...the place where today’s passions and challenges create the future...

www.wit-composites.com
WIT-Composites company using an autoclave technology produces carbon fiber components for:

AEROSPACE
WIT-Composites company using an autoclave technology produces carbon fiber components for:

**DRONES**

**COMPANIES**

UNITED SYSTEMS MILITARY
WIT-Composites company
using an autoclave technology
produces carbon fiber components for:

MEDICAL

ROBOTS
We manufacture composite control panels for simulators.
WIT-Composites manufacture carbon composite shell for electronic devices.
We have manufactured the **Coil former** with superconducting fault current limiter

made for National Electrotechnical Institute
WIT-Composites company using an autoclave technology

repair of composite structures

for the manufacturer of ultralight carbon bicycles
Since 2013 we were working in consortium with PZL Mielec A Sikorsky Company on a project:

"Development of **innovative mechanical bonding** to replace conventional bonding in aircraft structures"

(Block Structures Philosophy)

Aeroplane M-28
WIT-Composites provides:

10 more than 10 years of experience

autoclave technology

staff: high tech engineers

FEM simulations

know-how

fast prototyping
WIT-Composites provides:

- R&D activities
- composites elements with the 3% porosity (what is very unique)
- strength static tests
- thickness of carbon composite material can be 0.03 mm = 0.00118 in
Our 3F

FORWARD-THINKING
FUNCTIONALITY
FAIR PLAY
Current activities:

Carbon composite **fast mechanical connections for medical industry**
permeable to X-rays
Example of medical composites connection
FEM results for a composite profile with foam filling

Considered models

<table>
<thead>
<tr>
<th>Composite thickness [mm]</th>
<th>Layer layout</th>
<th>Foam modulus [MPa]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4xfabric</td>
<td>175</td>
</tr>
<tr>
<td>2</td>
<td>fabric / 10xUD / fabric</td>
<td>175</td>
</tr>
<tr>
<td>3</td>
<td>fabric / 15xUD / fabric</td>
<td>175</td>
</tr>
<tr>
<td>4</td>
<td>fabric / 20xUD / fabric</td>
<td>175</td>
</tr>
<tr>
<td>5</td>
<td>fabric / 25xUD / fabric</td>
<td>175</td>
</tr>
<tr>
<td>6</td>
<td>fabric / 25xUD / fabric</td>
<td>400</td>
</tr>
</tbody>
</table>

fabric – twill 200 g/m², unidirectional fibers (UD) – 100 g/m²

Maximum displacement

Model 1 – 1,287 mm
Model 2 – 0,811 mm
Model 3 – 0,5628 mm
Model 4 – 0,3966 mm
Model 5 – 0,3 mm
Numerical calculations for two versions of the composite segment

Static load 150 kg evenly distributed over the entire surface of the segment

Displacement

$u_{\text{max}} = 6.43\text{mm}$

$u_{\text{max}} = 5.89\text{mm}$
The arm of a medical robot for Accrea company

3 types of loads

Displacement

W1

$u_{max} = 0.699 \, \text{mm}$

W2

$u_{max} = 0.368 \, \text{mm}$

W3

$u_{max} = 1.587 \, \text{mm}$
Simulation of composite drone construction

Electric engine thrust – 35 N
Composites material thickness – 0,2 mm

Normal stresses S11, maximum value 99,4 MPa

Maximum displacement 4,7 mm
Simulation of composite drone construction produced for Ritex
We work on 5th generation

High pressure H2 tank up to 21755 PSI = 150 MPa

at 79 °F = 300 °K
We focus on the high pressure region 150 MPa (1500 bar) - area 4. It shows that by raising the pressure of hydrogen, we will obtain the density at the level of liquid and supercritical hydrogen, without the need for expensive conversion and storage of hydrogen in these cryogenic states.
Structural design is under patent procedure

Netto weight = 83.36 kg with $H_2 = 87.41$ kg

High pressure $H_2$ tank up to 150 MPa at 293 °K
Technological infrastructure:

- **Autoclave**
  With a capacity of 3m³ to polymerize composite structures

- **Measuring arm**
  Coordinate measuring arm with control and measurement workplace

- **Lathe**
  max length: 600 mm
  max diameter over bed: 250 mm
  max diameter over carriage: 140 mm
  spindle passage: 30 mm

- **CNC Milling Tool**
  Workspace: X 457 Y 305 Z 492
  Spindle speed: 40-4000 rpm
  Feed: 1-5000 mm

- **3-axis machining centre**
  Working dimensions:
  X 2600 mm Y 1600 mm Z 400 mm

- **Refrigeration facilities**
  For storage of pre-impregnated materials

- **Static load frame**
  with 100 kN force capacity
  with 10 kN force capacity
  with 1 kN force capacity

- **Rooms**
  Equipped with suction and filtering systems and equipment to maintain constant temperatures

- **Dryer**
  with a capacity of 3 m³
WIT-Composites management

R&D Director
Michael

CEO
Veronica

CFO
Stanisława

Production Manager
Maria

+ inspired and focused on results team of 8 Engineers
We like technological challenges!

The most desirable challenge for us is to create something that no one has created before!

We are a team of engineers - enthusiasts who with commitment and determination create the future of various industries.

Weronika Soszyńska
Managing Member

ws@wit-composites.com

www.wit-composites.com
- 28,000 sqft facility
- 13,000 sqft of track space
- Heated and Cooled Pit spots

- Track can be reconfigured
- Events with 200+ unique entries
- Largest Indoor RC track in Texas
- Handicap accessible
Indoor UAV Course
MOBILE CAPABILITIES
Autonomous Mobility Corridors

ERNEST HUFFMAN
Principle Transportation Planner
Transportation Department
Infrastructure for Autonomous Mobility Corridors

1. Autonomous robotics WILL require autonomous infrastructure.
2. Accelerated - Crawl, Walk, Run vs. moonshot.
3. Selective pragmatism in first applications feeds all ecosystem with reliable data.
4. There is a building concern of a Sputnik moment.

TEXAS has lead the nation when it comes to transportation - building roads created the interstate economy. We need to go beyond the virtual and install the infrastructure to support autonomy.
Autonomy Requires Deep Collaboration Among Many Domains

**Government**
Testing and Validation

**Academia**
Research & Development, State Infrastructure Support

**Industry**
Research & Development, Deployment of critical infrastructure
Autonomous Mobility Requires Multi-Disciplinary Approach

Law and Policy - There is going to be decades of work around new regulations, Federal and State policies, Risk mitigation and control, privacy issues, public/private easements within the new domain of the Z dimension.

Engineering and Aerospace - innovation around new flight systems, propulsion, advanced control theory, new electronics, materials, energy sources, industrial design.

Business - Autonomous systems will spearhead all forms of new business opportunities as robotics start to impact everything from delivery, transportation, infrastructure monitoring/repair and even the foundation of smart city programs. Tens of thousands of new jobs.
Autonomy Requires Research and Development Among Several Domains

**System Components**
- Batteries
- Gimbal
- Payloads
- Sensors
- Motors
- Autopilots

**Drones/Sensors**
- Small UAVs, Delivery Drones, Drone Taxies

**Autonomy Infrastructure**
- Navigation beacons, Drone Depots, Trackers, Vertiports, Micro-Weather, Radar

**UTM/Security**
- Precision Nav, Micro-Weather, UTM, Situational Awareness

**Business Operations**
- Integrated drone, data and operational management

**Avigation Easements**
- Route planning, GPS support, AI flight, UTM

**Data Analytics**
- Inspections, sensor data, Image processing, analytics, machine learning

**Wireless Network**
Secure, Reliable, Low-latency Radio Access Networks supporting 5G and new Data Spectrums

**Edge Computing Infrastructure**

atrius.world
Why Texas? Texas has a long list of Innovative Players
Why NCTCOG? You have Many Government, Academia and Industry Partners
Aerial Autonomy requires Corridors over Infrastructure Easements

- Texas DOT Easements
- Austin Energy Easements
- Commercial Easements
- Union Pacific Easements
- Electric Substations
- Austin Autonomous
- ATRIUS UT Autonomous Mobility
- Precision Assets
- 360's
Creating Corridors over Infrastructure Easements

The air itself is not real property; airspace, however, is real property when described in three dimensions with reference to a specific parcel of land. Such air rights are alienable. They can be sold, purchased, mortgaged, leased, or otherwise encumbered, subject to easements of light and air.

- Mission flight corridor
- Safety and Risk Rally Point
- Airspace UTM clearance
- Clear protected flight path

Traffic Corridor for Autonomous Drones

400’ Above structure

300’ Above structure

150’ Above structure

30’ Above structure

Uber Elevate Aerial Taxi

Amazon Delivery Drones
Dallas has many Easements for Autonomous Mobility Corridors

- Substations
- Transmission
- Railroad
- Roadways
- CASA
- 5G from Carriers
- Edge Data Centers
- Radars and Airports
Dallas has many Use Cases for Drones

- Safety Monitoring
- Progress Monitoring
- Pollution Monitoring
- Building Inspection
- Security Surveillance
- Autonomous Cars
- Traffic Monitoring
- Autonomous Delivery
- Autonomous Rovers
- Autonomous Drones
- Autonomous Trucks
- Autonomous Taxis
- Emergency Response
We can Mitigate Risks within the Autonomous Mobility Corridors

- Authorization Experience
- Aviation Corridors
- Secure Systems
- Small Drones
- Precision Captures
- Situational Awareness
- Verified Hardware
- Fail-Safe Algorithms
- Real-Time Connection
- Autonomous Missions
- Close to Structure
- Real-Time UTM Feeds
Mitigating Risks within the Autonomous Mobility Corridors

Aviation Easements

Wireless Network

Precision Navigation

Precision Missions

Situational Awareness

Micro-Weather
Autonomous Corridors will be supported by an Edge Computing Network

- Edge Processing
- CV, VR, AR, ML, EA
- High Speed Ingest
- Data Sovereignty
- Low Latency Network
- Precision Navigation
- Micro Weather
- Situational Awareness

Edge Data Centers
Why Texas? Texas Takes on the Hard Challenges!
Why Texas? Texas Has Already Been Leading the Nation!

Unmanned Aircraft Systems (UAS) technology, known commonly as drone technology, is driving transformational impact across a growing number of industries. Drones are impacting both public and private industries including oil/gas, power/energy, construction, Public Safety, rail, . . . Drones allow our state to inspect infrastructure and identify what needs to be maintained, repaired or replaced. Trillions on bridges, dams, roadways, ports, levies, utilities, transmission lines, water treatment, etc.

Texas is uniquely positioned to lead the adoption of Autonomous Systems across the State. Texas can lead the nation by investing in research & development, installing infrastructure and supporting the commercial industry. The leader in autonomy will create the most jobs, business investment and economic growth.

While Texas today is second to none in state support for UAS research and development, this technology is evolving rapidly, with other states eager to take the lead. Texas has to continue its leadership position in UAS technology and development.
Why Texas? We Own Trillions of Dollars Worth of Physical Assets

- Bridges: >50,000
- Oil Production: > 350k miles of pipe
- Power Lines: > 3,500 miles
- Railroads: >10,000 miles
- Wind Turbines: >10,000
- Border Security: >1,200 miles
- Port Security: 4 of the largest ports
- Coastline protection: >3,000 miles
- Precision Agriculture: 27 Million Acres
ADVANTAGES OF **ACTIVE MOBILE SENSING**
HAS IMPACTED MANY INDUSTRIES

**Energy**
- Wildfires

**Insurance**
- Tornadoes

**Intelligence**
- Hurricanes

**Telecom**
- Hazmat

**Infrastructure**
- Accident Scenes

**Smart City**
- Sporting event

**Traffic Management**
- Fire Prevention

**Park Management**
-
Why Texas? We have the largest number of Commercial Airports
Why Texas? We have major Military Installations
Autonomy Adoption Timeline for Reach Industry

Autonomy will evolve over time and will require critical infrastructure to be deployed to support each level of automation and type of autonomous vehicles.
Autonomy has a great deal to Research, Develop and Deploy
Autonomy has a great deal to Research, Develop and Deploy

<table>
<thead>
<tr>
<th>Category</th>
<th>0-2</th>
<th>2-5</th>
<th>5-10</th>
<th>10+</th>
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<tbody>
<tr>
<td>Dedicated Short-Range Communications (DSRC)</td>
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<td>Satellite Comms</td>
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<td>Mobile Comms</td>
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<td>V2x Comms</td>
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<td>Edge / Cloud Comms</td>
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<td>Enhanced GPS</td>
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<td>GPS-denied technology.</td>
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<td>UTM Technology &amp; Certification</td>
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<td>Airspace Integration</td>
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<tr>
<th>Research Areas</th>
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<tbody>
<tr>
<td>Precision Navigation</td>
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<td>Sense, Detect, Avoid</td>
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<td>Infrastructure Sensors</td>
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<td>Real-Time Weather Intelligence</td>
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<td>EV Charging</td>
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<td>Just-in-time Flight Authorization</td>
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<td>Assured Software &amp; Firmware Updates</td>
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<td>Modular Interchangeable Design</td>
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<td>Cybersecurity</td>
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<th>Applications</th>
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<td>Payment Systems</td>
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<td>Receiving Vessels</td>
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<td>Docking Stations</td>
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<tr>
<td>Refueling / Charging Stations</td>
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<td>Distribution Hubs (Hubs)</td>
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<td>Vertiports/Vertistops</td>
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<tr>
<td>Counter-UAS</td>
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</table>
Collaboration between Texas Universities - UT and A&M

Plan, Operate, Evaluate

Lone Star UAS was created by the State of Texas to:

- Stand Up And Operate A FAA UAS Test Site Designated To Safely Integrate Public And Civil UAS Operations Into The National Airspace
- Provide FAA R&D And Operational Data To Facilitate The Development Of Procedures, Standards And Regulations For Safe UAS Operations
- Serve As The Engine For Economic Development On Behalf Of The Governor And The State Of Texas

A Test Site Safety Readiness Survey Team from the FAA performed an Onsite Readiness Survey Of The Six UAS Test Sites

- Organization
- Planning
- Policies And Procedures – Safety
- Security

NASA Selects Texas A&M University-Corpus Christi to Test Drones in Urban Traffic Management
Austin Autonomous Mobility Corridors

ATRIUS Terminal:
- JJ Pickle Campus

ATRIUS Nodes:
- JJ Pickle West
- Domain Tower (Braker)
- Austin Substation (Steck)
- Austin Substation (2222)
- Camp Mabry (Loop 1)
- UT Aerospace Engineering

Initial Use Cases:
- Fire Response
- Traffic Management
- Parks management
- Accident Scene capture
- Situational awareness
- Austin Energy inspection
- Water Treatment
- Tollway Intelligence
Phase I - JJ Pickle Campus V1
First ATRIUS Depot deployment at the Crown Castle Tower at the intersection of Braker and Burnet. Flight radius of 1 mile. We are looking to run 4 to 12 hour duty cycles with the goal of having at least 1 drone in flight at all times. Within the first two quarters we want to capture over 10,000 missions and provide the dataset to the FAA, Mitre, Wolfram and others to provide analysis and statistics.

Create AOI, LOI, POI Zones
Universal GRID for Beacon placements
Universal GRID for Mission placements
ATRIUS Drone Depot Installations

Phase I - JJ Pickle Campus V1
First ATRIUS Depot deployment at the Crown Castle Tower at the intersection of Braker and Burnet. Flight radius of 1 mile. We are looking to run 4 to 12 hour duty cycles with the goal of having at least 1 drone in flight at all times. Within the first two quarters we want to capture over 10,000 missions and provide the dataset to the FAA, Mitre, Wolfram and others to provide analysis and statistics.
Phase V - JJ Pickle / Domain Pickle
West V2 - Extended Operations - 1m

The fifth phase would increase flight radius from the ATRIUS Depot to 2 miles. System dispatch and recovery between five ATRIUS Depots.
Drone Command and Control for JJ Pickle Research Facility

Drones: 4 - 32
Range: 1km, 2km, 3km
Latency: <50ms
Telemetry: <1mbps
Data: 2-12Mbps
Autonomy will be managed like a network, only this one will be of physical bits
# Timeline for the Adoption of the ATRIUS Mobile Sensor Network

<table>
<thead>
<tr>
<th>Phase 1: Test Locations</th>
<th>Phase 2: Single Location</th>
<th>Phase 3: Multi-location</th>
<th>Phase 4: Community</th>
<th>Phase 5: City Wide</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Autonomy</strong></td>
<td></td>
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</tr>
<tr>
<td>Active Monitoring</td>
<td>Remote Active Monitoring</td>
<td>Exception Case Monitoring</td>
<td>Real-Time Deployment &amp; Monitoring</td>
<td>Regional Network Deployment</td>
</tr>
<tr>
<td>Range 5,000’</td>
<td>Range 5,000’</td>
<td>Range 2 miles</td>
<td>Range 5 miles</td>
<td>Range 50+ miles</td>
</tr>
<tr>
<td>Duty Cycle 10 missions per day</td>
<td>Duty Cycle 50 missions per day</td>
<td>24hr/7 days a week coverage</td>
<td>24hr/7 days a week coverage</td>
<td>24hr/7 days a week coverage</td>
</tr>
<tr>
<td>Proprietary LTE</td>
<td>LTE/5G communications</td>
<td>Ingest, Micro-weather</td>
<td>Specialized drone hardware for infrastructure placement</td>
<td></td>
</tr>
<tr>
<td>Map</td>
<td>Precision Navigation</td>
<td>Micro-location, Environmental SDK</td>
<td>Map/VR/AR/Heads-up displays</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Map, geo registration</td>
<td>Map, Geo reg, VR/AR</td>
<td></td>
<td>Real Time GRID view within the digitized and real world</td>
</tr>
</tbody>
</table>

| **Deployment/Technology** |                          |                        |                    |                   |
| Single Site/Local UTM   | Single Site/Multiple Depots | Multiple Locations/Multiple Depots | Ground based UTM | Regional Enhanced UTM |
| BVLOS/Autonomous        | Regional UTM/ City Support | Active Regional UTM | Real-Time Geo     | Universal Traffic Management |
| Standard Missions       | Autonomous               | Ruggedized and secure  | Automated management | National Autonomous GRID |
|                         | Mission Standard Format (Uclidian) |                        |                    |                    |

| **Standards/Regulations** |                          |                        |                    |                   |
| Single Site/Local UTM   | Single Site/Multiple Depots | Multiple Locations/Multiple Depots | Ground based UTM | Regional Enhanced UTM |
| BVLOS/Autonomous        | Regional UTM/ City Support | Active Regional UTM | Real-Time Geo     | Universal Traffic Management |
| Standard Missions       | Autonomous               | Ruggedized and secure  | Automated management | National Autonomous GRID |
|                         | Mission Standard Format (Uclidian) |                        |                    |                    |

| **Use Cases/Partners** |                          |                        |                    |                   |
| Construction sites      | Construction sites       | Border wall            | Smart City         | Smart City        |
| Energy and Telecom Utility | Energy and Telecom Utility | Perimeter security and patrol | Public Safety     | Routine Infrastructure |
| Industrial sites        | Industrial sites         |                        |                    |                   |
| Border Wall pilots      |                         |                        |                    |                   |

**Timeline:**
- **2019:** Test Locations
- **2020:** Single Location
- **2020:** Multi-location
- **2022:** Community
- **2024:** City Wide
Statewide Unmanned Aircraft Systems (UAS) Standardization and Response

Travis Calendine, EMC Town of Little Elm
Greg Cutler, EMC City of Mansfield
Coitt Kessler, Robotic Emergency Deployment (RED) Team, Program Manager
Austin Fire Department

Wednesday, April 17, 2019
Agenda

• Introduction
• Purpose
• Learning Objectives
• Background
• State UAS Program Survey Results
• State Public Safety UAS Pilot Certification/ Qualification Program Framework
• 2019 Timeline
• Questions/ Discussion
• References
• Contacts
Introductions

Travis Calendine

Greg Cutler

Coit Kessler
Purpose

• Collaborative discussion on Statewide UAS standards, training, and certification for public safety UAS pilots.
Learning Objectives

• Overview of public safety UAS programs around the State.
• Why the need for a standardized training and certification.
• Share and discuss the initial framework of the training and certification program.
Background

- North Texas Public Safety Unmanned Response Team and the City of Austin Fire Department Robotic Emergency Deployment (RED) Team
  - Proof of concept
- Hurricane Harvey
- Rebuild Texas Hurricane Harvey Report
- Partners:
  - North Texas and Capital Region Public Safety Unmanned Response Teams
  - North Central Council of Governments UAS Working Group
  - Texas A&M Engineering Extension Services (TEEX)
  - Other local jurisdictions
Eye of the Storm UAS Recommendations

• Review laws and practices affecting the use of drones during emergency events and recommend changes in operations to promote their use. (Pg. 7, Chapter 7, Item # 9)

• Technology used during and after Hurricane Harvey included unmanned aerial vehicles, commonly referred to as UAVs, unmanned aircraft systems (UASs), or drones; websites; social media; and software applications. The use of technology can accelerate and expand response and recovery efforts. (Pg. 139, Disaster Technology)

• Drones played an important role in the immediate aftermath to Hurricane Harvey. Many different groups, both public and private, flew drones over affected areas for a variety of reasons. Emergency responders as well as insurance companies, NASA, railway operators, private industry, and state government agencies were all among drone users during Harvey. (pg. 139, Drones)
State
Air Operations Center
The Next Frontier
State UAS Program Survey Results

- **Questions: (57) Responses**
  - Point of Contact
  - Jurisdiction
  - Public Safety Entity
  - Certificate of Authorization (COA)
  - Part 107
  - Program Existence
  - Program Scale
  - Program Management
  - Program Funding
  - Type and Quantity of UAS
  - Issues/ Concerns
  - Comments

Texas UAS Programs
Survey Results

Public Safety Entity
57 responses

- Fire Department: 24 (42.1%)
- Police Department: 22 (38.6%)
- Emergency Management: 15 (26.3%)
- FD, PD, and EM: 1 (1.8%)
- Regional 9-1-1: 1 (1.8%)
- Higher Education: 1 (1.8%)
- GIS: 1 (1.8%)
- Public Safety Technology Services: 1 (1.8%)
Survey Results cont.

COA
57 responses

Part 107
57 responses

How long has your UAS program existed?
57 responses

The scale of the program? How may UAS Pilots:
57 responses
Survey Results cont.

UAS Program Manager
57 responses

- Full Time: 77.2%
- Part Time: 19.3%
- Collateral Duty: 1.5%

UAS Program Funding Sources
57 responses

- Jurisdiction/Department Budget: 43 (75.4%)
- Non-Profit: 9 (15.8%)
- Donation: 2 (3.5%)
- Officers personal drone: 1 (1.8%)
- Other Department: 1 (1.8%)
- Private Funding: 1 (1.8%)
- Private citizen donation: 1 (1.8%)
- Seizure Funds: 1 (1.8%)
- LCRA Internal projects: 1 (1.8%)
- Educational reimbursement: 1 (1.8%)
- Personal: 1 (1.8%)
- None: 1 (1.8%)
Survey Results cont.

• **Type and Number of UAS in your program.**
  • Types: DJI, Lepton RDASS
  • Number: 3 to 5 average

• **Common Issues/ Concerns:**
  • Standardized Training
  • Program Management
  • Certifications

• **Comments:**
  • I would like to see training available for more emergency services pertaining to intergovernmental communication and planning. Stuff like that is hard to come by unless you dig for it or specifically reach out to someone, so a central platform for state and local agencies to turn to would be helpful in planning flights and addressing important areas.
HOW STANDARDS PROLIFERATE:
(SEE: A/C CHARGERS, CHARACTER ENCODINGS, INSTANT MESSAGING, ETC)

SITUATION:
THERE ARE 14 COMPETING STANDARDS.

14?! RIDICULOUS!
WE NEED TO DEVELOP
ONE UNIVERSAL STANDARD
THAT COVERS EVERYONE'S
USE CASES.

YEAH!

(SOON:

SITUATION:
THERE ARE 15 COMPETING STANDARDS.)
State Public Safety UAS Pilot Certification/Qualification Program Framework

- Basic
- Advanced
- Master
- LZ Manager Course
- UAS Manager Course
- Jurisdictional UAS Program Coordinator Course
- State UAS Disaster Coordinator
BASIC

• 40 Hour Flight School
• Basic level NIST Course certification
• Part 107 License (Federal Standard)
• Check Off and qualify on basic level mission flight skills
  • What do we want these to be?
ADVANCED

• 2 Years as Basic Pilot
• 50 Documented Flight Hours
• Part 107 Renewed
• NIST – Recertified at a higher skill level
• Checkoff and qualify on Advanced level mission flight skills
• Upon completion of Advanced may take LZ Manager Course and get Certified as LZ Manager?
• Other Skills that should be required?
MASTER

• 2 years as Advanced Pilot
• 100 Documented Flight Hours
• Part 107 Renewed
• Re-Certification on NIST – must meet a higher standard of proficiency
• Checkoff and qualify on Master level mission flight skills
• Upon completion will be eligible for UAS Manager Course
• Other skills that should be required?
What do I get with each Certification Level?

• A Card with your Certification Level on it and any other endorsements such as LZ Manager or UAS Manager.

• This card would be presented to Command at any incident you respond to and they would quickly be able to identify what UAS positions you are eligible to fill.

• This card will also allow an LZ Manager to quickly identify your skill level and which types of missions should be assigned to you.
2019 Timeline

• **February 2019**
  • State Wide UAS Program Survey
• **March 2019**
  • UAS Regional Standards Content Review
• **April 2019**
  • TDEM Conference Survey Results/Training& Certification Standards
• **August 2019**
  • Statewide Site Visits
• **September 2019**
  • Statewide Council of Governments Consensus
• **November 2019**
  • TDEM Presentation for Validation
• **January 2020**
  • Finished
Questions/ Discussion
UAS Presentation Survey

• Presentation Survey Link: https://forms.gle/TtveQojj7G3L1z2E8

• Statewide UAS Resource/ Program Survey Link: https://forms.gle/xuPpWA1TteE45JgV8
References

• NFPA 2400 Standards for Small Unmanned Aircraft Systems (sUAS) Used for Public Safety Operations, 2019


Contact Info

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Bills of Interest - Unmanned Aircraft

Images

CSSB 59 (Zaffirini) - Commercial delivery purposes
   Referred to H State Affairs 4/8/19

HB 2512 (Miller) - Assessing unsafe environmental conditions
   Committee Action pending H State Affairs 4/8/19

HB 2912 (Zerwas) - Disaster preparation
   Committee Action pending H State Affairs 4/8/19

HB 3164 (Clardy)/SB 2034 (Hall) - 911 services or mapping project
   HB 3164 - Committee Action pending H State Affairs 4/8/19
**Bills of Interest - Unmanned Aircraft**

**Operations**

*SB 1701 (Whitmire)/HB 4084 (Walle)* - Restricts flight over, near schools  
HB 4084 - Committee Action pending H State Affairs 4/8/19

*SB 2299 (Powell)* - Restricts flight over military installations, adds to current critical infrastructure in code - Passed on Senate Local Calendar 4/17/19

*HB 3082 (Murphy)/SB 1996 (Birdwell)* - Adds ‘criminal negligence’ to code  
HB 3082 - Voted favorably from House Homeland Security and Public Safety 4/17/19

*HB 3494 (Cole)* - Restricts flight over commercial airports, adds to current critical infrastructure in code; restricts cities and counties from enforcing UAS ordinances - Committee Action pending H State Affairs 4/8/19
Bills of Interest - Unmanned Aircraft

**UAS Study**

**CSHB 2340 (Dominguez)** - Creates a study for emergency and disaster management, response, and recovery

Received in the Senate 4/11/19

**Miscellaneous**

**HB 4448 (Springer)** - Allows images to be used for commercial purposes under FAA guidelines; clean-up bill

Committee Action pending H State Affairs 4/8/19

Potential omnibus bill
Questions and Comments

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North Texas UAS Safety and Integration Task Force

Task Force Working Group Updates

Working Group Leaders

Maggie Schuster – Education and Public Awareness
Michael Hill – Legislative
Wes Jurey – Training
Russel Julian – Integration
Prioritized Initiatives

• Know Before You Fly Workshops

• Public outreach strategy
  Draft due by May 1, 2019

• Outreach events
  Calendar of events on NCTCOG UAS portal

• Bring Your Drone to the Park Day

• Outreach via local governments’ web/social media
Important Dates for Know Before You Fly Workshops

- RFP release – April 26, 2019
- Proposals due – May 10, 2019
- Consultant selected – Week of May 27, 2019
- Notice to Proceed – July 1, 2019
How Can You Help?

1. Register with the North Texas Aviation Education Speakers Bureau to volunteer for outreach events

2. Help us compile 2019 Outreach Event List
Prioritized Initiatives

• Provide comments for pending UAS Legislation
• Provide comments on Notice for Rule Changes from government
• Hold general informational sessions for legislature/policy makers
How Can You Help?

1. Provide comments on pending legislation

2. Provide comments on FAA Notice of Proposed Rulemaking

3. Be available to attend legislative information sessions
Training

Prioritized Initiatives

• Meeting with FAA Regional Administrator
• Meetings with Superintendents and CTE Directors
• Create or endorse a pilot credentialing standard
• Create or endorse baseline training curriculum
• Survey regional stakeholders for employee demand
• Secure funding for Public Safety UAS Response Team (PSURT)
Training

How Can You Help?

1. Be available to attend legislative information sessions
2. Start thinking about providing Externships for CTE Directors/Teachers
3. Participate in employer survey effort
Integration

Prioritized Initiatives

• Urban Air Mobility Integration Study
• Coordinate with municipalities
• Designate viable test sites
• Inventory tech solutions
• UAS Industry Day
How Can You Help?

1. Air Taxi Manufactures provide a checklist of Infrastructure needs

2. If you represent a municipality that is interested in hosting testing, inform the working group leader
What’s Next

Working Group Meetings – May 1, 2019

Education and Public Awareness, 9:00 am – 10:00 am

Legislation, 10:30 am – 11:30 pm

Training, 1:00 pm – 2:00 pm

Integration, 2:30 pm – 3:30 pm
Questions?

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