Realization of Advanced Air Mobility (ReAMo) Project

11th September 2023

New Energy and Industrial Technology Development Organization
Robots and Artificial Intelligence Technology Department
Realization of Advanced Air Mobility Project Manager/Project Coordinator

Masato MORI
About NEDO
Positioning of NEDO

In order to contribute to the resolution of social issues, NEDO formulates technology strategies and project plans and, as part of its project management, establishes project implementation frameworks by combining the capabilities of industry, academia, and government. NEDO also promotes technology development by carrying out, evaluating, and allocating funding to promising projects to accelerate the practical application of project results.
Overview of AAM in Japan
Japanese government has established the Public-Private Committee for AAM.

Roadmaps for Implementation of AAM in Japan has been published and updated.

NEDO's aim is the realization of these goals through the promotion of technological development.
Japanese Roadmap for AAM

Commercial services launch at Expo in 2025

Expansion of the services

-2025

- Completion of operating environments and regulatory framework
- Launch flight demonstrations

Social Implementation

- Package delivery services to isolated islands
- Basic flights
- Two-point passenger transportation in limited areas

Social Acceptance

- Resident acceptance in certain areas

Operating Environment

Aircraft

- Multimotor, Full electric, Two-seater

Operators

- Aircraft manufacturers
- Operating companies
- Landing area managers

Flight areas

- Gulf crowd, isolated islands, depopulated areas, etc.

Takeoff and Landing Areas

Alternative takeoff and landing areas

Aerostate utilization

10 flight areas

- Gulf crowd, isolated islands, depopulated areas, etc.

Takeoff and landing areas for eVTOL

Operation Methods

- Flight Distances: Approx. 10-60 km
- Enroute Configurations: Short transportation, scenic flights

Improvements in automation level

- Autonomous operations
- Approx. 300 km
- Untamed routes, on-demand operations

2025

- Two-point passenger transportation between airports and gulf coasts
- Improve public recognition through Expo 2025

2025-

- Expansion of regions and distances for passenger transportation services
- Launch air ambulance demonstrations
- Improve public recognition throughout Japan

2030-

- Expansion of package delivery and passenger services
- Launch urban air mobility
- Passenger transportation between suburban and urban areas
- Air ambulance transportation, cold district services, and private use
- Integrated into everyday life

Advanced Air Mobility in JAPAN 2021
Initial ConOps of UAM at Expo in 2025

• Commercial service with certified eVTOL aircraft
• Pilot onboard, VFR operation
• To support safe and smooth operation, JCAB will provide the following services as ANSP:
  - Publish the AAM route (non-exclusive) on AIP
  - Coordination of flight plan (strategic de-conflict)
  - Conformance monitoring with ADS-B
ReAMo Project
As the maturity level rises, there will be less human involvement in the operation of these vehicles. In urban areas in particular, flight density will increase, and use of AAM will penetrate into the spheres of everyday life.

- Start of commercial operation
- Utilization as secondary transportation from the airport
- Onboard pilots, low flight frequency
- Ports will mainly be located outside of densely populated areas

Image of Maturity Level 2
- Realization of high-density operations over urban areas, airspace exclusive to AAM
- With the advancement of automation, the pilot will no longer be on board but remotely monitors and controls the aircraft
- Many ports will be built on building rooftops, and flights will efficiently access large-scale airports as well

Image of Maturity Level 4
- Autonomous flights without any human involvement are realized, enabling free and flexible air mobility
- Users can take flights from their neighborhood in residential and surrounding areas, whenever they wish
- Aircrafts for personal use will become popular in addition to passenger aircrafts
Outline of ReAMo Project

• Five-year project starting in FY2022, with a budget of 20 million euros per year.
• Three R&D activities are supported.

1) Performance evaluation methodologies development
2) Multiple drone operations by a single pilot technologies development
3) Low altitude traffic management technologies development

Airplane

Urban Air Mobility (eVTOL)

Helicopter

For transportation

Inspecting infrastructures

Low Altitudes air space

Low Altitudes air space

Disaster response
ReAMo Project members

- Over 40 partners from universities, national R&D institutes and industry (telecoms, UTM service providers, motor manufacturers, UAS manufacturers, etc.) in Japan.

[Image: https://www.youtube.com/watch?v=WGiI0c5BDQM]
Reference Material