# "INNOVATION AND EMERGING TECHNOLOGIES FOR AIRPORTS"

Second North American, Central American and Caribbean Working Group (NACC/WG) Aerodromes and Ground Aids (AGA) Implementation Task Force Meeting (NACC/WG/AGA/TF/2), Mexico City, Mexico, 15 to 17 May 2024

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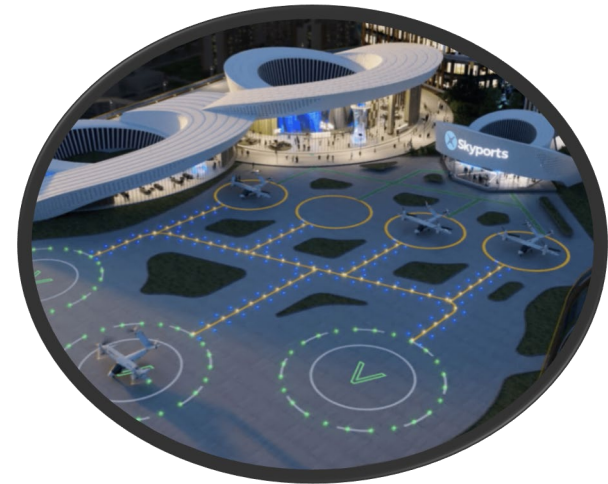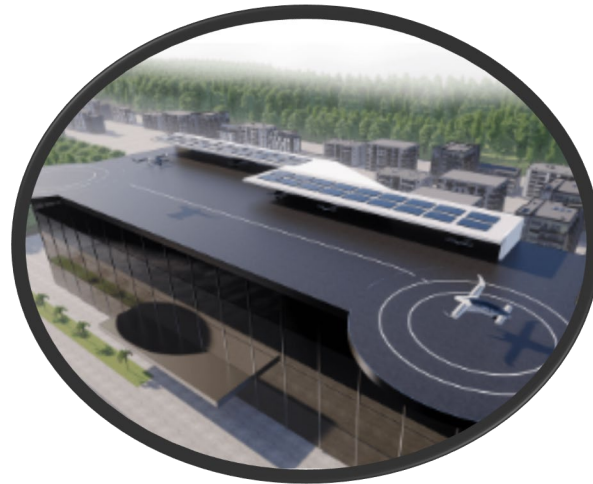
VERTIPORTS

area of land, water, or structure used or intended for landing, takeoff, and movement of VTOL-capable aircraft.

ELECTRIC AIRCRAFT CALLED EVTOL
(electrical–vertical take–off and landing)

- *The development of vertiports is related to the type of aircraft they will serve. These types of implementations require joint development between airspace users, regulators, and industry, which requires working closely.*

- *There are several initiatives worldwide, prototypes such as aircraft from Airbus (EU), Boeing (USA), Embraer, EHang (China), Hyundai (Korea), or those from startups such as Lilium and Volocopter (Germany) or Joby (USA), among others. For these prototypes to operate, they will need certification, just like the pilots or operators.*

- *In Europe, in April of this year, Urban-Air One will open in Coventry (United Kingdom), an initiative of Urban-Air Port and Hyundai - initially as an exhibition and for the Commonwealth Games in Birmingham - and Ferrovial with The startup Vertical Aerospace, which has announced the construction of 25 vertiports in the future also in the United Kingdom, aspires to design, build and operate the set of infrastructures necessary for the operation of flying taxis, electric vertical takeoff and landing aircraft in Spain.*

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- *Unmanned aviation offers unique opportunities, such as cargo transportation, delivery of life-saving materials, wildlife surveillance, disaster management support, infrastructure inspection, and much more. The rapid advancement of technologies to support unmanned aviation poses unique challenges to ensuring safe operations.*

- *Technologies in the fields of unmanned aircraft systems (UAS), remotely piloted aircraft systems (RPAS), UAS traffic management (UTM), advanced air mobility (AAM), vertiports, require a consensus of the work to be carried out by technical standardization organizations and ICAO serves as a global forum to exchange information with the objective of having a holistic vision and a harmonized implementation framework.*

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CHALLENGES

- *Technology: for example, aircraft autonomy, navigation precision, use of ATM infrastructure.*

- *Certification of aircraft, pilots and operators of these aircraft.*

- *Integrate safety, not only for the safe and efficient operation of aircraft, but also to prevent illicit activity.*

- *Airspace management and the integration of this type of aircraft into the already congested airspace.*

- *Development of procedures, regulation and standardization to facilitate operations.*

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WHY DEVELOP VERTIPORTS?

- *Many VTOL models are in the certification process and plan to begin operations as soon as possible.*

- *The market, applications and services that can be developed using these aircraft have a lot of scope.*

- *The vertiports will be developed to allow more efficient operations, increasing safety and taking advantage of the aerodynamic characteristics of these aircraft.*

- *Ground infrastructure required to support air mobility.*

- *It is estimated that the vertiport market will be around 40 billion dollars by 2050.*

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ICAO GROUPS WHERE VERTIPORTS IS WORKED

- Expert Group on Aerodrome Design and Operations

- Accident Investigation Expert Group

- Expert Group on Airworthiness

- Expert Group on Air Traffic Management Operations

- Expert Group on Requirements and Efficiency of Air Traffic Management

- Communications Expert Group

- Flight Operations Expert Group

- Frequency Spectrum Management Expert Group

- Expert Group on Instrument Flight Procedures

- Information Management Expert Group

- Meteorology Expert Group

- Navigation Systems Expert Group

- Expert Group on Personnel Instruction and Licensing

- Expert Group on Remotely Piloted Aircraft Systems

- Expert Group on Separation and Airspace Safety

- Surveillance Expert Group

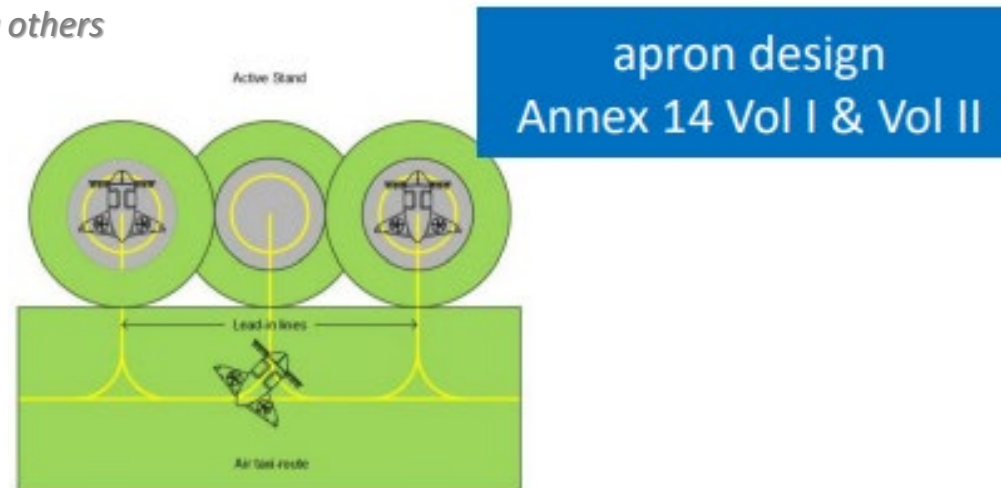- Expert Group on Safety Management and Expert Group on Dangerous Goods
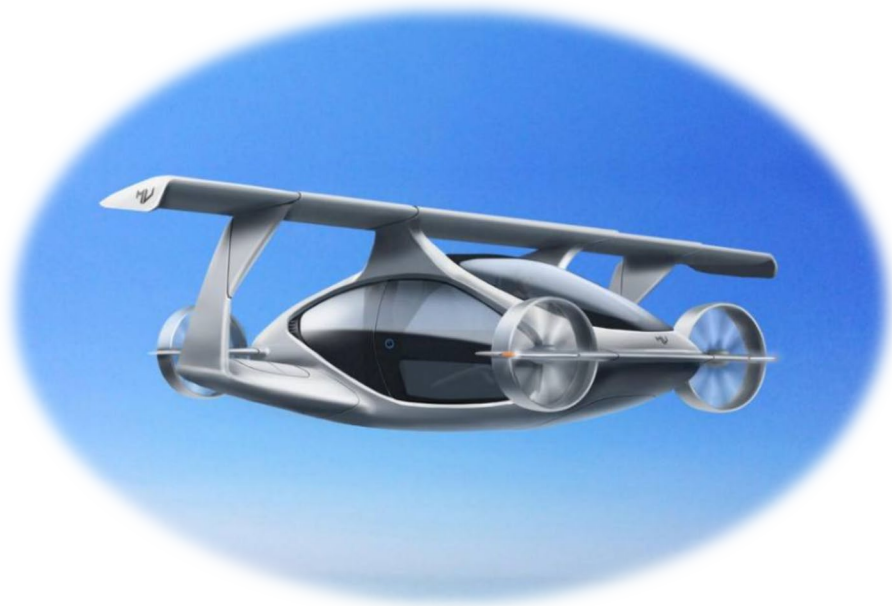
- *Clear implementation objectives*

- *Integration of all interested parties*

- *Joint work with other entities not necessarily related to aviation*

- *Development of the necessary infrastructure*

- *Training, not only for the aviation actors but for the general audience as well*

- *Regulation*

- *Structuring of airspace*

- *Integration into the ATM of these operations*

- *Make operations sustainable*

- *Among other*
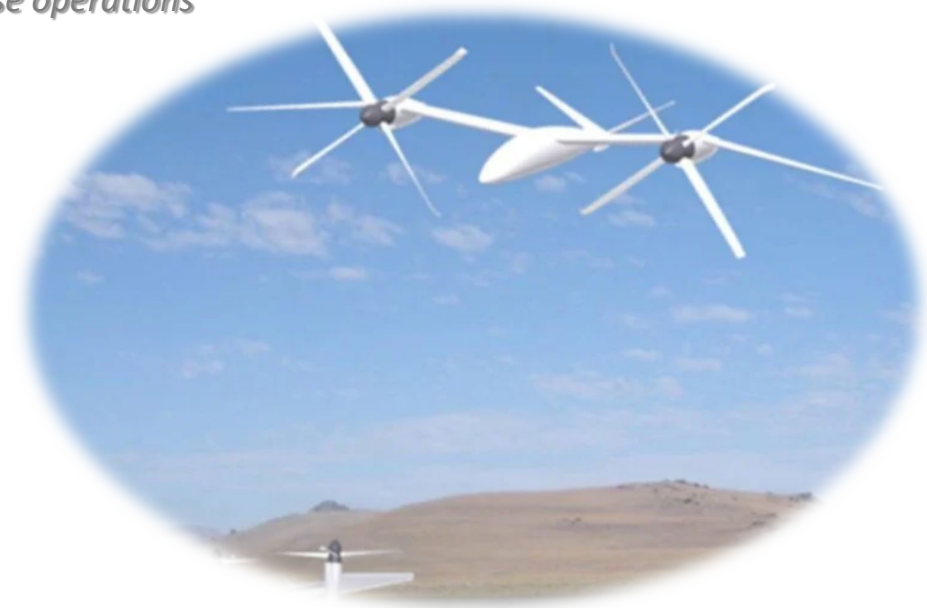
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VERTIPORTS FUNDAMENTALS

- *ICAO Annex 14*

- *Heliports, Doc 9261*

  - *Chapter B is drafted concerning and based on ICAO Annex 14, Volume II, Heliports and ICAO Document 9261, Heliport Manual*

- *Adaptable according to the information that is being received from the industry*

- *Documentation developed by EASA, FAA, among others*

- *Contributions from the Industry*

- *Operation test results*

Questions?