



Using drones to deliver valuable insights

- **Business needs** – They needed a more efficient way to perform facilities assessments for large government clients.
- **Networking solution** – AT&T Consulting recommended drones powered with MissionKeeper® software and other platforms to conduct thermal scans of a large base and campus environment.
- **Business value** – Clearer insight into assets and potential problems; the ability to track changes in topography, structures, and equipment; saved time and money.
- **Industry focus** – Government services and support
- **Size** – A workforce of about 20,000 in about 60 countries

About PAE

PAE merges technology with advanced business practices to deliver faster, smarter, and more efficient managed services. Its global workforce of about 20,000 delivers services in about 60 countries on all seven continents. Its vision as a global leader of government services and support is to perform with excellence and integrity. PAE is headquartered in Falls Church, Virginia.

The situation

Many PAE clients are government agencies with tight budgets. Always looking to deliver affordable solutions to exceed their expectations, PAE was interested in finding more effective ways to perform facility assessments.

Solution

AT&T suggested using drones powered with MissionKeeper® software to perform thermal imaging and Light Detection and Ranging (LiDAR) scans. MissionKeeper® allows multiple users in different locations to view the drones' live data stream, enabling collaboration and delivering the power to make field-based decisions in real time. A proof-of-concept deployment at a large government facility enabled PAE to complete in one week an assessment that otherwise would have taken up to a year.

Doing good things in tough circumstances

For more than 65 years, PAE has tackled the world's toughest challenges to deliver agile and steadfast solutions to the U.S. government, its allied partners, and international organizations. The company delivers a broad range of operational support services to meet the critical needs of its clientele.

Beyond serving its clients, PAE is committed to improving the communities in which its staff members work and live. It supports nonprofit organizations and charities that align with its core values and the interests of its employees, including veterans, and their families.

Craig Franklin is the Vice President for Global Mission Service Innovation at PAE, as well as the client executive for the Southeastern Conference and the U.S. Air Force and Space Force. He described some of the company's diverse operations. "We do aircraft, vehicle, and facility maintenance, partnership training, and staffing solutions. We provided medical services to support state government and commercial clients during the pandemic. During the Ebola crisis, we built 10 treatment units across Liberia where the outbreak was the worst. We do good things in tough circumstances."

Innovative solutions on time and within budget

Many PAE clients are government agencies with limited resources. "The biggest challenge is providing affordable solutions to meet all their needs," he said. "Providing innovations and differentiators at an affordable price is always a struggle."

Sometimes, Franklin said, the client doesn't want innovations, and it's up to the contractor to build a relationship of trust so the client will understand that its contractor has its best interests at heart. In addition, the length of some contracts creates additional challenges since client needs can change dramatically over 10 years.

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Craig Franklin

Vice President for Global Mission Service Innovation, PAE

"What we need to do as a company is be flexible and available to the client," Franklin said. "We partner with them to bring innovative solutions on their timeline and on their budget."

Celso Puente, PAE Vice President of Marketing and Communications, says that strategy and an internal focus on improving processes have helped the company build momentum. "We've invested a lot in our continuous improvement, and we're getting Six Sigma green belts and black belts trained across the company. This is not just at the corporate level, but within our programs to really add local 'boots on the ground value.'"

A year's worth of work in a week

Franklin noted that PAE already relied on AT&T Business to handle network security and all its wireless services, so when an AT&T executive suggested using drones to deliver added value to its clients, PAE was willing to listen. "It was just a natural relationship to expand with AT&T in other areas," he said. The company was especially interested in the idea of using drones to perform facility assessments.

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While PAE had the technical expertise to create its own drone program, Franklin saw the wisdom of using the experience of AT&T Business in the sector to eliminate the need to get air clearance, maintain the safety standards, and keep drones equipped with the latest technology. "It would be silly not to tap into AT&T and its stable of approved sub vendors that have done all the vetting and work to produce a turnkey solution," he said.

He decided to create a proof-of-concept for an important government client with a large industrial base. This would demonstrate the value of using the MissionKeeper® solution with drones. "They were happy to accommodate us," Franklin said. After a few weeks of planning, PAE was ready to execute the base evaluation.

The drones used LiDAR to view topography and capture the structure of buildings. They also used thermal scanning to look for temperature anomalies in buildings and equipment. "We can detect air leakage to see areas that might need to be sealed better to increase energy efficiency," Franklin said.

Franklin added, "We did effectively a year's worth of work in about one week. Based on that project, we now have an offering that we can provide to a wide array of PAE clients to help them and do infrastructure assessments."



Optimizing the workforce saves time and money

The drones used MissionKeeper software from KSI Data Sciences to give multiple users access to live video and data from drones and other devices. This enables the PAE team to visually inspect building roofs, a job that was previously done by workers who had to climb to the top of each structure, potentially risking their safety.

A simple user interface gives teams the power to collaborate and make field-based decisions from any location. This allows a subject matter expert and other team members to direct where the drone goes in real time. For PAE, that translates to an optimized workforce and savings. “If we have an expert who knows the facilities better than anybody else,” Franklin said, “we really want that person to be eyes-on during the flight.”

With the expert able to view the drone feed remotely in real time, PAE saves on the cost of flights, hotel rooms, and travel time. “We can just schedule them for a two-hour mission that they can complete sitting in their office,” Franklin said.

Strong return on investment

During PAE’s proof-of-concept flight, the drone inspection detected temperature anomalies that meant that water had gotten under the roof sealant. The revelation ended up saving the client significant money. “Had we not taken care of that problem right away, we think it would have cost the client \$200,000 a year from now,” Franklin said. “We discovered it with a \$50,000 drone surveillance flight and repaired it for \$10,000.”

Analytics like this will enable PAE to build a case for using the drones for future assessments. “You spend a little more money up front to save a lot of money in

the long run,” Franklin said. “Our job is to provide a strong return on investment, using continuous process improvement through digital means to save on labor and other costs and deliver good outcomes.”

Puente said the drone deployment also increases efficiency, since completing tasks quicker will allow PAE to do more for its clients. “They’ll be getting more bang for their buck,” he said. “If something we formerly spent three days to do now only takes one day, we’ll have more bandwidth to do other things for them.”

These efficiencies may allow a manager to reduce workforce size or use that workforce to accomplish more. “They can reinvest the money, the people, and the labor to possibly start initiatives that they couldn’t do before,” Puente said.

Spotting micro problems from a macro perspective

Franklin said the drones also create a baseline that PAE can use as a reference. “It’s essentially change detection, so we can see what has gotten worse.”

Another value proposition is being able to zero in on problems by dispatching a workforce to the exact problem area rather than having someone walk the entire facility.

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“It’s workforce efficiency and identifying micro problems from a macro perspective and then tackling those micro problems,” Franklin said. “That frees up my workforce to go do other tasks that they may not have gotten to that week, so we’re ahead of schedule. The advantages are safety, efficiency, and then highlighting and eliminating small problems before they become bigger problems.”



Drone capabilities will also help PAE perform environmental assessments to identify potential problem areas in watersheds or roads. “We can do road assessment in a fifth of the time it would take to drive the roads and visually survey them,” he added.

Workforce management to meet the client’s needs

PAE also uses AT&T Workforce Manager, cloud-based software that streamlines management of employees, vehicles, and assets. The solution significantly simplifies work processes by enabling employees to complete forms on tablets in the field and submit them wirelessly.

“You can use the Workforce Manager toolsets to recast the workforce and move them around in real time based on the needs of the client,” Franklin said.

The AT&T solutions make PAE more valuable to its clients. “We don’t create intellectual property or technology,” Franklin said. “We find partners who have already done that work and match them elegantly to a solution that the client needs at an affordable price.”

Credibility and next-gen technology

According to Puente, the work the company does with AT&T Business highlights PAE’s innovation and outcomes for its clients. “We do quite a bit of innovation across the board, but highlighting examples of these next-gen technologies really bolsters our credibility and enhances the company brand with AT&T in our corner.”

The needs of PAE’s clients will continue to bring new challenges, Franklin said, many of which will require new technology, delivered in a cost-effective manner. “Having AT&T Business in our ecosystem of technology providers gives us the value of a large company that’s doing a lot of things for a lot of different people.”

Franklin cited the AT&T Innovation Center, which helps clients optimize their operations with leading-edge technology. “I’ve got a couple of different hats, but I run innovation for the largest portion of the company, Global Mission Services,” he said. “So I find companies like AT&T that have aggressive technologies and can help us think through solutions and work with us on the best solutions to bring forward. We’ve been really happy with everything the AT&T Business team has been able to help us with.”