

## USE CASE

# HIGH ALTITUDE TOPOGRAPHY

KPWP is a British consultancy group which advises young and innovative companies that are seeking to build strong and sustainable brands. KPWP relies on a strong, global network of highly qualified experts.

*Kent Prince Wayne Parker.*

5  
FLIGHTS

7  
KILOMETERS  
SKISLOP

3600  
METERS  
ALT

60  
PERCENT  
SLOPS

35  
KM/H  
WINDSPEED

## THE NEED

KPWP's client needed to study the feasibility of renewing and developing the ski station resort of La Meije, one of the world's last area in which the most daring skiers can truly live by their passion.

Stretching from the 3600-meter, high Dome Lauze (the top of the resort) and the 1500-meter base in the village, la Meije is also one of the world's longest skislop. Internationally renowned, the valleys of Meije gather, each year, passionate skiers and snowboarders from all over the world. This is Europe's mecca for freeride skiing. And Delair-Tech had the mission to map it to able its maintenance and enhancement.



## THE SOLUTION



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



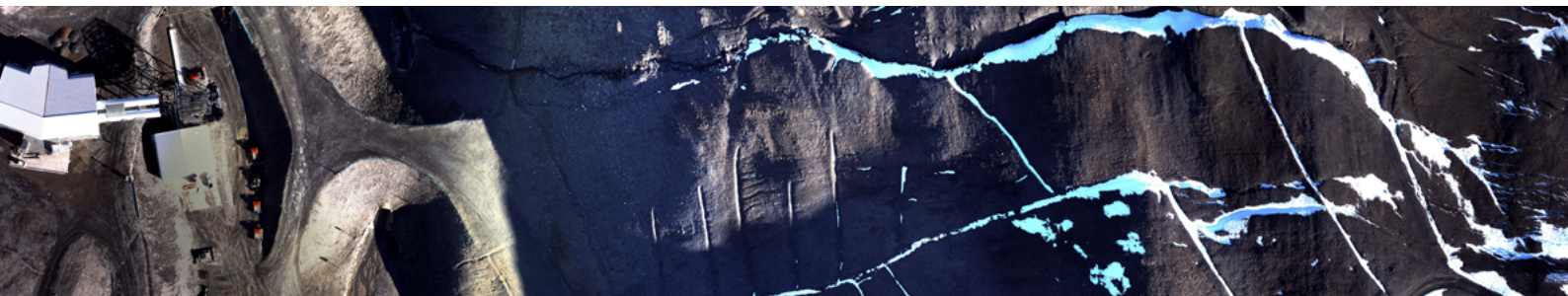
High altitude, strong wind, low temperatures, steep slopes, large area (etc.). The obstacles were various. To take up the challenge of mapping such a complex area, Delair-Tech deployed the DT18 UAV with its DT-3Bands sensor. Over a 7 km's long slope, the DT18 flew remotely piloted Beyond Line Of Sight. Its high endurance allows operators to capture thousands of RGB (Red-Green-Blue "classic eye vision") image acquisitions in a single flight. In next to no time, the images were extracted and uploaded to the Delair-Analytics data center. A few hours later, KPWP received a unique, georeferenced and precise orthophoto of the Meije valley.

## THE OPERATION

Flying in these extreme conditions of height, wind and temperature seemed quite a challenge. However, the UAV did not show any weakening during the operation. Even flying above glaciers and perpetual snows at 3 600 m, the DT18 remained stable, compliantly sticking to its flight plan and carrying on its mission. And by a simple setting, the sensor tackled the surexposition issue the snow had raised. The other major difficulty was finding a place to land as the site did not offer any large path. Nevertheless, the geolocation system was so accurate that landings were smoothly executed without any damage.

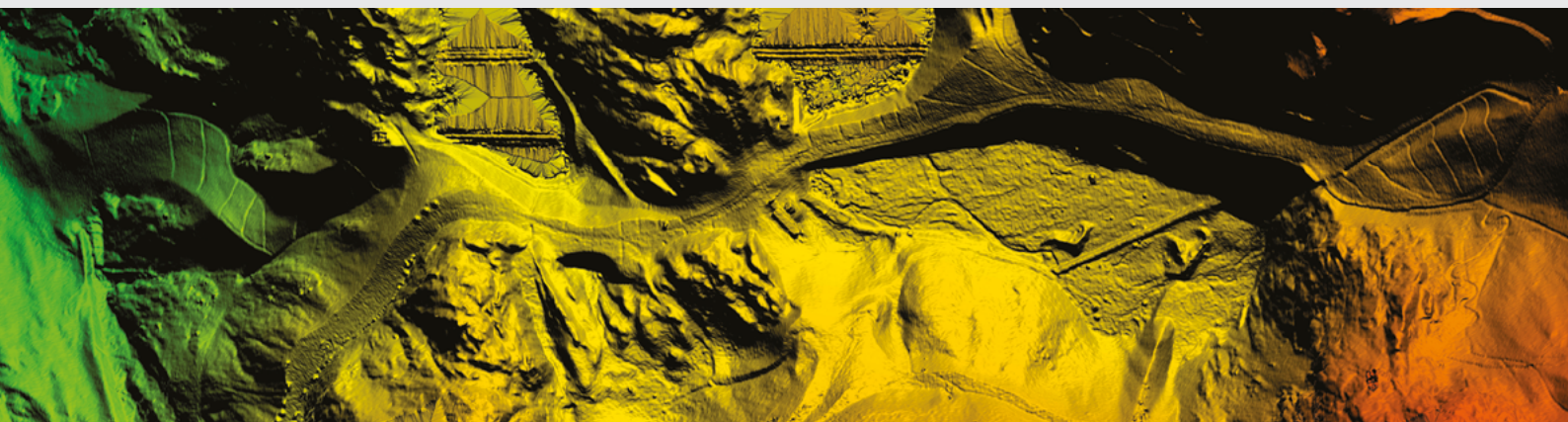
## DATA ANALYSIS

Processing all this data could have appeared as a nightmare if Delair-Analytics didn't have the relevant tools and algorithms to treat these images. Indeed, it is difficult to find matching points when the land is covered with snow and demanding to build a precise DSM when the relief is so steep. However, this did not set any issue to our experts as the results were handed in to the client 48 hours following the data acquisition.



## DELIVERABLES

From the thousands of RGB images captured during the flights, Delair-Analytics created a unique 4 cm GSD orthophoto of the skiing area. This is 200 times more accurate than what a satellite could have provided for KPWP. Thanks to a dozen of control points set up on the slopes of the mountain, the final results were enhanced to deliver a precise DSM to the final-user. And thus, help this skier's heaven remain what it is.



## WHY DID THEY CHOOSE DELAIR-TECH

✈ **Delair-Tech UAVs** are the **best** for demanding **missions in extreme conditions**.

✓ A **local, committed** and **customized service** with a global implementation.

✈ Our systems are **easy to deploy** and Delair-Analytics processes data in next to no time.

✈ **DT18's** superior range allows **unrivalled quality acquisition** of **large areas** in one **single flight**.