

## USE CASE

# TOPOGRAPHY - RAILWAY CONSTRUCTION

The Bolloré Group has been engaged in logistic and transportation infrastructure activities in Africa since 1927. Bolloré Africa Logistics, present in 56 countries, consolidates these efforts with €2.5 billion of turnover in 2012.

**70K**  
IMAGES  
ACQUIRED

**4**  
DAYS OF FLIGHT

**4**  
CM GSD ACHIEVED

**150**  
KM FLOWN AT 500M

**7.5K**  
Ha COVERED

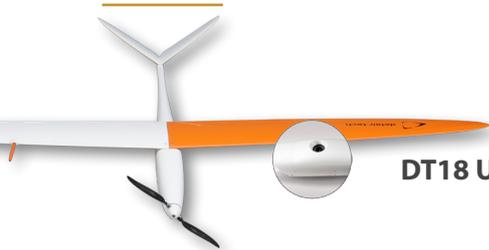
## THE NEED

Bolloré Africa Logistics began construction of a railway in Niger between Niamey and Dosso to appease its logistical requirements. In May 2014, the company urgently needed to start a preliminary topographic study on the construction of the railway on an area of land measuring 150km by 500m wide.

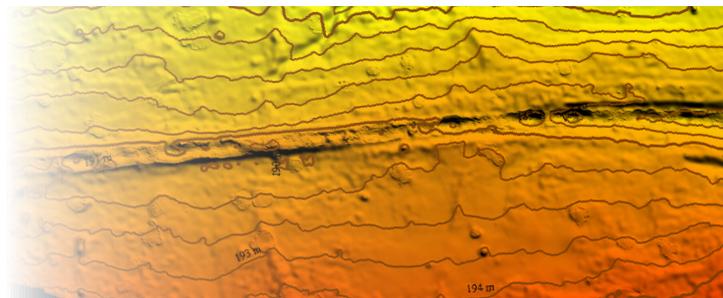
Bolloré Africa Logistics required centimetric resolution and mapping accuracy down to 15-20cm. The company also required that this entire job be completed in a maximum of 2 weeks, including all image processing.



## THE SOLUTION



**DT18 UAV - DT-3Bands Sensors**



Delair-Tech advised employing its DT18 Mapper drone package equipped with the fully-integrated, survey-grade DT-3Bands RGB camera and its long range antenna to perform BVLOS flights. Equipped with this sensor, the DT18 airframe performed the mapping of the entire railway corridor. Delair-Tech's full solution was chosen based on the high endurance of its UAV systems, cost-effectiveness, and ability to not only quickly acquire the data but process it accurately by leveraging the power of the Delair-Analytics platforme.

## THE OPERATION

Bolloré Africa Logistics commissioned Delair-Tech to operate the DT18 Mapper UAV system to accomplish the mission. The DT18 flew for 4 days to create the large map. The final product had a GSD of 4cm, a total size of 150km long by 500m wide, and an area of 7,500 hectares.

## DATA ANALYSIS

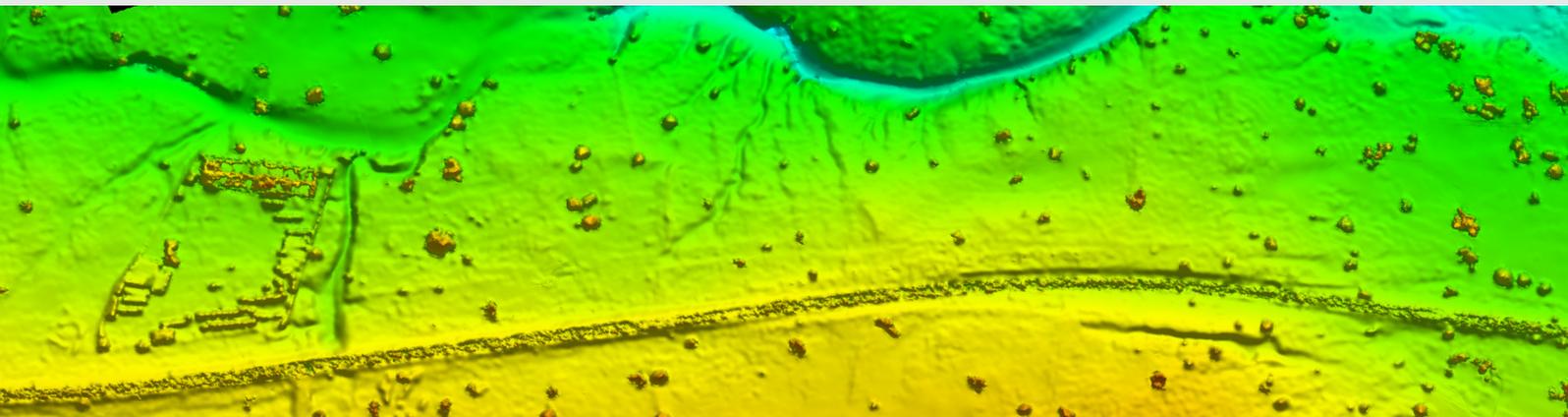
Putting the data to work. After 4 days of flights, the data was uploaded to the Delair-Analytics platform which carried out final processing to extract the most useful information for the completion of the client's first topographical studies:

- Creation of the large, continuous 2D orthophoto with a GSD of 4cm
- Creating a point cloud with 15-20cm georeferenced precision
- Extraction of digital terrain (DTM) and surface model (DSM) maps in CAD-compatible formats (.shp .dxf) for conducting topographical studies.



## DELIVERABLES

A report that includes the orthomosaic, point cloud, DTM, and DSM maps was delivered. A web visualization tool for viewing and archiving past results was created through the Delair-Analytics platform. Integrating the data into the client's own GIS/CAD software was made possible by the Delair-Tech technology.



## WHY DID THEY CHOOSE DELAIR-TECH

✈ **The endurance and long range** of Delair-Tech's UAVs make this **economically possible** (7,500 hectares in 4 days)

🕒 **Results obtained in 2 weeks** vs. 3 months with traditional methods

💰 **Price was 3x less** than traditional, ground-based methods

📍 **Resolution and precision** beat industry-standard