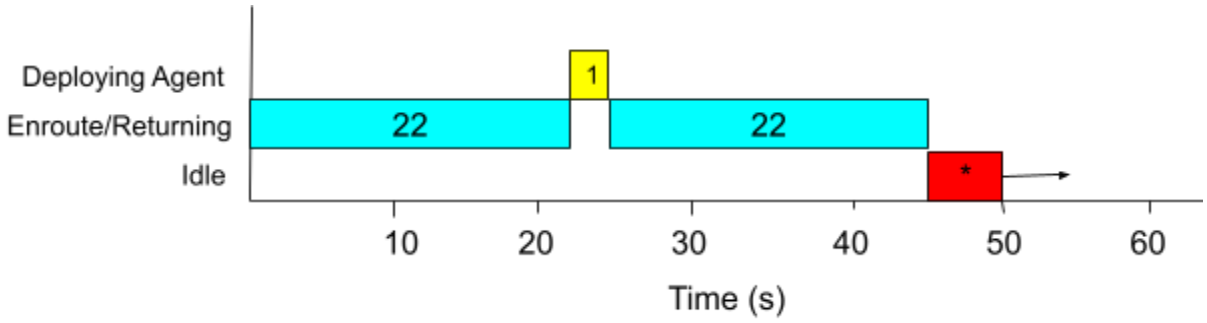
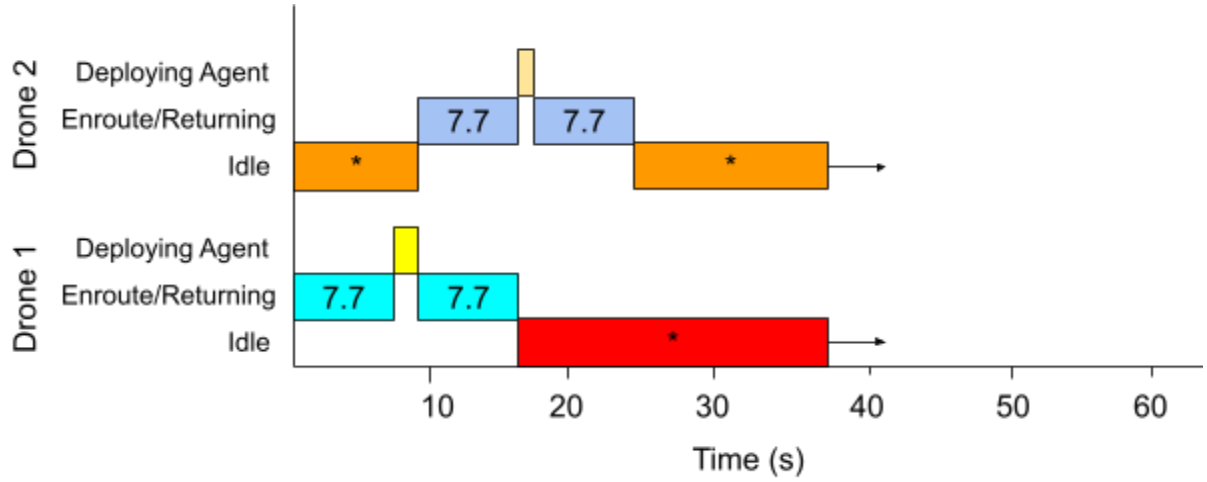
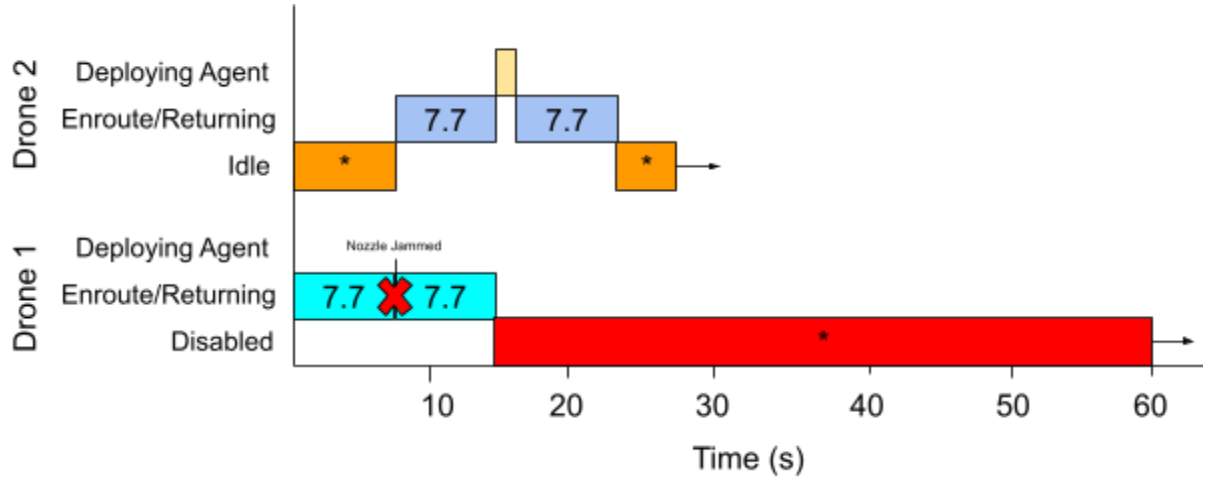


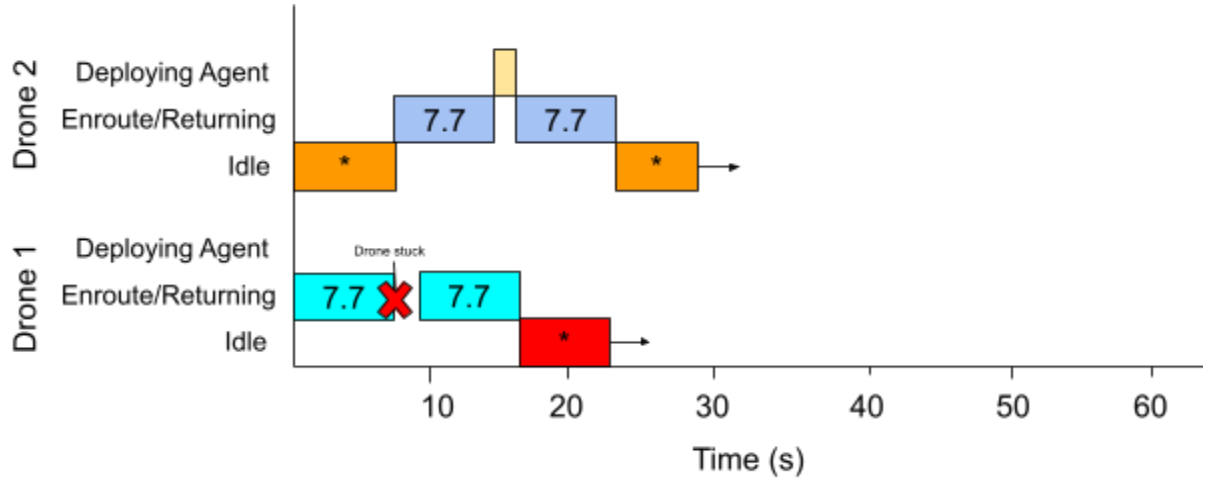
Timing Diagram 1: Zone 3 Low Severity Fire From Base at T=0
At 60 units per second, a single drone travels 22 seconds to zone 3. A low severity fire can be extinguished with a single drone in 1 second (10L/s). Note that the drone remains in the idle state until next scheduled event.



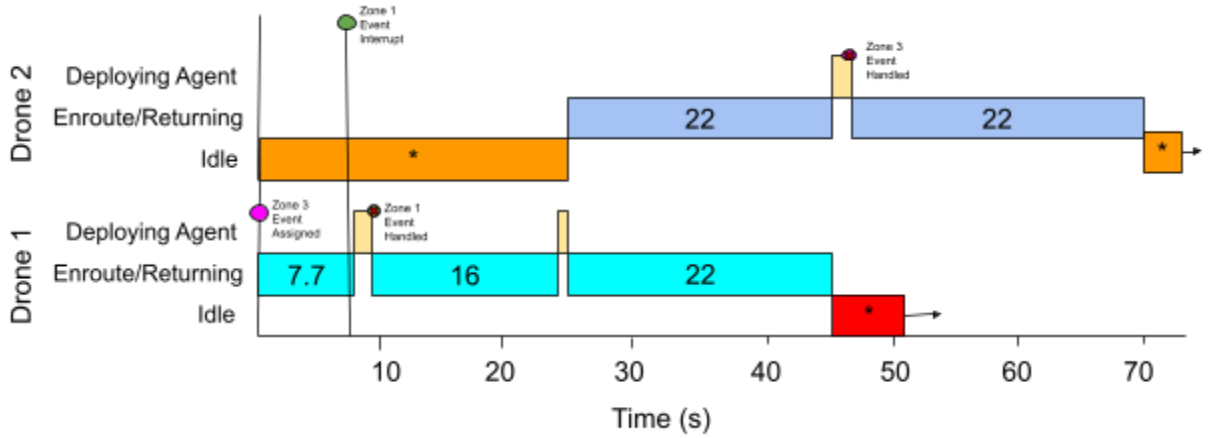
Timing Diagram 2: Zone 1 High Severity Fire, 2 Drones from Base at T=0
At 60 units per second, it takes the drone 7.7 seconds to travel to zone 1. A high severity fire requires 30 L of agent to extinguish, which is the full capacity of 2 drones. Once the first drone deploys its agent, the second drone is signalled to finish the extinguishing to avoid the second travel time of the first drone.



Timing Diagram 3: Zone 1 Low Severity at T=0 With Fault: Nozzle Jammed
At 60 units per second, it takes the drone 7.7 seconds to travel to zone 1 from base. A low severity fire only requires 10 L, or 1 drone. Drone 1 in this diagram has a fault, with its nozzle jamming at 15 s. This causes it to relinquish control of its event and return it to the queue, where the next drone is given the event. Drone 2 has the same travel time as drone 1, spends 1 second deploying its agent, then spends 7.7 seconds returning to base. Drone 1 remains disabled until it can be serviced (outside the scope of the program).



Timing Diagram 4: Zone 1 Low Severity at T=0 With Fault: Drone Stuck
At 60 units per second, it takes the drone 15 seconds to travel to zone 1 from base. A low severity fire only requires 10 L, or 1 drone. Drone 1 in this diagram has a fault, getting stuck in a tree. This causes it to relinquish control of its event and return it to the queue, where the next drone is given the event. Drone 2 has the same travel time as drone 1, spends 1 second deploying its agent, then spends 7.7 seconds returning to base. Drone 1 returns to base and is idle until it receives an event.



Timing Diagram 5: Zone 1 Low Severity (T=7.5) Interrupts Zone 3 Medium Severity (T=0)
In this diagram, a medium severity fire in Zone 3 is assigned to Drone 1, then a low severity fire in Zone 1 is assigned while Drone 1 is en route to Zone 3. Drone 1 stops to handle the zone 1 event with 10 L of agent, then continues to zone 3. After deploying 5 L of extinguishing agent in zone 3, another drone is assigned the remaining event and uses 15 L to complete the event in zone 3.