ICAO 80

AAM 2024
ICAO'S FIRST ADVANCED AIR MOBILITY SYMPOSIUM

Programme

In collaboration with **CAAM**

AAM 2024
ICAO'S FIRST ADVANCED AIR MOBILITY SYMPOSIUM

9 — 12 September 2024
ICAO Headquarters, Montréal, Canada

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CAAM

Advanced air mobility (AAM) global harmonization and interoperability: Challenges and opportunities

Day 1 – Monday, 9 September 2024
High-level Segment

	Assembly Hall (AH)
09:00 – 09:15	**Welcome Remarks**
09:15 – 09:30	**Opening Keynote**
09:30 – 10:00	**Why AAM?** This kick-off session will focus on the societal benefits of AAM and will delve into what AAM brings to citizens of the world.
10:00 – 10:50	**Let's Make Some Room for AAM Integration** The diverse operations covered under AAM, from the simplest and smallest UAS, to the more complex eVTOL urban operations, have one thing in common: they are often perceived as having the potential to disrupt the tried-and-true tenets of conventional aviation. Throughout its history, aviation has adapted and safely integrated new entrants into its system and the same should apply with AAM. The new and promising technologies behind the AAM "evolution" offer new solutions for aviation stakeholders and new services for many outside aviation. This session will explore how regulators and other stakeholders can work together to realize the opportunities for safe and efficient integration of new and conventional aviation. **Panellists:** **Mr. Filip Cornelis,** Director for Aviation, European Commission **Mr. Mike Mueller**, Vice-Chair, International Coordinating Council of Aerospace Industries Associations (ICCAIA)
10:50 – 11:20	**Coffee Break**
11:20 – 12:30	**Welcome to the World of eVTOL Operations** Ask a random sampling of symposium participants, "Name some eVTOL operations?" and you are likely to get many varied responses. This session will put that question to a select group of senior aviation experts. **Panellists:** **Mr. Jaiwon Shin**, President, Hyundai Motor Group and Chief Executive Officer, Supernal, LLC **Mr. Johann Bordais**, Chief Executive Officer, Eve Air Mobility

12:30 – 12:45	**SKYTALKS**

12:45 – 14:15	**Lunch Break**

14:15 – 14:55	**A World of Services**

The AAM ecosystem of tomorrow will rely upon new and evolving services to enable safe and efficient operations. These services include inter alia weather, surveillance, planning, and communications. This discussion will delve into how a flexible framework of services might be applied to the wide range of operations and risk levels within the AAM ecosystem. How can these services be developed and delivered; what is the role of third parties; how will non-aviation stakeholders be a part of the AAM ecosystem; what are the cost structure and recovery mechanisms associated with AAM services and infrastructure?

Panellists:
Mr. Simon Hocquard, Director General, Civil Air Navigation Services Organisation (CANSO)
Mr. Carlo Tursi, Chief Executive Officer, UrbanV

14:55 – 15:40	**AAM for the Rest of Us**

AAM is often associated with convenience services such as urban transportation and package delivery. In the global context, these operations fill many other needs, such as emergency medical transport and deliveries in air and ground environments which differ from the most modern airspaces. Panelists will discuss opportunities for flexible approaches that encourage efficient and adaptive implementation of AAM in locations around the world, in which resources may potentially be lower, policy support may be insufficient, and/or local technical know-how not widely available, amongst other factors.

Panellists:
Mr. Kyle Clark, Founder and Chief Executive Officer, BETA Technologies

15:40 – 16:10	**For the Benefit of All – UN Sustainable Development and AAM**

AAM use cases contemplate a future where air transport and associated services are accessible, safe, secure, efficient, and environmentally friendly and benefit peoples of the world. Many AAM services align with the United Nations Sustainable Development Goals (SDGs), which are a set of global goals designed to address various social, economic, and environmental challenges by 2030. This session will explore how AAM directly and indirectly supports the UN goals and how the SDG framework intersects with AAM's societal benefits around the globe.

16:10 – 16:40	**Coffee Break**

16:40 – 17:30	**The Economics of AAM**

Many consider that AAM paves the way for an entirely new aviation era. Direct AAM services, as well as numerous supporting services, are rapidly evolving, shaping market dynamics and economic landscapes. This session will explore the economics of AAM in terms of costs, benefits, job creation, growth, funding, fees, market access, etc. What are the interconnections between these factors and how do they influence decision-making, operating rules, airspace design and usage, development, and societal impacts and equity considerations?

	Panellists: **Mr. Dirk Hoke**, Chief Executive Officer, Volocopter
17:30 – 17:45	**Agreement Signature [placeholder]**
17:45 – 17:55	**International Call to Action and Day 1 Closing Remarks** Join us for the Closing session of the high-level segment of the AAM, this session will present the Call to Action on AAM.
18:00 – 18:30	**Drones Demo / Fly Past [placeholder]**
18:30 – 21:00	**Opening Reception**
21:00 – 21:15	**Drone Show [placeholder]**
End of Day 1	

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Day 2 – Tuesday, 10 September 2024
AAM Ecosystem

	Assembly Hall (AH)
09:00 – 09:15	**Daily Kick-off** **Mr. Todd Graetz**, Co-Founder, Aerolane, and Co-Founder, BNSF UAS
09:15 – 10:10	**Integration and Optimization of Infrastructure and Transportation Modes** In a nutshell, AAM is bringing aviation to our doorsteps. This new paradigm requires thoughtful consideration of this new ecosystem and appropriate strategies and policies for its integration into local and regional communities. Major societal, government, infrastructure, and transportation interests are at play with complex interdependencies between them. How are these interests brought together in a collaborative manner to safely, efficiently and sustainably, to enable AAM services? This morning's panel of experts will present compelling reasons to do so and creative ideas for making it work. **Panellists:** **Mr. Kevin Cox**, Chief Executive Officer, Ferrovial **Mr. Martin Larose**, Chief Executive Officer, H55 **Mr. Klaus Roewe**, Chief Executive Officer, Lilium
10:10 – 10:50	**Coffee Break**
10:50 – 11:45	**Human Resources to Operate the New AAM Ecosystem** Aviation relies on a workforce possessing highly specialized knowledge and skill sets, the basis for which has been developed and carefully refined over decades. This basis for knowledge and skills is a great starting point for the development of the AAM workforce. However, other new elements may need to be carefully considered, such as the anticipated scale of AAM operations, new aircraft designs and power sources, the use of vertiports, autonomy, and other considerations. The panelists will discuss the opportunities and challenges inherent in the development of the AAM workforce, including factors such as needed skillsets, the role of regional and local authorities, development of academic and professional training organizations and programs, employment equities, inter alia.
11:45 – 12:00	INDUSTRY SKYTALKS
12:00 – 13:30	**Lunch Break**

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	Assembly Hall (AH)	Conference Room 3 (CR3)	Conference Room 6 (CR6)
13:30 – 14:30	**Infrastructure – A System of Systems Challenge** As AAM is implemented, it will rely on both existing and new infrastructure. Planners, decision-makers, and engineers must consider the network of infrastructure within the context of multimodal transportation, sharing of resources including electricity, communications, and data, as well as development of vertiports in aerodromes and other locations. These and other factors require a system-of-systems approach to planning and development to enable smart AAM development and integration. Speakers will discuss this approach and associated processes, including how to get and then keep ALL stakeholders engaged.	**Facilitation** As AAM develops, cross-border (international) operations will become a reality. alit is necessary to begin to consider how formalities associated with international movements of aircraft, people or goods will be accomplished, efficiently and effectively in AAM environments. It is likely that Standards and Recommended Practices relating to such formalities, currently contained within ICAO Annex 9 – Facilitation, will need some update to meet the needs of AAM. Availability of tools and capabilities to efficiently conduct operations in line with legal and regulatory requirements will also be key. This panel will seek to anticipate how facilitation-related regulations and tools might evolve to meet the needs of AAM cross-border operations.	**Workshop:** **AAM Pillars of Impact – An Interactive Exploration of AAM Beyond Aviation** In this dynamic session, step into a collaborative exploration zone, where we bridge the United Nations Sustainable Development Goals (UN SDGs) with the multifaceted stakeholders of AAM. Together, we'll uncover the nuanced impacts of AAM services, navigating both opportunities and challenges. Discussions will spotlight aviation technology's potential in fostering responsible development of new aviation services. Participants will leave with an enhanced sustainability mindset tailored for planning and designing processes to enhance AAM responsible outcomes.
14:30 – 15:10	**Coffee Break**		
	Assembly Hall (AH)	Conference Room 3 (CR3)	Conference Room 6 (CR6)
15:10 – 16:05	**Holistic & Integrated Risk Management** AAM operations are predicated on the provision of innovative services. In certain cases, some of these services reduce the need to expose workers to direct operational risks. Others contemplate in due course the transport of passengers by eVTOL. These developments may require a reflection on current methods of risk assessment and consider	**Legal Issues in AAM** Due to its profound transformative potential, AAM is expected to have broad impacts on legal constructs and frameworks. Examples include the continuous development of high levels of automation towards autonomy and the shifts from human-centric to machine-centric controls. These evolutions are expected to impact key AAM functions, such as traffic management and remote piloting. As these new	**Workshop:** **Understanding Societal Acceptance of AAM** Societal acceptance of AAM? It's complicated! This workshop will examine how factors such as safety, noise pollution, equity in access, and public perception influence the integration of AAM into our communities. Through engaging discussions and interactive activities, strategies to address these concerns and foster positive reception of AAM will be

	risk more broadly and beyond the dimension of aviation alone. This session will discuss the evaluation of the whole of risk (net risk).	environments evolve, legal issues, such as liability, will likely face new tests and examination. In addition, key legal principles embodied in the Chicago Convention, may need renewed consideration. This session will explore this evolving AAM legal landscape.	explored. By considering diverse perspectives, this workshop will explore the why and how AAM development aligns with societal values, addresses community needs, and contributes to the advancement of sustainable urban mobility solutions.
16:15 – 17:15	**Continuous AAM Safety Improvement** States and regions currently have mechanisms for monitoring and improving aviation safety. In this session, panelists will explore practices supporting the development of a culture of continuous safety improvement within the diverse AAM ecosystem. What data collection requirements are considered as effective? How can this data be shared for the purpose of identifying hazard precursors and proactively implementing AAM safety improvements? What are potential models for fostering stakeholder collaboration toward achievement of safety performance goals?	**Environmental** Noise and emissions have been addressed through the development of aircraft standards for conventional aircraft, based upon decades of experience. What are the environmental impacts of AAM operations, and how should they be measured, and managed? This panel will discuss AAM environmental issues with a particular focus on sustainability throughout the aircraft lifecycle, and a flexible framework responsive to the continuum of AAM's operating environments.	**Workshop:** **Insurance and AAM** More than ever, local governments and operators are grappling with current unmanned aircraft operations and evolving larger and more complex flight operations within and between their cities. Within this developing space, stakeholders are considering the aviation insurance ecosystem, asking, "Who understands my AAM business to cover me effectively?" AAM insurance is a complex, multi-stakeholder problem requiring collective thought leadership from leading global aviation insurance brokers, underwriters, managing general agents. In this workshop, participants will have the opportunity to exchange on insurance considerations related to AAM.
17:15 – 19:30	**Networking Reception**		

End of Day 2

Day 3 – Wednesday, 11 September 2024
AAM Technology

	Assembly Hall (AH)
09:00 – 09:15	**Daily Kick-off**
09:15 – 10:10	**The Human and AAM** AAM use cases are predicated on the utilization of innovative types of aircraft, operating far differently from conventional aircraft, leading to a fundamental transformation of the entire aviation system, from being human-centric to machine-centric, from centralized to decentralized management of the operational environment, as we move towards increasing levels of digitalization and automation. At every stage of this evolution, the roles and responsibilities of humans, including of those operating in conventional aviation, must be carefully assessed to ensure the continued safety and efficiency of future aviation operations. Panelists will discuss the evolution of the roles and responsibilities of the human. **Panellists:** **Dr. Brian Yutko**, Chief Executive Officer, Wisk Aero **Ms. Carol Carroll**, Deputy Associate Administrator for the Aeronautics Research Mission Directorate (ARMD), National Aeronautics and Space Administration (NASA)
10:10 – 10:50	**Coffee Break**
10:50 – 11:45	**Technological Change – Transformation or Adaptation?** History is marked by technological developments that were disruptive to the socio-economic balances of their time. There are times such that the socio-economic frameworks then in place lean towards gently adopting and adapting to the change. There are other times the change can be revolutionary, transforming the applicable environment almost overnight (consider the transistor). As we consider the development and implementation of AAM, mindful of the overarching objectives of safety, efficiency and sustainability, will it or should it be transformational, adaptive, or somewhere in the middle? **Panellists:** **Mr. Rob Bishton,** Chief Executive, United Kingdom Civil Aviation Authority
11:45 – 12:00	**SKYTALKS**
12:00 – 13:30	**Lunch Break**
	Assembly Hall (AH)	**Conference Room 3 (CR3)**

13:30 – 14:30	Autonomy and Automation	AAM and Humanitarian Operations
	Aircraft supporting AAM operations will leverage a novel ecosystem which is fully digital, and their use of automation and autonomy is expected to differ significantly from conventional aircraft. Session panelists will discuss how the integration of greater levels of autonomy and automation will impact operational procedures and development of new regulatory frameworks.	In support to humanitarian operations, AAM provides new logistical solutions. Deliveries by UAS and logistic hubs offer potential to be explored. While some of these developments are taking place, wider implementation, and the facilitation of a quick response to emergency needs, remains challenging. The panelists will explore how humanitarian operations integrate into the AAM ecosystem, and how the implementation of a framework of operational provisions will support their development.

14:30 – 15:10	**Coffee Break**		
	Assembly Hall (AH)	**Conference Room 5 (CR5)**	**Conference Room 3 (CR3)**
15:10 – 16:05	**Airworthiness Considerations for AAM** AAM is commonly associated with passenger and cargo transportation services, but the reality is that it will support a much wider range of aircraft operations in different operational environments, with varying levels of safety risk. This panel explores the spectrum of aircraft that will operate in the AAM ecosystem and fit-for-purpose provisions for efficiently addressing airworthiness requirements relative to the target level of safety for the intended operational environment.	**Workshop:** **How can Academia and Research Organizations Help the Development of AAM?** This workshop serves as a platform for discussing how academia can contribute to the development, innovation, and sustainable growth of AAM. Participants will actively engage in an insightful exploration of collaborative opportunities between academic research and the AAM ecosystem.	TBD

16:15 – 17:15	**AAM Security**	**Academic Competition**	**Workshop:** **AAM Communications Planning**
	While AAM is expected to bring about new opportunities, implementing AAM on a large scale is not without challenges. AAM capabilities may be exploited for nefarious purposes, giving way to new aviation security threats. Thus, there are many facets to consider when developing AAM security and addressing the inherent threats, both on the ground and in the air, related to AAM operations at large. Our panelists will explore the potential threats associated with the broad array of AAM applications in the airspaces and environments within which they are meant to operate. Panelists will discuss new security vulnerabilities inherent in the use of AAM; urgent security considerations for protecting AAM aircraft in flight; and what AAM ground infrastructure, ports and security processes may be like, including at fixed-base operators.	Join us for an enlightening session as winners from the Global AAM Academic Paper Competition take center stage, presenting their research for the world to see. This competition has successfully engaged students from diverse realms and disciplines, fostering exploration and innovation in the burgeoning field of AAM. Prepare for a comprehensive examination of the outstanding papers, encompassing various aspects such as technology, safety, regulation, urban planning, legal considerations, and sustainability. Take part in the dialogue shaping the future of our skies and witness firsthand the ingenuity and vision of the next generation of AAM pioneers as they showcase their research.	An effective and complete communications strategy is vital for the successful implementation of AAM. This workshop explores how the AAM community can prepare to communicate on AAM throughout all the phases of development, integration, implementation, operation, and during contingencies. All stakeholders have a stake in AAM communications planning.

17:10 – 19:30   Networking Reception

End of Day 3

Day 4 – Thursday, 12 September 2024
AAM Advanced Operations and Support Services

	Assembly Hall (AH)
09:00 – 09:15	**Daily Kick-off**
09:15 – 10:10	**Global Needs – Leveraging AAM for Positive Human Outcomes** The AAM 2024 Symposium began by highlighting three inspiring AAM missions with deeply human impacts. Throughout the Symposium, additional sessions highlighted the significant potential of AAM to revolutionize the aviation industry and contribute to global sustainability and prosperity. The panelists in this session will explore how the global needs embodied in the UN SDGs provide a framework for leveraging AAM, in a sustainable manner, while improving urban and rural transportation and ultimately, human wellbeing. **Panellists:** **Dr. Hassan Shahidi,** President and Chief Executive Officer, Flight Safety Foundation (FSF) **Mr. Pravimal Abhishek,** Former Deputy Commissioner and District Magistrate, East Kameng in Arunachal Pradesh, Indian Civil Services **Mr. Emile N. Arao**, Director General, Kenya Civil Aviation Authority **Ms. Linda Falwasser,** Chief Executive Officer, Tāwhaki Joint Venture, National Aerospace Centre, New Zealand
10:10 – 10:50	**Coffee Break**

	Assembly Hall (AH)	**Conference Room 3 (CR3)**
10:50 – 11:45	**Airspace Design, Operating Rules, and Service Providers** A discussion of the complex interrelationships and interdependencies amongst these aviation building blocks and how each might evolve to optimize safety and efficiency for all current and future airspace users. The potential trade-offs between these building blocks have real impacts on stakeholders which should be fairly assessed and balanced. As technology enables new capabilities, fresh analysis and consideration of these aviation building blocks is necessary.	**It's 11:00 O'clock, Do You Know Where Your Aircraft Are?** It is anticipated that the numbers of aircraft conducting operations in the AAM ecosystem will rapidly grow and become ubiquitous in many locations. These operations will be conducted using high levels of automation, and navigational accuracy will be essential for safe operations. Efforts to improve navigational accuracy and establish needed reference systems continue. These include consideration of True versus Magnetic North and common altitude reference systems (CARS). This panel will discuss navigational topics which are essential to the safe and efficient implementation of AAM.

11:45 – 12:00	**INDUSTRY SKYTALKS**
12:00 – 13:30	**Lunch Break**
	Assembly Hall (AH)
13:30 – 14:30	**Traffic Management, ATM, UTM, eTM, xTM**
	In the future, airspace will likely be used by various types of aircraft, including in currently underutilized airspaces, at low and high altitudes. The diversity of contemplated use cases, including Advanced Air Mobility operations, remotely piloted aircraft systems (RPAS), and higher altitude operations (HAO), will require safe and efficient traffic management services. Today's traffic management systems and procedures will continue to evolve as these new operations are integrated with those of conventional aviation stakeholders. How will automation and technology shape the future of traffic management? Are flexible approaches suitable for safely managing the variety of risk levels which these future operations will entail? Should all traffic management services, whether existing or under development, be integrated as one, or work in a federated manner? How can traffic management systems and services be future proofed and ready to support the continued evolution of operations? This panel of experts will discuss these and other important traffic management questions.
14:30 – 15:00	**Coffee Break**
15:00 – 16:00	**Information and Data Management**
	Safely and efficiently accommodating the anticipated number of AAM flights will rely upon considerable amounts of data and information to support new operational and traffic management functions and systems. This session will explore new concepts for information and data management to ensure the right data gets to the right applications in an efficient, competitive, cost-effective, sustainable, reliable, and redundant manner.
16:00 – 16:30	**Wrap-up AAM 2024**
16:30 – 16:45	**Closing Remarks**
End of Day 4	