This roadmap outlines a flow of technology development and establishment of regulations which should be conducted with public-private cooperation. The roadmap focuses on possibility that challenges in urban and rural areas will be resolved with realization of more familiar and convenient means of air mobility, "Advanced Air Mobility (AAM)" – electric-powered vertical take-off and landing, and pilotless aircraft.

| Public-P                    |  |   | Advanced Air Mobility of air mobilit   | The roadmap focuses on possibility that challenges in urban and rural areas will be resolved with realization of more familiar and convenient me of air mobility, "Advanced Air Mobility (AAM)" – electric-powered vertical take-off and landing, and pilotless aircraft. |  |   |  |  |
|-----------------------------|--|---|--|---|--|---|--|--|
| dated March 18, 2022 FY2022 |  |   | <sup>8, 2022</sup> FY2022 FY202  | 23 FY2024   | FY2025   | Late 2020s  | 2030s+   |  |
| Utilization                 |  |   | Start shifting to commercial operations f  | rom test flights  |  | Expand commercial operations  | Expand service areas, and increase routes<br>and flights             |  |
|                             | Transport of people                            |   | Test flights, demonstrations, etc.   |   | Rural ard<br>Osaka-<br>Kansai  | as: secondary transport → intra-/inter-city transpo<br>eas: tourism and secondary transport → intra-area<br>es transport<br>Start private<br>flights<br>Emergency |  |  |
|                             | Transport of goods                             |   |  |   |  | delivery in remote islands and mountaneous area   | s $\rightarrow$ package delivery in urban areas $\rightarrow$ expand |  |
|                             | Business spillover                             |   | Aviation-related businesses Port installation and management, real estate, insurance, tourism, MaaS, medical services, new businesses, etc.  |   |  |   |  |  |
| Environment preparation     | Development of<br>aircraft safety<br>standards |   | Develop standards (9 or fewer seats, with/without the pilot on board)  |   |  |   |  |  |
|                             | Development of skill standards                 |   | Develop standards for pilot and maintenance Develop regulations for various types of aircraft staff (including remote control)   |   |  |   |  |  |
|                             | Airspace and operations                        |   |  | elop systems for safe and smooth air transport at low altitude<br>ffic management for AAM in the Expo, etc.) Develop systems for expanding<br>operations operations<br>Review regulations based on utilization trends, etc.   |  |   |  |  |
|                             |  |   | Guidelines for operational safety standards<br>(package delivery, passenger transport at Expo,etc.) Revise guidelines for advanced operations and densification)   |   |  |   |  |  |
|                             | Regulatory<br>development for<br>businesses    |   | Develop standards for air transport services<br>(package delivery, passenger transport at Expo,etc.) Develop standards and regulations for advanced<br>businesses (passenger transport without a pilot on<br>board) Review regulations based on utilization trends, etc. |   |  |   |  |  |
|                             | Take-off an                                    | Regulatory<br>development                                       | Organize requirements for existing airports and off-<br>site take-off and landing areas Use airports and off-site take-off and landing areas based on existing regulations   |   |  |   |  |  |
|                             |  |   | Develop standards for take-off and landing areas in accordance with international standards Use take-off and landing areas designed for UAM  |   |  |   |  |  |
|                             | and landing a                                  | Environment<br>preparation<br>for social<br>implementa-<br>tion | Organize tasks<br>• Install on rooftop Prepare environ   | iment   | Incorporate into building construction plans, urban plans, and regional plans                                      |   |  |  |
|                             |  |   | Sort possibility to use<br>rooftop emergency take-off     Develop standa<br>rooftop installar     Develop enviro   | ions  | Installation on building rooftops (use existing building rooftops $\rightarrow$ new construction and installation) |   |  |  |
|                             | areas  |   | and landing areas, etc. assessment met   | hods, etc.  |  |   | Full-scale deployment in urban areas                                 |  |
|                             | Social acceptance                              |   | Acquire public understanding in test areas Raise awareness through the Expo Increase beneficiaries and improve acceptance by resolving social issues   |   |  |   |  |  |
|                             | Test environments                              |   | Use and improve the Fukushima Robot Test Field as a test flight base, and enhance functions including research and human resource development  |   |  |   |  |  |
| Technology<br>development   | Safety and reliability                         |   | Secure safety and reliability, and develop performance evaluation methods for aircraft and components  |   |  |   |  |  |
|                             | Traffic management                             |   | Develop technology for airspace sharing among aircraft, unmanned aircraft and UAM<br>Develop basic communications, navigation and surveillance technologies for adverse weather conditions,<br>high density, autonomous operations, etc.                                 |   |  |   |  |  |
|                             | Electric-powered propulsion systems            |   | Develop elemental technologies such as motors, batteries, hybrids, hydrogen fuel cells, and noise reduction technologies   |   |  |   |  |  |

Advanced Air Mobility Roadmap