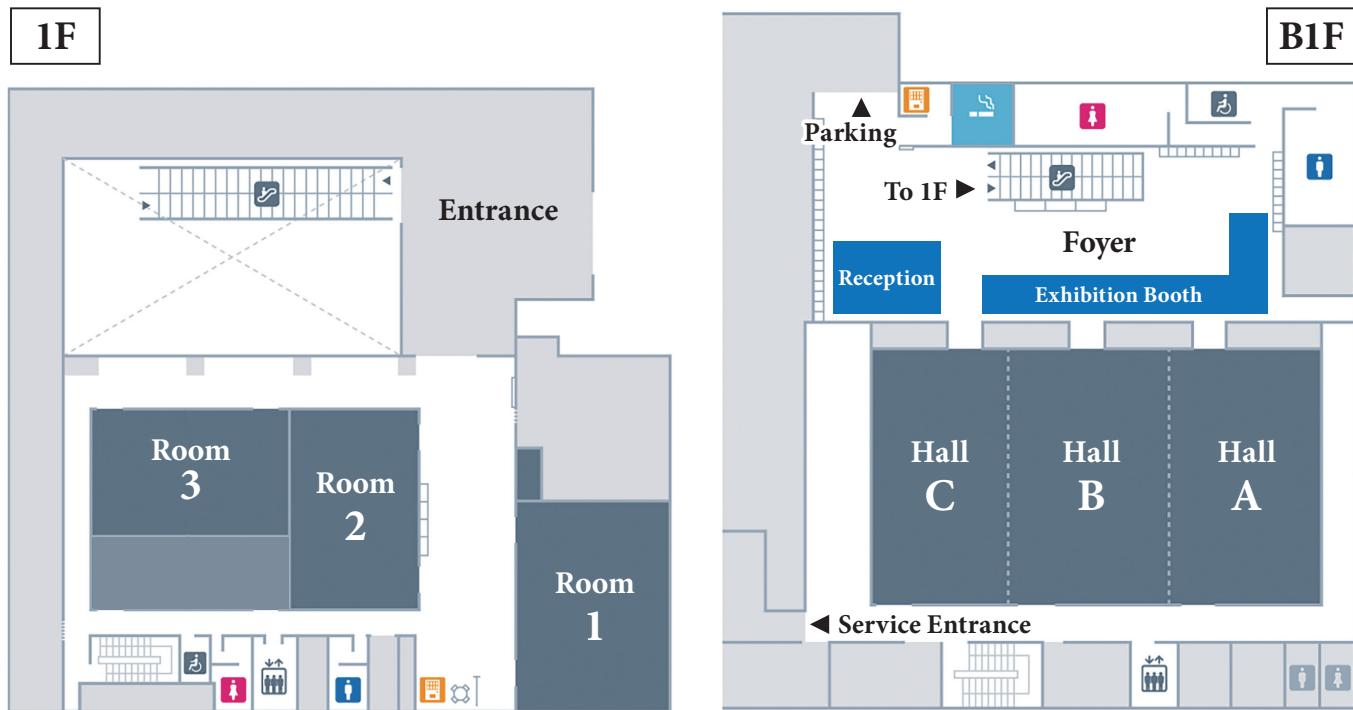
## Booth 6

NEC Corporation

Exhibition Booth



## < Floor Plan >



## < Workshop Location >



### Nakano Central Park Conference

Address: Nakano Central Park South,  
4-10-2 Nakano, Nakano-ku, Tokyo 164-0001, Japan.