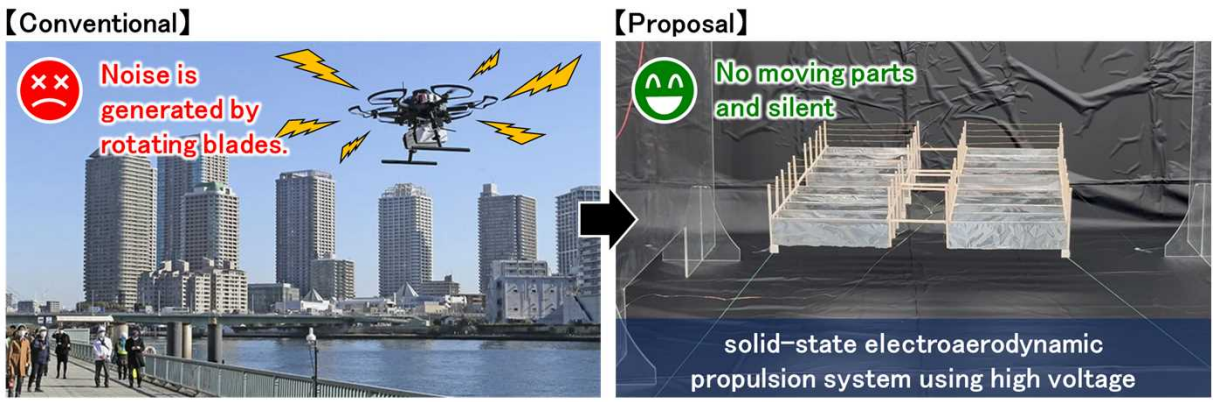
Project Title: Japan-U.S. International Joint Research and Development of a Solid-State Electroaerodynamic Propulsion System Using High Voltage (2024-2027*) *scheduled

Entrusted Party: Keio University

Outline of the Project

Background: Small unmanned aerial vehicles (drones) are highly maneuverable and becoming widely used for delivery, inspection, security, and other applications. However, most conventional drones are multicopters that generate propulsion by rotating multiple propellers at high speed, making them extremely loud.

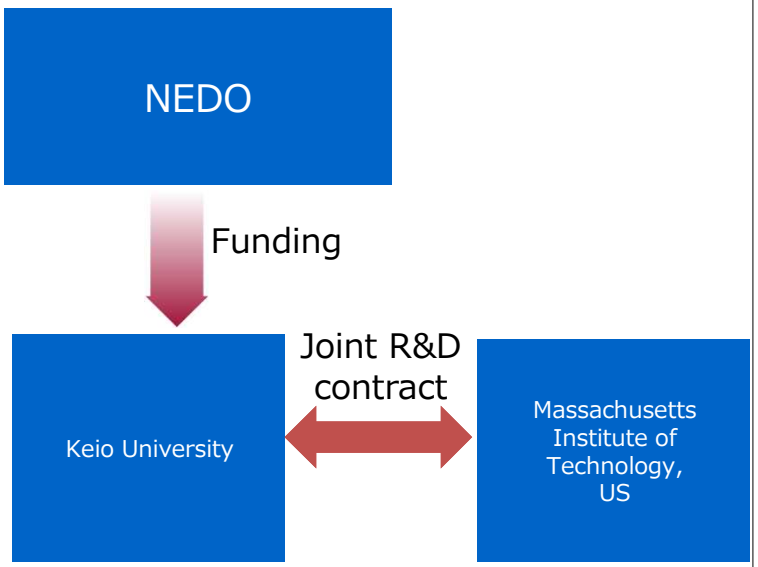
Objective: This project aims to develop a new solid-state electroaerodynamic propulsion system that uses high voltage to ionize the atmosphere and electrically generate propulsion.



Significance of International R&D

- Massachusetts Institute of Technology (MIT) is a research institution with world-class technological capabilities, having been ranked first in the QS World University Rankings for 13 consecutive years, and is internationally recognized in this field.
- Research and development will be jointly undertaken with MIT providing advice on control systems and propulsion mechanisms.

Project Scheme



Expected Outcomes

- During the project period, a small-sized device capable of transporting lightweight items will be developed to confirm the usefulness of the R&D results.
- Since this propulsion system does not use fossil fuels, it is expected to reduce CO_2 emissions by 9,017.4 ton-CO_2/year if aircraft such as flying cars become widely used in the future.
- A real-world social implementation roadmap will be studied to find applications outside of the aviation and air mobility fields.