Car:

Planner

Tracker

Drone:

Planner

Tracker

Mapping for car model:

Upsample to approximately 1 by 1 m grid if necessary. Else leave it as it is. Add 2m padding around every obstacle (C-space)

Hybrid A\* for car model:

Allow 3 motion primitives going forward (straight forward, turning left, turning right). Move a distance equal to sqrt(2). Allow several orientations per grid?

Hybrid A\* for drone model:

Allow 8 motion primitives in every direction.

Mapping for drone model:

Upsample to approximately 1 by 1 m grid if necessary. Else leave it as it is. Add 2m padding around every obstacle (C-space)

Tracker for car model:

Obstacle recovery in terms of returning to a waypoint (4 m lookbehind) 1 second. Slow down before turns and increase lookahead when speed increases.

Tracker for drone:

Should not hit any obstacles! Therefore, we must go slow and slow down before turns.

Todo:

1. Vary lookahead based on speed. (CarAI.cs) Monday

Limit maximum speed based on angle ahead. (CarAI.cs) Monday

~~Allow several orientations in same cell. (Planner.cs) Sunday~~

~~Fix mapper so it upsamples big cell maps (low resolution) and keeps small cell maps (high resolution). (Mapper.cs) Sunday~~

~~Fix mapper so it adds 2m padding regardless of resolution. (Mapper.cs) Sunday~~

Make A\* version for the drone (Planner.cs) Monday

1. Apply everything that has been done to the car, to the drone. (DroneAI.cs) Tuesday

2.5 Smooth path (remove abundant points and fit a spline to the path) (CarAI/DroneAI) Upon reply from Max

1. Try different terrains and fine tune the models individually (CarAI/DroneAI) Tuesday and forward