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DJI ENTERPRISE

ANSWERS matrice 300 RTK webinar

Drones for inspection inquiries

Are you developing a product to automate electrical line inspections?
Currently DJI has several drones that are very prepared for this type of inspections such as the Matrice 210 and 300 also the Phantom 4 RTK performs very efficient photogrammetric flights.

How much is the maximum gust of wind supports?
The Matrice 300 RTK withstands winds of up to 54 km/h.

Is the drone autonomous or does it need constant flight supervision?
The drone can do the entire flight in autonomous mode, but we recommend supervision throughout the flight.

What flying height do you recommend doing the inspections?
Between 30 and 40 meters.

What is the maximum distance between the base and the RTK antenna?
In principle it has the same scope as with the station.

What are the benefits of viewing the panels in real time remotely? Such as using another monitor in a different location.
Today that function is used more for security operations. Normally photovoltaic inspections require capturing a lot of field data for later analysis.

DJI Mavic 2 Dual Enterprise includes FLIR thermal camera, is it possible to use it for photovoltaic inspection?
The Mavic 2 Enterprise Dual has a low resolution thermal camera not recommended for use in thermal inspections. The use of cameras with higher thermal resolution such as the Zenmuse XT2 is recommended.

Does the Matrice 300 the RTK connect the IGN of Spain 2101 or 2102?
Yes, the Matrice 300 RTK is able to connect to any network that works with the NTRIP protocol.

Is the Matrice 300 RTK compatible with the Zenmuse XT camera?
The Zenmuse XT camera is not compatible with the Matrice 210 RTK V2s or the Matrice 300 drone.

Are you saying that you can do a Mavic flight once and then the software can detect any faults in the future?
No, it is totally independent. Flights can be programmed to be repeated and a history can be made, but the software itself does not identify an anomaly.

What percentage of overlap do you recommend for inspection flights?
To achieve precision, an overlap of at least 80% is necessary.

For solar inspection, what flying height is recommended for a Matrice 300 drone equipped with H20T camera?
Between 30 and 40 meters but we recommend equipping the Zenmuse XT2 with thermal camera for this type of inspections.

It seemed to me to see both flights with a camera in a Zenithal position and perpendicular to the surface of the plate. Is it correct and if so, why are flights being made in different perspectives?
Depending on the inspection and the position of the sun, it is necessary to perform flights that provide different viewing angles to provide different details for analysis.

Thermal cameras for drones inquiries

What lenses does the Zenmuse XT mount?
In the Zenmuse XT2 thermal camera for drones we have the possibility to choose between 13, 19 and 25 mm.

How high is it advisable to fly with a 640 thermal camera?
Between 30 and 40 meters.

What is the focal length of the Zenmuse XTS drone thermal camera?
It has a focal length of 19mm.

What focal length do you tend to use with the Zenmuse XT2?
Typically the 13 or 19mm lens is used.

Does the DJ300 controller allow adding control expansion module to control more camera parameters?
Currently DJI does not plan to integrate more camera configuration parameters.

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Is it possible to do the inspection with the Zenmuse XT2 336?
The 336 resolution XT2 is not the most suitable for inspections due to its low resolution it is not productive.

Why do you use the Zenmuse XT2 for inspection instead of the Zenmuse H20T?
Mainly because it uses radiometric video and the analysis platform uses this video format and the H20T does not currently have it implemented.

Which thermal camera is compatible with georeferencing your platform?
The Zenmuse XT2 Thermal camera.

Have you evaluated advantages in using the Zenmuse H20T (VS) Zenmuse XT2 camera in inspection of plants?
The Zenmuse XT2 camera uses radiometric video, however, the Zenmuse H20T does not currently have this feature.

What is the difference of the thermal camera of the DJI Mavic Pro drone with the FLIR thermal camera?
The main difference is the thermal resolution.
For this type of inspection it is advisable to use a camera with a higher resolution in order to capture more detail and achieve more precision in the analysis.

Drone battery inquiries

What limitations do TB60 batteries have for transporting them on commercial airline travel?
It is very difficult for them to allow you to transport them because the Wh in the battery exceeds the limit of 100 Wh imposed by the airlines for its transport.

How long does the Matrice 300 RTK battery charge time?
The 2 TB60 batteries of the Matrice 300 RTK, in addition, of the stations battery take time to charge from 0 to 100 in about an hour.

How many life cycles does the TB60 battery have?
Approximately 200 cycles.

Inspection software inquiries

Can DJI Terra be used to generate thermal orthomosaics taken with the Matrice 300 RTK integrating correctly with the orthomosaic real image?
We do not currently recommend using the Matrice 300 drone to generate orthomosaics as currently supported cameras are not good for this task.

What platform / software is used to create the KML file or the automated flight mission?
I recommend Google Earth to create KML files.

Training and regulations inquiries

When does DJI plan to launch training courses so that customers of the Enterprise range can carry out the maintenance of their aircraft such and as required by the regulations?
Currently we do not have news about it, we have already consulted it on several occasions, even so, ACRE is an official DJI technical service and you can consult any questions about maintenance
and DJI repairs.

Are there recommended drone thermography online courses?
We recommend that you consult ITC.

The IEC standard that regulates the performance of thermography in photovoltaic plants, a standard that you have mentioned in this presentation, establishes that the thermographic cameras used in these works must have a calibration certificate that is 2 years maximum. Which is the reason why doesn't DJI give these certificates on their thermal imaging cameras? Failure to give this certificate makes DJI cameras unable to be used professionally for this type of inspection ...
The calibration certificate can be obtained at specialized laboratories prepared for this purpose.
Each region has different legislation and calibration parameters, therefore, they must be analyzed in specialized laboratories attending to the different regulations of each territory.