



# A–Z of Drone Terms and Related Items

## Some common terms you may here when working with drone operators

### **A — Altitude**

The height at which a drone is flying, usually measured above ground level (AGL). Important for UK legal compliance and flight planning. The maximum height in the UK is generally 400 feet (120m) above ground level. For aviation altitude is generally referred to in feet

### **B — Beyond Visual Line of Sight (BVLOS)**

Drone operations where the pilot cannot directly see the aircraft. Requires special permissions in the UK. Guidance suggests the limit currently is around 500m in any direction from the drone depending on conditions and there are exceptions. For aviation horizontal distance is generally measured in Meters and not feet! It is to avoid confusion!

### **C — CAA (Civil Aviation Authority)**

The UK aviation regulator responsible for drone rules, pilot competency and operational approvals.

### **D — Drone Mapping**

The process of creating accurate 2D maps or 3D models using aerial imagery captured by drones.

### **E — Emergency Inspection**

Rapid-response drone surveys used after storms, fires, structural failures or flooding to safely assess damage.

### **F — Flight Planning**

Preparing a drone mission in advance, including airspace checks, weather, routes, battery requirements and risk assessments. This is a legal requirement for using heavier weight drones.



## **G — Ground Control Points (GCPs)**

A series of points marked out on a site and fixed in terms of their position using satellite receivers placed on the point. These points are clearly marked and flown over by the drone and then post flight the photographs are “tied” to the known GCPs to create accurate maps and models. It is often used in conjunction with Kinematic Positioning (see below).

## **H — Heritage Survey**

Drone inspections carried out on listed buildings, historic houses and conservation sites to reduce risk and improve access.

## **I — Infrared / Thermal Imaging**

Thermal cameras detect heat differences to identify water ingress, insulation failure, overheating equipment or wildlife activity.

## **J — JPEG**

A common image format used for drone photography and survey outputs.

## **K — Kinematic Positioning**

Positioning techniques such as RTK and PPK used to improve mapping accuracy. RTK is “Real Time” so corrections to the drone are made during the flight) PPK is Post flight corrections carried out by software.

## **L — LiDAR**

Light Detection and Ranging technology that uses lasers to create highly accurate terrain and vegetation models.

## **M — Multispectral Imaging/ drones**

The drone carries several separate cameras that capture multiple light wavelengths to assess vegetation health, drainage and crop performance. The sensors capture light outside the visible spectrum and produce different indices by combining the output of individual sensors in different ways to generate reports explaining crop and plant health.



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## N — NDVI

Normalized Difference Vegetation Index — a common agricultural analysis method used to assess plant health. This is the most common and useful report generated by a multispectral drone

## O — Orthomosaic

A high-resolution aerial image created by stitching together multiple photographs into a single accurate map.

## P — Photogrammetry

The science of creating measurements, maps and 3D models from overlapping photographs. It is an alternative to using Lidar (See above). For some jobs either Lidar or Photogrammetry works but for others one is better than the other

## Q — QGIS

Open-source geographic information software commonly used to analyse drone mapping outputs. This large software allows data to be sourced from different sites and combined in to reports but it is complex to master and other proprietary software's are often a better bet.

## R — RTK (Real-Time Kinematic)

A high-accuracy GPS correction system used for survey-grade drone mapping. See kinetic positioning. The system relies on satellite data and positioning from a base station which is fed to the drone to correct global positioning data from the drones' own sensors. It is far more accurate than GPS.

## S — Survey Grade Accuracy

A standard of positional accuracy suitable for professional measurement and mapping applications. It is generally sub 5cm in both the horizontal and vertical axis and requires use of RTK positioning and or Ground Control Points (see above) along with PPK corrections.

## T — Thermal drones

Actually, more a sensor or camera that measures infrared heat and is attached to a drone. It can identify hot or cold spots that may indicate escapes of heat or water leaks. The thermal drone is used a lot in search and rescue operations to find missing people



## **U — UAV (Unmanned Aerial Vehicle)**

Another term for a drone aircraft.

## **V — Visual Line of Sight (VLOS)**

A legal requirement in many drone operations where the pilot must maintain direct visual contact with the drone.

## **W — Waypoint Mission**

A pre-programmed drone flight path allowing automated survey or inspection flights.

## **X — XMP Metadata**

Data embedded into drone images containing flight, camera and positioning information.

## **Y — Yaw**

The rotational movement of a drone left or right around its vertical axis.

## **Z — Zoom Inspection**

Using high-resolution zoom cameras on drones to inspect inaccessible structures safely from a distance.

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## **Related Drone Equipment & Terms**

### **Airspace Restriction Zone (FRZ)**

Protected areas around airports and sensitive locations where drone operations may be restricted.

### **Battery Cycles**

The number of times a drone battery has been fully charged and discharged.

### **DSM (Digital Surface Model)**



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A model showing elevations of buildings, trees and terrain.

## **DEM (Digital Elevation Model)**

A terrain model representing ground elevations without buildings or vegetation.

## **Geo-Fencing**

Software restrictions preventing drones entering controlled or restricted areas.

## **Gimbal**

The mechanism that holds and moves the drone sensor to maintain level flight and good sharp results

## **Ground Control Points (GCPs)**

Accurately surveyed markers placed on the ground to improve mapping precision.

## **Hyperlapse**

A moving time-lapse video sequence created using drone footage.

## **Payload**

The equipment carried by a drone such as RGB, thermal, LiDAR or multispectral sensors.

## **Point Cloud**

Millions of spatial data points generated during LiDAR or photogrammetry processing.

## **RGB Camera**

A standard colour camera capturing red, green and blue wavelengths.

## **Remote ID**

Electronic identification transmitted by some drones to improve airspace awareness and safety.

## **Terrain Following**

A drone flight mode that automatically maintains height above changing ground levels.

## **Wind Resistance**

IMAGE SURVEYS



# A–Z of Drone Terms and Related Items

The drone's ability to remain stable and operational in windy conditions.