MINUTES OF MEETING OF THE ARIZONA GEOGRAPHIC INFORMATION COUNCILDATA COMMITTEE – UAS WORK GROUP

DRAFT

A public meeting of the Arizona Geographic Information Council was convened May 5, 2021 at 10:00 AM on Webex. Present at the meeting were the following members or designees of the AGIC Data Committee-UAS Work Group:

Table 1: Workgroup Voting Members

Member	Agency/Company	In Attendance
Chuck Powell, Co-chair	Westland Resources	No, with notice
Kasey Green, Co-chair	AZ State Land Department	Yes, phone
Robert Davis	Quiet Creek	Yes, phone
Lori Grabham	AZ Aerospace	No, with notice
Jenna Leveille	AZ State Land Department	Yes, phone
Mariah Modson	AZ State Land Department	Yes, phone
Mignonne Hollis	AZ Aerospace	Yes, phone
Nik Smilovsky	ASU	No, with notice
Marisa Walker	AZ Commerce Authority	No, with notice

Table 2: Public At-Large

Name		In Attendance
Jason Owens	Navopache Electric	Yes, phone
Tom Homan	Gila County	Yes, phone
Brandon Barnett	AZ State Land Department	Yes, phone
Spencer Coffin	Yavapai College	Yes, phone
Joe Wagner	Maricopa County FCD	Yes, phone
Nick Bisley	Pima County	Yes, phone
Amy Frazier	ASU	Yes, phone
Arnold Kedia	ASU	Yes, phone
Jacob Draper	Green Drone	Yes, phone
Virgil Coxon	ADOT	Yes, phone
Justin Eddinger	Green Drone	Yes, phone

I. **Call to order:** Meeting was called to order at 10:01 am; Introductions were made by the committee; ensuring attendance list was managed and quorum established.

II. **Approval of April Meeting Minutes:** March meeting minutes were distributed prior to the meeting via email. Kasey asked for a motion to approve the minutes as written. Robert motioned and Mariah seconded the motion. Motion passed unanimously without discussion.

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III. **Monthly Topics of Discussion:**

a. Connected by Drones Webinar Update – There was talk about drones being used in the future for transporting persons. That the FAA has that on their radar to develop procedures.

b. FHWA UAS Workshop Update – Free, two-day virtual event on June 2nd and 3rd will be focused on public safety and transportation application. https://forms.office.com/r/f4WUR9N9g2

c. FAA Webinars – Virtual symposium hosted by the FAA and AUVSI on June 9th and 10th. Topics from waivers and airspace authorizations, to the Part 107 rule and other policies will be covered. https://faauas.auvsi.net/program

IV. **UAS Presentation: *An Integrated Spectral–Structural Workflow forInvasive Vegetation Mapping in an Arid Region Using Drones***

By: Arnold Kedia, Brandi Kapos, Songmei Liao, Jacob Draper, Justin Eddinger, Christopher Updike, and Amy E. Frazier

Jacob and Justin from Northern Arizona University spoke to the lower Salt River restoration project. This project started in 2018 and launched Green Drone monitoring in 2020 through a grant. Their objectives are implementing long term monitoring plan and implementing a large educational outreach program to high school, and soon to be middle school, students in the Phoenix area. They teach how to implement drone technology and how it's used in natural resource management.

Arnold explained in more detail. This project is using drones as a resource to manage the vegetation. They can differentiate species types by using high resolution imagery. Distinguishing the invasive species from native vegetation is difficult with remote sensing. Crews manually cut down the regions of invasive species to reduce the risk of wildfires and allow for native seedlings to regrow. The group processed their imagery a couple different ways to create the best output, one with just the RGB data, and one with multi-spectral data. Since different areas of the same vegetation can have different signatures, ground crews used the collector app to mark different species in the field. This was taken in to train the algorithm processing which areas are the same even with varying signatures.

Amy went through the details of processing the data. Point clouds were generated from the collected imagery, which then went on to created DEMs and ortho-mosaics. From this, phase one made additional datasets: Bare Earth Elevation, Canopy Height Model, and Flow Accumulation. The flow accumulation model was used to determine if the areas of increased saturation during flooding, dictated the growth of certain species. Phase two used the multispectral output. This output was combined with a set of indices to help discriminate vegetation types. Capturing remote sensing using bands wasn't as

successful because of the noise created from the blue band. With its small wavelengths, it scatters easily and makes too noise in the output. However, the team realized the importance of the blue band, so they intend to look further into capturing with bands closer to the ground as to reduce the atmospheric scattering of the wavelengths.

V. **UAS Workgroup Updates:**

a. AZGeo Design Team – Kasey and Toni are making progress, learning how to best display content as they go. Getting their hands-on content will be a helpful steppingstone for this team.

b. Content Development Team – The team is still gathering and vetting their options for the launch page. Today's presentation will be considered for 'Use Cases' content.

c. Outreach/Event Planning Team – There was nothing new to report from the last meeting. Mignonne, Jenna, and Lori are going to meet separately to discuss a schedule of events.

VI. **Information or Topics for Future Meetings:** Next meeting is June 7th and will be a working meeting.

VII. **Adjourn:** Meeting adjourned at 10:55am.