

The background image shows a large, modern interior space. On the left, there is a wide, multi-level staircase with a copper-colored metal railing. To the right, a tall, glass-enclosed structure, possibly an elevator or a decorative element, rises. The ceiling is white with several large, circular skylights. The overall atmosphere is bright and architectural.

Routonomous

MathWorks Minidrone Competition at
Nordics and Baltics 2021

Jan-Ruben Schmid



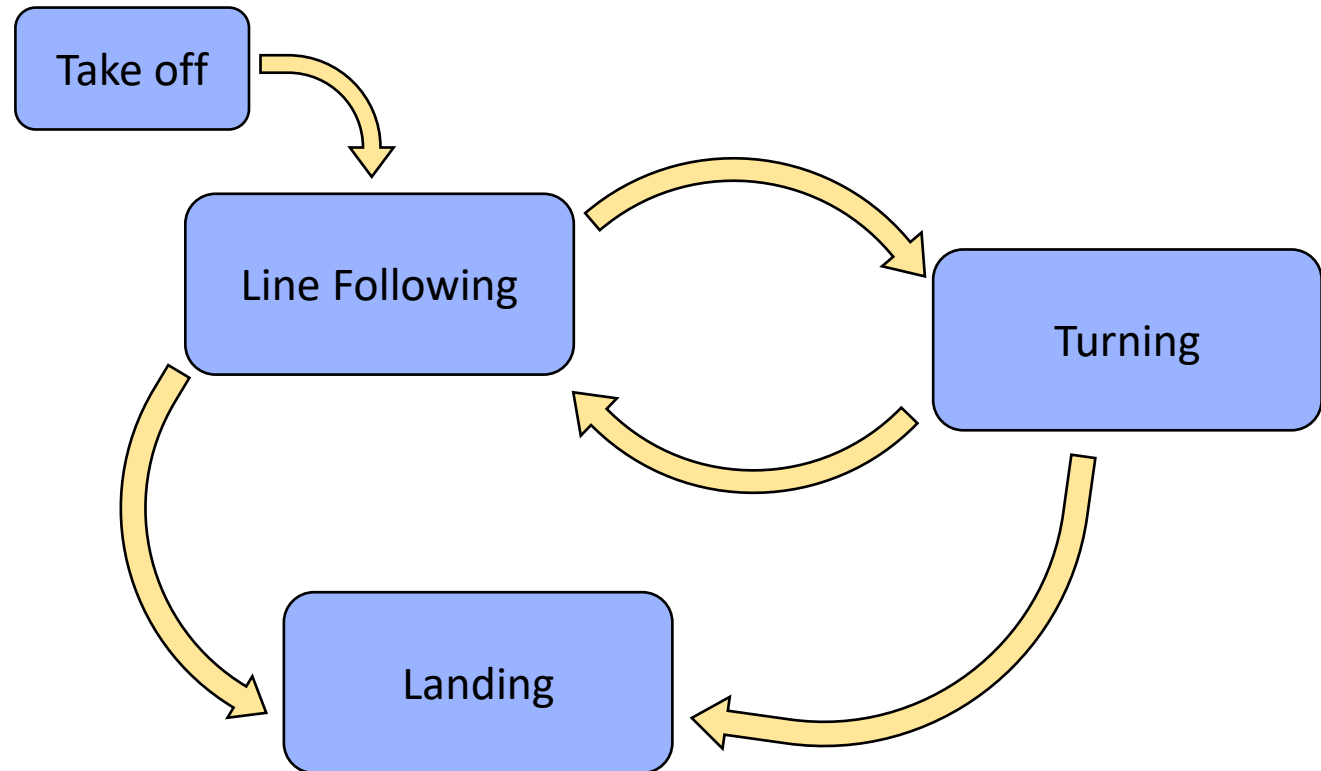
- MSc in Engineering - Robot Systems

Nathan Durocher



- MSc in Engineering - Robot Systems

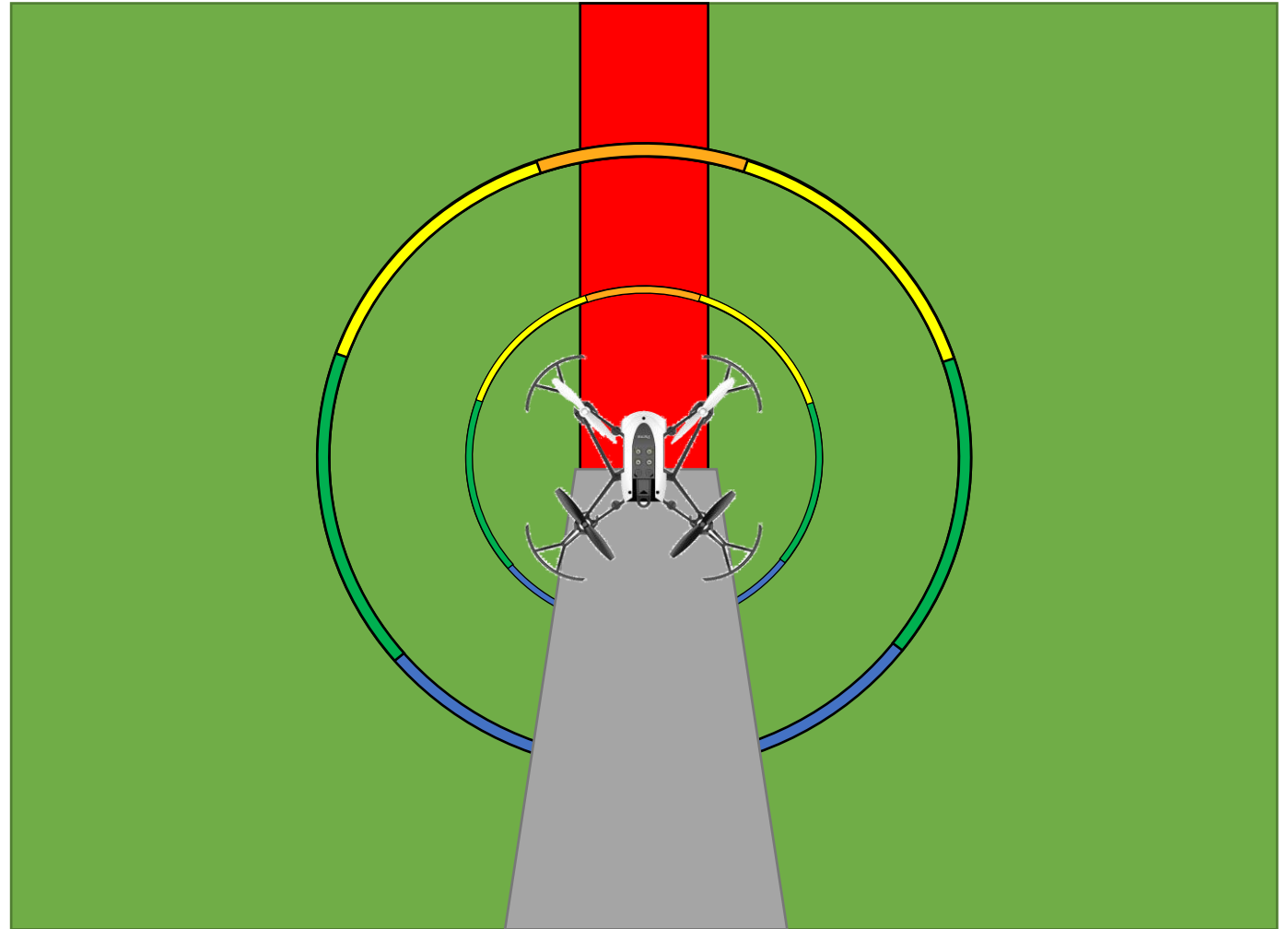
- Each behavior has different priority
- Based on image data



Behaviors

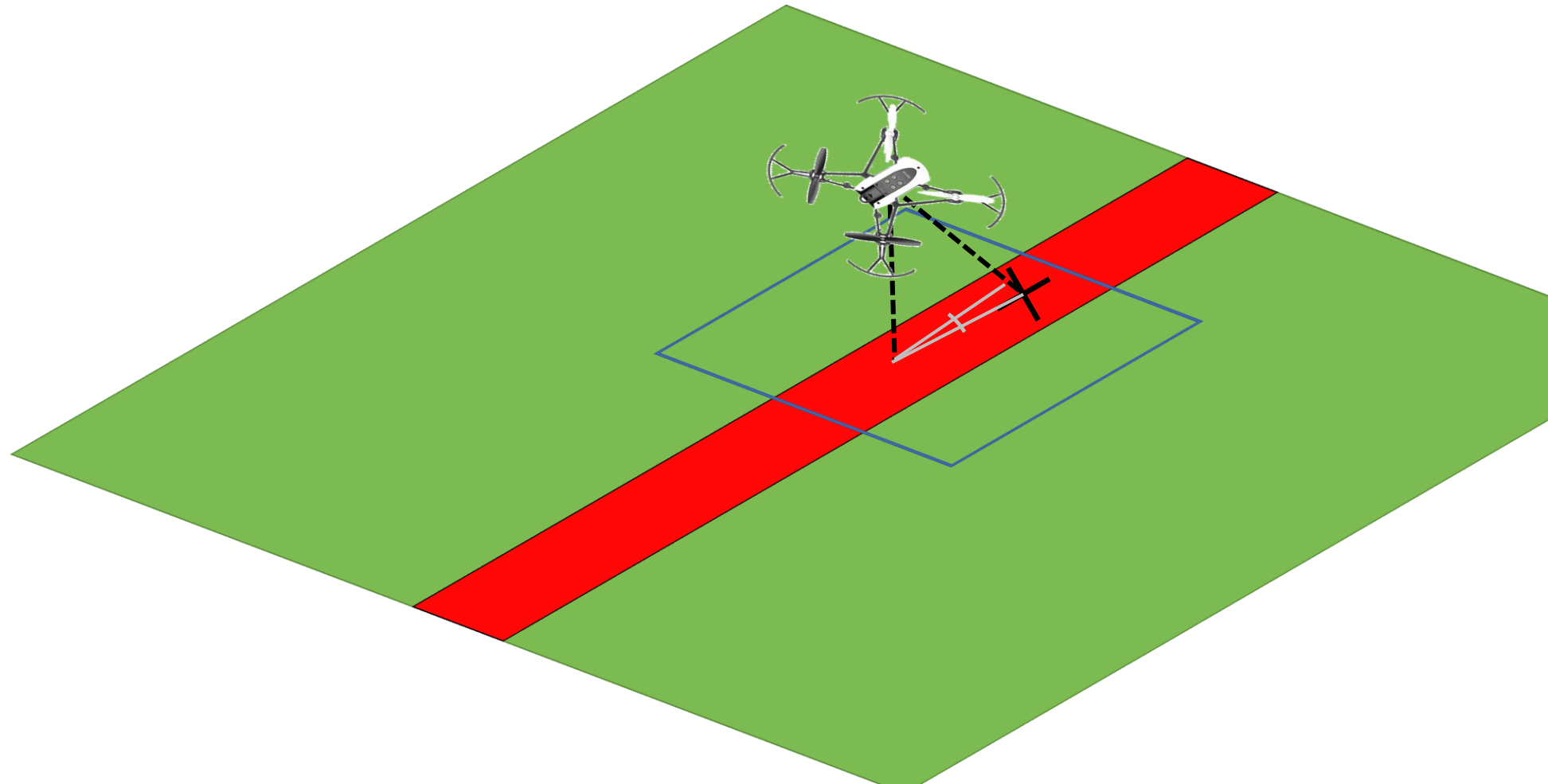
Line following

- Enclosure based line of sight guidance
- Weighted detection radius
- Highest red response provides next waypoint

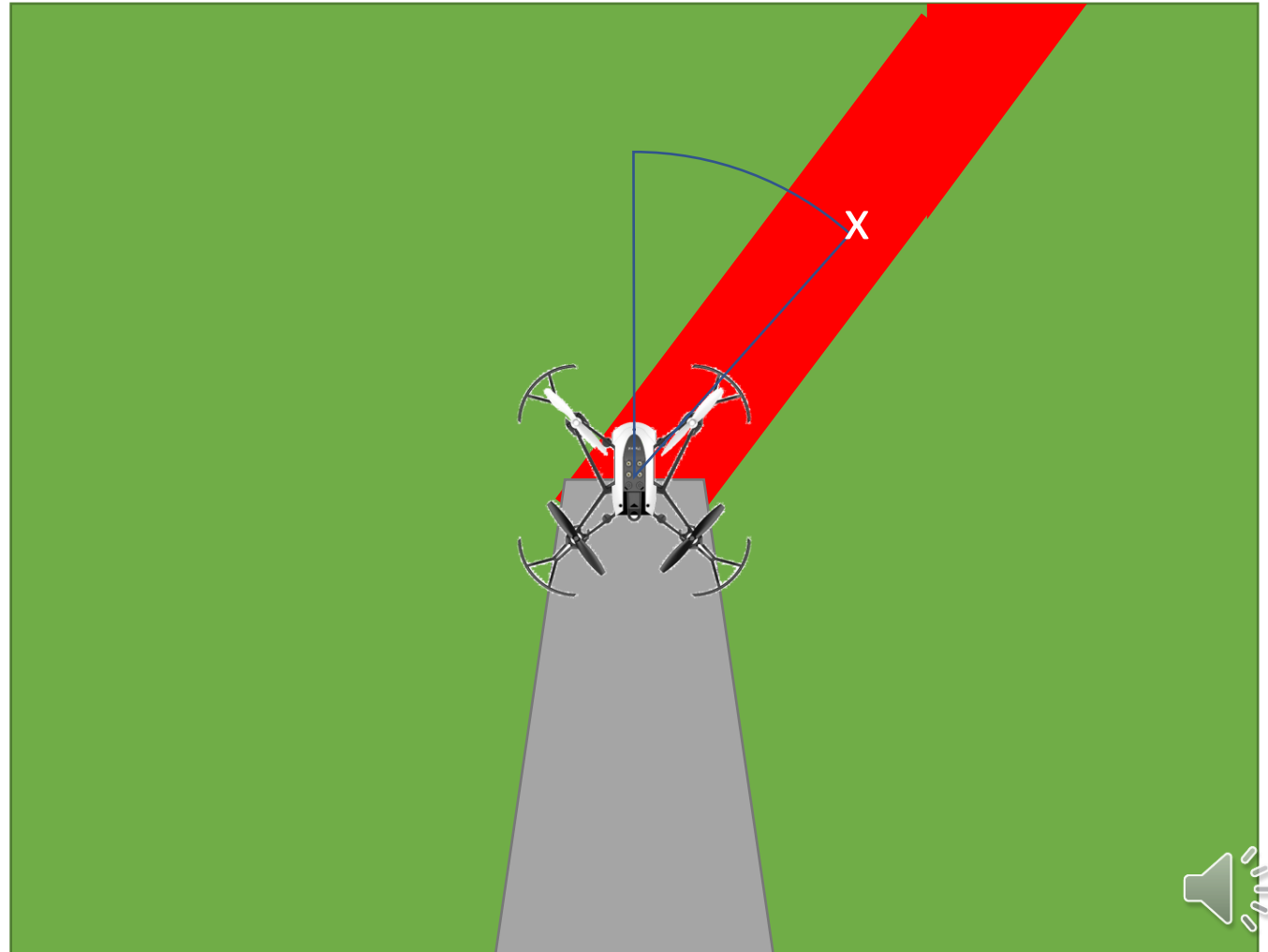


Behaviors

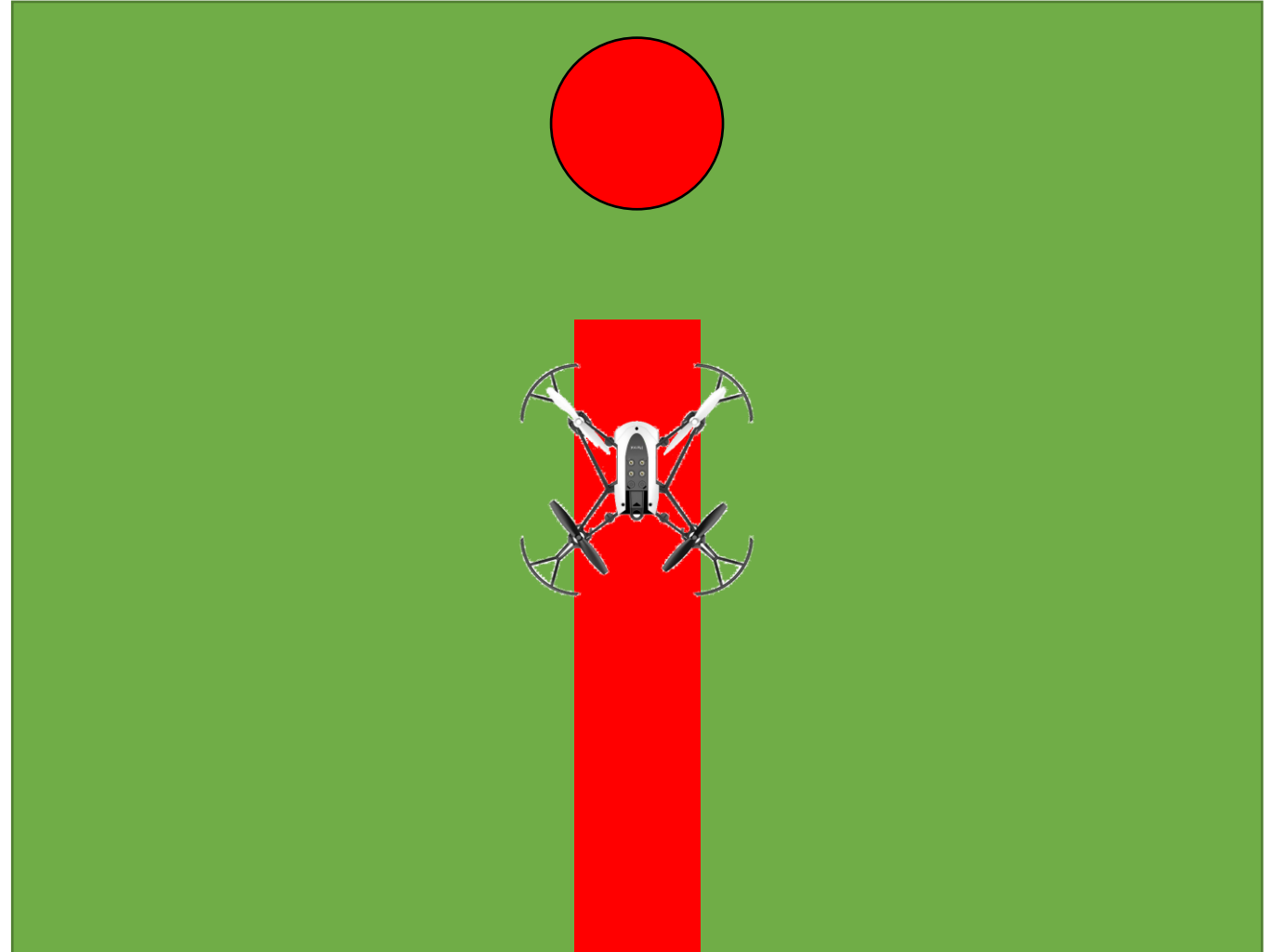
Line following

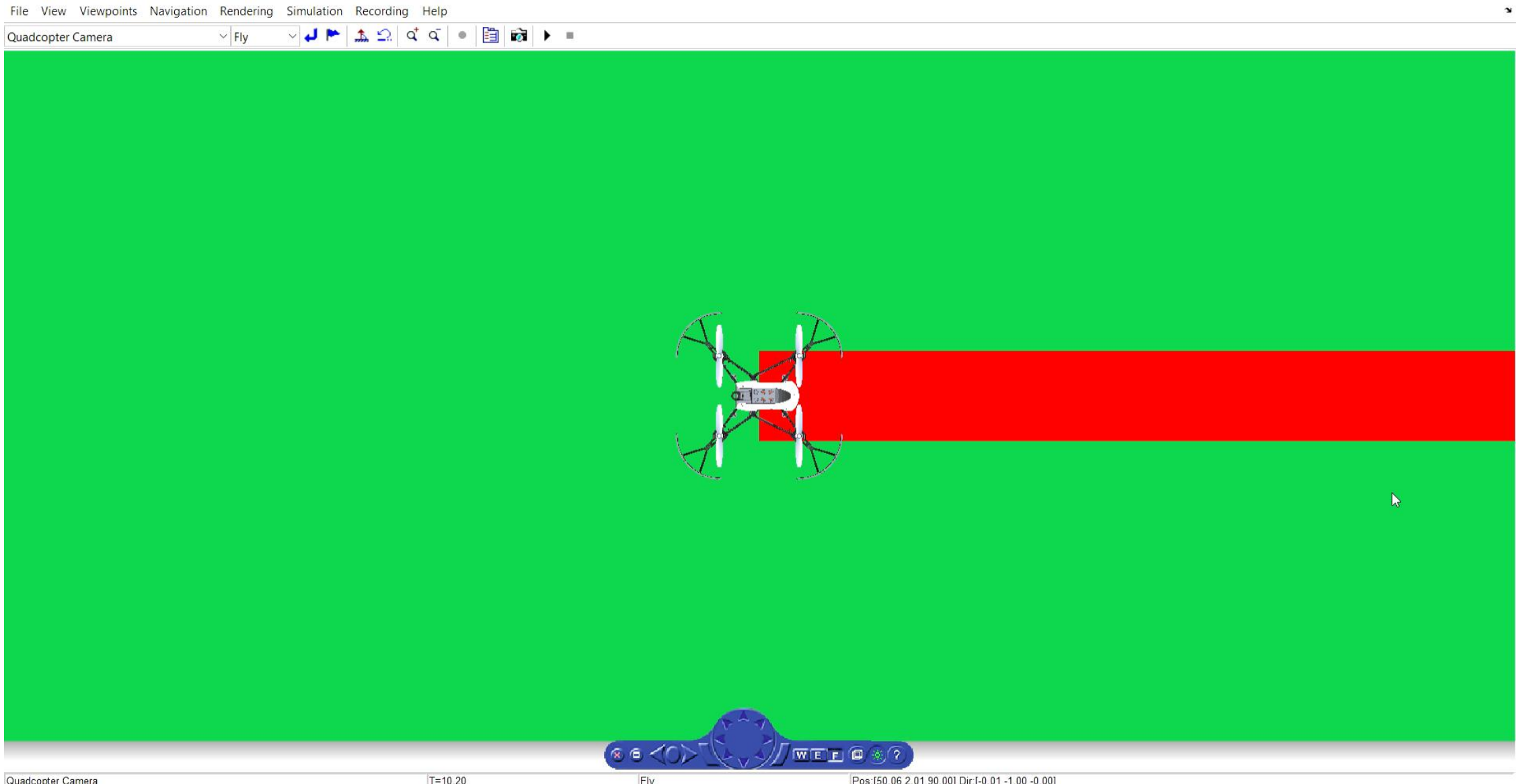


- Mask out previous track
- Adjust yaw based on geometric center of visible line



- Circle detection
- Landing begins when above the geometric center





- Determining proper guidance law
- Constrain and simplify drone model movements
- Extracting real time information from a dynamic environment