



# City of San Antonio

## Agenda Memorandum

**File Number:**  
**{{item.tracking\_number}}**

---

**Agenda Item Number:** {{item.number}}

**Agenda Date:** April 18, 2023

**In Control:** Airport Advisory Commission Meeting

---

**DEPARTMENT:** Aviation Department

**DEPARTMENT HEAD:** Jesus H. Saenz Jr.

**COUNCIL DISTRICTS IMPACTED:** Citywide

**SUBJECT:**

Autonomous Vehicle Systems (AVS) Lab at the University of the Incarnate Word

**SUMMARY:**

Dr. Michael Frye leads the Autonomous Vehicle Systems (AVS) Lab at the University of the Incarnate Word (UIW) part of the School of Math, Science and Engineering. He will present to the Airport Advisory Commission the ongoing research in Unmanned Aircraft Systems (UAS) underway in the AVS Lab.

**BACKGROUND INFORMATION:**

Under the direction of Engineering faculty and Dr. Michael Frye, the AVS Lab is undertaking ongoing research in UAS as part of the Phase II UIW and CPS Energy UAS Partnership, in which the lab team has transformed 2D images to 3D maps using images capture from multiple UAS flights as well as the ability to teach software to detect the components of a powerline using artificial intelligence. In the Lab, an autonomous UAS platform can now detect a transmission line

and navigate autonomously to the powerline. Each quarter, the team continues to develop new innovations using supervised and unsupervised learning and 3D mapping with geographical information systems (GIS).

**ISSUE:**

This briefing will provide an opportunity for the Airport Advisory Commission to receive a briefing on the work of the AVS Lab at UIW.

**FISCAL IMPACT:**

This item is for briefing purposes only.

**ALTERNATIVES:**

This item is for briefing purposes only.

**RECOMMENDATION:**

This item is for briefing purposes only.