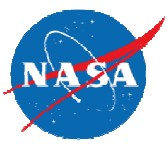




Urban Air Mobility: Concepts and Challenges
Natasha Neogi
Assured Autonomy Workshop, Mobility Panel Discussion
October 16-17, 2019



UAM Passenger Carrying Market Comparisons

Comparisons of Passengers and Numbers of Vehicles per City

Crown Air Metro	2028	2030
# pax trips/day/city	23,744	136,986
# vehicles/city	273	1,533
# flights/day/city	5,936	34,247
# pax/flight (avg)	4	4

Aggressive on assumptions (i.e. autonomy) and implementation (i.e. vertiport infrastructure)

BAH (baseline)	Near-mid
# pax trips/day/city	8,200
# vehicles/city	410
# flights/day/city	5,500
# pax/flight (avg)	1.49

Fairly conservative assumptions in all except manufacturing volumes, and no predictions for dates

Uber Air Taxi	2025-2030
# pax trips/day/city	60,000
# vehicles/city	400
# flights/day/city	15,000
# pax/flight (avg)	4

Aggressive timeline and assumptions more in-line with Crown market study

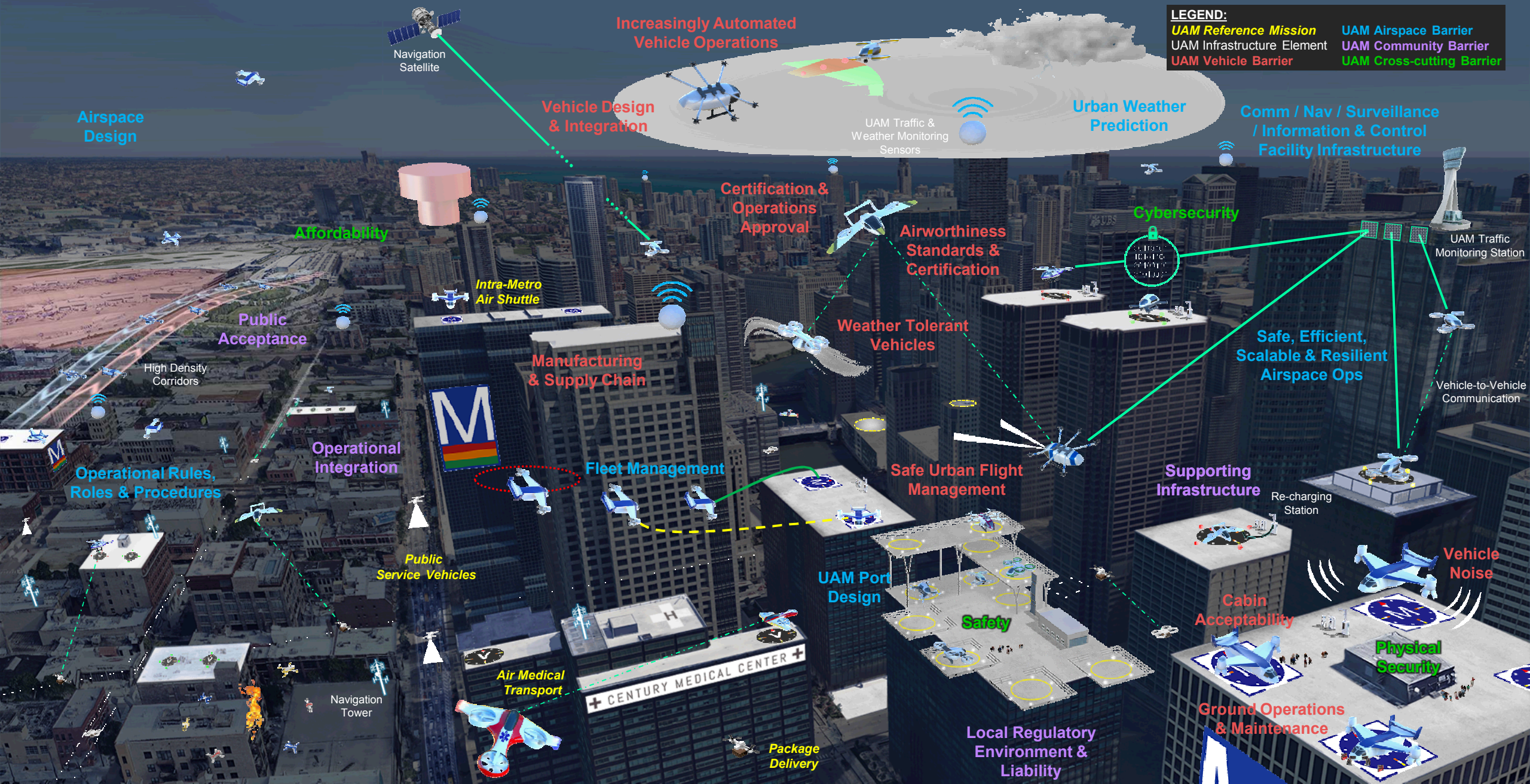
Cost Comparisons Over Time (\$/pax-mile)

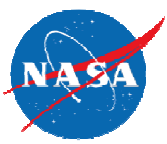
Cost (\$/pax-mile)	Launch	"Near-Mid-Term"	"Far-Mid-Term"	"Long Term"
BAH Baseline	N/A	6.25	~2.50	N/A
BAH Low End	N/A	~3.75	~1.50	N/A
Crown	N/A	2.00	1.20	N/A
Uber	5.73	N/A	1.84	0.44

Leverage data to architect a comprehensive approach that defines a realistic progression to open the UAM passenger-carrying market

Urban Air Mobility: Passenger Carrying OV-1

National Aeronautics and
Space Administration





UAM Reference Missions

Passenger Carrying Reference Missions



INITIAL STATE



INTERMEDIATE STATE



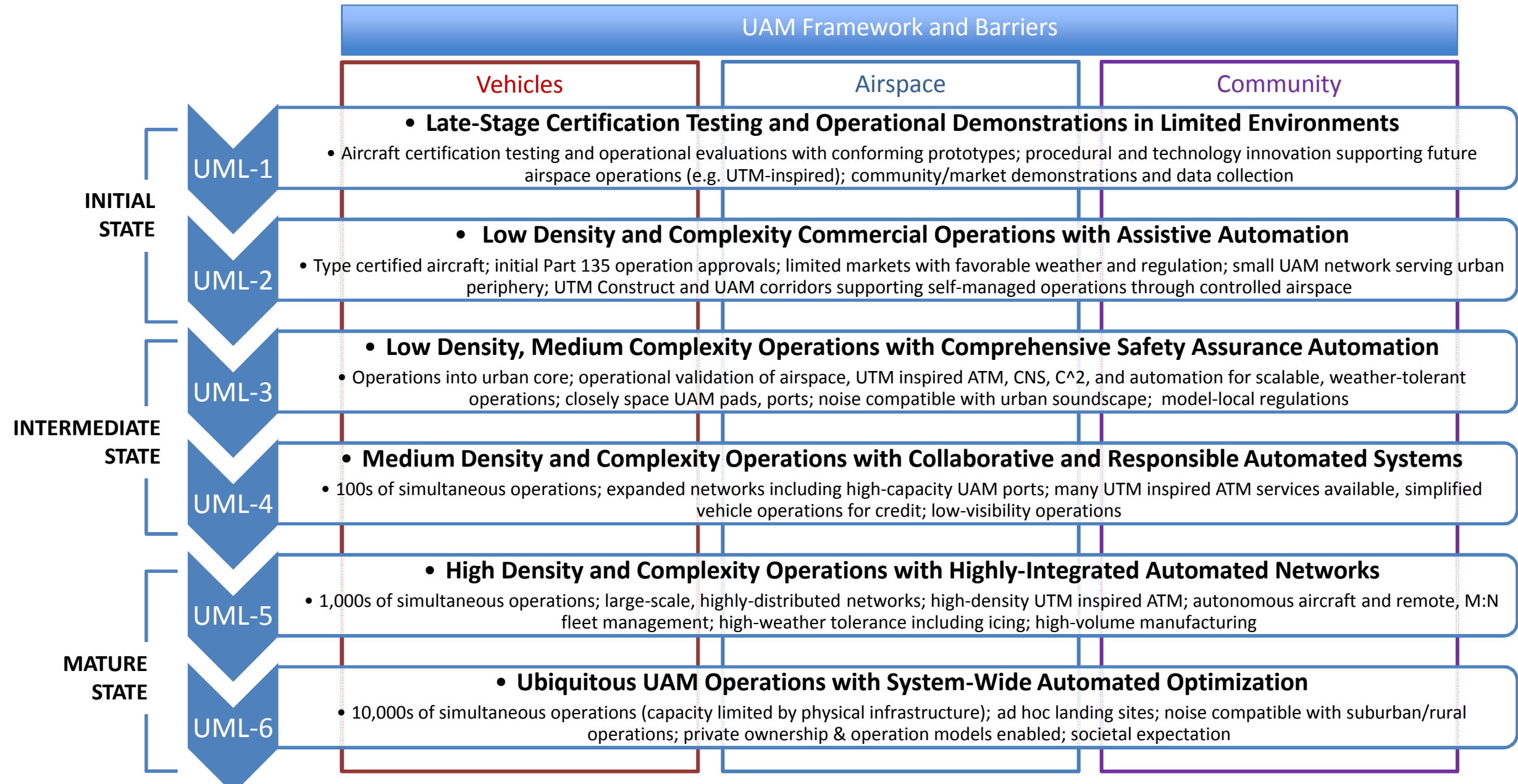
MATURE STATE

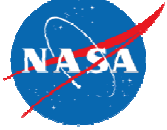
Non-Passenger Carrying Reference Missions



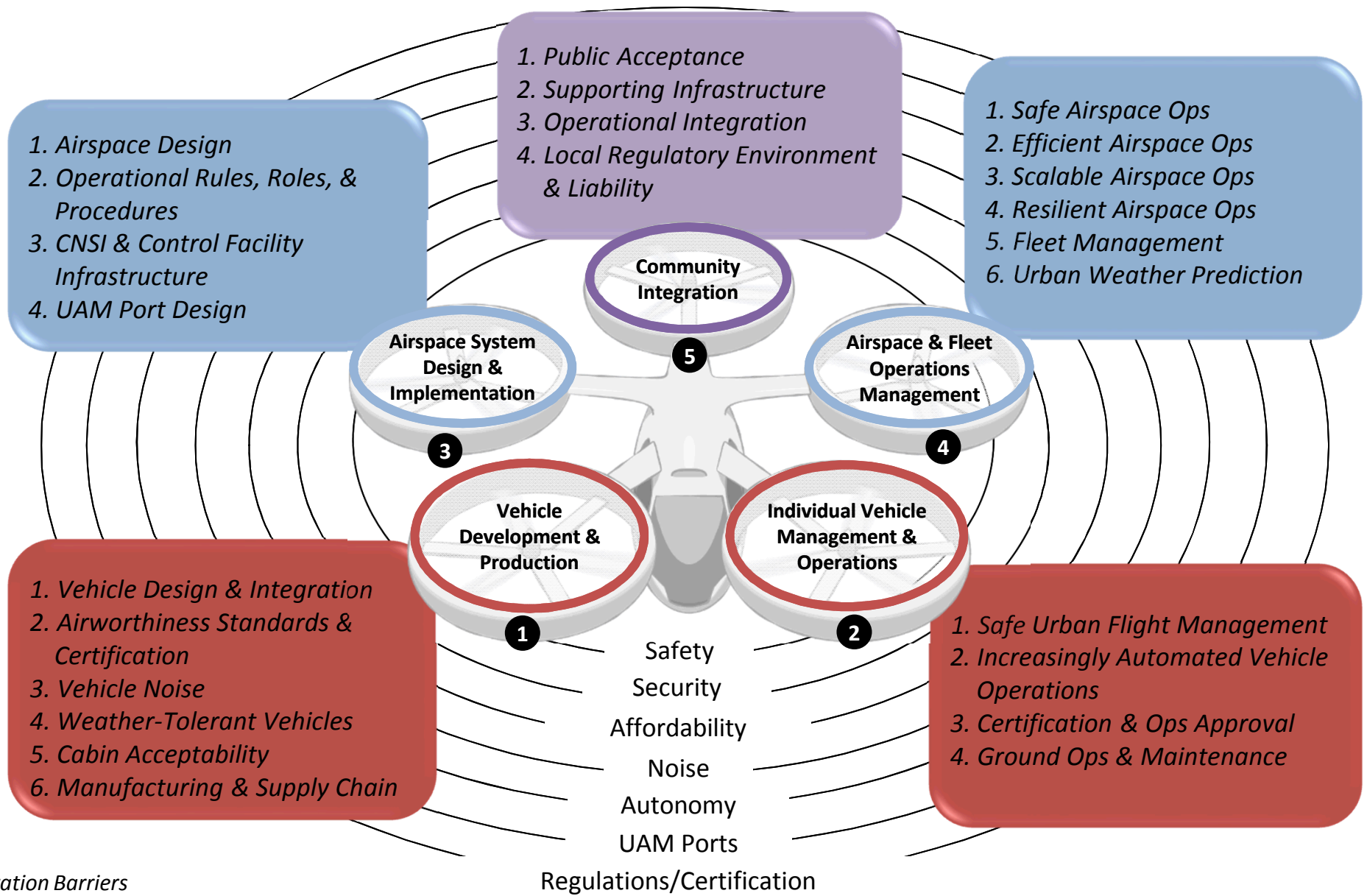


UAM Maturity Levels (UML)

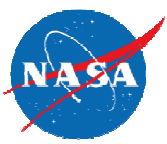




UAM Framework and Barriers

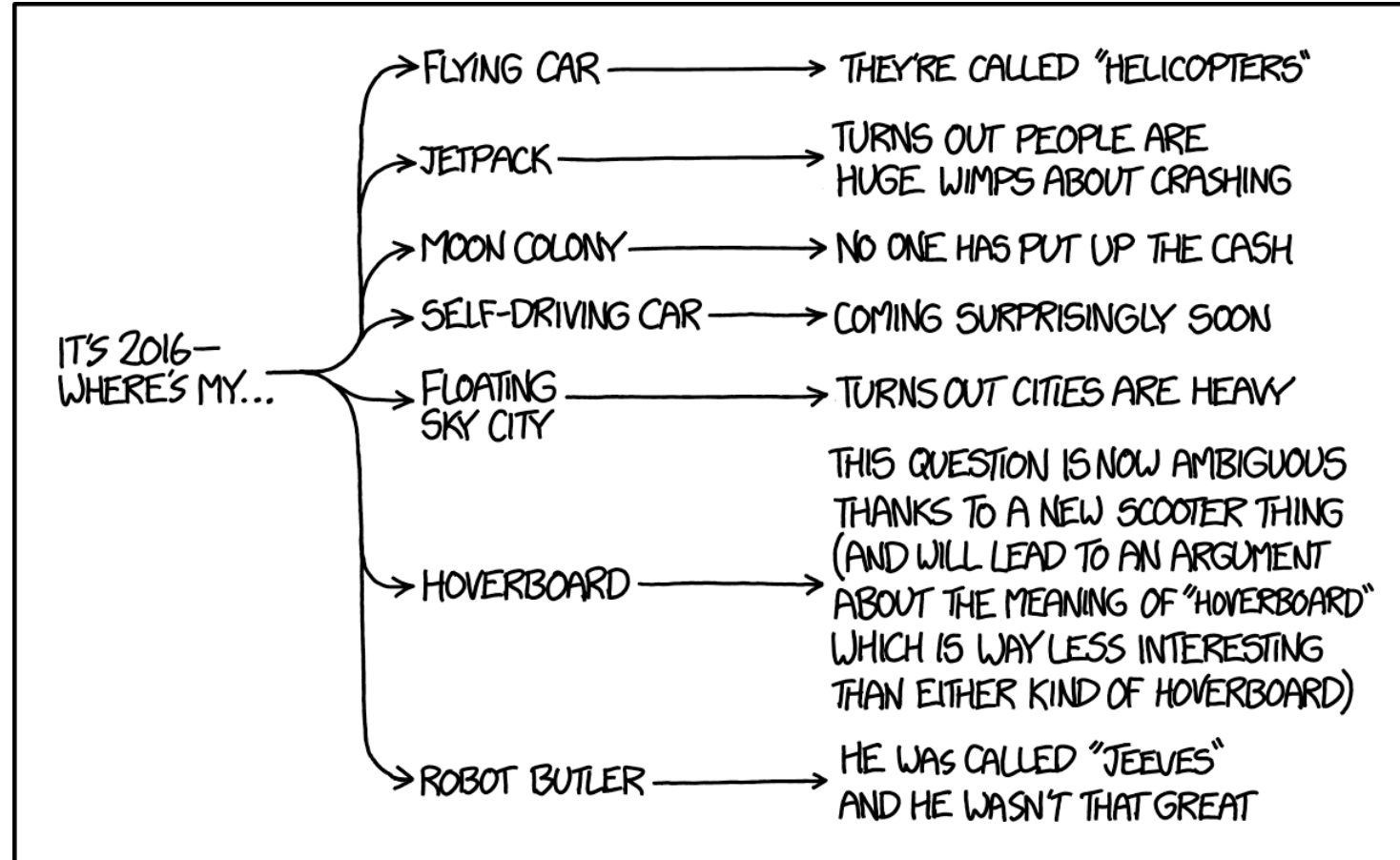


- Vehicle Barriers
- Airspace Barriers
- Community Integration Barriers
- # Pillar number



Questions?

<https://www.xkcd.com>



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