The Gulf South Gazette

Summer 2024



Inside: Bathymetry with USVs

GSR Business Meeting 2024 Report

Member Spotlight: Will Alexander

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2023-2025 Gulf South Officers



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Stuart Babin



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PRESIDENT'S MESSAGE

By Stuart Babin

Dear Gulf South Members,

I hope everyone is staying safe over this blazing summer… as I write this, Hurricane Beryl has freshly left her mark in the lives of many of our Texas members (who are struggling to get back to the norm). It seems our drought conditions of last summer will not be the case this season.

It was so great to see and meet many of you at our Gulf South Region (GSR) Business Meeting and Geospatial Conference back in April at Nicholls State University. This conference was a huge success, and we had a lot of great feedback as a result. This event could not have happened without the tireless efforts of many. But I would especially like to recognize Bill Swope, Dr. Balaji Ramachandran (and his Nicholls staff led by Liz McCurry), Scott Dunham, and Jib Ahmad. I look forward to the next conference (which is already in its planning stage).

As we near elections for the next season, I invite you to consider volunteering for a position or chairing a committee. The Region is better managed by several than just a few. And after witnessing students' interest at the recent conference, I'd dare say the future of these bright careers is dependent on us to push the chains forward.

Respectfully,



Stuart Babin, ASPRS Gulf South President



Will Alexander

MEMBER SPOTLIGHT

Will Alexander, SIT

By Bill Swope, CP

For this edition of the Gulf South Region ***Member Spotlight*** we are featuring one of our younger members, Will Alexander, who in my view is one of the reasons why I am so hopeful for the future of the Geospatial Industry. But before we get to any of my personal opinions of our subject matter, let's get to the facts first.

Will is a native Texan from Sugar Land but currently resides in Bedford. One of two sons in the family, Will's father is a former attorney who eventually found his way into IT and currently manages an IT department for a nutritional supplements company. His mother is a dietician working with dialysis patients at a local medical company, Davita Dialysis. Will's only brother, Captain Edward Alexander, is a member of the United States Army Signal Corps which is the branch that creates and manages communication and information systems for the command and control of the combined arms forces.

As is often the case in the land surveying and geospatial professions, family history was a catalyst in Will's interest. Will's *Great Great Grandfather*-his grandfather's grandfather-worked as a surveyor in Oregon, surveying on the Oregon Short Line Railroad (OSL), which would later become part of the Union Pacific System. Hard land surveying work during the day gave way to hunting in the afternoon as the OSL weaved its way across five states in the northwest part of the US: Wyoming, Idaho, Utah, Montana, and Oregon. This same ancestor served with Teddy Roosevelt as a Rough Rider in the Spanish-American War.

Once out of high school Will attended and graduated from Texas A&M at Corpus Christi (TAMUCC) with a BS in Geographic Information Systems (GIS) in August of 2018. Going directly into graduate school at TAMUCC after earning his degree, Will was then confronted with the COVID-19 pandemic and virtual classes only, so he left school and entered the workforce.

Will is currently with Centurion Planning & Design, LLC working as a Survey Data Coordinator where he primarily is processing the data from the field crews to create land survey deliverables in AutoCAD. Since Centurion is a small company Will gets to wear several hats, so he helps oversee data processing overall, paying attention to workflows and processes and the integration with other departments. From Planning and Design work to BIM Modeling and supporting Engineering in their airport work at DFW International, Will gets to be involved in an assortment of projects and even gets to use GIS in supporting Senior Project Managers. Using various scanning equipment Will lends a hand processing terrestrial lidar data and is the lead on aerial surveying at the company utilizing sUAS.



Will at TSPS Chapter 9 picnic.

When it comes to Professional Development, Will is all business and is well on his way to earning several distinctions. To start, Will is a CST Level 2 in both field and office tracks and wanted to give a shout-out to current GSR Secretary/Treasurer Jib Ahmad, who voluntarily hosts the exams and proctored Will on both of his level 2 tests. Next, Will is an SIT in Texas and under consideration for his RPLS. Having just passed the Principles of Surveying test means he only needs to pass the Texas State Specific Exam.

On the ASPRS front Will has applied for Technologist level certification in both Photogrammetry and UAS and came about his interest in Geospatial technologies in a roundabout way. While looking for resources to learn more about aerial surveying and mapping, Will remembered hearing about ASPRS from a professor. When he investigated the society, he

realized the Gulf South Region had just gotten started so began attending member meetings and networking with the other professionals involved in the region, which eventually landed him a committee member position with the Media Committee and then editor of the newsletter. Naturally inclined to give back to what is important Will has proved his commitment to the industry and ASPRS through his generous giving of his time.

But it was another uncle of Will's who really showed him the potential of technology while talking with Will about how it had touched his own profession. A dental lab technician, Will's uncle understood the advantages technology could bring to his occupation and was an early adopter of 3D imaging and printing. Using 3D models of his patient's teeth they were able to create dental implants with an accuracy and precision not seen before. While it was difficult to learn at the start, the time spent perfecting the new way in which to build better implants was well worth it. Within a few years, more than 1/3 of traditional dental implant labs across the US had gone out of business as they couldn't compete with the efficiency of the new process.

The next step in Will's geospatial indoctrination was a memorable presentation on creating a 3D model of an HEB grocery store roof for a new solar panel installation. As Will states, "In absorbing that presentation, my education in geomatics and remote sensing, and the story from my uncle, collided, and I realized that I, too, was witnessing a generational change in technology. I became determined to ride the tide upwards, foreseeing that if I worked hard and managed to learn the technology and its practices inside and out quickly enough, that I'd find relatively advanced positions available sooner rather than later." It was the light-bulb moment that keeps giving in Will's case.



UAS Remote Pilot in Command

Will's mentors include Dr. Michael Starek of TAMUCC and Isidro Garza, RPLS. Studying under Dr. Starek was a foundational experience for Will as was working his first survey job under the watchful eye of Mr. Garza who continues to support Will as a surveyor and geospatial professional.

When asked about outside interests Will immediately pointed to his interest in gaming as a life-long passion involving other family members including his dad and brother. "My dad got me started on strategic roleplaying games a long time ago, and my brother and I currently have an ongoing cooperative playthrough of Baldur's Gate 3 we play together on weekends as our schedules permit," he said.

Will also enjoys experimenting in the kitchen a bit having made sausages and harboring a desire to try his hand at making cheese someday, adding that Macaroni and Cheese is his favorite dish.

In addition, Will has creative writing talents, having published a short story through a contest. He intends to revisit his creative writing side once he's gotten his RPLS and the ASPRS CMT exams out of the way. His love of books is evident, "The very first book I was gifted to have for my own is an illustrated copy of The Hobbit, with a handwritten note from my dad on the inside cover. The Lord of the Rings was what he read to me in bed after I graduated from The Complete Tales of Beatrix Potter, and a few years later Peter Jackson's Lord of the Rings adaptations were in theaters as we kept up with their releases and extended editions. I'd have to say Tolkien's works must be foundational to me in ways I don't even realize!", he said. As study material in preparation for the PS Exam Will read George Cole's Surveyor Reference Manual.

If stranded on a deserted island Will's needs exceeded the basics, "…shelter, food, water, a computer, and an internet connection, that sounds like a pretty good remote work deal".

Not one to get his feathers ruffled easily, Will eschews pet peeves choosing to instead rely upon history's philosophical lessons, as well as the modern ones, which can be summed up as***, don't sweat the small stuff***.

Will's final thoughts and comments are, in a word, inspiring and touch on a pressing issue in the land surveying and geospatial community, "What we do is really, really cool! There is a lot of debate in the land surveying and geospatial worlds about why we don't have enough people in these industries. ***This*** gets blamed by some people, ***that*** gets blamed by some other people, and ***over yonder*** is blamed by yet another group of people. But what I think it really comes down to fix the problem is we all have about 40 years in our careers, some of us got here late, some of us early, but if everybody who considers themself a professional right now committed to raising up 3 employees to the level of professional over the course of those 40 or less years, we'd be well on the way to solving the issue!"

Wise words from a young professional who sees the need to give back to the community that has given him a career.



Will at Calandula Falls in Angola.



Will at the National Palace of Pena, in Portugal.



Proof that Will is one of those who have ridden an elephant.

INTRODUCTION TO BATHYMETRY USING USVS

By Rebecca Capps, Army Corps of Engineers

An uncrewed surface vessel (USV) is a boat that is remotely operated on the water's surface. Conceptually, a USV is similar to an uncrewed aerial system (UAS) and may sometimes be called a boat drone. The USV system includes a vehicle, payload, control, and data link components, much like a UAS. A USV can be piloted with a controller or may autonomously follow survey lines. This article will focus on nearshore, shallow water applications for vessels roughly ten feet or less. Larger, more robust (and expensive) USVs for offshore applications also exist.



Figure 1: Examples of USVs from BathyLogger, Teledyne, and CHCNAV

Small, portable USVs are ideal for shallow water hydrographic surveys or for surveying water bodies inaccessible to crewed survey vessels. These units can be carried and positioned by only one or two people. Survey sites can include rivers, lakes, and ponds. Due to their shallow draft, USVs can safely operate up against the shoreline. Even though some USVs can operate in only a few inches of water, sonar units typically require at least a foot of water for depth measurements. USVs are also used at other sites, including locks, dams, reservoirs, docks, and ports.



Figure 2: A Teledyne Z-Boat operated by the US Army Corps of Engineers Galveston at different job sites.

USVs are commonly outfitted with either single-beam or multibeam sonar systems. A single-beam echo sounder (SBES) emits a short sonar pulse from the transducer and then listens for the returning echo. Water depth is measured based on the travel time of the returned echo and the speed of sound in water. A single-beam echo sounder can only provide a single depth measurement directly under the transducer. A multibeam echo sounder (MBES) sends out multiple sonar beams in a fan-shaped pattern and produces a swath of depth readings. Although a SBES is simple and cost-efficient, a MBES can provide greater coverage and resolution. A variety of other sensors and payloads may also be deployed on a USV. Cameras may be used to monitor around the USV. USV hydrographic data can also be combined with topographic surveys of the shoreline. Alternatively, some USVs can be directly mounted with a lidar system and will capture topographic and bathymetric data simultaneously.

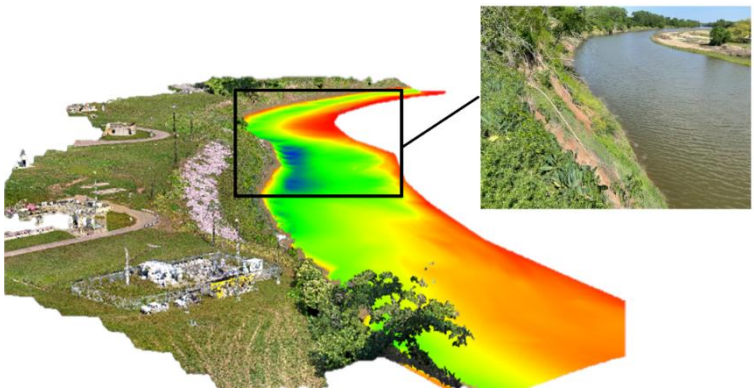


Figure 3: A photogrammetric point cloud acquired from an UAS is combined with a hydrographic model acquired with a Teledyne Z-Boat USV

A USV can cost a few thousand dollars to over $100,000 depending on size, build quality, features, and payload. Any firm interested in acquiring one should carefully consider their typical use cases and accuracy requirements to select the features that meet their needs. A survey-grade hydrographic SBES will record a digital water column echogram. The echogram provides a graphical representation of the return echo. Hydrographic surveyors use the echogram to validate that the digitized depths are coming from the water bottom and not from features in the water column, such as sediment, fish, or vegetation. A lower-cost SBES may only be capable of providing depth readings, however. The onboard sensors will also determine what level of post-processing is needed. An SBES can be georeferenced with a survey-grade GNSS receiver; MBES and lidar require both GNSS and an inertial measurement unit (IMU).

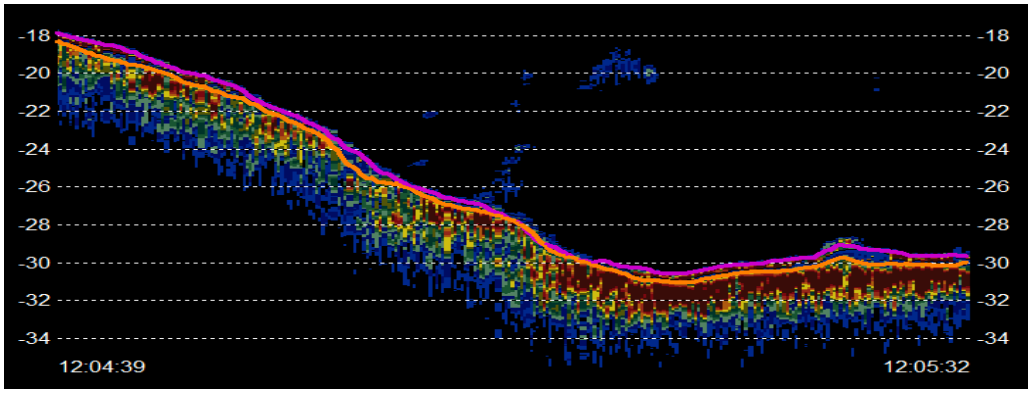


Figure 4: An echogram from a single beam echosounder

Although USVs have been commercially available for around a decade, they don't receive nearly as much attention as their aerial counterparts. USVs confer many of the same advantages as drones, including increased safety, reduced environmental impacts, efficiency, and cost-effectiveness. With a USV, there is no need for a field crew to enter the water or disturb sensitive sites. USVs are an essential hydrographic surveying tool that deliver accurate, reliable data in challenging conditions.

STANDING COMMITTEE UPDATES

Compiled by Media Committee Staff



Program Committee Updates

Chair: Scott Dunham
Committee Members: Rebecca Brown Capps

The Program Committee will need to add 1-2 additional members to this committee to assist with 2024 meeting presentation planning/coordination as well as the 2025 annual conference.

Monthly Meeting Presentations

For July, our presenter was Ravi Soneja, CMT-LiDAR. He presented on: *Unmanned Fixed-wing High Density Airborne Lidar System Evaluation*.

Speakers are needed for most of the rest of the year.

We are now planning the GSR 2025 conference and speaking with multiple groups about hosting. As planning and coordination materializes, we will share the location. We hope to have more time to promote the event to increase attendance and potential sponsors.

The Program Committee is still searching for new members and is taking suggestions for speakers at monthly meetings, so anyone interested in helping this vital region committee please email Scott Dunham at sdunham@ga-inc.net.

Media Committee Updates

Chair: Jib Ahmad
Committee Members: Will Alexander and Bill Swope

The media committee's main responsibility is the Gulf South Region newsletter, the Gulf South Gazette.

For the newsletter, we would like to open submissions for any contributions, including work/project photos, cartoons, articles, notifications of events, and anything else you think your fellow members would like to see!

Anyone who has a submission or has an interest in working on the Media Committee can email Jib Ahmad at jahmad@halff.com or Will Alexander at willalexander.sl@gmail.com.

Nominating Committee Updates

Chair: Cody Condron
Committee Members: TBD

The 2024 election nomination process is now open! The nomination committee is seeking candidates for several key positions, including Vice President, Texas 2nd Representative, and Louisiana 2nd Representative. We recently sent out a survey to the region which closed 6/30. We will continue to take candidates through July, please reach out to Cody Condron (cody.condron@kci.com) with nominations or if you are interested in self-nomination. The elections will take place in month of September.

REGION NEWS

Gulf South Region Business Meeting and Conference 2024

By Bill Swope, CP & Will Alexander, SIT

A huge thank you to everyone who came down to Thibodaux for our first in-person meeting! We had over 50 attendees, of which half were ASPRS members, for 4 technical presentations, the ASPRS Preparation for Certification Workshop, student presentations, drone demos, and a lot of fun with great networking opportunities. For our first in-person conference, we'd say it was a success.

A very special thank you to our host, Nicholls State University, and the staff who made our event run smoothly! Our thanks are extended as well to the university catering staff who worked personally with our members' special dietary needs and kept us fed with delicious meals. Another thanks to the staff at ASPRS, Yuki Day and Danielle Blanchard, for their support and help and to all our great Sponsors who helped make our 2024 conference a success!

See you next year in Austin, Texas. Details to come out this fall.

TECHNICAL SESSIONS



Surveying and Geomatics Engineering: Principles, Technologies & Applications

Michael Starek, Ph.D.
Texas A&M University Corpus Christi
Dr. Starek gave a presentation on the revision of the American Society for Civil Engineers (ASCE) Manual of Practice (MOP) for Engineering Surveying highlighting the pertinent chapters and information as well as covering newer technologies such as lidar and photogrammetry.



Bridge Clearance Asset Inventory using Mobile Lidar Acquisition

Ciaran Manning, CMT-Lidar
LTRA
Ciaran presented an LTRA project in the DFW area wherein over a few dozen bridges were scanned via mobile lidar. This data was used for inspections and asset management to assess the current conditions of the infrastructure for future planning. Ciaran walked us through LTRA's planning and capture process.



NextGen Utility Network Management using ArcGIS

Paul LeBlanc
ESRI
Utility systems face continued challenges due to aging infrastructure, advances in technology and regulations. The ArcGIS Utility Network was designed to provide a next-generation solution for these problems. This session provided an overview of how the Utility Network works with the WebGIS Information Model and best practices for using analytics to obtain rich information from the network.



Survey Grade Control for UAS Flights

Jib Ahmad, RPLS, PLS, CFM, RPIC
Halff
Gulf South Region Secretary/Treasurer, Jib Ahmad's presentation covered what qualifies as survey control, when and when not to use it based on project needs, the updated ASPRS Accuracy Standards, and some differences between control for manned and unmanned aerial surveys.

ASPRS Certification Workshop



ASPRS Secretary

Harold Rempel, CP, CMS-Lidar, GISP
ESP Associates, Inc.

Harold gave the only ASPRS Certification Workshop planned for the Gulf South Region this year. Seats were about sold out and attracted interest from professionals even outside of the conference. Harold covered the history of ASPRS certifications, their place as a qualification in our industry, statistics of test-takers, an overview of what to expect on the tests, test prep fundamentals, and practice questions with answers from each of the ASPRS specialty areas.

If you would like to attend the ASPRS Certification Workshop in the future, you can look for it at major industry events such as Commercial UAV Expo and Geoweek.

> "I thought this was great for review as someone who already has his certification. Once you're managing projects and programs you can lose touch with some of your scientific fundamentals. I think attending this workshop every couple of years can help even certified professionals."
>
> -Bill Swope, CP

Student Presentations

"Bathymetric LiDAR Depth Correction Using Semantic Segmentation and a PointCNN Deep Learning Model" by Ovi Paul (Presenter), Nima Ekhtari and Craig Glennie – University of Houston.

Ovi Paul, Ph.D. is a student at the University of Houston and Research Assistant at the National Center for Airborne Laser Mapping (NCALM).

"Characterization of Louisiana Coastal Ridges Using LiDAR and Hyperspectral Imaging" by Mason Dupre (Presenter), Balaji Ramachandran, and Gary LaFleur – Nicholls State University.

Mason Dupre is a recent graduate of the Nicholls State University Geomatics program currently working for LADOTD, Survey Intern 2.

"3D Model of the Nicholls Campus using LiDAR" – James E. Jones, III, Landon M. Neil, and William D. Hunter II – Mentor Dr. Balaji Ramachandran.

Graduating seniors from the GEOM 440- Senior Seminar course.

Drone Demos by Frontier Precision & NEI GPS



Staff from two of our great conference sponsors, Frontier Precisions & NEI GPS, held two UAS demonstrations on the last day of the 2024 conference at Nicholls State University. Attendees were treated to flight demonstrations of the Quantum Trinity Pro VTOL UAS and the Microdrones EasyOne Lidar UHR+.

We'll be looking to add a few more demonstrations at next year's conference so stay tuned for updates coming in the Fall of 2024 and get ready for Austin, Texas for the 2025 edition.



Thanks to Frontier Precision and NEI GPS for being a part of our conference and for their support over the years. Two great companies to work with.

Home - NEI - NEI (neigps.com)

Land Surveying Equipment, GPS/GNSS Receivers, Mapping & GIS Software | Frontier Precision

Geospatial Experts Panel

Moderated by Gulf South Region Louisiana State Representative Dr. Balaji Ramachandran, Associate Research Professor of Geomatics, Nicholls State University



Featuring:



ASPRS Executive Director

Karen Schuckman, CP, CMS-Lidar, PLS
RRC Companies



Gulf South Region Vice President

Scott Dunham, CP, CMS-Lidar
Gorrondona & Associates, Inc.



Gulf South Region Founding Member & Conference Chair

Bill Swope, CP
Halff

The panel covered a lot of great topics impacting our industry. Balaji came up with great questions and Karen, Scott, and Bill were able to give a lot of time to give thoughtful answers and bounce off each other. Among the topics raised were elevating our collective professions, educating the public, bringing up a new generation of geospatial workers, and where the future of technology is taking us.

Sponsors

Another very special thanks to our sponsors, without whom the event wouldn't be able to carry on to future!

Please use our community page to access links to our sponsors' websites.

BREAKFAST SPONSOR

NEI GPS

GOLD SPONSORS

McKim and Creed

MPH | Morris P. Hebert, Inc.

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Gorrondona & Associates, Inc.

Frontier Precision

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Centurion Planning and Design

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SILVER SPONSORS

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BRONZE SPONSORS

GeoTerra Surveying & Mapping

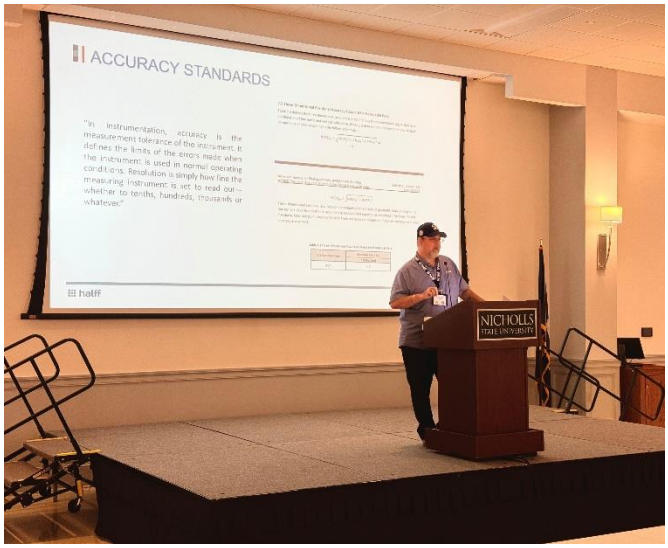
Attendees

Finally, we had a great batch of attendees from throughout Texas and Louisiana! Whether you came from near or far, we thank you for attending our event and hope to see you all and more again next year!











Field Day for the NC Texas Aerial Robotics Initiative

By Bill Swope, CP

The Gulf South Region sponsored the 2nd annual Field Day for the North Central Texas Aerial Robotics Initiative group (ten ISD's from the Fort Worth area) at Wilkerson-Greines Activity Center in Fort Worth on May 8th this year. This year's event showcased Land Surveying and Geospatial technologies with 12 educational stations set up for approximately 134 students from participating ISD's.

Crews from 12 DFW area professional service firms were hand with technology ranging from UAS, or drones, mobile lidar, ground penetrating radar, and other ground-based remote sensing technologies like hand-held lidar equipment and even wearable lidar scanning systems. Participating firms and agencies included Gorrondona & Associates, Dallas College, Halff, McKim & Creed, Yazel & Peebles, the USACE Fort Worth District, Westwood Professional Services, Adams Surveying Company, Data Land Services Corporation, KCI Technologies, and Yellow Rose Mapping.

We're already hard at work planning next year's event and look forward to introducing these vital professions and technologies to the young people in our communities.













INDUSTRY NEWS ARTICLES

By Jib Ahmad, RPLS, PLS, CFM



FAA Makes Drone History in Dallas Area

https://medium.com/faa/faa-makes-drone-history-in-dallas-area-060a4fcc747f



Skyfront Launches Water-Cooled Perimeter 8+ WC for Reliable Drone Operations in Extreme Heat

https://dronelife.com/2024/07/16/skyfront-launches-water-cooled-perimeter-8-wc-for-reliable-drone-operations-in-extreme-heat/



New Oceanographic Survey Drone Can Take Off, Land, and Sail on the Water

https://dronelife.com/2024/07/22/new-oceanographic-survey-drone-can-take-off-land-and-sail-on-the-water/

UPCOMING EVENTS

CHANGE OF TIME FOR MEETINGS!

The Gulf South Region holds its monthly board meetings the first Tuesday of each month and its member meetings the second Tuesday of each month at **12pm** Central Time going forward. Exceptions are made for holidays and other special occasions. A full schedule of Gulf South Region events is posted on the Gulf South Community page under the events tab.

ASPRS Gulf South Region 2024 Events Community Page Link

Monthly Meeting Access Information:

Join Zoom Meeting

https://us02web.zoom.us/j/89154821530?pwd=RmN3SkFmbXQyb1AwajUwZkVMaUxrdz09#success

Industry Events Calendar

Compiled by Will Alexander, SIT

Commercial UAV Expo Commercial UAV 09/03-09/05, Las Vegas NV Commercial UAV Expo | Expo & Conference on Commercial Drones (expouav.com)	**TxDOT Surveyors Conference** Transportation Geospatial Presentations 09/17-09/18, Corpus Christi, TX https://web.cvent.com/event/8b726a1f-bc20-4016-bd5b-3ac9162ea0c0/summary
URISA GIS-Pro 2024 URISA Annual Conference 10/07-10/10, Columbus OH Urban and Regional Information Systems Association (urisa.org)	**RCN Conference** Reality Capture Network, Lidar 10/08-10/10, Boise ID The Reality Capture Network
TSPS Convention Texas Society of Professional Surveyors 10/09-10/12, The Woodlands, TX Texas Society of Professional Surveyors (tsps.org)	**ASPRS International Technical Symposium** Geospatial Presentations 10/21-10/24, Virtual Home | 2024 Symposium (asprs.org)
Texas GIS Forum TxGIO (formerly TNRIS) GIS Workshops and Presentations 10/21-10/25, Austin TX 2024 Texas GIS Forum | Texas Geographic Information Office	**Esri Gulf Coast User Conference** ArcGIS Workshops and Presentations TBA, register at the following link to be notified of plans: 2024 Esri Gulf Coast User Conference | Plan Ahead

COMIC CORNER

Assembled by Will Alexander, SIT







A triple feature this month! Earlier this year, my team was sent a notebook sketch of marked elevations. Just a grid of x's with elevations on them, no scale bar, distances, north arrow, or any other attempt at a reference. Our client wanted us to use it as an existing conditions topo to compare with a design surface. There was some back and forth about that!

Contributions are always welcome! If you have a geospatial, remote sensing, or aviation themed funny, please send it in to Will at willalexander.sl@gmail.com for inclusion next time, with credit for the contributor given!

ASPRS Member Benefits

- 12-month subscription to *Photogrammetric Engineering & Remote Sensing* (PE&RS) the official peer- reviewed journal of ASPRS
- Professional Certification
- Networking Opportunities
- 25%-40% Discounts on ASPRS Publications
- Discounts on all ASPRS Conferences (Annual and Specialty)
- Invitations to Technical and Division Meetings
- Invitations to Region specialty conferences technical tours workshops and social activities
- Eligibility for over $40,000 in National and Regional awards scholarships and fellowships.
- Develop leadership skills.

LINKS

https://community.asprs.org/gulfsouth/home
https://www.asprs.org/education/asprs-awards-and-scholarships
https://www.asprs.org/Students.html
https://www.asprs.org/student-advisory-council.html
https://www.asprs.org/certification

