



PROBLEM

What good is a high tech rocket if you can't track it?

Current PSAS methods of tracking are limited by dependence on human eye.

Rockets move fast.

Keeping antennas and cameras pointed at them during flight is a challenge.



RocketTracks was originally conceptualized in 2011 as a mechanical structure controlled by a manual control box.

While this was an improvement over earlier handheld models, it still left too much room for human error.

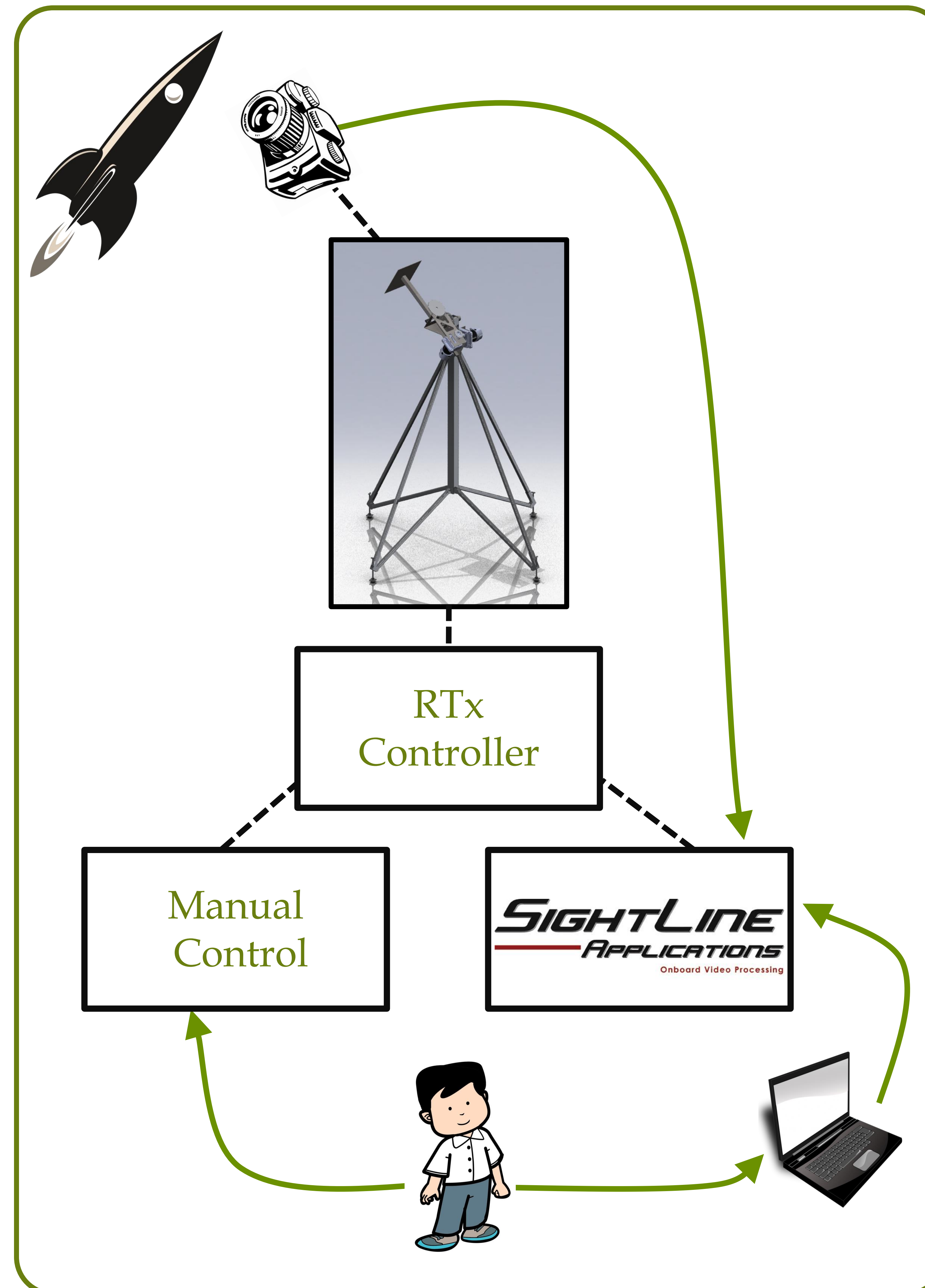


IDEA

Eliminate human error by adding automatic tracking capabilities to the existing RocketTracks system.

IMPLEMENTATION

- Create RocketTracks controller board to interface mechanical system with automatic and manual control boards
- Implement Ethernet for communication between different blocks of RocketTracks system
- Interface with Sightline SLA-1500 to add automatic tracking
- Improve control loop for manual controller and interface via Ethernet
- Create safety protocols and perform FMEA analysis to protect from personal injury or damage to system



HOW IT WORKS

User selects mode

Manual Mode:

User can adjust the direction that RocketTracks points by turning two knobs corresponding to the horizontal and vertical axes

Automatic Mode:

- User selects object to track using laptop.
- Camera provides feedback to Sightline® as to position of the object.
- RTx Controller adjusts mechanical position accordingly

Emergency Stop

- Automatic removal of power to system if:
- Big red button is pushed
 - User gets too close to system
 - Any single component breaks that could result in loss of system control

RTX CONTROLLER BLOCK DIAGRAM

