



# Southeast Con 2019 Hardware Competition

TEAM 305

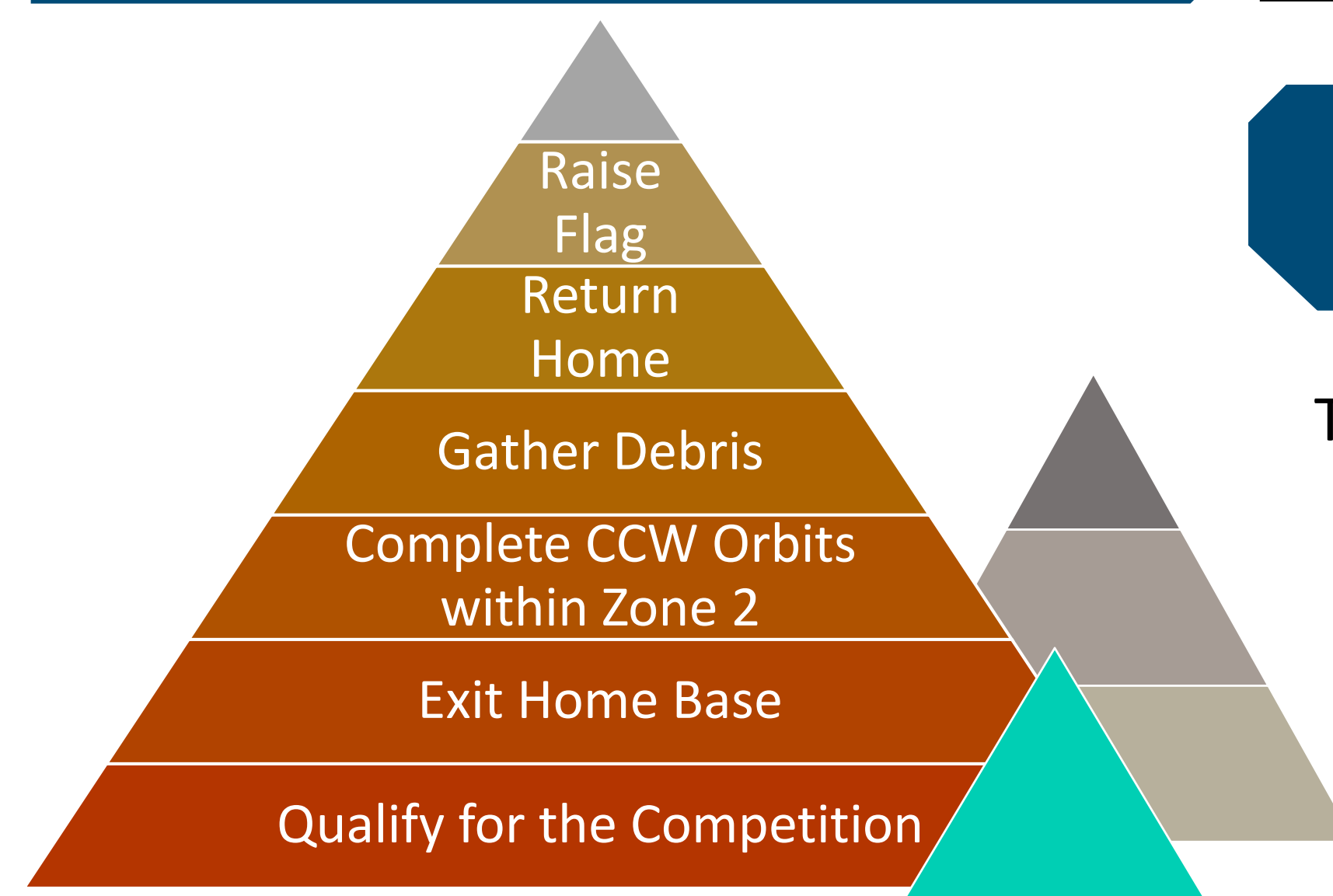
FAMU-FSU  
Engineering

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 Advisor: Linda DeBrunner, Ph.D. Instructor: Jerris Hooker, Ph.D. Reviewers: Bruce Harvey, Ph.D., Leonard Tung, Ph.D.

## Abstract

The IEEE Southeast Con is a national annual robotics competition that is being hosted in 2019 at the Von Braun Center in Huntsville, Alabama from April 11, 2019 through April 14th, 2019. The robotics competition for this year involves designing an autonomous robot that can clean up debris on the playing field and return home, while also sorting the debris. The debris located on the field will also vary between four different colors. During the competition, multiple other robots will be actively playing against each other and points will be deducted if robots collide.

## Objective



## Strategy for Competition

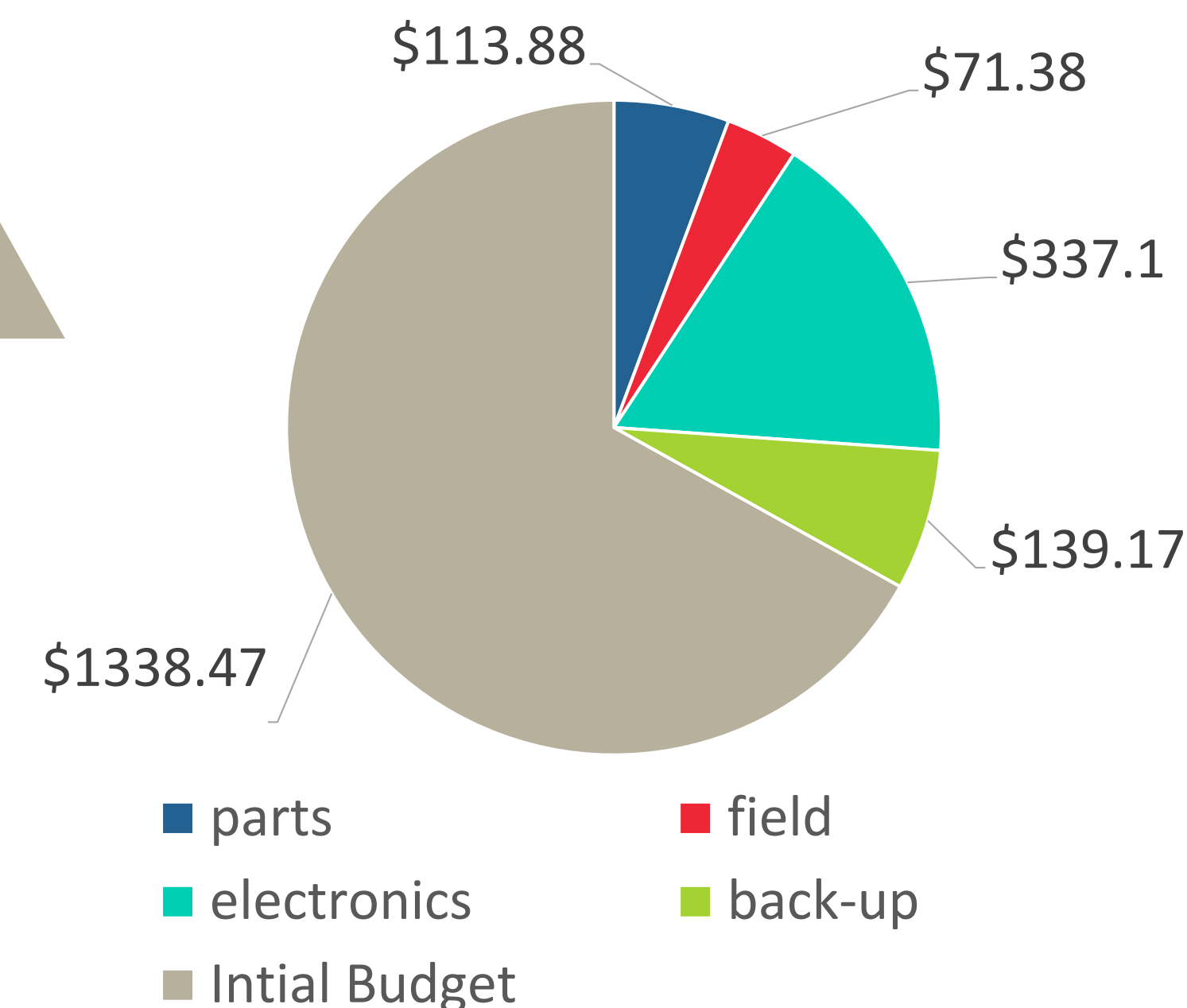
- Navigate field using predetermine route
- Use multiple IR sensors for object detection
- Use Pixy2 camera for color recognition
- Sort and store debris collected in storage unit

## Point System

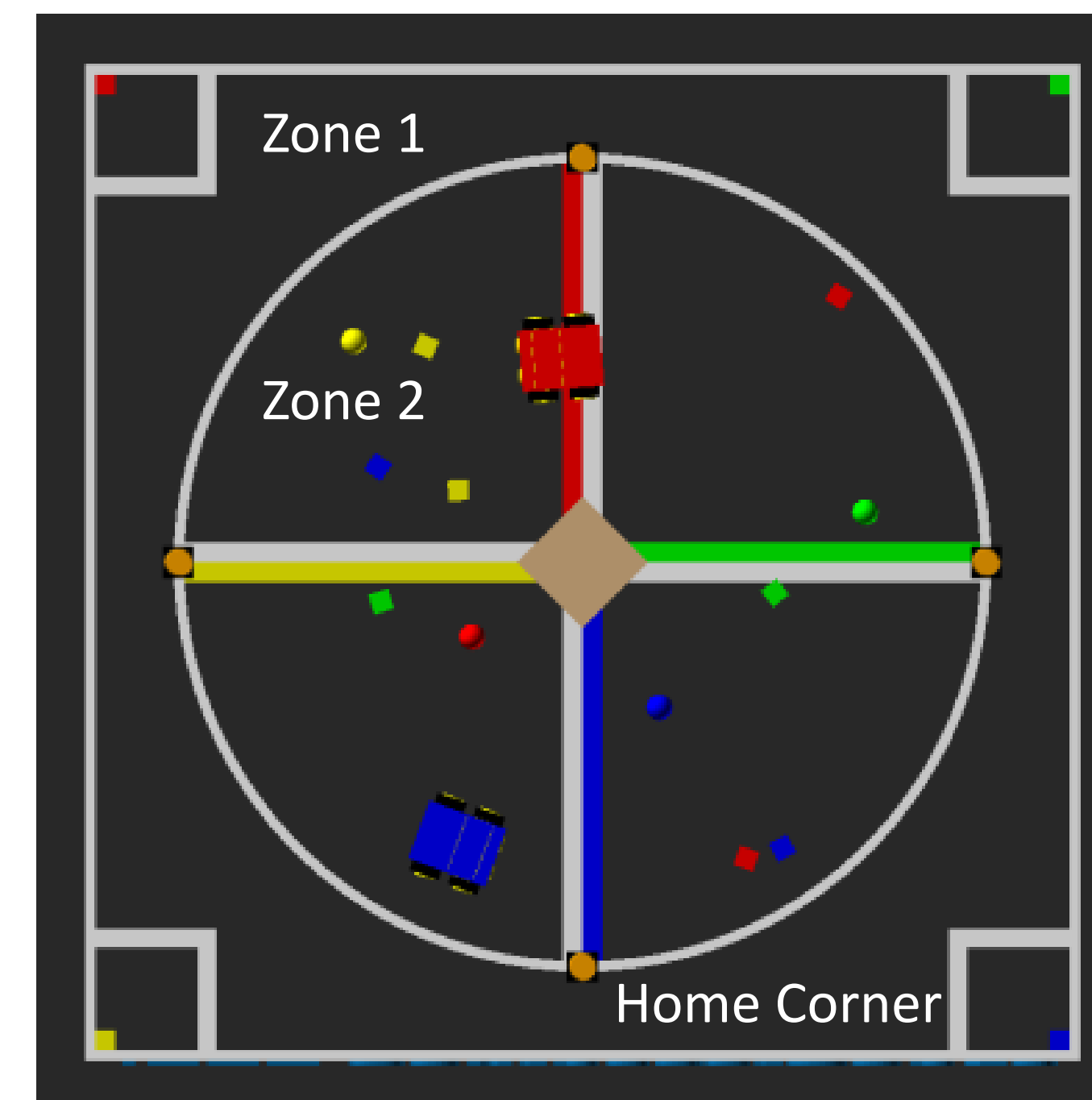
Points	Task
5 Points	Leave home base and enter Zone 1
5 Points	Cross the orbital line into Zone 2 (first time only)
5 Points	For each complete, counter-clockwise orbit within Zone 2, starting from the quadrant closest to designated corner square
10 Points	Debris removed from Zone 2 (each)
10 Points	Debris placed in home base (additional to removal)
10 Points	Color-matched debris placed in appropriated color corner square (bonus points)
10 Points	Finish in your home base
25 Points	At conclusion of debris removal, raise your onboard flag while in home base
-10 Points	Every collision with a Spacetel

## Budget

Total Budget: \$2,000

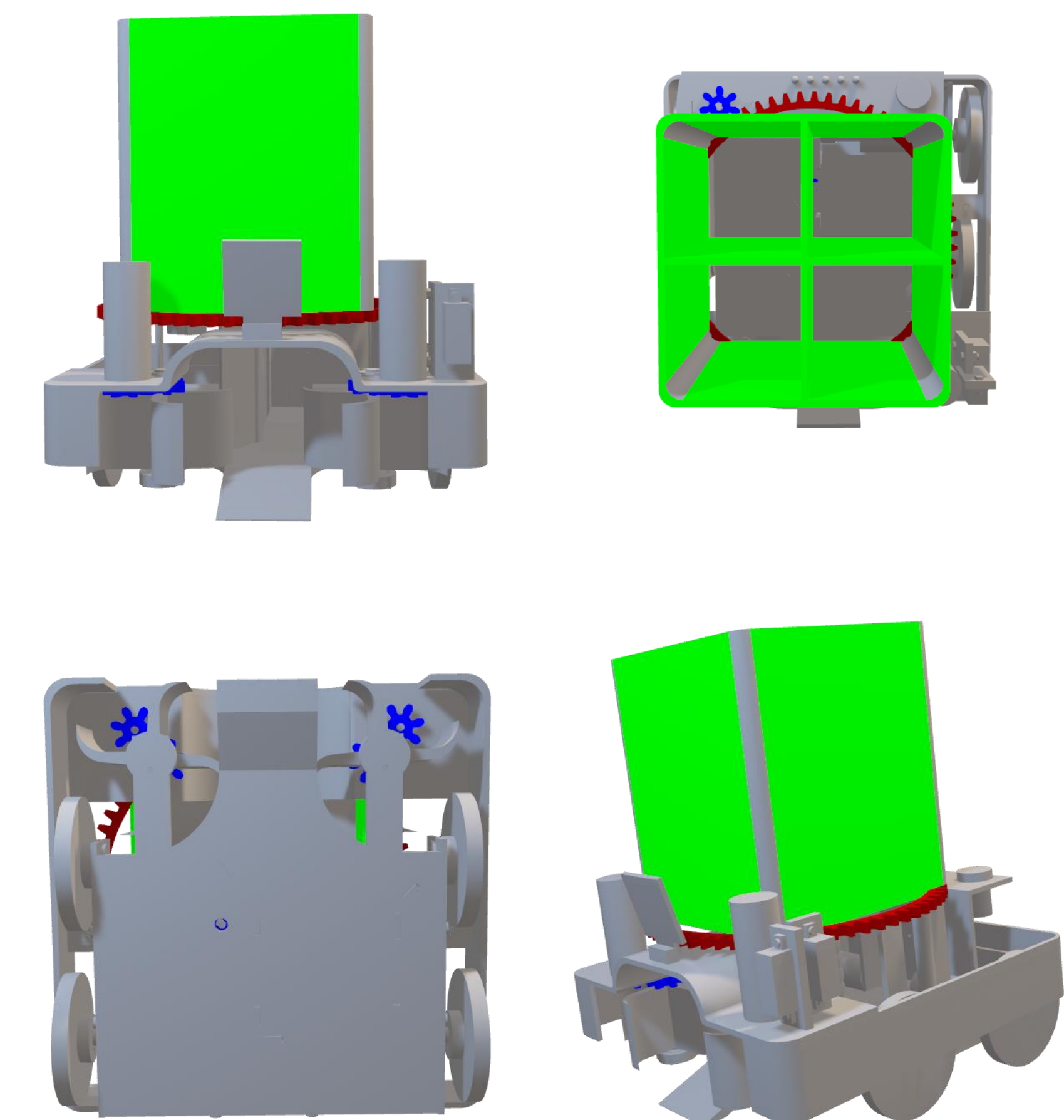


## Playing Field



ZONE 1	Area in which debris needed to be move to
ZONE 2	Inner area where orbits can be completed and debris gathered.
HOME CORNER	Randomly assign starting position for the robot and debris to be place

## Final Design



## Meeting Target

