BELL ADVANCED VERTICAL ROBOTICS COMPETITION

STEM SPONSORSHIP OPPORTUNITY

WHY

BELL ADVANCED VERTICAL ROBOTICS COMPETITION

LEGACY OF STEM SUPPORT

SUCCESSFUL FIRST ROBOTICS MODEL

EMERGENCE OF NEW TECHNOLOGY

GAP IN STEM-BASED COMPETITIONS

2017

17 Students, 2 Schools

2022

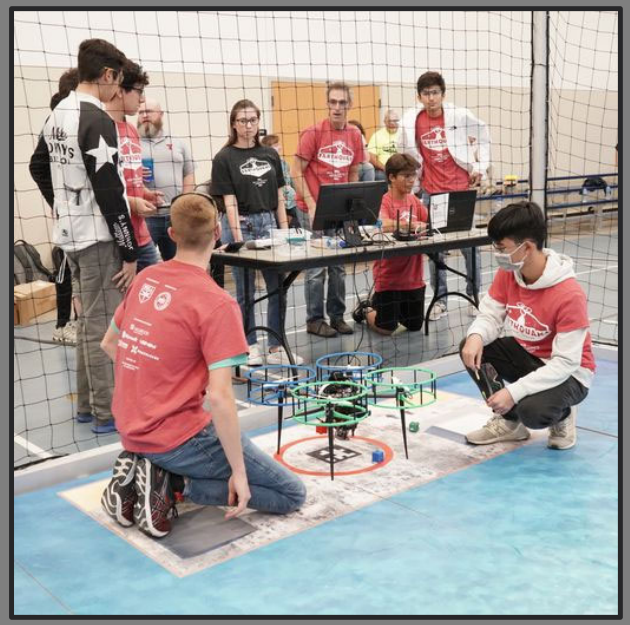
700+ Students, ~60 Schools

CREATING VALUE FOR STUDENTS, EDUCATORS, AND INDUSTRY

WHAT IS THE

BELL ADVANCED VERTICAL ROBOTICS COMPETITION

Extensive Team Engagement
Multidiscipline Learning



Real World Mission Scenarios
Air & Ground Integration

Cutting Edge & Open Source
Technology

AFFORDABLE EXECUTION

UNIVERSITY TEAMING

INDUSTRY INVOLVEMENT

UNIQUE 10-WEEK HIGH SCHOOL STEM COMPETITION

BELL ADVANCED VERTICAL ROBOTICS COMPETITION

IMPACT

"...The experience of the Bell drone competition is what first got me interested in Aerospace..."

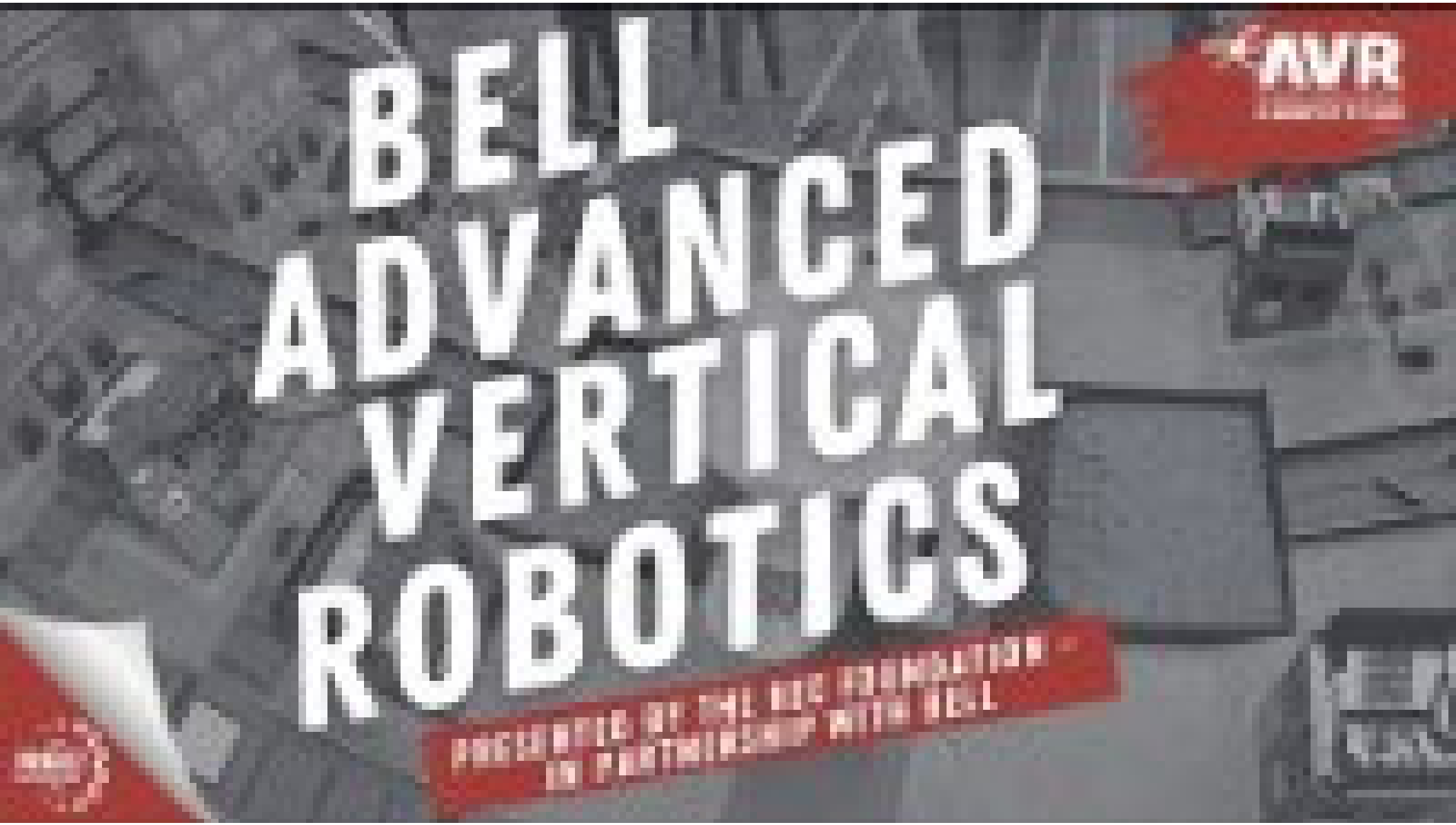
"...the Bell competition has capabilities that no other competitions have..."

"..This program is a great way to introduce kids to new skills that they would not get anywhere else."

"...60 click throughs all the way to the admissions application. A great collaboration!"

"...AVR is a transformational competition because it develops both soft skills...and hands-on technical skills"

BUILDING A SUSTAINABLE TALENT PIPELINE FOR OUR FUTURE


BELL
ADVANCED
VERTICAL
ROBOTICS
AVR

BELL ADVANCED VERTICAL ROBOTICS COMPETITION

SPONSORSHIP LEVELS

NOTE: All funding provided directly to REC Foundation (501c3) for tax purposes

GOLD

$50k+

- Event t-shirt logo
- REC landing page branding
- Event space banner
- Press release branding
- Bell's social media partner
- Sponsor recognition during event kickoff
- 2 minute kickoff talking slot

SILVER

$30k - $50k

- Event t-shirt logo
- REC landing page branding
- Event space banner
- Press release branding
- Bell's social media partner
- Sponsor recognition during event kickoff

BRONZE

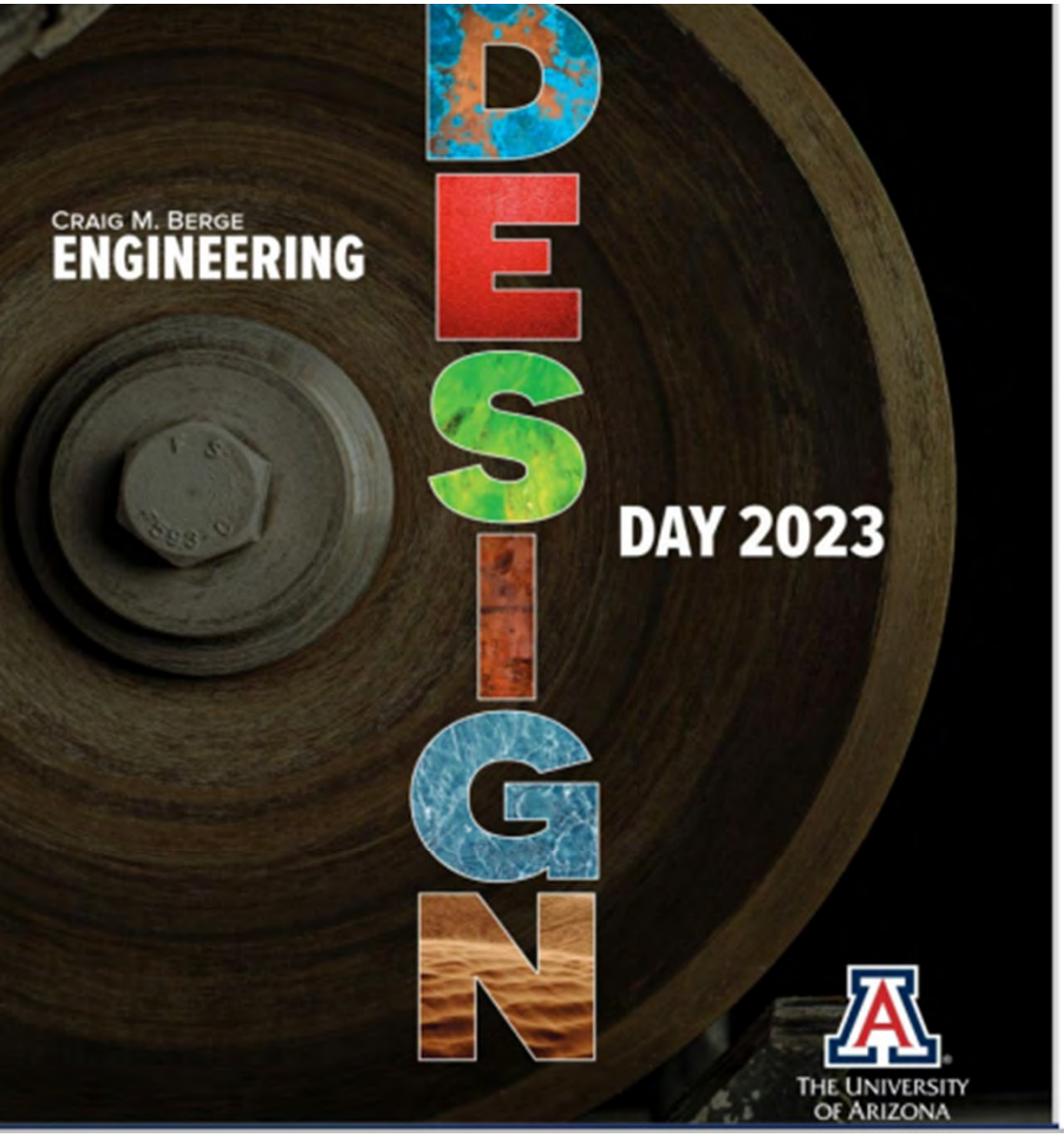
$10k - $30k

- Event t-shirt logo
- REC landing page branding
- Event space banner
- Sponsor recognition during event kickoff

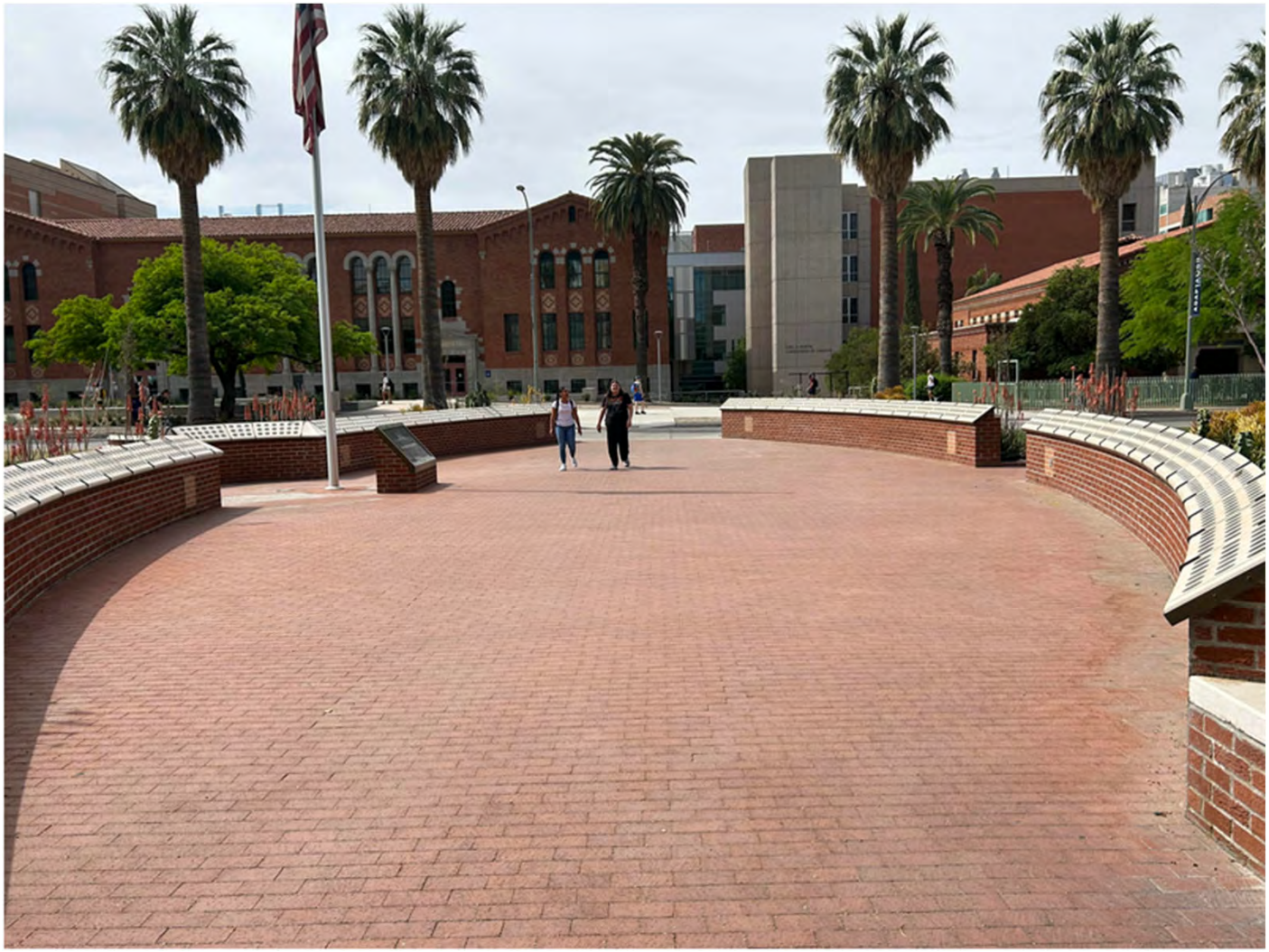
Additional information available at https://roboticseducation.org/bell-advanced-vertical-robotics/

Or contact Rohn Olson, Bell Sr. Tech Fellow (rolson@bellflight.com | 817-280-4377)


HAPPENING TODAY
DESIGN DAY
SENIOR ENGINEERING S
WEATHER
TUBAC



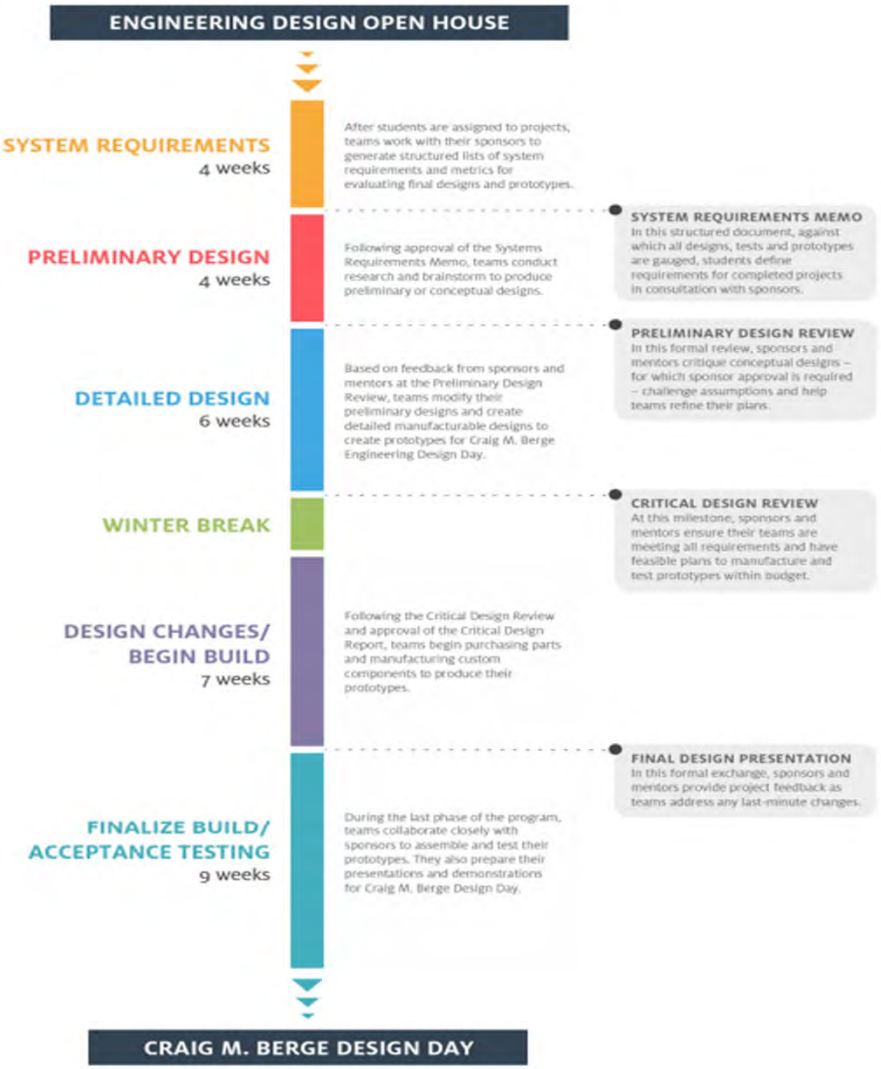
2023 Design Day Brochure




Seaman
Mickey Edward
Evans
USN
Enlisted 1st class
1922-1941
MO

INTERDISCIPLINARY CAPSTONE COURSE AND SENIOR DESIGN PROJECTS

YEAR AT A GLANCE




THE UNIVERSITY OF ARIZONA
Mentor: Brad Ross
Sensitivity Analysis
DELL


RAYTHEON
23
PODBOT

STAR - Short Term Aerial Recognizance

Team 23092

Raytheon Technologies

PROJECT GOAL

Prove the feasibility and performance of five critical components to a tube-launched aerial reconnaissance drone that provides first responders and government agencies with rapid situational awareness for safe and effective response.

STAR is an aerial drone pneumatically launched from a tube that hovers over an area and streams video to a user device. The team developed and proved out the five main subsystems of the drone for future integration by follow-on engineering capstone teams.

The system is made up of these subsystems: camera, durability, autopilot, arm deployment and power distribution. The camera subsystem employs a high-resolution analog camera, transmitter and receiver that displays video on the user's device. The durability subsystem demonstrates a drone mock that is able to withstand launch loads. This "slug prototype" is made of durable 3D printed CarbonX Nylon 12 and machined aluminum parts. The autopilot subsystem demonstrates stable flight through an altitude-hold feature for user-controlled information-gathering. The arm deployment subsystem demonstrates the transition from launched "slug" configuration to the deployed quadcopter configuration. This subsystem employs microswitches and a flight controller to demonstrate power delivery to the four brushless motors as the arms are deployed and locked. Finally, the power distribution subsystem relays enough power for a minimum of five minutes of operation.

Results independently show the feasibility and performance of each of the five critical subsystems. This gives confidence for future integration work to ensure the system is durable, stable and able to provide valuable information to the user.

TEAM MEMBERS

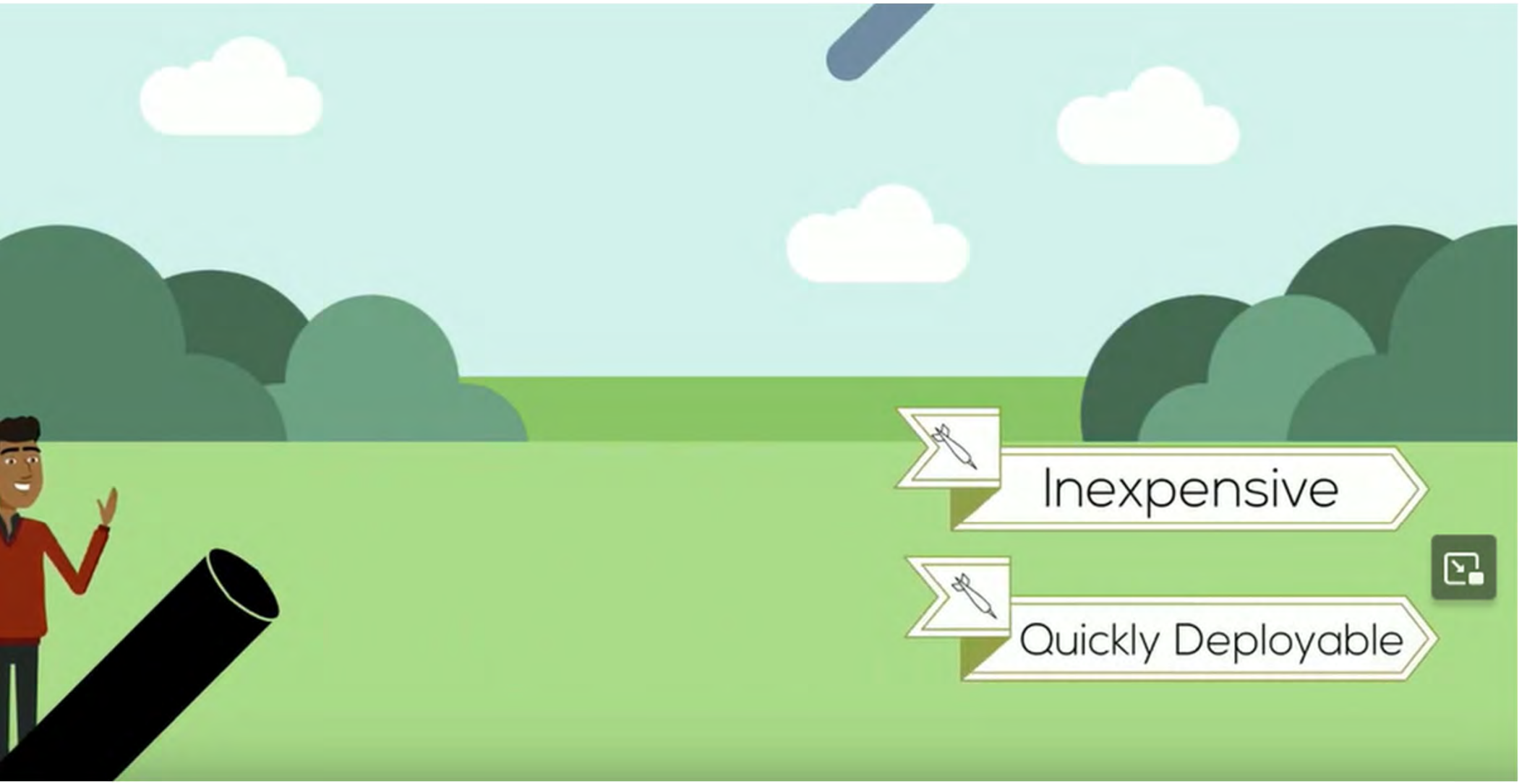
Cesar Armando Bours, *Aerospace Engineering*
Caleb William Eubanks, *Biosystems Engineering*
Josh Ray Forrest, *Systems Engineering*
Tyler Stephen Monlux, *Electrical & Computer Engineering*
Gabby Parks, *Aerospace Engineering*

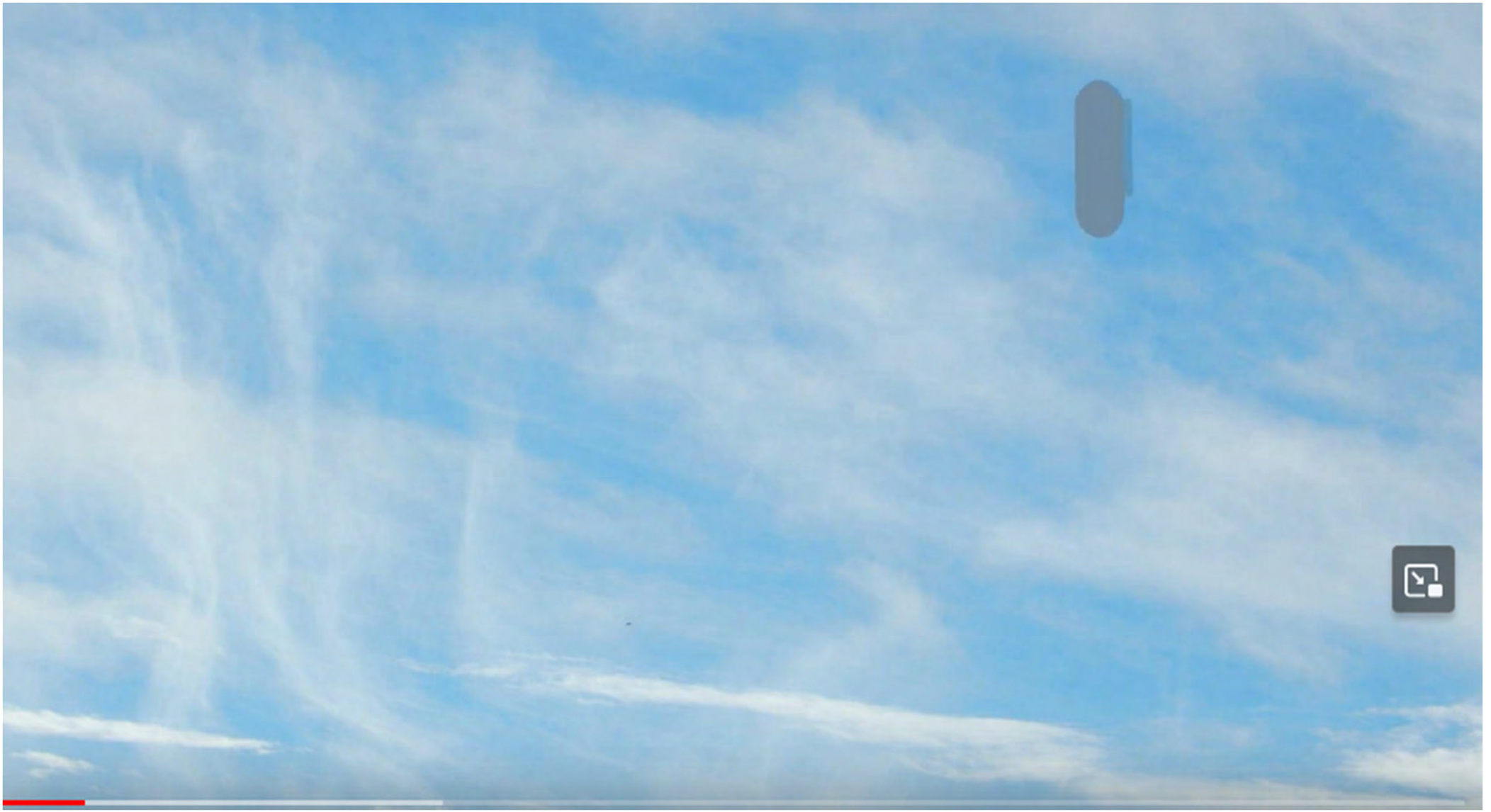
COLLEGE MENTOR

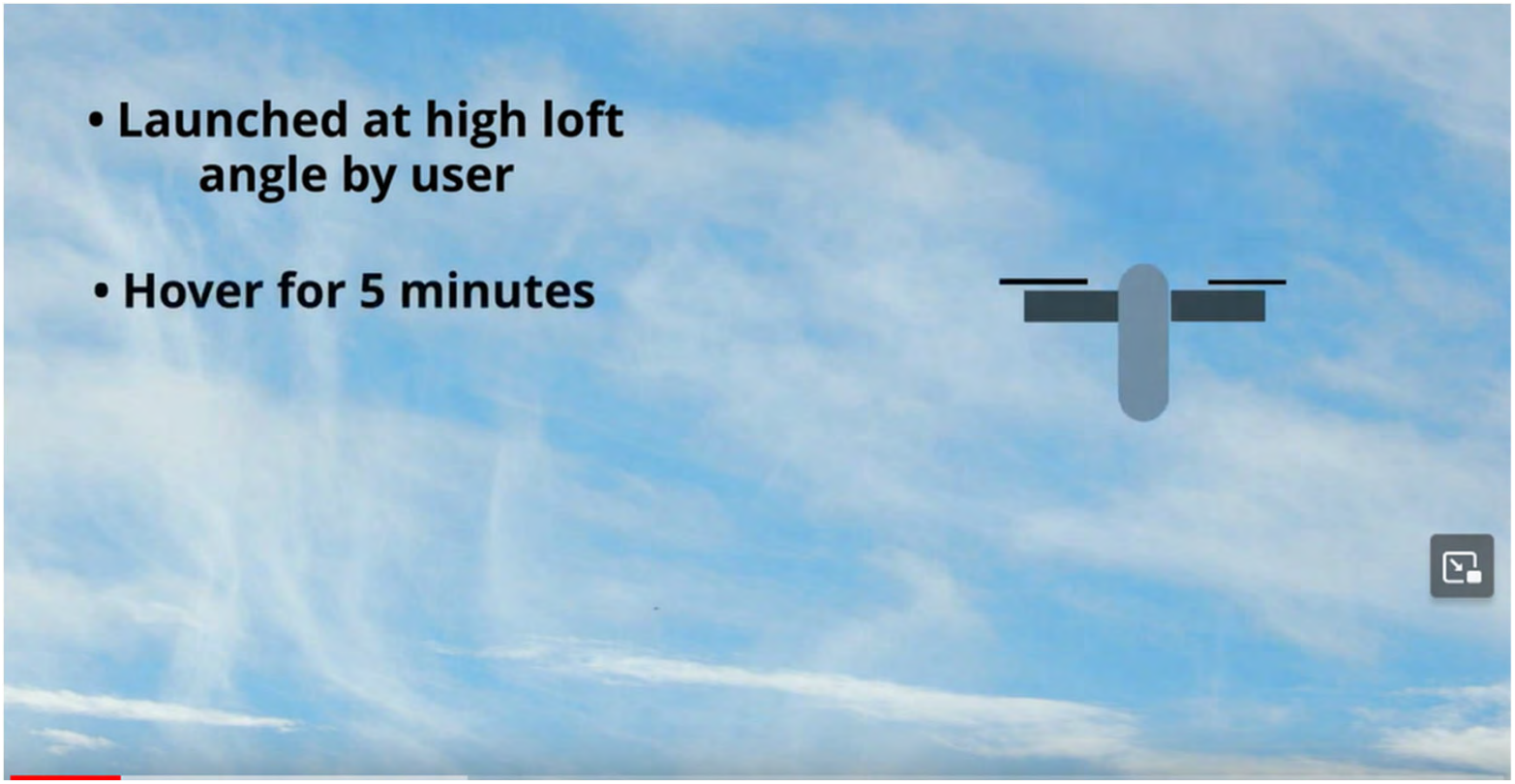
Jeff Scott Wolske

SPONSOR ADVISOR

Dmitry Knyazev


Inexpensive
Quickly Deployable




• Launched at high loft angle by user
• Hover for 5 minutes

TEAM 23092

SHORT TERM AERIAL RECONNAISSANCE

Cesar Bours, Caleb Eubanks, Joshua Forrest, Tyler Monlux, Gabby Parks

• Sponsor: Raytheon Bike Shop • Mentor: Jeff Wolske

THE PROBLEM

First responders, law enforcement, and other similar operators need a low cost, user-friendly way to gain rapid situational awareness in potentially dangerous and quickly developing scenarios.

OUR GOAL

Develop 5 major subsystems of 40 mm quadcopter that:

- Is deployable via pneumatic launcher
- Autonomously captures mid-air
- Provides stable live video feed to the user
- Hovers for over 5 minutes.

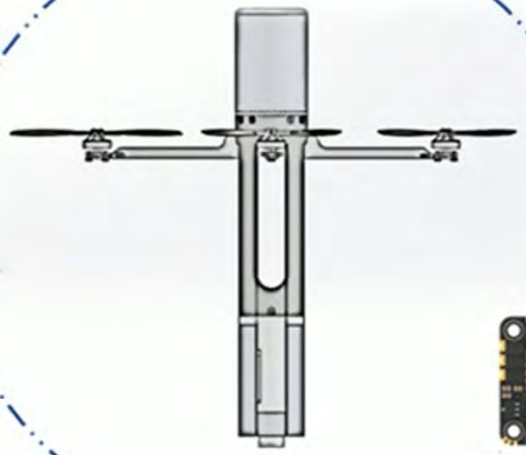
RESULTS AND NEXT STEPS

Our final testing results:

- Survivability of launch loads over 100 psi
- Stable hovering and uninterrupted video feed
- Smooth arm deployment and battery mechanism
- Ability to hover over 5 minutes

Future teams will be required to focus on the integration of these subsystems

OUR SUBSYSTEMS AND METHODS



SLUG PROTOTYPE

- Full mockup slug, test launched
- Designed on CAD
- 3D printed with Nylon 12.

ARM DEPLOYMENT AND POWER ON

- Static arm deployment and battery power on
- Arms launched in closed position
- Deploys with sabot
- User initiates startup sequence

AUTOPILOT

- Hovering on-station autopilot capability
- Flight controller programmed with Beta Flight
- Hover at specified altitude

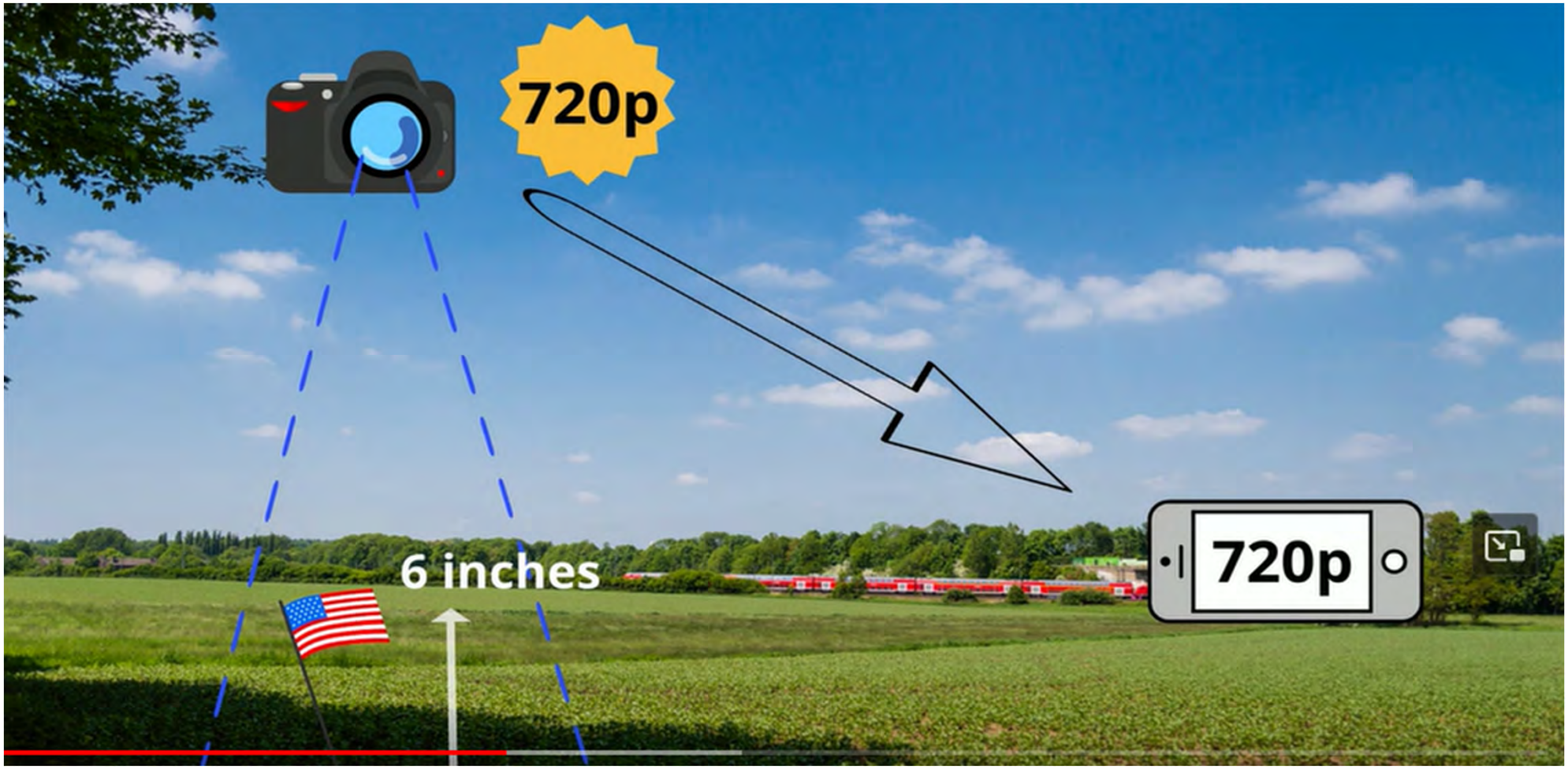
CAMERA AND COMMUNICATION

- Camera and wireless communication link
- Digital camera transmits video to user's handheld receiver

BATTERY SPREAD BENCH

- Battery consumption spread-bench.
- Test done at full mockup weight
- 4x 14-500 batteries
- Must hover for 5 minutes

College of Engineering



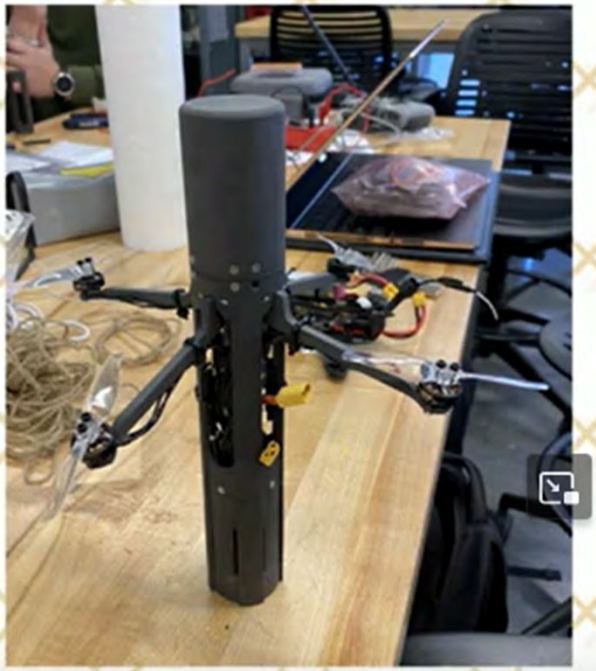
Most challenging segment of the project

unnamed.jpg

Weight Analysis: 360 grams

Motor Power: 165 grams (x4)

Battery Capacity: 1300 mAh



Spatial Exploration with Robotic Operators (SpERO)

Team 23104

PROJECT GOAL

Design a robotic system to enter and explore Martian lava tubes for the purpose of geological survey.

There are more than 1,000 suspected lava tubes on Mars, which could someday provide shelter from the Martian environment for human inhabitants.

SpERO consists of a solar balloon that travels across the Martian surface in search of lava tubes and lowers an inflatable rover to collect photographic samples and point maps of the lava tube environment. It uses lidar, or Light Detection and Ranging, to collect 3D point maps of the lava tubes and entrances, cameras to take images of the environment, and sensors to measure temperature and radiation. An antenna relay system sends the data to Earth to be analyzed by scientists.

The prototype aims to validate this system using an autonomous octocopter drone that carries a rover on a lowering garage. A spool-motor system lowers a rover on the garage to autonomously maneuver around obstacles without the use of GPS. It navigates using lidar and inertial measurement units and collects a 2D point map and images of the environment. The data is communicated from the rover to the drone through an antenna on the garage. SpERO will demonstrate navigation capabilities, the rover lowering system and a three-antenna communication relay.

TEAM MEMBERS

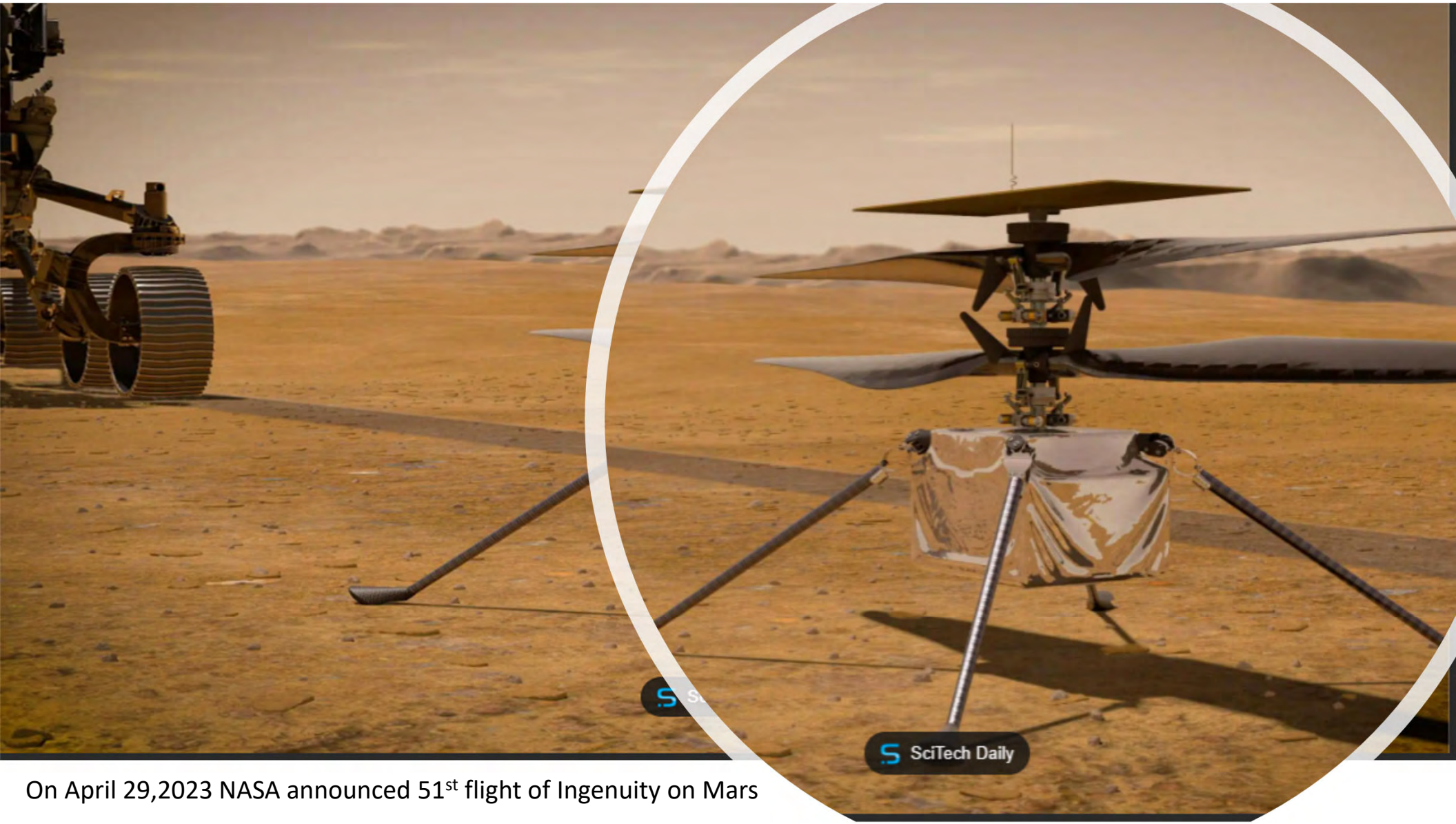
Roman Joseph Anthis, *Aerospace Engineering*
Anna Elizabeth Dinkel, *Aerospace Engineering*
Andrew Gabriel Frisch, *Aerospace Engineering*
Elijah West Greenfield, *Aerospace Engineering*
Nicholas Scott Mammana, *Aerospace Engineering*
Kylar Joshua Nietzel, *Aerospace Engineering*

COLLEGE MENTOR

Sergey Shkarayev

SPONSOR ADVISOR

Harshad Kalyankar



On April 29,2023 NASA announced 51st flight of Ingenuity on Mars

Team 23104 Spatial Exploration with Robotic Observers

Sponsors: NASA, University of Arizona **Mentors**: Jekan Thangavelautham, Sergey Shkarayev
Team Members: Anna Dinkel, Kylar Nietzel, Roman Anthis, Elijah Greenfield, Nicholas Mammana, Andrew Frisch

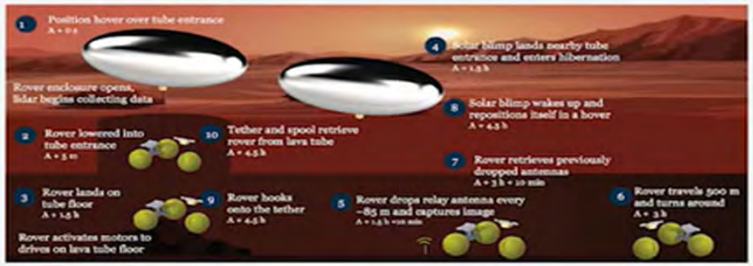
SPERO

Motivation

Lava tubes may provide shelter for inhabitance of Mars as they protect from radiation and large temperature variations. SpERO seeks to explore and return detailed mapping and images to help us understand and characterize lava tubes.

Artist's Rendition of Lava Tube Habitat

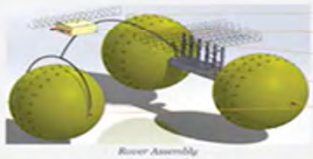
Concept of Operations



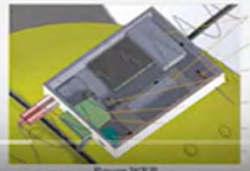
Prototype

Mission Design

Solar Balloon and Carriage Assembly



Rover Assembly



Rover WEB

Detailed Design

Communication & Data Relay

The antenna relay system ensures no loss of data. A simulation was performed to maintain high signal strength.

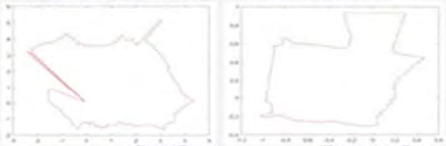
Martian Wind Currents

Martian wind currents are used to travel at unprecedented speeds of 1500km in 7 sols from the Noctis Landing to Arsia Mons.

MAVEN Martian Wind Map

Testing Results

The images below are 2D point map scans collected by LiDAR in a dark cave environment



Cave Data *Entrance Data*

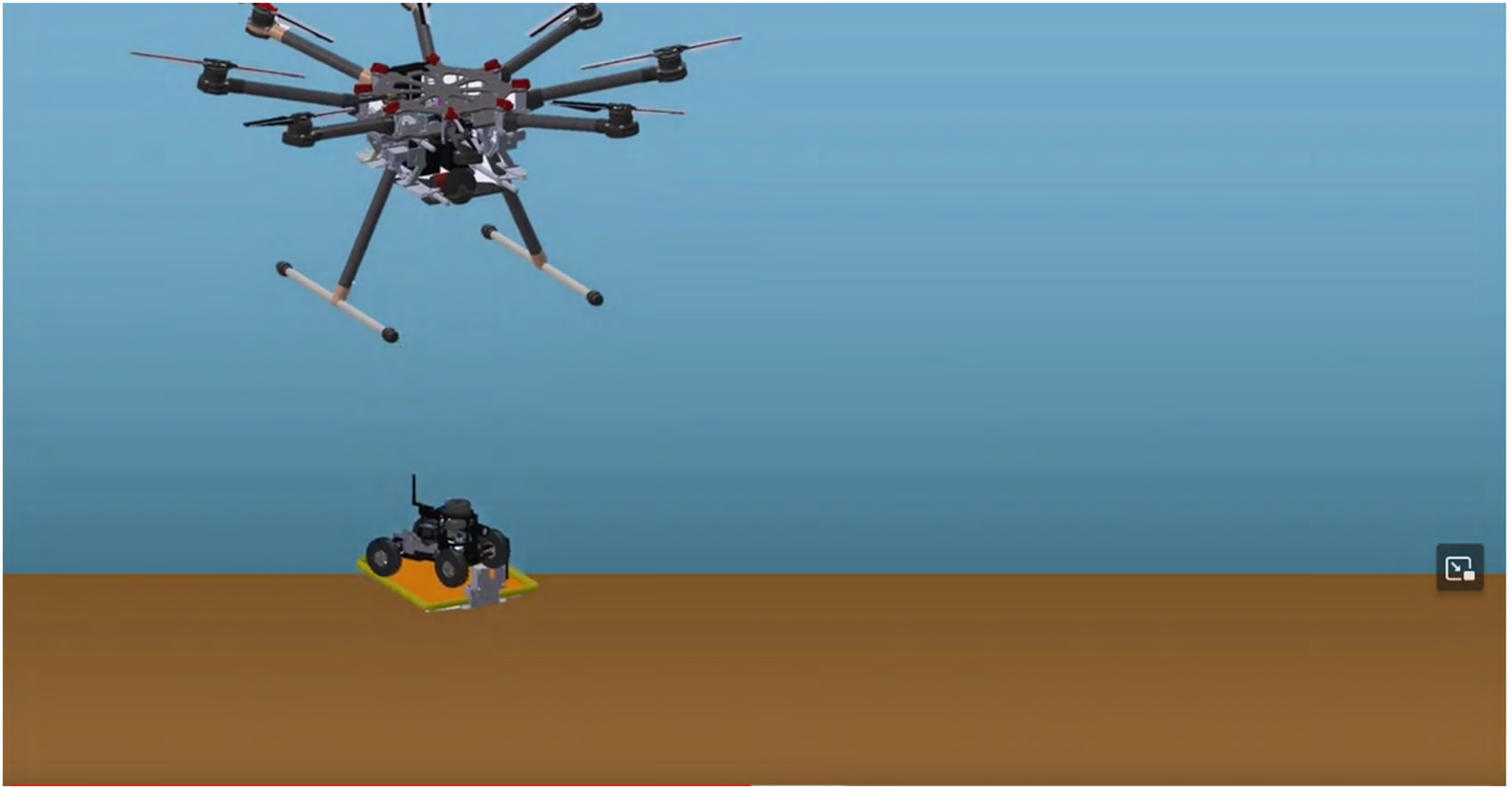
References

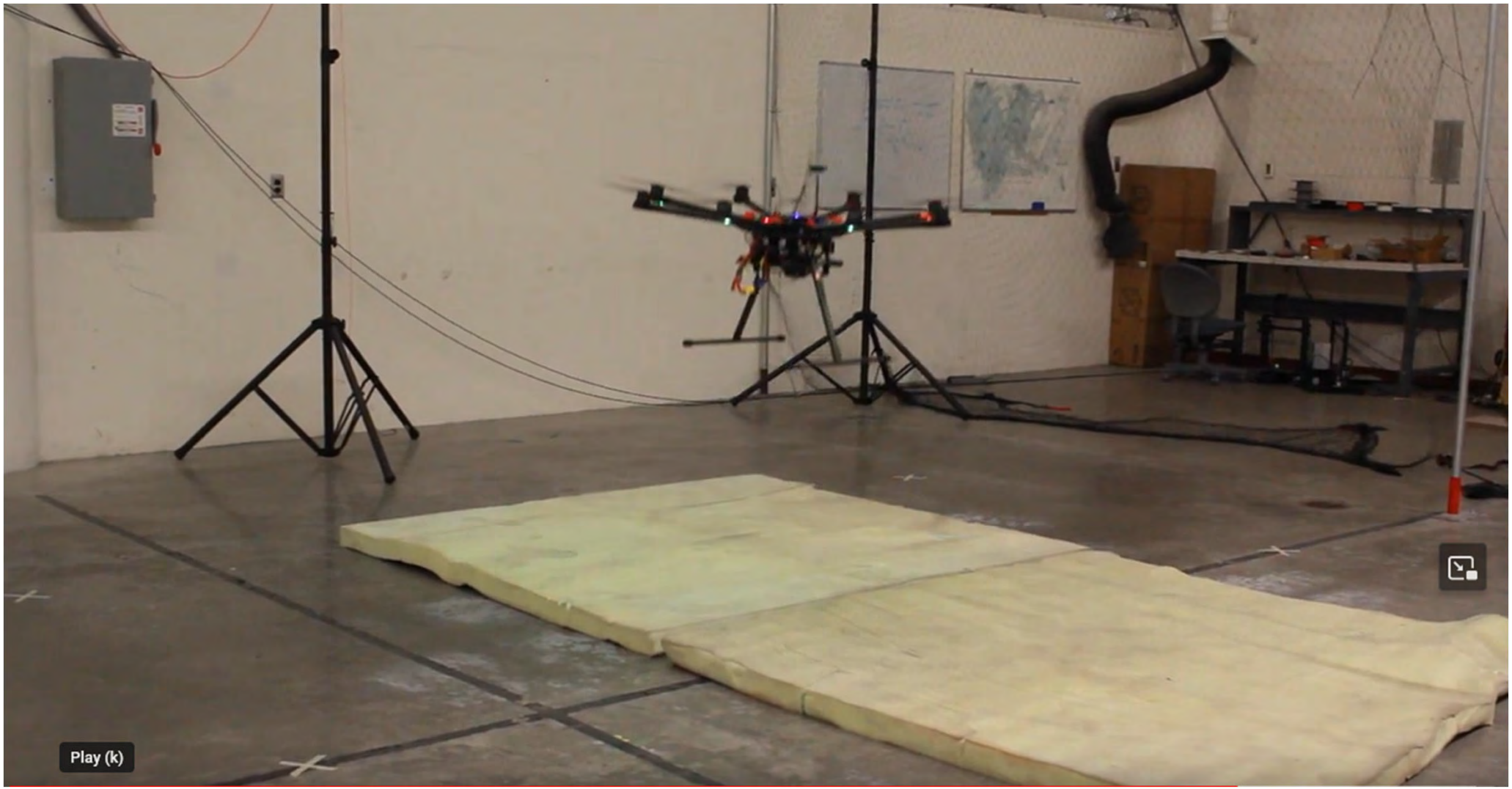
- Steigerwald, Bill. "Maven Maps Wind in Martian Upper Atmosphere." *NASA*, NASA, 8 Oct. 2019.
- Rosselli del Turco, Emilia. "Habitat Concept in Lunar Lava-Tube." ESA, European Space Agency, 4 Aug. 2019.

Acknowledgements

- Harshad Kalyankar, Adrien Bouskela, Nicholas Blanchard
- Christian Copic, Nicholas Smith
- Nora Day

THE UNIVERSITY OF ARIZONA




Play (k)

TESTING AT UAV DESIGNATED PARK


Craig M. Berge
Engineering
Design Program
UNIVERSAL AVIONICS
an Elbit Systems Company
Team # 23105
Project SAIL:
Support Aerial Incendiary Locator
Team Members:
Maximus Ch erospace Engineering
Katelyn Hack erospace Engineering
Maanyaa Ka erospace Engineering
Yash Vardha echanical Engineering
Alton Zhang Aerospace Engineering
0:00 / 7:58
THE UNIVERSITY OF ARIZONA
CC

Bighorn fire near Tucson has burned over 6,000 acres and is threatening hundreds of homes

By Madeline Holcombe and Joe Sutton, CNN

Published 4:00 AM EDT, Fri June 12, 2020


Hacker
Brushless Motors

Play (k)


Play (k)

TEAM MEMBERS

Cristian Daniel De Gante Hernandez, *Mechanical Engineering*
LD Dukes, *Mechanical Engineering*
Garrett Austin Fenderson, *Electrical & Computer Engineering*
Austin Greif, *Systems Engineering*
Sidhant Gulati, *Electrical & Computer Engineering*
Siwen Wang, *Systems Engineering*

COLLEGE MENTOR

James Sweetman

SPONSOR ADVISORS

Joellen L Russell, Eddy Stocker

AQUABOT C3 - Aquatic Drone Coordination, Communication and Control

Team 23077

Center for Accelerated Biomedical Innovation

PROJECT GOAL

Create a communication, coordination and control system for a swarm of aquatic drones.

This project presents a proof-of-concept (C3) system for a swarm of aquatic drones. The drones' purpose is to monitor the state of oceans and recover plastic and other contaminants. To increase the devices' efficiency, they will operate in a swarm or fleet mode.

The team designed and built eight drones with a central control unit and user interface. These drones are capable of autonomous navigation; individual and swarm movement patterns such as grid searches; collision avoidance with other system drones; monitoring water temperature, pH, and salinity; and communicating commands and data with the central control unit via a proprietary mesh radio frequency network.

The control system for a real-world ocean drone swarm with the ability to monitor ocean health metrics and remove plastics from the ocean will be built upon the C3 system from this project.


DELL
5

TEAM MEMBERS

John Roger Allen, *Aerospace Engineering*
Charles James Fischer, *Aerospace Engineering*
Keegan Kelaher, *Aerospace Engineering*
Kyle Ryan Peabody, *Aerospace Engineering*
Aidan Petrie, *Electrical & Computer Engineering*
Will Wong, *Aerospace Engineering*

COLLEGE MENTOR

Sergey Shkarayev

SPONSOR ADVISOR

Adrien Bouskela

AIAA Design/Build/Fly Competition

Team 23015

THE SIMPSON FAMILY

PROJECT GOAL

Create a unique radio control aircraft that will compete in the American Institute of Aeronautics and Astronautics (AIAA) international Design/Build/Fly (DBF) competition.

The annual AIAA DBF competition is an international event, hosted in Tucson and Wichita, Kansas, that invites schools from all over the world to design, build and fly an aircraft according to the design requirements that are set each year. Each team must attempt to maximize their possible points earned via scoring guidelines set by the competition. Flight envelope attributes such as endurance, speed and payload weight must be balanced accordingly to create an aircraft that will obtain the highest score.

This year, the schools were tasked with designing an aircraft that is capable of flying three missions, each with their own stipulations. Based on the scoring and competition guidelines, this design must be able to carry a heavy internal payload, mount a vertical antenna to one wingtip and have an endurance of around eight minutes. In addition, the aircraft must be able to disassemble and fit into a box that is compliant with FAA carry-on regulations, limiting battery size and aircraft dimensions. By employing computational fluid dynamics, advanced composite building techniques and rigorous aerodynamic design processes, the University of Arizona team developed a competitive aircraft to represent the school on the international stage.

EMPLOYMENT OF NEUROINDIVIDUALS IN THE AEROSPACE/AVIATION INDUSTRY

North Texas UAS Safety and Integration Task Force

Larry Rothman, Ph.D.
Chairperson
HAAPE

A 2017 study showed that individuals with autism may have a natural propensity for Avionics and Aviation Parts Repair.

In 2019 Broward College, and HAAPE launched the first program of its kind to train Autistic individuals to be Avionics Repair Technicians.

In 2020, aviation jobs and opportunities slowed due to COVID, so we turned the focus additionally to Supply Chain / Logistics jobs certifications and jobs.

In 2022, as COVID waned, we found a strong demand for autistic employees noting their value of productivity, loyalty and focus.

In 2023, we are launching a CNC program tailored to Autistic individuals

BROWARD COLLEGE
AVIATION INSTITUTE
www.broward.edu/aviation

Haape
HELPING ADULTS WITH AUTISM PERFORM AND EXCEL

HAAPE-BROWARD COLLEGE AVIONICS
MAINTENANCE CERTIFICATION

THE PROGRAM IS THE **FIRST IN THE WORLD** TO INCLUDE AN ADAPTATION FOR PEOPLE WITH ASD. THE PROGRAM IS OFFERED AT BROWARD COLLEGE AS A CERTIFICATION IN AVIATION ELECTRONICS TECHNICIAN.

The certification typically takes 2-3 semesters to complete resulting in a career where demand usually exceeds supply of candidates. We have employers who will assure employment upon completion of the program.

BOEING NEURODIVERSITY HIRING INITIATIVE

Boeing Neurodiversity Hiring Initiative

Realizes: A different perspective or an alternative communication style can be a great asset to any employer, yet because of standard recruitment processes and management practices, many people on the autism spectrum or with other neurodivergence face systematic barriers to accessing and maintaining employment.

Boeing Defense, Space Security Fabrication Electrical Center (Mesa, AZ) in 2021 received certification as a Certified Neurodiverse Workplace.

Boeing Ridley Township, PA facility launched and Autism at Work pilot program. The pilot's mission was to develop a reliable and repeatable hiring model that is inclusive of individuals with autism and leverages their key capabilities and expertise. The successful pilot led to three new hires, with the scalable model planned for application across the Boeing enterprise.

Currently seeking

Software Test Engineer
Structural Analysis Engineer
Static Analysis Assistant
Mid-Level Cloud Security Engineer

Ramp Service Employee
Shipping & Receiving Specialist
Mid-Level Quality Inspector
Supplier Quality Specialist

Haape
HELPING ADULTS WITH AUTISM PERFORM AND EXCEL

SOUTH FLORIDA AVIATION NEURODIVERSITY HIRING PROGRAM EXAMPLES

Beyond Boeing

SUMMIT AEROSPACE
SETTING A NEW STANDARD FOR SUPPORT

MIA-based MRO Facility for Landing Gear, Hydraulics, Pneumatics, Power Generation and Avionics and Accessories

Certified Autism-Friendly Workplace

Has hired 3 of HAAPE's candidates so far, with a projection to hire 10-20 more.

AVIOTEK

FLL-based MRO facility for Instruments, Avionics, Electro-Mechanical, Pneumatic and Hydraulics components

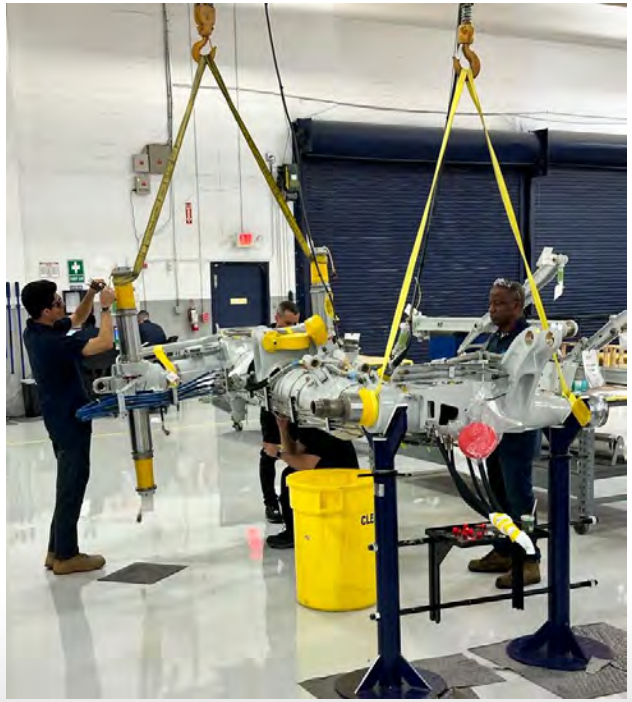
Pilot program with Broward County Schools to bring in 8 candidates + a Job Coach and Teacher, as unpaid internships for 1-year. A FREE program underwritten by Broward County with no obligation to hire at the end of the year.

Haape
HELPING ADULTS WITH AUTISM PERFORM AND EXCEL

SUMMIT AEROSPACE
SETTING A NEW STANDARD FOR SUPPORT

Haape
HELPING ADULTS WITH AUTISM PERFORM AND EXCEL

Sam - Landing Gear Final Assembly Technician



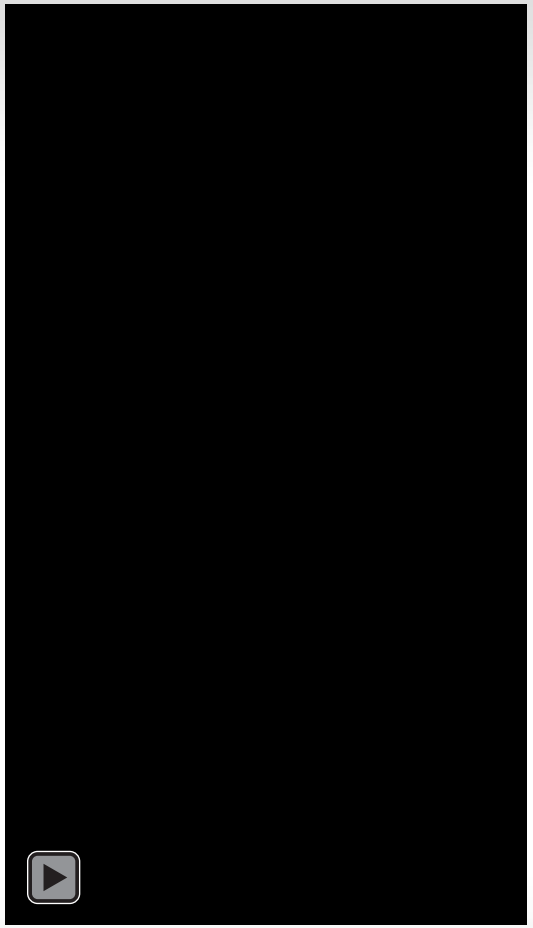
SUMMIT AEROSPACE
SETTING A NEW STANDARD FOR SUPPORT

Haape
HELPING ADULTS WITH AUTISM PERFORM AND EXCEL

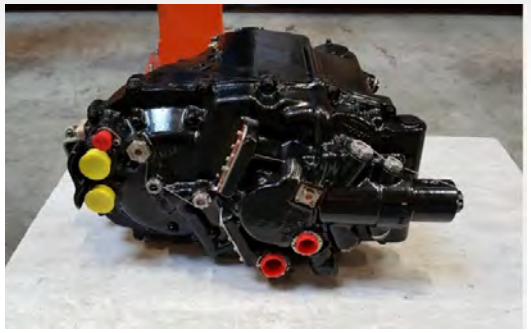
Christopher -
Landing Gear Components Inspector

SUMMIT AEROSPACE
SETTING A NEW STANDARD FOR SUPPORT

Haape
HELPING ADULTS WITH AUTISM PERFORM AND EXCEL



Zach – IDG Test Bench Technician



What is IDG (Integrated Drive Generator) in Aircraft?

The Integrated Drive Generator system, or IDG, is a key power system found on aircraft that controls all of the engine hydraulic systems. An IDG consists of a Constant Speed Drive (CSD) and AC generator mounted side by side in a single housing assembly. The CSD uses controlled differential action to maintain the constant output speed necessary to power the generator. Because the IDG has such an important role in powering key components of the aircraft, its reliability is critical.

https://youtu.be/x8XTw95D-y4

Haape
HELPING ADULTS WITH AUTISM PERFORM AND EXCEL

Aviation, Aerospace, and Supply Chain Jobs for Neurodiverse Individuals

TSA Bag Scanner
Shipping & Receiving
Inventory Control Clerk
Quality Inspector
Avionics Repair Technician
IT Service Desk
Reach Truck Operator
Aviation Technical Writer
Technical Librarian
Transportation Planner
Transportation Specialist
Quality Control Inspector

Business Analyst
Commodity Specialist
Demand Planning Manager
Director of Global Procurement
Director of Logistics & Distribution
Director of Operations
Director of Supply Management
Distribution Manager
Global Sourcing Manager
Import/Export Specialist
Logistics Analyst
Supply Planner
Data Analyst
Pull / Pack / Ship Fulfillment
Material Handling Specialist
Final Assembly Technician

Operations Manager
Plant Manager
Process Improvement Manager
Production Planner
Project Manager
Purchasing Manager
Quality Systems Auditor
Sourcing Specialist
Strategic Procurement Manager
Supply Chain Manager

Why Aviation/Aerospace Employers May Want to Hire You?

You have unrecognized and unique strengths and abilities!

- **Excellent attention to detail**
- **Excellent memory/recall**
- **Ability to absorb facts**
- **Extremely focused**
- **Thinking Out of the Box**
- **Rules and routine oriented**
- **Accuracy**
- **Loyal and reliable**
- **Honest**

Haape®
haape.org

How Can You Help?

01

Be an advocate for the program, implement across the USA

02

Sponsor the Program

03

Sponsor a Student

04

Provide vocational training, internships, job placement and retention

THANK YOU!!!

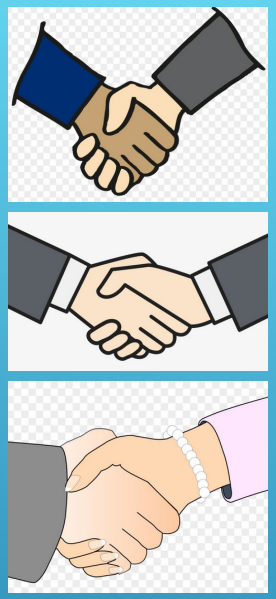
Larry Rothman, Ph.D.
Chairman
Helping Adults with Autism Perform and Excel

www.haape.org

L.Rothman@haape.org

1.732.586.7367

North Central Texas Council of Governments



Haape

HELPING ADULTS WITH AUTISM PERFORM AND EXCEL

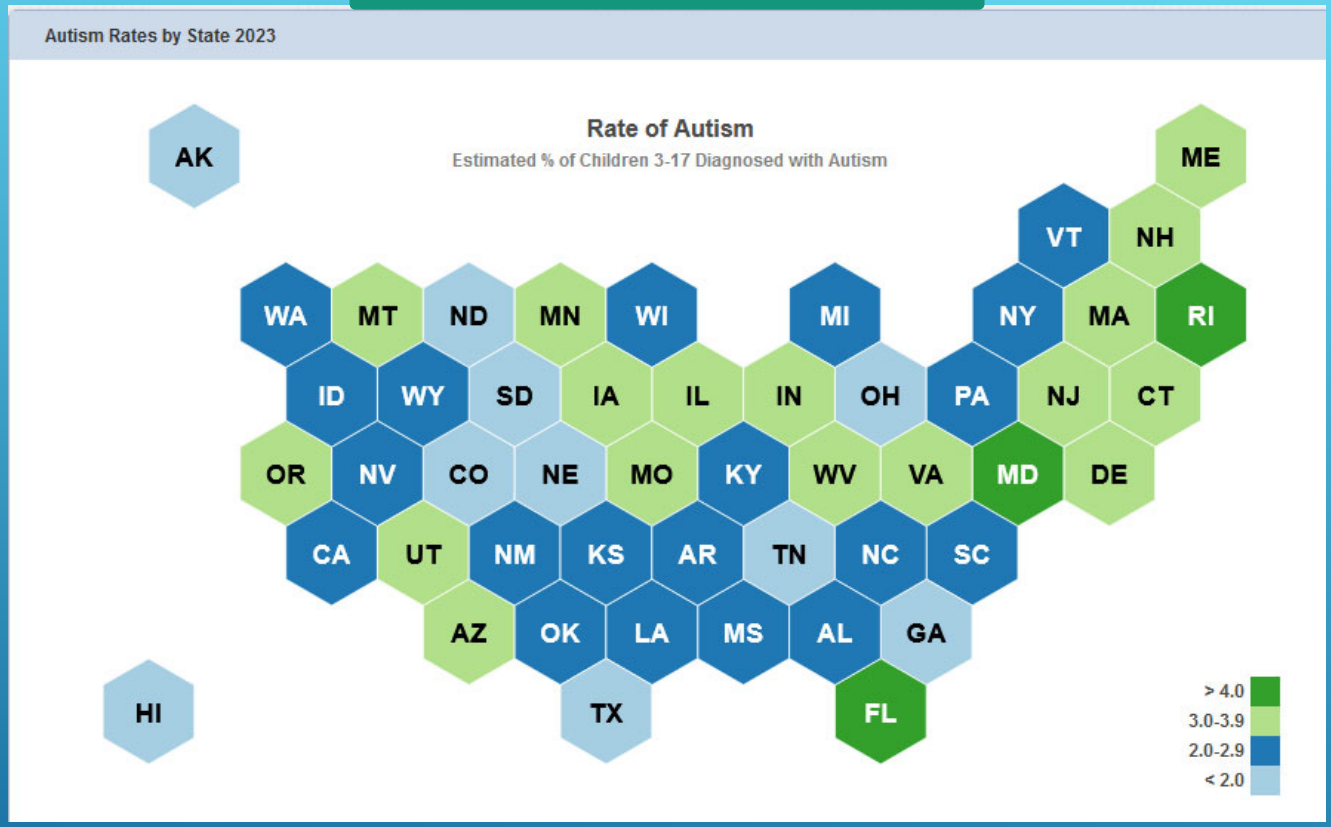
C.H.A.M.P.

Childrens' Health and Mentor Program

AGENDA

- Call to Action-
- CHAMP Organization Overview
- Training and Job Referrals
- Why individuals with autism are a great hire for the UAS industry
- HAAPE-CHAMP Commercial Drone certification process
- HAAPE-CHAMP Drone program development
- Path Forward

CALL TO ACTION



-Autism is prevalent and growing in the United States. (1 in 36)
-Young adults (18 +) are an untapped talent pool with unique abilities that can contribute to the local economy. The unemployment rate is 80%+
-The HAAPE-CHAMP drone program presented here is just one of the 7 skill training programs HAAPE offers.

CHAMP ORGANIZATION OVERVIEW

FREE FUN ACTIVITIES

HAWIIAN THEMED DANCE

MIAMI MUSEUM VISIT

C.H.A.M.P.

Childrens' Health and Mentor Program

CHAMP is an all volunteer non-profit organization supporting the special needs community

JOIN AS A CHAMP MEMBER

What do I want to know about?

FREE FUN ACTIVITIES

JOB TRAINING

EMPLOYERS-HOW DO I HIRE?

HOW CAN I HELP?

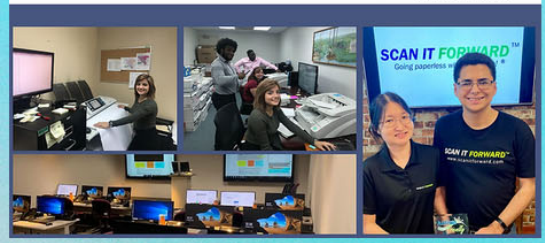
JOB TRAINING AND JOB REFERRALS

DRONE PILOT TRAINING

Past and Present Team Members

SCAN IT FORWARD™

Going paperless with a purpose!



DOCUMENT MANAGEMENT TRAINING

Training and Job Referrals

WE HELP EMPLOY DIFFERENT THINKING

THE MILDY IMPACTED

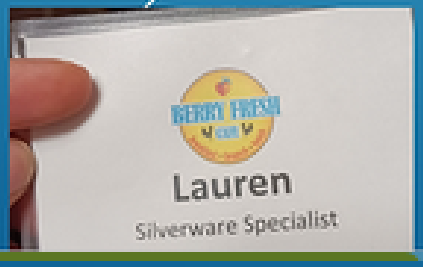
COMMERCIAL DRONE PILOT

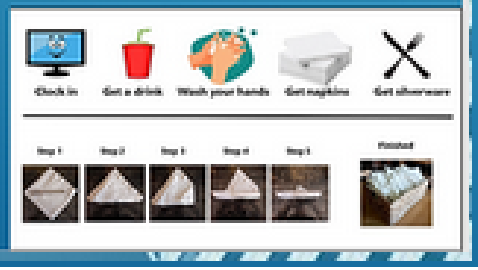
THE MODERATELY IMPACTED

SCANNING TECHNICIAN

THE MOST IMPACTED

RESTAURANT WORKER





Why the UAS Industry may want to Hire Individuals with Autism.

You have unrecognized and unique strengths and abilities!

- Excellent attention to detail
- Excellent memory/recall
- Ability to absorb facts
- Extremely focused
- Thinking Out of the Box
- Rules and routine oriented
- Accuracy
- Loyal and reliable
- Honest

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haape.org

C.H.A.M.P.

Childrens' Health and Mentor Program

HAAPE-CHAMP Commercial Drone certification process

HAAPE Collaborative Training Programs for Employment

Program	Description	Admission Criteria	Duration; Online and/or In Person	Costs/Financial Support	Provider
ONLINE PROGRAMS					
Drone Pilot/ Observer (ONLINE)	1) Introduction to Drones for people with ASD 2) FAA Part 107 Commercial Drone Pilot Course	7th Grade Reading	ONLINE INTRODUCTORY COURSE THREE 2HR SESSIONS ONLINE FAA COURSE- 30 HRS	**1)$150 for introductory course** **2)$475 for FAA Part 107 course**	1) CHAMP 2) Drone Pilot Ground School

This program provides the autism community the necessary skills to be a commercial drone program.

This information is provided to the family to ensure they understand the costs and the admission criteria to set the student up for success.

This is one of 7 programs HAAPE has developed and offers to individuals with autism.

HAAPE-CHAMP DRONE PROGRAM DEVELOPMENT

Drone Pilot Familiarization and FAA Certification Courses

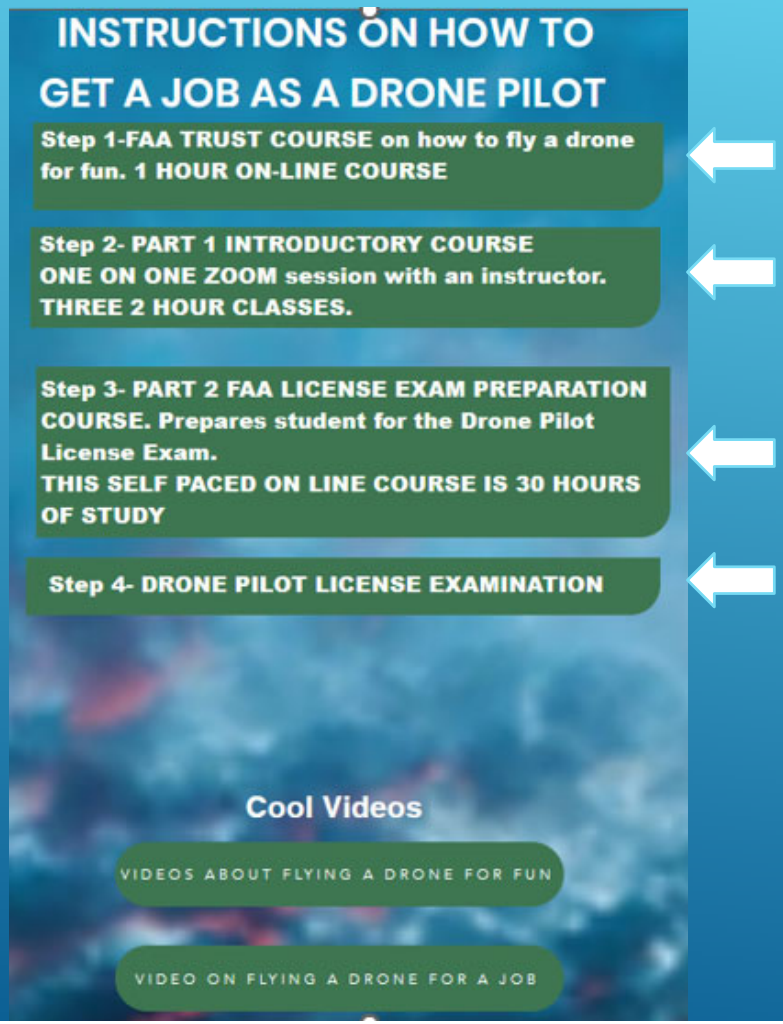
Familiarization Class Details (Phase 1)

1-This class is **FREE** of charge.
2-Six (6) hours of on-line instruction on ZOOM. 3 days, 2 hours each day.
3-Instructor led class includes lecture, some animation, and short videos.

FAA Drone Certification Class Details (Phase 2)

1-This on-line class is the means for any person to obtain their commercial drone pilot license.
2-Class costs the student $225 using a referral for a 20% discount.
3-This class is self paced and includes a video lecture and a written transcript to accommodate different learning styles.

The CHAMP website describes how to pursue training and employment as a commercial drone pilot.



CONTACT INFORMATION FOR THE TEAM COLLABORATING ON THIS PRESENTATION

INTRODUCING LARRY ROTHMAN FOR THE REMAINDER OF THE PRESENTATION

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Chairman-President
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L.rothman@haape.org

Brett Carpenter
Childrens' **H**ealth **A**nd **M**entor **P**rogram Inc. (dba CHAMP)
www.myychamp.com
brettc@myychamp.com
561-308-3305

C.H.A.M.P
Childrens' Health and Mentor Program

Maggie Schuster
UAS PLus Services
Maggie@YourAerialView.com
940-395-6486

birdstop

A New Era of Remote Sensing

Keith Miao

CEO, Birdstop


421
S 335
S 303
S 309


S 335
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S 309


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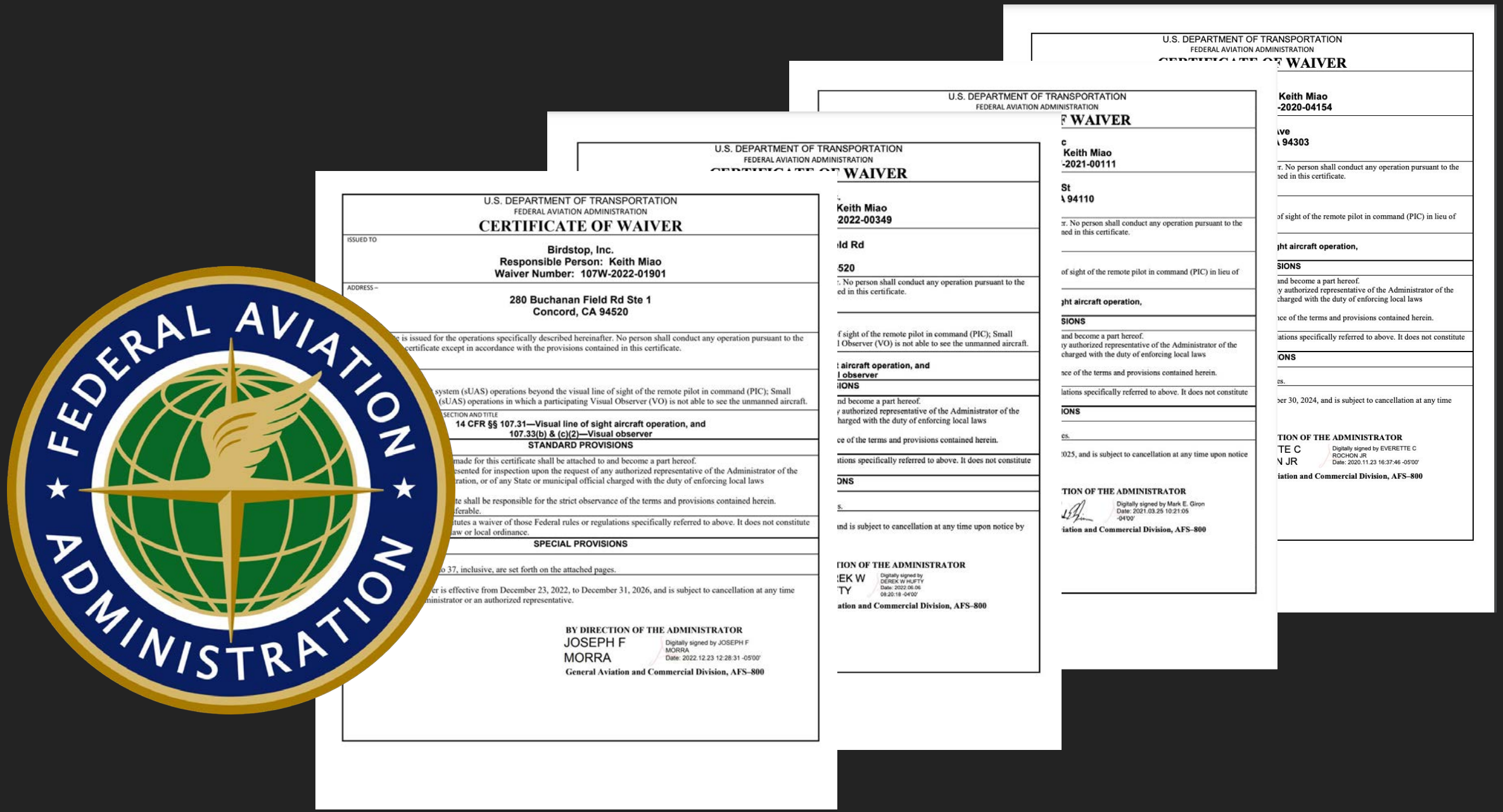
Patent No. US11355021B1

BVLOS

BVLOS

Beyond Visual Line of Sight


FEDERAL AVIATION
ADMINISTRATION


U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
CERTIFICATE OF WAIVER
ISSUED TO
Birdstop, Inc.
Responsible Person: Keith Miao
Waiver Number: 107W-2022-01901
ADDRESS –
280 Buchanan Field Rd Ste 1
Concord, CA 94520
14 CFR §§ 107.31—Visual line of sight aircraft operation, and
107.33(b) & (c)(2)—Visual observer
STANDARD PROVISIONS
SPECIAL PROVISIONS
BY DIRECTION OF THE ADMINISTRATOR
JOSEPH F MORRA
Digitally signed by JOSEPH F MORRA
Date: 2022.12.23 12:28:31 -05'00'
General Aviation and Commercial Division, AFS–800
Keith Miao
-2022-00349
Digitally signed by DEREK W HUFTY
Date: 2022.06.06 08:20:18 -04'00'
Keith Miao
-2021-00111
Digitally signed by Mark E. Giron
Date: 2021.03.25 10:21:05 -04'00'
Keith Miao
-2020-04154
Digitally signed by EVERETTE C ROCHON JR
Date: 2020.11.23 16:37:46 -05'00'
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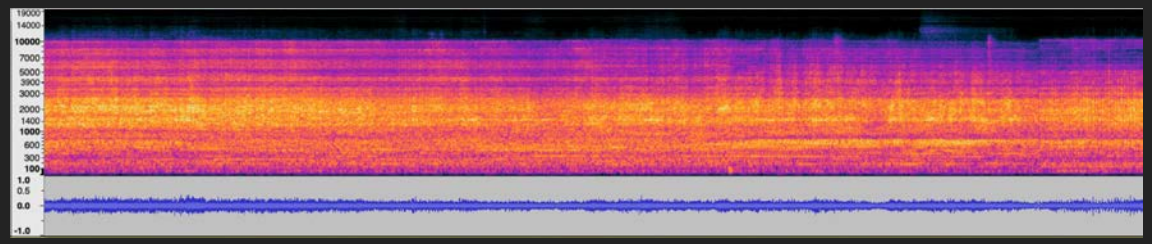
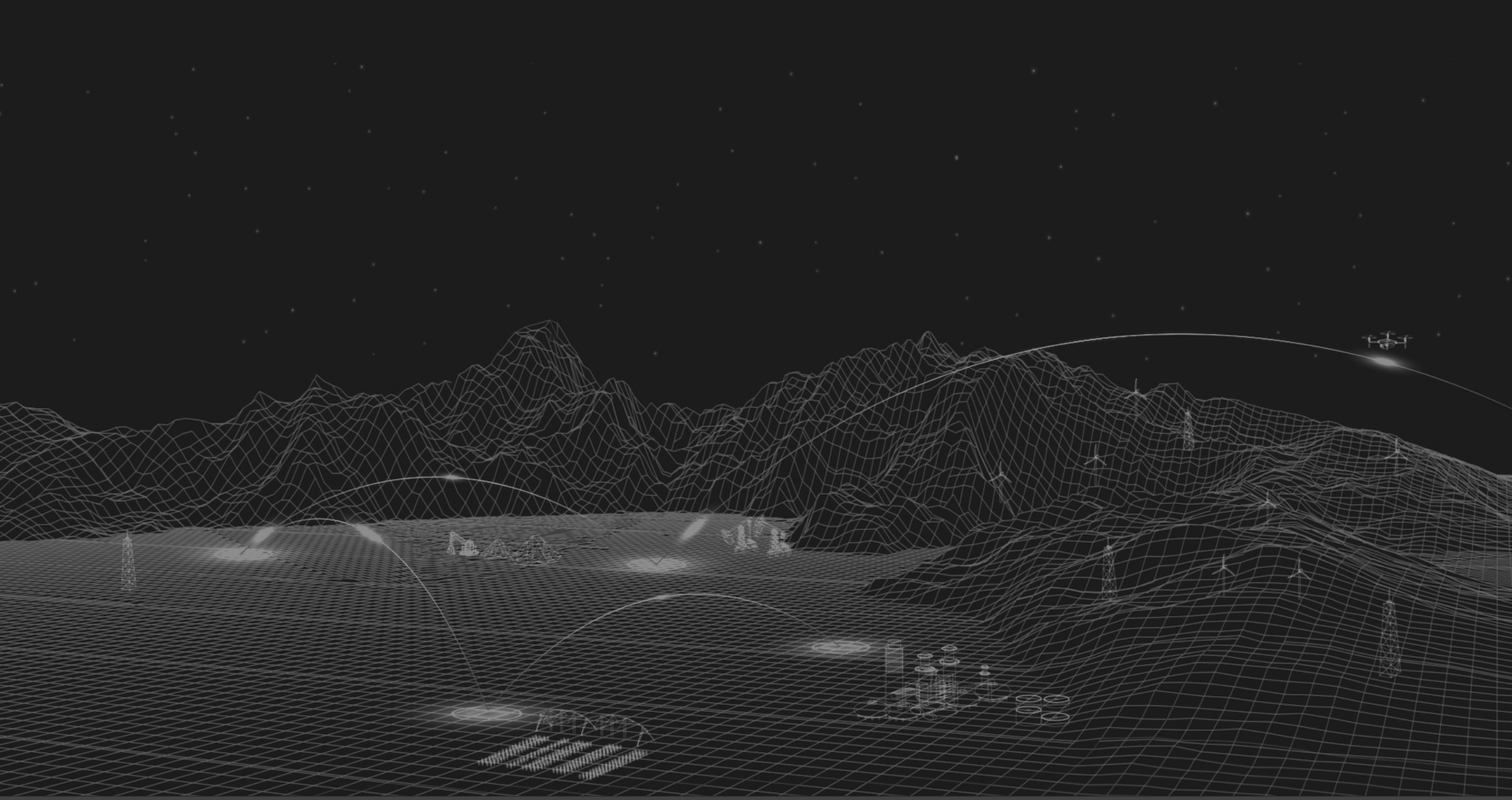
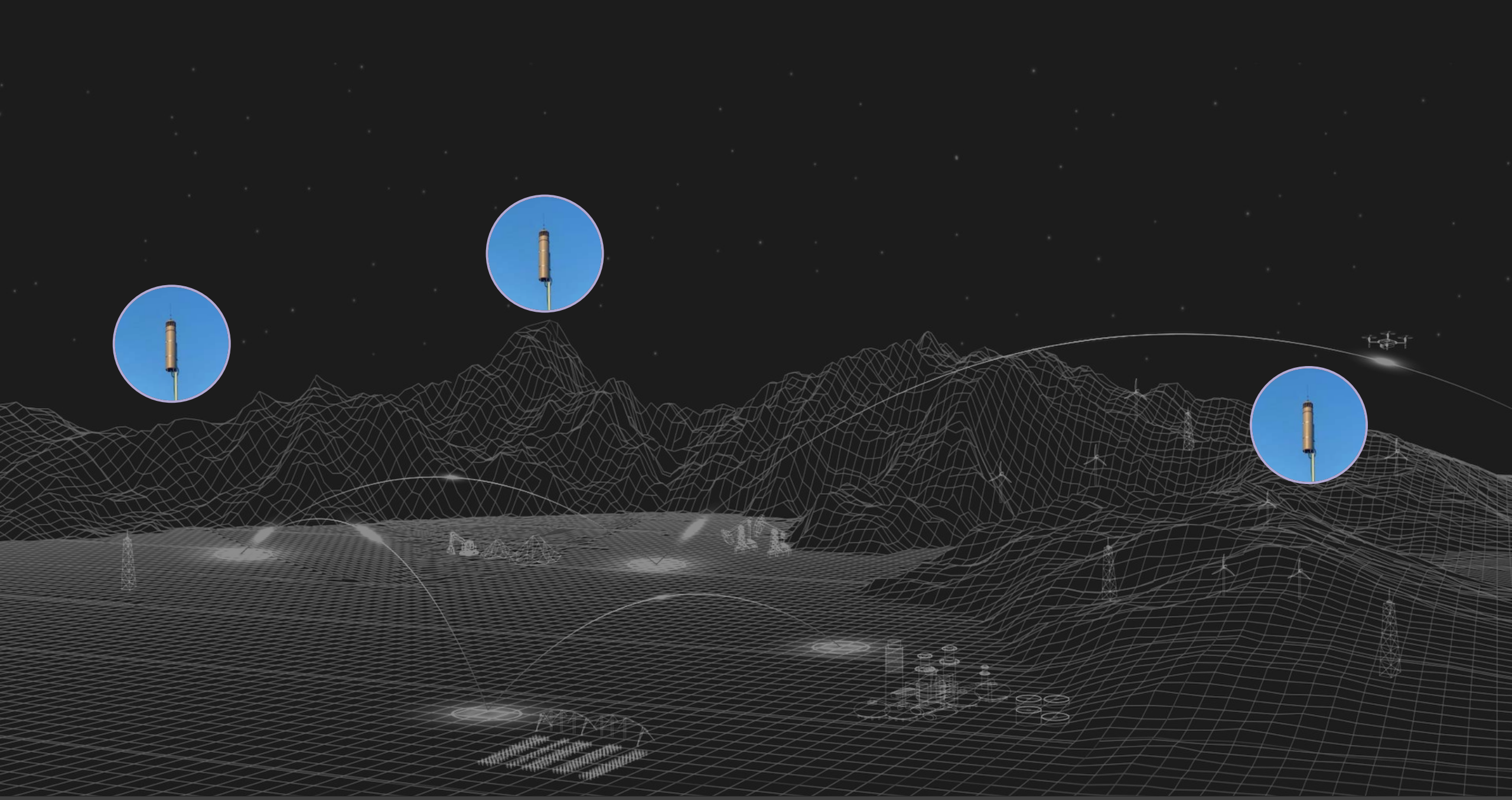
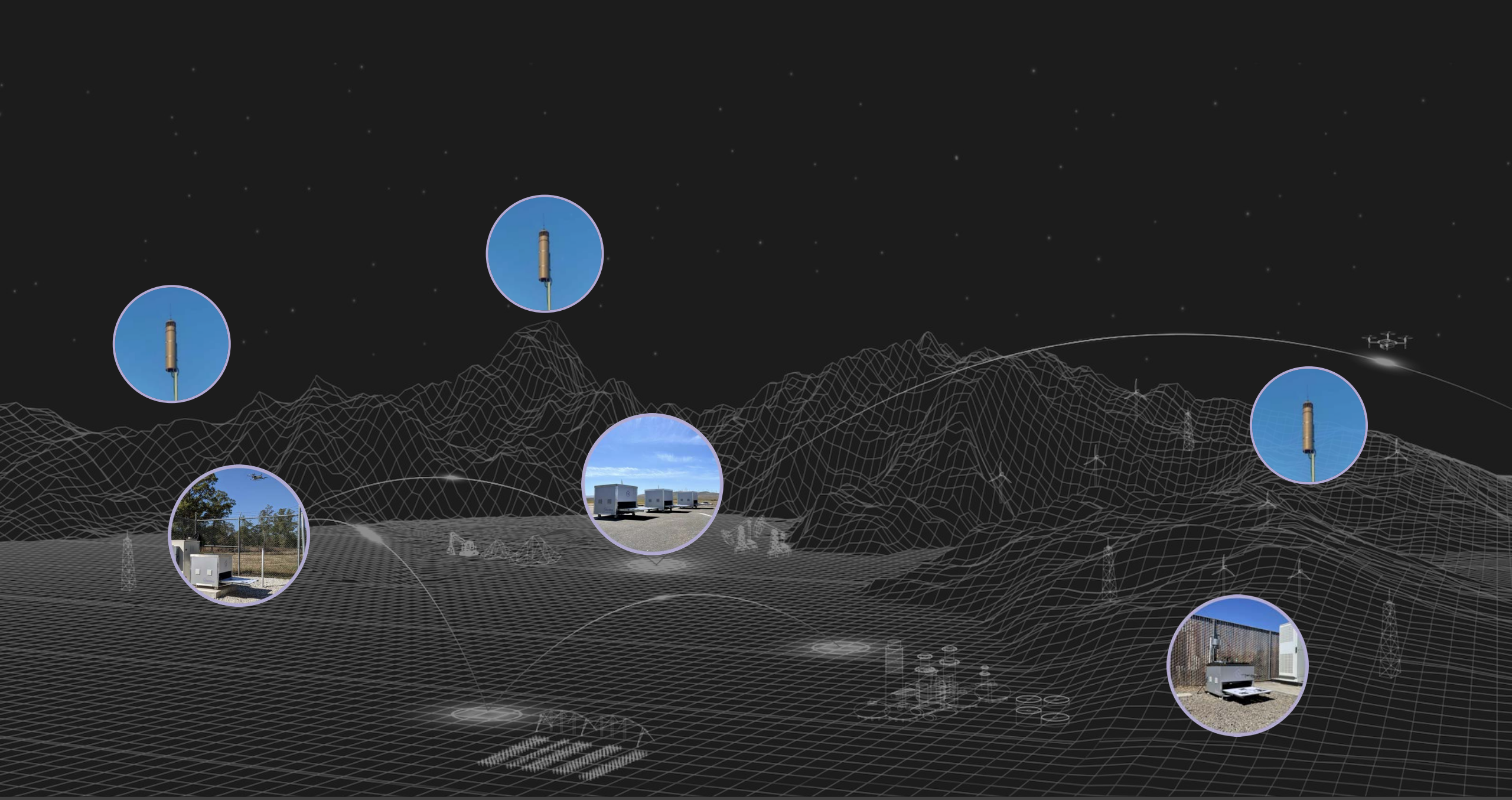
Marietta







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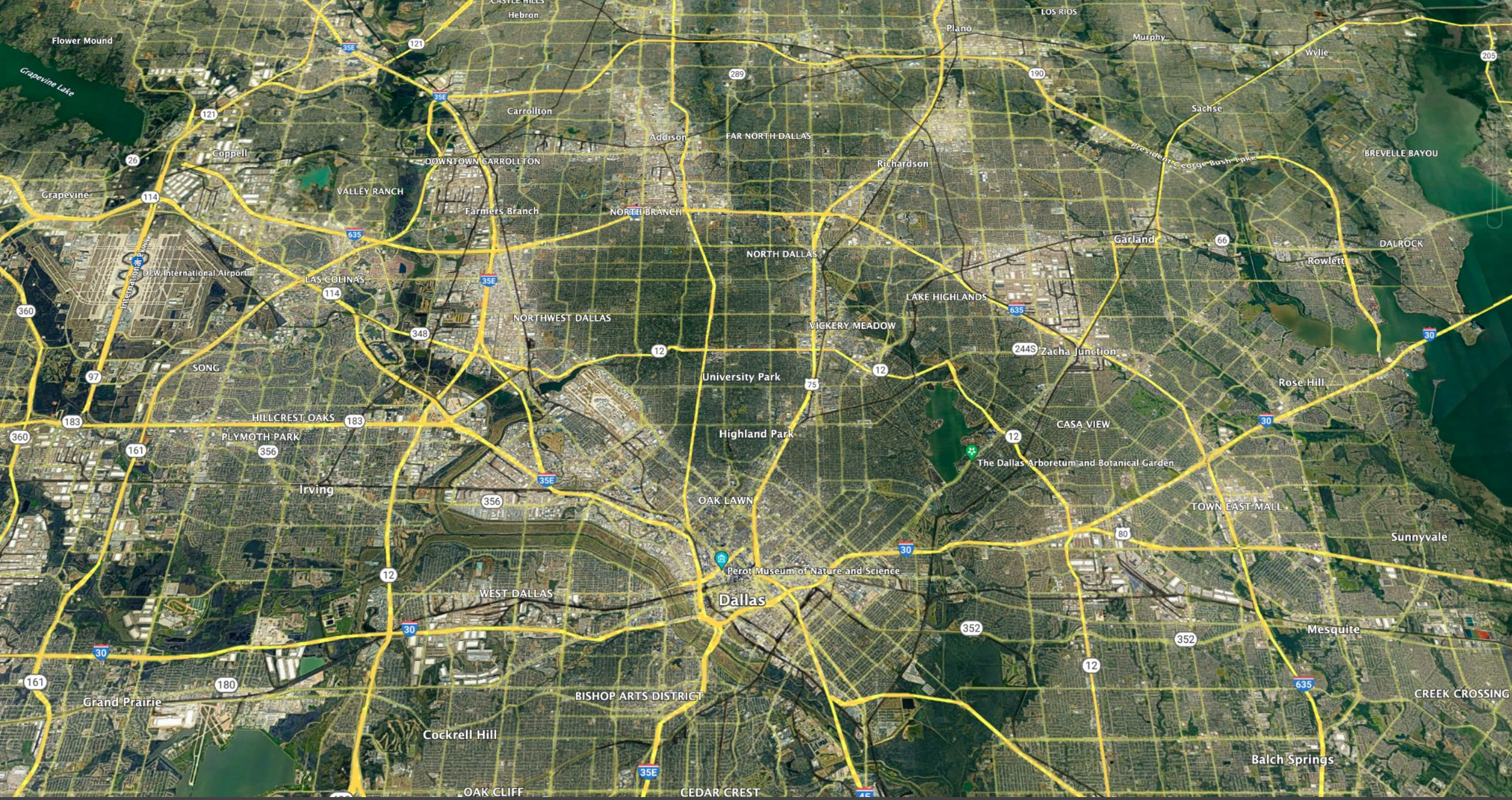
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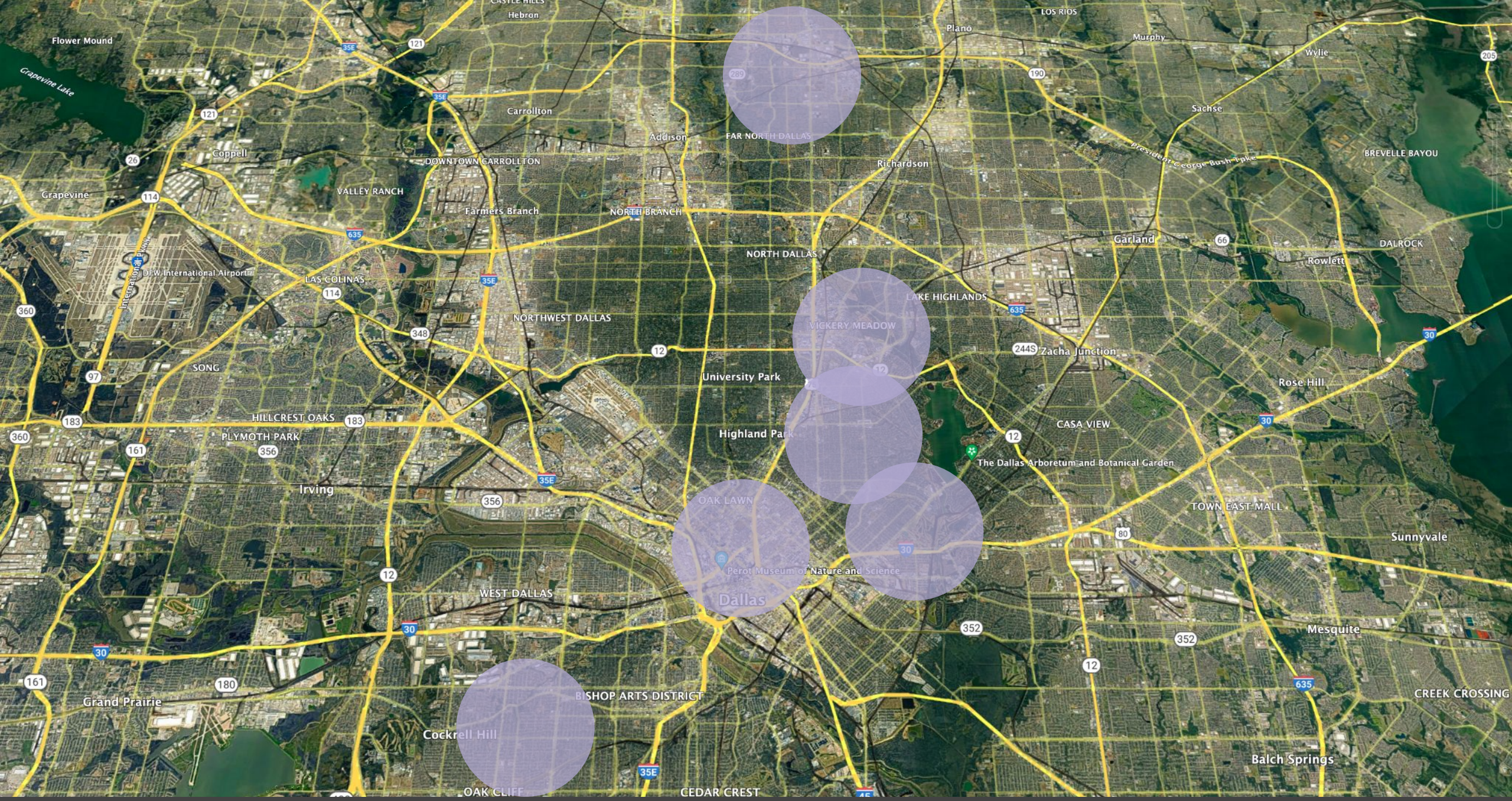
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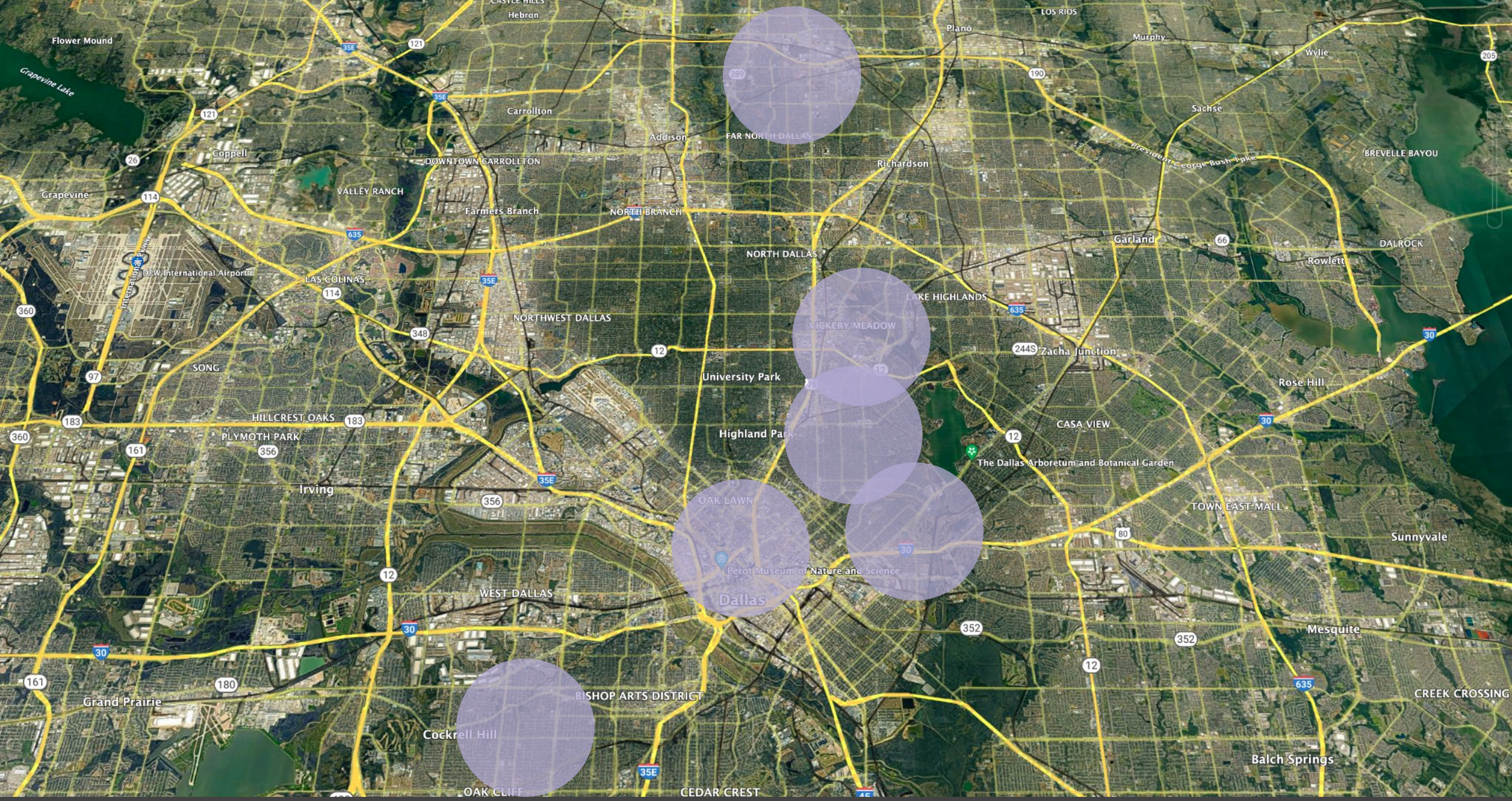
Cedar Springs
Maple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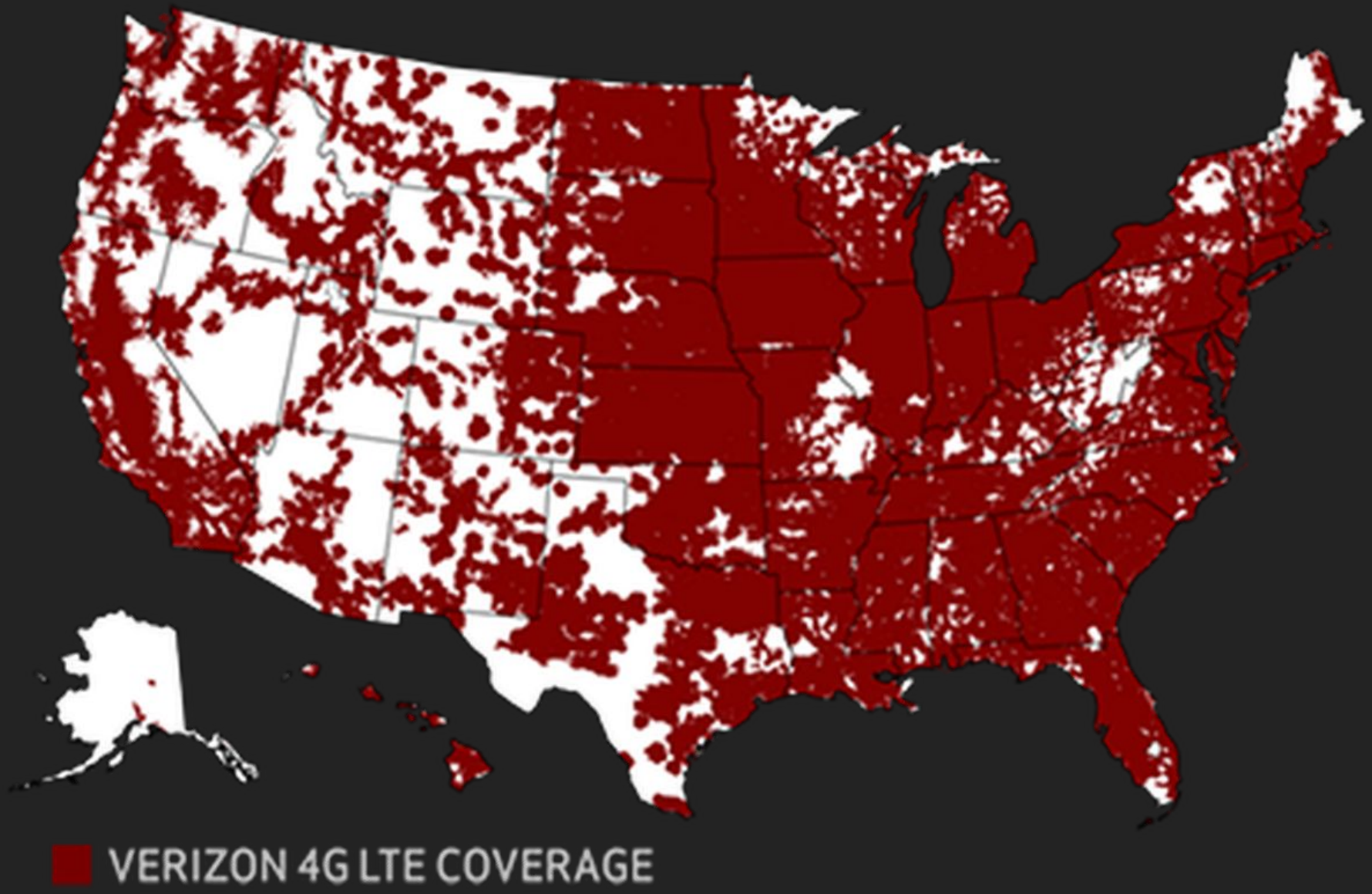
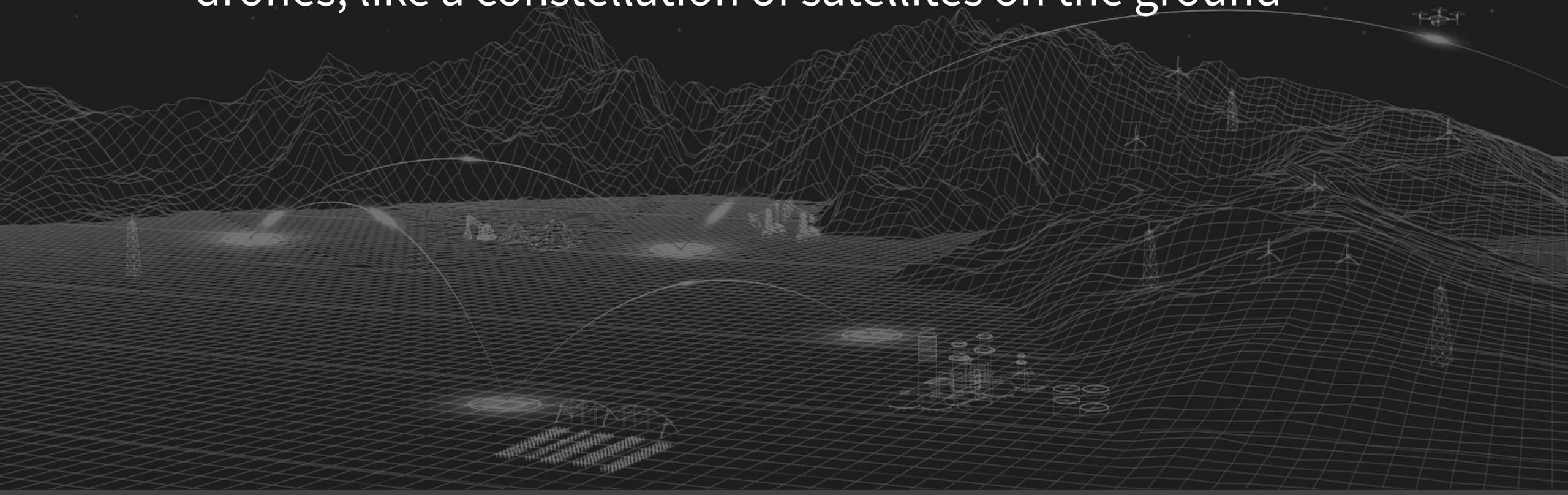

VERIZON 4G LTE COVERAGE

VISION

Build a nation-level remote sensing platform using BVLOS drones, like a constellation of satellites on the ground



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LEGISLATIVE UPDATE

NICHOLAS ALLEN

NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS

North Texas UAS Safety and Integration Task Force Meeting

May 2, 2023

FEDERAL UPDATE

Filed Legislation

S.905 The Drone Integration and Zoning Act.

- Would establish a section of airspace between 200 and 400 feet AGL for use by commercial operators and hobbyists
- Provides landowners with property rights that extend to 200 feet AGL
- Preserves local zoning authority for unmanned aircraft take-off and landing zones

TEXAS LEGISLATURE - DATES OF INTEREST

November 14, 2022

Bill Filing for the 88th Texas Legislature Began

January 10, 2023

88th Session of the Texas Legislature Convened

March 10, 2023

Bill Filing Deadline (Excluding Local Bills)

May 29, 2023

Final Day of the 88th Regular Session

June 18, 2023

Last Day Governor Can Sign or Veto Bills

BILLS OF INTEREST

Unmanned Aircraft

- HB 1302 (Geren)- Relating to inspections and examinations by the Railroad Commission of Texas of certain sites and facilities conducted using unmanned aircraft. **Passed House 4/27**
- HB 1516 (Wilson)/ SB 423- Relating to the use of unmanned aircraft by the Texas military forces. **Set on House Calendar 4/25; Senate Bill passed House 4/26.**

BILLS OF INTEREST

Unmanned Aircraft

- SB 1308 (Hancock)- Relating to the operation of an unmanned aircraft over an airport or military installation. **Referred to House State Affairs 4/10**
- SB 2144 (Parker)- Relating to advanced air mobility technology. **Passed House 4/28**
- HB 3075 (Kacal)- Relating to the operation of an unmanned aircraft over a correctional facility or detention facility. **Passed House 4/28**

BILLS OF INTEREST

Unmanned Aircraft – No Action

- HB 3489 (Gervin-Hawkins)- Relating to the use of an unmanned aircraft to locate and retrieve wounded or killed wildlife.
- HB 4102 (Guillen)/ SB 1986 (Hughes)- Relating to prohibiting the acquisition or use of certain unmanned aircraft by a governmental entity.
- HB 2159 (Capriglione)- Relating to the prosecution of the criminal offense of operation of an unmanned aircraft over certain facilities. **Introduced and referred to committee on House State Affairs 3/9**
- HB 4249 (Morales) / SB 1899 (Birdwell)- Relating to a law enforcement agency's use of deadly force by means of a drone.

CONTACT US

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NCTCOG Legislative Updates: www.nctcog.org/legislative
Texas Legislature Online: https://capitol.texas.gov/