



Louisiana Advanced Aviation and Drone Advisory Committee

2024 Annual Report

January 19, 2024

Date: January 19, 2024

To: Secretary, Department of Transportation and Development
Chair, House Committee on Transportation, Highways, and Public Works
Chair, Senate Committee on Transportation, Highways and Public Works

RE: Louisiana Advanced Aviation and Drone Advisory Committee Annual Report

Committee Membership:

The Honorable Mark Wright, Louisiana State Representative
The Honorable Robert Owen, Louisiana State Senator
George Rey, Sr., Pelican Chapter AUVSI (Vice-Chair)
Scott Gammel, Louisiana Airport Managers and Associates (FAA Liaison)
Andrea Dupre, Houma-Terrebonne Airport Commission (Secretary)
Brian Landry, Louisiana Chemical Association
DaCoda Bartels, Aerobatics Drone Division of Grand Isle Shipyard
Jonathan Kemp, Louisiana State Police
Joel Champagne, Jr., Champagne Beverage Company
Andy Brown, Louisiana Farm Bureau Federation
Robert Moore, Ouachita Parish LA Fire Department
Jeffrey Messinger, Louisiana Society of Professional Surveyors
Dr. Nancy Clement, Fletcher Community College
Dr. Balaji Ramachandran, Nicholls State University
Bradley R. Brandt, MSA, Louisiana DOTD (Chair)

Subject: L.R.S. 2:2.1.B.(1) & L.R.S. 2:2.1.E.(1) "The committee shall provide recommendations to the secretary of the Department of Transportation and Development as well as both the House Committee on Transportation Highways and Public Works and the Senate Committee on Transportation Highways and Public Works on policy and regulatory issues related to the adoption of drone technologies. At least thirty days prior to the start of each legislative session, the committee shall issue a report about the state of unmanned aircraft systems and unmanned aerial system industry in Louisiana..."

This report covers the actions and considerations of the committee for calendar year 2023.

Background

The purpose of the Louisiana Drone Advisory Committee (LADAC) is to provide an open venue in Louisiana and all unmanned stakeholders to work in partnership to identify and recommend a single, consensus-based set of resolutions for issues regarding the efficiency, safety, integration of unmanned systems into the state of Louisiana and to develop recommendations to address those issues and challenges. The LADAC will provide the state's legislative, executive, and our federal delegation recommendations that may be used for planning purposes in the areas of legislation, operational safety, and economic development investments to ensure increased growth of this burgeoning technology.

The LADAC leadership is composed of a Chairperson, appointed by the Secretary of Transportation, and assisted by a Vice Chairperson, Secretary, and FAA Liaison person selected from the appointed LADAC members through a simple majority vote. The LADAC conducted deliberations on recommendations to provide to the state's legislative, executive, Louisiana's federal delegation, and the Federal Aviation Administration (FAA). All LADAC meetings were open to the general public. The Committee's structure was predicated on a two-tiered system with subordinate Task Groups (DACTG) established to develop specific subject recommendations and other documents for the LADAC. Adjunct to the LADAC is a Subcommittee (LADAC Subcommittee or DACSC) composed of members with broad knowledge and expertise related to the continued growth of drone technology through economic development in increasing operations, manufacturing, and maintenance.

The LADAC established DACTG to accomplish specific tasks as described above. Depending upon the type of tasking, DACTG products will either be presented to the DACSC for review and deliberation, then forwarded to the DAC or they might be presented directly to the LADAC. Members of DACTGs will be appointed by the DACSC Co-Chairs in consultation with the DAC Chairperson. Each DACTG will approve Terms of Reference defining the objective, scope, membership, specific tasks, and deliverables with a schedule. Unlike the LADAC and DACSC, members of TG do not represent a particular affected entity and are selected for their expertise in the subject matter rather than their affiliation. Task Groups will disband upon delivery of their recommendations as appropriate.

Louisiana Advanced Aviation and Drone Advisory Committee **Calendar Year 2023 Meetings/Actions**

The Louisiana Advanced Aviation and Drone Advisory Committee, hereinafter referred to as "LAADAC", conducted four public meetings in accordance with statutory requirements.

January 18, 2023 LAADAC Meeting

The first meeting was conducted on January 18, 2023 and was held at the Louisiana State Capitol, House of Representatives - House Committee Room 4 from 10:00 AM -12:00 PM. A quorum was met as 8 of 15 committee members were in attendance. A motion was made by Mr. Gammel and seconded by Mr. Moore to approve the Calendar Year 2022 LADAC Committee Legislative Report with actions taken today during the meeting in regards to the Title 14:337 language recommendations. The changes will be reflected on page 5 of the report before the drone advisory task group reporting area. The motion was passed unanimously by the committee. A discussion ensued pertaining to the recommended name change of the committee. In an August 2022 meeting, the committee voted on changing the name of the committee from Louisiana Drone Advisory Committee (LADAC) to LAA (Louisiana Advanced Aviation Committee). Atty. Hardy advised that since the committee name was approved in legislation a bill would have to be introduced and approved by the legislature for the name change. Rep. Owen stated he would submit legislation, but would like to keep the word "Drone" in the name. Committee agreed that the recommended name change legislation should change the committee's name to the Louisiana Advanced Aviation and Drone Committee. A motion was made by Mr. Rey and seconded by Mr. Gammel to recommend revising the name of the committee to the Louisiana Advanced Aviation and Drone Advisory Committee. The motion was passed unanimously by the committee.

A follow up discussion was held amongst the committee members regarding recommended language to §14:337 which pertains to the unlawful use of an unmanned aircraft system. Committee members recommended that statute of limitation language also be adopted. A motion was made by Sgt. Kemp and seconded by Mr. Rey to adopt the language for Title 14:337 as stated during the committee meeting and add a seven-year prescription period or statute of limitation for this particular crime so if a repeat offense occurs within those seven years it will be considered a second offense or subsequent offense. The motion passed unanimously. The general recommended language from the LADAC to the legislature is listed herein and identified with an underline for new language:

§14:337. E.(2) On a conviction for a second or subsequent offense as provided in Paragraph (A)(1) of this Section, the offender shall be fined not less than five hundred dollars nor more than four thousand dollars, or imprisoned, with or without hard labor, for not less than six months nor more than two years, or both, and forfeiture to the law enforcement authority of any property seized in connection with the violation.

§14:337. E.(4) On a conviction for a second or subsequent offense as provided in Paragraph (A)(2) of this Section, the offender shall be fined not less than two thousand dollars nor more than five thousand dollars, or imprisoned, with or without hard labor, for not more than one year, or both, and forfeiture to the law enforcement authority of any property seized in connection with the violation.

§14:337. E.(5) A “second or subsequent offense” for this Section, shall be any offense committed within seven years of the date on which the last offense was committed.

Future LADAC meetings were established to allow for maximum participation from committee members and industry stakeholders for the 2023 calendar year. Proposed LADAC meetings are May 10, 2023, August 9, 2023, November 8, 2023, and January 17, 2024. Interim meetings may be scheduled at the discretion of the LADAC.

May 3, 2023 LAADAC Meeting

The second meeting was conducted May 3, 2023 and was held at the St. Charles Parish Department of Homeland Security & Emergency Preparedness Center, from 1:00 PM - 3:00 PM. A quorum was not met as 7 of 15 committee members were in attendance. No official actions were taken at this meeting. The committee members present agreed to proceed with an unofficial discussion on the unmanned industry in Louisiana. The general discussion among the committee members present are provided below.

Copies of each task group terms of reference was available for review. There were some past committee members that were not reappointed/replaced with new committee members so those names were updated. Task Groups 4, 6, and 7 had significant committee member changes. Votes for task group assignments could not take place due to lack of a quorum.

The LADAC chair spoke to DOTD legal in regards to each task group having a charter--since the LADAC did adopt a charter for overall committee/group, it would be prudent to have a charter for each task group. Will take back to legal to see if each can be adopted and will place on website. In August, would like for members to consider what they would like task group charter to look like--will have to put in January report for Dr. Kalivoda, DOTD Secretary.

Legislative Items Discussion

- LADAC Legislative report was submitted on time.
- **HB407 (Robert Owen): Name Revision** Bill received full approved vote from House Transportation Committee and will now move to Senate Committee for vote. Mr. Rey stated that the committee needs to find out if we need to make any changes to the language so we can get that in and get it approved.

Title 14:337: Mr. Brandt stated could not find any bills associated with this may not have been submitted this year. Mr. Rey stated that may have to find someone to submit for next year's session. Changes needed for how committee is structured—only had 1 quorum meeting this year. Mr. Rey will check with some private entities to see how to get legislation to get language changes, because there are things that are going on the federal side and if we are not structured correctly the state will suffer.

Dr. Ramachandran asked if a representative could attend on behalf of someone else and also proxy vote (subcommittees). DOTD Legal advised that proxy votes cannot be done due to sub-committee's being state committee group.

DOTD Legal also stated that if private agencies/entities would like to serve on any task groups they must go through Ethics training as everyone else did on LADAC. Mr. Brown stated that he has been

on other boards/committees where you can have other members outside of the board/committee to serve.

Mr. George Rey made presentation on Counter UAS & Aircraft Electrification Briefing. (Phil Constantin put in for grant for Louisiana. Department of Defense will be coming to New Orleans July 16-18, 2023).

A general discussion was held with the members of public that were present in regards to Mr. Rey's presentation.

Next proposed meeting was discussed for August 2, 2023.

No action items were discussed due to lack of quorum.

August 9, 2023 LAADAC Meeting

The third meeting was conducted August 9, 2023 and was held at the Louisiana State Capitol, House of Representatives - House Committee Room 1 from 10:00 AM -12:00 PM. A quorum was met as 9 of 15 committee members were in attendance. Chair Brandt welcomed new appointed members Andrea Dupre' (who replaced Joshua Alford) and Ms. Nancy Clement (who replaced Dr. James Dire) to LAADAC committee.

Mr. Brandt asked if anyone had any items to add to the agenda. Items added were: Vote for new secretary for LAADAC Committee; New committee chairs for Task Group 2 and Task Group 3 and a new member for task group 2 (If no volunteers for these positions will assign roles after the meeting) Federal Aviation Administration Droning on Events; Advanced Air Mobility Ecosystem Report; Federal Aviation Administration Facts Sheet 2023; Federal Aviation Administration Reauthorization; Federal Incentives.

A motion was made by Mr. Rey and seconded by Mr. Bartels to add the items to the agenda. The motion passed unanimously.

Vote for New Secretary:

A nomination was made by Mr. Rey and seconded by Mr. Bartels for Mrs. Dupre' to replace Joshua Alford (who no longer is appointed to the LAADAC committee), as LAADAC Secretary. No other nominations' were offered. The vote approved for Mrs. Andrea Dupre' to replace Joshua Alford as LAADAC Secretary passed unanimously.

Approval of Minutes and Meeting Discussion:

Motion made by Mr. Moore and seconded by Mr. Gammel to approve the minutes from the January 2023 LAADAC meeting as presented. Motion passed unanimously.

Motion made by Mr. Rey and seconded Dr. Ramachandran to approve the meeting discussion from the May 2023 LAADAC meeting as presented. Motion passed unanimously.

Legislative Actions

A. Official name change passed during the regular Legislative session—bill was proposed by Rep Owens to change the name of the committee from the Louisiana Drone Advisory Committee to the

Louisiana Advanced Aviation and Drone Advisory Committee (LAADAC) as well as extended the terms of the committee to 2026—bill passed and was signed into law by Governor Edwards.

B. Annual Legislative Report

Reports must be filed 30 days prior to the start of the regular legislative session.

- i. Report is due to the Legislature committee by February 9, 2023.
- ii. LAADAC committee meeting on January 17, 2023 to approve the report and then route to DOTD Secretary for approval
- iii. For DOTD approval purposes reports need to be sent to DOTD Secretary by January 18, 2023

Mr. Rey: Hard Legislative items that LAADAC committee would like to submit. House and Senate have a limit on how many bills that they can usually put forward—depending on how many action items the committee would like to put forward, we need to have an iron-clad list of items for November meeting. Will propose three legislative items to bring forth to the committee in November to vote on to present to the legislators during the upcoming session.

Dr. Ramachandran: Would like to suggest that December meeting be held within the first 10 days of Christmas (because December 20 is too close to Christmas)—and to come up with some action items at the November meeting so that during the December meeting can finalize some items.

Task Group Reports:

As part of the Louisiana Transportation plan the department is currently working on (5 different plans)—one of the standalone reports is the Aviation or Airport System Plan report. There are a number of different white papers and tasks that the consultant working on the Aviation program are looking at including some of the statistics of UAS usage in the state. Early next fall will be able to report findings from consultant.

- a. Task Group 1 – sUAS Drone Statistics in LA – **(Gammel)**: No items at this time but will have good statistics to present at next LAADAC meeting.
- b. Task Group 2 – Econ. Devel. Impact of Unm. Systems for Air, Ground, & Maritime – **(Vacant)**: No group members had anything to report
- c. Task Group 3 – Leg. & Exec. Impacts Hindering Growth of UAS in LA – **(Vacant)**: No group members reported
- d. Task Group 4 – Leg. & Exec. Impacts Hindering Public Safety of UAS in LA – **(Champagne)**: Chairman absent. No group members reported.
- e. Task Group 5 – Efforts to Implement Counter UAS to Protect Critical Infrastructure – **(Rey)**: Presentation and report was provided
- f. Task Group 6 – Develop a Baseline of Unmanned Maritime Systems Development in LA – **(Landry)**: Chairman absent. No group members had anything to report.
- g. Task Group 7 – Develop a Baseline of Electrification of Aviation Development in LA – **(Rey)**: Presentation and report was provided.

New Business:

Authorize LAADAC vice-chairman Rey to develop language for 14:337 and present it to the LAADAC committee at the next LAADAC meeting in November.

Motion made by Sgt. Kemp and seconded by Dr. Ramachandran. Motion carried.

Authorize LAADAC vice-chairman Rey to reach out and begin discussions with the State Fire Marshall's office to set up a meeting regarding the electrification of aircraft.

Motion made by Mr Moore and seconded by Mr. Gammel. Motion carried.

Call for government to begin looking into adding a full-time employees to increase Aviation Division within the Louisiana Department of Transportation and Development to handle AAM and Drone-Specific requirements on behalf of the LAADAC committee.

Motion made by Dr. Ramachandran and seconded by Mr. Bartels. Chair Brandt asked for a roll call vote to be conducted.

Yea: Mr. Bartels, Sgt. Kemp, Mr. Moore, Mr. Rey, Ms. Clement, Dr. Ramachandran, Mr. Gammel, Ms. Dupre'

Abstain: Brandt

Yea vote is to allow vice-chairman Rey to move forward to proceed with developing the language and present this language at the next LAADAC meeting in November. *Nay* vote is not to allow the development of the language. **Abstain** is to not vote at all.

With 8 "Yea" votes, "O" Nay votes, and 1 "Abstain" vote motion approved.

Emergency response to develop a program in conjunction with GOSEPH and the Louisiana State Police to train agencies and pre-qualified agencies to be able to fly a drone during a disaster (will fall under Task Group 4).

Motion by Mr. Rey, seconded by Mr. Gammel. Motion carried.

Review of Report Advanced Air Mobility Ecosystem reports that Louisiana Economic Development (LED)—was brought to chairman Brandt and vice-chairman Rey for advisory from LAADAC—Sgt. Kemp also advised from a legal aspect.

International Civil Aviation Organization (ICAO) Symposium September 9-11, 2024 in Montreal, Canada for awareness and educational standpoint.

Next Board Meeting:

Mr. Brandt informed LADAC that next meeting would be on November 15, 2023.

November 15, 2023 LAADAC Meeting

The fourth meeting was conducted November 15, 2023 and was held at the Louisiana State Capitol, House of Representatives - House Committee Room 6 from 10:00 AM -12:00 PM. A quorum was not met as 7 of 15 committee members were in attendance. No official actions or votes were taken during this meeting. The members present agreed to proceed with general unofficial discussions on the unmanned industry in Louisiana. The members present also agreed to have Mr. Rey provide an update on the Task Groups 5 and 7 actions to date. The minutes from the August 2023 meeting were not voted on.

A discussion ensued regarding the limited participation of appointed members attending meetings and impacts to committee business and development of a strategic plan to move forward. A discussion ensued regarding the legislative report that will be submitted to the Secretary and the Joint Transportation Chairs 30 days before the start of the session (March 11, 2024). The discussion focused on the need for a January meeting to ensure the committee can complete and vote on a report to be submitted within the proper suspense times. It was unofficially agreed upon that Friday, January 19, 2024 should be the next scheduled meeting of the LAADAC.

Mr. Brandt provided an update for Task Group 1 (sUAS Drone Statistics in Louisiana) for the members present. DOTD will complete a white paper on unmanned activity through the aviation

system planning process. A website is being developed by the department's consultant to follow/track plan will be available early next year. Once this information is released, Mr. Brandt will provide this information to the committee. Mr. Brandt also provided information and ideas on Task Group 2 (Economic Impact of Unmanned Systems for Air, Ground, & Maritime) for collecting and developing a report for the economic impact of unmanned systems that the committee could use as a baseline by which to develop a long-range strategic plan. Mr. Champagne provided an update on Task Group 4 (Legislative & Executive Impacts Hindering Growth of UAS in Louisiana). Mr. Rey provided an update on Task Group 5 (Efforts to Implement Counter UAS to Protect Critical Infrastructure) and Task Group 7 (Develop a Baseline of Electrification of Aviation Development in Louisiana).

Mr. Brandt provided the additional following information on national efforts and developments in the aviation and unmanned industry. An update on FAA Reauthorization – November 17, Appropriations Run out December 31 affecting the industry. Mr. Brandt stated that Congressman Mike Johnson (R-04) as he was presented as the new Speaker of the House.

Actions taken in congress since our last meeting are listed as follows: [H.R.5879](#), Drone Research and Innovation for Law Enforcement Act of 2023, amends title 49, United States Code, to permit small, unmanned aircraft pilot research for public safety. Introduced by Representative Troy Nehls (R-TX-22); [H.R.6143](#), provides for drone security. Introduced by Representative Mike Gallagher (R-WI-08). – **Text Could not be located**; [H.R.6042](#), requires the Secretary of Labor to award grants for promoting industry or sector partnerships to encourage industry growth and competitiveness and to improve worker training, retention, and advancement as part of an infrastructure investment.

Mr. Brandt informed the committee that MassDOT Aviation Division reached out on a partnership proposal for Counter Drone Technology Learn Opportunity. Will try to facilitate a meeting during TRB in Washington Jan. 7-11, 2024 MassDOT, DOTD, Houma-Terrebonne, Mitre. Mr. Brandt has reached out to Mitre to begin discussions. Mr. Brandt informed on the development of the Louisiana Business Aviation Association (LBAA) Formation; International Civil Aviation Organization (ICAO) – Drone Enable Symposium 5-7 Dec, 2023 Montreal, CA – Focus on “Innovation and Infrastructure Developments Supporting the Future of Unmanned Aviation.”; State of Utah Released - At the request of the state Legislature, the Utah AAM Working Group, part of the Utah Department of Transportation's Aeronautics Division, released a legislative report and study on the implementation of AAM services in regions such as the Salt Lake City metro area (the Utah AAM Infrastructure and Regulatory Study is a 58-page framework — similar to the FAA's Innovate28 and its previously released AAM blueprint — that identifies the benefits, limitations, assets, timelines and funding mechanisms associated with the state's adoption of these emerging services.

Louisiana Advanced Aviation and Drone Advisory Committee **Task Group (LAADACTG) 2023 Reporting**

LADAC Task Group – 1 – sUAS Drone Statistics in Louisiana

The small unmanned aircraft systems (sUAS) Drone Statistics in Louisiana task group establishes a set of economic baseline data for sUAS for the state. The task group is exploring drones procured in Louisiana, drones registered in Louisiana, industry breakout employing drone usage, academia usage of drones, and the economic impact of drones within our state. This work was assigned during the November 16 meeting and work continues to integrate and finalize these figures and data for the committee. This task group work satisfies the requirements for §2:2.1.E(1)(a)-(f).

Task Group 1 – No formal report for CY 2023.

LADAC Task Group – 2 – Economic Development Impact of Unmanned Systems for Air, Ground, & Maritime

This task group will use existing studies and collected data to create a baseline of economic information specific to air, ground, and maritime industries for the state. The task group is exploring the direct, indirect, and induced impacts of drones. Further, the group is exploring commercial and community benefits and research the impacts of Urban Air Mobility (UAM) and Advanced Air Mobility (AAM) have on social and economic benefits. This work was assigned during the November 16 meeting and work continues to integrate and finalize these figures and data for the committee. This task group work satisfies the requirements for §2:2.1.E(1)(a)-(f).

Task Group 2 – No formal report for CY 2023.

LADAC Task Group – 3 – Legislative & Executive Impacts That may be Hindering the Economic Growth of Unmanned Systems in Louisiana

This task group is researching and establishing a legal opinion request for unmanned aircraft systems for the state to be transmitted to the Department of Transportation and Development (DOTD) and the Federal Aviation Administration (FAA) to define a position and receive guidance on legislation that would identify hindrances of FAA or state regulations on aviation easements and the FAA airspace authority. Regulation of drones should encourage safe and responsible operations, while promoting innovation and economic growth, so that people and businesses across Louisiana can continue to benefit from the new opportunities, jobs and services that drone technology brings. This work was assigned during the November 16 meeting and work continues to integrate and finalize these figures and data for the committee. This task group work satisfies the requirements for §2:2.1.E(1)(a)-(f).

Task Group 3 – No formal report for CY 2023.

LADAC Task Group – 4 – Legislative & Executive Impacts That Maybe Hindering the Public Safety of Unmanned Systems in Louisiana

This task group is reviewing and researching first responders' use of small Unmanned Aircraft Systems(sUAS)/drones in applications pertaining to firefighting, law enforcement, and emergency medical missions. First responder organizations have used drones to search for lost children, identify high risk areas in burning structures, facilitate relief operations following hurricanes, reduce risk and exposure for law enforcement officers in active-shooter events, and many other emergency use cases. This work was assigned during the November 16 meeting and work continues to integrate and finalize these figures and data for the committee. This task group work satisfies the requirements for §2:2.1.E(1)(a)-(f).

Task Group 4 – No formal report for CY 2023.

LADAC Task Group – 5 – Current Efforts to Implement Counter Unmanned Aircraft Systems (C-UAS) to Protect Critical Infrastructures in Louisiana

The exponential growth of small unmanned aircraft systems (sUAS)/drones creates new risks for the protection of Louisiana's Critical Infrastructure, mass gathering, and the protection of the general public. Technology trends are dramatically transforming legitimate applications of sUAS while simultaneously making them increasingly capable drone weapons in the hands of criminals, careless, clueless, and nefarious operators. The task group is exploring the state's drone laws and recommending needed reforms and/or revisions to ensure the state is protected from advancing drone technology. Additionally, this group will identify possible new legislation or executive action to implement a statewide strategy to ensure full counter UAS coverage at all critical infrastructure sites and further establish and promote public-private partnerships through an unmanned Center of Excellence in Louisiana that will work with government, academia, and private interests to develop common operating principles. This work was assigned during the November 16 meeting and work continues to integrate and finalize these figures and data for the committee. This task group work satisfies the requirements for §2:2.1.E(1)(a)-(f).

Task Group 5 – Formal report was for CY 2023. Refer to Appendix A

LADAC Task Group – 6 – Develop a Baseline of Unmanned Maritime Systems Development in Louisiana

The Maritime industry is in the early phase of autonomous ship design, construction, and at sea demonstration featuring Artificial Intelligence (AI) technology allowing onshore remote control, light crewed or uncrewed operations that represent a giant leap forward for the maritime industry. Moreover, the impact and the scale of this coming AI robotic fleet will spark the biggest transformation in the maritime industry since sail gave way to steam. This task group will review the United States Coast Guard regulations potentially impacting the deployment of partially or fully autonomous vessels on the nation's waterways. Further, it will identify possible new state legislation or executive action to improve the state's maritime leadership through industry and academic incentives. The group will also identify impediments to shipyard improvements and modernization towards autonomous vessels and work with port facilities to safely accept autonomous vessels at their piers and wharves. This work was assigned during the November 16 meeting and work continues to integrate and finalize these figures and data for the committee. This task group work satisfies the requirements for §2:2.1.E(1)(a)-(f).

Task Group 6 – No formal report for CY 2023.

LADAC Task Group – 7 – Electrification of Aircraft

Advances of new technology such as electric Vertical Take-off and Landing aircraft (eVTOLs), better batteries and motors, advanced communication systems, autonomous navigation, and advanced surveillance systems enable Advanced Air Mobility (AAM) aircraft to take flight. Louisiana's current aviation enterprise infrastructure is now challenged to meet this new demand signal from this community. The Electrical Infrastructure support for charging multiple eVTOLS (electric Vertical Take Off and Landing) on an airport's ramp will require a coherent Megawatt Charging system. The design of such a system needs to provide a rapid charging capability that will enable AAM/UAM (Urban Air Mobility) aircraft to complete 20-25 flights per day. The turn-around time requires that the eVTOL reaches an 80% charge state in 15 minutes and fully charged in 30 minutes. The current design state of AAM/UAM finds that there is no common or standard charging connectors within the more than 200 manufacturers worldwide. Also, there are no standards for the ground support systems at the current airports where AAM/UAM is taking place. The operational areas to take-off and land are designated as vertiports. Vertiports will require different standards than traditional helicopter or airplane facilities because eVTOL aircraft use different power sources than both traditional airplanes and helicopters and may have different performance characteristics. For their part, FAA officials said that while FAA has existing standards and guidance for helicopter landing facilities, eVTOL aircraft might have different design and performance characteristics. Another infrastructure issue is AAM/UAM aircraft will require specialized firefighting equipment for battery fires. Consequently, FAA is working on developing an advisory circular on vertiport design for publication in 2024. In the interim, in February 2022 FAA released a draft engineering brief on vertiport design that covers safety-critical vertiport elements such as landing area size and lighting. FAA plans to release the final version of this brief later this year.

Task Group 7 – Formal report submitted for CY 2023. Refer to Appendix B

Louisiana Advanced Aviation and Drone Advisory Committee

APPENDIX A



LADAC Task Group-5 Reporting For CY2023

Report to the Louisiana Drone Advisory Committee Work Product of Task Group-5 (TG-5)

TASK GROUP -5: Counter Unmanned Aircraft Systems (C-UAS)

TASK GROUP Leader: CDR. R. George Rey Sr.

TASK GROUP Members: Rep. Mark Wright, Scott Gammel, Joshua Alford, & Andy Brown

Tasking Summary:

- Examine/review Louisiana's Drone law and recommending needed reforms/revisions to ensure that state is protected from advancing drone technology.
- Identify possible new State Legislation or Executive Action to implement a state-wide strategy to ensure full C-UAS converge at all Critical Infrastructure sites in Louisiana.
- Review and recommend the establishment of a C-UAS Public, Private Partnership Center of Excellence in Louisiana that will work with Government, Private, and Academic stakeholders in developing a common operating picture statewide.

Scope of Task Group Work: Key Events

LAADAC TF-5 partnered with Protective Security Advisor, New Orleans, LA to apply for a study to Addressing the current UAS (uncrewed Aircraft Systems) threat to Louisiana's Critical Infrastructure due to clueless and carless UAS operators and moreover, nefarious Domestic Violent Extremists (DVE) CI facility protective gaps 03/05/2023

LAADAC TG-5: provided a C-UAS brief to Sen. McMath (Transportation Chair) 4/21/23

LAADAC TG-5: provided FAA's Office of C-UAS a briefing vis Zoom 07/12/23

LAADAC TG-5: provided Sect. of Treasury Mr. Schroder an in-person brief on C-UAS 07/12/23

LAADAC TG-5: provided the FAA's office of C-UAS and staff a zoom presentation on Louisiana's C-UAS program 07/12/23

LAADAC TG-5: provided the Bayou IntelliCon / GOHSEP Soft Target Workshop (CBRNE) on C-UAS 06/20/23

LAADAC TG-5: provided the NOPD (Office of the Superintendent) a presentation on Louisiana's C-UAS program 08/11/23

LAADAC TG-5: provided a Louisiana C-UAS presentation via zoom to Virginia Innovation Partnership Corp. (VIPC). VIPC provide TG-7 their C-UAS R&D development working through funding from CISA. Both parties agreed to develop an MOU to work together to demonstrate a two-state program demonstrating integration of C-UAS data to provide a Common-Operating-Picture (COP). 08/17/23

LAADAC TG-5: reached out to the C-UAS industry (Active Security Consulting, LLC) to review the current state-of-the-art technologies in operation and future challenges. 11/14/23

LAADAC TG-5: reached out to the C-UAS industry (AirSight, LLC) to review the current state-of-the-art technologies in operation and future challenges. 11/15/23

LAADAC TG-7 follow-up conference call with AirSight on discussion of collecting empirical data from multiple sights to help develop a COP for Louisiana and feed it to the State's Fusion Center. 11/30/23

LAADAC TG-5: provided a C-UAS presentation to the FBI's Weapons of mass Destruction C-UAS Tabletop Exercise-TTX (workshop) 12/06/23

LAADAC TG-5: provided a C-UAS presentation to INFRAGARD Louisiana end-of-year meeting. 12/21/23

Overview of work Product:

In CY 2023, our scope was to expand the current systems employed in Louisiana protecting our critical infrastructure, begin the process to review the development requirements that will integrate multiple stand-alone C-UAS into a common operating picture, and finally demonstrate pushing this COP to the GOSHEP Fusion Center.

The COP C-UAS architecture will interconnect local and regional deployed systems that will provide a real-time sUAS flight data feed into a COP Center for quick threat analysis and if required provide direction to law enforcement to apprehend the individual(s) or take mitigating action.

- Develop a baseline sUAS threat matrix to industry and government.
- Review and advise on the best of C-UAS class of systems based on field testing demonstrations.
- Develop C-UAS TTPs (Technology, Techniques. And Procedures)
- Develop Interoperability requirements for Counter-UAS systems.
- Integrate local and regional C-UAS into a State level COP at the Fusion Center.
- Develop real-time analytics/forensic TTPs.

a COP Center will provide a quick threat analysis and if required provide direction to law enforcement to apprehend the individual(s) or take mitigating action (when authorized by federal law).

TG-5 will focus is on the detection and surveillance capabilities around the Critical Infrastructure, but C-UAS capability could be extended to operate in other environments, such as high-density urban festival or sporting events areas. The topic of cooperative targets detection is not to be addressed, but interaction with information from cooperative sensors should be included in the overall system assessment. Interoperability of the defeat capabilities with the airport and ANSP (Air Navigation Service Providers) systems will be addressed.

Legislative Gap(s): Louisiana Revised Statutes Title 14:337 Revisions to add to the statue a confiscation clause:

Title 14 - Criminal Law

§14:337. Unlawful use of an unmanned aircraft system

On a conviction for a second or subsequent offense as provided in Paragraph (A)(1) of this Section, the offender shall be fined not less than five hundred dollars **not more than four thousand dollars**, or imprisoned, with or without hard labor, for not less than six months nor more than **two years, or both.**

(1) "Federal government" means the United States of America and any department, agency, or instrumentality thereof.

(2) "State government" means the state of Louisiana and any department, agency, or instrumentality thereof.

(3) "Targeted facility" means the following systems:

- (a) Petroleum and alumina refineries.
- (b) Chemical and rubber manufacturing facilities.
- (c) Nuclear power electric generation facilities.
- (d) School and school premises as defined by R.S. 14:40.6(B).
- (e) Critical infrastructure as defined by R.S. 14:61(B).
- (f) Grain elevators and grain storage facilities.

During this Legislative Session we are requesting that upon conviction the Unmanned Aircraft System (Drone) be permanently **confiscate from the felon.**

Provide funding to conduct a state-wide study to address the current UAS (uncrewed Aircraft Systems) threat to Louisiana's Critical Infrastructure due to clueless and carless UAS operators and moreover, nefarious Domestic Violent Extremists (DVE) CI facility protective gaps.

Funding is estimated between ~\$150k to \$200k

Recommendations:

Approve the funding for the statewide UAS threat gap analysis.

Submit a bill to Revised Louisiana Statutes Title 14:337 Revisions to add to the statute a confiscation clause:

Louisiana Advanced Aviation and Drone Advisory Committee
APPENDIX B



LADAC Task Group-7 Reporting For CY2023

Report to the Louisiana Drone Advisory Committee Work Product of Task Group-7 (TG-7)

TASK GROUP -7: Electrification of Aviation

TASK GROUP Leader: CDR. R. George Rey Sr.

TASK GROUP Members: Dr. Balaji Ramachandran, Mr. Robert Moore, Josh Alford

Tasking Summary:

- Identify the number of AAM/UAM eVTOL aircraft our service providers are contacting for and the timeline to bring them to a Louisiana airport
- Identify General Aviation airports best suited to operate L-UAS AAM/UAM eVTOLS
- Review the Current State Laws dealing with autonomous Aircraft
- Review current charging connectors standards for high powered vehicles
- Review current state fire standards for their applicability to support Vertiports

Scope of Task Group Work: Key Events

LATECH Meeting on adding electrical aircraft (eVTOL) to the curriculum covering flight simulation and Remote Split Operation (RSO). 01/10/2023

Task Group-7 (TG7): Terms of Reference for Electrification of Aviation Development in Louisiana Completed 4/21/23

Task Group-7 (TG7): provided FAA's Office of Airports (Ms Griffin & staff) an update on the electrification of aviation in Louisiana 05/21/23

LAADAC TG-7 provided FAA's NEXTGEN office (Paul Fontain & staff) on Louisiana's efforts to prepare for the electrification of aviation 05/21/23

Act No. 169 DAC name change to LAADAC; HB407 Signed by the Governor. Becomes Act No. 169 on 06/07/23

LAADAC TG-7 supported HUM airport's L-UAS air space study kickoff meeting with MITRE. Scope of study is to gain support for FAA first and then ICAO second for authorization beyond 12 nm from the coast of Louisiana out into the ICAO airspace of the Gulf of Mexico. This initial study was funded by HUM 08/23-24/23

LAADAC TG-7 provided Rep. Garret Graves and staff an update on the States preparations for the electrification of aviation in Louisiana 08/31/23

Beta Technologies completes first Louisiana GA airport eVTOL battery charging site survey review and report completed in September 2023

LAADAC TG-7 provided the FBI's Electrical Vehicle Defense Working Group Louisiana's efforts to prepare for the electrification of aviation and possible cyber threats 09/21/23

LAADAC TG-7 provided the White House Interagency Working Group (IWG) on Advanced Air Mobility (AAM) Louisiana's efforts to prepare for the electrification of aviation. 11/04/23

LAADAC TG-7 emailed a request to the Fire Marshall Office requesting a meeting to open a discussion of the electrification of aviation with a specific review of forth coming Vertiport and how fire codes will be applied to these facilities in Louisiana. Enclosed in the email was a White Paper providing background information for the terms of the meeting. 12/13/23

Overview of work Product:

2023 was the initial full working year to establish the Task Group – 7 covering the electrification of aviation in Louisiana under the terms of reference under the LAADAC.

This year TG-7 focus was to reach out to industry, airports, and academia and begin a discussion on the current development of aviation's electrification and more specifically its impact on Louisiana.

This work was able to identify the aviation communities rapid shift in procuring future eVTOL, sVTOL, and hybrid L-UAS for passenger and cargo future flight operations in Louisiana. The first airport in Louisiana preparing for these emerging technologies is Houma-Terrebonne Airport (HUM). HUM has the largest helicopter flight operations in the world. HUM two largest tenants (Bristow and PHI) have on order over 600 of these new electrical and hybrid aircraft on order.

This new industry demand signal is the impetus for a review of the electrical infrastructure at the HUM airport and the current capacity to support 30 or more electrical battery-operated aircraft

receiving a charge. The initial assessment was the sub-stations would not support that charging load. Moreover, the loss of a sub-station or the transmission lines would render these aircraft inoperable. Currently the beginnings of a study to develop a smart-island small power plant located on HUM property was started this year.

Based on the industry's demand signal of the initial bow-wave of new battery powered and hybrid aircraft that will operate from Louisiana TG-7 set up a number of briefing to FAA's Airport office, UAS office, ATO office, and the NextGen office throughout the year of 2023 to garner support in authorizing future flight operations.

Another step taken by TG-7 this past December was to reach out to our State Fire Marshall requesting a meeting to open a discussion current and possible future state fire codes that will cover the development of "Vertiports" in Louisiana. The current or future governance will have a significant impact on industry budling the necessary infrastructure to support the economic development of future aviation in Louisiana.

Act 328

TG-7 recommends funding a state-wide study to identify first tier, second tier, and third tier of cities and towns to setup Vertiports. Moreover, to identify recommended routing between urban vertiports withing a city or town and connecting regional routes.

Louisiana's invests now in transforming itself into a center for AAM and L-UAS technology adoption will reap first-mover benefits—top talent and wide-ranging investment opportunities—as well as significant benefits for its taxpayers including reduced congestion, increased technology industries and jobs, robust economic activity, and a larger tax base. Such a study in these emergent technologies for the safe, efficient, and equitable transportation of goods and people throughout the state is a strategic growth area for Louisiana's aerospace sector.

It is estimated that this study is in the cost range of between ~\$150k - \$200k

The significant growth of these new platforms will place a large labor demand on Vertiport flight certification on DOTD's Office of Multimodal Commerce's Aviation Division. To ensure there is no negative impacts to authorizing the many future application by industry We recommend that DOTD OMC Aviation Division receive authorization from the Executive Branch an increase of three Full Time Equivalent (FTE) position. This will ensure the State is not impacting this new and vibrate economic growth sector.

Legislative Gap(s): After reviewing applicate laws and statues what recommendations would the TG make to ensure Louisiana meets and improves the economic viability in the growth of Uncrewed Systems

The current makeup of the LAADAC created by Act No. 328 enacted on 08/01/21 provide for 15 entities appointed by both the Executive and legislative offices. After two years, they were a number of inquiries both from academia and industry that the selected organization did not

provide a full inclusiveness on this LAADAC Committee. We recommend adding a minimum of five additional seats that include, LATECH, LA Dept. of Environmental Quality (DEQ)

Recommendations:

Approve the funding for the statewide Electrification of Aviation infrastructure, ID future Vertiport locations and connecting air routes.

Approve the addition of 3 FTE to the staff of LADOTD Aviation Division

Louisiana Advanced Aviation and Drone Advisory Committee 2023 Industry Information

Mr. Rey provided the additional following information on national efforts, developments, and actions taking place in the aviation and unmanned industries.

Stop exporting critical US tech to drone maker DJI, lawmakers urge Biden

[Ishveena Singh](#) | Dec 19 2023



In the latest episode of US government vs. drone maker DJI, lawmakers are demanding oversight into the Department of Defense's role in allowing American companies to export critical components to DJI. In the middle of the controversy is Maryland-based Ceva whose technology is powering some of the most popular DJI drones including the Mavic 3, Mini 3 Pro, Air 2S, and DJI FPV aircraft.

In a [letter](#) addressed to Secretary of Defense Lloyd Austin, a group of 15 Republican lawmakers have urged the Biden administration to block export licenses for US components to the Chinese company giant because "American technology should not be advancing DJI drones."

The letter says that there are several "credible industry reports" that provide evidence of US components being found inside DJI drones, suggesting that the US government is granting export licenses for the same. Ceva, for instance, openly touts that its AI vision [technology is powering DJI drones](#). And the problem, according to the lawmakers, is that DJI drones put US national security at risk.

"From facilitating terrorist attacks in the Middle East to intelligence threats to the American homeland, drones made by the Chinese-owned company DJI pose an unacceptable risk to our national security," says Mike Gallagher, who chairs the House Select Committee on China. "Despite these clear threats, which landed DJI drones on [multiple government blacklists](#), DJI has leveraged bureaucratic get-out-of-jail-free cards to rip off American technology while undermining our national security. This needs to stop."

DJI, meanwhile, claims that the letter "traffics in distortions and misrepresentations of fact."

The company tells [Reuters](#), “We strongly deny any allegations against DJI regarding human rights. Our drones have proven to be among the most innovative, cost-effective, and easy to use – while leading on data security.”

It’s worth mentioning that the American Security Drone Act of 2023, which is currently awaiting President Joe Biden’s signature as part of National Defense Authorization Act (NDAA), [prohibits](#) government agencies from using drones that are manufactured or assembled in China.

US anti-DJI and -Autel drone blacklist poised to become law, clearing the way for nation-wide user bans already in the works

[Bruce Crumley](#) | Dec 15 2023

Efforts to undermine the fortunes of the world’s leading [drone maker DJI](#) are about to bare a bumper crop fruit with legislative passage of a key defense bill that contains the National Security Drone Act of 2023, which blacklists aerial tech from China-based companies for use in official federal agency work. The wider package now awaits President Joe Biden’s signature. DroneDJ readers will be forgiven for feeling like [they’ve read this story](#) before.

The push to impose official bans on Chinese UAVs has been underway since attaining its [first achievement](#) in late 2020 with their inclusion on the Department of Commerce’s Entity List. Since then, drives using wider nets against tech accused of leaking data back to Beijing have been launched with the more specific goal of scooping powerhouse DJI’s gear out of action. Those have succeeded – though only to a degree, thus far – in having the company’s products added to certain influential federal agency blacklists. The initiatives have also inspired similar [proscriptive laws in several states](#) controlled by like-minded political actors.

Now that campaign is on the cusp of securing another anti-DJI victory with Thursday’s final legislative clearance of the \$886.3 billion National Defense Authorization Act for fiscal year 2024. Awaiting Biden’s signature, that soon-to-be-law contains the [American Security Drone Act of 2023](#) (ASDA), prohibiting agencies from using “the procurement or use by the federal government of unmanned aircraft systems (UAS) that are manufactured or assembled by certain foreign entities, including entities subject to influence or control by China.”

That, within the context of awful US-China relations, is [legislative blacklist longhand](#) for DJI, and even more recently, Autel drones. It’s also an echo of earlier [accusations of data leaking](#) and collaboration with Beijing’s human rights’ suppression without presenting any objective evidence to back up the claims. Both companies have vigorously denied all allegations Washington politicians have leveled against them.

Given the increasingly scarce cases of bipartisan agreement needed to pass bills – and the urgency of advancing work on defense-related matters in particular – it’s more than likely Biden will sign the text (even if he suspects a new DJI Mini 4 Pro will be under his Christmas tree in two weeks). Meaning, it’s a [safe bet the blacklist](#) within it will be officially extended to all federal agencies very soon.

As dire as that would be [in broadening the exclusion](#) of its drones in official work, the development portends even bigger potential threats for DJI and its ally-amid-adversity rival Autel. Especially with the bill's political backers and US UAV industry supporters already [looking to attain near total bans](#) on the craft in the country (that means you, too, leisure and enterprise customers).

Indeed, the [Countering CCP Drones Act](#) introduced in March not only seeks the same kind of soon-redundant blacklisting of craft from DJI and other China-based companies as the looming law on Biden's desk. It would also prevent anyone from flying them, de facto, through its proposed ban on those craft from using Federal Communications Commission (FCC) infrastructure during operation.

Given the virtually inescapable reliance of UAVs on ubiquitous public FCC networks, being cut off from those is synonymous (shorthand, this time) with a total, permanent grounding in US airspace. The bill, in other words, aims to turn every DJI, Autel, and other "suspected" China-produced drone into a pinwheel paper weight.

While that proposed text is clearly more radical in its objective, its authors will be reinvigorated by the National Security Drone Act of 2023 making it into law – and after multiple introductions when first ignored – within the broader defense package.

Overair looks to bring eVTOL operations to Texas, working with City of Arlington and DFW Airport

[Scooter Doll](#) | Nov 16 2023



Less than a month after announcing three separate partnerships to establish electric Vertical Takeoff and Landing (eVTOL) operations in South Korea, zero-emission aviation developer [Overair](#) is turning its sights back on its native US. Today, Overair has shared news of two separate memorandums to research, develop, and implement eVTOL operations in North Texas.

Overair is an advanced air mobility (AAM) specialist based in Santa Ana, California, that was spun out of Karem Aircraft back in 2020. Since then, its team has combined decades of aerospace

experience into the development Overair's flagship eVTOL, called the Butterfly, which [originally debuted in 2021](#).

The Butterfly's [current design iteration](#) can transport up to five passengers plus one pilot, or 1,100 pounds of cargo. The eVTOL prototype can reach a top speed of 200 mph and travel approximately 100 miles on a single charge.

In June of 2022, Overair [announced \\$145 million in funding](#) to help get its Butterfly eVTOL into the prototyping stage ahead of actual test flights. While we still await those milestones, Overair's focus has been on expansion to new markets outside the US.

In Late October, it inked a letter of intent for the sale of [up to 20 Butterfly eVTOLs](#), as well as two memoranda of understanding (MOU) with key partners in South Korea to accelerate the nation's AAM goals.

Today, Overair announced two additional memoranda of understanding – this time with organizations in Texas, to help bring commercial EV operations to the northern region of the Lone Star State.



Rendering of the Butterfly eVTOL / Credit: Overair

Overair establishes new strategic collaborations in Texas

This morning, Overair shared two separate press releases – both outlining new collaborations to establish eVTOL operations, and both including popular areas in Northern Texas.

The first bit of news pertains to a fresh MOU signed by the Dallas Fort Worth International Airport, who has enlisted Overair's expertise to jointly explore future vertiport development and eVTOL operations within the DFW Metroplex. To begin, the parties will [complete a feasibility assessment](#) for the integration of passenger eVTOL travel across the North Texas region.

That assessment will be supported by a cross-functional research group that will explore the policies and infrastructure necessary to successfully implement an integrated eVTOL program at DFW Airport in the future.

Overair CCO Valerie Manning spoke to the company's latest MOU:

Today's agreement is a major step toward bringing Advanced Air Mobility to one of the world's largest and fastest growing metropolitan areas. We look forward to working closely with DFW to ensure the more than 8 million people living throughout this region, along with the millions of visitors per year, will have easy access to safe, fast, affordable, and eco-friendly travel options.

Not to be outdone, Overair simultaneously announced a second memorandum of understanding signed with the City of Arlington – the first-ever direct partnership between a city in Texas and an eVTOL OEM. Similar to the agreement with DFW Airport, Overair and Arlington will research, develop, and launch eVTOL operations in the city, beginning at the Arlington Municipal Airport.

Arlington is currently home to four professional sports franchises, including the Dallas Cowboys and Texas Rangers, in addition to countless restaurants, shopping centers, and a Six Flags amusement park. Through its collaboration with Overair, the City of Arlington hopes to one day use passenger eVTOL travel to connect citizens to these entertainment venues. Manning once again spoke to that prospect:

Today's announcement is a major step toward positioning Arlington as one of the first cities in the world to integrate fully electric AAM capabilities into its transportation ecosystem. Electric advanced air mobility is an example of transportation evolving with the needs of a growing society. We are incredibly excited to help drive this transportation evolution in North Central Texas and to expand our presence in this region, known for its talent and technology.

As part of its specific agreement with the Arlington municipality, Overair shared it will establish a new base of operations in North Central Texas, in addition to its current headquarters in California. The new footprint is expected to bring new jobs to the region, especially if and when commercial eVTOL operations come to fruition. Per Arlington Mayor Jim Ross:

This partnership with Overair not only advances the City of Arlington as a leader in implementing innovative transportation solutions, it also provides high-tech and engineering jobs to our residents and the community at large; ultimately creating a new mobility ecosystem that will provide socio-economic progress for decades to come. We are excited to work with Overair to shape the future of transportation for our city and the DFW region.

As of late October, Overair was honing in on assembly of its Butterfly eVTOL prototype. The company reports it has already assembled the Butterfly's fuselage, wings, and other components and plans to begin a flight-testing program in 2024. It aims to launch commercial operations ahead of the 2028 Summer Olympics in Los Angeles.

Officials meet to support the future of advanced air mobility

By Virginia Innovation Partnership Corporation | November 27, 2023



PHOTO: Virginia Innovation Partnership Corporation

Representatives from aviation and aerospace organizations in eight states have launched the “Advanced Air Mobility ([AAM](#)) Multistate Collaborative” to exchange views and methods to enable public infrastructure and services supporting the new generation of aircraft based on emerging technologies that are providing high levels of safety, efficiency and environmental sustainability. The group recently held its inaugural meeting in Herndon, Virginia, and was organized by the Virginia Department of Aviation, the [Virginia Innovation Partnership Corporation](#) (VIPIC) and JobsOhio, to discuss the state-level policies and infrastructure needed to support AAM operations across the country.

“The AAM Multistate Collaborative recognizes that AAM represents all modes of aviation, from Small Uncrewed Aircraft Systems (sUAS) to Electric Vertical Takeoff and Landing (eVTOL) vehicles and includes serving traditional aviation and airports. The collaborative will be a forum for states to share thoughts on aviation and aerospace, commerce and trade, economic development, technology, and other relevant perspectives and strategies for AAM,” said Greg Campbell, director of the Virginia Department of Aviation ([DOAV](#)). “While the Federal Aviation Administration (FAA) regulates AAM operations in the national airspace, state governments can support AAM by shaping the state and local laws and regulations, infrastructure and funding that complement the FAA policy and advance the AAM industry.”

The collaborative plans to identify and harmonize the governance and regulatory mechanisms that are within each state's jurisdiction as a focal point to ensure continuity of operations. The group's members will consider the needs of these new, flexible aviation services and how states can facilitate infrastructure development. They will also study the development of guidance for the aspects of AAM managed on the ground at the state and local level that allows state authorities to connect to and complement the FAA's airspace jurisdiction with a consistent regulatory framework.

"States will assume a critical role in providing seamless AAM operations and spurring economic development, especially in communities that were previously unserved by legacy commercial aviation," said Tim Sweeney, Director of Advanced Manufacturing, Aerospace and Aviation at JobsOhio. "Although manufacturers are continuing to develop and test their designs for FAA certification, it is necessary for states to begin preparing for AAM to support the industry when it is ready to fly."

The group intends to build on the success of this Initial meeting by expanding its membership with representatives from additional states and serve as an information resource for states on the methodologies and technologies to develop a nationwide AAM ecosystem. They will also seek input from vehicle manufacturers and other industry participants to inform further analyses and establish goals to enable consistent and effective policy.

"We will engage with the FAA and industry to ensure that states create harmonized laws and regulations and shared infrastructure goals that complement established policies and standards and align with commercial needs," said Tracy Tynan, the director of the Virginia Unmanned Systems Center at VIPC. "

Our goal is to support the growth of the industry and help with the safe evolution of AAM from the laboratory to the skies."The founding members of the collaborative represent organizations responsible for the development of AAM in Alaska, Ohio, Oklahoma, Oregon, Pennsylvania, Texas, Utah and Virginia, as well as the National Association of State Aviation Officials (NASAO). The next meeting of the collaborative is planned for Ohio in February 2024.

WHITE PAPER

A New Era in Aviation Fire Protection in Louisiana

“Meeting the Safety Demands of The Emergent Advanced Air Mobility (AAM) and Urban Air Mobility (UAM) Battery Powered aircraft”

Purpose: Ensure Firefighting personnel are trained and equipped to manage the specialized needs associated with large high voltage AAM & UAM batteries and electric propulsion aircraft that could also produce toxic gas emissions, or high voltage electrical arcing. Moreover, to work with Louisiana’s Office of the Fire Marshall as the Authority having jurisdiction on setting state fire standards.

Background: Louisiana is in the early planning stages for the development of vertiports that will require significant levels of electrical power to provide the AAM/UAM aircraft a quick charge with the eventual goal of 80% charge in 20 minutes. Clearly, this introduces the potential for fires at ground level, in hangars, and future proposed parking garages and building rooftops.

We have seen other State fire services experienced the proliferation of electric vehicles (EV) in recent years. When batteries are damaged, such as in a crash or through an internal battery cell defect, energy can remain trapped in the battery. This stranded energy can trigger thermal runaway fires continuously overheats and over-pressurizes leading to, arc-flashing, off-gassing, and sometimes explosions.

Currently, the only way the fire service is able to get a reaction like that under control is to put copious amounts of water on it. In April, when a Tesla Model S crashed and caught fire in Texas, firefighters had to use about 32,000 gallons of water before the blaze was finally extinguished. Most car fires involving traditional fuel vehicles require a few hundred gallons of water to put out.

The Tesla Model S battery pack is rated at 100 volts DC, the first AAM aircraft that will soon operate out of the Houma-Terrebonne Airport (HUM) is rated at 800 Volts DC.

How much water will it take to extinguish an AAM aircraft battery fire?

Discussion: The HUM’s staff is now working with Beta Technologies to plan the construction of first AAM/UAM battery charging station in Louisiana. The design phase will be completed in the October 2023 timeframe.

The NFPA-418, Standard for Heliports specifically states in Section 4.2.2 that “the design of the heliport, including all the aeronautical components, shall be in accordance with FAA AC 150/5390-2C, Heliport Design Advisory Circular (an update NFPA-418 covering electrical battery powered aircraft is due in late 2024 or early 2025).

The updated NFPA-418 draft includes new language that addresses charging systems, battery storage, electrical storage systems (ESS), hydrogen storage and dispensing, and numerous other items. It too has been carefully harmonized with the ASTM and FAA standards. Access to this draft standard can be found on the NFPA website at www.nfpa.org.

Currently, there are no mandatory design standards, fire codes, building codes or best practices that speak to AAM/UAM vertiport infrastructure on the ground or parking garage and building rooftops. Thus, what will be required for operations to be considered "Safe" by an objective standard.

The HUM staff is in the process of working with their major tenants to prepare its infrastructure for the building of two Vertiports on the flight operations aviation area. The first Fully Electrical AAM with large batteries and electrical motors will arrive by mid-to-late 2024 to begin demonstration flight testing. Also, currently under design and testing are aircraft with hydrogen fuel cells, and highly automated Large-Uncrewed Aircraft Systems (L-UAS). The risk mitigation strategy to address this complex air space is to build an ARFF fire station.

Next Steps: The Louisiana Advanced Aviation and Drone Advisory Committee (LAADAC) is tasked, by the Governor, to identify areas that might negatively impact this emergent technology from integrating quickly into the State's aviation sector or hamper this new economic development engine that will significantly increase cutting edge jobs for our State.

The LAADAC is requesting a meeting with Fire Marshall Daniel Wallis and his staff to open a discuss on how best to prepare Louisiana for the coming development of Vertiports and the development of fire standards. What would be the best time for this initial meeting?

Sincerely,

Original Signed By

R. George Rey Sr.
Vice Chairman
LAADAC

Cc: Mr. Brad Brandt, Chairman
Mr. Scott Gammel FAA Liaison
Ms. Andrea Dupre, Secretary
Sgt. Jason Kemp. Member



U.S. Department
of Transportation
Office of the Secretary
of Transportation

GENERAL COUNSEL

1200 New Jersey Avenue, S.E.
Washington, D.C. 20590

July 14, 2023

RE: Updated Fact Sheet (2023) on State and Local Regulation of Unmanned Aircraft Systems (UAS)

Dear Colleague:

We write to share the updated Fact Sheet (2023) issued by the Federal Aviation Administration (“FAA”), Office of the Chief Counsel, and the United States Department of Transportation, Office of the General Counsel, discussing legal considerations applicable to state and local regulation of Unmanned Aircraft Systems (“UAS”) (also commonly referred to as “drones”). Like its 2015 predecessor, the Fact Sheet is a guide for state and local governments as they respond to the increased use of UAS in the national airspace.

The updated Fact Sheet summarizes well-established legal principles regarding federal authority for regulating the efficiency of the airspace, including the operation or flight of aircraft, which includes, as a matter of law, UAS. It reviews the federal responsibility for ensuring the safety of flight, as well as the safety of people and property on the ground as a result of the operation of aircraft. The updated Fact Sheet also sets forth the basic preemption framework applicable to UAS:

- States and local governments may not regulate in the fields of aviation safety or airspace efficiency but generally may regulate outside those fields.
- A state or local law will be preempted if it conflicts with FAA regulations.
- State or local laws affecting commercial UAS operators are more likely to be preempted.

As substantial air safety issues are implicated when state or local governments attempt to regulate the operation of aircraft in the national airspace, but legitimate state and local interests in health and safety exist in other contexts, the updated Fact Sheet provides examples of laws addressing UAS that would be subject to federal preemption and others that would likely pass muster.

The updated Fact Sheet concludes with a discussion of Enforcement Matters and Contact Information for Questions. The FAA Office of the Chief Counsel’s Aviation Litigation Division is available to answer questions about the principles set forth in this fact sheet and to discuss with you the intersection of Federal, state, and local regulation of aviation, generally, and UAS

operations, specifically. A special email address has been set up to receive any questions you may have: 9-AGC300-Preemptionquestions@faa.gov.

A copy of the updated Fact Sheet is attached to this letter. The document is also available at: <https://www.faa.gov/uas/state-and-local-regulation-unmanned-aircraft-systems>. Thank you in advance for your consideration.

Sincerely,



John E. Putnam
General Counsel



Marc A. Nichols
Chief Counsel, FAA

Enclosure



State and Local Regulation of Unmanned Aircraft Systems (UAS) Fact Sheet

Federal Aviation Administration
Office of the Chief Counsel

United States Department of Transportation
Office of the General Counsel

July 14, 2023

SUMMARY

The general balance between Federal and state authority in the context of aviation regulation is well established. The Federal Aviation Administration (“FAA”) has the exclusive authority to regulate aviation safety and the efficient use of the airspace by aircraft. Attempts by state and local governments to regulate in those fields are preempted.¹ Outside those fields, the States are generally free to regulate—even by enacting laws that are aimed at or affect aviation—as long as their laws do not conflict with FAA regulations or relate to the prices, routes, or services of commercial air carriers.

Despite important differences between manned aircraft and unmanned aircraft systems (“UAS”), the basic preemption framework described above is fully applicable to UAS. That means:

- *States and local governments may not regulate in the fields of aviation safety or airspace efficiency but generally may regulate outside those fields.* A state or local law is preempted if it is aimed at aviation safety or the efficient use of the airspace. But a law seeking to advance other objectives is generally not covered by field preemption unless it impairs the reasonable use by UAS of the airspace.

¹ Federal preemption refers to the power of Congress, derived from the Supremacy Clause of the United States Constitution, to promulgate laws that are the supreme law of the land. Under Supreme Court precedent, Federal law can preempt state law in two ways: Federal law can either *expressly preempt* state law when a Federal statute or regulation contains explicit preemptive language, or it can *impliedly preempt* state law (through *field* or *conflict* preemption) when its structure and purpose implicitly reflect Congress’ preemptive intent.

- *A state or local law will be preempted if it conflicts with FAA regulations.* A law is preempted if it makes it impossible to comply with FAA regulations or frustrates the purposes and objectives of such regulations.
- *State or local laws affecting commercial UAS operators are more likely to be preempted than laws affecting non-commercial UAS operators.* The Airline Deregulation Act preempts any state or local law that directly references the prices, routes, or services of a UAS operator with economic authority to provide interstate transportation, or that has a significant impact on such prices, routes, or services. Thus, even laws that would be permissible in the context of recreational UAS users may be preempted as applied to commercial UAS operators.

BACKGROUND

This document, which updates and replaces the FAA's *State and Local Regulation of Unmanned Aircraft Systems (UAS) Fact Sheet* (Dec. 17, 2015), is intended to provide essential information about the Federal regulatory framework for use by States and localities when considering enacting laws affecting UAS.² State and local restrictions affecting UAS operations should be consistent with the extensive Federal statutory and regulatory framework pertaining to control of the airspace, air traffic control, aviation safety, navigational facilities, and the regulation of aircraft noise at its source.

Successive FAA reauthorization acts have each emphasized the Congressionally-mandated priority that the FAA integrate UAS into the national airspace.

State and local jurisdictions continue to explore the regulation of UAS. Since 2013, at least 44 States have enacted laws relating to UAS, addressing issues such as privacy, delivery of prison contraband, firefighting, law enforcement use of UAS, and UAS registration. However, some jurisdictions have enacted or are considering laws that raise preemption issues, such as regulation of UAS operations (prohibiting UAS operations over the jurisdiction; addressing flight altitude, safety, and/or maintaining visual line of sight), a law providing for UAS interdiction/neutralization, and a law that would have created trespass liability for anyone operating UAS less than 350 feet above real property without the express permission of the property owner.

Since 2015, the FAA's Office of the Chief Counsel has fielded many questions from state officials and legislators, local jurisdictions (mayors, county executives, police departments, correctional facilities, etc.), industry associations, and private individuals concerning the regulation of UAS.

² While this document only addresses UAS, it is based on principles that apply to airspace and aviation more generally. Accordingly, many of the principles in this fact sheet are likely to ultimately apply to Advanced Air Mobility (AAM) operations and other emerging aviation activities. The FAA and DOT intend to develop a similar fact sheet for AAM operations.

THE FEDERAL FRAMEWORK IN AVIATION

Congress has vested the FAA with the authority to regulate the areas of airspace use, management, and efficiency; air traffic control; safety; navigational facilities; and aircraft noise at its source. Congress directed the FAA to prescribe air traffic regulations (including safe altitudes), and rules for protecting individuals and property on the ground, using the navigable airspace efficiently, and preventing collision between aircraft and other aircraft including airborne objects. A citizen of the United States has a statutory public right of transit through the navigable airspace. To ensure the maintenance of a safe and sound air transportation system, the FAA has exclusive regulatory authority over matters pertaining to aviation safety and the efficient use of the airspace.

In 2012, Congress provided the FAA with a statutory mandate to develop a comprehensive plan to safely accelerate the integration of UAS into the national airspace. In subsequent legislation, Congress directed the FAA to develop a means for remote identification of UAS and mitigation of threats posed by errant or hostile UAS, to continue development with the National Aeronautics and Space Administration (“NASA”) of a UAS traffic management system, and to address other UAS-related matters.³

In response to Congress’ direction, the FAA has promulgated several UAS-related rules and is developing additional rulemakings.⁴ Congress created a statutory *Exception for Limited Recreational Operations of Unmanned Aircraft* to allow those flying UAS purely for personal enjoyment to operate without having to comply with 14 CFR part 107. People flying under this statutory exception are required to comply with all rules for recreational flyers.

Presented below are general principles of Federal law as they relate to aviation safety and the efficiency of the airspace, and examples of state and local laws that would most likely raise preemption issues, and those that would most likely not.⁵ The FAA’s Office of the Chief Counsel is available to discuss specific questions.

³ See, e.g., 49 U.S.C. § 46320 (prohibiting interference with wildfire suppression, law enforcement, or emergency response efforts by operation of unmanned aircraft); FAA Reauthorization Act of 2018, Pub. L. 115-254, § 363, 132 Stat. 3186, 3308 (prohibiting a person from operating a UAS that is equipped or armed with a dangerous weapon).

⁴ See 14 C.F.R. part 107 (*Small Unmanned Aircraft Systems*); 14 C.F.R. part 89 (*Remote Identification of Unmanned Aircraft*), see also 87 Fed. Reg. 55,685 (Sept. 12, 2022), *Notification of Enforcement Policy Regarding Production Requirements for Standard Remote Identification Unmanned Aircraft*; 14 C.F.R. part 48 (*Registration and Marking Requirements for Small Unmanned Aircraft*); and 14 C.F.R. § 107.39 and subpart D (*Operations Over Human Beings*), and 86 Fed. Reg. 4,314 (Jan. 15, 2021), *Final Rule, Operation of Small Unmanned Aircraft Systems Over People*.

⁵ Congress has exclusively authorized the Departments of Defense, Energy, Justice, and Homeland Security to engage in limited UAS detection and mitigation activities to counter UAS presenting a credible threat to covered facilities or assets. Because no other entities have been granted that authority, it is important that state, local, tribal and territorial (SLTT) and private sector entities without such statutory authority (including SLTT law enforcement organizations, SLTT governments, and owners and operators

FIELD PREEMPTION – BASIC PRINCIPLES

- Federal statutes give the FAA comprehensive and exclusive authority to regulate aviation safety and the efficient use of the airspace, and the FAA has issued a complex set of regulations in these areas. States may not regulate in those fields.
- State and local governments may not adopt FAA regulatory requirements and then enforce them as state or local regulations. The courts have held that where Congress occupies an entire field, even complementary state regulation is impermissible. Field preemption reflects a congressional decision to foreclose any state regulation in the area, even if it is parallel to Federal standards.
- The FAA has exclusive authority to regulate aviation safety and airspace efficiency with respect to UAS operations at any altitude. Field preemption does not depend on the altitude of the operations affected by a state law.
- The FAA has exclusive authority to regulate airspace efficiency for UAS at low altitudes as it does for manned aircraft at higher altitudes. The FAA has not set minimum altitudes for UAS and in fact, requires UAS to operate only at low altitudes (generally not to exceed 400 feet above ground level).
- The FAA has exclusive jurisdiction over certain regulatory fields, not over certain airspace. Thus, while the “navigable airspace” extends to the ground, that does not mean that States are powerless to regulate UAS operations if they are not acting to regulate aviation safety or airspace efficiency. It is well established in the context of manned aircraft that Federal law does not preempt altogether any state regulation purporting to reach into the navigable airspace; the same is true with respect to UAS.

CONFLICT PREEMPTION – BASIC PRINCIPLES

- State laws are subject to conflict preemption when compliance with both Federal and state regulations is impossible, or when the state law stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress.
- Even if a state law regulates outside the fields of aviation safety and airspace efficiency and is therefore not covered by field preemption, it may still be preempted if it conflicts with one or more FAA regulations.
- Note that field preemption analysis and conflict preemption analysis may often lead to the same result. For example, a ban on UAS operations above an entire city or over a broad swath of facilities would very likely be preempted not only as an intrusion into the field of airspace efficiency (*i.e.*, field preemption), but also as an obstacle to the FAA’s exercise of its airspace authority (*i.e.*, conflict preemption).

of critical infrastructure, stadiums, outdoor entertainment venues, airports, and other key sites) understand that federal laws may prevent, limit, or penalize the sale, possession, or use of UAS detection and mitigation capabilities. See https://www.faa.gov/uas/resources/c_uas.

EXPRESS PREEMPTION UNDER THE AIRLINE DEREGULATION ACT OF 1978 – BASIC PRINCIPLES CONCERNING AIR CARRIERS

- State laws are subject to express preemption under the Airline Deregulation Act of 1978 (“ADA”) if they “relate to” the prices, routes, and services of an air carrier that has been given economic authority by the Department of Transportation (“DOT”) to provide interstate or foreign air transportation.
- A state law is “related to” air carrier prices, routes, and services—and therefore preempted—when it directly references such prices, routes, or services or has a “significant impact” on such prices, routes, or services.
- State laws may be preempted as applied to certain commercial UAS operators even if they would not be preempted as applied to other UAS operators.

EXAMPLES OF STATE AND LOCAL LAWS ADDRESSING UAS THAT WOULD BE SUBJECT TO FEDERAL PREEMPTION⁶

- State laws aimed at regulating aviation safety or airspace efficiency. For example, laws:
 - Regulating UAS operations or restricting flight altitude or flight paths in order to protect the safety of individuals and property on the ground or aircraft passengers, or in order to ensure the efficient use of the airspace by UAS and/or other aircraft;
 - Implementing UAS traffic control systems;
 - Designating “highways” or “routes” for UAS;
 - Selling or leasing UAS-related air rights above roadways;
 - Regulating UAS markings;
 - Establishing a licensing scheme for UAS pilots;
 - Requiring air safety education or training;
 - Imposing requirements for the safe manufacturing of UAS; or
 - Mandating safety-related equipment such as geo-fencing. Courts have found that state regulation pertaining to mandatory training and equipment requirements related to aviation safety is not consistent with the Federal regulatory framework.
- Certain state or local laws aimed at other objectives that impair the reasonable use by UAS of the airspace.
 - If a law seeks to advance non-safety or efficiency objectives but affects where UAS may operate in the air, the question of whether the law is preempted will depend primarily on whether the law negatively impacts safety and on how much of an impact the law has on the ability of UAS to use or traverse the airspace.

⁶ The 2015 Fact Sheet listed examples of laws “for which consultation with the FAA is recommended.” Some have interpreted this language as suggesting that the FAA did not believe that state and local UAS laws were subject to field preemption. That is not the case: as noted above, state and local governments are barred from regulating in the fields of aviation safety and airspace efficiency. The FAA remains open to consulting with state and local governments that are trying to determine whether particular laws fall within the preempted fields, but any such consultations will not modify the scope of preemption and do not contemplate “co-regulation” of UAS safety or airspace matters with the States.

- For example, a privacy-related ban on UAS operations over an entire city would very likely be preempted because it would completely prohibit UAS from using or traversing the airspace above the city and impede the FAA’s and Congress’s ability to safely and effectively integrate UAS into the national airspace.⁷ In contrast, a privacy-related restriction applied to the lower altitudes over facilities where people could likely have an expectation of privacy—such as parks or schools—would more likely be permissible because of its lesser impact. Similarly, tailored security-related restrictions over open-air water treatment facilities or certain types of critical infrastructure would more likely be permissible where the restrictions were limited to the lower altitudes and still permitted UAS overflight (e.g., by commercial package delivery UAS) at higher altitudes.⁸

EXAMPLES OF STATE AND LOCAL LAWS ADDRESSING UAS THAT WOULD LIKELY NOT BE SUBJECT TO FIELD OR CONFLICT PREEMPTION⁹

- Laws aimed at objectives other than aviation safety or airspace efficiency that do not impair the reasonable use by UAS of the airspace.
 - Such laws could include those concerning land use or zoning; harassment of individuals or groups; privacy; voyeurism; trespass on property; the exercise of other police powers; reckless endangerment; emergency medical services; search and rescue; law enforcement use of facial recognition; delivery of prison contraband; wildfire suppression;¹⁰ criminal mischief; transfer or delivery of controlled substances; taking photographs or videos with respect to particular facilities (e.g., water treatment facilities; prisons; oil refineries; chemical facilities; railroad facilities; amusement parks; energy production, transmission, and distribution facilities; and any system or asset described by title 42 of the United States Code, § 5195c(e)); requirements for police to obtain a warrant prior to using a UAS for surveillance; protection of wildlife; using UAS for hunting or fishing, or to interfere with or harass an individual who is hunting or fishing; and law enforcement operations.

⁷ See, e.g., *Singer v. City of Newton*, 284 F. Supp. 3d 125, 131-132 (D. Mass. 2017) (holding that the city’s prohibition of UAS operations below 400 feet (1) over any private property without the express permission of the property owner, and (2) over public property without prior permission from the city worked in tandem to “create an essential ban on drone use within the limits of Newton ... thwart[ing] not only the FAA’s objectives, but also those of Congress for the FAA to integrate drones into the national airspace.”).

⁸ Under 14 C.F.R. § 107.51, *Operating limitations for small unmanned aircraft*, the altitude of UAS cannot be higher than 400 feet above ground level, unless the UAS is (1) flown within a 400-foot radius of a structure; and (2) does not fly higher than 400 feet above the structure’s immediate uppermost limit.

⁹ As noted above, the ADA may preempt certain state or local laws as applied to air carriers—i.e., commercial UAS operators with economic authorization to provide interstate transportation—even if they would not be preempted with respect to other UAS users.

¹⁰ States and localities are encouraged to coordinate with their Law Enforcement Assistance Program (“LEAP”) agent.

- Such laws are not covered by field preemption even if they have some effect on where UAS may operate in the air, as long as they do not impair the reasonable use by UAS of the airspace.
- Many of these state and local concerns are already addressed by laws that regulate ground-based conduct not involving UAS, and such laws often can be applied to UAS. Restrictions on *how* UAS are utilized (*i.e.*, conduct) instead of *where* they may operate in the airspace would more likely be consistent with Federal preemption principles.
- Laws regulating the location of UAS takeoff and landing areas. It is well established that States have a valid interest in choosing where aircraft may operate on the ground. Laws designating takeoff and landing locations have no direct effect on where UAS may operate in the air.
- Laws that prohibit, restrict, or sanction operations by UAS in the immediate reaches of property to the extent that such operations substantially interfere with the property owner's actual use and enjoyment of the property.
- State and local policies concerning where a UAS operator can be located while conducting operations.
- UAS registration requirements that are ministerial and do not directly or indirectly regulate aviation safety or the efficient use of the airspace.

ENFORCEMENT MATTERS

- Federal aviation statutes authorize the FAA to initiate legal enforcement action, including certificate actions and imposing civil penalties, for violations of FAA statutory or regulatory requirements. Federal aviation statutes do not authorize the FAA to delegate its formal enforcement functions to state or local governments.
- The FAA has continuously conducted outreach efforts with Federal, state, and local law enforcement on UAS operations. Additionally, the FAA has the Law Enforcement Assistance Program (“LEAP”), which provides, as appropriate, aviation-related support and education to law enforcement agencies.
- The FAA realizes that public safety agencies, such as law enforcement, are well-positioned to deter, detect, and investigate unauthorized or unsafe UAS operations. These also have an important role in protecting the public from unsafe and unauthorized UAS operations.
https://www.faa.gov/uas/public_safety_gov
- Unauthorized operations can cause potential hazards to people and property both in the air and on the ground. The FAA's *Drone Response Playbook for Public Safety* (Sept. 2020) is a resource for public safety officials who conduct investigations into drone operations. The *Playbook* can help determine the difference between authorized and unauthorized drone operations and what actions public safety agencies may take. The *Playbook* is available at https://www.faa.gov/sites/faq/files/uas/public_safety_gov/public_safety_toolkit/Public_Safety_Drone_Playbook.pdf.

CONTACT INFORMATION FOR QUESTIONS

The FAA's Office of the Chief Counsel, Aviation Litigation Division (AGC-300), is available to answer questions about the principles set forth in this fact sheet and to discuss with you the intersection of Federal, state, and local regulation of aviation, generally, and UAS operations, specifically. You may contact the Aviation Litigation Division at 9-AGC300-Preemptionquestions@faa.gov or by mail addressed to: Federal Aviation Administration, Aviation Litigation Division (AGC-300), Office of the Chief Counsel, Ninth Floor, 800 Independence Avenue, S.W., Washington, D.C. 2059