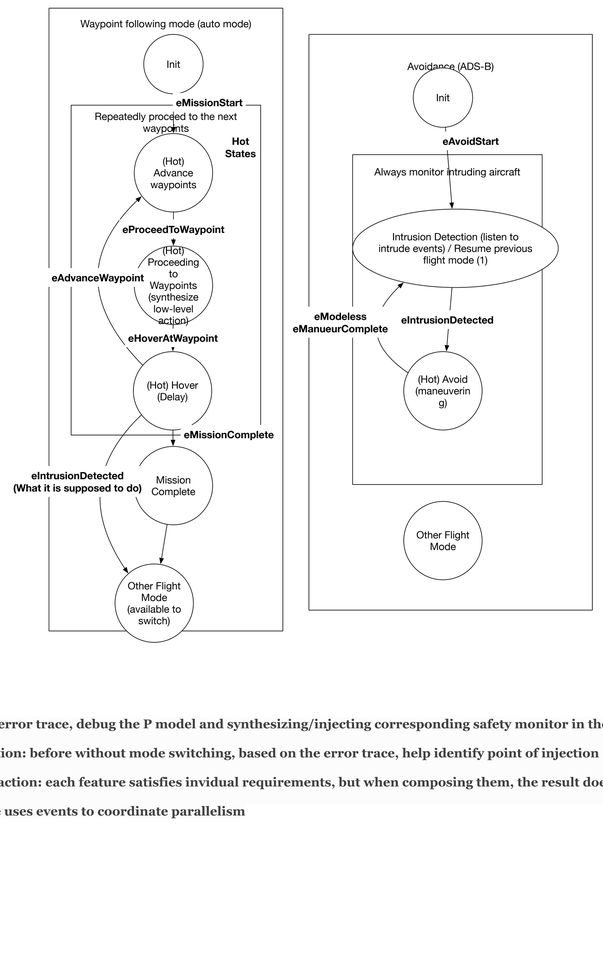


MAV_CMD_NAV_WAYPOINT

Command Field	Mission Planner Field	Description
param1	Delay	Hold time at mission waypoint in integer seconds - MAX 65535 seconds.
param2		
param3		
param4		
param5	Lat	Target latitude. If zero, the Copter will hold at the current latitude.
param6	Lon	Target longitude. If zero, the Copter will hold at the current longitude.
param7	Alt	Target altitude. If zero, the Copter will hold at the current altitude.

ADS-B mode

- AVD_ENABLE: set to “1” to enable ADS-B based avoidance (param refresh may be necessary after setting this)
- AVD_F_DIST_XY: the horizontal distance in meters that should be considered a near-miss
- AVD_F_DIST_Z: the vertical distance in meters above or below the vehicle that should be considered a near-miss
- AVD_F_TIME: how many seconds in advance of a projected near-miss (based on the vehicle’s current position and velocity) the vehicle should begin the `AVD_F_ACTION`.
- AVD_F_ACTION: controls how the vehicle should respond to a projected near-miss (i.e. 2:Climb Or Descend, 3:Move Horizontally, 4:Move Perpendicularly in 3D, 5:RTL or 6:Hover)
- AVD_F_RCVRY: sets how the vehicle will behave after the vehicle has cleared the near-miss area (i.e. 1 = resume previous flight mode)

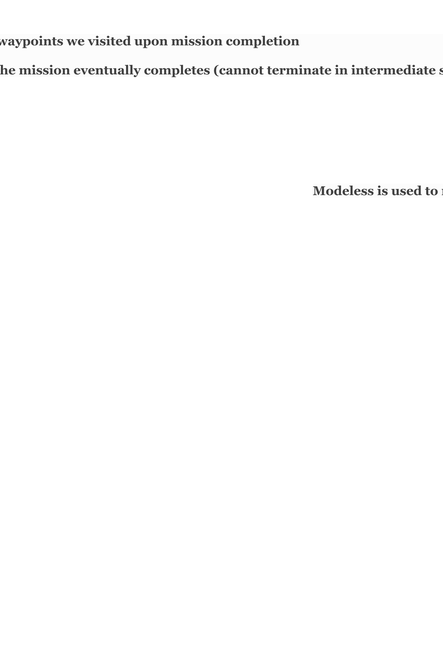
Based on the error trace, debug the P model and synthesizing/injecting corresponding safety monitor in the controller code, or change controller implementation/architecture?

Another solution: before without mode switching, based on the error trace, help identify point of injection

Feature interaction: each feature satisfies invidual requirements, but when composing them, the result does not satisfy

Spec machine uses events to coordinate parallelism

Below is a simplified version of the diagram



safety: all waypoints we visited upon mission completion

liveness: The mission eventually completes (cannot terminate in intermediate states)

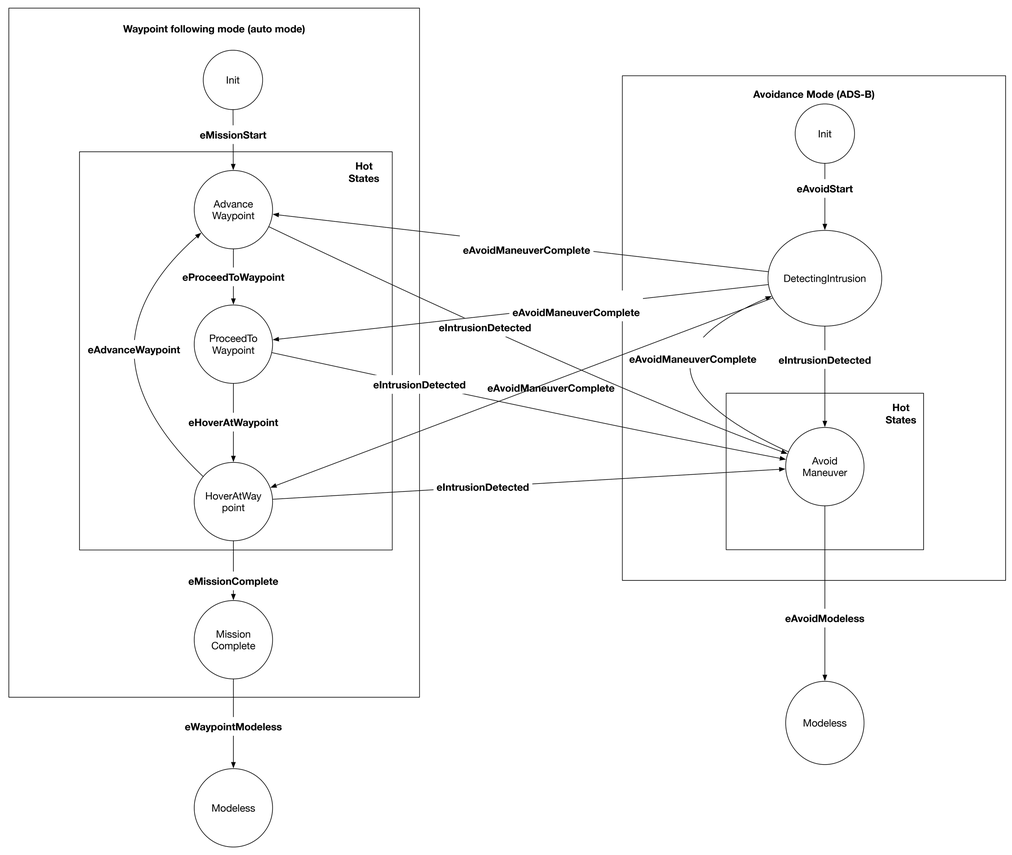
safety: every intrusion detected should be intervened by a corresponding Avoidance maneuver

liveness: All avoidance maneuvers are eventually complete (cannot terminate on AvoidManeuver state)

Modeless is used to resume previous flight mode

Below is a simplified version of the diagram

Solution 1: synthesize composite model, add coupling



Solution 2: Use an independent arbiter (automatic mode switching)

Introduce Pause Mode