

A drone is shown flying over a field of tall grass. The image has a dark, moody aesthetic with a purple and blue color palette. Overlaid on the left side are several circular technical diagrams, including a large circular scale with numbers from 140 to 260 and various concentric circles and arrows. The drone is positioned in the upper right quadrant, flying towards the right. The overall composition suggests a theme of technology, precision, and environmental monitoring.

# DRONES AND MICROGRIDS NOVEMBER 17, 2025

AARON SYKES

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## Current:

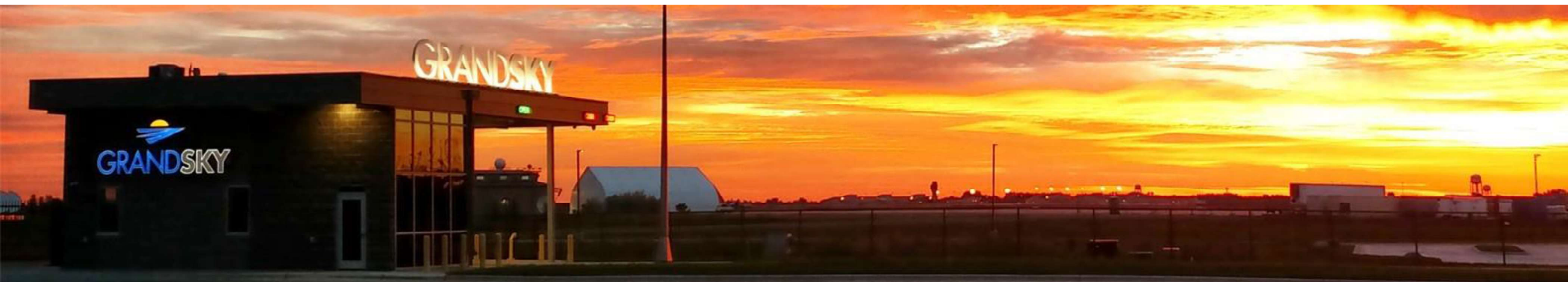
Flight Operations Project Manager  
GrandSKY

## Previous:

Assistant Director, NCAT  
Owner, Solutions 101 LLC  
Founder, MAVMeetup





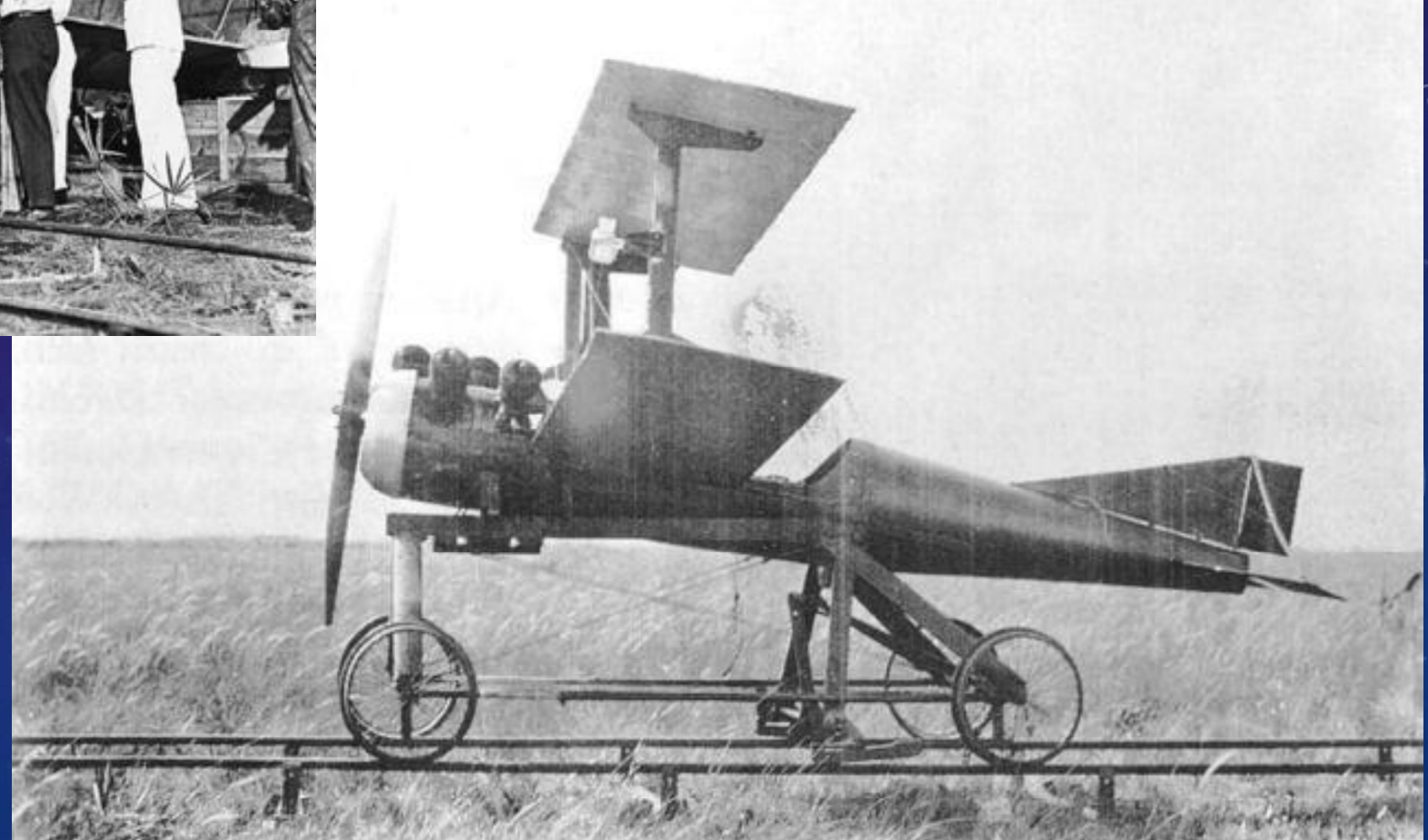


- Located at Grand Forks Air Force Base
- 217 Acres, with Runway Access
- BVLOS Operations
- Current Operations and Tenants
  - Northrop Grumman
  - General Atomics
  - NOAA Weather Drone CRADA
  - Project ULTRA





# FIRST DRONES



1918  
KETTERING BUG

# UNCREWED SYSTEMS

## Unique Opportunity

- Innovative
- Iterative
- Limited Human Risk

## Ultimate Value

- Mobile Data Collection Platforms
- Flying Computers



# CURRENT OPERATIONAL FRAMEWORK

## Federal Aviation Regulation Part 107

- Under 400' AGL
- No operations over people, infrastructure
- No operations in vicinity of airports (without prior coordination)
- Within Visual Line of Sight
- Under 55 lbs GTOW
- “Don’t be THAT guy”

Waivers are exception, not the rule

# THE PLATFORMS

## Airframe

- Multi-rotor
- VTOL
- Fixed Wing

## Propulsion

- Electric
- Hybrid

## Manufacturers

- DJI
- Everyone Else
  - Skydio

## The Pending Cliff – 23 Dec 2025

- DJI Ban
- NDAA/Blue List Compliance



# THE SENSORS - THERMAL





# THE SENSORS

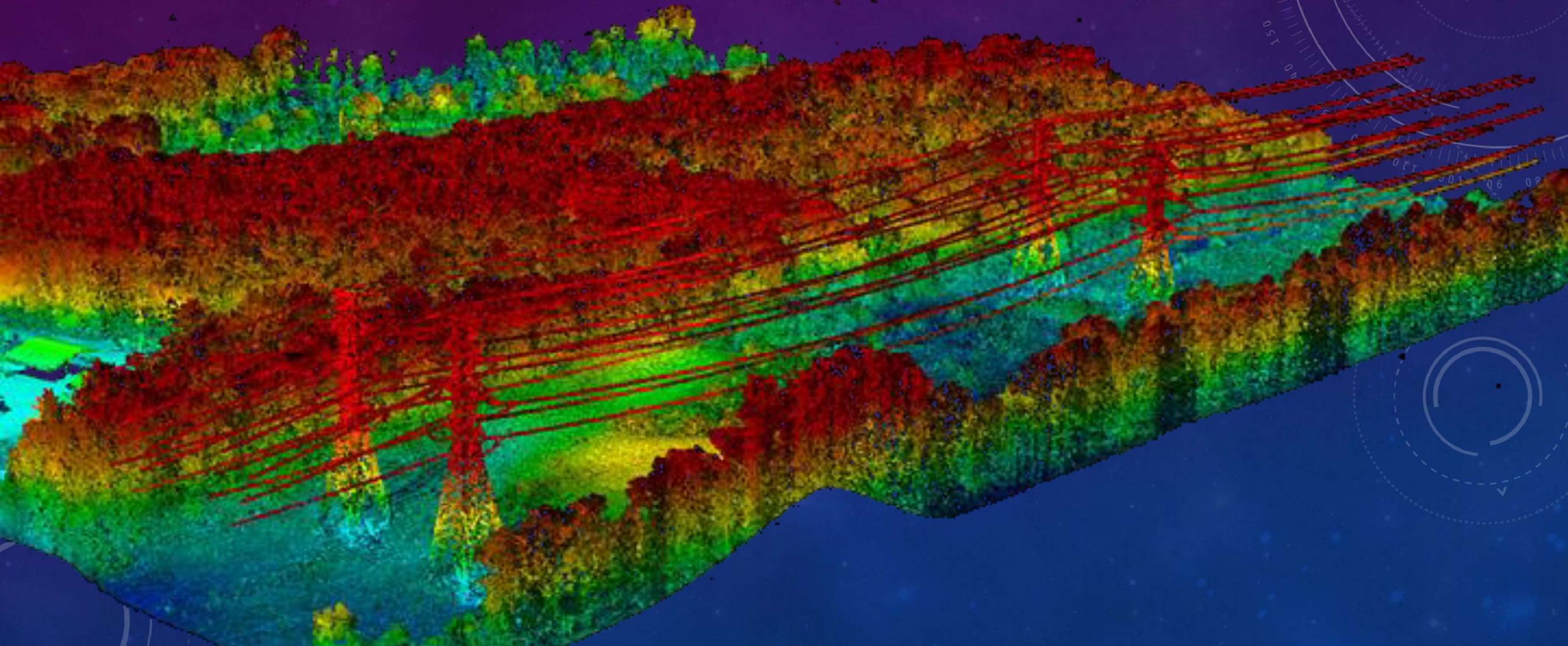
## RGB IMAGERY

## ORTHOMOSAICS





# THE SENSORS - LIDAR





# THE FUTURE: OPERATIONAL FRAMEWORK

## Federal Aviation Regulation Part 108 and Part 146

- Normalize BVLOS Flights
- Aircraft upto 1,320 lbs GTOW
- Electronic Conspicuity
- Airworthiness Acceptance

## New Opportunities

- Delivery Drones
- Crop Spraying
- Drone-In-A-Box
  - Death of the Drone Pilot



# THE FUTURE: TECHNOLOGY

## Aircraft Design

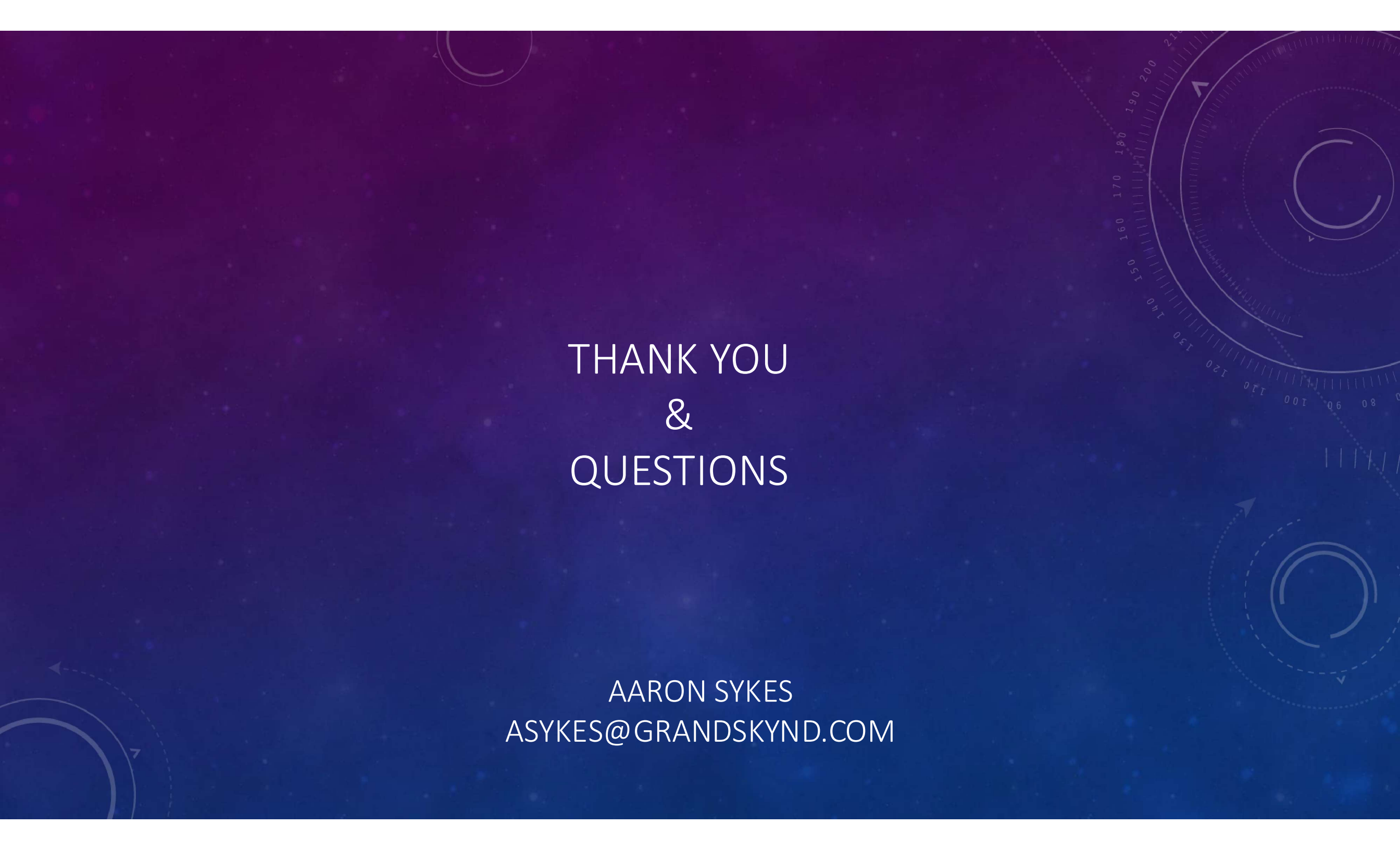
- Airworthiness Acceptance
- Composites and other advanced materials
- Battery and Propulsion

## Digital Revolution

- C2 Links
  - Starlink
- Machine Learning
  - Condition Recognition
  - In-flight mission evolution
- Swarm technology







# THANK YOU & QUESTIONS

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