Research on Future Air Mobility in JAXA

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The Japan Aerospace Exploration Agency (JAXA) is a National Research and Development Agency.

In accordance with the 6th Science, Technology, and Innovation Basic Plan (Japan Cabinet Office) and global carbon-neutral goals, JAXA’s vision keyword is SUSTAINABLE.
• Using JAXA’s research assets on disaster relief aircraft operation technology (D-NET) and UAS/UTM, JAXA aims the integrated manned/unmanned operation in **disaster relief mission**.

• Then, JAXA expands its application to **eVTOL’s daily operations** together with Japanese industries leveraged by the NEDO’s ReAMo project planning **flight demonstration at Osaka/Kansai Expo 2025**.

• JAXA also supports Japanese industries by providing **noise prediction tools enabling quieter eVTOL design**.
• **ReAMo project** (2022-2026), launched by NEDO, aims to achieve integrated traffic management technologies for drones, eVTOLs and conventional VFR aircraft flying in low-altitude airspace.

• **JAXA joins the ReAMo project** together with Japanese industries and provides core technologies to enable information sharing, conflict management, automated flight and UTM-based data sharing based on existing expertise and technology such as D-NET and UAS research.
Predicting & Improving Aerodynamic Characteristics

- In order to improve public acceptance of eVTOLs and expand its operation area, research activities about I) predicting aerodynamic and aeroacoustics characteristics, and II) improving aerodynamic performance and quietness of eVTOLs have been also conducted.

- JAXA’s key technologies include (but are not limited to):
  - Aerodynamic prediction (simulation and unsteady Pressure Sensitive Paint measurements)
  - Aeroacoustics prediction (simulation and noise source detection measurements)
  - Rotor performance and noise improvements

- JAXA eVTOL research model will be developed for technology demonstration.

*A1 Unstructured CFD solver, *2 Structured CFD solver, *3 Aeroacoustics simulation solver*