NCITE Project Summary

Mapping and Disrupting Emerging Illicit UAS Supply Chains

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The project addresses the growing use of unmanned aircraft systems (UAS) by designated cartel and transnational criminal organizations operating in Mexico and near the U.S. border and addresses the difficulty of distinguishing malign drone activity from legitimate use. It will map how high-resource cartels source, develop, modify, and deploy UAS, and will translate those insights into actionable tools for disruption. Researchers will analyze open-source physical and digital supply chains using a buy–steal–modify–build framework, conduct targeted subject matter expert interviews, build a supply-chain map, prototype a UAS code attribution assessment tool, and codify "watch indicators." Expected takeaways include clearer interdiction points across hardware, firmware, and software pipelines; attribution cues for custom code; and a guidance library for screening and investigations. The project aims to support stronger, earlier disruption of cartel UAS programs and assist DHS and interagency operators in this mission.

Impact Statement

By illuminating cartel UAS procurement and development pathways and providing practical indicators and tools, this project enables DHS operators (Customs and Border Protection, DHS Office of Intelligence & Analysis, CBP Air and Marine Operations, ICE Homeland Security Investigations) to detect, attribute, and disrupt illicit drone activity earlier and more efficiently along the U.S. border and at other protected sites.

Policy Impact

- Executive Order 14165, "Securing Our Borders" (Jan. 20, 2025): Supply-chain maps and indicators guide the targeted use of technology and interagency actions directed by the EO to secure land borders.
- Executive Order 14305, "Restoring American Airspace Sovereignty" (Jun. 6, 2025): Findings identify interdiction nodes and support Homeland Security Task Force and Joint Terrorism Task Force-aligned counter-UAS operations protecting critical infrastructure and mass gatherings.

ACKNOWLEDGMENT AND DISCLAIMER

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End User Offices with Direct Operational Impact

Customs and Border Protection – National Targeting Center	Customs and Border Protection – Air and Marine Operations
Cybersecurity and Infrastructure Security Agency – Infrastructure Security Division	Office of the Director of National Intelligence – National Counterterrorism Center
DHS Office of Intelligence & Analysis – Counterterrorism Center	Homeland Security Task Force (HSTF) Intel Fusion Cell
DHS Office of Strategy, Policy, and Plans – Counterterrorism and Emerging Threats	Immigration and Customs Enforcement (ICE) Homeland Security Investigations (HSI) – Countering Transnational Organized Crime, Office of Intelligence
Federal Bureau of Investigation – Joint Terrorism Task Forces	

Expected Findings and Outputs

- Clear typologies of cartel UAS activity across buy–steal–modify–build pathways, including common components, logistics routes, and concealment practices.
- Identification of high-leverage interdiction points and brokers across physical (hardware, shipping) and digital (firmware, software, design files) supply chains.
- A preliminary code assessment prototype demonstrating feasibility of attributing provenance and reuse patterns in custom UAS software without collecting personally identifying data.
- A vetted set of physical and digital "watch indicators" to help operators distinguish normal market behavior from early signals of cartel UAS procurement and development.

NCITE Strategic Priority

Tactics — This project aims to explain how cartels operationalize UAS and where operators can disrupt those tactics across supply chains.

NCITE Operational Area of Excellence

Technology and Innovation — The project delivers a supply chain map and a code assessment prototype that translate research into usable tools for law enforcement and intelligence partners.

Methodology

Using open-source information, the team will map cartel UAS supply chains; conduct select semi-structured interviews with subject matter experts; and build a map of hardware/software nodes and transit corridors. In parallel, they will collect and deidentify publicly available UAS-related code (e.g., flight control, payload scripts) to structure a corpus and prototype an attribution tool. Outputs include a guidance library of indicators, narrative briefs, and practitioner-ready visuals.

Please visit the NCITE website for more information on the project at ncite.unomaha.edu

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