



ICAO

DRONE ENABLE

5 — 7 DECEMBER 2023
ICAO Headquarters, Montréal, Canada



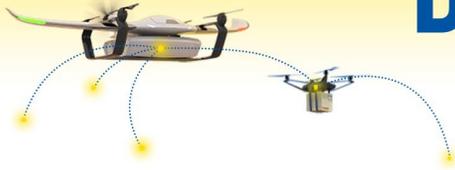
PROGRAMME



01. PROGRAMME

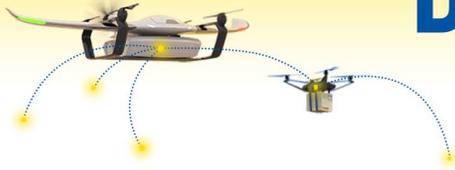
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Day 1 – Tuesday, 5 December 2023

Time (EDT)	Session Description
09:30 – 09:40	Welcome Remarks <ul style="list-style-type: none">- Mr. Juan Carlos Salazar, Secretary General, International Civil Aviation Organization (ICAO)
09:40 – 10:00	Keynote Presenter: <ul style="list-style-type: none">- H.E. Captain Sulaiman Saleh Almuhaimeedi, Executive Vice President, Safety and Aviation Standards, General Authority of Civil Aviation, Saudi Arabia
10:00 – 10:20	ICAO Unmanned Aircraft Systems (UAS)/UAS Traffic Management (UTM) Update The work of ICAO will be summarized, including the most recent updates to the UTM Framework and the outcome of the DRONE ENABLE 2023 RFI. Presenter: <ul style="list-style-type: none">- Mr. Mark Wuennenberg, Technical Officer, Remotely Piloted Aircraft Systems Section, International Civil Aviation Organization (ICAO)
10:20 – 10:50 COFFEE BREAK	
10:50 – 12:05	RFI Topic 1 Session 1 <i>What solutions are needed or being developed to address CNS requirements in low-level airspace?</i> As new types of operations are being introduced in areas where civil aviation operations have not commonly been conducted (e.g. low-level urban and rural), identification of new communications, navigation and surveillance (CNS) capabilities will be required. The CNS infrastructure used by conventional aviation was not initially designed to provide services in those areas and by introducing new types of operations, the aviation community will have to identify, in particular, what CNS infrastructure will be required. The session will help to identify



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which performance requirements the CNS infrastructure will need to meet to accommodate low-level operations.

Moderator: **Mr. Steve Bradford**, Chief Scientist, NextGen Office, Federal Aviation Administration (FAA)

Presenters:

- **Dr. Daisuke Kubo**, Associate Senior Researcher, Japan Aerospace Exploration Agency (JAXA)
- **Dr. Yinian Mao**, Chief Executive Officer of Meituan UAS & Senior Vice President of Meituan, Shenzhen Meituan Low Altitude Logistics Technology Co. (refers to Meituan UAS)
- **Ms. Barbara Pareglio**, Senior Technical Director, GSMA, Smart Mobility Lead
- **Mr. Wei Dai**, Research Associate & Ph.D. Candidate, Air Traffic Management Research Institute (ATMRI), Nanyang Technological University

12:05 – 13:50 LUNCH

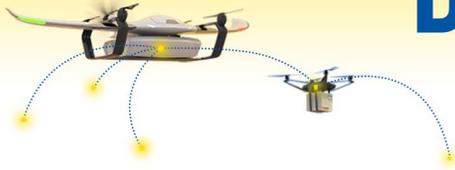
13:50 – 15:05

RFI Topic 1 Session 2

What solutions are needed or being developed to address CNS requirements in low-level airspace?

As new types of operations are being introduced in areas where civil aviation operations have not commonly been conducted (e.g. low-level urban and rural), identification of new communications, navigation and surveillance (CNS) capabilities will be required. The CNS infrastructure used by conventional aviation was not initially designed to provide services in those areas and by introducing new types of operations, the aviation community will have to identify, in particular, what CNS infrastructure will be required. The session will help to identify which performance requirements the CNS infrastructure will need to meet to accommodate low-level operations.

Moderator: **Mr. Steve Bradford**, Chief Scientist, NextGen Office, Federal Aviation Administration (FAA)

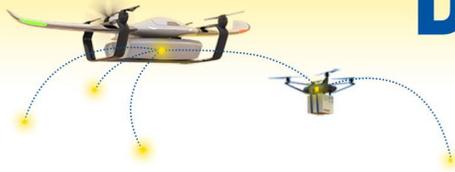


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	<p>Presenters:</p> <ul style="list-style-type: none"> - Mr. Amit Ganjoo, Founder and Chief Executive Officer, ANRA Technologies - Mr. Adrian Solomon, UTM System Architect, Thales Airspace Mobility Solutions - Mr. Daniel García-Monteavaro, Head of Drone Business Development, ENAIRE and Mr. Francisco Javier de Andrés, Senior team leader and project manager, INECO - Mr. “David” Bin Chen, General Engineer, Safety & Integration Division of the UAS Integration Office (AUS), Federal Aviation Administration (FAA)
<p>15:05 – 15:45</p>	<p>RFI Topic 1 – Question and Answer Session</p>
<p>15:45 – 16:15 COFFEE BREAK</p>	
<p>16:15 – 17:15</p>	<p>Addressing Unauthorized Unmanned Aircraft (UA) Operations (Workshop)</p> <p>As the number of UA operations increases, occurrences of airspace infringement have been a valid concern. While guidance material exists, there is still a need to raise awareness on the need for procedures to ensure that the appropriate actions are taken to address unauthorized UA and minimize risks to aviation.</p> <p>Moderator: Mr. Billy Shallow, Director Security, Innovation and Airport IT, Airports Council International (ACI)</p> <p>Presenters:</p> <ul style="list-style-type: none"> - Ms. Ruby Sayyed, Global Head Air Traffic Management, International Air Transport Association (IATA) - Mr. Michał Witkowski, Aerodrome Operations Director, Warsaw Chopin Airport - Dr. Eduardo Garcia, CANSO Senior Manager, Future Skies, Civil Air Navigation Services Organization (CANSO) - Capt. Jim Bamberger, Branch Chief, Public Area Security & Infrastructure Protection, Transportation Security Administration (TSA), United States
<p>17:15 – 19:30</p>	<p>DRONE ENABLE 2023 Reception</p>
<p>END OF DAY 1</p>	



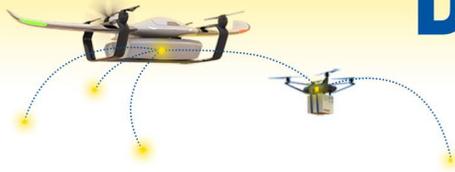
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Day 2 – Wednesday, 6 December 2023

09:00 – 09:05	Welcome Remarks
09:05 – 09:15	Workshop Summary
09:15 – 10:10	<p>UTM: Industry Perspective</p> <p>This session will provide updates on current advancements, developments and deployments, as well as future plans for UAS Traffic Management (UTM) systems from the perspective of industry stakeholders, including Air Navigation Service Providers (ANSPs) and UTM Service Providers. As UTM systems and services continue to mature and support more complex unmanned aircraft operations, it is important to focus on successful UTM deployments and implementation and reflect on what worked and what should be improved. This session will include experiences gained, lessons learned and best practices gathered during UTM deployments.</p> <p>Moderator: Mr. Michael Gadd, Head of Office of Airworthiness, Blue Bear Systems Research Ltd.</p> <p>Presenters:</p> <ul style="list-style-type: none"> - Mr. Eyal Zor, Chief Executive Officer, Airwayz - Mr. Jan-Eric Putze, Chief Executive Officer, Droniq GmbH - Mr. Asam Khan, Chief Executive Officer, Astra UTM - Ms. Alexandra Officer, Co-Chair, Operational Systems Integration Working Group, Civil Air Navigation Services Organization (CANSO)
	<p>10:10 – 10:40 COFFEE BREAK Sponsored by ANRA Technologies</p>
10:40 – 11:35	<p>UTM: Regulators Perspective</p> <p>This session will provide updates on current advancements/developments and deployments, as well as future plans for UAS Traffic Management (UTM) systems from the perspective of regulators. As UTM systems and services continue to mature and support more complex unmanned aircraft operations, regulators have to adapt regulations accordingly. The session will serve as a platform to inform about new regulatory challenges, recent changes and to describe regulatory strategies at the national and regional levels.</p>

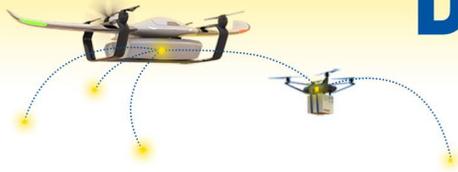


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	<p>Moderator: Mr. Michael Gadd, Head of Office of Airworthiness, Blue Bear Systems Research Ltd.</p> <p>Presenters:</p> <ul style="list-style-type: none"> - Mr. Steve Bradford, Chief Scientist, NextGen Office, Federal Aviation Administration (FAA) - Mr. Joachim Luecking, Head of Unit for Aviation Safety, Directorate-General for Mobility and Transport, European Commission - Mr. Paul Hibberd, Branch Manager Emerging Technologies and Regulatory Change, Civil Aviation Safety Authority – Australia (CASA) - Mr. Robson Santos, Air Traffic Manager, the Department of Airspace Control (DECEA)
11:35 – 12:15	Question and Answer Session on UTM Perspectives
12:15 – 14:00 LUNCH	
14:00 – 15:00	<p>RFI Topic 2 – Session 1</p> <p><i>What are the critical elements of Advanced Air Mobility (AAM) requiring global interoperability and harmonization?</i></p> <p>Concepts for AAM ecosystems are being developed with and by, States and industry in several regions and under various national or regional regulatory regimes. Through these efforts, challenges and priorities for implementation are starting to be identified. Although it is recognized that AAM ecosystems will be designed to solve primarily local and regional needs and interests, there may be issues requiring consideration at the global level. Interoperability of systems and capabilities is often presented as an enabler to the deployment of AAM operations in multiple locations, as the use of similar requirements can avoid duplicative or divergent solutions, while fostering trust and acceptance.</p> <p>Moderator: Ms. Leslie Cary, Former Chief, Remotely Piloted Aircraft Systems Section, International Civil Aviation Organization (ICAO)</p> <p>Presenters:</p> <ul style="list-style-type: none"> - Mr. Moshe Cohen, Cofounder and Chief Executive Officer, Ciconia Ltd. - Mr. Iain Coutts, Principal Aviation Consultant, Arcadis - Mr. Brent Klavon, Chief Strategy Officer, ANRA Technologies - Mr. Lawrence Ley, Senior Portfolio Manager, Boeing Research and Technology, Boeing



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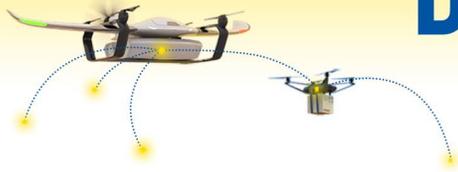


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15:00 – 15:30 COFFEE BREAK

<p>15:30-16:30</p>	<p>RFI Topic 2 – Session 2</p> <p><i>What are the critical elements of Advanced Air Mobility (AAM) requiring global interoperability and harmonization?</i></p> <p>Concepts for AAM ecosystems are being developed with and by, States and industry in several regions and under various national or regional regulatory regimes. Through these efforts, challenges and priorities for implementation are starting to be identified. Although it is recognized that AAM ecosystems will be designed to solve primarily local and regional needs and interests, there may be issues requiring consideration at the global level. Interoperability of systems and capabilities is often presented as an enabler to the deployment of AAM operations in multiple locations, as the use of similar requirements can avoid duplicative or divergent solutions, while fostering trust and acceptance.</p> <p>Moderator: Ms. Leslie Cary, Former Chief, Remotely Piloted Aircraft Systems Section, International Civil Aviation Organization (ICAO)</p> <p>Presenters:</p> <ul style="list-style-type: none">- Mr. Mingcheng Zhang, Ph.D. Candidate, Air Traffic Management Research Institute (ATMRI), Nanyang Technological University- Ms. Supreet Kaur, Lead Systems Engineer for the Data & Reasoning Fabric in the Aeronautics Directorate, National Aeronautics and Space Administration (NASA)- Ms. Justine Whitfield, Head of Products, Airways International and Mr. Phil Rakena, Operations Development Specialist, ATS, Airways New Zealand- Mr. Andrew Hately, UTM Concept Expert, EUROCONTROL Innovation Hub
<p>16:30 – 17:00</p>	<p>RFI Topic 2 – Question and Answer Session</p>

END OF DAY 2



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Day 3 – Thursday, 7 December 2023

09:00 – 09:05

Welcome Remarks

09:05 – 10:05

Remote ID in the UTM environment

Panelists will discuss advancements on remote identification (Remote ID) and how this capability serves different entities, including law enforcement. Within the context of a UTM-enabled environment, the panel will discuss the role of Remote ID for possible Vehicle to Vehicle (V2V) and Vehicle to Everything (V2X) communication, and how Remote ID could support conflict resolution. The Panel will also discuss the protocol and architecture requirements for Remote ID and how cyber resilience supports the efficiency of Remote ID services.

Moderator: Mr. Michael Goodfellow, Technical Officer, Global Interoperable Systems, International Civil Aviation Organization (ICAO)

Presenters:

- Mr. Philip Kenul, Rear Admiral (retired), Chair, ASTM Committee F38 on Unmanned Aviation Systems, American Society for Testing Materials (ASTM) International
- Dr. Juan Vicente Balbastre Tejedor, Full professor at Universidad Politécnica de Valencia, European Organisation for Civil Aviation Equipment (EUROCAE)
- Mr. Andy Thurling, Vice President, Airspace Innovation, Drone UP
- Dr. Stuart William Card, Chief Scientist, AX Enterprize
- Mr. Gabriel Cox, Chair, Remote ID Workgroup, ASTM International
- Mr. Drev Van Duren, Engineer, Senior Staff, Qualcomm

10:05 – 10:35 COFFEE BREAK

10:35 – 11:35

Performance-driven UTM capabilities to support the growing variety of operations and scalability

The session will present advanced services including risk assessment, common altitude reference systems, weather prediction, traffic information services for the UTM and other tools supporting complex unmanned aircraft operations.



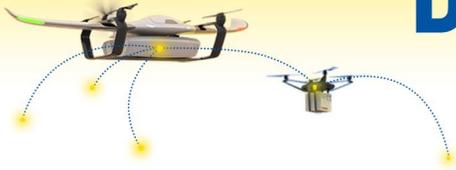
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	<p>Moderator: Mr. Benoit Curdy, Head of the Strategy and Innovation Unit, Swiss Federal Office of Civil Aviation (FOCA)</p> <p>Presenters:</p> <ul style="list-style-type: none">- Mr. Amit Ganjoo, Chief Executive Officer, ANRA Technologies- Mr. Hendrik-Jan Van Der Gucht, Managing Director, Skeydrone- Mr. Paweł Korzec, Chief Executive Officer, Droneradar- Mr. Don Berchoff, Chief Executive Officer, TruWeather Solutions, Inc.
11:35 – 13:20 LUNCH	
13:20 – 14:20	<p>Long distance Beyond Visual Line of Sight (BVLOS) operations (safety aspects and lessons learned)</p> <p>This session will focus on the industry developments in relation to long-distance BVLOS operations realized by UAS. Industry panelists will present examples of scalable operations and inform on the experiences and lessons learned.</p> <p>Moderator: Ms. Jan de Regt, Senior Researcher, Flight Safety Foundation</p> <p>Presenters:</p> <ul style="list-style-type: none">- Mr. Bruno Boucher, Executive Vice-President, Nordic Unmanned- Mr. Ansgar Kadura, Chief Services Officer, Wingcopter- Mr. Zac Kennedy, Chief Regulatory Officer, Swoop Aero- Mr. Conor French, Chief Regulatory Officer, Zipline
14:20 – 14:50 COFFEE BREAK	
14:50 – 15:30	<p>Advanced Air Mobility activities at ICAO</p> <p>This session will look at current, and future ICAO activities related to advanced air mobility and the role of ICAO to support global harmonization of the AAM.</p> <p>Presenter:</p> <ul style="list-style-type: none">- Mr. Thomas Bombaert, Technical Officer, Remotely Piloted Aircraft Systems Section, International Civil Aviation Organization (ICAO)

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15:30 – 16:20

Wrap-up DRONE ENABLE 2023 and closing remarks

- **Mr. Pascal Luciani**, Deputy Director, Air Navigation and Aviation Safety, International Civil Aviation Organization (ICAO)
- **Mrs. Michele Merkle**, Director, Air Navigation Bureau, International Civil Aviation Organization (ICAO)

END OF DAY 3



02. SPONSOR PROFILES

 **BRONZE SPONSOR**



ANRA Technologies

ANRA Technologies is an international provider of airspace and operations solutions for uncrewed aircraft operators and airspace managers. ANRA offers intelligent and modular traffic management software capabilities for UAS Traffic Management (UTM)/U-space and Urban Air Mobility (UAM) operations as a USS, USSP, and CISP. For organizations that need an enterprise-class drone operations solution, ANRA offers other value-added technologies such as surveillance data correlation, C-UAS support, automated risk assessments, and a modifiable rules engine. ANRA is a FAA certified LAANC provider, certified CASA Safety app provider, and certified Swiss FOCA Network Remote ID provider.



ANRA Technologies
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 **LANYARD SPONSOR**



Orbitalize

Orbitalize is a Swiss company providing software engineering services to civil aviation authorities, air navigation service providers and U-Space service providers. We specialize in automated testing, distributed systems and mission-critical user applications. We offer the ideal blend of operational experience and development best practices.

We are members of ASTM and contributors to the InterUSS project.



Orbitalize
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Michael Barroco
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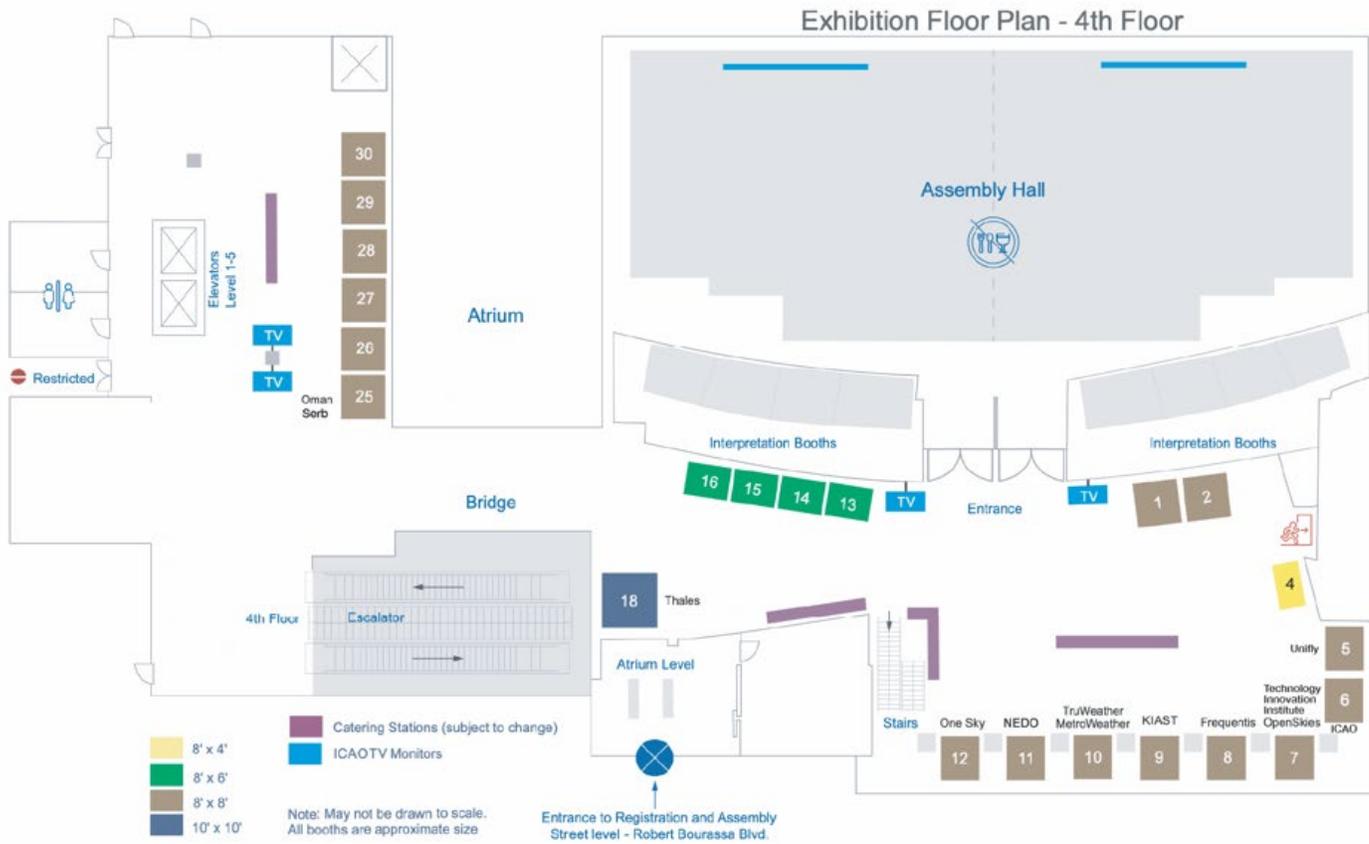


03. EXHIBITOR PROFILES

EXHIBITION FLOOR PLAN



Drone Enable Symposium and Exhibition





Booth 5

Unifly is a company rooted in aviation which envisions to enable autonomous aviation by driving the technology to advance the safety and efficiency of autonomous aviation. The Unifly platform bridges authorities, drone pilots and various stakeholders to safely integrate next generation aircraft into the airspace. By fully digitizing and automating Traffic Management, and by integrating with drones, Air Traffic Management (ATM), Advanced Air Mobility (AAM) & other UAS Traffic Management (UTM) systems through standardized interfaces, the platform is addressing the exponential growth in air traffic generated in the upcoming decades.



UNIFLY
www.unifly.aero



Andres Van Swalm
andres.vanswalm@unifly.aero



Booth 7

Openskies is a SME based in Dublin, Ireland and have extensive experience in developing foundational software for UTM and secure drone operations. Our work covers several aspects of UTM and digital aviation: identity and authentication, air-traffic visualization and display and standards based UTM tooling. Openskies founded and contributes to the OpenUTM stack (<https://openutm.net>), a fully open-source, standards-compliant UTM software. The software enables deployment of UTM services, is professionally supported and has a growing community, it can be deployed as is or customized and easily extended as necessary to fit the purpose.



Openskies Aerial Technology (OpenUTM)
<https://openutm.net>



Dr. Hrishikesh Ballal
hrishi@openskies.sh



Booth 7

TII is the dedicated applied research pillar of Abu Dhabi's Advanced Technology Research Council (ATRC) and a pioneering global research and development centre that focuses on applied research and new-age technology capabilities. The Secure Systems Research Center (SSRC) is part of the Technology Innovation Institute (TII), a UAE-based pioneering global research and development center focusing on applied research and new-age technology capabilities. At SSRC, we are committed to driving Zero Trust end-to-end security and resilience in cyber-physical, and autonomous systems that will ensure safety and enrich lives in the UAE and worldwide.



Technology Innovation Institute
<https://www.tii.ae>



Govind Singh
govind.singh@tii.ae



Booth 8

Frequentis is a global supplier of communication and information systems for control centres with safety-critical tasks. The listed family company develops and markets its "control centre solutions" in the Air Traffic Management segment (civil and military air traffic control, air defence) and the Public Safety & Transport segment (police, fire brigades, emergency rescue services, railways, coastguards, port authorities). With a market share of 30%, Frequentis is the world market leader in voice communication systems for air traffic control. Frequentis is also the global leader in aeronautical information management and aeronautical message handling systems.



Frequentis
www.frequentis.com



Markus Klopf
markus.klopf@frequentis.com

KIAST (Korea Institute of Aviation Safety Technology) is a government (MOLIT, Ministry of Land, Infrastructure and Transport) branch specialized in aviation safety organization that nurtures aviation safety technology experts necessary for aviation safety, and performs certification, testing, research, and technology development related to the prevention of aviation accidents. Furthermore, KIAST has been actively supporting the advancement of the drone industry through infrastructure development, regulatory improvements, and fostering businesses, with a focus on enhancing UAS safety and activation. Serving as the lead agency for the development of Korea's UTM, KIAST is expanding its role and scope as a specialized aviation safety institution.



KIAST
Korea Institute of Aviation
Safety Technology
www.kiast.or.kr



Yongju Kim
yikim@kiast.or.kr



TruWeather Solutions and Metro Weather have partnered to solve the last mile weather challenges for the widespread adoption of drones in society. The 2 companies have stepped up to address the wind challenges imposing on the safe and accurate movement of drones in the low-level airspace. TruWeather has a framework for viable weather sensing infrastructure placement and a SaaS platform for a visualization of the data collected. The "Wind Guardian", a Doppler Lidar created by Metro Weather, allows for accurate monitoring of wind conditions over a broad area, making it an invaluable technology for the drone and air taxi ecosystem.



TruWeather Solutions
www.truweathersolutions.com



Lisa Tinnesz
lisa.tinnesz@truweathersolutions.com



Booth 11

New Energy and Industrial Technology Development Organization (NEDO), plays an important role in Japan's economic and industrial policies as one of the largest public research and development management organizations. It has the two basic missions of addressing energy and global environmental problems and enhancing industrial technology. NEDO aims to encourage the development of drones and robots that can be used in sectors and fields such as logistics, infrastructure inspection, and disaster coping, while also running test flights and establishing systems in preparation for utilization of them in the society.



Nedo

www.nedo.go.jp/english



Junichi Sugihara

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Booth 12

OneSky is a global UTM company developing airspace assessment, operations and traffic management solutions for the aviation industry. Our goal is to harmonize our sky - ensuring safe, efficient, and scalable access to all airspace users. We take a robust and long-term approach to UTM, envisioning the challenges ahead as traffic management is unified for all operators. By working with all stakeholders - drone operators, drone manufacturers, and airspace authorities - we understand the unique challenges of this ecosystem and serve the critical needs of the community.



OneSky

www.onesky.xyz



Amanda Brewer

abrewer@oneskysystems.com

Thales is the world leader in airspace mobility solutions. Two out of every 3 planes around the world take-off and land with the help of Thales. Thales is trusted by key ATM decisionmakers across 180 nations to master complexity and make timely decisions for better outcomes.

Thales and North Dakota's Northern Plains UAS Test Site partnered to develop Vantis for industry-leading UAS traffic management into national airspace. By combining Thales' technology expertise with NPUASTS's UAS leadership, Vantis provides a connected, secure, and sustainable aviation ecosystem, benefiting commercial, government, and defense organizations while ensuring seamless integration for manned and unmanned operators.



Thales
www.thalesgroup.com/en



Sandra Schilling
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INTERNATIONAL PAVILLION



The Civil Aviation Authority (CAA) of Oman holds the responsibility for overseeing civil aviation matters within the country. Serb is a specialized company facilitating low-altitude drone operations and managing associated business activities.



Oman
www.caa.gov.om
www.serbglobal.com



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