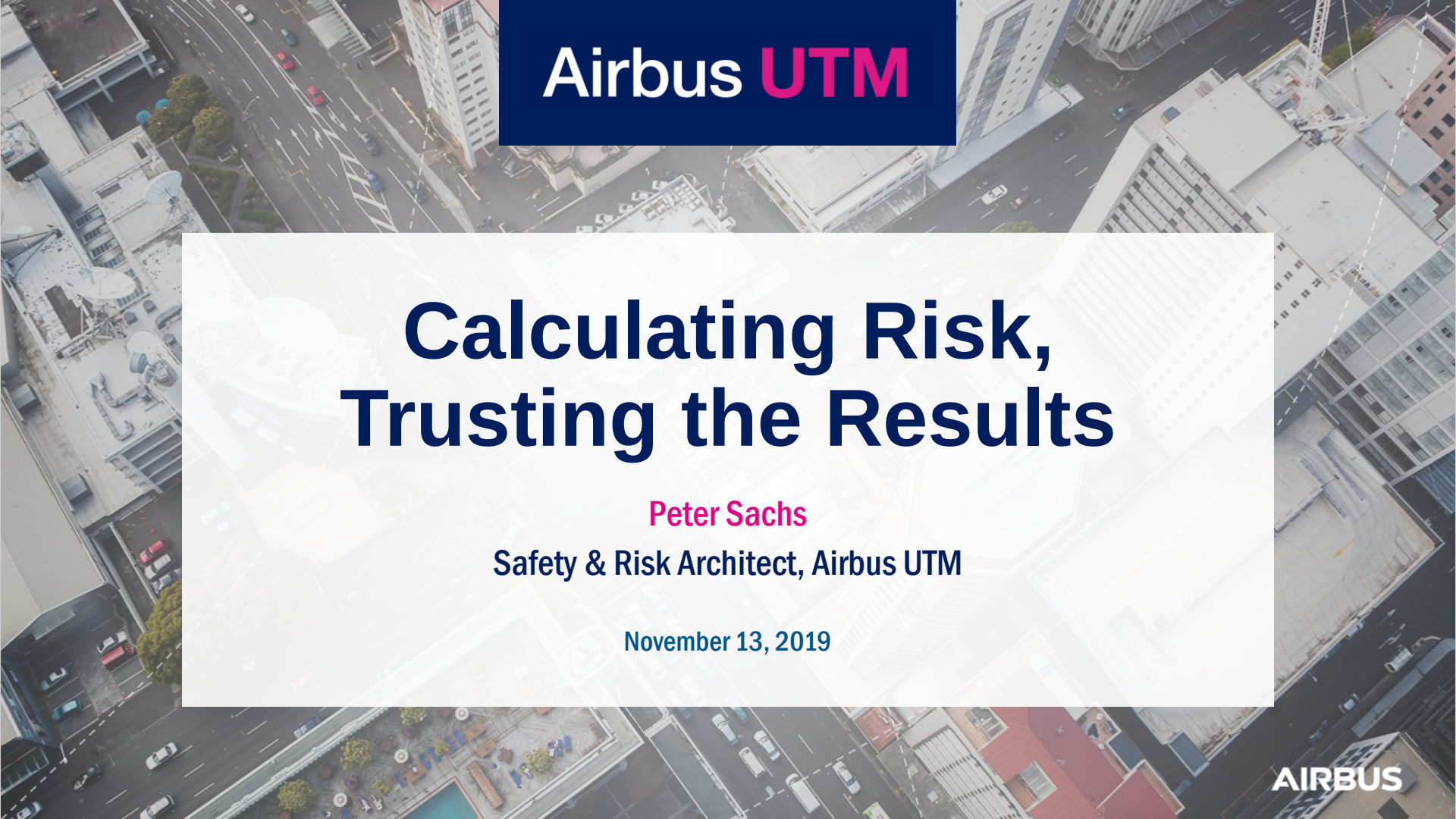


Airbus UTM

Calculating Risk, Trusting the Results

Peter Sachs

Safety & Risk Architect, Airbus UTM

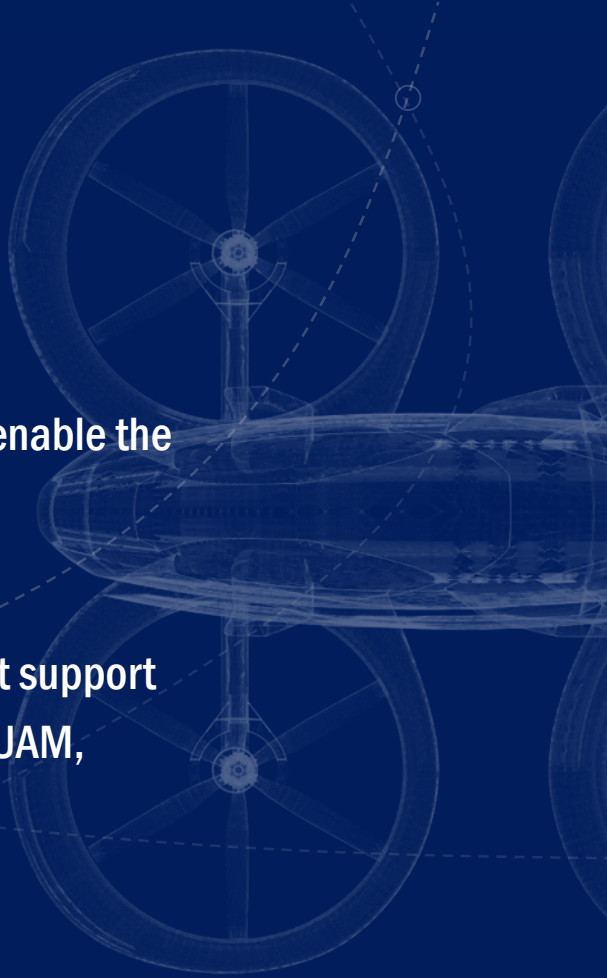
November 13, 2019

AIRBUS

About Airbus UTM

Airbus UTM is building digital air traffic management solutions to enable the next age of aviation.

We design, specify, build, and deploy digital air traffic services that support the automated and digital operations of our skies, including UAS, UAM, HAPS.



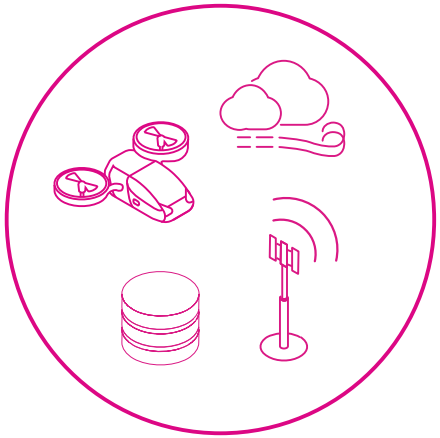
Risk Management Today

UTM risk management is proactive

Preflight

Use advanced algorithms to anticipate hazards during preflight planning

Inflight



UTM systems are aware of minute changes and can adapt

Emergency

Services coordinate on the fly to ensure a safe outcome

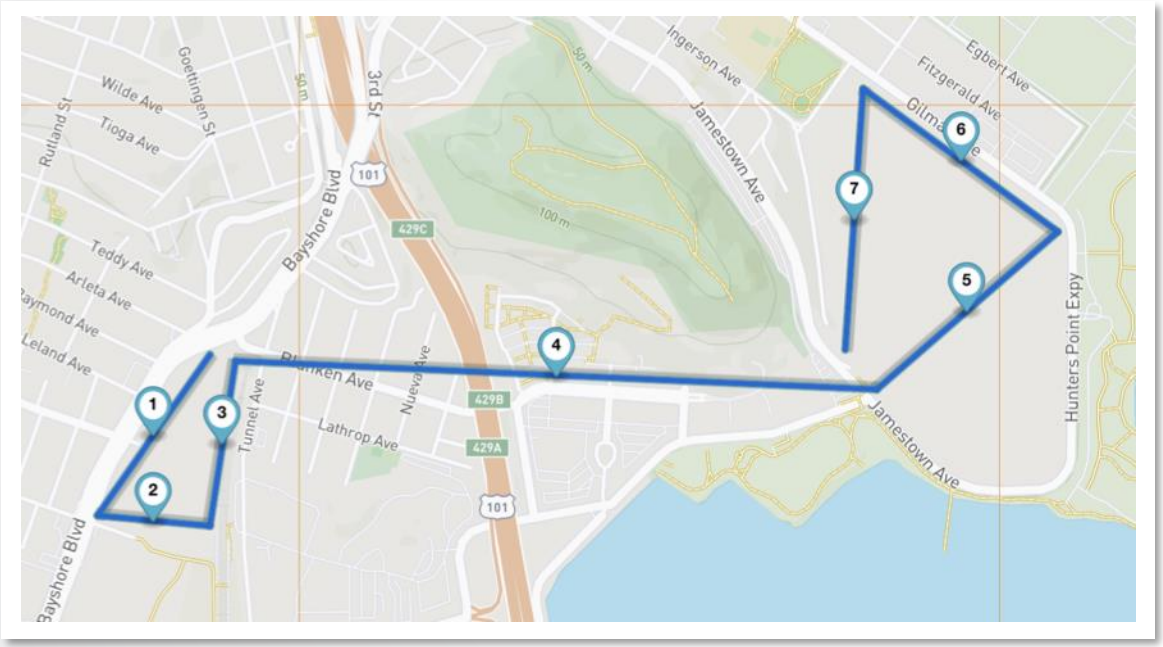
AIRBUS

Different methodologies yield different results

SORA ▪ LAANC ▪ QUANTITATIVE

AIRBUS

Consider this inspection flight



Two construction sites

- Within Class B surface area
- Over dense neighborhoods and a busy freeway

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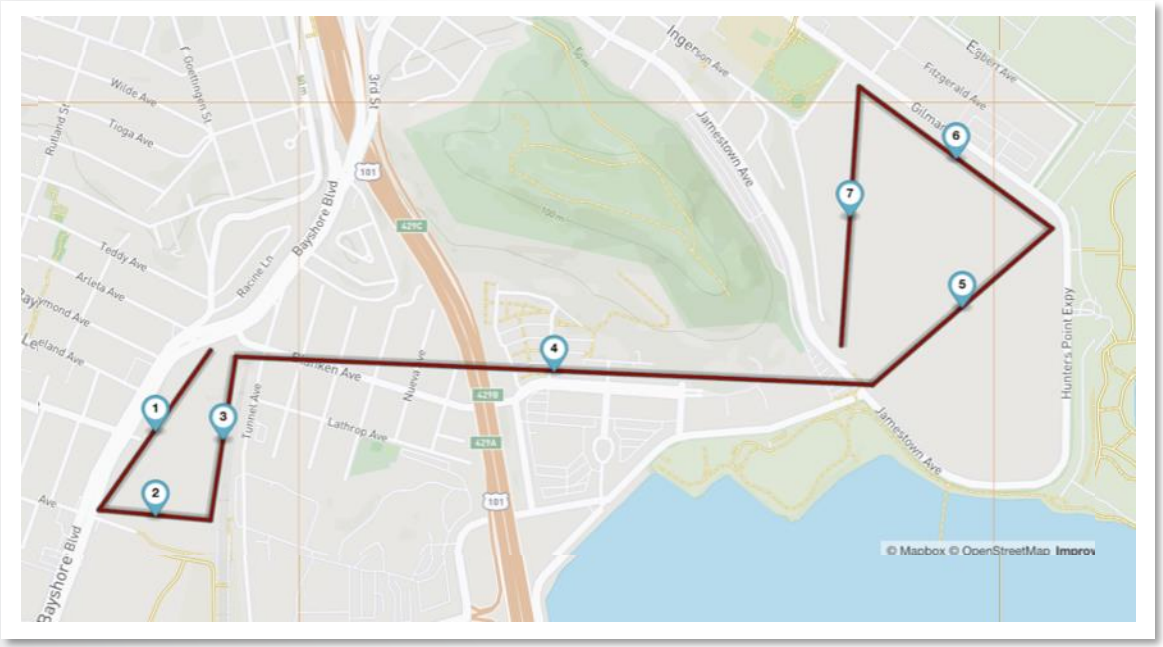
SORA – This mission is SAIL VI

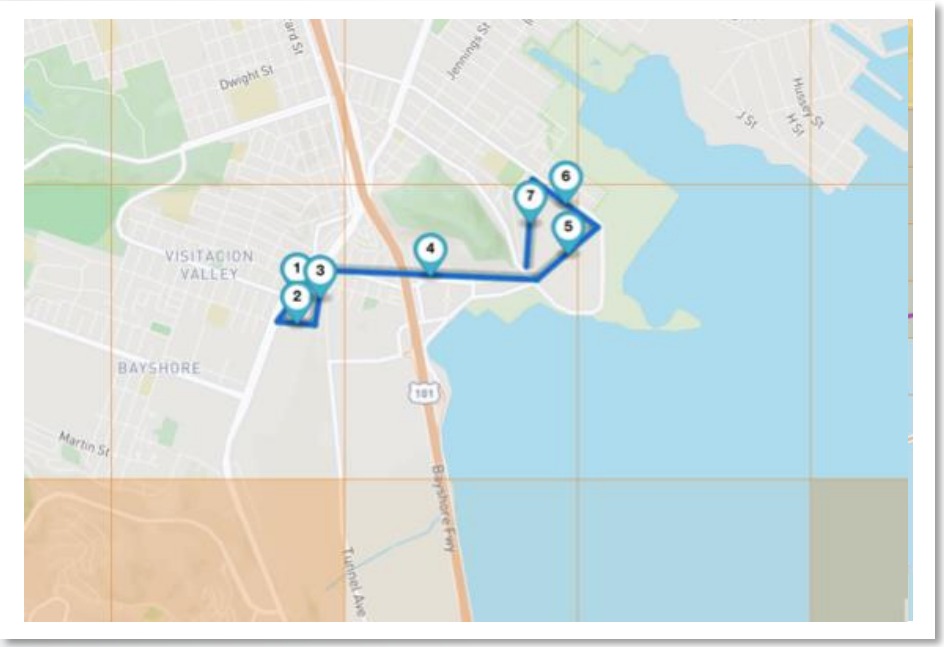


Operator will need to meet stringent requirements

- Both air risk and ground risk are considered high
- Score tells operator how robust their UAS, processes and procedures need to be

AIRBUS

LAANC allows automatic approval



- Minimize risk of midair collision with conventional aircraft
- Flight occurs at allowable altitude
- Operator must follow Part 107 regulations

Airbus UTM

Airbus Probabilistic Calculation

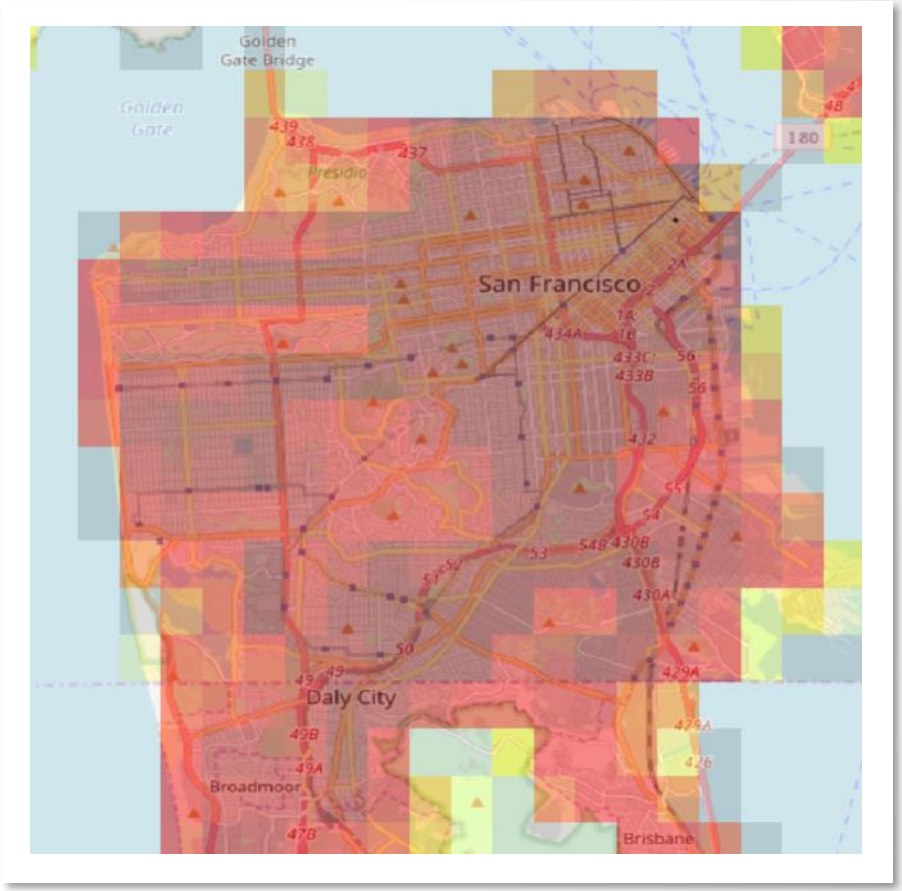
We mathematically evaluate battery performance, pilot experience, maintenance history, weather and vehicle characteristics

Result: Battery dies halfway through flight, assuring a crash

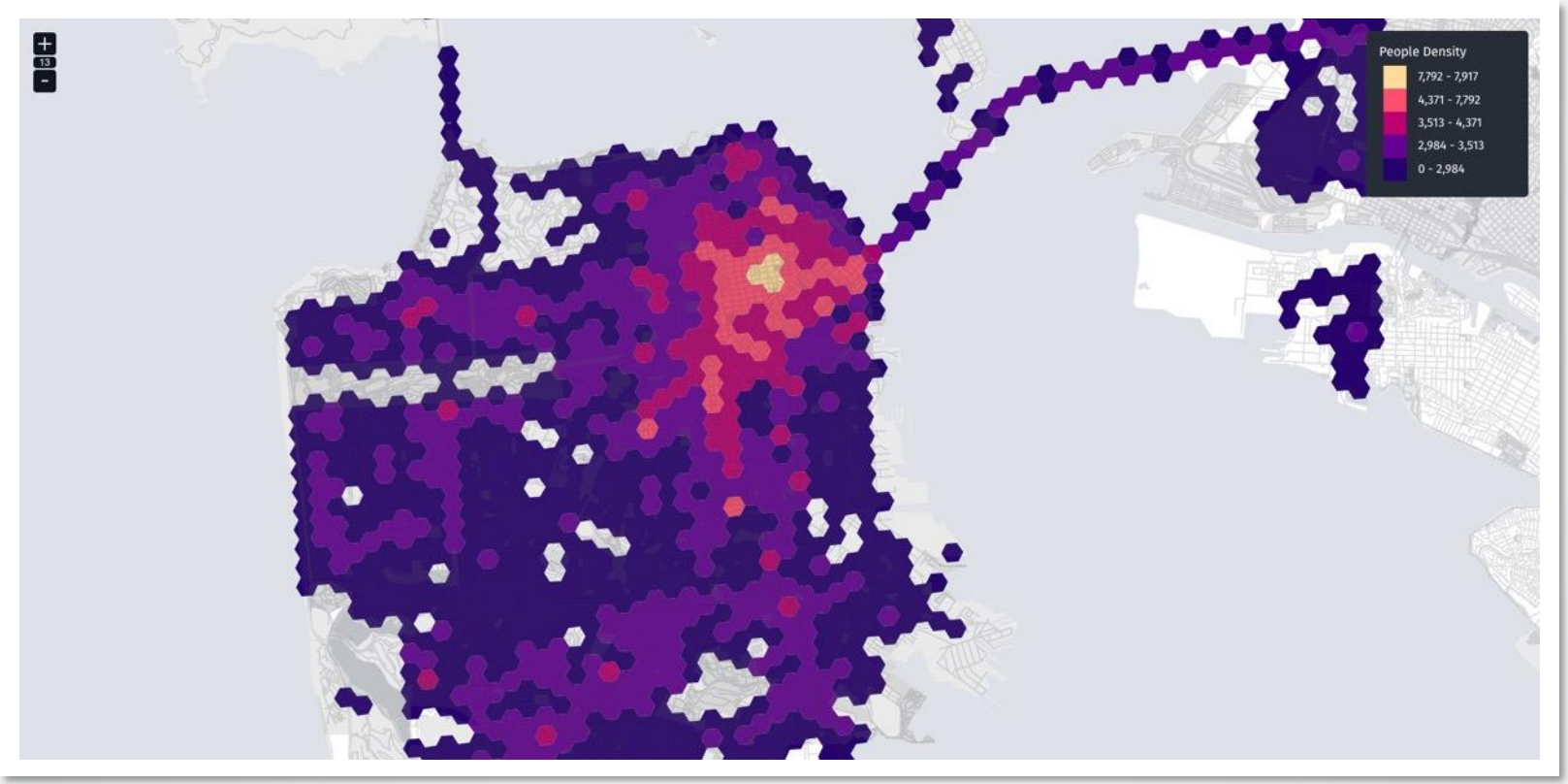
Improving Population Estimates

Population Density Data Sources

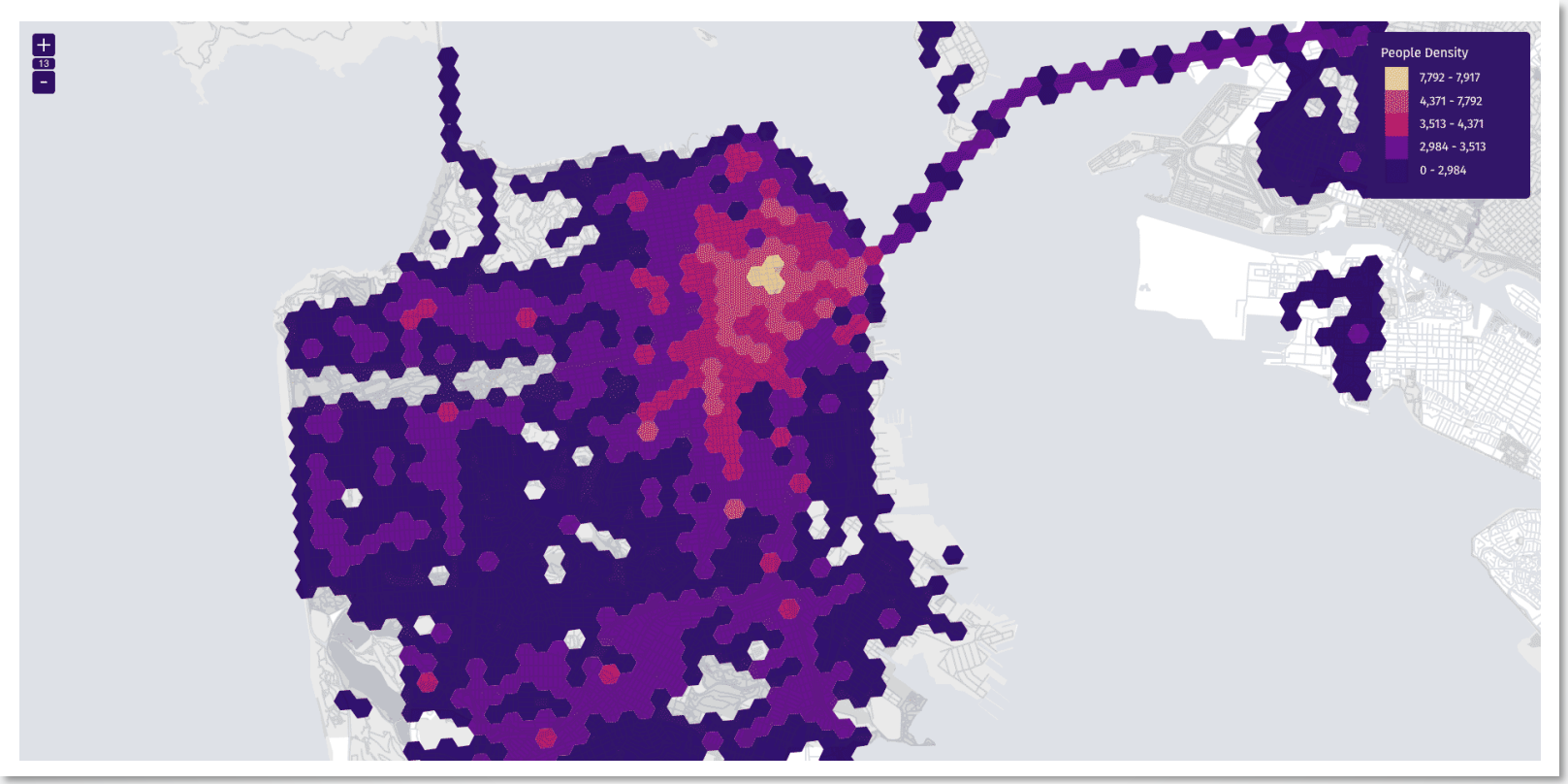
- What density is “sparse” or “populated”?
- Static sources provide a baseline or average. How can we capture variations in movement patterns?



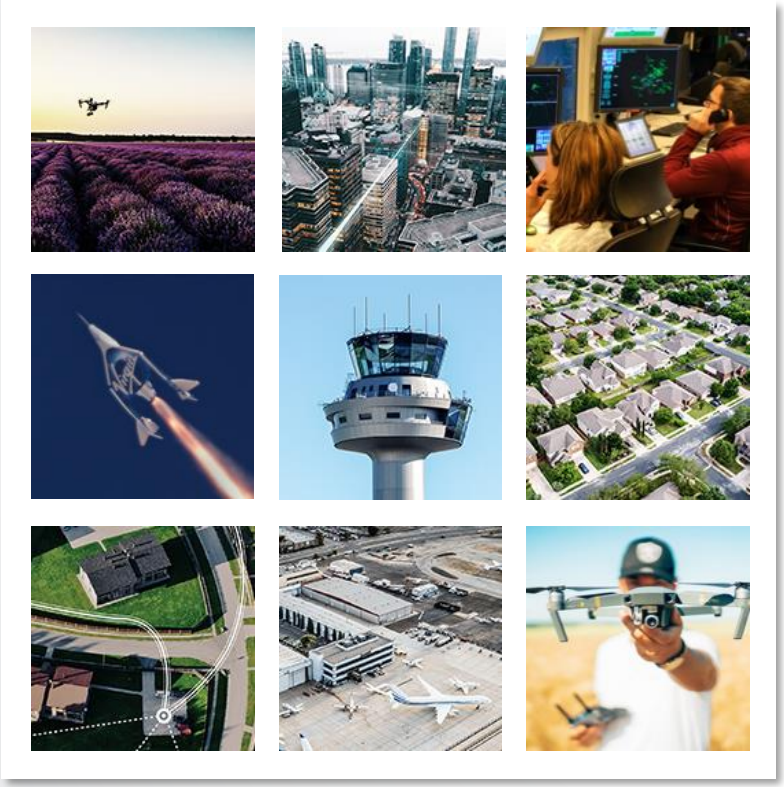
Dynamic Population Density



Dynamic Population Density



UTM Risk Assessment means evaluating the whole system



- We can not evaluate UAS as single vehicles for much longer.
- Increasing traffic numbers → increasing risk
- If vehicles depend on UTM services for a safe flight, and one of those services fails, what happens?

Call to Action

Recommend that the ICAO UTM Framework point to a common methodology for risk assessment.

If we have multiple, formulas generating conflicting results, we may sacrifice the safety of our skies.

Reach out to us.

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