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CAMERA SELECTION FOR HIGH ALTITUDE PSEUDO SATELLITE.

Abstract

High Altitude Pseudo Satellites (HAPS) are unmanned stratospheric vehicles positioned over an area for long periods of time to provide telecommunication and Earth observation information. Our article presents the methodology to select two high resolution aerial cameras for environmental monitoring application, based on weight, GSD (Ground Sampling Distance), Swath and FOV (Field Of View) requirements. For our application, we need to select two types of cameras, the first one to have a wide FOV with large swath and the second one to have high GSD, respecting the condition of weight which must not exceed 2 kg. For an optimal choice, we are limited by different constraints such as: camera weight, detector resolution, pixel pitch, dynamic range, focal length, and exposure time. The results obtained according to the specifications of the selected cameras were in accordance with the requested requirements and the expected performances.