Asia-Pacific Economic Cooperation

2024/TPTWG/AEG/TM1/006
Agenda Item: 2.5

Measure of Realizing Beyond the Visual Line of Sight Flight of Unmanned Aircraft Systems in Urban Area in Japan

Purpose: Information
Submitted by: Japan

APEC PERU 2024

Thematic Session on Unmanned Aircraft Systems: Flightpath to the Future
9 April 2024

Asia-Pacific Economic Cooperation

Measure of realizing BVLOS Flight of UAS in Urban Area in Japan

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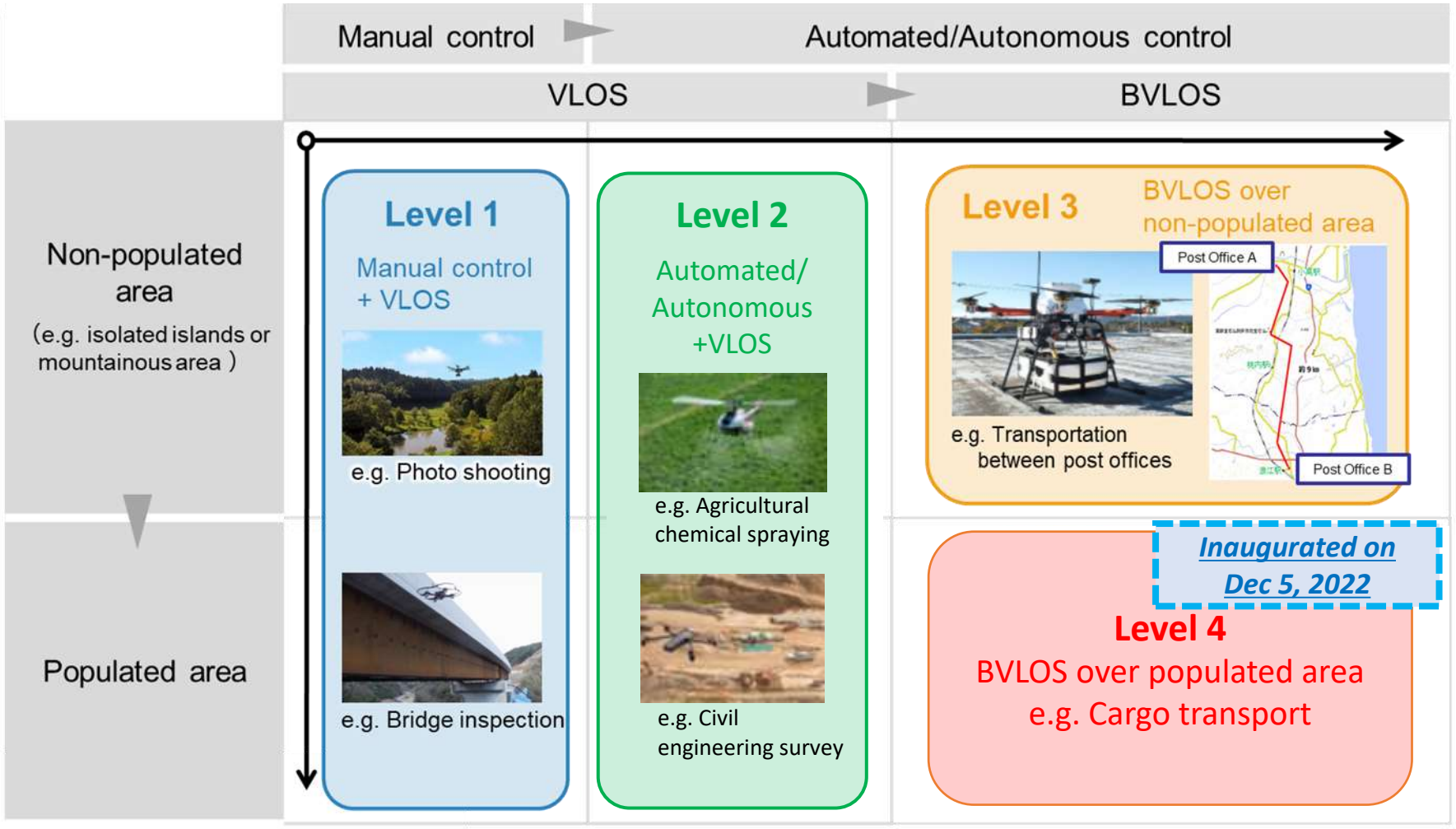
Categories for UAS operation in Japan



Transition of Rules for UAS

- In 2015, first regulation for UAS was introduced
  - under the Civil Aeronautics Act of Japan (rules for airspace and ways of flying).

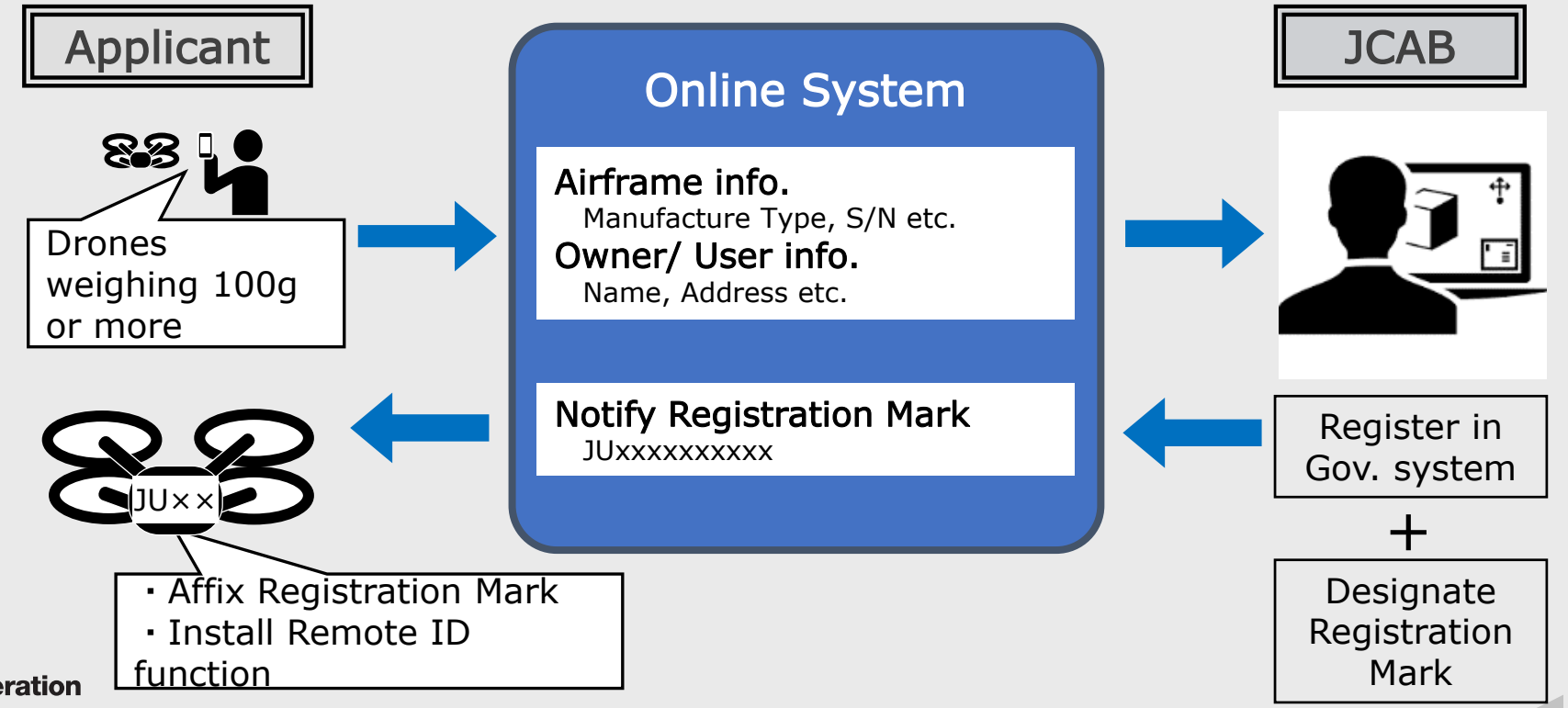
In order to introduce the Level 4 flight, a series of amendments to the Civil Aeronautics Act of Japan have been adopted.

1. **Registration system**
   1. Effective from June 20, 2022
2. **UAS certification system**(Class1/2)
3. **Pilot qualification system**(Class1/2)
4. **Rules of operation**

   2.～4. Effective from Dec 5, 2022

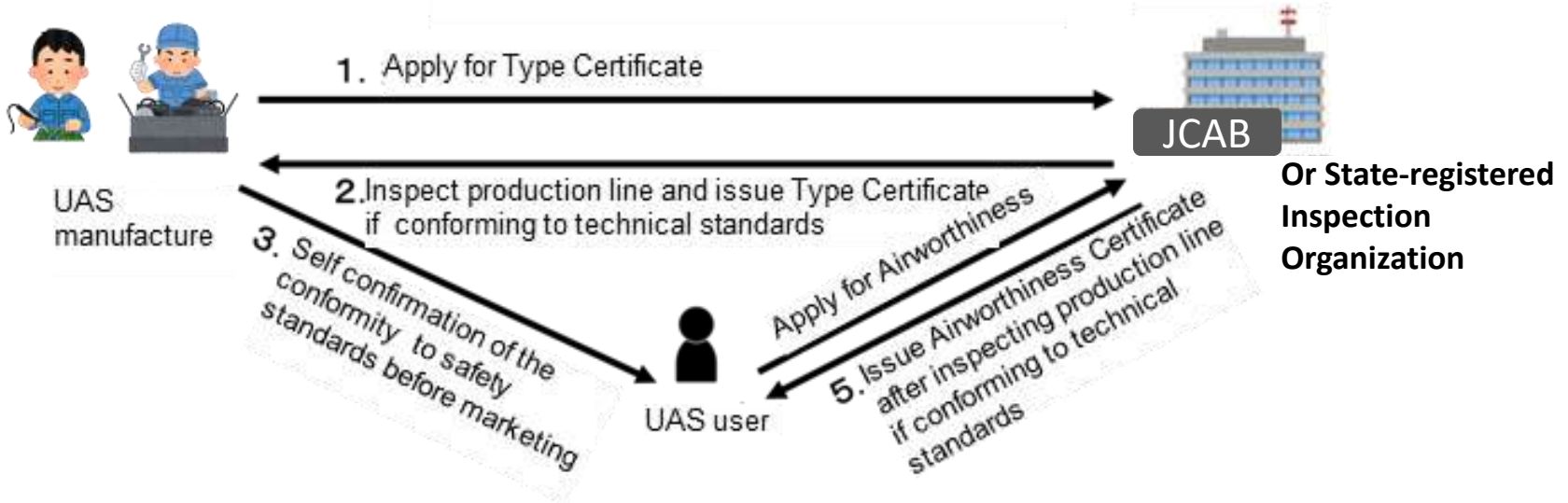
Registration system

- All registration process can be completed through online system.
- After registration, an operator shall affix the designated registration mark to the airframe, as well as install “Remote ID” function transmitting its airframe information including registration mark.
- As of the end of February 2024, more than 383,000 drones have been registered.



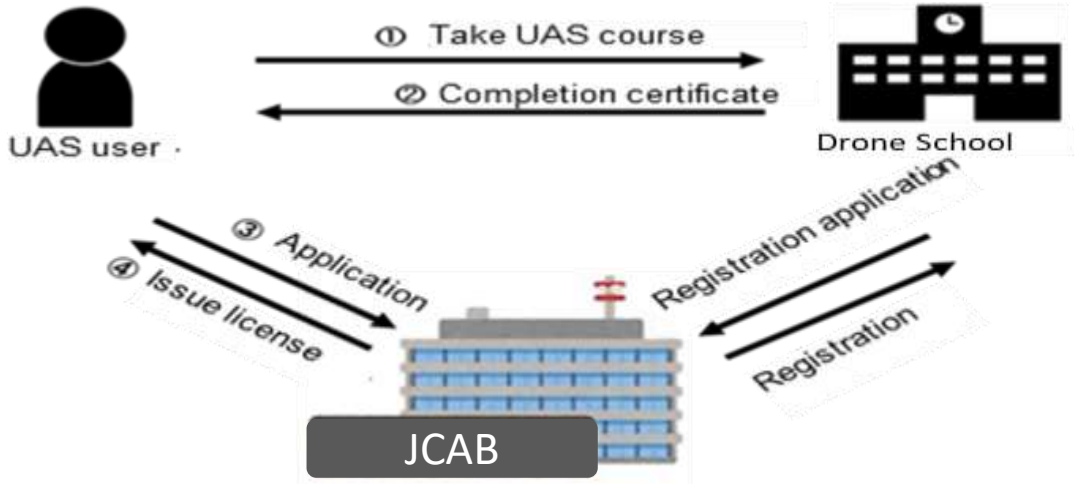
UAS certification system

- **UAS certification system** for individual UAS has been established.
- If **Type Certificate** is obtained by a UAS manufacturer 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.**



Rules of operation

- 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 with aircraft, etc.

Urgent Aid

Rescue any persons involved in an accident.

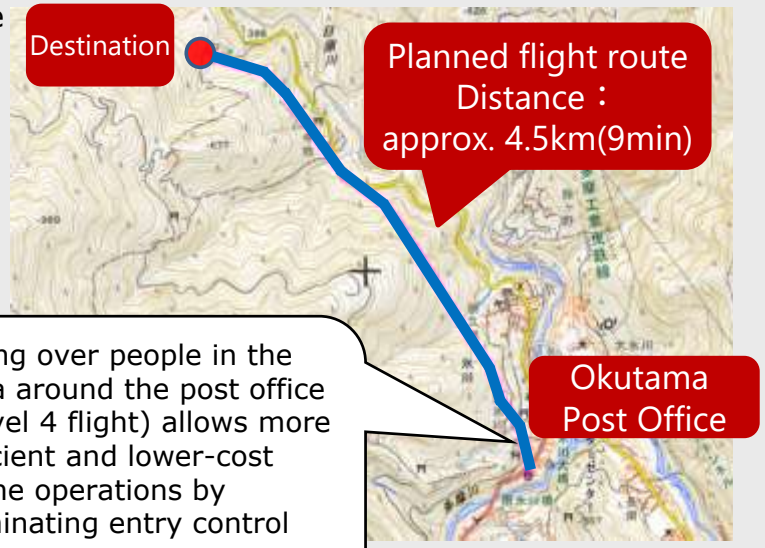
- For the Level 4 flight, risk assessment and associated mitigation measures are to be conducted when requesting flight permission from JCAB for its review.

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

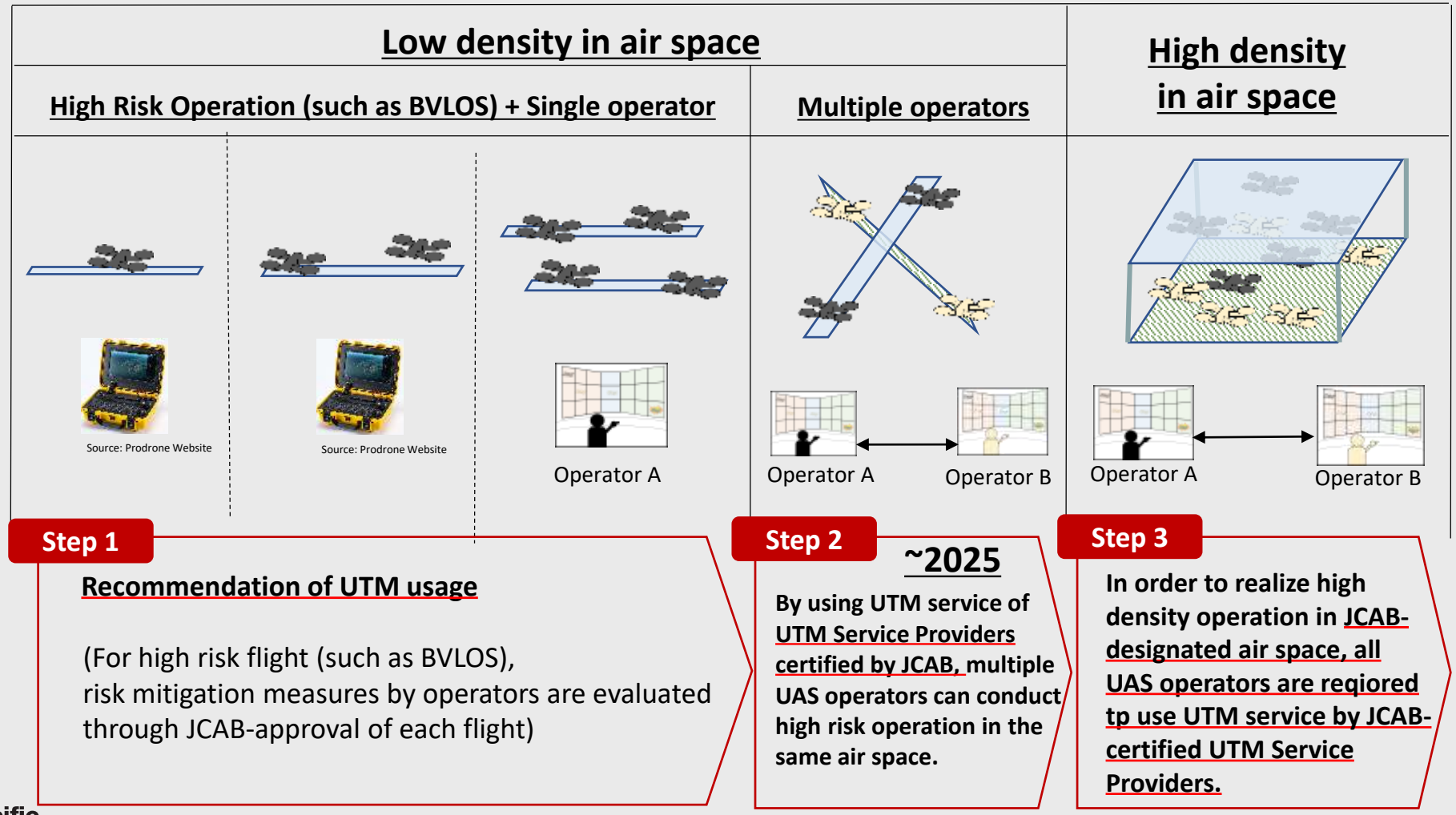
*Ref: Press Release by Japan Post Co., Ltd on March 17th, 2023

Challenges toward BVLOS flight in urban area

	Action/Consideration deemed be necessary
Aircraft	• Encourage manufacturers to obtain type certificate
Pilot	• Train pilots at training organizations to be equipped with sufficient knowledge and skills
UAS traffic management	• Technology and system development of UTM
Liability of accidents	• Necessity of insurance for damages against third parties
Administrative procedures	• Streamlining administrative procedures, clarifying and streamlining regulations
Profitability	• Technology development of simultaneous operation of UAVs（Including technology and system development of UTM）
Social acceptance	• Accumulating cases of safe operation and public relations

Major challenge: 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.



Next Steps, Recommendations for APEC Policy Makers

- APEC policy makers are encouraged to..
  - Tackle challenges toward realization of safe BVLOS flights in urban areas, by sharing idea on safety and goals, as well as challenges and lessons among APEC policy makers.

Thank you for attention!

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