



Variable Angle Target Training System (V.A.T.T.S.)



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Context

Background

- Stationary Infantry Target (SIT)
 - Digital Range Training System (DRTS)
- Stationary Infantry Targets are used to train military and law enforcement. These systems provide a more realistic representation of real life situations by incorporating a pop up motion.



Needs

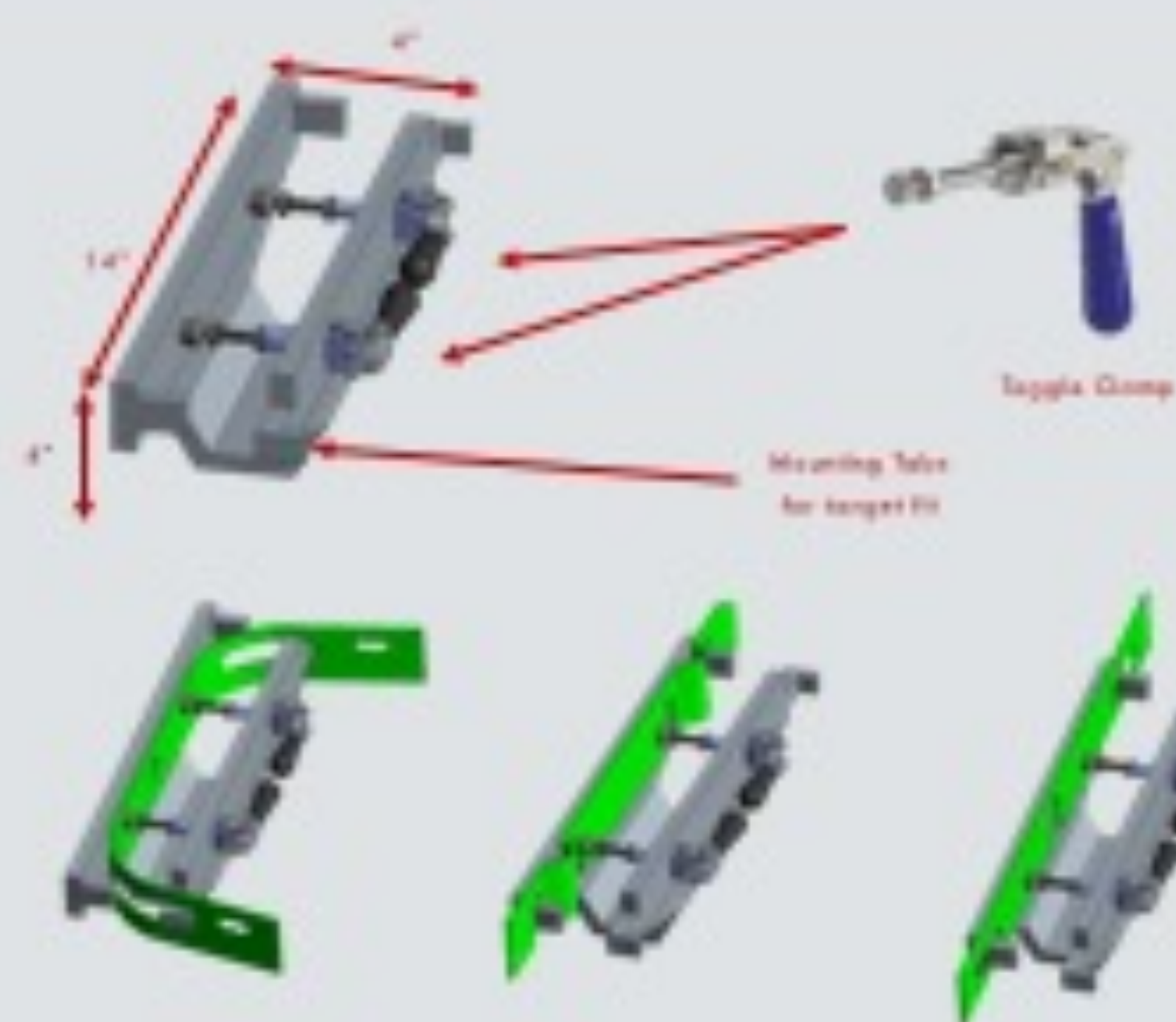
- Accommodation of various standard military targets
 - Incorporate angular rotation
- The modified SIT should be able to function in a harsh environment including wind, cold and hot temperatures and mud. The controlling software must also meet standards given by FASIT 2.0 and be able to rotate to predetermined positions to present a friend or foe to a trainee.



Design

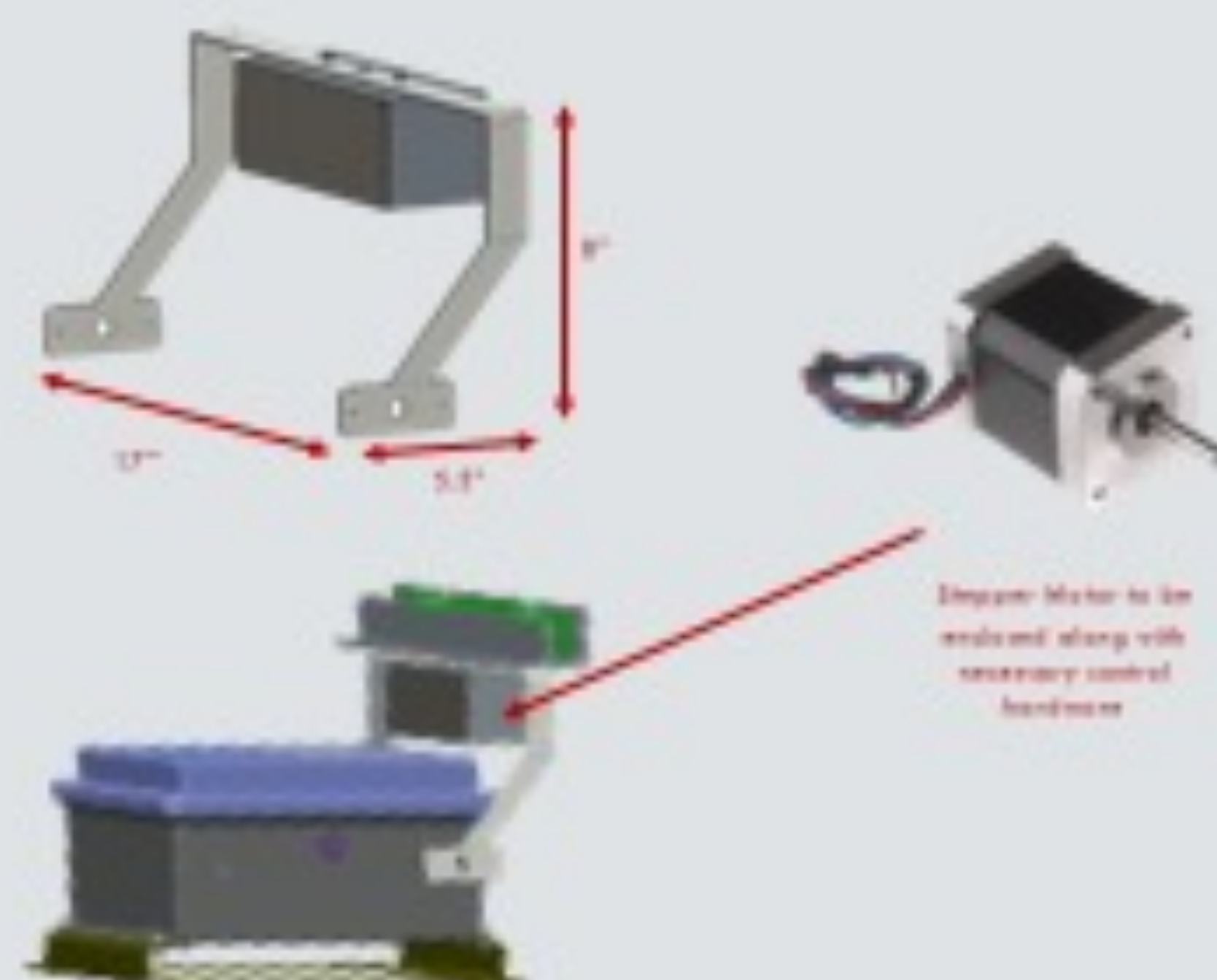
Bracket Design.

The selected bracket design incorporates push/pull hole mounted toggle clamps to secure the various targets in place. The mounting tabs prevent lateral movement of the targets and ensure a proper fit. This design also allows for various common forms of manufacturing, such as casting.



Arm Design

The displayed arm design employs the use of an offset from the lifter itself. This was chosen to avoid a pinch point at the top of the lifter. The arm incorporates a dust-proof enclosure for the components which control the angular rotation of the attached bracket.



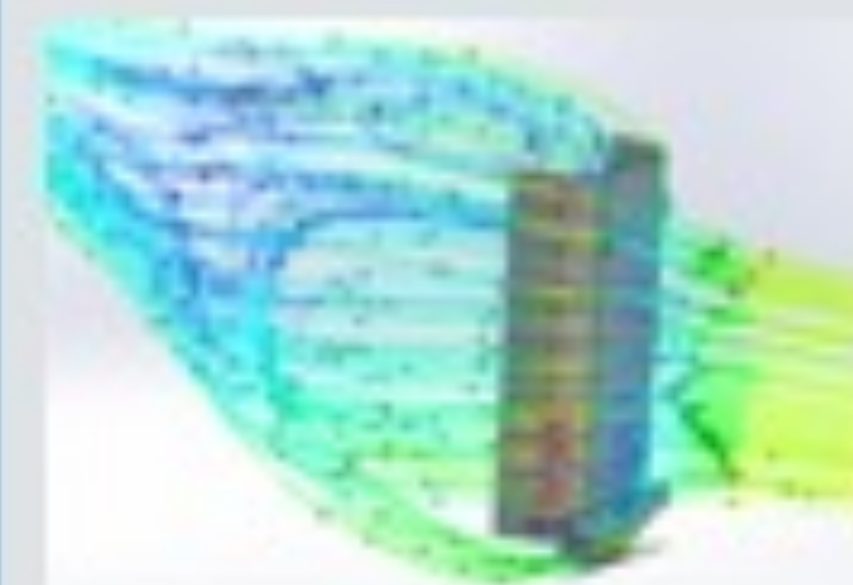
Future

Challenges

- Mating of the Bracket and the Arm assemblies
- Accounting for wind resistance
- Producing a prototype within the given weight constraint of 10 pounds
- Developing a suitable enclosure for the motor and control board

Goals

- Produce relevant engineering analysis of proposed prototype through the use of computer simulations
- Produce a functional prototype which meets the given design constraints



Airflow over curved "front" target from the front



Airflow over curved "front" target from back