EEE4113F: Proposed Solution

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Context

We interviewed Kyle Walker who studies eagles in the Kalahari. One of his major concerns was that he is unable to confirm whether his camera traps are working once he has set them up in a tree. He also has no way of telling if the camera trap has moved from its set position. This means that if he forgets to turn the camera on, or something causes the camera to move in such a way that it is no longer facing the nest, he will not be able to capture the data that would have been recorded in that time.

Problem Statement

Kyle, who monitors eagles in the Kalahari, needs a way to remotely adjust his camera and access its status and contents, because interestingly, he has to wait up to 8 months, for data retrieval, to confirm that the equipment had been working correctly.

Proposed Solution

In order to meet the requirements of our problem statement, we propose a system with the following 4 sub-modules:

1. Power Management,
2. Communications (transmissions),
3. Camera System (rotation and angle adjustment), and
4. Mounting, physical infrastructure and interfacing

The system will allow the camera trap's position to be adjusted where necessary and wireless communications will be used to transmit images so that they can be accessed without physically retrieving the SD card currently used. In order to support these additional parts of the system, a power management sub-module is required - this would include the solar power currently used and configuring it for the additions to the system. Mounting and physical infrastructure is necessary to ensure that the system is secure and stable while interfacing is important to ensure the sub-modules are able to communicate and are compatible.