# Road Surveying using Quadcopter X-4 drone

**Overview:**

A road survey using a drone was completed for a client named JK Cement Company who needed DSM and DEM contours as well as a geo-referenced orthophoto and RMSE report. Consequently, the final output comprises DSM, DEM, a geo-referenced Orthophoto in.jpeg format, as well as contours for both the DSM and DEM.

**Approach**

A single Quadcopter (X-4) was used to survey the road in the Bagalkot area of Karnataka. It was outfitted with an RGB Sony Alpha ILCE-A6000 camera with a resolution of 24.3 MP.

**Surveying and Processing:**

During a drone survey with an RGB camera, the ground is photographed several times from different angles, and each image is tagged with coordinates. The drone was flown 150 metres above the ground. It took roughly 6 days to complete the survey using a drone and gathering GCPs. Around 21 ground control points were used to provide georeferencing. The drone captured more than 10,000 photographs, and the full data processing process—including modifications and validation—took roughly 10 days.

**Challenges:**

This included a number of challenges during the survey, including R.O.W. and weather conditions including wind and rain. Weather events made the project difficult, but the drone was flown safely.

**Results**

Pixel Vision successfully delivered output in accordance with the specifications set out by JK Cement. The very first draft was accepted by JK Cement and no revisions were required.