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