• Our Story
• State of the Industry
• Identify Challenges
• Propose Solutions
• Discuss mutually beneficial relationship
**BACKGROUND**

- **2011**
  - First unmanned aircraft flight using an FAA-approved GBSAA prototype system.

- **2012**
  - Army demonstrates enhanced GBSAA system capabilities to validate design and functionality of GBSAA technology.

- **2015**
  - Air National Guard adopts Army’s GBSAA technology for operations.

- **2016**
  - First military post, Fort Hood, begins using GBSAA technology after extensive research, development, integration, and test.
How can you tell everything is working correctly?
What do you do when something goes wrong?
TEAM MEMBERS

DR. SEAN CALHOUN
Autonomous Systems

ANDREW CARTER
Safety Critical Architecture

RYAN PLESKACH
Program Management

CHRISTOPHER CROWDER
Systems & Safety Engineering

GREG DORCHIES
Software Engineering & Integration

MATT MANNING
Systems Design & Analysis
UAS Traffic Management (UTM) is starting to transition from research to operationalization and commercialization.

States are looking at how to role out UTM.

Public – Private Partnerships (P3s) are forming.

Test Sites and DOTs are leading the charge.
  • Ex. Ohio DOT, Northern Plains Test Site
• **U T M O B S E R V A T I O N S**

• Multiple developer organizations (with different goals)
• Federated system with lack of centralized control or oversight
• Lack of standards and limited understanding of how current standards relate
• Configuration management suffers in quickly evolving environments
• System robustness has not been addressed yet
• Who/what/when/how of maintenance has not been addressed yet
• System certification/acceptance testing is evolving
  • Regression testing will be difficult in a rapidly changing environment
• No incentive to report faults/failures
  • No data verification capability identified
### Safety
- Determining the health and integrity of the System
- Verifying services meet their spec
- Configuration Management (CM) across Hardware, Firmware, Software and Configuration Versions
- Regression testing
- No 3rd party verification that “anything” is good or working

### Uptime
- Maximizing and tracking uptime and availability
- Preventing cascading failures taking down the whole system
- Keeping the System up and running during a component failure

### Maint.
- Lack of maintainer tools to identify, isolate and repair issues
- Root cause analysis of faults/failures
- Event reconstruction
SOLUTION

- Keep system up and running.
- Mitigate failures and graceful degradation.
- Data validation and fault detection.
- Health and Integrity Monitoring
DEMO
Anticipated Functions

- Data Storage/Playback
- Data Analysis
- Airspace Control/Management
- Operations Management
- Situational Awareness
- Maintenance
- Contingency Management
**Anticipated Functions**

- Data Storage/Playback
- Data Analysis
- Airspace Control/Management
- Operations Management

- **Situational Awareness**
- **Maintenance**
- **Contingency Management**
TARGET CUSTOMERS

PUBLIC INVESTMENT
PRIVATE INVESTMENT
PUBLIC RETURN
PRIVATE RETURN

PUBLIC PARTNERSHIP

RESILIENX
We're looking to partner with anyone operationalizing UTM
Assist in System Engineering Activities
Integrate FRAIHMWORK CORE
Deploy Tiered Maintenance Interface (TMI) to Control Centers
Configure TMI for specific Components and CONOPS

**Benefits**
- Increased System Safety
- Reduced Maintenance Costs
- Ecosystem Accountability
- Improve BVLOS COA Probability
- Increased Economic Activity (via Increased Uptime)
Of all the technologies out there right now, ResilienX has the one the industry needs most.

- Sarah Hood, former USAF CPT and Air Traffic Controller

The team has extensive experience in unmanned aircraft systems, surveillance, systems engineering, cyber security, and software engineering.

- NASA SBIR Technical Reviewer

We believe in the solutions ResilienX will bring to the table... and they will accelerate the timeline for routine commercial BVLOS operations.

- Ray Young, Ph.D., Chief Integration Officer, NUAIR Alliance

THANK YOU FOR YOUR TIME
BACKUP
**Milestones**

- **JAN 2019** | GENIUS NY Program
- **APR 2019** | $500K Prize/Investment
- **SEP 2019** | MVP Finished & FAA Contract Award
- **MAR 2020** | Software Build 2 Complete
- **JUN 2020** | 10 Full-Time Staff
- **SEP 2020** | Brisbane, AU Customer Site Integration
- **DEC 2020** | $1M in Annual Revenue
- **JUL 2019** | FAA White Paper Accepted
- **DEC 2019** | Won 2 NASA SBIRs $240K
- **GENIUS NY Program**
- **Ohio GBSAA Customer Site Integration**
- **Software Build 2 Complete**
2008-17 Multiple Army Ground Based Sense and Avoid proposals
2017 NASA UAS Integration Task Order 4
2017 NASA UAS Integration Task Order 5
2018 NUAIR U-SAFE UTM Program
2018 Ohio DoT UTM Program
2018 Major Theme Park Counter-UAS

2018 GENIUS NY Program (Business Accelerator / Incubator)
2019 NASA SBIR: Enhancing UTM Ecosystem Robustness (as CAL)
2019 NASA SBIR: Data Fusion for Anomaly and Degradation Detection (as CAL)
2019 Massachusetts DOT UAS Implementation RFQ
2019 FAA BAA Whitepaper (accepted and invited to propose)
2019 North Carolina Drone Summit: Unmanned Up (Start Up Competition)
2019 FAA BAA: Contingency Management Platform
2019 ICAO Drone Enable 3 Whitepaper
FAA ORGANIZATIONS

Office of Security & Hazardous Materials Division:

- National Security Programs & Incident Response
- Ensures integrity of those who work in or support the National Airspace System (NAS)
- Protects FAA employees and facilities from criminal and terrorist acts
- Hazardous Material Incidents
- LEAP - Primary contact between FAA and Law Enforcement inquiries
FAA Mission

To provide the safest, most efficient aerospace system in the world.
AREA OF RESPONSIBILITY
Law Enforcement Assistance Program

CONDUCT REGULATORY INVESTIGATIONS

WE ASSIST AND SUPPORT LAW ENFORCEMENT AGENCIES

PROVIDE AVIATION RELATED EXPERT WITNESS TESTIMONY, GATHER EVIDENCE, AND TAKE OATHS
UAS Safety & Security

• FAA is safety focused not security focused
  – FAA does partner w/ other agency for security

• Airspace is public use
  – Cannot limit access arbitrarily

• State and local laws control the ground not the air
  – Also examine the behavior not the UAS to pursue enforcement
Reporting Unsafe UAS Activity

• While flying or at the airport:
  – Report the sighting to Air Traffic Control (DEN)
    • Note the location, altitude, and characteristics of the aircraft

• Anywhere else:
  – Call local law enforcement
    • The FAA has published guidance for law enforcement to help them respond to unsafe UAS activity

• Be as detailed & specific as possible
  – Location, altitude, direction, pictures, videos, etc.
LAW ENFORCEMENT AND PUBLIC SAFETY

Understanding Your Authority with Drones

Law enforcement and other public safety agencies have an important role in protecting the public from unsafe and unauthorized drone operations. As a law enforcement officer, you are often in the best position to deter, detect and investigate unsafe or unauthorized drone operations.

UNSAFE AND/OR UNAUTHORIZED DRONE
The FAA’s Law Enforcement Checklist helps you identify the necessary steps you need to take to respond to a situation involving an unsafe or unauthorized drone.

- **Detect** all available elements of the situation; attempt to locate and identify individuals operating the drone. (Look at windows/balconies/rooftops).
- **Report** the incident to the FAA Regional Operations Center (ROC). Follow-up assistance can be obtained through FAA Law Enforcement Assistance Program special agents.
- **Observe** the drone and maintain visibility of the device; look for damage or injured individuals. Note: Battery life is typically 20 to 30 minutes.
- **Notice** features: Identify the type of device (fixed-wing/multi-rotor), its size, shape, color, payload (i.e., video equipment) and activity of device.
- **Execute** appropriate police action: Maintain a safe environment for general public and first responders. Conduct field interviews; request proof of drone registration; document ALL details of the event per the guidance provided by the FAA.

Always follow your agency policies: Take appropriate action based on the facts and circumstances of the incident and site/area-specific laws and rules. Any action taken by the FAA should not preclude law enforcement from taking action to enforce state and local laws regarding drone operations. Local laws or ordinances that may apply include, but are not limited to: reckless endangerment, criminal mischief, voyeurism, interference with law enforcement and trespassing.

**Document and provide the following information to the FAA:**
- Identity of operators and witnesses (name, contact information)
- Nature of the operation (for fun, to support a business, governmental)
- Type of device(s) and registration information (number/certificate)
- Event location and incident details (date, time, place)
- Evidence collection (photos, video, registration information, device confiscation)

**CONSIDERATIONS FOR DISRUPTING DRONE OPERATIONS**
State and local law enforcement entities, private-sector stakeholders, and even individuals may be interested in methods for disrupting the operation of drones believed to pose a hazard to privacy, safety or security. However, the FAA cautions all non-federal entities against pursuing the testing, evaluation or use of technologies to detect and/or mitigate drone activity, whether involving kinetic or non-kinetic capabilities, without consulting legal counsel for a thorough evaluation of the legal risks.

Learn more at faa.gov/go/DronePublicSafety

December 2018

Federal Aviation Administration
CONTACT YOUR FAA LEAP AGENT OR FAA ROC FOR ASSISTANCE

Special agents from the FAA’s Law Enforcement Assistance Program (LEAP) are your point of contact for federal, state, local, tribal, territorial and international law enforcement agencies. LEAP special agents can provide information on drone enforcement and registration matters. Providing a LEAP special agent with reports of suspected unauthorized UAS incidents in a timely manner increases the FAA’s ability to take enforcement action when appropriate. (NOTE: You may contact any LEAP agent if your assigned agent is not available.) Washington Headquarters Program Office and D.C. drone incidents: 202-267-4641 LEAP@faa.gov.

WEST
LEAP Branch Manager
206-231-2093
- WA, ID, OR, MT and WY
  special agent: 425-495-1972
- Northern CA
  special agent: 916-956-8830
- Southern CA, NV, CO and GU
  special agent: 310-363-9435
- AZ, UT and HI
  special agent: 602-721-6091
- Alaska
  special agent: 907-201-0245

CENTRAL
LEAP Branch Manager
405-954-8569
- IL, IN, MI, MN, OH and WI
  special agent: 847-294-7521
- IA, KS, MO, NE, ND and SD
  special agent: 816-329-3711
- OK, AR and LA
  special agent: 817-222-5742
- TX and NM
  special agent: 817-222-5713

EAST
LEAP Branch Manager
404-305-6816
- CT, ME, MA, NH, RI and VT
  special agent: 781-238-7704
- DE, MD, NJ, NY and PA
  special agent: 781-238-7073
- AL, MS, TN, KY and NC
  special agent: 404-305-6759
- GA, SC, VA and WV
  special agent: 404-305-6807
- North and Central FL
  special agent: 404-430-1365
- South FL, PR and VI
  special agent: 786-778-5923
  786-409-8576

Regional Operations Centers (ROCs) are staffed 24/7 and should be contacted if you observe a drone that may potentially interfere with the safety or security of the National Airspace System. The ROC will ensure notification is made to manned air traffic in the vicinity as well as appropriate FAA offices.

Western: AK, AZ, CA, CO, HI, ID, MT, NV, OR, UT, WA, WY
206-231-2089 / 9-wsao-opsctr@faa.gov

Washington DC / National
202-267-3333 / 9-woa-ash-woc@faa.gov

Central: AR, IA, IL, IN, KS, LA, MI, MN, MO, ND, NE, NM, OH, OK, SD, TX, WI
817-222-5006 / 9-cso-ioc@faa.gov

Eastern: DC, DE, MD, NJ, NY, PA, WV, VA
404-305-5150 / 9-ESA-ROC@faa.gov

AL, CT, FL, GA, KY, MA, ME, MS, NC, NH, PR, RI, SC, TN, VI, VT
404-305-5180 / 9-ESA-ROC@faa.gov
UAS Outreach and Education

I FLY SAFE

All drones are aircraft—even the ones at the toy store. So when I fly a drone I am a pilot. Before I fly I always go through my pre-flight check list. I regularly check the safety guidelines at faa.gov/uas

FLY SMART, FLY SAFE, AND HAVE FUN!

 Prelude, Federal Aviation Administration

PRE-FLIGHT CHECKLIST

- I fly below 400 feet
- I always fly within visual line of sight
- I am aware of FAA airspace requirements: faa.gov/go/uastfr
- I never fly over groups of people
- I never fly over stadiums and sports events
- I never fly within 5 miles of an airport without first contacting air traffic control and airport authorities
- I never fly near emergency response efforts such as fires
- I never fly near other aircraft
- I never fly under the influence

Federal Aviation Administration

NO DRONE ZONE

FLY B4UFLY

Federal Aviation Administration
UAS Outreach and Education

November 4-10, 2019
UAS Outreach and Education

• National Drone Safety Awareness Week will help educate the public about drone safety by highlighting how key sectors of the drone community are engaging with the public and spreading awareness throughout all 50 states on specific focus areas.

• It can also be an opportunity for drone stakeholders and users to kick off new safety initiatives.
UAS Outreach and Education

faa.gov/go/DroneWeek
UAS Outreach and Education

• What are we (FAA LEAP) looking for?
  
  – Promote YOUR:
    • Safety stories, successes, events, and educational programs
    • Drone safety is everyone’s responsibility, and
    • This event will continue to advance the public-private partnerships and collaboration.
UAS Outreach and Education

To register your event, go to:

http://unmannedaircraftsafetyteam.org/safetyweek/
NORTH CENTRAL TEXAS
AERIAL ROBOTICS STEM INITIATIVE
REGIONAL OVERVIEW

Aerial Robotics STEM Pathways

North Central Texas (NCTX) Aerial Robotics STEM Initiative is developing a regional network of educators and employers to develop Aerial Robotics STEM pathways.

The initiative includes a diverse consortium of 10 school districts, ranging in size from 176 to 86,039 students. The partnering districts include six major suburban districts, two rural districts, one major urban district, and one central city suburban district.
PARTNERS

CROSS SECTOR PARTNERSHIPS

Azle ISD           Grapevine-Colleyville ISD
Bell Helicopter    Hurst Euless Bedford ISD
Birdville ISD      Interlink North Central
Cleburne ISD       Keller ISD
Crowley ISD        Strawn ISD
Fort Worth ISD     Tarrant County College District
Era ISD            Tarrant County Workforce Solution Texas
KEY ACTIVITIES

- Increase CTE enrollment in pathways aligned with aerial robotics
- Offer two professional development opportunities for teachers
- Build sustainable partnerships through MOUs and data-sharing agreements
ALIGNMENT WITH LABOR DEMAND

REGIONAL LABOR MARKET

POSTSECONDARY

SECONDARY
SEAMLESS POSTSECONDARY DEGREE PLANNING
Students’ progress through seamlessly connected secondary and postsecondary programs of study and degree plans.

BRIDGE PROGRAMS
Bridge programs and transfer and articulation agreements provide structures that enable students to navigate transitions between institutions without running into dead ends.

DEVELOPMENTAL EDUCATION
Presentations are communication tools that can be demonstrations, lectures, speeches, reports, and more.
CREDENTIALS WITH VALUE IN THE LABOR MARKET

The labor market value of certifications is validated through employer input and labor market information.
INTEGRATION OF RIGOROUS
CORE ACADEMIC AND
CAREER-FOCUSED LEARNING

PATHWAY DESIGN

MULTIPLE ADVANCED COURSE OPTIONS

CORE AND CAREER IN CTE

TEACHER EXTERNSHIPS
Texas OnCourse

Texas OnCourse is designed to ensure that every high school graduate has a plan for college and career. It provides college and career information and resources for students, families, and educators across the state. Learn more at texasoncourse.org
CONTINUUM OF WORK-BASED LEARNING EXPERIENCES

Sample State Initiatives that support Work-Based Learning

- Talent Connection
- Jobs and Education for Texans (JET) Program
- Skills Development Fund
- Texas Internship Challenge
- Apprenticeship Texas Expansion Grants
2019 BELL VERTICAL ROBOTICS COMPETITION
Competition - Fall Semester 2019
• Kick Off Event – Sat Oct 12th
• Competition Day – Sat/Sun Dec 7/8th
  • 8 Weeks to Design/Build/Fly/Compete

Targeting 20 DFW High Schools

Location: UTA Mavericks Activity Center (MAC)
Help Needed: Mentors & Sponsors

2019 BELL VERTICAL ROBOTICS COMPETITION

REQUEST FOR TECHNICAL MENTORS

The third annual BELL Vertical Robotics Competition is taking place this Fall semester with over 30 high schools in the DFW area. This innovative competition takes on the vertical dimension by combining drones and robotics to engage students in a wide range of skills needed for STEM-M (Manufacturing) career pathways.

This year’s competition theme is On-Demand Mobility which will simulate air-taxi movement of people plus rapid delivery of food orders. Teams will be given eight weeks to assemble their baseline drone kit and to design, build and integrate their robotic solutions to achieve the On-Demand Mobility challenge.

HELP NEEDED

Technical Mentors (2 per high school) will work with high school students during the 8-week design/build/period – Oct 12th to Dec 7th.

Mentoring will take place after school hours – Typically 2 evenings a week.

Desired skill sets for mentors include Project Management, Mechanical Design, Electronics, Coding, CAD design, 3-D Printing, Fabrication, Kinematic design, UAV Piloting

Competition Event at University of Texas Arlington - MAC Sports Arena
Saturday Dec 7 with Finals on Sunday Dec 8

Lease more on the competition website: https://roboticscompany.com/events

For questions email: mcroboticscompany.com

Bell Vertical Robotics Competition
Sponsorship Levels and Benefits

The Bell Vertical Robotics Competition takes on the vertical dimension by combining UAVs with robotics to expose students to a wide range of skills needed for STEM-M (Manufacturing) career pathways.

This year’s competition theme is On-Demand Mobility which will simulate air-taxi movement of people plus rapid delivery of food orders. Teams will be given eight weeks to design, build and integrate their robotic solutions with their UAV to achieve the On-Demand Mobility challenge.

We are seeking corporate and private sponsors to help fund and promote this fun and challenging event which is specifically designed to inspire the next generation to meet rapidly changing future workforce needs.

Please review the sponsor levels below or contact us to discuss customized arrangements, including in-kind equitainment, personnel support, guided funding, etc. We are especially interested in funds to provide scholarship donations to high schools who do not have the needed funding to participate. Your donation can be given through the Persistence Development Foundation (PDF) - a 501(c)(3) tax-exempt non-profit organization.

$20,000 Gold Level
- Recognition in all press releases
- Name/logo as Gold Sponsor in Official program and on VRG website.
- Free Exhibitor’s Showcase Booth at VRC events (Kickoff and Competition)

$10,000 Silver Level
- Recognition in select press releases
- Name/logo as Silver Sponsor in Official program and on VRG website.
- Free Exhibitor’s Showcase Booth at VRC events (Kickoff and Competition)

$5,000 Scholarship Donation
- Recognition in select press releases
- Name/logo as a Scholarship Donor on Banner for the High School recipient, in Official program and on VRC website.
- Free Exhibitor’s Showcase Booth at VRC events (Kickoff and Competition)

To learn more about the 2019 Bell Vertical Robotics Competition visit our competition website at: https://roboticscompany.com/

For additional information contact:
Harold Stemp
Persistence Development Foundation www.e-pdf.org
817-559-9551
972-268-8100

If you like Facebook | Twitter | LinkedIn | Pinterest | YouTube

BellRobotics.com
Q & A
A Note from NASA’s Project Manager, Mr. Ron Johnson

- FAA forecast: The commercial, small non-model UAS fleet will grow from 277,000 in 2018 to 835,000 in 2023. The average annual growth rate over the 5-year forecast period is 24.7 percent.
  - Many uses: package delivery, news collection, precision agriculture, infrastructure inspections, public safety, etc.
- NASA is conducting research on what a future air traffic management system for small drones would look like, and the challenges with flying drones in urban environments
- The results of this research will be provided to the FAA who will be responsible for implementing an operational system in the future
- The drone industry will also use the test results to help build more capable, safer drones
- NASA is very pleased to conduct this important research in Corpus Christi with Lone Star UAS Center of Excellence and its partners
NASA’s Concept for a possible UTM System that would safely manage diverse UAS Operations in the airspace above buildings and below crewed aircraft operations in suburban and urban areas.
Mission Background

LSUASC conducted a series of UAS flight demonstrations, collectively called the Technical Capability Level 4 (TCL4) Demonstration, to provide data on complex UAS operations occurring in an urban environment. All data supports NASA’s continued UAS Traffic Management (UTM) project.

Dates: July-August 2019
Location: Corpus Christi, TX

Partners

Concept of Operations

Current state of UTM hazard risk assessed as medium-high
- Significant control measures required to mitigate risk to non-participants and on-lookers
- Public service/controlling agency identification capabilities limited

Results/Lesson Learned

➢ Understand safety aspect of BVLOS ops in urban environment
➢ Evaluate feasibility of current UAS technology and UTM services
➢ Identify gaps in capabilities

Trends & Observations
- Proven need to standardize all aspects of UAS operations from common terminology to UAS programming
- Disconnect between reference factors such as map datums and altitude references
- Requirement for signals redundancy and non-GPS navigation to counter structural and electromagnetic interference
- Operating systems must be hardened for extreme environmental factors
- Community engagement and involvement is a critical enabler

Flight Data

Sampling of Flight Characteristics:
12 Groupings of 39 Unique Characteristics

Bringing UAS to America’s Skies

LSUASC Proprietary
The LSUASC is Actively Working With NASA to Bring Urban Air Mobility Testing to Texas.
• NASA recognized early that maximum value from GC would require strong coordination with the FAA and industry
  – Achieve a UML-4 Book of Requirements (i.e. toward industry consensus standards)

• NASA and the FAA are working closely together to formulate the GC
  – Have had several formal and informal efforts to refine the overall concept and work details
  – FAA executives have been involved in formal GC reviews
  – FAA personnel from all organizations (e.g., AIR, AUS, ATO, ANG, AFS, and ARP) have been engaged through a scenarios technical working groups

• NASA has received industry input and is working to receive additional industry input
  – Previous input received primarily through Industry Day and RFI last fall
  – Aeronautics Research & Technology Roundtable and informal conversations have also shaped the GC
  – Upcoming call for Working Groups
Partnership and Grand Challenge Series Overview

**Ecosystem-wide and GC Series**
- UAM Wide engagement*
- NASA R&D Partnerships
- UAM Wide Partnerships**

**First Grand Challenge (GC-1)**
- GC-1 Defined

**GC Development Test (GC-DT)**
- Integrated Flights
- Airspace Simulation
- Qual

**GC-n, Series Culmination**
- **Demonstrate scaled operational capabilities in urban environments**

*Continue to work future GC definition through collaborative partnership workshops
** NASA recognizes it will not be involved in all UAM wide partnership activities

NCTCOG Interest
<table>
<thead>
<tr>
<th><strong>Goal</strong></th>
<th>Improve UAM safety and accelerate scalability through integrated demonstrations of candidate operational concepts and scenarios</th>
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</thead>
</table>
| **Objectives** | 1. **Accelerate Certification and Approval.** Collect relevant data through flight test that assist the FAA in developing test procedures, data requirements, and methods of compliance for UAM vehicle certification, pilot certification, and operational approval, including considerations for increasing levels of automation and autonomy  
2. **Develop Flight Procedure Guidelines.** Test different flight procedures and related airspace design constructs that enable the development of preliminary flight procedure guidelines and airspace design criteria  
3. **Evaluate the CNS Trade-Space.** Explore and evaluate reliable, secure, and affordable communication, navigation, and surveillance requirements, options, and trade-offs  
4. **Demonstrate an Airspace Operations Management Architecture.** Demonstrate and document an airspace operations management architecture extending the UTM construct that has the potential to safely manage scalable UAM operations without burdening the current ATM system  
5. **Characterize Vehicle Noise.** Conduct initial characterization of the community noise impacts of UAM vehicles through measurements of vehicle ground noise |
Next Steps

• LSUASC recently responded to NASA UAM GC Solicitation to provide:
  ➢ State and Local sUAS and UAM Use Case “Portfolio”
  ➢ UAM GC support “plan” aligned with GC Series Objectives
  ➢ Office of the Governor Engaged and Endorsed our proposal
  ➢ 180 Day effort

• Post Award:
  ➢ Kickoff Meeting (Date TBD) at the NCTCOG, Austin or both
  ➢ Other State Stake Holders invited to participate
  ➢ OEMs, Ecosystem Providers will be encouraged to participate

• Update via WEBEX during the October 29 UAS TF Meeting
The Urban Air Mobility Vision

Bringing UAS to America’s Skies
LSUASC Proprietary

Mike Sanders
Executive Director, LSUASC
10201 South Padre Island Drive
Corpus Christi, Texas 78418
361-825-5731
Michael.sanders@tamucc.edu
Scenario 1 CONOP

**Urban Canyon**
- TAROT 4/Avision 200'
- FIRE 8/AirXos 300'
- TAROT 1/Avision 250'

**T-Heads / CC Marina**
- TAROT 5/ANRA/350'
- TAROT 3/AirMap/400'
- TAROT 6/Collins/150'
- ROBOT 9/ANRA/200'

**Waters Edge Park**
- TAROT 2/AirXos/300'

<table>
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<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>6:30</td>
<td>Crew Show</td>
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<tr>
<td>7:00</td>
<td>MSN Brief</td>
</tr>
<tr>
<td>7:30</td>
<td>Load Out</td>
</tr>
<tr>
<td>8:00</td>
<td>Setup</td>
</tr>
<tr>
<td>9:00</td>
<td>Mission Start</td>
</tr>
<tr>
<td>12:00(T)</td>
<td>Lunch; Log Resupply</td>
</tr>
<tr>
<td>2:00</td>
<td>ENDEX; Recovery</td>
</tr>
<tr>
<td>3:00</td>
<td>HF Survey</td>
</tr>
<tr>
<td>4:00</td>
<td>AAR</td>
</tr>
<tr>
<td>5:00</td>
<td>MSN Complete</td>
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</table>

Bringing UAS to America's Skies
LSUASC Proprietary
**Scenario 2 CONOP**

**MISSION**
On 15 AUG 19 from 0900-1500, Lone Star UAS conducts Scenario 2 flight missions in Corpus Christi, TX for the NASA TCL4 events.

**CONCEPT OF OPERATIONS**
Mission will occur in three phases:
Phase 1: Load out and movement
Phase 2: Setup and Mission Execution – Test Card v15
Phase 3: Recovery and Debrief

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<th>Event</th>
<th>Location</th>
<th>Info</th>
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<tr>
<td>0630</td>
<td>Show</td>
<td>Omni Hotel</td>
<td>All Hands</td>
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<tr>
<td>0700</td>
<td>Update Brief</td>
<td>Nueces A Rm.</td>
<td>All Hands</td>
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<tr>
<td>0730</td>
<td>Load Out</td>
<td>Log Site</td>
<td>Aircrews</td>
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<tr>
<td>0800</td>
<td>Arrival and setup</td>
<td>Per CONOP</td>
<td>Aircrews</td>
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<tr>
<td>0900-1500</td>
<td>Scenario 2 execution</td>
<td>Per CONOP</td>
<td>All Hands</td>
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<td>1200-1300(T)</td>
<td>Lunch</td>
<td>LRZ/GCS Sites</td>
<td>As Required</td>
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<td>1230-1330</td>
<td>LOG Resupply</td>
<td>LRZ/GCS Sites</td>
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<td>1500-1600</td>
<td>Recovery Ops</td>
<td>Log Site</td>
<td>All Hands</td>
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<td>1600-1730</td>
<td>Human Factors and AAR</td>
<td>Nueces A Rm.</td>
<td>All Hands</td>
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<td>1730-1800</td>
<td>Scenario 1 Mission Briefing</td>
<td>Nueces A Rm.</td>
<td>All Hands</td>
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<td>1800-1830</td>
<td>Closeout Briefing</td>
<td>Nueces A Rm.</td>
<td>LoneStar Staff</td>
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**UNIT**

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<thead>
<tr>
<th>Task</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tarot 1, 2, 5, 6, 8, 9</td>
<td>Execute flight operations in the SEA district using the USS’s as per crew card. Provide data ISO NASA TCL-4.</td>
</tr>
<tr>
<td>Tarot 4</td>
<td>Execute flight ops from the USS Lexington with USS Air Map Provide data ISO NASA TCL-4.</td>
</tr>
</tbody>
</table>
NOTAMs

08/033 - AIRSPACE UAS WI AN AREA Defined AS 1NM RADIUS OF 274705N0972339W (CRP159007.6) SFC-400FT AGL. 16 AUG 13:00 2019 UNTIL 16 AUG 21:00 2019. CREATED: 15 AUG 22:44 2019
Results of InterLink’s 32nd Annual ~ 2018-2019 Regional Employer Survey
Discussion

- **InterLink’s 2019 ~ 32nd Annual Employer Survey Executive Summary**

- **Regional Demand Occupations** identified by employers

- **Macro Trends** expected to be game changers

- **Emerging and Evolving Occupations**

- **Entry Level Skills and Attributes** verified by employers

- **Interlink Website** ~ portal to labor market information (www.interlink-ntx.org)
Employer Responses

- 1271 North Central Texas Employers
- Representing 202,824 North Central Texas Employees
- 153 companies representing global 1,421,950 employees

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Occupations identified as in demand numbering over 1,000 for the next five years

- Elementary Teachers – 1863
- Secondary Teachers – 1676
- Cloud and Security Architects (identified by several names) – 1616
- Registered Nurses – 1149
- Electricians – 1061
Occupations identified as in demand numbering over 500 for the next five years:

- Laborers and Freight Stock Material Movers (Hand) – 998
- Police Officers – 998
- Police/Sheriff Patrol Officer – 852
- Nurse, BSN – 776
- Pilot & Co-Pilot – Airline – 583
- Automotive Repair Service Technician – 551
- Maintenance & Repair Worker, General – 535
- Nurse Aid/Assistant (CNA) – 511
- Construction Laborers - 500
When asked to identify Emerging and Evolving Occupations that may offer career opportunities, two industries were overwhelmingly identified:

- Drones and other UAV (unassisted air or autonomous vehicles) occupations
- Information Technology Security occupations
Part 2 ~ Gauging the use of Robotics and Artificial Intelligence (AI)

- Regarding the use of Robotics and Artificial Intelligence (AI), of the 61 responses:
  - 62% are currently assessing or planning to use AI technology
  - 18% are currently testing or piloting the deployment of robotics
  - 20% are currently deploying the use
Employee reduction as a result of automation did not seem to be of concern at this time. Of the 109 responses:

- 90% report no impact
- 0.92% report current impact
- 5% report an impact in 1-3 years
- 5% report an impact beyond 3 years
Affects of technology on growth or decline of occupations:

- The use of Drones and other UAV, and Robots were the most frequently mentioned as showing the most growth potential.

- Occupations identified as having the most decline due to the use of automation are in the areas of warehousing and customer service.
InterLink’s
2019~2024
Demand and
Emerging and Evolving Occupations

High Skill ~ High Demand ~ High Wage
Occupations
Identified by
North Central Texas Employers

Descriptions of Occupations are in the
InterLink Demand Occupations Brochure
at
www.interlink-ntx.org

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## 2019~2024 InterLink High Demand Occupations
Identified by North Central Texas Employers

Data Source: EMSI, Texas Workforce Commission, Bureau of Labor Statistics, InterLink Regional Employer Labor Market Survey, InterLink Task Forces

<table>
<thead>
<tr>
<th>Industry Cluster ~ Job Title</th>
<th>Regional Median Hourly Earnings</th>
<th>Regional Experienced Hourly Earnings</th>
<th>Typical Entry Level Education</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Agriculture, Food and Natural Resources</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Veterinary Technologists and Technicians</td>
<td>$15.99</td>
<td>$23.20</td>
<td>Associate's degree</td>
</tr>
<tr>
<td><strong>Architecture and Construction</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricians</td>
<td>$20.41</td>
<td>$31.98</td>
<td>High school diploma or equivalent</td>
</tr>
<tr>
<td>Heating, Air Conditioning, and Refrigeration Mechanics and Installers</td>
<td>$20.83</td>
<td>$33.69</td>
<td>Postsecondary nondegree award</td>
</tr>
<tr>
<td>Maintenance and Repair Workers, General</td>
<td>$18.21</td>
<td>$28.08</td>
<td>High school diploma or equivalent</td>
</tr>
<tr>
<td>Operating Engineers and Other Construction Equipment Operators</td>
<td>$18.60</td>
<td>$25.87</td>
<td>High school diploma or equivalent</td>
</tr>
<tr>
<td>Plumbers, Pipefitters, and Steamfitters</td>
<td>$21.72</td>
<td>$32.12</td>
<td>High school diploma or equivalent</td>
</tr>
<tr>
<td>Welders, Cutters, Solderers, and Brazers</td>
<td>$18.04</td>
<td>$27.91</td>
<td>High school diploma or equivalent</td>
</tr>
<tr>
<td><strong>Business, Marketing and Finance</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accountants and Auditors</td>
<td>$35.27</td>
<td>$59.99</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Financial Analysts</td>
<td>$39.94</td>
<td>$66.53</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Insurance Claims and Policy Processing Clerks</td>
<td>$18.84</td>
<td>$28.75</td>
<td>High school diploma or equivalent</td>
</tr>
<tr>
<td><strong>Education and Training</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary School Teachers, Except Special Ed.</td>
<td>$28.23</td>
<td>$37.10</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Secondary School Teachers, Except Special and Career/Technical Education</td>
<td>$29.01</td>
<td>$38.49</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td><strong>Health Science</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Licensed Practical and Licensed Vocational Nurses</td>
<td>$22.54</td>
<td>$30.70</td>
<td>Postsecondary nondegree award</td>
</tr>
<tr>
<td>Medical Assistants</td>
<td>$15.77</td>
<td>$20.52</td>
<td>Postsecondary nondegree award</td>
</tr>
<tr>
<td>Medical Clinical Laboratory Technologists and Technicians</td>
<td>$25.35</td>
<td>$39.47</td>
<td>Associate's degree</td>
</tr>
<tr>
<td>Medical Records and Health Information Techs.</td>
<td>$19.49</td>
<td>$34.07</td>
<td>Postsecondary nondegree award</td>
</tr>
<tr>
<td>Nursing Assistants</td>
<td>$12.30</td>
<td>$17.77</td>
<td>Postsecondary nondegree award</td>
</tr>
<tr>
<td>Patient Care Technicians (PCT)</td>
<td>$9.29</td>
<td>$12.42</td>
<td>High school diploma or equivalent</td>
</tr>
<tr>
<td>Pharmacy Technicians</td>
<td>$15.38</td>
<td>$22.55</td>
<td>High school diploma or equivalent</td>
</tr>
<tr>
<td>Radiologic Technologists</td>
<td>$28.95</td>
<td>$39.31</td>
<td>Associate's degree</td>
</tr>
<tr>
<td>Registered Nurses</td>
<td>$35.42</td>
<td>$48.50</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Respiratory Therapists</td>
<td>$29.73</td>
<td>$38.28</td>
<td>Associate's degree</td>
</tr>
</tbody>
</table>
# 2019-2024 InterLink High Demand Occupations

**Identified by North Central Texas Employers**

*Data Source: EMSI, Texas Workforce Commission, Bureau of Labor Statistics, InterLink Regional Employer Labor Market Survey, InterLink Task Forces*

<table>
<thead>
<tr>
<th>Industry Cluster ~ Job Title</th>
<th>Regional Median Hourly Earnings</th>
<th>Regional Experienced Hourly Earnings</th>
<th>Typical Entry Level Education</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hospitality and Tourism</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chefs and Head Cooks</td>
<td>$23.67</td>
<td>$40.00</td>
<td>High school diploma or equivalent</td>
</tr>
<tr>
<td>Food Service Managers</td>
<td>$21.34</td>
<td>$43.82</td>
<td>High school diploma or equivalent</td>
</tr>
<tr>
<td><strong>Information Technology</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer Network Architects</td>
<td>$56.45</td>
<td>$79.45</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Computer Systems Analysts</td>
<td>$44.05</td>
<td>$70.11</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Information Security Analysts</td>
<td>$44.15</td>
<td>$71.11</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Network and Computer Systems Administrators</td>
<td>$43.37</td>
<td>$64.56</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Software Developers, Applications</td>
<td>$52.68</td>
<td>$74.50</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Software Developers, Systems Software</td>
<td>$51.86</td>
<td>$75.21</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td><strong>Law and Public Service</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergency Medical Technicians and Paramedics</td>
<td>$19.39</td>
<td>$28.72</td>
<td>Postsecondary nondegree award</td>
</tr>
<tr>
<td>Firefighters</td>
<td>$27.46</td>
<td>$41.32</td>
<td>Postsecondary nondegree award</td>
</tr>
<tr>
<td>Paralegals and Legal Assistants</td>
<td>$28.32</td>
<td>$42.96</td>
<td>Associate’s degree</td>
</tr>
<tr>
<td>Police and Sheriff’s Patrol Officers</td>
<td>$33.43</td>
<td>$45.16</td>
<td>High school diploma or equivalent</td>
</tr>
<tr>
<td><strong>Manufacturing</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Machinists (including CNC)</td>
<td>$18.88</td>
<td>$29.50</td>
<td>High school diploma or equivalent</td>
</tr>
<tr>
<td><strong>STEM</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Civil Engineers</td>
<td>$41.18</td>
<td>$69.45</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Electrical Engineers</td>
<td>$47.08</td>
<td>$75.32</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Industrial Engineers</td>
<td>$46.80</td>
<td>$69.77</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Mechanical Engineers</td>
<td>$43.55</td>
<td>$75.31</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Video Game Designers</td>
<td>$44.35</td>
<td>$62.24</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td><strong>Transportation, Distribution and Logistics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aircraft Mechanics and Service Technicians</td>
<td>$29.54</td>
<td>$47.32</td>
<td>Postsecondary nondegree award</td>
</tr>
<tr>
<td>Airline Pilots, Copilots, and Flight Engineers</td>
<td>$75.51</td>
<td>$157.49</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Automotive Body and Related Repairers</td>
<td>$18.63</td>
<td>$31.91</td>
<td>High school diploma or equivalent</td>
</tr>
<tr>
<td>Automotive Service Technicians and Mechanics</td>
<td>$16.05</td>
<td>$29.73</td>
<td>Postsecondary nondegree award</td>
</tr>
<tr>
<td>Diesel Engine Specialists</td>
<td>$22.35</td>
<td>$31.54</td>
<td>High school diploma or equivalent</td>
</tr>
<tr>
<td>Transportation, Storage, and Distribution Mgrs.</td>
<td>$43.82</td>
<td>$76.37</td>
<td>High school diploma or equivalent</td>
</tr>
</tbody>
</table>

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## Emerging and Evolving Occupations

**Projected to Offer Future Employment Opportunities**

Emerging Occupations are new occupations in the workforce with new titles and skills. Evolving Occupations are traditional occupations whose knowledge, skills, and abilities have changed or evolved.

<table>
<thead>
<tr>
<th>SOC Code/O*NET Code</th>
<th>Occupation Title</th>
<th>Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>19-1021</td>
<td>Biochemists</td>
<td>Science</td>
</tr>
<tr>
<td>19-4021</td>
<td>Biological Technicians</td>
<td>Science</td>
</tr>
<tr>
<td>15-1139.08</td>
<td>Business Intelligence Analysts/Operations Research Analyst</td>
<td>Information Technology</td>
</tr>
<tr>
<td>15-1139.07 Emerging</td>
<td>Cloud Computing Architects</td>
<td>Information Technology</td>
</tr>
<tr>
<td>15-1111 - Emerging</td>
<td>Data Scientists including Advanced Analytics</td>
<td>Information Technology</td>
</tr>
<tr>
<td>17-3024</td>
<td>Drone Operators/Remotely Piloted Vehicle Engineering Tech. (Unassisted Air Vehicles)</td>
<td>Transportation</td>
</tr>
<tr>
<td>17-3025.00</td>
<td>Environmental Engineering Technicians</td>
<td>Engineering</td>
</tr>
<tr>
<td>19-4092.00</td>
<td>Forensic Science Technicians (Computer &amp; Digital)</td>
<td>Information Technology</td>
</tr>
<tr>
<td>17-3029.10</td>
<td>Fuel Cell Technicians</td>
<td>Energy</td>
</tr>
<tr>
<td>29-9032</td>
<td>Genetic Counselors</td>
<td>Health Science</td>
</tr>
<tr>
<td>19-1029.03</td>
<td>Geneticists</td>
<td>Health Science</td>
</tr>
<tr>
<td>Emerging</td>
<td>Infrastructure Integration Specialist</td>
<td>Information Technology</td>
</tr>
<tr>
<td>13-2099.02</td>
<td>Market Research Analysts &amp; Marketing Specialists</td>
<td>Business</td>
</tr>
<tr>
<td>17-2131.00</td>
<td>Materials/Smart Materials Analysts/Engineers</td>
<td>Science</td>
</tr>
<tr>
<td>17-2139.09</td>
<td>Nano Systems Engineers</td>
<td>Engineering</td>
</tr>
<tr>
<td>17-3029.12</td>
<td>Nanotechnology Engineering Technicians</td>
<td>Technology</td>
</tr>
<tr>
<td>17-3029.11</td>
<td>Nanotechnology Engineering Technologists</td>
<td>Technology</td>
</tr>
<tr>
<td>19-4099.01</td>
<td>Quality Control Analysts</td>
<td>Information Technology</td>
</tr>
<tr>
<td>19-4099.03</td>
<td>Remote Sensing Technicians</td>
<td>Information Technology</td>
</tr>
<tr>
<td>13-2099.02</td>
<td>Risk Management Specialists (Risk Analysts)</td>
<td>Business</td>
</tr>
<tr>
<td>17-3024.01</td>
<td>Robotics Technicians – Electro Mechanical Technician</td>
<td>Technology</td>
</tr>
<tr>
<td>47-2231</td>
<td>Solar Photovoltaic (Electric) Technicians Installers</td>
<td>Construction</td>
</tr>
<tr>
<td>Emerging</td>
<td>Virtual Reality Engineers/Specialists/Technicians</td>
<td>Technology</td>
</tr>
<tr>
<td>49-9081</td>
<td>Wind Turbine Service Technicians</td>
<td>Construction</td>
</tr>
</tbody>
</table>
What do employers really want?
Basic Entry Level Skills & Attributes
Validated by the 2019 InterLink Employer Survey
<table>
<thead>
<tr>
<th>Entry Level Workforce Skills/Attributes</th>
<th>%</th>
<th>Entry Level Workforce Skills/Attributes</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attention to Detail</td>
<td>88.89%</td>
<td>Multi-tasking</td>
<td>64.10%</td>
</tr>
<tr>
<td>Teamwork</td>
<td>87.18%</td>
<td>Technology and Tool Usage</td>
<td>59.83%</td>
</tr>
<tr>
<td>Pride in Work</td>
<td>83.76%</td>
<td>Decision-making</td>
<td>58.12%</td>
</tr>
<tr>
<td>Integrity</td>
<td>82.91%</td>
<td>Leadership</td>
<td>58.12%</td>
</tr>
<tr>
<td>Work Ethic</td>
<td>82.91%</td>
<td>Appreciation of Diversity</td>
<td>53.85%</td>
</tr>
<tr>
<td>Professionalism</td>
<td>82.05%</td>
<td>Information Gathering</td>
<td>53.85%</td>
</tr>
<tr>
<td>Following Directions</td>
<td>80.34%</td>
<td>Perseverance</td>
<td>50.43%</td>
</tr>
<tr>
<td>Problem-solving</td>
<td>80.34%</td>
<td>Creativity</td>
<td>48.72%</td>
</tr>
<tr>
<td>Customer Service</td>
<td>78.63%</td>
<td>Conflict Management</td>
<td>42.74%</td>
</tr>
<tr>
<td>Time Management</td>
<td>78.63%</td>
<td>Stress Management</td>
<td>41.03%</td>
</tr>
<tr>
<td>Initiative</td>
<td>75.21%</td>
<td>Numerical and Arithmetic Application</td>
<td>39.32%</td>
</tr>
<tr>
<td>Oral Communication</td>
<td>74.36%</td>
<td>Thoughtful Reflection</td>
<td>32.48%</td>
</tr>
<tr>
<td>Willingness to continue learning</td>
<td>74.36%</td>
<td>Resource Allocation</td>
<td>28.21%</td>
</tr>
<tr>
<td>Dedication</td>
<td>67.52%</td>
<td>Intellectual Risk-taking</td>
<td>26.50%</td>
</tr>
<tr>
<td>Organization</td>
<td>67.52%</td>
<td>Adaptability</td>
<td>0%</td>
</tr>
<tr>
<td>Written Communication</td>
<td>66.67%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
WE'RE FOLLOWING POTENTIAL GAME CHANGERS

3D/4D Printing

Augmented Reality In Healthcare

Autonomous Vehicles (AVs)

Bio Technology

Drones/UAVs

Natural Resources, Food & Energy

Regenerative Medicine/Genetics

Risk & Security Management

Robotics

Smart Everything

The Grid

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WE’RE FOLLOWING POTENTIAL GAME CHANGERS

#13 ~ Blockchain & Crypto Currency

#14 ~ Automated Workforce Machine Learning
Thank you! I welcome your......

Questions?

Comments
InterLink

www.interlink-ntx.org

The online portal to
Labor Market Resources

Candy Slocum:  www.interlink-ntx.org

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UNMANNED SUMMIT

SOUTHERN METHODIST UNIVERSITY
IN ATTENDANCE

- EDUCATIONAL SERVICE CENTERS
- PUBLIC SCHOOL ADMINISTRATORS
- CHARTER SCHOOL ADMINISTRATORS
- TEACHERS, CTE DIRECTORS
- COLLEGE ADMINISTRATORS
- STUDENTS
AGENDA

WHAT CAN WE DO TO GET OUR PROGRAM STARTED?

Unmanned Safety Institute, Little Elm ISD, ELM Aerial Services

HOW DO WE GET OUR STUDENTS THERE?

Dallas Co. Community College, Letourneau, Dept of Labor

WHY DO WE NEED AN EDUCATED WORKFORCE?

Bell Flight, L3 Harris, Little Elm EMT

WHAT CAN WE DO TO GET OUR PROGRAM STARTED?

Unmanned Safety Institute, Little Elm ISD, ELM Aerial Services
Survey

175 EDUCATORS POLLED
475 SCHOOL DISTRICTS REPRESENTED
6 SERVICE REGIONS REPRESENTED
UAS PROGRAMS

44% IMMEDIATELY
33% BY NEXT YEAR
20% WITHIN 2 YEARS
3% NO
Where do you need the most help to build your program?

- Curriculum: 57.78%
- Facility Training: 60.00%
- Equipment choices: 37.78%
- Job Opportunities: 37.78%
- Funding: 40.67%
- Other: 13.33%

**PROGRAM ASSISTANCE**

- 60% FACILITY TRAINING
- 57% CURRICULUM
- 37% EQUIPMENT CHOICES
- 37% WORKFORCE OPPORTUNITIES
- 46% FUNDING
- 13% OTHER
CURRICULUM CHOICES

25% CURRENT CURRICULUM
55% CONSIDERING USI
20% NOT YET DECIDED
Would you like help to build out your program?

ANSWER CHOICES | RESPONSES
--- | ---
Yes | 64.44%  
No | 4.44%  
Unsure | 31.11%
GOING FORWARD

- 8 EDUCATION SERVICE CENTERS
- 516 SCHOOL DISTRICTS
- 8,556 SCHOOLS
- 2,929,223 STUDENTS

AND GROWING!
UAS Safety and Integration Initiative

Know Before You Fly “Your Drone” Workshops
What are the Workshops

- Six workshops for general public interested in recreational and commercial UAS users
- Locations throughout the Dallas-Fort Worth region
- 150 people per workshop (1,800 total)
- Promote FAA Know Before You Fly resources
- Promote safety
- Promote the UAS industry
- Promote various regional UAS initiatives and resources
- Improve public perception
- First workshop November 16, NCTCOG Offices
Workshop Sponsorship Levels

1. $500
   - Logo on agenda, website and social media

2. $1,000
   - Level 1 +
   - Mentioned in intro
   - Items in gift bag

3. $2,500
   - Level 1 and 2 +
   - Booth at workshop*
   - Up to 10 sponsors

4. $5,000
   - Level 1, 2, and 3 +
   - Seat on the Q and a panel
   - Up to 3 sponsors

5. $10,000
   - Level 1, 2, 3 and 4 +
   - Logo on front of all marketing materials give
   - Opening presentation/remarks and featured on the women and drones podcast
   - 1 sponsor

*Booth size subject to venue location

Know Before You Fly Your Drone