Introduction to the ENRI and UAM/AAM Research Activities

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About ENRI

Electronic Navigation Research Institute (ENRI):

- Responsible for research and development in the field of ATM/CNS in Japan
- Covers the basic technologies of avionics, including electronic navigation, air traffic control, satellite navigation, and related fields that support governmental needs and social demands

ATM: Air Traffic Management  CNS: Communications, Navigation, and Surveillance

ENRI Website

https://www.enri.go.jp/eng/index.html
About ENRI

National Institute of Maritime, Port and Aviation Technology (MPAT)
- National Maritime Research Institute (NMRI)
- Port and Airport Research Institute (PARI)
- Electronic Navigation Research Institute (ENRI)
  - Air Traffic Management Department
  - Navigation Department
  - Surveillance and Communications Department
  - International Standardization Center
  - Iwanuma Branch

Experimental aircraft

Radio anechoic chamber

SSR Mode S ground station
Research Project: Investigation of Operational Environment for Advanced Air Mobility and Urban Air Mobility (FY2023–2025)

Research question:
What is the appropriate operational environment for advanced air mobility (AAM) and urban air mobility (UAM) in low-altitude air space?

Project goal:
- ✔ Drafting several potential configurations of the operational environment
- ✔ Proposing a highly feasible operational environment
Airspace design for the UAM in the airport vicinity

- An increase in the volume of UAM flights near airports poses challenges to existing aircraft and air traffic control systems.

- This study investigates the potential constraints influencing the design of the UAM service airspace (UASA).
UAM/AAM Research Activities

Surveillance and communication for the low-altitude airspace

✓ The UAM is considered to fly at lower altitudes than existing aircraft.

✓ Surveillance and communication systems for low-altitude airspaces are required because the existing air traffic control systems do not adequately support such a low-altitude airspace.

✓ This study investigates the efficient surveillance and communication environment and promising elemental technologies.
• The ENRI is a research institute dedicated to studying ATM/CNS.

• The ENRI started a UAM/AAM project, called the Investigation of Operational Environment for Advanced Air Mobility and Urban Air Mobility.

• The research project included the following:
  ✓ airspace design for the UAM in the airport vicinity.
  ✓ surveillance and communication for the low-altitude airspace.
ご清聴ありがとうございました

Thank you for your attention!