Unmanned Aircraft Systems – Remotely Piloted Aircraft Systems
Implementation/Regulation Webinar for the APAC Region

UAS/Drone and AAM Policy in Japan

Japan Civil Aviation Bureau
UAS/AAM Division

BVLOS Operation Over People by UAS/Drone

Category of UAS operation in Japan

Manual control → Automated/Autonomous control

VLOS → BVLOS

Non-populated area
(e.g. isolated islands or mountainous area)

Populated area

Level 1
Manual control + VLOS

e.g. Photo shooting

e.g. Bridge inspection

Level 2
Automated/ Autonomous +VLOS

e.g. Agricultural chemical spraying

e.g. Civil engineering survey

Level 3
BVLOS over non-populated area

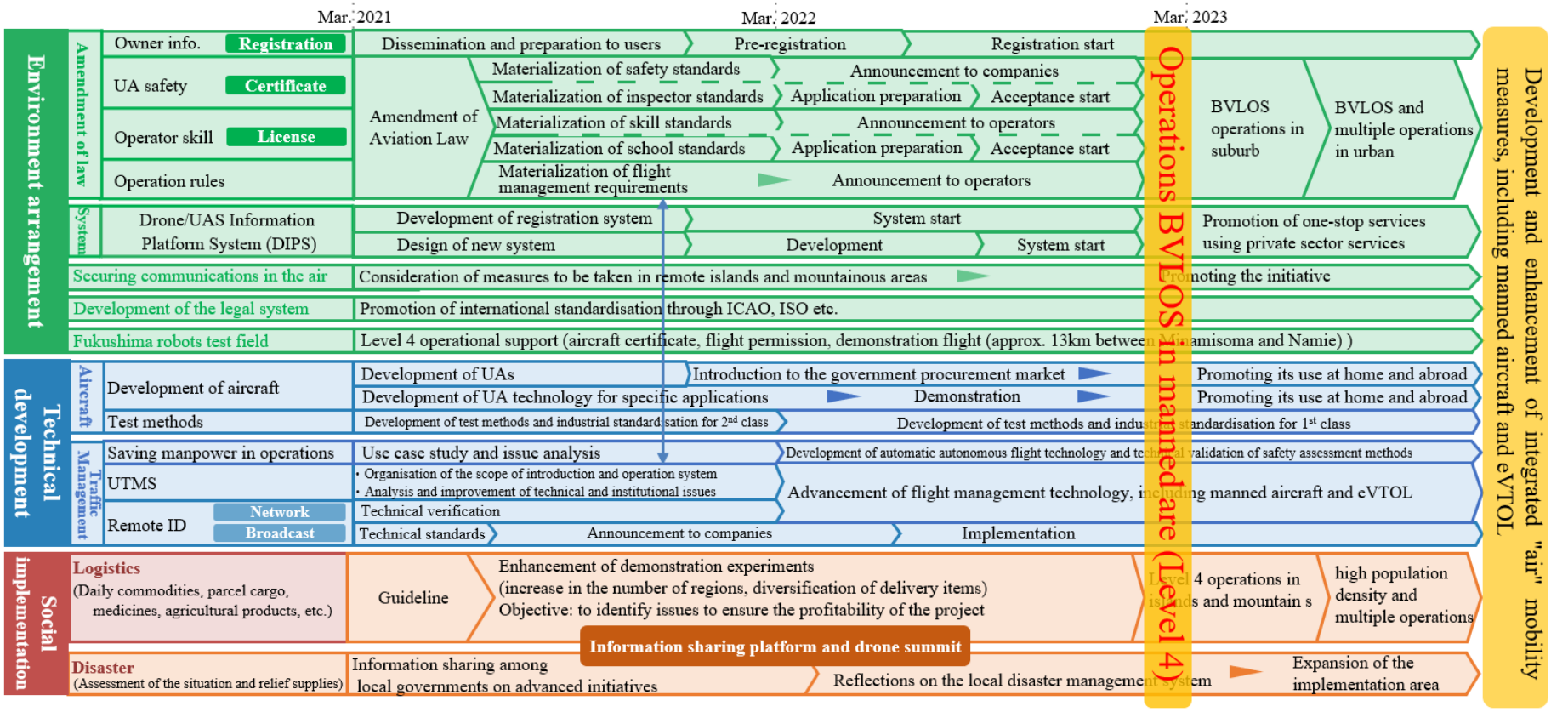
e.g. Transportation between post offices

Inaugurated on Dec 5, 2022

Level 4
BVLOS over populated area
e.g. Cargo transport

Collaboration with industry on policy making

- Strategies for drones have been discussed in a Public-Private committee which involves various stakeholders.
- The realization of BVLOS operation over people (Level 4 flight) was a major target to be accomplished before March 2023 (first Level 4 flight conducted in March)
- After realizing Level 4 flight, we will further focus on UTM implementation.



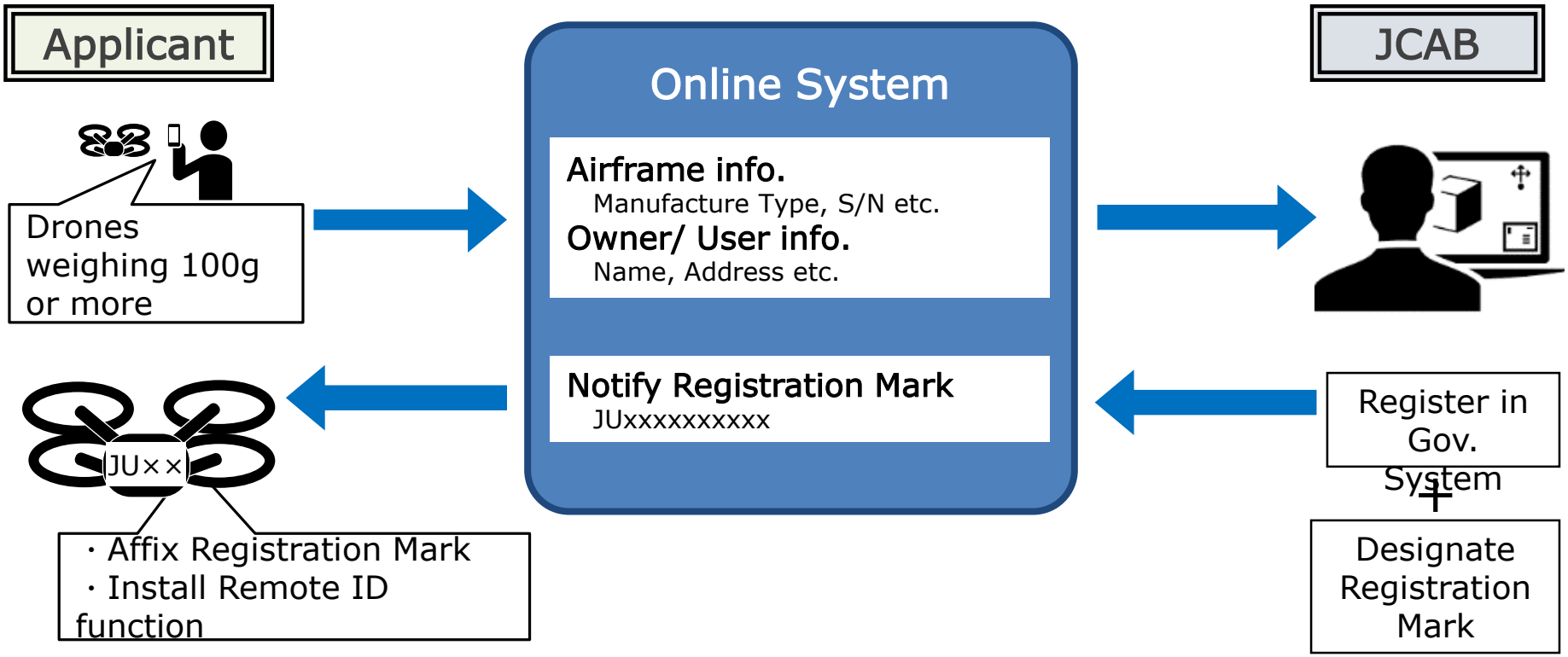
Amendment of Civil Aeronautical Act

- In 2015, first regulation for UAS was introduced to the Civil Aeronautics Act of Japan (rules for airspace and ways to fly).
- In order to introduce the Level 4 flight, a series of amendments to the Civil Aeronautics Act of Japan have been adopted.
- Introduction of new regulatory systems to realize Level 4 flight in Japan.
  1. Mandatory registration system of drones weighing 100g or more (Became effective on June 20,2022)
  2. UAS certification system(Class1/2)
  3. Pilot qualification system(Class1/2)
  4. Rules of operation

  } Became effective on Dec 5, 2022

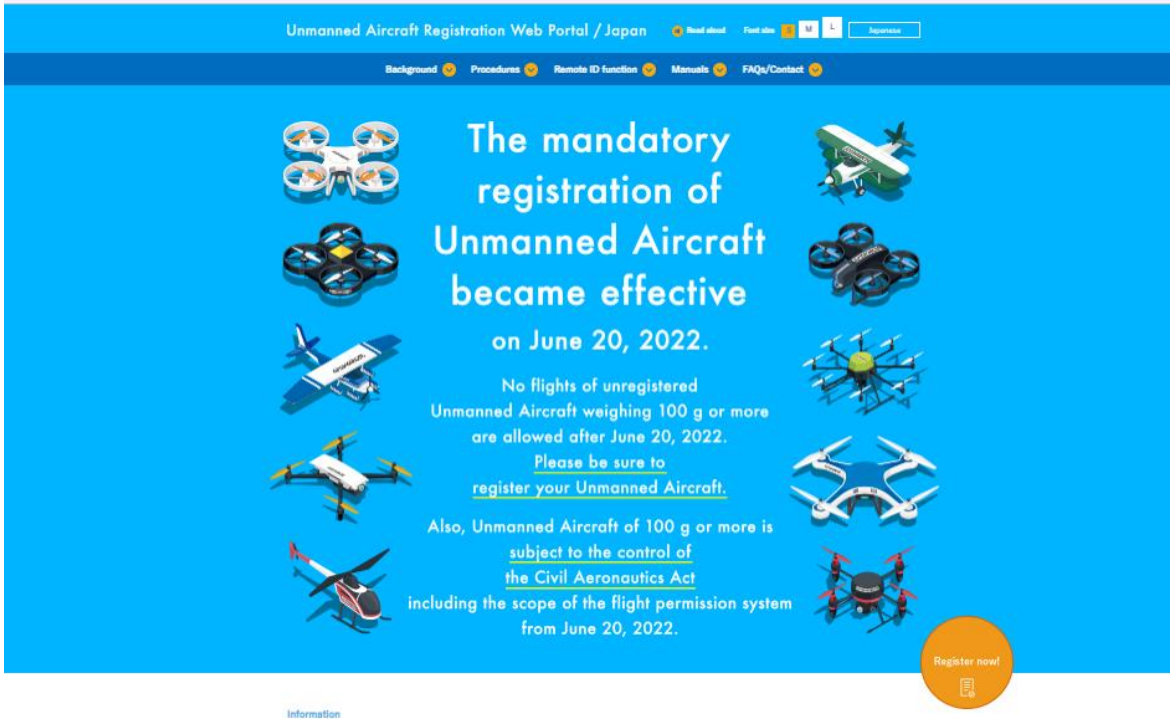
Mandatory registration system

- All registration process can be completed through online system.
- An operator shall affix the designated registration mark to the airframe. Also, the remote ID function transmitting its airframe information including registration mark shall be installed.



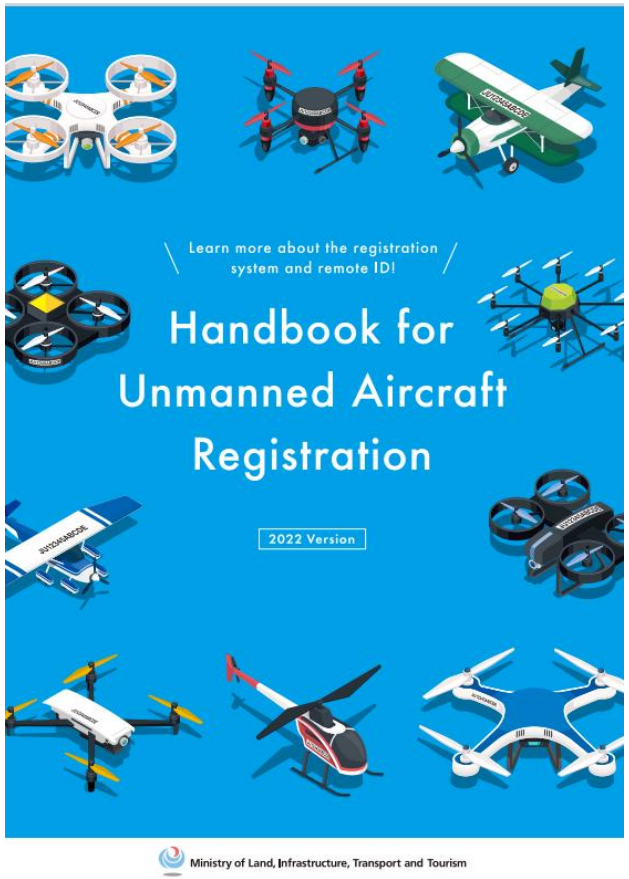
Mandatory registration system

- JCAB printed posters, leaflets, and also published handbook for the distribution at drone events and drone retailers to facilitate earlier registration.



Website

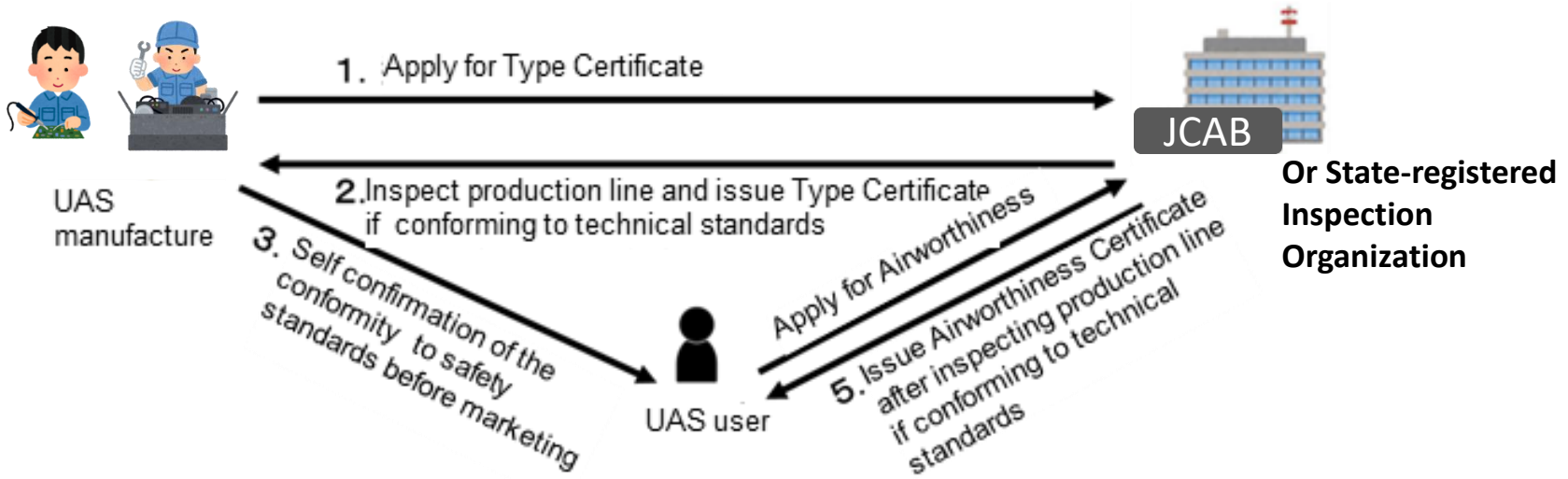
https://www.mlit.go.jp/koku/drone/en/



Handbook

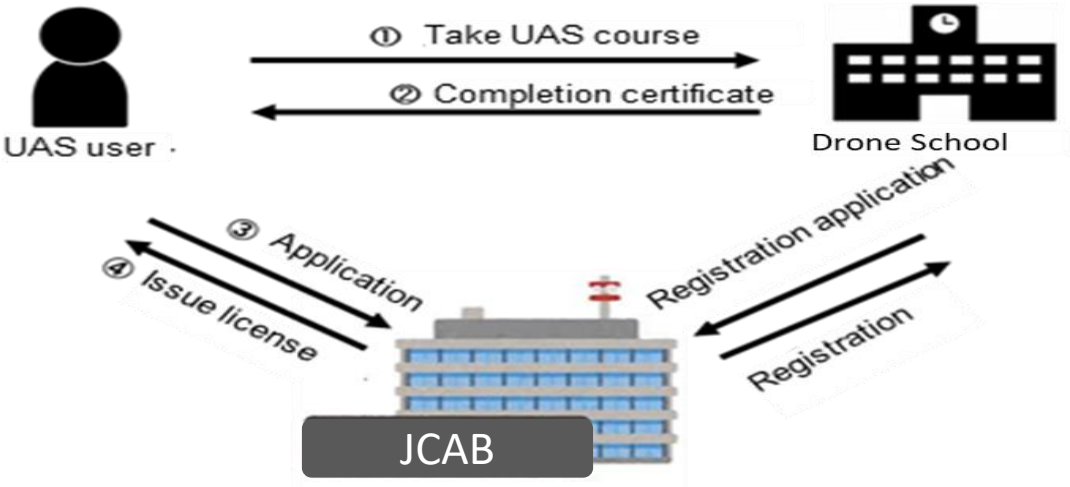
UAS certification system

- **UAS certification system** for individual UAS has been established.
- If **Type Certificate** is obtained by UAS manufacture for a specific drone, inspection for the UAS certificate may be simplified.
- Two classes of certificate:
  - Class 1 UAS Certificate (prerequisite for Level 4 flight)
  - Class 2 UAS Certificate
- **State-registered inspection organizations** are allowed to conduct relevant inspections on behalf of JCAB.



Pilot qualification system

- **Pilot qualification system** has been established.
- Two classes of license:
  - Class 1 Pilot License (prerequisite for Level 4 flight)
  - Class 2 Pilot License
- Ratings are applied regarding the type of airframe (fixed wing, helicopter, multi-rotor) and the types of flight (night, BVLOS, etc.).
- **State-designated testing organization** conducts Pilot License examinations (paper examination and practical examination).
- All or part of the examination may be exempted, if applicants have completed UAS training course provided by **State-registered training organizations.**



Common operation rules

- As common operation rules (not limited to Level 4 flight), UAS operators are required to take actions below.

File Flight Plan

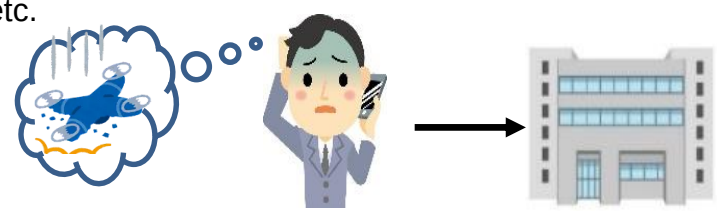
Report flight route, date, altitude, information of pilots, etc.

Keep UAS logbook

Keep flight area, flight time, maintenance log, etc.

Report accidents and incidents

Report injuries, damage to properties, collision to aircraft, etc.



Urgent Aid

Responsible for rescuing an injured person involved in the accident

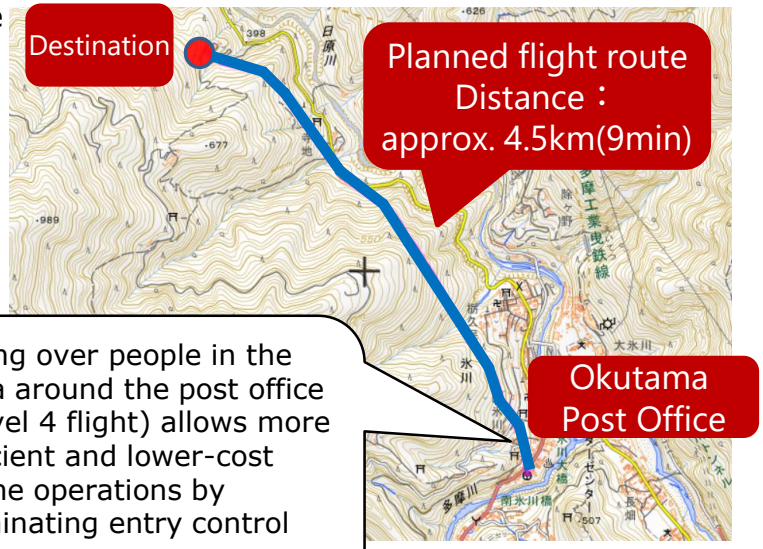
- For the Level 4 flight, risk assessment and associated mitigation measures are to be conducted when requesting flight permissions to JCAB for its review.

First Level 4 Flight (March 24th,2023)

- In accordance with the amended Civil Aeronautics Act which became effective last December, Level 4 flight (BVLOS flight over people) is now available for a pilot with Class 1 Pilot License flying an UAS granted Class 1 UAS Certificate under the flight permission by JCAB.
- The first Level 4 flight was demonstrated on March 24th ,2023 by Japan Post Co., Ltd.

First Level 4 Flight*

- **Date** March 24th,2023
- **Place** Okutama City, Tokyo
- **Operator** Japan Post Co., Ltd
- **Objective** Delivery to a residence from Okutama Post Office



Flying over people in the area around the post office (Level 4 flight) allows more efficient and lower-cost drone operations by eliminating entry control measures.

Class 1 Pilot License

Issuance of Class 1 license started on Feb 14th, 2023.

Image of Class 1 Pilot License

Class 1 UAS Certificate

March 13th: Class 1 Type Certificate

✓ Class 1 Type Certificate allows to omit a large part of the safety inspections required for Class 1 UAS Certification

March 14th: Class 1 UAS Certificate

Equipped with parachute for emergency

"PF2-CAT3" of ACSL
(3D image of the UAS)

*Ref: Press Release by Japan Post Co., Ltd on March 17th, 2023

UTM implementation

Flight Information Sharing System (FISS)

- JCAB has developed “Flight Information Sharing System (FISS)” in 2019.
- Prior to the flight, UAS operators may
  (1) register the flight information in FISS, and
  (2) confirm other operators’ flight information sharing the same air space.
- If flight plans conflict, FISS triggers an alert to prompt the involved operators to make preflight coordination.
- This function has been integrated into “DIPS” (Drone/UAS Information Platform System) from Dec 5, 2022 along with other functions, so that the multiple applications can be made online through a single interface.

UAS operator

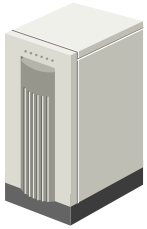
Prior to the flight, operators register the flight information.

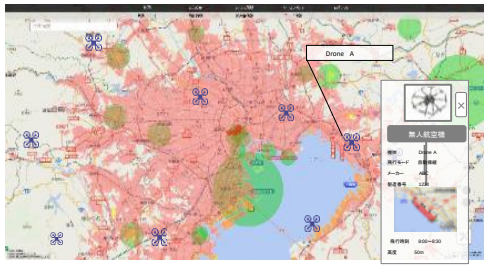
【shared information】
- Date
- Route
- Altitude
- Name
- Contact information

＜Benefit ⊖＞
- **Operators can confirm the information of other operators sharing the same air space.**

＜FISS＞

※integrated into DIPS after Dec,2022.





Display image of FISS

Manned aircraft operator (HEMS)

Provide the real time position data to FISS.

＜Benefit ⊖＞
- **Manned aircraft operators can confirm flight plans of UAS.**
- **If manned aircraft comes close to the registered UAS flight plan, FISS triggers an alert.**

Local government

【shared information】
- Flight restricted areas set by local governments

＜Benefit ⊛＞
- **Drone operator can confirm flight restricted areas in advance.**

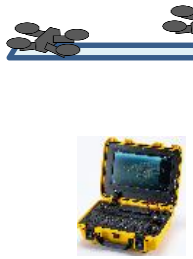
Introduction of UAS Traffic Management (UTM)

To respond to increased UAS operations in the future, UTM would be necessary for the safe and efficient operation. UTM will be introduced in step by step basis, considering air space density and operation risk.

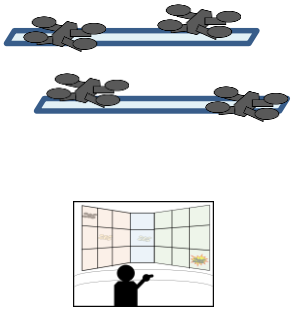
Low density in air space

High Risk Operation (such as BVLOS) + Single operator

Source: Prodrone Website

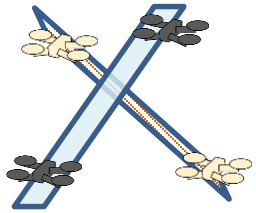


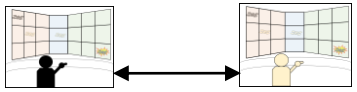
Source: Prodrone Website



Operator A

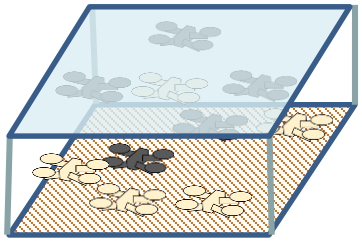
Multiple operators

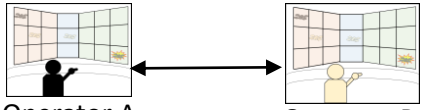




Operator A Operator B

High density in air space





Operator A Operator B

Step 1

Recommendation of UTM usage

(For high risk flight (such as BVLOS),
risk mitigation measures by operators are evaluated through JCAB-approval of each flight)

Step 2

~2025

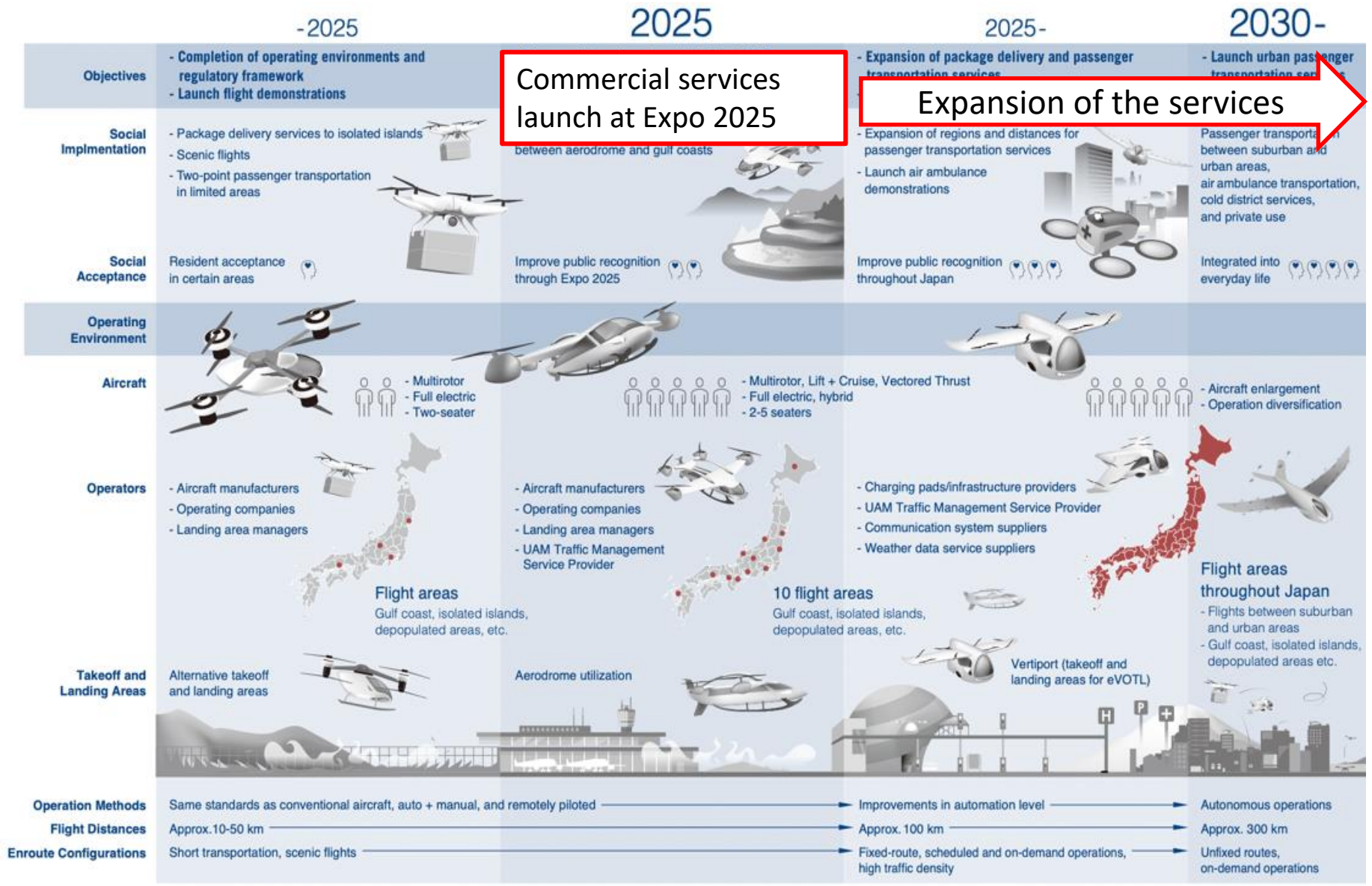
By using UTM service of UTM Service Providers certified by JCAB, multiple UAS operators can conduct high risk operation in the same air space.

Step 3

In order to realize high density operation in JCAB-designated air space, all UAS operators are reqiored tp use UTM service by JCAB-certified UTM Service Providers.

AAM Introduction in Japan

AAM Roadmap in Japan

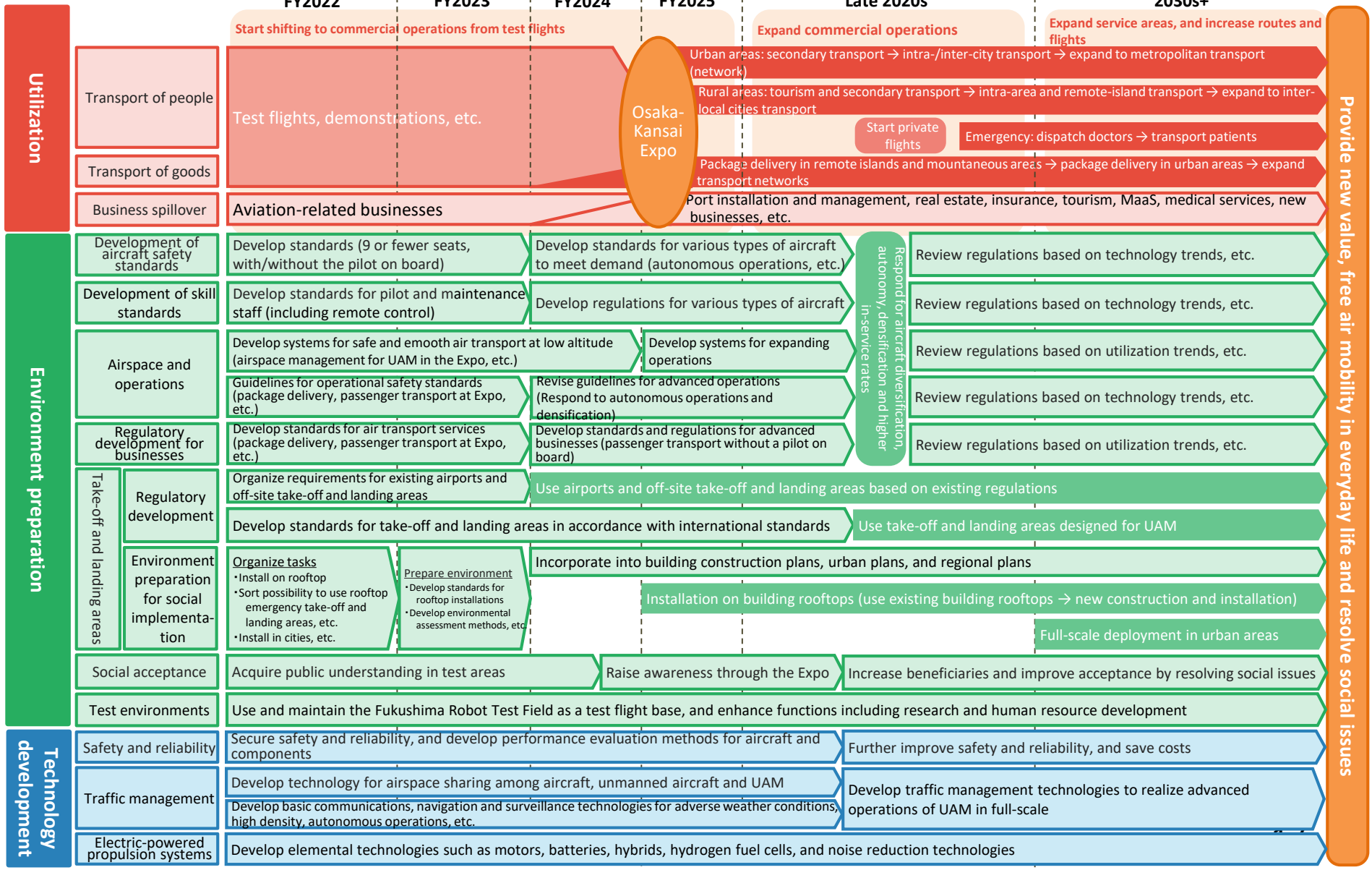


Based on " Advanced Air Mobility in JAPAN 2021"

Advanced Air Mobility Roadmap

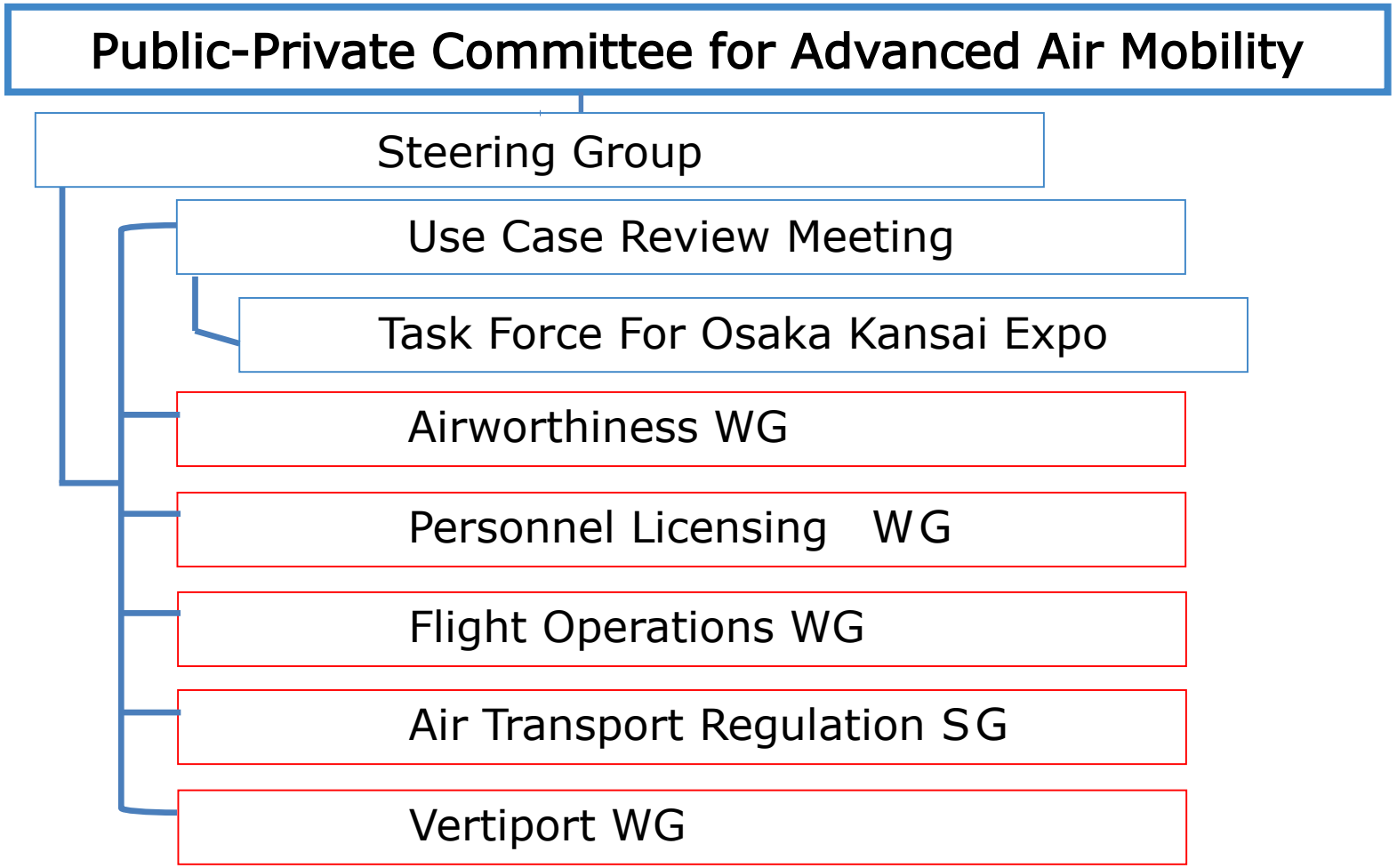
Public-Private Committee for Advanced Air Mobility
dated March 18, 2022

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, so-called "Urban Air Mobility (UAM)" – electric-powered vertical take-off and landing, and pilotless aircraft.



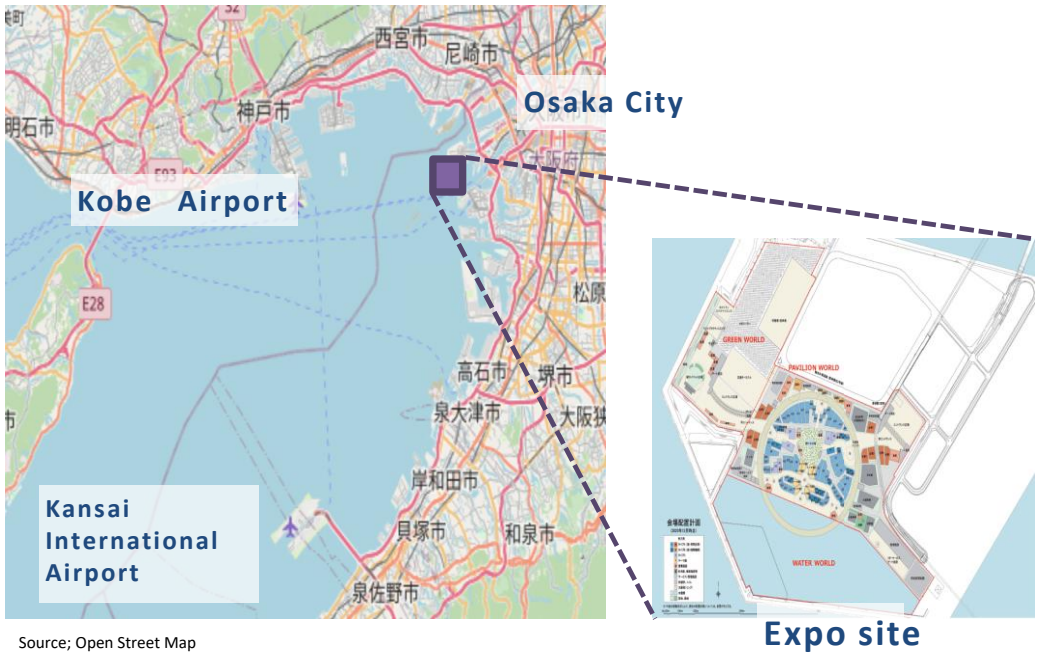
Public-Private Committee for Advanced Air Mobility

◆ JCAB and Ministry of Economy, Trade and Industry have jointly established the Public-Private Committee for Advanced Air Mobility , bringing together stakeholders in the public and private sectors to realize AAM in Japan.



Initial ConOps of AAM at 2025Expo

- Commercial service of AAM in Japan will commence at Osaka Kansai Expo in 2025.
- Commercial service with certified eVTOL aircraft
  - Sightseeing flight around Expo site
  - Two-point passenger transport service
- 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



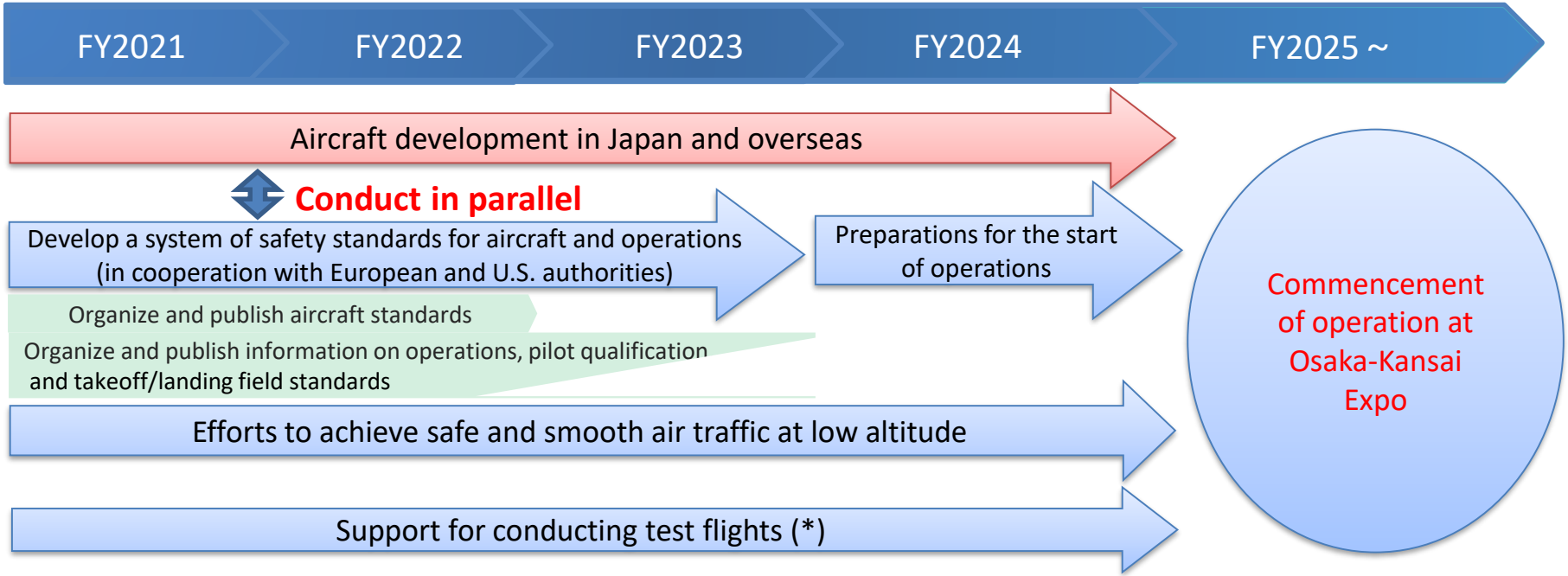
Source; Open Street Map

Osaka Kansai Expo

1. Theme:
   "**Designing Future Society for Our Live**"
2. Location: **Yumeshima (Osaka City Waterfront)**
3. Schedule:
   April 13th to October 13th, 2025
4. Expected Total Number of Visitors: **28.2 million**
5. Target Number of Countries and International Agencies:
   150 Countries, 25 International Agencies

Commencing AAM flight

- Conventional aircraft safety standards have been established based on a long history of aircraft development and lessons learned from accidents and other incidents.
- However, internationally-harmonized standards do not exist for AAMs.
- In Japan, relevant safety standards (aircraft, pilots, operations, and takeoff/landing sites) planned to be established sequentially and all developed by the end of FY2023.
- Establish a traffic management system by the end of FY2024 for safe and smooth flights around the Expo site and over the airport.



(*) **"Guidelines for Test Flights"** were established on March 2022 to clarify permission criteria for test flights and to be shared with operators and local governments.