

CUSTOMER SUCCESS STORY:

# Accurate Drone Solutions increases revenue per pilot by 37% by switching from DJI Phantom 4 to Skydio 2 for mapping



**-25%**

Processing time

**-66%**

Flight time required

**10X**

ROI by upgrading to  
autonomous drones

“Switching from DJI to Skydio has improved our entire workflow, and improves the way we do things before, during, and after the drone flight. It has made our whole company more efficient.”

- SAM DE LONG, CEO OF ACCURATE DRONE SOLUTIONS

## Executive Summary

Accurate Drone Solutions is a rapidly growing drone service provider (DSP) based in Seattle and serving the construction industry in the Pacific Northwest. Accurate Drone Solutions provides full survey grade scan data for construction project monitoring, by using a suite of scanning and mapping solutions ranging from total stations to drone flight capture. Serving both General Contractors and Subcontractors, Accurate Drone Solutions helps keep projects running on schedule by providing enhanced reporting integrated with project plans to project managers and superintendents. This enables their clients to use drone scanning and mapping as a tool to reduce the amount of rework subcontractors must perform.

Founded in 2018, Accurate Drone Solutions started out using the DJI Phantom 4 Pro V2.0. After testing the Skydio 2 in early 2020, they found that they could create maps with higher quality and accuracy in less time, while eliminating the risk of crashes. Flying more advanced grid pattern flights than ever before thanks to the joint solution of Skydio and DroneDeploy, Accurate Drone Solutions is able to capitalize on the autonomous flight capabilities enabled by the Skydio Autonomy engine built into the Skydio 2, which provides 360° obstacle avoidance, reliable GPS-denied operations, and breakthrough workflow automation. As a result, Accurate Drone Solutions uses Skydio for approximately 70% of their missions today, with this number expected to grow up once the service provider adopts more solutions in the Skydio portfolio.

HEADQUARTERS
Seattle, WA
INDUSTRY
Construction (Drone Service Provider)
CHALLENGE
Manual drones (DJI Phantom 4 Pro) were taking too much time, and not providing accurate data for Accurate Drone Solutions’ construction customers
SOLUTION
Skydio 2 + DroneDeploy for fast, safe, and accurate 3D models of construction sites
RESULTS
<ul style="list-style-type: none"><li>• Skydio 2 produces a more precise scan in 33% of the flight time the DJI Phantom 4 Pro takes</li><li>• Skydio shaves 25% of the post-processing time vs. DJI – producing 10x ROI on upgrading to autonomous drones</li><li>• Higher quality scans help Accurate Drone Solutions’ customers save up to 5% of their overall project costs by preventing rework – 10x ROI on the price of the scan</li></ul>

## Challenges

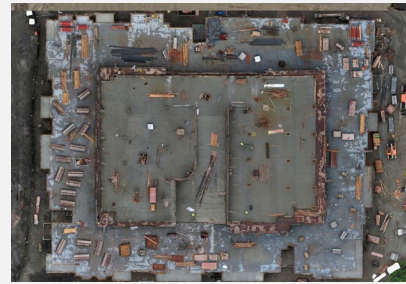
Like many enterprise users flying manual drones, Accurate Drone Solutions found them to be insufficient to generate successful scans in complex environments. With high precision requirements, the team needed to fly at low altitudes, but on construction sites, low altitudes are often fraught with obstacles – scaffolding, in-progress structures, or cranes.

**“Manual drones presented a tradeoff between performance, measured in speed and scan quality, and safety, both to our equipment and workers on the ground at my customer’s site.”**

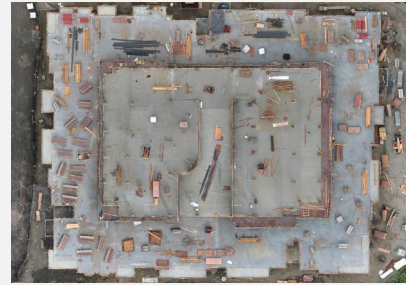
**- SAM DE LONG, CEO OF ACCURATE DRONE SOLUTIONS**

### **Operators forced to trade safety for speed and accuracy**

A frequent challenge for Accurate Drone Solutions customers is to scan job sites with cranes in them. In normal circumstances, drone pilots would set up a grid flight, where the drone follows a lawnmower pattern parallel to the ground, capturing the necessary imagery for a 3D Model. Flying above the crane is not an option, because it will obscure the data below, and generate a low-resolution model because the drone is then far away from the ground-level structure it needs to document. Therefore, operators using manual DJI drones were forced to fly up to four different scanning flights, landing to change batteries in between, to capture the areas around the crane. This process could take 90 minutes on a typical job site.



*The image from Skydio 2 is clearer and has better contrast.*



*Skydio: top image  
DJI: bottom image*

### **Lengthy post-processing**

The shortcomings of manual drones remained evident after the flight is complete, when the operator input the imagery data into a photogrammetry engine to generate the model. Because manual drones require so many extra flights, much of the data that is generated is redundant, but still requires processing time for the photogrammetry software. As a result, the turnaround time for a single 3D model of a site could be as long as eight hours – a major pain in the construction business, where the structures are rapidly changing and clients often demand same-day turnaround. By the time the model was ready to shipped to the customer, it was already out of date.

## Solution

In early 2020, Accurate Drone Solutions began experimenting with Skydio 2, and after initial testing, tripled the size of their Skydio fleet and began replacing manual DJI drones on live missions. The team now trusts the Skydio 2's AI algorithms to augment DroneDeploy's scripting solutions and generate 3D models more efficiently than ever before.

**“Skydio 2 has taken our operations to the next level. Now, we can generate better scans faster than ever before, and our contractor customers ultimately benefit from the faster turnarounds and reduced rework they have to perform. We use Skydio 2 every chance we get.”**

**- SAM DE LONG, CEO OF ACCURATE DRONE SOLUTIONS**

With the Skydio 2, Accurate Drone Solutions’ pilots are able to set grid patterns at any altitude on any jobsite, knowing that Skydio Autonomy will avoid any obstacle in the drone’s path. That allows the team to fly lower, capturing higher resolution and more accurate data without the unnecessary overlap in scan patterns that leads to data overload in the processing phase. The results have impacted both Accurate Drone Solutions’ bottom line, and that of their customers.

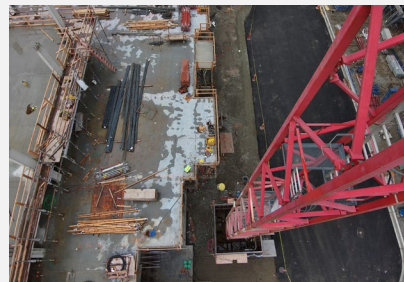
The team is excited at the results with the Skydio 2, and thrilled at the opportunity to leverage upcoming solutions. The soon-to-be-available Skydio 3D Scan software will help the team generate scans faster and more accurately than ever before, even in crowded, overhung, or indoor environments. And further on, when it becomes available, the Skydio Dock will allow Accurate Drone Solutions to leave drones on-site with their customers and use teleoperation to generate data from a central office, eliminating repeated travel time and multiplying the effectiveness of each pilot on the team.

## **Results: Autonomy delivers 10x ROI to Accurate Drone Solutions, and another 10x ROI to their clients**

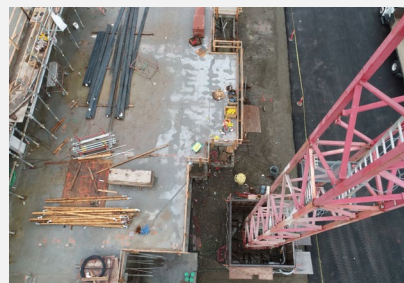
Today, Accurate Drone Solutions’ mapping operations save time and money while adding safety and quality. The growing team performs scans of approximately 20 sites per month, and realizes efficiency and quality benefits on every single mission. The most notable improvements are:

**Skydio 2 produces a more precise scan in 33% of the flight time the DJI Phantom 4 Pro takes.**

With autonomy, data collection time has been reduced from 90 minutes to under 30 minutes, because the team can perform one large scan of an area, instead of a mixture of smaller scans arranged around obstacles in the area. This improvement saves an Accurate Drone Solutions pilot approximately 20 worker-hours per month – during which they can generate 5 more scans for 17% more revenue per month – and reduces the amount of time that clients need to pause their job site to allow for drone scanning, delighting site superintendents.



*The image from Skydio 2 is clearer and has better contrast, while captured at higher elevation.*



*Skydio: top image  
DJI: bottom image*



**Skydio shaves 25% of the post-processing time vs. DJI - producing 10x ROI on upgrading to autonomous drones.**

Because the autonomous solution enables Accurate Drone Solutions to generate less redundant scan data, flying with Skydio has helped save approximately two hours of processing time per job, a process that normally takes eight hours. This improvement allows for same-day turnaround on scans, delighting customers and increasing the likelihood of follow-on scanning work for the team. Even better, it means the team can process up to 5 more scans in a month, increasing revenue by an incremental 20%, and producing an estimated 10x annual ROI for Accurate Drone Solutions.

**Higher quality scans help Accurate Drone Solutions' customers save up to 5% of their overall project costs by preventing rework - 10x ROI on the price of the scan.**

Since switching to Skydio, Accurate Drone Solutions has impressed customers with the quality of their 3D models, which are measured against high-precision surveying scans. Scans are performed frequently - the team deploys Skydio 2 on around 25 scans per month. The Accurate Drone Solutions team estimates that a \$400 scan saves their customer an average of \$4000 in rework. As a result, customers are extremely interested in high-quality scans that can identify even the smallest details.

**"Every build error we can catch early—for example, before concrete is poured—saves our client \$3-4000. Our Skydio drones are saving our construction industry clients hundreds of thousands of dollars a year in avoided rework."**

**- SAM DE LONG, CEO OF ACCURATE DRONE SOLUTIONS**



*Note that when we zoom in on the ramp in the middle of the scene, the Skydio has much better resolution on the pipes because it was able to capture images from lower.*



*Skydio: top image  
DJI: bottom image*

Since Accurate Drone Solutions' general contractor customers are using the scans to verify the accurate positioning of snap lines and make sure all the subcontractors (e.g., plumbers, electricians) work from the same accurate plan, precision and useability are critical.



## SKYDIO IS THE WORLD-LEADER IN AUTONOMOUS FLIGHT TECHNOLOGY

Skydio is the leading U.S. drone manufacturer and world leader in autonomous flight technology. Skydio leverages breakthrough AI technology to create the world's most intelligent flying machines for consumers, enterprises, defense and civilian agencies. Founded in 2014, Skydio built a world class R&D team with leading experts in AI, robotics, cameras, and electric vehicles from top companies, research labs, and universities. Headquartered in Redwood City, CA, Skydio designs, assembles, and supports its products in the U.S. to offer higher standards of supply chain and manufacturing security. Skydio is trusted by leading enterprises across a wide range of industry sectors and is backed by top investors and strategic partners including Andreessen Horowitz, IVP, Playground, Next47, Levitate Capital, NTT DOCOMO, NVIDIA.