

DRONE ENABLE

An aerial view of a city with three drones flying in the sky. The drones are connected by dotted yellow lines, suggesting a network or flight path. The background is a clear blue sky and a dense urban landscape.

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Symposium Summary

5 — 7 DECEMBER 2023

ICAO Headquarters, Montréal, Canada



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Keynote

Key message from H.E. Captain Sulaiman Saleh Almuhaimeedi

- **The main driving factors pushing UAS industry forward**
 - **Public acceptance**
 - **Need for sustainable air transport**
 - **Technological advancements**
- **Sharing experiences/practices at international fora such as ICAO is key**
- **Example of efficiency – 2 minutes instead of 2.5 hours transport**



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ICAO UAS/RPAS/UTM Update

- Update provided on RPAS SARP developments
 - Annex 6, Part IV has been agreed by the ANC, next step Council adoption (March 2024)
- ICAO UTM Framework
 - Edition 4 published
 - Edition 5 has been completed by UAS-AG
- UAS-AG developed and evaluated the DRONE ENABLE 2023 RFIs
 - 45 RFI received/16 RFI speakers which you heard from



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RFI Topic 1 – CNSA Requirements

- **CNSA infrastructure needs adjustments to accommodate low-level airspace operations**
- **Capacity and coverage enhancement is a challenge**
- **Diversity of infrastructure can improve UTM services, performance and safety**
- **There is no one-size-fits-all solution to CNSA**



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UTM: Industry Perspective

- High demand for appropriate sets of services and data in UTM
- Critical data needed for strategic and tactical de-confliction
- Risk mitigation has to be considered by all stakeholders (regulators, ANSPs, UTM Service Providers, etc.)
- Need for conspicuity to build the bridge between drone operations and ANSPs
- Flight prioritization to be considered (Commercial Delivery vs. Medical)



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UTM: Regulatory Perspective

Challenges:

- Rapid advancements in technology
- Need for harmonization (interoperability) of UTM Service Provider activities
- Cooperation and coordination amongst various stakeholders

Lessons learned and way forward:

- Continuous industry guidance (technical guidance material, SOPs)
- Technology-driven conspicuity of unmanned aircraft
- Information and data sharing
- Managing stakeholder expectations, systems flexibility and adaptability



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Addressing Unauthorized Unmanned Aircraft (UA) Operations (Workshop)

- **Roles and responsibilities**
 - Identify stakeholders, determine and assign clear responsibility
 - Collaborative decision making
- **Process and procedures**
 - Robust process is paramount (response planning)
 - Risk classification is key to determine response
- **Technology as a tool to obtain information**
- **Getting back to normal operations is as important as managing the occurrence**



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RFI Topic 2 – AAM

Critical elements of advanced air mobility (AAM) requiring global interoperability and harmonization:

- **Harmonization/interoperability makes operations safer, cheaper (lower costs), better**
- **Many elements of the AAM ecosystem (e.g. Vertiports) will benefit from SMS.**
- **Priorities: DAA; security; data exchange**
- **Numerous non-aviation stakeholders involved**
- **ICAO framework is relevant**



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Remote ID in the UTM environment

- Remote ID can serve different applications and communication
- Remote ID can support conflict resolution capabilities
- Challenges: privacy; spoofing; standardization/interoperability (regulators not using same data fields)
- Need for harmonized standards as well as regulations
- ICAO's role recognized



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

- Risk management supportive services need to facilitate flight planning to increase scalability
- Traffic information methods need further advancements and unification
- Common Altitude Reference critical, especially in mixed manned/unmanned operations
- Aviation weather network insufficiently granular, no way measure precisely below 5.000 ft (risk, uncertainty, costs)
 - Business case exist; needs harmonization of trusted weather data/system through ICAO



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Long Distance Beyond Visual Line-of-Sight (BVLOS) Operations (safety aspects and lessons learned)

- UAS operations save lives, provides humanitarian aid & other benefits
- Growing numbers of long-distance BVLOS operations inform the evolving and more complex BVLOS operations of the future
- Communications and outreach with communities & public are necessary
- Advancements still needed in the regulatory framework. Standards and harmonization will create efficiencies and simplify approvals from State regulators
- Operating and safety data from long-distance BVLOS flights is important for continuous safety improvement



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Advanced Air Mobility activities at ICAO

- ICAO work ongoing through expert group (AAM SG)
 - Assessment of the AAM ecosystem and is developing a VISION document
 - Gap analysis of the small UAS regulatory framework
 - To develop UTM implementation guidance material
 - Exploratory assessments
- Leveraging ICAO's expertise and experience, and well-established aviation mechanisms
- AAM is one of ICAO's Priority Focus Areas
- First ICAO Advanced Air Mobility Symposium from 9 to 12 September 2024, here in Montréal

AAM 2024

ICAO'S FIRST ADVANCED
AIR MOBILITY SYMPOSIUM

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Thank You!