

HorizonUAM Use Cases and Technology Scenarios

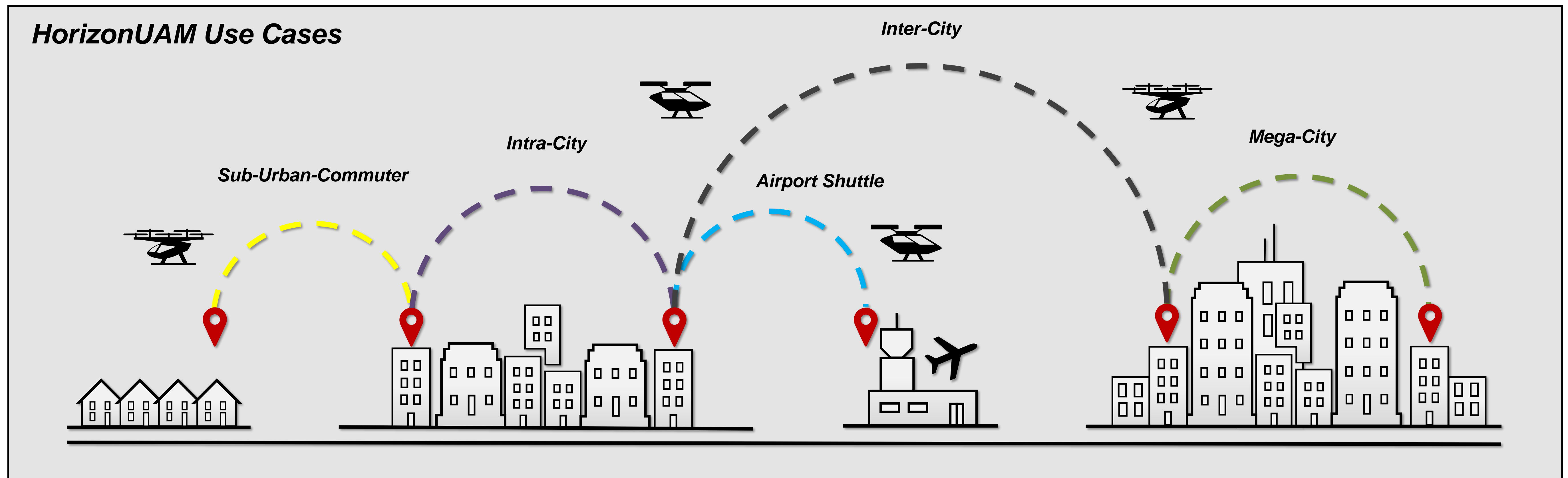
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Use Cases

Intra-City Use Case

- **Transport range:** up to 50 km
- **Speed:** up to 100 km/h
- **Seats:** up to 4
- Flights on-demand within core areas and built-up urban areas of cities in Germany
- High traffic density and flights in urban environments over short distances
- Flight mission with up to two intermediate stops without need for recharging

Mega-City Use Case

- **Transport range:** up to 100 km
- **Speed:** up to 150 km/h
- **Seats:** up to 6
- Flights on-demand within core areas and built-up urban areas of global mega-cities
- High traffic density and flights in urban environments over large distances
- Flight mission with no or one intermediate stop without need for recharging

Airport Shuttle Use Case

- **Transport range:** up to 30 km
- **Speed:** up to 150 km/h
- **Seats:** up to 4
- Scheduled flights between airports and selected locations (e.g. city center, CBD)
- Vehicle with higher payload capacity and space to store luggage
- Flight mission between two vertiports with charging capability after each flight

Suburban-Commuter Use Case

- **Transport range:** up to 70 km
- **Speed:** up to 150 km/h
- **Seats:** up to 4
- Scheduled flights between suburbs / surrounding satellite cities and the city center
- Economically challenging due to high peak demand and low off-peak demand
- Flight mission between two vertiports with charging capability after each flight

Inter-City

- **Transport range:** over 100 km
- **Speed:** over 100 km/h
- **Seats:** up to 10
- Scheduled flights between two cities
- Vehicle for long distance flights with high comfort for passengers
- Flight mission between two vertiports with charging capability after each flight

Technology Scenarios

	2025	2050
Propulsion technology	Fully electric or hybrid electric based on conventional fuels	Fully electric or hybrid electric, also hydrogen-based
Level of autonomy	Onboard-Pilot / Remote-Pilot*	Highly automated to autonomous
U-space Service Level	U-space Service Level U1 (first U-space services)	U-space service Level U2-U3 (advanced U-space services)
Communication	Multilink communications approach relying on existing comm. infrastructure	Multilink communications approach with specifically designed datalink
Navigation	GNSS and supporting multi-sensor navigation	Certified multi-sensor navigation including GNSS

* For the intra-city and mega-city use cases an onboard pilot is assumed, and for the use cases airport shuttle, suburban and intra city a remote pilot.