PHOENIX
LiDAR SYSTEMS

From Land Surveying to Laser Scanning: Humble Beginnings

Russell White didn't set out to become a pioneer in drone and LiDAR technology. In fact, he "fell into it" by accident. *"I got fired from cleaning pools, which is, I think, like the lowest of the low you could possibly be,"* White recalls, *"I started surveying the next day."* In 2005, armed with a surveying rod instead of a skimmer net, White embarked on a new career in land surveying. Over the next five years, he honed the fundamentals of mapping and measurement on the ground. This traditional surveying work gave him a solid foundation in geospatial data, but larger technological horizons were already coming into view.

White's big break into LiDAR came when he joined one of Houston's first companies doing 3D laser scanning. *"They were one of the first two companies here in Houston doing scanning. I was employee number three, I think,"* he says of his move to QuantaPoint, a laser scanning firm, around 2010. It was early days for terrestrial LiDAR, and the equipment was primitive by today's standards. White jokes that their first scanner *"was a pile of junk... about 18 to 20 inches across"* with a very limited field of view. Despite the clunky hardware, White learned scanning and broke new ground using ever-evolving scanners to capture precise 3D measurements of structures. *"It was all static [terrestrial] laser scanning,"* he explains of those pioneering projects. In an era when few had even heard of LiDAR, White was becoming an early expert.

After a year and a half immersed in 3D scanning, White briefly returned to conventional surveying, only to be pulled back into the LiDAR world almost immediately. As he tells it, he left the scanning firm for a surveying job at a construction company, but *"like 2 weeks later, a [person] comes in to scan"* on a project and struck up a conversation. That chance meeting led to White's next role at Insight 3D, another scanning services company. For the next five years, he took his expertise worldwide.

"I worked for Insight for five years, and it was great. [We] did a lot of work all over the world," White says of this period. From oil facilities in Nigeria to infrastructure in Europe, he traveled far afield to map complex environments with static LiDAR. These experiences broadened White's perspective. He saw firsthand how 3D data could solve real problems in construction, engineering, and land development across the globe.

By the mid-2010s, laser scanning had proven its value on the ground. The next frontier was taking it to the skies. Unmanned aerial vehicles (UAVs) equipped with LiDAR were emerging as a powerful tool to survey large areas quickly. Sensing this trend, White decided to pivot his career toward aerial LiDAR and mobile mapping. In 2017, he joined HTS Advanced Solutions in Houston with a mandate to help build up new geospatial capabilities, including drone-based and vehicle-based LiDAR scanning. It was a bold move into what was then still uncharted territory for many surveying firms.

At HTS, White soon found himself leading the charge in deploying a UAV LiDAR system for the first time. The team initially purchased a drone LiDAR kit from another hardware provider to get started. The unit featured a Velodyne HDL-32E sensor mounted on a DJI Matrice drone. On paper, a capable system. In practice, however, it put White's resourcefulness to the test. He recalls that while the drone and sensor hardware were solid, *"the hardware was fine, in fact it was a tank"* that survived multiple hard landings without major damage, but the software and support from the vendor were severely lacking. *"It worked great. It was the software and the people [that were the problem],"* White explains, noting that the difficulties he faced were not due to the LiDAR sensor itself but the overall solution around it. Suddenly, the expert in static scanning found himself struggling with buggy software, poor data processing workflows, and minimal guidance from the supplier. *"I was just kind of thrust into this position of, 'figure this out, man,'"* he says of those early UAV LiDAR days.

That baptism by fire taught White an important lesson in aerial LiDAR: the ecosystem matters as much as the hardware. Reliability isn't just about a sturdy sensor; it's also about software that makes the data usable and knowledgeable support when issues arise. This realization set the stage for one of the most fateful encounters of White's career and introduced a partner who would accompany him for years to come.

Struggling with the limitations of the initial drone LiDAR system, White started looking for alternatives that offered a more complete package. He first heard about Phoenix LiDAR Systems through a former colleague. *"Donnie's the one who introduced me to Phoenix,"* White says, referring to a friend from his Insight 3D days. *"He's like, 'Check this out, man. They've got live data preview,' and I was just like, oh my God, this is cool as hell,"* White remembers, laughing about his reaction to seeing Phoenix's technology in action for the first time. That live preview feature, the ability to see LiDAR data in real-time during flight, was a game-changer in 2017. It meant fewer coverage gaps and more confidence that the data collection was successful before leaving the field.

White reached out to Phoenix LiDAR Systems and was connected with a sales engineer at Phoenix. Right away, he sensed a different vibe from this company. *"My initial experience with [Phoenix] when they were in LA was incredible,"* he recalls. The Phoenix team's expertise and professionalism stood out. *"Just talking over the phone about a quote, I was like, these guys... know their stuff,"* White says. Unlike his previous vendor, Phoenix provided comprehensive training and support, not just a box with a sensor in it. They invited White out to their Los Angeles facility for hands-on training and offered ongoing help as he got up to speed. Phoenix's approach did come at a higher price point than his previous system, but to White, it was worth it. In his view, LiDAR is *"one of the true markets where you do get what you pay for"*, and cutting corners on a mission-critical system was not an option. *"You're gonna get more out of a Phoenix [system]... just because of support,"* he insists, reflecting on the difference an attentive partner can make.

His conviction eventually persuaded his boss at HTS. White spent months championing Phoenix's miniRANGER UAV LiDAR system, which was just hitting the market in late 2017. The persistence paid off: one morning, almost to White's surprise, his manager casually announced that he had placed the order. *"I'll never forget the day... he goes, 'Oh, by the way, the deposit for the miniRANGER was sent off,' and just walks away,"* White says. *"I was like, are you kidding me? ...I was so excited. I was like, we have a legitimate system now."*

The Phoenix miniRANGER arrived soon after. White dove into Phoenix's training, eager to master the new gear. He actually drove from Houston to Los Angeles to pick up a rental unit and undergo training while his company's purchased unit was being built. By a stroke of luck, their brand-new miniRANGER system was ready just in time for him to hand-carry it back. Immediately, it went into action. The first project was a 15-mile irrigation canal in Colorado, a challenging survey with limited ground access and plenty of logistics hurdles.

But now White had the right tool for the job. “I fell in love with that unit right away,” he says of the miniRANGER, “the process was so great… showing up to their facility in LA, it was like ‘this is it.’” The canal mapping mission was a success, and White returned home convinced that Phoenix had not only superior technology but also a team that had his back.

With a reliable Phoenix system in hand, White and his colleagues at HTS began pursuing more aerial LiDAR work. Phoenix’s ecosystem made this easier. For example, Phoenix had just introduced LiDARMill, a cloud-based processing service that simplified turning raw point clouds into usable data. “I was like, man, this is gonna make everybody’s intro to LiDAR so much simpler… let’s help people get into LiDAR”. That vision of democratizing LiDAR shows how White saw Phoenix not just as a vendor, but as a partner in spreading a technology he was passionate about.

As White’s use of Phoenix products grew, so did his relationship with the Phoenix LiDAR Systems’ team. “Walking in there [to Phoenix’s office], you’re like, man, this is something else,” he says, describing the impression the company made on him early on. He soon got to know Phoenix’s team on a first-name basis. In turn, Phoenix came to value White as an insightful power-user. “You recognize it becomes a two-way street, right? I’m not just a consumer,” White explains.

He began providing Phoenix with extensive feedback from the field. In fact, White wrote a short white paper for Phoenix’s engineers outlining the pros and cons of a new navigation hardware update, even nitpicking details like connector types that would make maintenance easier. Phoenix listened. White’s suggestions helped drive a few design tweaks (such as more robust connector options) and software improvements in Phoenix’s flight planning software. “We helped change some of the options in the flight planner,” he notes, underscoring how actively Phoenix responded to user feedback.

This collaborative dynamic solidified White’s loyalty to Phoenix. The miniRANGER performed flawlessly for years, and when Phoenix introduced a lighter-weight “miniRANGER Lite” version, White’s team acquired that as well. By 2019, Phoenix LiDAR Systems had become integral to White’s work and reputation as a cutting-edge geospatial professional.

Careers evolve, and White’s has been no exception. In the years that followed, he moved through a couple of different roles, but wherever he went, Phoenix LiDAR was quick to follow. When asked, “How many companies have you been at that you’ve used or tried to get a Phoenix system now?”, White answered: *“…This is my 4th.”* Over time, he has introduced Phoenix solutions at four separate organizations. After HTS, he did a short stint at another firm where he immediately advocated for acquiring a Phoenix unit (which they did). He then revived his own consulting venture called Dimensional Geomatics, again relying on Phoenix’s gear he had come to trust. Even when circumstances forced him to sell one set of hardware, he soon found himself using another Phoenix model (the Scout/XT32) because, as White puts it, *“for its price, it’s a great unit. I don’t have any problems with it.”* The specifics may change, but the through-line is clear: Phoenix’s systems and support have been a staple of White’s toolkit across multiple chapters of his career.

White credits Phoenix’s comprehensive approach, high-quality hardware, versatile software, and responsive support for keeping him a step ahead. *“I’m depending on everything,”* he says. *“I’m depending on the flight planner to work. I’m depending on my support person to be my front line of support… to pick up the phone and give me an answer when I have a problem.”* That peace of mind is not something he found everywhere in the industry. For example, White has seen competitors push overly simplistic “one-button” LiDAR solutions that, in his view, trade flexibility for ease of use. Phoenix takes a different tack: they provide powerful tools but also make sure the user can fully leverage them through training and collaboration. In White’s opinion, this difference shows up in the results. All else being equal, *“you’re gonna get more out of a Phoenix [system]… because of support [and] all these other things that play into it,”* he says. His customers and employers have certainly benefited from that philosophy. With Phoenix, White has been able to deliver successful outcomes again and again, whether it was capturing accurate as-built models of factories, mapping flood control channels by drone, or deploying a mobile mapper on a tight deadline. Each time, Phoenix’s role went beyond just shipping a box; they became partners in problem-solving.

Today, Russell White is back in Houston at CS Tech AI, where he serves as a Geospatial Technology Manager (a role combining his technical expertise and leadership in developing new service lines). CS Tech AI is an engineering and mapping firm with big ambitions

“Our 10-year goal, we want to be up there with [the large firms] on a massive engineering scale,” White explains of the company’s vision. To get there, CS Tech AI set its sights on mobile LiDAR mapping, especially for infrastructure and utility projects. There’s a huge demand to map highways, powerlines, telecom fiber routes, and more. White was tasked with building a mobile mapping program essentially from scratch.

When evaluating solutions, White immediately thought of Phoenix LiDAR Systems. However, this time the requirements were a bit different. CS Tech AI needed a system versatile enough to handle mobile mapping and aerial drone scanning, while maximizing value on a budget. Phoenix had an answer for that, too: the newly released Phoenix “Flex” platform. True to its name, the Flex is a modular LiDAR system that can be configured in different ways. For example, as a dual-headed, 360° mobile mapper on a truck, or as a single scanner mounted on a UAV for aerial surveys. In early 2024, White consulted with Phoenix about options. “[They] told me about this Flex system,” White says, and it immediately grabbed his interest. Phoenix even invited him to see it in action. “It was like, ‘Dude, the Flex is the way to go. ...Show me what it’s about,’ and I even drove up to Austin because, you know, we’re so close,” White recalls of that meeting, chuckling at his own eagerness.

It didn’t take much convincing. The Flex checked all the boxes for CS Tech’s needs. By combining one high-end system with multiple roles, White realized “We have a great blend here.” Soon after, CS Tech acquired a Phoenix Flex for less than the cost of a competitor's mobile LiDAR system with dual functionality. “I basically got my UAV and my Flex system for about what it would have cost someone to just go buy a [mobile LiDAR],” he notes, contrasting it with pricier competing options. This investment has already started to pay off. In February 2025, CS Tech landed a project that required both mobile and aerial LiDAR coverage, the exact scenario the Flex was built for. White’s team was able to deploy the same system in dual configurations to capture everything efficiently. “It gives us that ultimate flexibility, and we were able to put it to work... we actually had a job that needed mobile and aerial, and it’s like, this is fantastic,” White says proudly of the outcome.

The introduction of the Flex has generated fresh excitement within CS Tech. Even veteran operators were astonished by the capability. White brought his lead drone pilot, Greg, to Phoenix’s training center in January. Seeing the new system in action for the first time, “he [couldn’t believe] himself on day one,” White laughs. The data quality was just that impressive. Another colleague’s first reaction to the point clouds coming off the Flex was simply, “Oh my God... just unbelievable data,” according to White.

Those reactions underscore how far LiDAR technology and Phoenix’s solutions have come since the bulky scanners of White’s early career. The Flex system is also a testament to Phoenix’s ethos of customization and user focus. “It just makes sense, because it’s such a customized system and Phoenix puts so much focus on making it whatever you need it to be,” White explains. In CS Tech’s case, what they needed was one system that could do it all, and Phoenix delivered.

Looking ahead, White sees even more potential to leverage his Phoenix equipment as CS Tech grows. The company is eyeing major infrastructure mapping contracts, from utility corridor surveys to city-wide digital twins. “We’re going to depend on that [Flex] system even more,” White notes, especially as upcoming acquisitions and projects ramp up the workload. He’s confident that Phoenix will continue to be there as a dependable partner through this next chapter. In fact, White views Phoenix’s role not just as a supplier but as a critical teammate in his mission to build a world-class geospatial practice at CS Tech.

After nearly two decades in the geomatics field, Russell White’s journey reflects a consistent theme: embracing new technology can yield extraordinary results when you have the right support. From tripod-mounted scanners in the mid-2000s to drones and mobile mappers today, White has continually pushed into new frontiers of LiDAR. Phoenix LiDAR Systems has been by his side for the most transformative of those leaps, providing the advanced tools and the safety net of expert support that allowed White to innovate with confidence. “In LiDAR, you get what you pay for,” he likes to say, and what White invested in with Phoenix was not just equipment, but a relationship. That relationship has enabled him to succeed across multiple organizations and even more ambitious projects. Each time White came in with a vision for how LiDAR could solve a problem, Phoenix helped turn it into reality, whether by tailoring a system to his needs or by simply picking up the phone when he called with a question.

In the fast-evolving world of geospatial technology, it’s easy to chase the latest gadget or cut-rate solution. White’s story is a reminder that true success often hinges on partnership. “I think of Phoenix as an extension of our team,” White says. “Anyone can sell you one system, but when the customer is successful and growing, and the vendor grows with them, that’s a proper partnership.” In his matter-of-fact way, Russell White has proven this philosophy time and again. As he and Phoenix LiDAR Systems continue to chart new paths in aerial and mobile mapping, their journey illustrates how combining an innovator’s drive with a partner’s unwavering support can elevate an entire industry.