

for the Drone/Unmanned Vehicle Workshop for Mississippi Government Agencies



Thursday, May 19, 2016

All Ranks Club Camp Shelby Joint Forces Training Center

Event activities conducted in association with the Open Technology Systems: Unmanned Remote and Autonomous Vehicle Planning Systems Program

TSWG Task AA-DP-4341



U.S. Department of Homeland Security Science and Technology Directorate Sponsored by:



U.S. Department of Defense Combating Terrorism Technical Support Office Advanced Analytics Capabilities



After Action Report (AAR)

Report Date: 06/07/16

Activity:	Unmanned Vehicle / Drone Workshop for Mississippi Government Agencies		
Event Date:	Thursday, May 19, 2016	Location:	Camp Shelby Joint Forces Training Center
Contract:	URAVS AA-DP-4341	Project Ref:	OS-URAVS Workshop
Objective:	Coordinate with public safety, public service and public administration communities of interest within MS 4 th Congressional District to identify benefits and challenges of unmanned vehicle adoption within rural communities.		
Featured Technology:	Info briefings by subject matter experts on various URAVS technologies	Govt Host:	Department of Homeland Security, Science & Technology Directorate; Department of Defense, Combating Terrorism Technical Support Office
Attendees:	60+ Federal, state, local public safety, public service and public administration representatives from 13 counties (MS 4 th Congressional District) in southern Mississippi		
Notes:	Program scope and initial activities are to define the functional and technical requirements for a planning system that inventories URAVS technologies, compliance issues and market trends/services and will develop a functional prototype of the OS-URAVPS software to manage the critical aspects of this information. May 19 Workshop was designed to bring together interested representatives from targeted program area (MS 4 th district) to initiate discussion and refine target activity objectivews.		
Attachments:	1) UAV Workshop AAR; 2) OTC Presentation Slides; 3) User Survey; 4) Hinds Community College Presentation Slides; 5) William Carey University Presentation Slides; 6) Grant Writing Collaboration Slides; 7) Media Analysis		
File Name:	UAV Workshop AAR – May 19 2016		



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EXECUTIVE SUMMARY

PROGRAM OBJECTIVE: To assist government agencies in rural communities acquire and operate unmanned vehicle systems to support law enforcement, emergency management and critical infrastructure protection and maintenance objectives.

On Thursday, May 19, 2016, the Open Technology Center hosted the <u>Drone Workshop for Mississippi</u> Public Sector Agencies at Camp Shelby Joint Forces Training Center. The day-long workshop was

attended by more than 60 federal, state and local representatives of public safety, public services and public administration agencies and organizations from the southern region of the State of Mississippi.

The Unmanned Vehicle (commonly referred to as "drones") Workshop was conducted as part of the Open Source Unmanned Remote and Autonomous Vehicle Planning Systems (OS-URAVPS) program that is designed to assist government agencies in rural and underserved communities¹ acquire and operate unmanned vehicle systems to support law



enforcement, emergency management and critical infrastructure protection and maintenance objectives in these areas.

Initial program activities, such as the Workshop, focus on coordinating with public safety, public service and public administration communities of interest within the 13 counties in south Mississippi



which make up the State's Fourth Congressional District and will be conducted at OTC facilities located at <u>Camp Shelby Joint Forces Training Center (CSJFTC)</u> new Hattiesburg, MS. Future activities will include agencies from across the state and ultimately across the nation.

The primary objective of the May 19th Workshop

was coordinate with state and local officials and to identify specific benefits and challenges of using unmanned vehicle systems in rural communities. OTC distributed a <u>User Survey</u>² to regional, state

¹ http://files.consumerfinance.gov/f/201410 cfpb final-list-of-rural-underserved-counties-2015.pdf

² https://docs.google.com/forms/d/1inoRjrIde9KiS3xgXXx44wnIfJMDu1bh4fVMl4Yul3c/viewform



and local agency representatives four (4) weeks prior to the event to collect data to establish a baseline of information regarding current use and future interest in using unmanned systems. Data collected from survey results were presented during the workshop and will be used to further identify and address interests, needs and challenges of program participants.

The OS-URAVPS program is sponsored by the Department of Defense's <u>Combating Terrorism Technical Support Office (CTTSO)</u> and the <u>Department of Homeland Security's Science and Technology Directorate (DHS S&T)</u>.

The program is conducted by the <u>Open Technology Center (OTC)</u>, a Mississippi-based non-profit organization whose mission is to facilitate research, development, evaluation, training, public-private collaboration and technology transfer of open source and other open technology solutions to support national defense and homeland security objectives. OTC programs and activities seek to increase technical, administrative, economic and cyber security efficiencies of public and private sector IT systems.

UNMANNED REMOTE AND AUTONOMOUS VEHICLE SYSTEMS (URAVS)

Unmanned vehicles are used extensively across government agencies to achieve varied missions including military, border surveillance, mapping, environmental monitoring, disaster recovery and law enforcement. Much of the core technology used to operate unmanned vehicles is similar and could be more broadly shared across agency programs to reduce costs, increase efficiency and facilitate innovation.

While military and special operations groups have access, funding and operational latitude to utilize unmanned (aerial, terrestrial and maritime) systems, a general lack of consistent information, authorization, collaboration, training and access to standardized, government-centric unmanned vehicle systems has hampered broad, efficient adoption of unmanned technologies within domestic public safety, public service and public service communities of interests (COIs).

Surveillance

Search & Rescue

Critical Infrastructure Inspection

Emergency Response

Critical Infrastructure Inspection

Critical Infrastructure Inspection

Environmental Monitoring

In addition, the proliferation of small, inexpensive

commercially-available unmanned vehicles has created a confusing and potentially dangerous environment for domestic, specifically state, local and tribal entities who seek to utilize these systems in support of official mission activities.



Therefore, the objective of this effort is to increase information sharing and technology transfer between Federal entities with extensive experience with unmanned vehicle systems and domestic government entities which could benefit greatly from access to the strategic, tactical and practical knowledge base garnered from years of military and related operations.

Activities associated with the program entitled Open Technology Transfer of Unmanned Remote and Autonomous Vehicle Systems (URAVS) in Support of National Defense and Domestic Homeland Security Communities of Interest (COI) are set forth and defined through a Statement of Work (SOW).

Program objectives and activities support mission goals for the U.S. Department of Homeland Security



(DHS) Science and Technology Directorate (DHS S&T)³ and Cyber Security Division (CSD)⁴ which include interest in research, development, evaluation and deployment of existing, evolving and maturing unmanned (aerial, terrestrial and maritime) vehicle system technologies that support

homeland security mission objectives of federal, state, local and tribal public safety, public service and public administration communities of interest.

With this DHS S&T and CSD objective in mind, this project will facilitate cross-agency collaboration, development, information and resource sharing to provide access to advanced URAVS technologies, practices, and subject matter expertise to government agencies, with focus on rural and traditionally under-served communities.

In similar manner, program and task activities support mission objectives identified by the Department of Defense, Combating Terrorism Technical Support Office (CTTSO) Advanced Analytics Capabilities

(AAC)⁵ that include furthering the knowledge and understanding of advanced computing, analytics and information management techniques that support national defense and public safety special operations groups and related COIs, such as Border Protection and High Intensity Drug Trafficking Areas (HIDTA)⁶. Issues related to privacy, secure communications, technology and training standardization and



advanced architectures to push decision making out into the field in a safe and compliant manner are inherent to this task.

Both CTTSO and DHS understand the importance of coordinating in these technical areas and the convergence of related technologies.

³ https://www.dhs.gov/science-and-technology

⁴ https://www.dhs.gov/science-and-technology/csd-projects

^{5 &}lt;a href="http://www.cttso.gov/?q=TSWG_AAC">http://www.cttso.gov/?q=TSWG_AAC

^{6 &}lt;a href="http://www.nhac.org/news/HIDTA">http://www.nhac.org/news/HIDTA Counties.htm



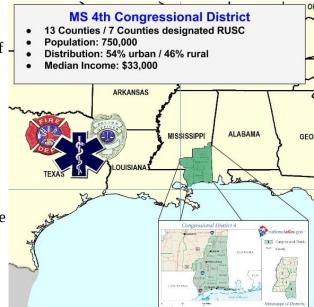
TARGET AUDIENCE & ATTENDEES

TARGET AUDIENCE: Initial OS-URAVPS program activities will focus on public safety, public service and public administration agency personnel within the rural 13 counties in southern Mississippi that constitute the MS 4th Congressional District.

The day-long workshop was attended by more than 60 federal, state and local representatives of public safety, public services and public administration agencies and organizations from the southern region of the State of Mississippi.

Target audience included public safety, public service and public administration agencies and communities of interest within the 13 counties in south Mississippi which make up the State's 4th Congressional District.

Mississippi's 4th congressional district covers the southeastern region of the state. It includes all of Mississippi's Gulf Coast, stretching ninety miles between the Alabama border to the east and the Louisiana border to the west, and extends north into the Pine Belt region. It includes three of Mississippi's four most heavily populated cities: Gulfport, Biloxi, and Hattiesburg. Other major cities within the district include Bay St. Louis, Laurel, and Pascagoula.



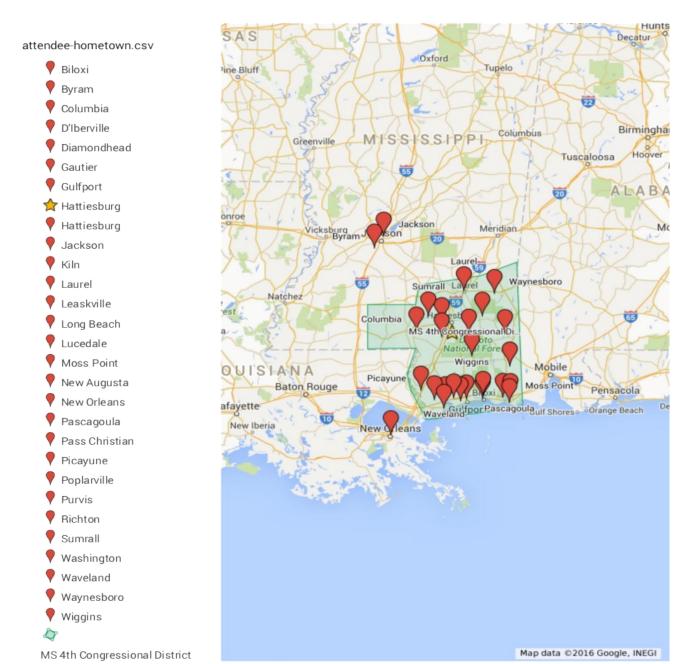
Counties within the district include: entire counties of Hancock, Harrison, Jackson, Pearl River, Stone, George, Lamar, Forrest, Perry, Greene, Wayne, and Clarke, most of the county of Jones, and parts of both Jasper and Marion counties are counted in this district.⁷

Area and Demographic Information			
Areas	9,536 miles		
Population (2000)	711,219		
Distribution	53.72% urban, 46.28% rural		
Median include	\$33,023		
Ethnicity	75.3% White, 22.6% Black, 1.5% Asian, 1.8% Hispanic, .8% Native American, 1% other		
Occupation	30.6% blue collar, 51.9% white collar, 18.4% gray collar		

⁷ https://en.wikipedia.org/wiki/Mississippi%27s 4th congressional district



URAVS Workshop Attendees



Attendees at May 19, 2016 URAVS Workshop, Camp Shelby Joint Forces Training Center



WORKSHOP AGENDA

The primary objective of the May 19th Workshop was coordinate with state and local officials and to identify specific benefits and challenges of using unmanned vehicle systems in rural communities. OTC distributed a <u>User Survey</u>⁸ to regional, state and local agency representatives four (4) weeks prior to the event to collect data to establish a baseline of information regarding current use and future interest in using unmanned systems. Data collected from survey results were presented during the workshop and will be used to further identify and address interests, needs and challenges of program participants.

Time	Activity	Speaker
08:00 - 09:00 AM	Registration at All Ranks Club, Camp Shelby Joint Forces Training Center - Coffee and Refreshments Served	
09:00 AM	Present Colors - Prayer	Clifton Addison, OTC
09:00 - 09:15 AM	Welcome - Program Overview & Meeting Objectives	Dr. Brad Smith, OTC
09:15 - 09:30 AM	Open Technology Center Overview	John Weathersby, OTC
09:30 - 10:30 AM	PANEL 1: STRATEGIC VALUE of Unmanned Vehicles for federal, state and local government agencies. Why and how UAV technologies are important to conducting core mission objectives.	Dr. Dan Massey, DHS S&T COL Greg Michel, CSJFTC; Albert McCray, FAA; Guy Walton, FBI; Lee Smithson, MEMA; Jim Boxx, MS HS
10:30 - 10:45 AM	Coffee and Bio Break	
10:45 - 11:45 AM	PANEL 2: TACTICAL REALITIES of UAV Adoption and Use. What to expect from UAV systems, sensors, training and support.	WC2 Shane Bradburn, CSJFTC; Dennis Lott, Hinds CC; Dr. Italo Subbarao, William Carey University
11:45 - 01:00 PM	Lunch Provided at All Ranks Club	
01:00 - 02:30 PM	UAV User Survey Analysis - Needs, concerns, questions and recommendations for state and local agencies	Dr. Brad Smith, OTC; John Weathersby, OTC Clifton Addison, OTC
02:30 - 03:00 PM	Feedback - Next Steps - Future meetings, technology demonstrations, training programs, educational seminars, grant opportunities	Dr. Brad Smith, OTC; John Weathersby, OTC; Rebecca Brown
03:00 PM	DOOR PRIZE DRAWINGS - DISMISS	

Event was hosted at the All Ranks Club at <u>Camp Shelby Joint Forces Training Center (CSJFTC)</u> near Hattiesburg, MS. Future activities will include agencies from across the state and ultimately across the nation.

 $^{8 \}quad \underline{https://docs.google.com/forms/d/1inoRjrIde9KiS3xgXXx44wnIfJMDu1bh4fVMl4Yul3c/viewform} \\$



PANELS and PRESENTATIONS

The workshop was designed as a one-day event that would provide access to national and local subject matter experts and facilitate discussion among attendees and audience members.

Presentations included:

- Program Overview and Meeting Objectives presented by <u>Dr. Brad Smith</u>, <u>Director of Federal Programs for the Open Technology</u> Center (Presentation slides Attachment "A").
- Overview of the Open Technology Center by <u>John Weathersby</u>, Executive Director of the <u>Open Technology Center</u> (Presentation slides - Attachment "A")
- PANEL 1: Strategic Value of Unmanned Vehicle Systems for Federal, State and Local Public Safety, Public Service and Public Administration Agencies
 - <u>Dr. Daniel Massey</u>, Program Manager, U.S. Department of Homeland Security, Science &
 Technology Directorate
 - (Key discussion points) DHS recognizes essential value of state and local law enforcement and emergency management agencies
 - Need for federal state local, as well as local-to-local, cooperation and collaboration
 - UAVs are a valuable tool for use in wide variety of homeland security mission objectives. Federal government has spent large sums on development of sensors and vehicles and needs to share lessons learned and resources with state and local entities.



- Camp Shelby is home to National Unmanned Aerial Flight Systems Center.
- CS has 100 square miles of restricted air space, facilities and capability to serve as training center for appropriate government UAV training activities.
- Mr. Albert McCray, Unmanned Vehicle Systems, Avionics Inspector, Federal Aviation Administration





- FAA seeks to work with state and local agencies to facilitate safe adoption of UAVs.
- FAA regulations are evolving quickly to address commercial, private and govt demand for UAV access. <u>Rule 107</u>, regarding rules and regulations for UAVs, expected to be released this summer.
- Public sector agencies must follow FAA rules regarding operation of all aircraft, including UAVs.
- No one is allowed to shoot down any aircraft, including UAVs. If a UAV is operating over private space, then it is most likely an issue of trespassing, but that does not warrant or justify anyone to "shoot it down."



- UAVs are NOT to be flown over crowds of people.
- State and local agencies are required to obtain a <u>Certificate of Waiver or Authorization</u> (COA) before using UAV.
 - COA is an authorization issued by the Air Traffic Organization to a public operator for a specific UA activity. After a complete application is submitted, FAA conducts a comprehensive operational and technical review. If necessary, provisions or limitations may be imposed as part of the approval to ensure the UA can operate safely with other airspace users.
- o Mr. Guy Walton, Special Agent, Federal Bureau of Investigation
 - UAVs represent a "force multiplier" for law enforcement
 - Collaboration is essential between federal, state and local agencies.
 - State and local law enforcement should never under-estimate the importance of their role in national fight against terrorism and other threats.
- Mr. Lee Smithson, Director, Mississippi Emergency Management Agency
 - UAVs have great potential for emergency management activities.
 - Excellent for use in search and rescue, environmental, HAZMAT and other damage assessment scenarios.
- **Mr. James Boxx**, Operational Director, Mississippi Office of Homeland Security



- Need for training and access to standardized UAVs and sensors for public sector agencies.
- Collaboration is key to success.
- PANEL 2: Tactical Realities of UAV Adoption for State and Local Agencies
 - Chief Warrant Officer Shane Bradburn, National Unmanned Aerial Flight Systems
 Center, Camp Shelby Joint Forces Training Center
 - Camp Shelby is unique in its resources and capabilities to training in unmanned vehicle systems.
 - Mr. Dennis Lott, Program Director / Instructor, Hinds Community College, Unmanned Aviation Systems Department
 - Presentation Slides Attachment "C"



- Dr. Italo Subbarao, DO, MBA, Associate Dean, William Carey University, College of Osteopathic Medicine
 - Presentation Slides Attachment "D"
- UAV User Survey Analysis



- o Dr. Brad Smith, John Weathersby, Clifton Addison, OTC Program Manager
 - Presentation Slides Attachment "A"
- Coordination of Joint Funding Opportunities and Grant Writing
 - Mrs. Rebecca Brown, Mississippi Community Education Center
 - Presentation Slides Attachment "E"

FOLLOW-UP ACTION ITEMS

- Distribute After Action Report (AAR) to attendees
- Coordinate with FAA representative to determine feasibility of securing Certificate of Authorization or Waiver (COA) to establish a Public Service Training Program at Camp Shelby Joint Forces Training Center.
 - Certificates of Waiver or Authorization (COA) is an authorization issued by the Air Traffic
 Organization to a public operator for a specific UA activity.
- Select technical, policy and general educational issues identified from attendee feedback for follow-on Workshop meetings.
 - UAV platform (vehicle) demonstration
 - UAV payload (sensor) demonstration
 - FAA policy update on Rule 107 Operation and Use of Small Unmanned Vehicles
 - https://www.faa.gov/regulations_policies/rulemaking/media/021515_suas_summary.pdf
 - Educational briefing for city/county/community administrators regarding authority to operate UAV
- Set date for next Workshop meeting(s)
 - Tentative dates (end of July, early August)

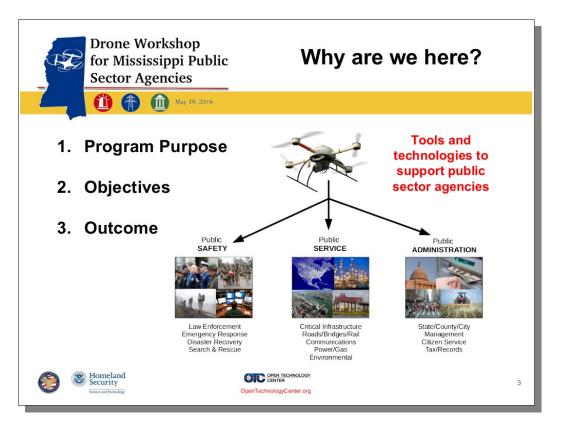


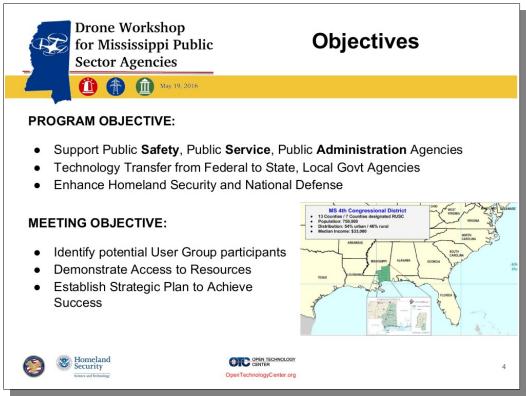
ATTACHMENT "A" - OTC PRESENTATION















Expected Outcome

COLLABORATION 0-6 Months

- Technology Demonstrations
- Educational Seminars
- Organization





- Operational Training
- Pilot & Support Training
- Policy & Practice Support



IMPLEMENTATION 9-18 Months

- Grant Funding
- Equipment Purchase
- Shared Resource Access











UAVs in the Field



http://www.foxnews.com/us/2011/11/16/drone-gives-texas-law-enforcement-birds-eye-view-on-crime.html





OpenTechnologyCenter.org

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Open Tech Center

The Open Technology Center is a government-sponsored, non-profit organization that supports national defense and homeland security technology objectives.

OTC's mission is to utilize open source software and other open technology practices to increase technical, administrative, economic and cyber security efficiencies of federal, state and local government IT systems.

Program Partners



































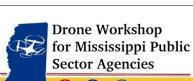












Common Threats













Attack on World Trade Centers and Pentagon



February 11, 2013 EF4 tornado strikes Hattiesburg, MS





September 15, 2015 Active Shooter at Delta State University





February 29, 2016 White House warns of potential cyberattack on US Power Grid



August 28, 2005 Category 5 Hurricane Katrina strikes Gulf Coast



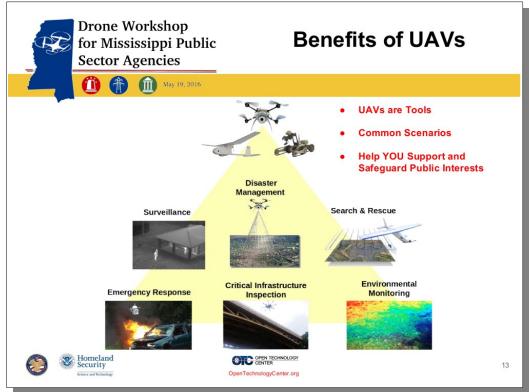
















Challenges to Adoption









Access to Resources and Funding

- Acquisition and Lifecycle Expense (Total Cost of Ownership)
 - Support Equipment
 - Technology Upgrades

Pilot and Maintenance Training

- Selection, Retention of Qualified Personnel
- Technology Demonstrations and Field Testing
- Maintenance and Support Expense

Political, Policy and Privacy Concerns

- Supporting Core Mission Objectives TOOL VS TOY
- **FAA Regulations**
- Privacy Concerns of Public





























STRATEGIC VALUE OF UAV TECHNOLOGIES

- Dr. Daniel Massey, DHS Science & Technology Directorate
- Mr. Albert McCray, Federal Aviation Administration, Jackson, MS
- Special Agency Guy Walton, Federal Bureau of Investigation, Jackson, MS
- COL Greg Michel, Commander, Camp Shelby Joint Forces Training Center Mr. Lee Smithson, Director, Mississippi Emergency Management Agency
- Mr. Jim Boxx, Mississippi Department of Public Safety, Homeland Security

Agency - Impact - Collaboration











Panel 2: **Tactical Expectations**









National Unmanned Aerial Flight Systems Center **Camp Shelby Joint Forces Training Center** CW2 Shane Bradburn











Unmanned Aerial Systems Program Dennis Lott, UAS Instructor





School of Osteopathic Medicine Dr. Italo Subbarao









Drone Workshop for Mississippi Public **Sector Agencies**









User Survey

Feedback to determine Interest, Need, Questions, Concerns

Link to Survey: https://goo.gl/pgVJNp

- **Purpose:** The User Group Survey data will enable development of a baseline to assist in developing the common operating picture for agencies and organizations.
- Target Audience: Public Sector Agencies in MS 4th Congressional District
 - 13 counties representing approx. 750,000 people
 - Public Safety, Public Service, Public Administration
- **Total Number** of Survey Participants:











User Survey Results

KEY TOPIC AREAS

- 1. LEVEL of INTEREST in Unmanned Vehicle Technologies
- 2. EXISTING ADOPTION and Use of UAVs
- 3. EXPECTED BENEFITS of UAV Adoption
- 4. TYPES of SENSOR PACKAGES Desired
- 5. TRAINING and SUPPORT Resources
- 6. CYBER SECURITY









Drone Workshop for Mississippi Public **Sector Agencies**



User Survey Results









LEVEL OF INTEREST

- **HIGH** Level of Interest
 - o 100% would benefit
 - 74% Very Interested
- Questions / Concerns?
 - Value to Department
 - o Expense
 - Training / Support
 - **Privacy Issues**
 - **FAA Regulations**

CURRENT ADOPTION

- Only FOUR (4) have UAV
- Purchased ON-LINE
- Price Range: \$1,000 \$3,000
- ONE (1) Trained by Manufacturer
- Primary Mission Objective: **SEARCH and RESCUE**
- Sensor: Day Light CAMERA









Drone Workshop for Mississippi Public **Sector Agencies**

User Survey Results









EXPECTED BENEFITS

- Search and Rescue
- **Emergency and Disaster** Response
- Intelligence and Evidence Gathering
- Tactical / SWAT Operations

SENSOR PACKAGES

- Camera (daylight)
- Camera (infrared)
- Camera (thermal)
- Other types of sensors?

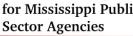








Drone Workshop for Mississippi Public











TRAINING - SUPPORT

- Access to Local / Regional **Training Resources**
- Personnel Expense Time Away from Duty, Updates
- Standardized Training **Procedures**
- Mobile Command / Communications Equipment
 - o 50% Interested

User Survey Results

CYBER SECURITY

- **NOT High Concern**
- WHY?
 - Minimal Impact Not within my responsibilities
 - o Federal Issue
 - o Lack of Resources and Education
 - Why is this important to me in a rural community?







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Way Forward









- Feedback Questions: WHAT DO YOU NEED?
- **Technology Demonstrations**
 - COA Flight Demos
 - Payload / Sensor Demonstrations
 - Pier Agency Briefings
- **FUNDING**
 - Rebecca Brown Grant Writer / Coordinator
 - Potential Federal Funding
- **Participation**
 - Next Meetings









Next Steps









COLLABORATION 0-6 Months

- Technology Demonstrations
- **Educational Seminars**
- Organization



OPERATION 6-9 Months

- Operational Training
- Pilot & Support Training
- Policy & Practice Support

IMPLEMENTATION 9-18 Months

- Grant Funding
- Equipment Purchase
- Shared Resource Access















Contact Information

Open Technology Center

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Dr. Brad Smith, Director, Federal Programs Brad.Smith@opentechnologycenter.org Cell: (601) 606-1448

Clifton Addison, Program Manager Clifton.Addison@opentechnologycenter.org Cell: (601) 606-4336







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Drone Workshop for Mississippi Public Sector Agencies









- Camp Shelby Joint Forces Training Center
- City of Meridian, MS
- · City of Pass Christian, MS
- City of Waveland Police Department
- City of Wiggins Police Department
- · Forrest County, MS
- Harrison County, MS
- Hinds Community College
- Lamar County Schools
- Lamar County Sheriff Department
- Lamar County, MS
- Mississippi Bureau of Narcotics
- Mississippi Department of Public Safety

- Mississippi Development Authority
- Mississippi Emergency Management Agency

Meeting Attendees

- Mississippi National Guard
- Mississippi Power / Southern Company
- Mississippi Secretary of State
- National Unmanned Aerial Flight Systems Center
- Office of Congressman Steven Palazzo, MS 4th
- Office of Senator Roger Wicker
- Office of Senator Thad Cochran
- Stone County, MS
- US Department of Defense
- US Department of Homeland Security
- William Carey University







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Slides #7, 15, 17, 19 are administrative agenda updates and are not included to save space in the AAR.



ATTACHMENT "B" - URAVS USER SURVEY

<u>Unmanned Remote / Autonomous Vehicle System Survey</u>

The following survey data will allow the Open Technology Center to develop a baseline of information to assist in developing the common operating picture for agencies and organizations in Mississippi's Fourth Congressional District. Please complete the survey as accurately as possible so we can collectively move forward in the process of acquiring these technologies for future use. Individual respondents will not be identified, responses will be consolidated for presentation of overall needs.

1.First Name * 2.Last Name *

3.Title * 4.Department *

5. What best fits the kind of work you do. *

- Law Enforcement
- First Responders
- County/ City Administration
- Other

6.Street Address * 7.City * 8.State * 9.Zip code * 10.County *

11.Phone Number * 12.Email *

13.Does your organization have an Unmanned Remote / Autonomous Vehicle System (URAVS), i.e. a "drone?" *

If "No" please proceed to #21

- Yes
- No

14.If yes What kind is it?

- Aerial (UAV)
- Terrestrial (UGV)
- Maritime (ROV)

15. Where did you get it?

- Retail store
- Online
- Sales person
- Other:



16. How much did it cost?

- 0 to \$500
- \$501 to \$1000
- \$1001 to \$3000
- \$3001 and up

17. How many members of your department are trained to operate it?

- 1
- 2
- 3
- 4 or more

18. How were your operator(s) trained? check all that apply

- Manufacturer Training Course
- Prior experience
- Other:

19.For what kind of missions/purposes do you use it? check all that apply

- Search & Rescue (SAR)
- Fire control & damage assessment
- HAZMAT/CBRNE management
- Emergency & disaster response
- Other:

20. What are the capabilities of your URAVS? check all that apply

- Cameras
- Infrared cameras
- Air monitoring sensors
- Ability to deliver supplies/first aid kits
- Other:

21. Would your organization benefit from acquisition and use of URAVS? * If you answer no there is no need to finish the survey, thanks for your participation.

- yes
- no

22.If yes, which one do you think would benefit your department the most? check all that apply

- Aerial (UAV)
- Terrestrial (UGV)



• Maritime (ROV) (surface or submersible)

23. How important is it for your organization to have URAVS?

- Scale 1 10
- not important at all
- extremely important

24. What are some ways that URAVS could benefit your organization? check all that apply

- Accident reconstruction
- Tactical/SWAT operations
- Intelligence & evidence gathering
- Traffic & crowd control
- Search & Rescue (SAR)
- HAZMAT/CBRNE management
- Emergency & disaster response
- Event & VIP security
- Documentation of an event for future reference (lawsuits, training...)
- Other:

The following questions are relative to Cyber Security and the use of URAVS. Cyber security, also referred to as information technology security, focuses on protecting computers, networks, programs and data from unintended or unauthorized access, change or destruction. Network outages, data compromised by hackers, computer viruses and other incidents affect our lives in ways that range from inconvenient to life-threatening. As the number of mobile users, digital applications and data networks increase, so do the opportunities for exploitation.

25. Is cyber security an issue in your organization?

- Scale 1 10
- no issue
- extreme issue

26.Do you think that a mobile URAVS command/communications trailer is important for your organization?

- Scale 1 10
- not at all important
- extremely important

27.If your organization had a mobile URAVS command/communication trailer, what types of equipment would be necessary in the trailer to meet your needs? check all that apply

- Secure cellular communication
- Radio communication (FM, VHF, UHF, etc...)



- Television monitors for data tracking/presentation
- Secure network capability
- Other:

28. What capabilities would your organization require of URAVS? check all that apply

- Camera (daylight)
- Camera (infrared)
- Camera (thermal)
- Air quality monitoring sensors
- Other:

29. How important are standardized URAVS, where your department and other agencies will have and be trained on the same type of equipment? *

- Scale 1 10
- not at all important
- extremely important

30. What technology or regulatory concerns need to be addressed to make drones an effective tool for your organization?



ATTACHMENT "C" - HINDS COMMUNITY COLLEGE PRESENTATION





What are the requirements to operate a sUAS in the NAS?

- Public institutions must obtain a COA
- Pilot license not required -Pilot/Operators are certified by the agency
- Pilot/Operator medical not required
- Public agencies must have a training program
- Public agencies certify their aircraft

- Medical certificate not required
- sUAS must weigh less than 55 lbs
- Visual line-of-sight (VLOS) only
- Daylight operations only
- Maximum altitude of 500 feet, currently 400 feet
- Special waivers must be obtained from FAA to operate outside these parameters







The new commercial class of UAS is designated sUAS (small unmanned aircraft systems). This category includes all unmanned aircraft over half pound up to 55 pounds. Aircraft in this category will be regulated under the proposed FAA Part 107 when it becomes final.









Fixed Wing Advantage
Long endurance - typically 1-2 hours or more
Disadvantage
Need large space for takeoff and landing

- Mapping environmental monitoring
- Search and rescue
- Post disaster damage assessment
- Faster and longer range than multirotor, cover greater area per flight
- Pinpoint trouble spots for followup and closer inspection with rotary aircraft









Multirotor

Advantages

- Hover and loiter capability Persistent surveillance
- No runway needed

Disadvantages

- Shorter flight duration
- Slower less range than fixed wing aircraft









Miniaturization of sensors extends capability of sUAS

Fire fighter safety - see hotspots on roofs, see through smoke

Environmental monitoring

Accident documentation

Far less expensive than manned aircraft - less funding required to deploy a fleet of vehicles

Persistent hover and stare capability for hostage situation - law enforcement personnel stand off at a safe range





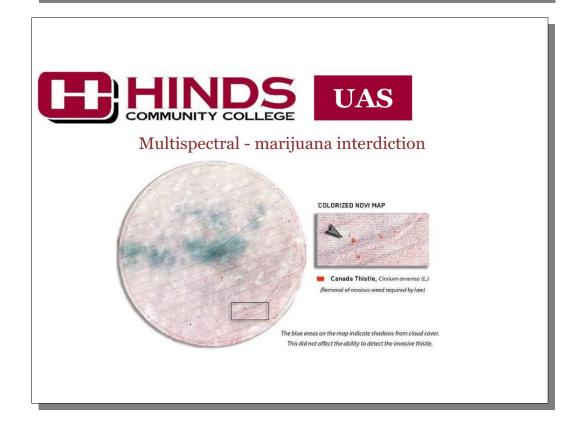


RGB - normal color vision



LIDAR - precision measurement - \$\$









Hyperspectral = Predator Vision See through solid objects - \$\$\$







Search and Rescue



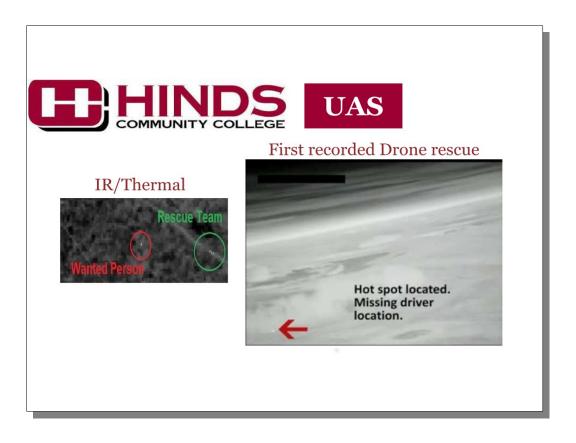
Gulfport after Katrina



Delivery of food, water, medical supplies to inaccessible post disaster areas











- Now is the time to put systems in place.
- Secure operating permissions with the FAA as a Public agency.
- Be prepared
- It takes time to put training and systems in place.
- sUAS is the next golden era of aviation. Be a participant.
- · Lead the revolution.

DENNIS LOTT

Program Director/Instructor
Hinds Community College UAS
4136 Airport Road,

Bolton, MS 39041

Ph: 601.857.3301

Fax: 866-249-1257

The aviation department at Hinds Community College offers several degree options to prepare majors for professional positions in aviation and aviation-related areas. From aircraft maintenance, a commercial pilot program, to training in piloting unmanned aerial vehicles (UAVs), Hinds CC aviation programs prepare students for exciting career opportunities.

http://www.hindscc.edu/programs-of-study/career-and-technical-programs/Industrial-Engineering-Technology/Transportation-Distribution-and-Logistics/Aviation-Technology/aviation-tech/aviation-technology



ATTACHMENT "D" - WILLIAM CAREY UNIVERSITY PRESENTATION



Emergency Response in the 21st Century

Italo Subbarao, DO, MBA Associate Dean Preclinical Sciences William Carey University College of Osteopathic Medicine

RT @newsbreaker: 'VIOLENT rotation on radar: confirmed wedge tornado moving into W. Hattiesburg NOW. Take cover!! 'http://t.co/qAsbIk4R ...

RT @Jake_WLBT: LiVE streaming coverage from John Sibley of a large, wedge tornado moving into Hattiesburg and Oak Grove: #mswx http://t ...

Can Twitter Save Lives?

- · 82 injuries
- 80,000+ tweets
 - · ~2 fold increase in activity
- 10,000+ users
 - · ~2.5 fold increase in users





http://www.gannett-cdn.com/-mm-/b6ae2e62ccab92546590b498ad e17c9b2744336/c=444-0-3740-24738-y-3334s-54br/380fo-pali/-

i hear the tornado on hwy 98 in the Burg is that true?

RT @spann: SIGNIFICANT DEBRIS SIGNATURE ON DUAL POL DATA MOVING INTO HATTIESBURG!!! PEOPLE NEED TO BE IN SHELTER NOW!!! http://t.co/HKq ...





Crisis leads to Opportunity

"When written in Chinese, the word, 'crisis,' is composed of two characters. One represents danger and the other represents opportunity."



WCUCOM Project HiRO



- CO-PI:
 - Italo Subbarao, DO, MBA
 - Guy Paul Cooper, OMS III
- Research Team:
 - Nicole Henry, OMS I
 - Jarred Mullins, OMS II
 - Shannon Altazan, OMS II
- Faculty:
 - · Robert Bailey, DO



AFTER ACTION REPORT

Drone Technology



- Pilot & Provider HD Video
- ▶ Flight Camera Stabilization
- ▶ 15-20 min. flight time
- ▶ 35-45mph
- ▶ 6-10 mile transmission range
- GPS & Waypoint equipped
- Remote controlled load deployment
- ~20 pound payload
- ▶ Engine failure Safety & parachute

Telemedicine Kit



- Cardiac Kit (as demonstrated)
 - Face to Face communication
 - AED
 - ECG and heart rate
 - Blood Pressure
 - Pulse Oximetry
 - Aspirin, Nitroglycerin
 - Glucometer
 - Oxygen tank (optional)
 - Shears, Razors, Alcohol wipes



Modular Uses

Search and Rescue

Infectious Diseases

HAZMAT RESPONSE

Disaster Response



Bioterrorism

Mass Casualty

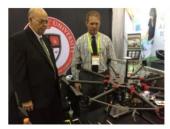
Rural EMS

Wilderness Medicine

EPIDEMICS

Working Prototype

https://www.youtube.com/watch?v=X4w 2HyEynnM









WCUCOM



Thank You!



For more information please contact: **Hirosaves@gmail.com**



AFTER ACTION REPORT

ITALO SUBBARAO, DO, MBA

Associate Dean
Pre-Clinical Sciences & Associate Professor of
Clinical Sciences (Family Medicine)
William Carey University
(601) 318-6046
isubbarao@wmcarey.edu

Dr. Subbarao is the Associate Dean, Pre-Clinical Sciences & Associate Professor of Clinical Sciences (Family Medicine) at William Carey University College of Osteopathic Medicine. He was formerly Director of Public Health Readiness Office at the American Medical Association Center for Public Health Preparedness and Disaster Response, the Deputy Editor of the Journal of Disaster Medicine and Public Health Preparedness an official AMA publication, and the Medical Director for the National Disaster Life Support Program Office.



The DO – American Osteopathic Association Oct 25, 2015

Osteopathic solution: Drone could bring telemedicine to rural disaster victims

The drone-delivered medical kit would include live video with a health care professional as well as diagnostic and treatment equipment.

http://thedo.osteopathic.org/2015/10/osteopathic-solution-drone-could-bring-telemedicine-to-rural-disaster-victims/

Dr. Subbarao is a leader in domestic and

international disaster response including terrorism and is recognized for his work in interprofessional competency development and assessment. He has provided field and technical support to the Haiti Earthquake, the Mumbai Shootings, Hurricanes Gustave and Ike, Hurricane Katrina, the Pakistan Earthquake, and other large scale events. He has published and edited over 60 books and articles and has been an invited speaker to many domestic and international sponsored conferences which include US Dept. of Health and Human Services, Centers for Disease Control and Prevention, and the North Atlantic Treaty Organizations.

Dr. Subbarao is an emergency medicine physician and has completed additional fellowship training in Disaster Medicine at Johns Hopkins University. Dr. Subbarao completed his emergency medicine residency training at Lehigh Valley Hospital, Muhlenberg, in Bethlehem, Pennsylvania, where he won three national resident research awards. He is a graduate of the Philadelphia College of Osteopathic Medical School joint DO/MBA program in Health Care Administration. He lives with his wife and son in Hattiesburg, MS. Sr. Subbarao joined WCUCOM in 2012.

- See more at: http://www.wmcarey.edu/faculty-and-staff-0#sthash.IXLmGxi2.dpuf



ATTACHMENT "E" - GRANT WRITING OPPORTUNITIES

Grants: Stuff You Should Know

- I. Use every clue they give you.
 - If an RFP is specific about desired outcomes, activities or use of funds make sure you speak to those concerns explicitly in the proposal.
 - Make sure you understand the funding guidelines of the grantor. Federal funds can be especially restrictive and jargon heavy. Make sure you can acknowledge your understand of federal budget lingo such as the "OMB Super-circular" if the RFP mentions it.



- c. Once you receive a grant, KEEP YOUR FUNDER HAPPY! Funders often return to "easy and reliable places to drop the \$\$\$.
- II. Use clear concise language.
 - a. Make your case and tell your story to a 5th grader.
 - b. Every word should add value. NEVER exceed limits on words or pages.
- III. Get a little help from your friends: but choose the right ones.
 - a. Include elected officials relevant to the source of funding (federal congress members for federal dollars) and relevant to the geography of the activities (if writing for a county/consortium, also seek support from municipalities within the boundaries of the project).
 - Include partner agencies that operate relevant programs, will participate in the grant activities, will provide promotional/informational or other support
 - c. Do not include irrelevant organizations for the sake of having a high number of letters. Grant reviewers can't always tell if you know where you are going when the purpose of inclusion is not obvious.
- IV. Don't wear your friends out.
 - a. Ask for support early and do most of the work.
 - b. Avoid repeated "emergencies".
 - c. THANK your friends and keep them updated on successes.
- Show you have skin in the game; cite any and all other investments/activities that support the overarching mission.
- VI. Make sure you are the right fit.
 - a. Answer this question first—BEFORE investing time and energy
 - b. Could you enlist an eligible partner who meets the criteria?

 $108 \, Sheffield \, Loop \bullet \, Hattiesburg, \, MS \bullet 601.255.7510 \bullet spickering@mscec.org/rbrown@msdyslexiacenter.org$

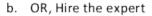


AFTER ACTION REPORT

Grants: Writers and Dollars

I. Writers

- a. Become the expert
 - i. Association for Funding Professionals
 - ii. Grant Professionals Association (www.grantprofessionals.org)
 - iii. Grant Learning Center (http://www.grants.gov/web/grants/learn-grants.html)



- i. Private grant writers
- ii. Consulting/engineering firms (ask MS Association MAS/MMA for referrals)
- iii. Non-profits/governmental support agencies
 - 1. MS Community Education Center (MCEC)
 - 2. Planning & Development Districts (PDDs)
- iv. Verify successes
- v. Pay structure
 - % of award (sometimes w/ minimum payment due in lieu for unsuccessful proposals)
 - 2. Flat fee/project
 - 3. Hourly and expense billing (similar to legal fees)
 - 4. Other structure based on the specific nature of the project
- vi. Do the math (a city paid \$18,000 to writer for \$17,000 grant: OOPS)

II. Locating Funding Sources

- a. Identify your target: federal, state, private foundation
 - Research previous awards (can find foundation assets and award lists by searching for their federal 990 online; free search at https://projects.propublica.org/nonprofits/)
 - ii. Have conversations with funder whenever possible
- b. Grants.gov
- c. Grantgopher.com (non-profits)
- d. Reconnectingamerica.org (local governments
- e. Nacogrants.org (for counties)
- f. Grantwatch.com (for local governments/non profits)
- g. MSnonprofits.org (for non profits)
- h. Thegranthelpers.com
- i. Set Google alerts for "RFP +SpecificAgencyName and/or +SpecificCategoryName"





REBECCA BROWN

Center Coordinator

Mississippi Community Education Center

Hattiesburg, MS

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rbrown@msdyslexiacenter.com

Rebecca "Becky" Brown is working with OTC to help facilitate and coordinate grant writing and other joint funding opportunities

- Past President of the Hattiesburg group of the American Society of Training and Development
- President of the Leadership Pinebelt Alumni Association
- Co-Chair of the Symposium/Conference Committee, USM Center for Logistics Trade & Trans.
- Co-Chair of the ADP Leadership Pinebelt Steering Committee, Southeastern Employment and Training Association (SETA) and Mississippi Economic Development Council, ADP Education Task Force, United Way Community Impact Committee



ATTACHMENT "F" - MEDIA EXPOSURE

PRESS RELEASE

Date: Monday, May 16, 2016

Open Technology Center Awarded \$1.86 Million to Bolster Cyber Security in Rural Communities

Washington, D.C., May 16, 2016 - The Open Technology Center, a Mississippi-based, non-profit research organization that supports homeland security and national defense objectives, recently announced it has been awarded two contracts through a joint effort sponsored by the U.S. Department of Defense (DoD) Combating Terrorism Technical Support Office (CTTSO) and the U.S. Department of Homeland Security, Science and Technology Directorate to facilitate development of open technology systems that support public safety, law enforcement and emergency management entities in rural and under-served communities. The two contracts have an estimated value of \$1.86 million.

"OTC is sponsored by DHS and DOD to work with state, local and tribal agencies to help develop and transfer information and technology resources from federal to state and local agencies that support rural communities," said OTC Executive Director, John Weathersby.

"Federal agencies and larger, metropolitan communities have access to resources to address physical and cyber threats to their network systems and critical infrastructure. Small, rural communities are not immune to similar threats such as cyber-related attacks where money or personal information is stolen over the Internet or responding to a natural disaster," he said. "However, smaller communities traditionally don't have access to funding or man-power to keep pace with the rapidly changing technology. No matter the size or scope of the attack or disaster, the first on the scene and the last to leave are the local law enforcement, emergency management and community administration personnel. Our tasking is to help provide access to the best technology tools and information available."

Under the existing contracts, OTC will facilitate development, testing and implementation of mobile communication and sensor technologies, web-based applications and unmanned vehicle systems that support public safety, emergency management and disaster recovery operations.

As part of the program's activities, OTC will also host a series of informational workshops and technology demonstrations at Camp Shelby Joint Forces Training Center to provide government representatives with information regarding technology capabilities, privacy and policy issues, access to funding, training and maintenance support.

- more -



The Open Technology Center (OTC) is a non-profit organization established in 2013 through funding support from the U.S. Department of Homeland Security, Science & Technology Directorate (DHS S&T) and the Mississippi National Guard's Camp Shelby Joint Forces Training Center (CSJFTC). OTC's mission is to facilitate research, development, evaluation, training, public-private collaboration and technology transfer of open source software and other open technologies to support national defense and homeland security objectives for federal, state and local government agencies. OTC programs and activities seek to increase technical, administrative, economic and cyber security efficiencies of public and private sector IT systems.

For more information on OTC technology and activities, visit: www.opentechnologycenter.org or email info@opentechnologycenter.org or call (601) 427-0152.

#







72°

FULL FORECAST

Search

Camp Shelby to host first drone workshop for government agencies

Published: Tuesday, May 17th 2016, 6:18 pm CDT Updated: Tuesday, May 17th 2016, 6:22 pm CDT

By Charles Herrington, Reporter CONNECT

CAMP SHELBY, MS (WDAM) - Government organizations from South Mississippi will gather at Camp Shelby Thursday to learn about drone technology.

The Open Technology Center will host the first drone workshop for Mississippi public sector agencies.

The focus is on helping governments in rural areas acquire and operate unmanned vehicle systems to support law enforcement, emergency management and critical infrastructure.

"The overall intent is to bring technology that the federal government has already paid for into the hands of rural communities as we have here in South Mississippi," said Brad Smith, director of federal programs for the Open Technology Center.

Funding is coming from the Department of Defense and the Department of Homeland Security.

Agencies that are planning on attending include the cities of Meridian, Pass Christian, Waveland and Wiggins. Forrest, Lamar, Harrison and Stone counties also plan on participating.

"The greatest issue I would say is the regulatory process right now," said Smith. "How do we get these systems in the air, so that they can be useful to these agencies and organizations."

Initial workshops will help agencies in Mississippi's 4th Congressional District. Future seminars will include organizations from across the nation.





81° roken Clouds folumbia

FULL FORECAST

Search

Camp Shelby hosts first drone workshop for state agencies

Published: Thursday, May 19th 2016, 1:08 pm CDT Updated: Thursday, May 19th 2016, 1:11 pm CDT

By Charles Herrington, Reporter CONNECT

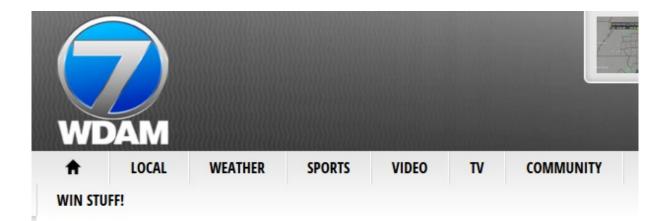
CAMP SHELBY, MS (WDAM) - Law enforcement and emergency management officials from South Mississippi were at Camp Shelby Thursday to learn about unmanned aerial vehicle technology.

The Open Technology Center hosted the first drone workshop for state public service agencies.

The focus is on helping agencies in rural or under-served areas learn how to acquire and properly use drones for search and rescue, emergency management, land surveying and other purposes.

The funding is coming from the Departments of Defense and Homeland Security.

Officials from the FAA, MEMA and the FBI also attended.



Camp Shelby hosts first drone workshop for state agencies

Published: Thursday, May 19th 2016, 1:08 pm CDT Updated: Thursday, May 19th 2016, 5:18 pm CDT

By Charles Herrington, Reporter CONNECT









Law enforcement and emergency management officials from South Mississippi were at Camp Shelby Thursday to learn about unmanned aerial vehicle technology. Source: WDAM CAMP SHELBY, MS (WDAM) - Law enforcement and emergency management officials from South Mississippi were at Camp Shelby Thursday to learn about unmanned aerial vehicle technology.

The Open Technology Center hosted the first drone workshop for state public service agencies.

The focus is on helping agencies in rural or under-served areas learn how to acquire and properly use drones for search and rescue, emergency management, land surveying and other purposes.

Officials from the FAA, MEMA and the FBI also attended.

"The overall goal of the program is to introduce the available technologies to these law enforcement, first responder, emergency management and public administration organizations," said Brad Smith, director of federal programs for the Open

Technology Center.

"It's invaluable for us to have both the federal and the state governments here to give us an idea of where we are going to go from this point and how we can get our people trained," said Chris Bowen, district 5 supervisor for Forrest County.

The funding for the workshop and future similar events is coming from the Departments of Defense and Homeland Security.

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ATTACHMENT "G" - MEDIA IMPACT

"Camp Shelby hosts first drone workshop for state agencies" distributed by WDAM-TV, Hattiesburg, MS. May 19, 2016 – Network affiliates that displayed the story via TV news or station website.



Station	Market	Station	Market	Station	Market
CBS46-TV	Atlanta, GA	KVVU-TV	Las Vegas, NV	WHNS-TV	Greenville, SC
Cleveland19-TV Cleveland, OH		KWES-TV	Odessa, TX	WIS-TV	Columbia, SC
KAIT-TV	Jonesboro, AR	KXXV-TV	Waco, TX	WLBT-TV	Jackson, MS
KAUZ-TV	Wichita Falls, TX	WAFB-TV	Baton Rogue, LA	WLOX-TV	Biloxi, MS
KCBD-TV	Lubbock, TX	WAFF-TV	Huntsville, AL	WMBF-TV	Myrtle Beach, SC
KCTV-TV	Kansas City, KA	WALA-TV	Mobile, AL	WMC-TV	Memphis, TN
KFDA-TV	Amarillo, TX	WALB-TV	Albany, GA	WNEM-TV	Flint, MI
KFVS-TV	Cape Girardeau, MO	WAVE-TV	Louisville, KY	WSFA-TV	Montgomery, AL
KLTV-TV	Tyler, TX	WBRC-TV	Birmingham, AL	WSFA-TV	Troy, AL
KMOV-TV	St. Louis, MO	WBTV-TV	Charlotte, NC	WSMV-TV	Nashville, TN
KPLC-TV	Lake Charles, LA	WCSC-TV	Charleston, SC	WTOC-TV	Savannah, GA
KPTV-TV	Portland, OR	WDAM-TV	Hattiesburg, MS	WTOL-TV	Toledo, OH
KSLA-TV	Shreveport, LA	WECT-TV	Kansas City, MO	WTVM-TV	Columbus, GA
KSWO-TV	Lawton, OK	WFIE-TV	Evansville, ID	WVUE-TV	New Orleans, LA
KTRE-TV	Lufkin, TX	WFSB-TV	Hartford, CN	WWBT-TV	Richmond, VA
KUAZ-TV	Pheonix, AZ	WFXG-TV	Augusta, GA	WXIX-TV	Newport, KY
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