Ultra-stable Lifting Platform for the Music and Movie Industries

Status: Available

Group Members: TBD

Sponsor(s):

Supervisor(s): Krishna Vijayaraghavan, PhD, PEng, Assistant Professor, Mechatronics Systems Engineering

Project Description

A transportable 2.5m by 6.1m platform that can lift 5000Kg from a height of 0.3m to a maximum height of 6.1m that provides enough stability for mounting and operating cameras. This lift uses a proprietary driven hinge design that allows for the stability and height change. The hinge mechanism is currently being patented as no similar patents exist Nationally or Internationally.

The scope of the project requires full stress and load analysis for all components. In addition, a unique lifting component must be designed and incorporated for the initial lift from 0.3m to 1.2m. A secondary lift design takes over at that height and moves the lift from 1.2m to 6.1m. The platform must have the ability to be moved efficiently once collapsed, so steering control and (potentially) driven wheels need to be involved. Control electronics for the drives will need to be incorporated. All drive mechanisms, control electronics, steering, and structural members must fit into the described volume.

As the hinge concept is proprietary, a non-disclosure will be required to be signed.