

Automated Sun Tracking Platform

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Abstract

The Central Michigan University Geography Department currently uses Surface Acquisition System (SAS) to measure the watercolor of the Great Lakes. While doing this, the team needs to manually adjust this device to be perpendicular to the Sun's rays. The manual adjustments of the SAS platform are leading to inaccurate measurements due to human error. To overcome this factor of human error, the CMU Geography Department has approached us with the idea of an automated system.

By using mathematical equations, we are able to determine the correct position of the Sun at any given time. The automated system platform will focus on position control with the aid of a compass sensor, encoder, DC motor, microprocessor, potentiometer, and H-Bridge drivers. The weight of the system plays a large role in our design. The entire SAS platform will be redesigned to be more compact, as well as lightweight, to improve position accuracy. The complete system will be designed and manufactured by the Smart Data Collection team.