

DJI's Zenmuse XT Streamlines Thermal Aerial Imaging Process

"Good work DJI and FLIR, this is a real industry-leading piece of equipment and will certainly make a difference in the industrial UAV inspection industry."

-Lewis Pritchard, CEO of Team UAV

CUSTOMER:

Carillion PLC

FOCUS:

Thermal Imaging

SOLUTION:

DJI Matrice 100
with Zenmuse XT

If your company specializes in thermal aerial imaging, the traditional processes involved can easily create budgetary concerns such as higher insurance, greater general risk and cost of extra equipment.

Team UAV, a UK based drone survey and inspection services provider, had faced these kinds of problems in the past. Their UAV application set up at the time involved Tau 2 LWIR thermal imaging camera cores mounted onto DJI Matrice 100s along with associated equipment.

When it came to serving Carillion PLC, one of the world's largest and most innovative construction companies, both parties realized a more innovative approach was needed.

Fortunately, DJI's new Zenmuse XT had just been released, which is a FLIR Infra Red (IR) or "thermal camera" designed to be combatable with drones made by DJI.

CHALLENGE:

Thermal imaging has always been a meticulous process for Team UAV's industrial inspections, though previously it had been difficult to carry out these tasks efficiently.

With the FLIR Tau 2 connected to their squad of Matrice 100s, Team UAV was able to view live feeds from the thermal cameras. This gave them the ability to conduct thermal surveys such as checking faulty communication equipment on masts, inspecting solar panels for defunct units or assessing overheating elements on buildings.

However, the process of setting up the camera proved cumbersome and time consuming, often involving using up valuable flight time to land and make adjustments if something wasn't quite right.

For Team UAV, the added time expenditure started to accumulate throughout the year incrementally, first with critical flight times then increased insurance and greater risk. Consequently, they had to start charging more for their services.



Team UAV previously used the system shown above to capture thermal aerial images. One of the systems' major faults was the need to land in order to change camera settings.

SOLUTION:

When Team UAV learned of the brand new DJI Zenmuse XT, they knew it was the perfect solution to their mounting problems. The state-of-the-art thermal camera system easily integrated with their Matrice 100 UAV platform. Having used FLIR sensors in the past, they knew the image quality would be industry-leading.

Lewis Pritchard, CEO of Team UAV, tested the Zenmuse XT on a project that would normally take a full four days – inspecting seven schools and one busy airport hanger. All eight locations had an array of solar panels due for inspection. Using thermal aerial imaging, inspectors can quickly note which panels are defunct or at risk of overheating. If just one panel overheats, the whole system could short-circuit, meaning taking the site offline until costly repairs can be made.

The Zenmuse XT was able to shave a significant amount of time off of each mission, producing 3D Models, Point Clouds, IR imagery, Hi-res stills and IR Video. Additionally, the integration of DJI's Lightbridge 2 gave them more range, more reliability, and better clarity.

Speaking about the speed of integration the Zenmuse XT had on their work set up, Lewis Pritchard said, "we connected the XT to the Matrice 100 and within seconds we had an encrypted color palette thermal image being beamed directly to our tablet with ultra-low latency."

"All of the parameters are adjustable on the fly," Lewis added, "no more 'faffing around' taking off to test then landing and re-adjusting and then up and down again. We are now in the air changing and correcting and viewing the data live whilst we're flying."



The Zenmuse XT is compatible with the Inspire 1 (pictured above), Matrice 100 and Matrice 600 airframes.

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**-Lewis Pritchard
CEO at Team UAV**

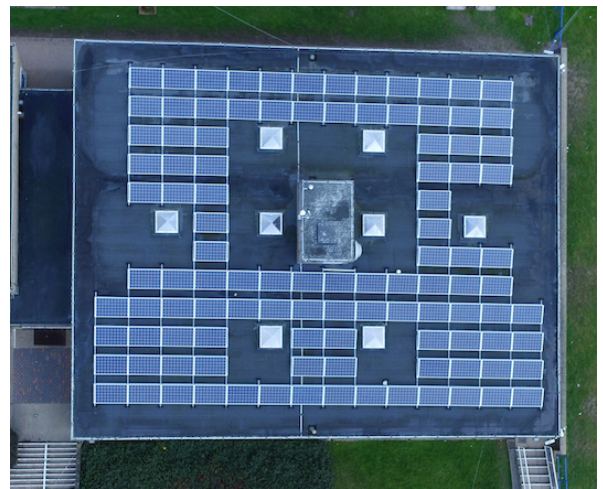
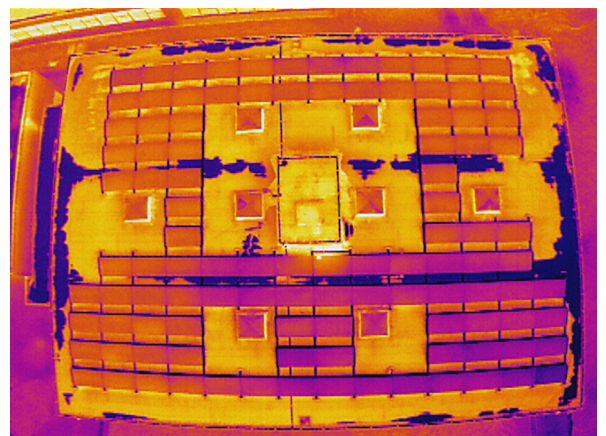


Image taken by Team UAV of solar panels on the roof of a school



Infrared image of the same installation shown in the uppermost picture. Variations of red determine temperature and can be used to spot defunct or at-risk of overheating panels, as well as judge optimal panel placement.

RESULTS:

Thanks to DJI's Zenmuse XT, Team UAV was able to complete all their tasks in just one and half days, as opposed to the estimated original four using previous methods. Additionally, Team UAV realized that with a simpler and quicker inspection process, they can now expand their business operations to complete tasks that were previously not cost effective.

With its ease of use and high-sensitivity infrared scanning capabilities, the DJI Zenmuse XT fundamentally changed Team UAV's workflow and cost structure for the better. Gone are the days of taking off and landing for the same photo just to perfect the settings. Similarly, by focusing on full DJI integration — and less on third-party systems — Team UAV are now able to focus on their core business, providing drone survey and inspection services.

PARTNER:

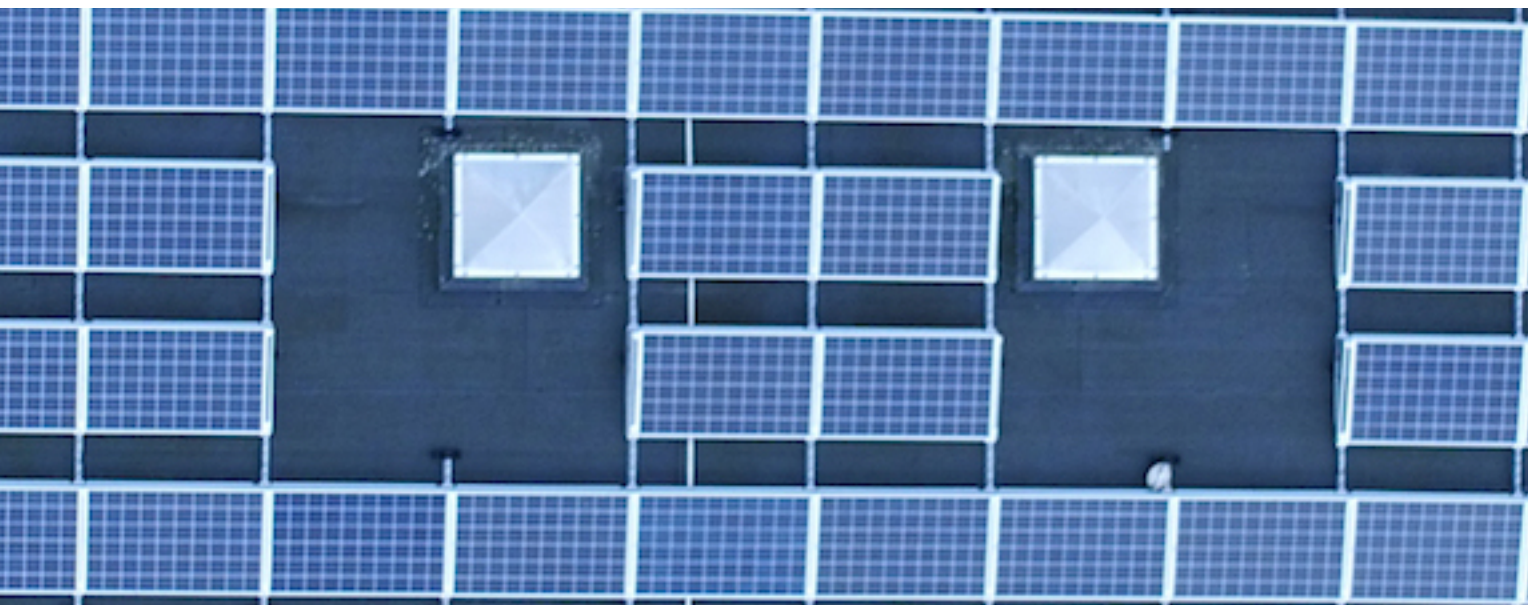


FLYING PLATFORM:

Matrice 100



Zenmuse XT Camera



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