

**YellowScan**

Reliable LiDAR for UAV.

USE CASE

# Archeology



UAV USED  
Custom made



SOLUTION  
Mapper

“

*We were able to make sense of a chaotic terrain model with a non-intrusive, quick and cost effective method.*

Isabelle-Heitz, Geologist and Founder of Aird'Eco



**Company:** Aird'Eco  
**Website:** airdeco-drone.com  
**Country:** France

## Business need.

The archeological site is located on the left bank of the river Eure, in France, near the Maintenon Aqueduct. The site itself is called Cesar's camp, because some remains of the Roman time were found on the ground.

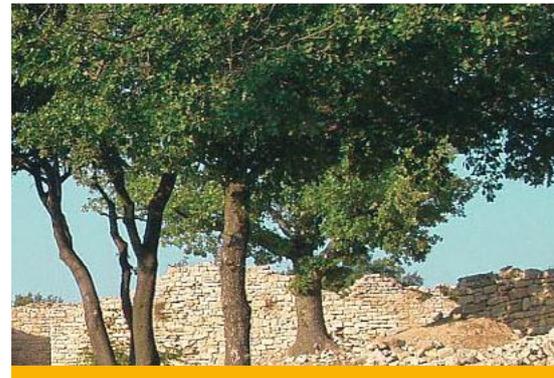
The site is about 5.5 hectares (13.5 ac), covered by woods. Trees on the site are 30m high (100ft), the slopes are steep (40m / 130ft) and more importantly, the bushes are very dense on the top of the rampart. Because of its thick vegetation cover, this site known since the 19th century was never explored before.

## Objective.

Make a topographic map of the site for archeological researches.

## Solution.

YellowScan Mapper on a drone, for quick, easy and detailed data collection even in dense vegetation conditions.

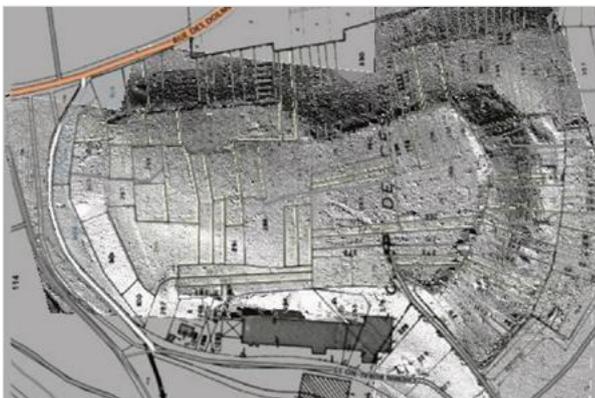


## USE CASE

# Results

Aird'Eco was able to make sense of a chaotic terrain model. When Aird'Eco presented the results to the archeologists, the features they were the most interested in were:

- The curve of the rampart that was thought to be linear before.
- An internal corner in the west side of the camp, suggesting that it was its entrance.
- Clean cut excavation, probably more recent and related to the water management of the quarry during the Aqueduct construction (Maintenon Aqueduct, near the site).



Road with surrounding infrastructure and terrain: geodesy for road reconstruction and extension

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Aird'Eco produced a 3D printed model of the site in resin. The printer used by the subcontractor has a micron accuracy and allowed the archeologists to see details that didn't appear in 2D.

There is an example of a man-made 2m wall the client wanted to have the micro-topography of. Because of the dense boxwood, Aird'Eco wasn't sure the YellowScan Mapper would scan through. They were surprised to see clearly the small wall appearing on the 3D resin Model.

This work was highly acclaimed by the archeologists because it was obtained with a non-intrusive method, it was quick (1 day in the field, about 1 month of post-processing), not limited in surface and cost effective !

## Acquisition.

Aird'Eco could cover the entire site of 5,5 hectares in two-half days with 6 flights and a 50% overlap. Aird'Eco recorded an average density of 140 points/m<sup>2</sup>, which was equivalent to 25 points/m<sup>2</sup> after classification.

## Mission parameters.

- Number of flights : 6
- Survey Size : 5.5 hectares (13.5 ac)
- Flight speed : 4 m/s
- Flight altitude : 50 m
- Software: YellowReader, Terrasolid
- Duration : 1 day