



**Asia-Pacific  
Economic Cooperation**

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**2024/TPTWG/AEG/TM1/003**

Agenda Item: 2.2

## **Unmanned Aircraft Systems Necessity or Nuisance**

Purpose: Information  
Submitted by: Singapore



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



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# UAS: Necessity or Nuisance

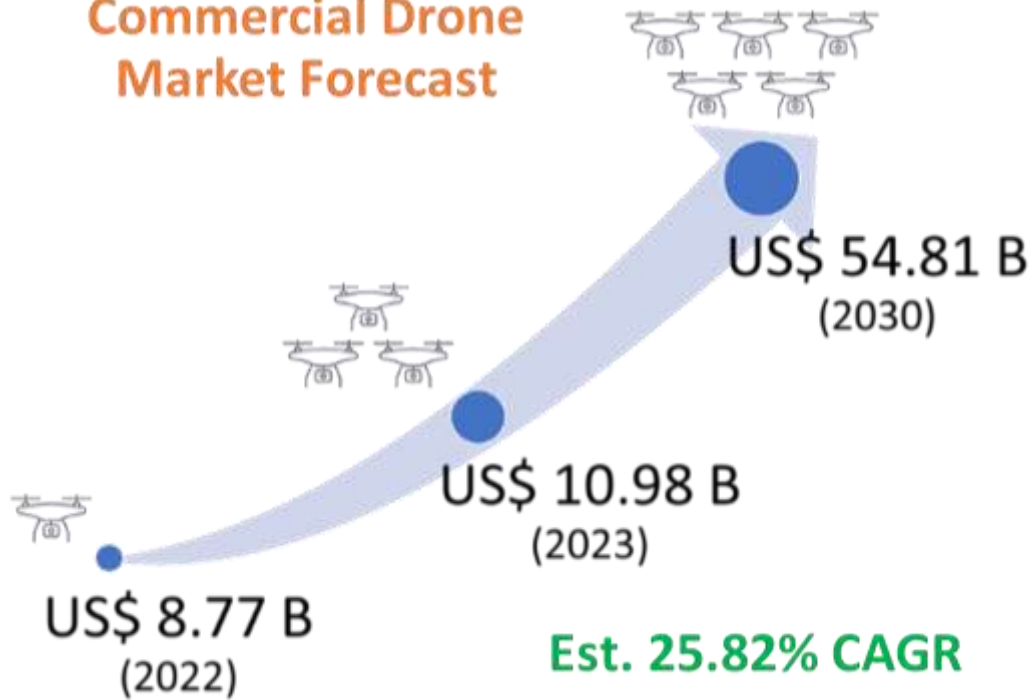
**Maran Paramanathan,**

**Director, Unmanned Systems Policy, Regulations and Operations**

Apr 2024

# Rapid growth of UAS Industry

## Commercial Drone Market Forecast



## Economic and Social Benefits



Increased productivity



Reduce manpower



Improved safety

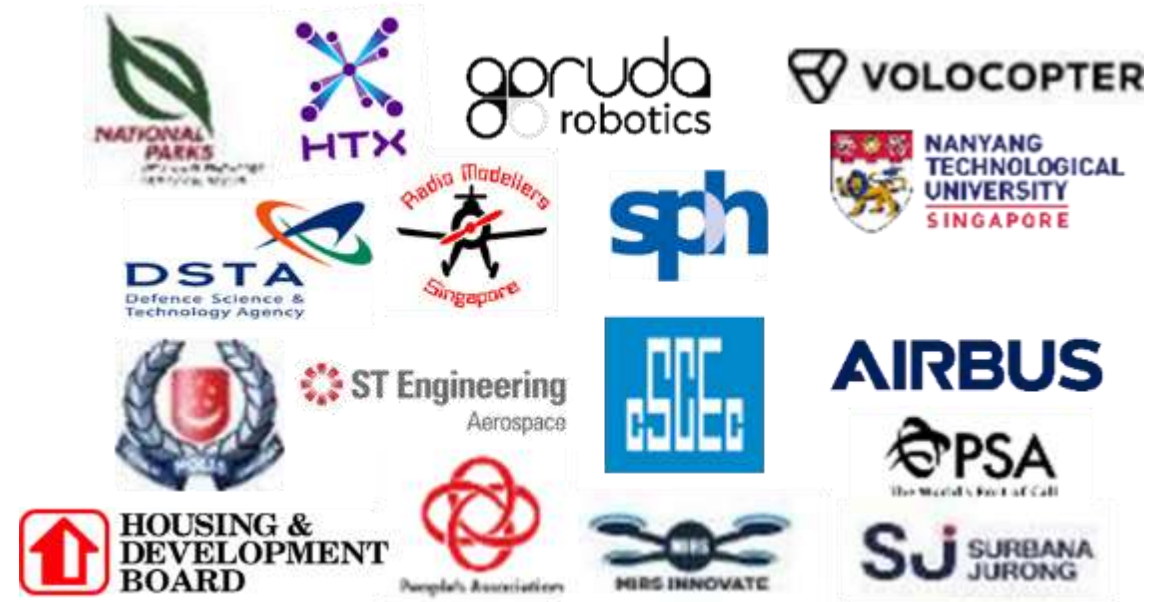
Regulators have adopted varying approaches to facilitate



# Wide range of platforms, stakeholders & use cases increase the complexity of regulating UAS



*A variety of UAS types with mixed of custom-made & commercially-bought*



*A wide range of UAS use cases; façade, tunnel & reservoir inspections, drone shows & a growing demand for shore-to-ship deliveries*

# UAS have a role in enhancing workforce safety, increasing efficiency & productivity



**Façade Inspections**



**Reservoir Monitoring**



**Ship-to-Shore Deliveries**



**Surveillance**



**Entertainment**



# Challenges

## Capability & Capacity

- Anticipate needs
- Fast-evolving

## Increase in Complexities

- Closer to Manned Aviation
- BVLOS

## More Capable UAS

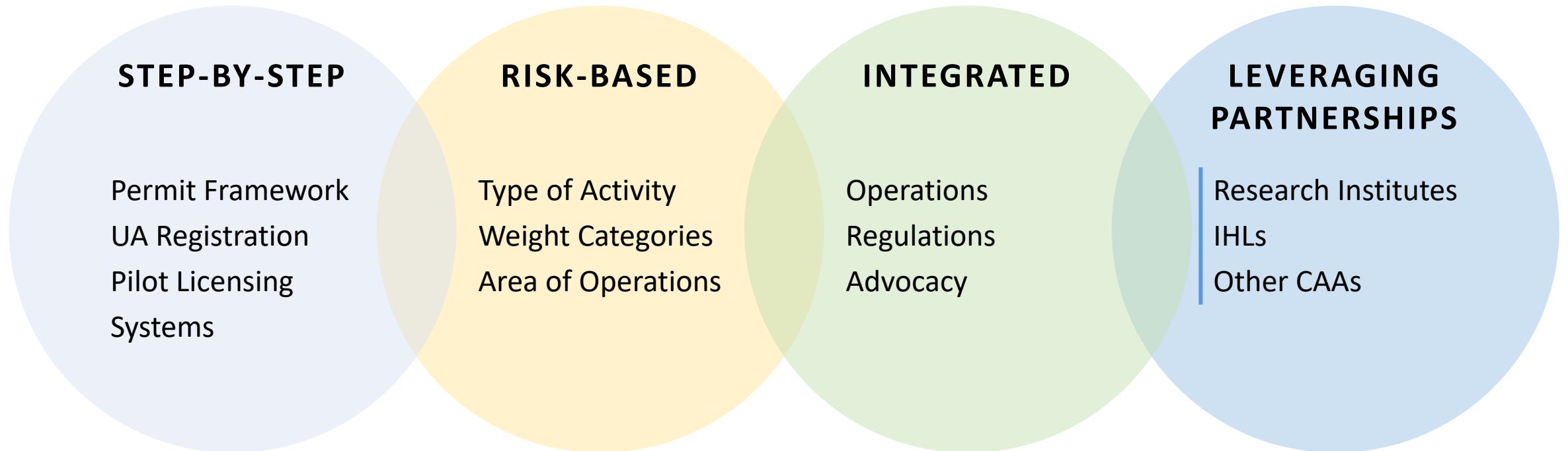
- Bigger, Heavier Payloads
- Longer Range & Duration

## Different Stakeholders

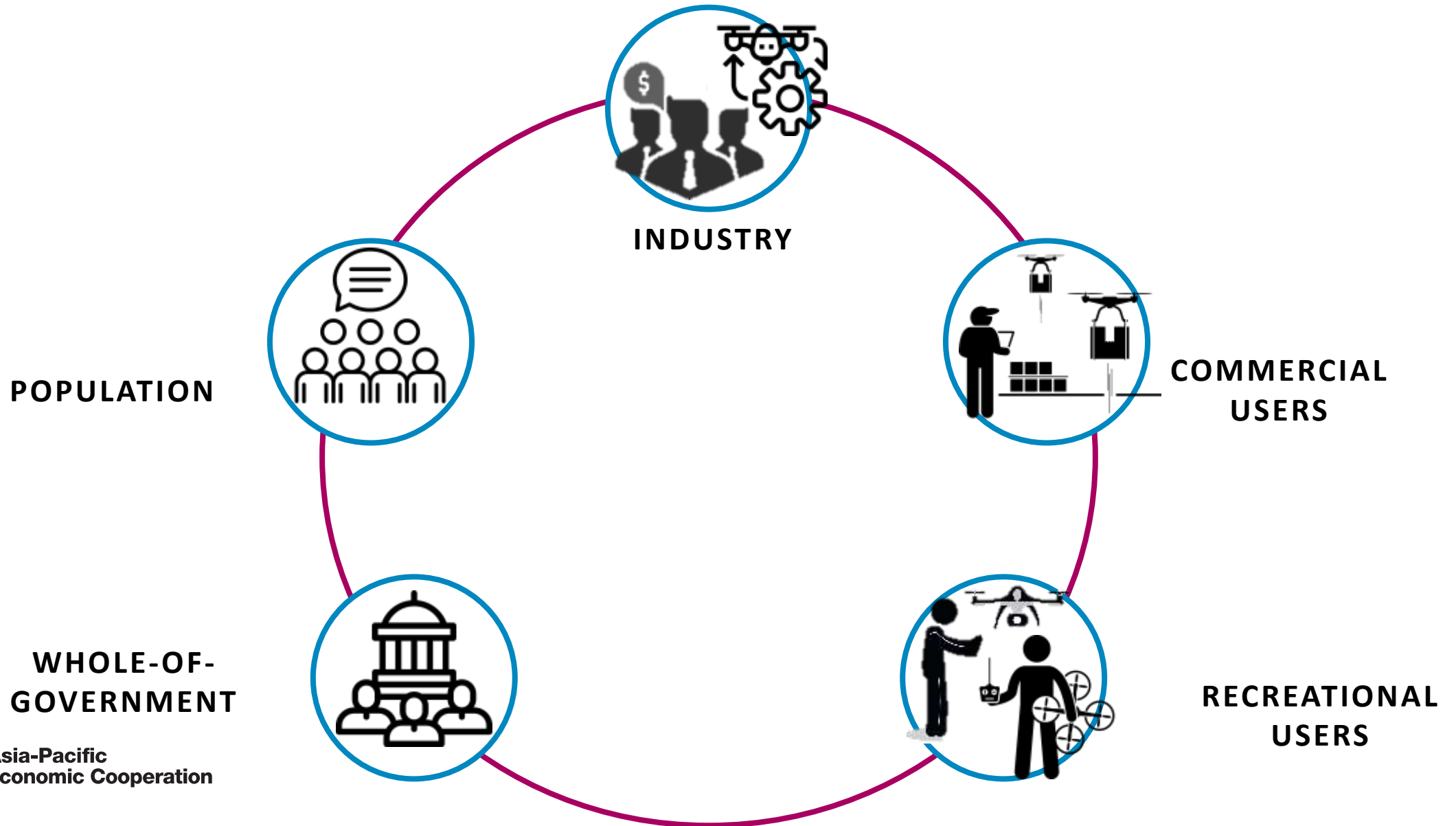
- Across all industries
- Tension with manned aviation



# Building Capabilities

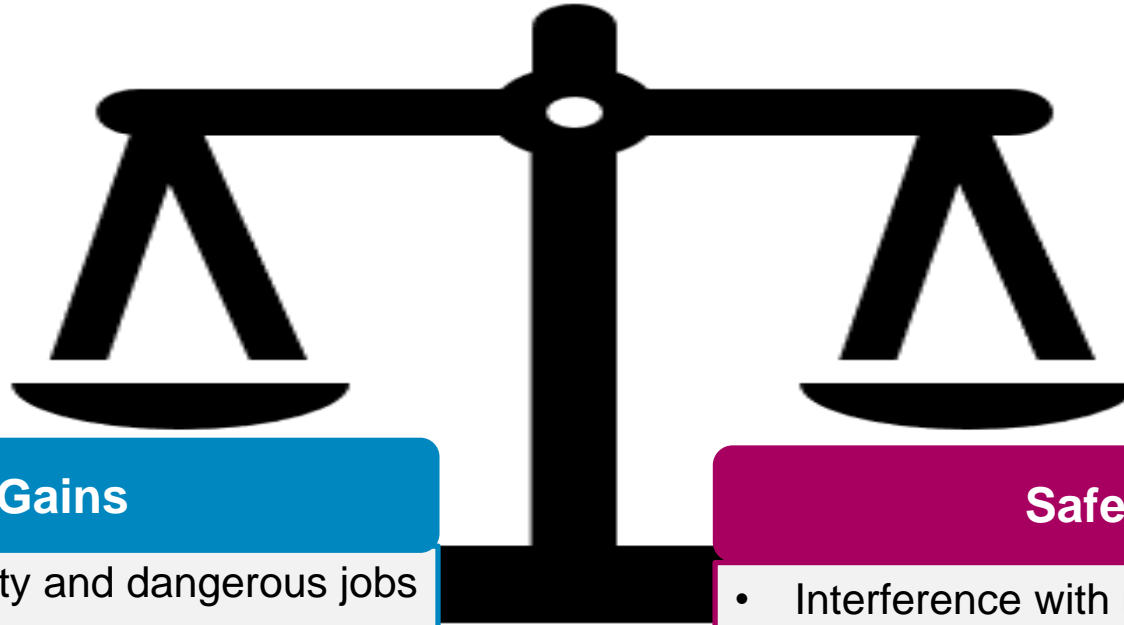


# Engaging Stakeholders





# Achieving the Right Balance



## Economic Gains

- UAS can perform dull, dirty and dangerous jobs (e.g. surveillance)
- UAS can transform business models (e.g. last-mile delivery)
- UAS provides new eye-in-the-sky perspective (e.g. filming, mapping)
- UAS provides alternative transport means (e.g. urban aerial mobility)

## Safety Hazards

- Interference with manned aircraft operations
- Risk to persons and/or properties

## Security Threats

- Hostile surveillance
- Delivery of a chemical, biological or explosive payload

# End of Presentation



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