



**TruWeather  
Solutions**  
BEYOND ORDINARY

# Deployment of Two Precision Weather Testbeds in North Texas

**North Texas UAS Safety and Integration Task Force  
Don Berchoff, CEO TruWeather Solutions  
October 29, 2024**



TruWeather  
Solutions  
BEYOND ORDINARY

## What We Do

Provide high-fidelity weather intelligence for the age of autonomy

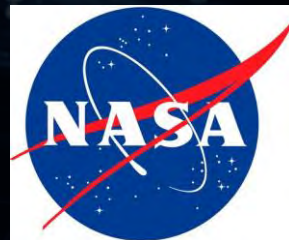
- We are a micro-weather data, analytics, and services company focused on safely and cost-effectively moving people and goods via remotely controlled air and/or autonomous vehicles and crew-flown electric Vertical Takeoff and Landing (eVTOL) vehicles
  - Founded in 2015 – expertise in aviation, weather, and logistics
  - Focus on low-altitude airspace
  - Leverage all available government weather data, then deploy additional sensors as needed
  - Partner with the best companies in weather science and technology
  - Led publishing, and now demonstration of a new ASTM Weather Standard
  - Provide simplicity for decisionmakers via end-to-end weather ecosystem

# Two North Texas Use Cases – Background

- TruWeather and key partners deploying two weather testbeds for two use cases
  - Low-Altitude Precision Weather for Small Drone Delivery Operations – Northeast Dallas
  - Precision Weather for Intermodal Uncrewed Air & Ground Transportation – North Fort Worth
- Two funding sources
  - NASA Small Business Innovation Research (SBIR) Awards
    - Low-altitude weather measurement sensors and 3D wind model
  - City of Fort Worth USDOT SMART Grant
    - Advanced low-altitude and road weather measurement infrastructure
    - Road weather model



**TruWeather  
Solutions**  
BEYOND ORDINARY



U.S. Department of Transportation



# Team Members and Capabilities

- TruWeather leads a team of partners to develop and integrate:

- Software
- Weather data sets
- Precision wind and road weather modeling
- Customized insights, services, and decision-aids



- Key weather/data technology partners:

- MetroWeather – advanced wind-sensing LiDARs
- Frost Solutions – road weather sensors and road weather modeling
- University of Massachusetts (UMASS) Collaborative Adaptive Sensing of the Atmosphere (CASA) – advanced high-resolution weather radar
- Envision Innovative Solutions – data integration and data visualization



**TruWeather  
Solutions**  
BEYOND ORDINARY



# Project Outcomes

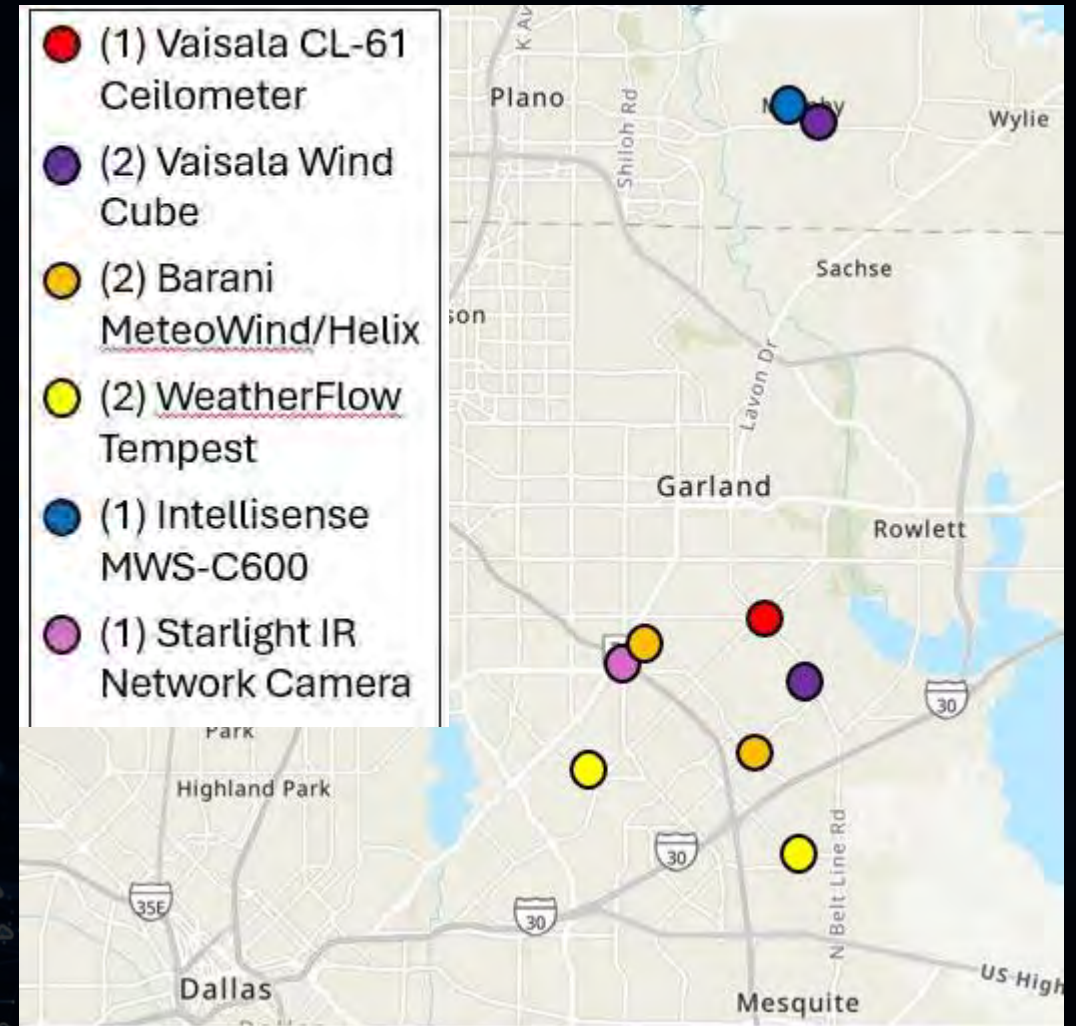
- Collect high-density data to support autonomous flight and ground operations
- Create a street-scale wind analysis and prediction system
- Create a wind hazard and low-level wind shear detection service
- Detect ceiling, visibility, and winds near drone launch & recovery sites and along flight corridors
- Assess value of advanced weather data for UAS/AAM business ops – publish economic study
- Conduct robust tests to validate integration of aviation and road-weather sensors and models
- Work with key partners to develop key measures of performance and measures of effectiveness to quantify the benefits to intermodal transit activities.
- Evaluate performance under operational scenarios, and collect and share metrics.





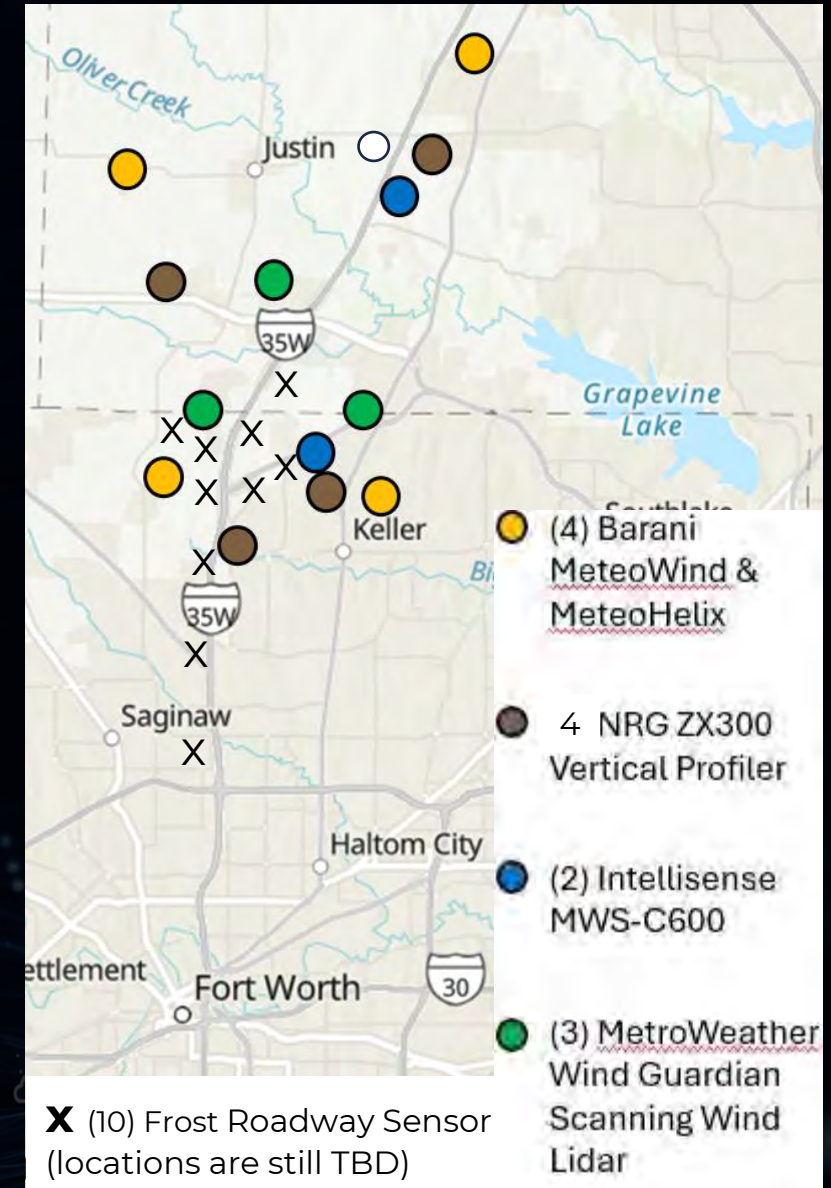
# Low-Altitude Precision Weather for Small Drone Operations

- Advanced weather sensors shown are co-located with DroneUp flight operation areas
- City of Garland and City of Murphy is facilitating deployment
- Camera and anemometer deployed on cell tower
- Wind Cubes and ceilometers will provide an unprecedented level of precision for low-altitude winds and clouds
- Goal: NTAP waiver to demonstrate implementation of ASTM Weather Standard for “approved” flight operations



# Weather for Intermodal Uncrewed Air/Ground Transportation

- Advanced sensors shown are NASA SBIR and DOT SMART Grant-funded sensors, plus additional MetroWeather sensors
- Hillwood providing crucial facility access for key sensors
- Locations of sensors are aligned with anticipated UAS/AAM flight operations in and around Alliance airport northward
- Roadway sensor locations are still TBD pending coordination with TX DOT, but will be aligned with Intermodal Parkway and other key roads for autonomous vehicles

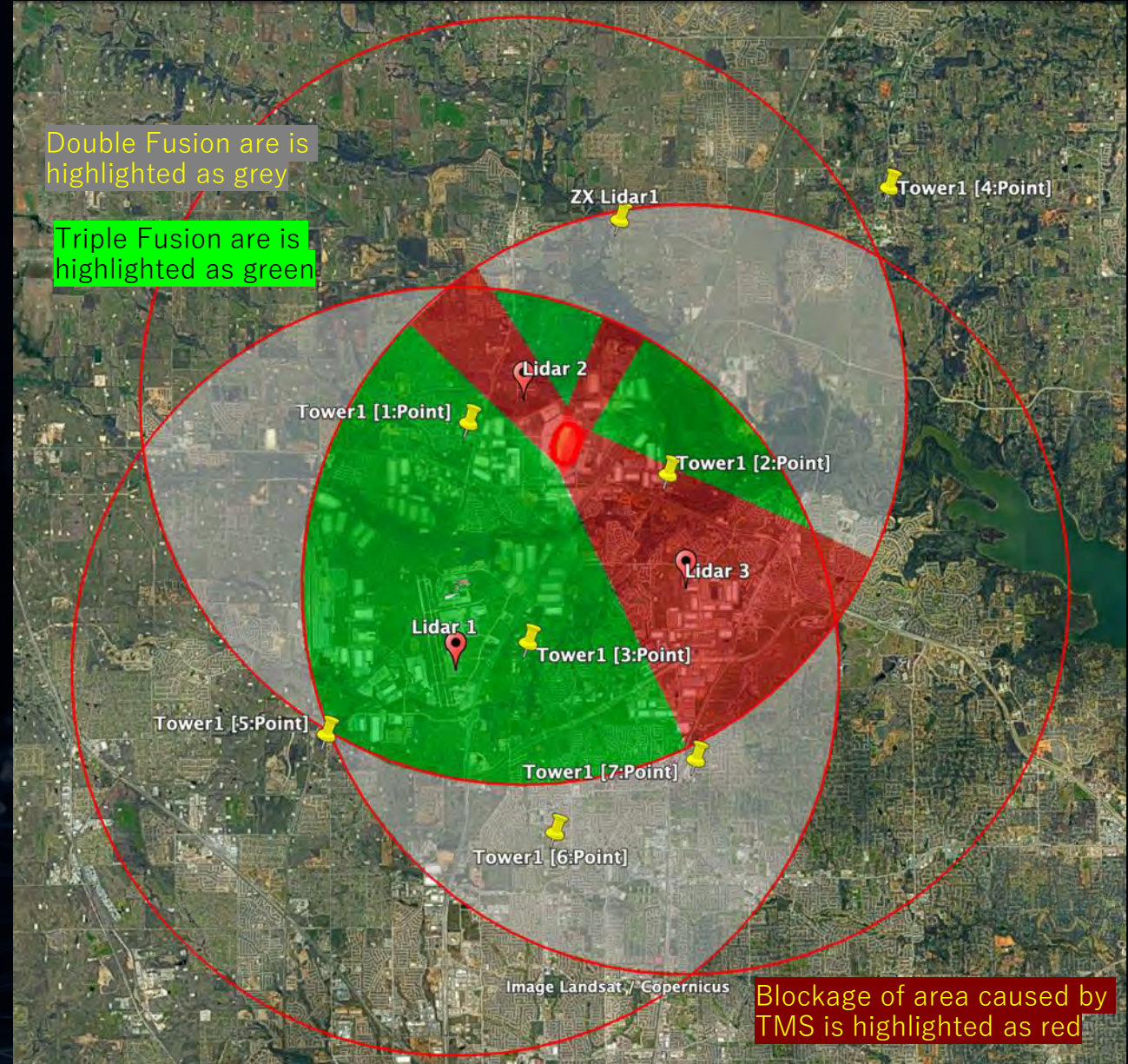




# Notional View of what LIDAR Data Coverage Aerial Extent



- FAA key site area
- Looking for “champion operators” to partner to obtain FAA NTAP waiver to use weather data as “approved” weather for flight ops.





# Call for Participation

- Seeking interested public, academic, and private sector entities to participate
  - City of Fort Worth charter efforts
  - Uncrewed Aerial System (UAS) drone operators (e.g., delivery, public safety, DOTs, security/surveillance, local operators)
  - eVTOL operators
  - UAS Service Suppliers/Provider of Services (e.g., flight planning/deconfliction, fleet management, airspace management)
  - Ground transportation companies and autonomous vehicle stakeholders
  - Any other interested parties



# Schedule

- Both projects (SBIRs and Smart Grant) have officially started
- Sensor deployments November 2024 thru February 2025
  - Data starts flowing upon sensor deployment ... requires period of calibration, validation, integration
- Work with local operators to submit NTAP requests
- Advanced 3-D wind model currently in development ... to be deployed March 2025
- Proof of concepts, demonstrations, use of real data for real ops: March – December 2025
- SBIRs and SMART Grant Phase I scheduled to end December 2025
  - Opportunity for DOT SMART Grant Phase II





# Primary Points of Contact

- TruWeather: Tom Froominckx (project leader) and Nick Burton (our “boots on ground”)
- City of Fort Worth: Armond Bryant and Kelly Porter
- Hillwood: Chris Ash and Nick Konen



TruWeather  
Solutions  
BEYOND ORDINARY

# Thank You

[truweathersolutions.com](http://truweathersolutions.com)



**TruWeather  
Solutions**  
BEYOND ORDINARY

Contact:

Don Berchoff

[Don.Berchoff@TruWeatherSolutions.com](mailto:Don.Berchoff@TruWeatherSolutions.com)

+1 680 800 7587



A woman with long brown hair is smiling and looking to her left while floating in the ocean. She is holding a yellow inflatable device, a RESTUBE, which is partially inflated. The device has the brand name 'RESTUBE' and the slogan 'BACKUP YOUR WATER SAFETY' printed on it. Below the slogan, there are five numbered diagrams (1-5) illustrating the steps to use the device. The background shows a calm sea and distant mountains under a clear sky.

# UAV | UAS

## FLOTATION DEVICE COMPREHENSIVE

---

**RESTUBE**  
BACKUP YOUR WATER SAFETY [WWW.RESTUBE.EU](http://WWW.RESTUBE.EU) - DESIGNED IN GERMANY, MADE IN EUROPE



# OVERVIEW

---

- **LENNOX HEAD RESCUE (CASE STUDY)**
- **OAK ISLAND RESCUE (CASE STUDY) | SCALING OF DRONES US**
- **FLOTATION DEVICES**
- **USE CASES**
- **AGENCIES**
- **DRONE SAR PROGRAM IMPLEMENTATION**



An aerial photograph of a coastline. The ocean is a deep blue-green color, with white foam from waves crashing onto a sandy beach. The beach is a light tan color and curves along the coast. In the background, there are dark green hills or mountains under a clear blue sky.

# UAV | UAS

## Rescue

**Place:**

Lennox Head, Australia

**Date:**

18 Jan 2018

**Equipment:**

DJI M600 (modified; w | deploy capability)

**Supplemental:**

Marine Rescue Pod – SoS 5701

**# of Persons Rescued:**

2

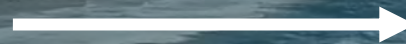




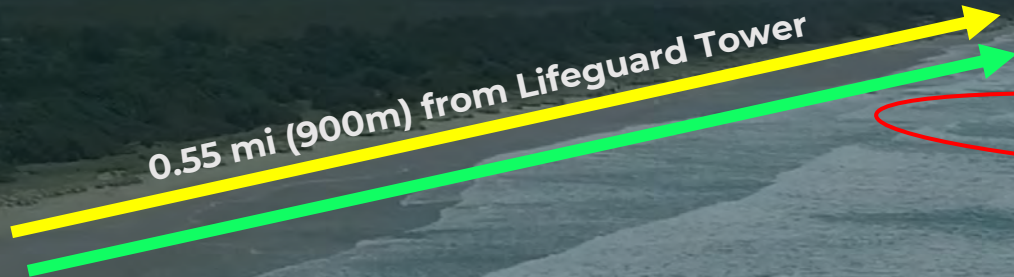
Helicopter Rescue Base – 19 mi (32 km)



400 ft (120m) Distance to victims



0.55 mi (900m) from Lifeguard Tower



10 ft (3m) waves



Rip Current



### Comparison – Critical Response Times: Drone | Lifeguard | Helo

Components	Drone	Lifeguard - Vehicle	Helo – Response
Activation	15"	1'	5'
Travel / Response Time	35"	4'	6' *
Deployment	10"	3'	1'
Recovery	3'	3'	
<b>Total Rescue Time</b>	<b>4'</b>	<b>11'</b>	<b>12'</b>

\* - Speeds of 150 – 180 mph



# HAYSTACK Rescue

**Place:**

Oak Island, North Carolina

**Date:**

16 May 2024

**Equipment:**

DJI M30T (w | deploy capability)

**Supplemental:**

Restube Automatic (2)

**# of Persons Rescued:**

1

# SCALE OF DRONE IMPLEMENTATION: US

Drone Implementation across US Agencies (2023)



17,985

Police <sup>1</sup> vs Police w. drones <sup>2</sup>  
Current Implementation: 3.9%



289

27,228

Fire <sup>3</sup> vs Fire w. drones <sup>2</sup>  
Current Implementation: 1.1%

<sup>1</sup> Wikipedia - Law Enforcement in the United States

<sup>2</sup> DroneResponders

<sup>3</sup> Wikipedia - Firefighting in the United States



# PRODUCT USAGE



**Restube Beach**  
Swimming | Snorkeling




**Restube Active**  
Swimming | Snorkeling | Kayaking | Fishing | Triathlon




**Restube Extreme**  
Kitesurfing | Surfing | SUP




**Restube Automatic**  
Drones | Lifeguarding | First Responders




**Restube Automatic PRO**  
Drones | Lifeguarding | Boating | Helos




**Restube Lifeguard**  
Lifeguarding | First Responders





# COMPARATIVE: TYPE I – V | RESTUBE

## Standard PFD / Other



Type I: 1360g (3 lbs)



Type II: 454g (1 lb)



Type III: 385 - 900g (.85 – 2 lbs)



Type V: 1156g (2.6 lbs)



Rescue Ring: 1360g (3.0 lbs)



Rescue Can: 2500g (5.5 lbs)

## Type IV (Throwables)



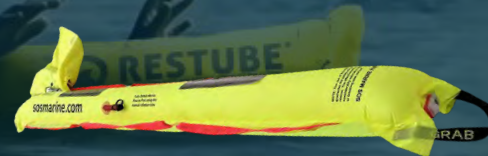
Restube Auto: 240g (0.5 lbs)



Restube Auto PRO: 558g (1.2 lbs)



RBA 200: 1134g (2.5 lbs)



SoS 5701: 950g (2.1 lbs)



Throw Raft: 998g (2.2 lbs)

# USE CASES

---

**Rescue Operations:** Automatic-deploy flotation devices play a crucial role in water rescue operations (from boats, PWC, fixed-wing, helos, etc). Lifeguards, coastguards, or emergency responders, can wear these devices to ensure their own safety while approaching and assisting individuals in distress. The automatic inflation feature allows rescuers to focus on the rescue operation rather than manually deploying their flotation devices.

**Equipment Flotation:** Automatic deploy flotation devices can be used to provide buoyancy to equipment and objects during water-based operations. For example, in situations where equipment, tools, or valuable assets need to be protected from sinking or lost in the water, these devices can be attached to them, ensuring they remain afloat and retrievable.

**Canines:** Dogs can be involved in search and rescue operations, or other special ops. These devices are equipped with buoyancy chambers and secure fastenings, allowing dogs to stay afloat. The automatic deploy feature ensures that the device inflates upon water immersion, eliminating the need for manual activation by the handler or rescuer.

**Swiftwater Rescue:** Flotation devices are particularly useful in swift-water rescue situations, where strong currents pose a significant risk. Rescuers can wear/throw these devices.

**Underwater Recovery:** Using a manual Restube with a USV, offers a solution for recovery underwater. Utilizing a snare system, the Restube is securely affixed to the item/object/person, and the USV arm activates the inflation mechanism. Once triggered, the Restube creates buoyancy, lifting objects to the surface. This method can provide a means of underwater recovery. With this method, there isn't a need to inflate below the surface, making this a more streamlined and practical recovery method.

**Aviation Overwater Safety:** Ensuring passenger and crew safety during overwater flights or operations near bodies of water is essential. Flotation devices play a vital role in this, as they can be worn and manually inflated upon water immersion, providing buoyancy during a water landing or emergency evacuation. Certain safety measures restrict the use of automated devices to avoid the risk of entrapment in capsizing or submersion. In these situations, manually operated flotation devices are preferred to ensure safety and prevent potential hazards.

**Flotation for Watercraft and Rafts:** Automatic deploy flotation devices can be integrated into watercraft, rafts, or small boats to provide additional flotation. In the event of an accident, such as capsizing or damage to the vessel, these devices can automatically inflate, keeping the watercraft or raft afloat and providing individuals with a stable and buoyant platform for safety and rescue.



# RESTUBE PROGRAMS

## UNITED STATES / CANADA (SELECT AGENCIES)



Police





# RESTUBE PROGRAMS

## UNITED STATES / CANADA (SELECT AGENCIES)



Fire



# RESTUBE PROGRAMS

## UNITED STATES / CANADA (SELECT AGENCIES)

Federal / State Agencies:



Educational Agencies



# DRONE SAR: IMPLEMENTATION & COST

- **Overview of SAR Water Program Goals**
- **Importance of drone technology for SAR operations vs other equipment | standalone**
  - Speed | Efficiency | Cost
- **Factors of consideration**
  - Flight time | Camera Quality | Payload Capacity | Durability | Ease of use & adoption
- **Models (DJI, Autel, Skydio, Brinc, etc.)**
- **Payload Systems (what to consider)**
  - Camera systems (Zoom, Thermal, Nightvision)
  - Comms (Loudspeakers (real time, pre-recorded), two-way)
  - Deployment systems (EFDs (Emergency Flotation Devices), First Aid)
  - Other Accessories (Lighting, PLBs)
- **Cost Analysis**
  - **Basic Tier – Simple Drone + Standard Camera + Basic Flotation**
    - Pricing range: \$3k – \$5k
  - **Intermediate Tier – Advanced Drone + Thermal Camera + Comp PDS + Comms**
    - Pricing range: \$10k – \$20k
  - **Advanced Tier – Top tier Drone + Full suite Cameras + Adv PDS + Comms + Accessories**
    - Pricing range: \$30k – \$50k
- **Implementation – Training | Standardization | Regulatory Compliance (Part 107 / COAs ) | Maintenance**



# Maverick Autonomous Vehicle Research Center

## Presenters

---

Yan Wan: Distinguished University Professor, EE

Nick Gans: Head of AIS Division, UTA Research Institute & Associate Professor, CSE

Kamesh Subbarao: Jenkins Garrett Professor and Associate Chair, MAE

Cody Lundberg: Research Engineer, UTA Research Institute



# UAV Use in Future Cities



Aerial Taxi

Cargo Transport

Traffic Surveillance

Land Survey

Precision Agriculture

Sports  
Coverage

Personal Assistance

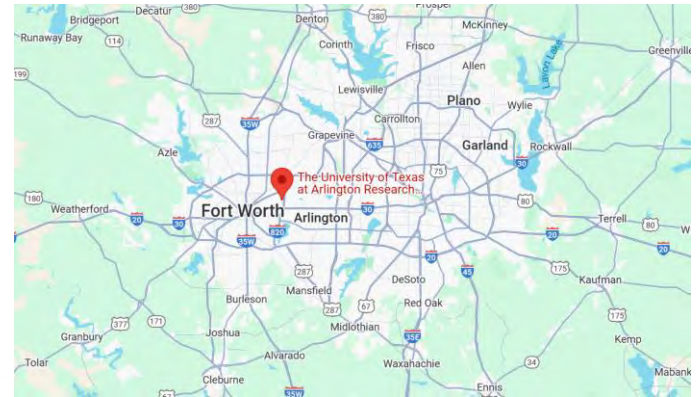
Emergency and Disaster Response

Environmental Monitoring

Infrastructure Health Monitoring

# Introduction

- The University of Texas at Arlington is expanding its research and innovation capabilities by building a \$2.3 million, state-of-the-art outdoor netted drone facility.
- The Maverick Autonomous Vehicle Research Center (MAVRC) will be located at the UT Arlington Research Institute (UTARI) in Fort Worth, with a planned completion date of January 2025.
- This netted facility will allow for safe outdoor testing of advanced autonomous air vehicles while meeting all FAA regulations.





# Outdoor Netted Facility



# Outdoor Netted Facility





# Features of the Facility

- The 150'x120'x40' netted structure allows safe, development and testing autonomous/unmanned air vehicles while meeting FAA regulations
- Power and lighting to support operations at various conditions, including night use
- Wireless internet coverage
- Advanced cameras and motion capture enable sophisticated control algorithms and verification
- 26 Vicon motion capture cameras to localize vehicles, objects for control and validation of algorithms
- 720-sqft control/observation center that allows teaching, research, training and outreach
- Support and training available from UTARI researchers and staff

# Facility Use Cases

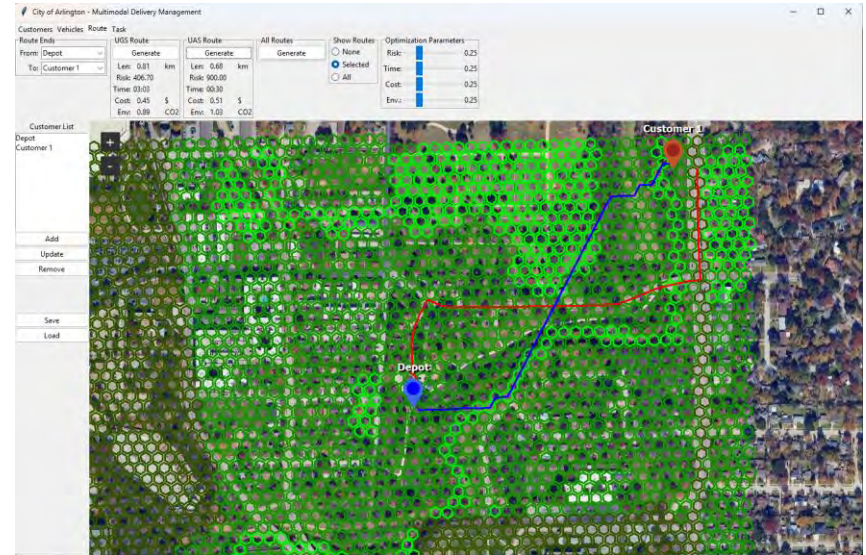
- **Autonomous UAV Testing and Development:** The facility can be used to test and develop new autonomous drone technologies, including sensors and platforms, navigation algorithms, obstacle avoidance systems, and payload delivery mechanisms.
- **Disaster Response Training:** The facility can simulate disaster scenarios where drones are used for search and rescue operations, damage assessment, and delivery of emergency supplies.
- **Educational Programs and Workshops:** The facility can host educational programs, workshops, and training sessions for students, researchers, and industry professionals to learn about the latest advancements in drone technology and autonomous systems.



# UTA UAV Research

- **Security and Surveillance:** The facility can be used to develop and test drones for security applications, such as perimeter surveillance, crowd monitoring, and threat detections
- **Counter UAS:** The facility can be used to test systems designed to detect, track, and counter drones for security and defense of sensitive areas
- **Collaborative Autonomy:** The facility can be used to support collaborative autonomous systems research such as multi-UAS formation, swarms, and air and ground autonomous vehicle collaboration.
- **Agricultural Research:** Drones can be tested for precision agriculture applications, such as crop monitoring, pest detection, and soil analysis, to improve farming efficiency and sustainability.
- **Environmental Monitoring and Data Collection:** Researchers can deploy drones to monitor environmental conditions, collect data on air quality, and study wildlife habitats without disturbing the ecosystem.
- **Urban Planning and Infrastructure Inspection:** The facility can support research on using drones for urban planning, including traffic monitoring, infrastructure inspection, and maintenance of public utilities.

# Sample Research Project: DOE Funded Multimodal Delivery Project



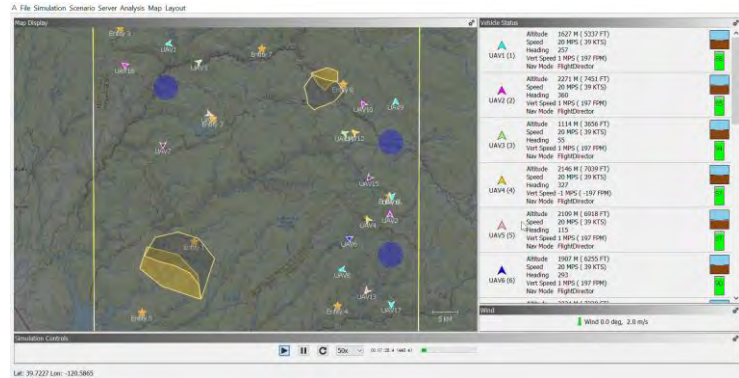
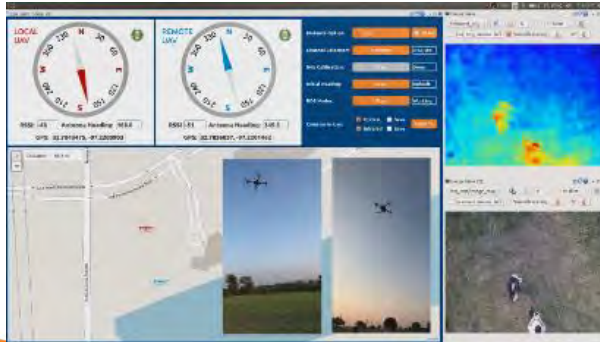
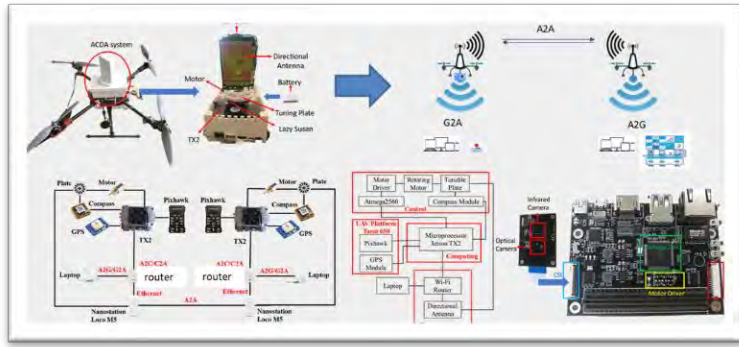
CLEVON



AERIALLOOP  
DRONE DELIVERY AIRLINES



# Sample Research Project: Networked UAV for Emergency Response





# Multi-disciplinary Techniques

- Autonomous vehicles are integrated systems that are service oriented, and hence require multi-disciplinary techniques that span
  - Sensors
    - Embedded systems
  - Communication
    - Cyber-physical systems
  - Control
    - Intelligent Transportation
  - Mechanical and electrical systems
    - Various application domains in civil engineering, business, biology, environmental science, urban planning, etc.
  - Human-machine interaction
  - Security, privacy, certification
  - Data science
  - Machine learning

# UTA Position

- UTA broad engineering disciplines that offer all the relevant expertise, including
  - the only Aerospace program offered in the DFW area
  - UTA Research Institute that specializes in applying cutting-edge technologies to real-world engineering problems
- Solid track record with sustained success in funding and funded research
- Long-term collaborations with local industries and communities
- Rich academic programs including e.g.,
  - Unmanned Systems Certificate
  - Autonobots Club
  - Cyber Physical Systems Certificate

# UTA Faculty Involvement (more 40 faculties)

- **Civil Engineering:** Nick Fang, Pengfei (Taylor) Li
- **Computer Science and Engineering:** Ishfaq Ahmad, Vassilis Athitsos, William Beksi, Chris Conly, Gautam Das, Jean Gao, Shawn Gieser, Vamsikrishna Gopikrishna, Junzhou Huang, Manfred Huber, Mohammad Islam, Farhad Kamangar, Won Hwa Kim, Chengkai Li, Fillia Makedon, Chris McMurrough, Shirin Nilizadeh, Habeeb Olufowobi, Deokgun Park, Cesar Torres, Dajiang Zhu, Yingying Zhu
- **Electrical:** Kambiz Alavi, Ali Davoudi, Sungyong Jung, Frank Lewis, Ramtin Madani, Chenyun Pan, Ioannis Schizas, Yan Wan, David Wetz, Yijing Xie
- **Industrial, Manufacturing and Systems:** Brian Huff, Jay Rosenberger
- **Mechanical and Aerospace:** Animesh Chakravarthy, Panos Shiakolas, Kamesh Subbarao
- **UTA Research Institute:** Nick Gans, Asif Iqbal, Cody Lundberg, Michael Araujo, Michail Theofanidis



# Civil Engineering

- **Nick Fang:** UAVs as a Multispectral Remote Sensing Platform
- **Pengfei (Taylor) Li:** UAV/UGV trajectory planning and scheduling, UAV route scheduling, transportation, traffic data collection, logistics



# Computer Science and Engineering

- Computer Vision/AI/Machine Learning/Big Data (UAV/UGV applications):
- Ishfaq Ahmad, Vassilis Athitsos, William Beksi, Chris Conly, Gautam Das, Jean Gao, Shawn Gieser, Vamsikrishna Gopikrishna, Junzhou Huang, Manfred Huber, Mohammad Islam, Farhad Kamangar, Won Hwa Kim, Chengkai Li, Fillia Makedon, Chris McMurrough, Shirin Nilizadeh, Habeeb Olufowobi, Deokgun Park, Cesar Torres, Dajiang Zhu, Yingying Zhu

# Electrical Engineering

- **Kambiz Alavi:** Unmanned vehicle system
- **Ali Davoudi:** Power electronics, networked control and learning
- **Sungyong Jung:** Sensor design for UAV/UGV monitoring
- **Frank Lewis:** AI/RL for UAV/UGV, distributed decision, control, coordination for networked UAV/UGV
- **Ramtin Madani:** Optimization, machine learning
- **Chenyun Pan:** Circuit design for deep learning applications



# Electrical Engineering

- **Ioannis Schizas:** Machine Learning, statistical signal processing, data Analytics, optimization
- **Yan Wan:** networked UAV/UGV control, CPS approaches to UAV/UGVs, UAV/UGV application, AI for autonomous vehicles, UAV traffic management and urban aerial mobility (Industry grants with Toyota motors, Ford motors, Lockheed Martin, MITER, and Dell Technologies)
- **David Wetz:** Pulsed power, power electronics
- **Yijing Xie:** Multi-agent systems-based control, optimization and learning theory

# Industrial, Manufacturing and Systems

- **Brian Huff:** UAV/UGA localization, navigation
- **Jay Rosenberger:** Air transportation, traffic management

# Mechanical and Aerospace

- **Animesh Chakravarthy:** Guidance and control for flight vehicles, cyber-security of UAV swarms, morphing UAVs
- **Panos Shiakolas:** Robotics/auto/assistive/HRI
- **Kamesh Subbarao:** Flight mechanics, simulation and control, astrodynamics, UAV/UGV coordination



# UTA Research Institute

- **Nick Gans:** UAV/UGV team formation, surveillance, monitoring, search, machine learning for UAV and anti-UAV security and surveillance tasks
- **Asif Iqbal:** Machine learning for UGV/UAV, SLAM
- **Cody Lundberg:** UAV/UGV team formation, environmental and infrastructure monitoring
- **Michael Araujo:** 3D mapping
- **Michail Theofanidis:** Motion planning and control

# Call for Participation and Collaboration

- **In Spring 2025, we will organize an Open House Event for the Facility.**
- **Please contact us if you are interested in**
  - **showcase your product/project**
  - **seek for collaboration**
  - **tour of the facility**

# 2025 GULF SOUTH REGION ANNUAL BUSINESS MEETING & GEOSPATIAL CONFERENCE



## SPEAKER INFORMATION



**Scott Dunham, CP, CMS**  
**Gorrondona & Associates, Inc.**  
**Gulf South Region**  
**Vice President**

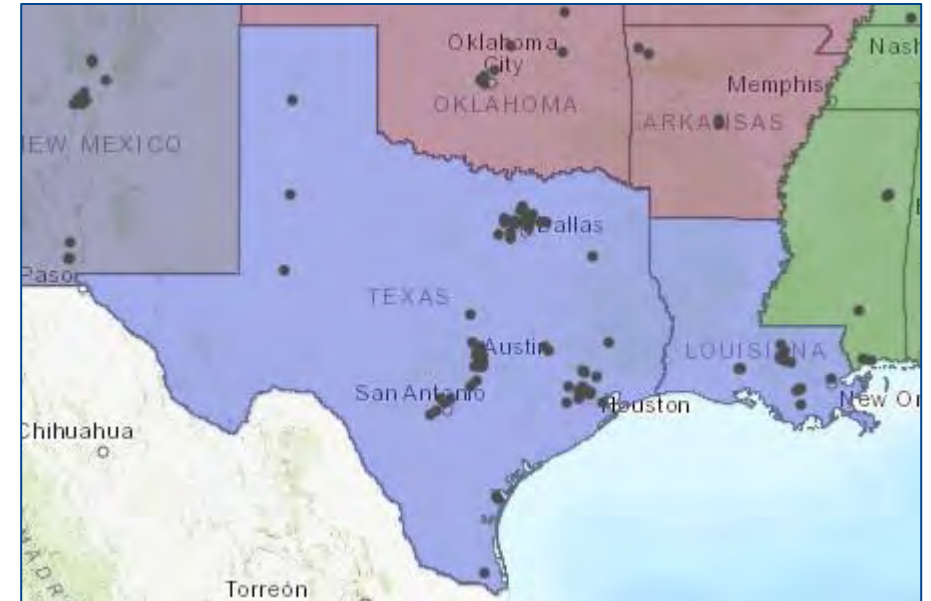
- 25 years of experience in photogrammetry and remote sensing
- Certified Photogrammetrist, No. R1400 (2012), American Society of Photogrammetry and Remote Sensing (ASPRS)
- Certified Mapping Scientist in LiDAR, No. R038 (2018), ASPRS
- Vice President, Gulf South Region, ASPRS
- Geospatial Director at Gorrondona & Associates, Inc. – 10 years

# ASPRS

Mission: To advance knowledge and improve understanding of mapping sciences to promote the responsible applications of photogrammetry, remote sensing, geographic information systems (GIS) and supporting technologies.

# GULF SOUTH REGION

- Comprised of Louisiana and Texas
- Chartered in 2021
- 144 Members as of October 2024
- 48 Certified Members as of October 2024
- Advance knowledge in imaging and geospatial information in the region





## GULF SOUTH REGION

## WHAT DO WE OFFER?

- Professional Networking Opportunities
- Professional Certifications
- Access to professional development and educational content
- Career Growth Opportunities
- Discounts on ASPRS Certification, Conferences, and ASPRS Publications

# GULF SOUTH REGION

# Conference Schedule

Wednesday March 12th				
START	END	SESSION	INFORMATION OR SESSION TOPIC	SPEAKER/ROOM
2:00 pm	4:00 pm	Registration Desk Hours	Attendee registration hours and Sponsor exhibit booth move in.	Atrium
4:00 pm	5:00 pm	Annual Business Meeting	Gulf South Region Annual Business Meeting.	Longhorn Room
6:00 pm	9:00 pm	Welcome Reception	Drinks, snacks and time to network with other professionals. Bar open from 6-8pm	Atrium

Thursday March 13th				
7:30 am	4:00 pm	Registration Desk Hours	Registration Desk hours for the day.	Atrium
7:30 am	8:00 am	Continental Breakfast	Enjoy Continental breakfast with other professionals.	Atrium
8:00 am	10:00 am	Sponsor Move in	Exhibit booth move in time.	Atrium
8:00 am	8:10 am	Presidents Welcome	A conference overview and welcome by Gulf South Region President, Scott Dunham.	Scott Dunham, CP, CMS Lidar/Lil Tex
8:15 am	9:15 am	Technical Session One	The Digital Underground: Powered by Precision Data	Nik Smilovsky, PhD, Lil Tex
9:00 am	4:30 pm	Sponsor Exhibit Hours	Sponsor exhibit booth hours for the day	Atrium
9:25 am	10:25 am	Technical Session Two	Impact of NGS 2022 Datum & Low Distortion Projections to Mapping and Engineering Projects.	Vas Kalogirou, RPLS, PLS, PSM/Lil Tex
10:25 am	10:45 am	Break with Sponsors	Refreshments provided.	Atrium
10:45 am	11:45 am	Technical Session Three	TBD	Ciaran Manning/Lil Tex
11:30 am	12:30 pm	Lunch with Sponsors	Enjoy lunch with our great Sponsors!	Atrium
1:00 pm	2:00 pm	Technical Session Four	Leveraging AI/Deep Learning to Enhance UAS Photogrammetric Workflows	Michael Starek, PhD/Lil Tex
2:10 pm	3:10 pm	Technical Session Five - NEW ADDITION	InSAR related	Danielle Smilovsky, PhD/Lil Tex
3:10 pm	3:30 pm	Break with Sponsors		Atrium
3:30 pm	5:00 pm	Geospatial Experts Panel	<p>Moderated by Kent Groh of the Geoholics.</p> 	Karen Schuckman CP, CMSL; Jib Ahmad, RPLS, PLS, CFM, RPIC; Paul DiGiacobbe, PE, DBIA; Sergio Roman/Lil Tex
6:30 pm	9:00 pm	Awards Dinner	Region Awards hosted by Balaji Ramachandran	Atrium

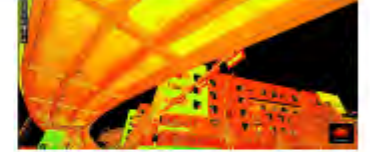
Friday March 14th				
7:30 am	12:00 pm	Registration Desk Hours	Registration Desk hours for the day.	Atrium
7:30 am	8:00 am	Continental Breakfast	Enjoy Continental breakfast with other professionals.	Atrium
8:00 am	9:00 am	Technical Session 5a	Practical Instruction for the Surveying of Ground Control and Checkpoints in Accordance with ASPRS Specifications - Part 1	Jim Gillis RPLS, CP & Jamie Gillis RPLS, CP/Lil Tex
9:10 am	10:10 am	Technical Session 5b	Practical Instruction for the Surveying of Ground Control and Checkpoints in Accordance with ASPRS Specifications Part 2	Jim Gillis RPLS, CP & Jamie Gillis RPLS, CP/Lil Tex
10:30 am	11:30 am	Technical Session 6	Bridging the Digital Divide: Aligning GIS Education with industry needs in the Geospatial Revolution	Daniel Waktola, PhD/Lil Tex
10:30 am	11:45 am	UAS Demonstrations	UAS demonstrations (weather permitting)	Off-site location TBD
12:00 pm	1:00 pm	Lunch with Sponsors	Enjoy lunch with our great Sponsors!	Atrium
1:00 pm	5:00 pm	Preparation for ASPRS Certification Workshop	Four-hour ASPRS Certification preparation workshop.	Longhorn Room



# GULF SOUTH REGION



## Preparation for ASPRS Certification Workshop



This workshop covers the common knowledge areas comprising a large portion of exam content for ASPRS Certification. It is valuable preparation for those who have never taken an ASPRS exam, as well as for those who have expertise in a particular specialty, such as lidar or UAS, but feel less prepared for the general knowledge component of the exam. This workshop will also explain the certification application process and the importance of certification in career development.

Registering for the Preparation for Certification Workshop **DOES NOT** include access to the main conference events, sessions, or meals.

**Instructor(s): TBD**

Registration Fee - \$225.00



## Meal Sponsor (5) = \$2,000.00

Benefits Include:

- Exhibit booth with two (2) complimentary conference registrations (one 5' table, two chairs and power outlet)
- Networking break & lunch opportunities with attendees
- Recognition before every technical session
- Recognition as Meal Sponsor on all marketing materials
- Gulf South Region Community page listing with company logo and website link

## Gold Sponsor (20 Available) - \$1,500.00

Benefits Include:

- Exhibit booth with two (2) complimentary conference registrations (one 5' table, two chairs and power outlet)
- Networking break & lunch opportunities with attendees
- Recognition before every technical session
- Gold Sponsor listing on all marketing materials
- Gulf South Region Community page listing with company logo and website link

## Silver Sponsor (unlimited) = \$1,000.00

Benefits Include:

- One (1) complimentary conference registration - **JUST ADDED!**
- Networking break opportunities with attendees
- Recognition before every technical session
- Silver Sponsor listing on all marketing materials
- Gulf South Region Community page listing with company logo and website link

## Bronze Sponsor (unlimited) = \$750.00

Benefits Include:

- Networking break opportunities with attendees
- Bronze Sponsor listing on all marketing materials
- Gulf South Region Community page listing with company logo and website link



# My Contact Info

---

**Scott Dunham, CP, CMS**

**[sdunham@ga-inc.net](mailto:sdunham@ga-inc.net)**

**512.348.3350**

**[Click Here to Register](#)**

