

<b>Drone Agent</b>
A drone that patrols over a warehouse looking for threats.
<b>State description</b>
is_flying: Is the drone flying or parked
is_controlled_by_security: Has security personell taking charge of the drone?
mission_completed: The simulation has ended
chasing_robber: Is the drone after a robber
target_robber: The drone has a robber as target
<b>Actions</b>
take_off: The drone eleveteas form its landing station
land: The drone goes to its landing station and lands
patrol: The drone moves around the warehouse looking for threats
inspect_area. Go to an area where suspicious activity was detected
chase_robber: Go after a target robber
<b>Methods</b>
check_collision: Check if it is safe to move to the target cell
find_safe_position: If going to collide find a cell where the collition would be avoided
<b>Communication</b>
CA-1/protocol: INFORM_THREAT/SurveillanceProtocol rolename: Surveillant
CA-2/protocol: ACCEPT_CONTROL/ControlProtocol rolename: Responder

<b>Camera Agent</b>
A camera located in a fixed point of the warehouse
<b>State description</b>
detection_radius: The radius to which the camera can detect movement
last_detection_time: The last time movement was detected
detected_agents: What agent was detected
<b>Actions</b>
scan_area: Actively scan area for any agents
detect_movement: Detect if any agent is within detection radius
<b>Methods</b>
alert_drone: Alert the nearest drone about detected robber
<b>Communication</b>
CA-1/protocol: ALERT_THREAT/SurveillanceProtocol rolename: Observer
CA-2/protocol: REQUEST_ASSISTANCE/AssistanceProtocol rolename: Alerter

<b>Security Personnel Agent</b>
A security person that goes around the warehouse looking for threats.
<b>State description</b>
has_drone_control: Is it currently controlling a drone
chasing_robber: Is it chasing a robber
target_robber: The robber which it is chasing if any
alerted_to_robber: Has it been alerted of a robber by a drone or camera
alerted_to_robber: Has it been alerted of a robber by a drone or camera
movement_speed: How fast is it moving at any given time
<b>Actions</b>
patrol: Patrol the area randomly while avoiding collisions
chase_robber: Chase and try to catch the robber with increased urgency
assess_threat: Assess if drone's area inspection reveals a threat
<b>Methods</b>
take_drone_control: Take control of a drone
release_drone_control: Release control of a drone
check_collision: Check if moving to new position would cause collision
<b>Communication</b>
CA-1/protocol: REQUEST_CONTROL/ControlProtocol rolename: Controller
CA-2/protocol: COORDINATE_PURSUIT/PursuitProtocol rolename: Pursuer

### **Robber Agent**

A robber who tries to sneak in the warehouse and not be detected

### **State description**

is\_caught: Has it been caught by another agent

is\_spotted: Has another agent detected it

### **Actions**

move: Move while trying to avoid detection and collisions

evade\_threats: Move away from detected threats

### **Methods**

check\_nearby\_threats: Check for nearby drones and security personnel

check\_collisions: Check if moving to new position would cause collision

### **Communication**

CA-1/protocol: None  
rolename: Target