|  |  |
| --- | --- |
| **Use Case Name** | UC1: Move Elevator |
| **Scope** | Elevator |
| **Level** | User Goal |
| **Primary Actor** | Passenger |
| **Stakeholders and Interests** | Passenger:   * Call elevator to current floor * Move from one floor to another * Be able to stop the elevator   Maintenance:   * Call elevator to current floor * Move from one floor to another * Be able to stop the elevator |
| **Preconditions** | Preconditions:   * Elevator is not currently full * No maintenance mode, no alarm conditions |
| **Post Conditions** | Post Conditions:   * Elevator goes to floor that it is called on * Elevator moves to requested floor in some predetermined order * Elevator updates displays when it arrives at floor |
| **Main Success Scenario**  Actor Action | System Responsibility |
| 1. Actor presses button to call elevator |  |
|  | 1. Elevator moves to floor |
|  | 1. Elevator opens door |
| 4. Person gets on elevator |  |
|  | 5.Elevator closes door |
| 6. Person chooses floor |  |
|  | 7.Elevator moves to floor |
|  | 8. Elevator opens doors |
| 9. Person gets off elevator |  |
|  | 10. Elevator closes doors |
| **Alternate flows** | **Passenger presses stop**   1. When passenger is on elevator, they push stop button 2. Elevator stops at nearest floor in direction it is travelling 3. Elevator opens door and passenger exits 4. Elevator returns to beginning state   **Elevator receives alarm**   1. Anytime elevator gets alarm 2. Elevator follows UC3 for alarm code 3. Passenger is dropped off at the nearest floor   **Elevator is in maintenance mode**   1. Anytime elevator gets maintenance signal 2. Elevator follows UC2 for maintenance flow 3. Passenger is dropped off at desired floor |

|  |  |
| --- | --- |
| **Use Case Name** | UC2 Maintenance Mode |
| **Scope** | Elevator |
| **Level** | Maintenance Worker Goal |
| **Primary Actor** | Maintenance Worker |
| **Stakeholders and Interests** | Maintenance Worker   1. Maintenance worker wants to be able to perform safe uninterrupted scheduled / unscheduled maintenance on elevator   Passenger   1. Passenger wants maintenance to complete quickly so they can ride elevator |
| **Preconditions** | 1. Maintenance worker is validated by system |
| **Post conditions** | 1. Elevator is in maintenance mode 2. Elevator is empty 3. Elevator is on first floor 4. Elevators doors are open |
| **Main Success Scenario**  Actor Action | System Responsibility |
| 1. Person turns switch to put elevator in maintenance mode |  |
|  | Elevator verifies that person is a maintenance worker |
|  | Elevator updates status to maintenance mode, which causes it to reject new requests |
|  | Elevator processes all current requests as per UC1 |
|  | Elevator goes to first floor |
|  | Elevator opens doors |
| 1. Maintenance crew performs required maintenance action |  |
| **Alternate Flows** | **Elevators is immobile for whatever reason**   1. Elevator stays at UC2 step 4 indefinitely |

|  |  |
| --- | --- |
| **Use Case Name** | UC3: Switch Elevator On and Off |
| **Scope** | Elevator |
| **Level** | Alarm System Goal |
| **Primary Actor** | Alarm System |
| **Stakeholders and Interests** | Passengers   1. Exit building safely   Firefighters   1. Wish elevator to be cleared as fast as possible |
| **Preconditions** | 1. Elevator is currently functional |
| **Post conditions** | 1. Elevator is empty 2. Elevator is on the first floor |
| **Main Success Scenario**  Actor Action | System Action |
| 1. Alarm sends signal to begin alarm process |  |
|  | Elevator receives alarm code |
|  | Elevator updates alarm status |
|  | Elevator goes to nearest floor |
|  | Elevator opens doors |
| 1. Alarm sends off message |  |
|  | Elevator closes doors |
|  | Elevator proceeds to first floor uninterrupted |
|  | Elevator resets |
| **Alternating Flows** | **Elevators is immobile for whatever reason**   1. Elevator stays at UC2 step 4 indefinitely |

|  |  |
| --- | --- |
| **Use Case Name** | **Call Elevator to Location** |
| **Scope** | Elevator |
| **Level** | Passenger Goal |
| **Primary Actor** | Passenger |
| **Stakeholders and Interests** | Passengers   1. Be able to call an elevator to a specific location |
| **Preconditions** | 1. Elevator is currently functional |
| **Post Conditions** | 1. Elevator is on the floor that it was called to 2. Elevator doors are open |
| **Main Success Scenario**  **Actor Action** | System Action |
| 1. Passenger presses call elevator button |  |
|  | Elevator adds need to move to passengers floor to priority queue |
|  | Elevator finishes drop-offs in direction it’s travelling then travels to passengers floor |
|  | Elevator doors open |
| **Alternating Flows** | **Elevator is immobile**   1. Elevator stays at floor it’s currently on |

|  |  |
| --- | --- |
| **Use Case Name** | Tell Elevator to Drop a Passenger Off |
| **Scope** | Elevator |
| **Level** | Passenger Goal |
| **Primary Actor** | Passenger, Elevator |
| **Stakeholders and Interests** | Passenger  1 .Arrive at desired floor safely and quickly  Elevator   1. Drop all passengers off quickly and safely |
| **Preconditions** | 1. Elevator must have a passenger with a desired location in the queue |
| **Post Conditions** | 1. Elevator is on desired floor 2. Elevator doors are open |
| **Main Success Scenario**  **Actor Action** | **System Action** |
| 1.Passenger presses button of the floor they wish to go to |  |
|  | 2.Elevator queues desired floor |
|  | 1. Elevator closes doors |
|  | 1. System moves in direction of desired floor, stopping at any requested floors while in route |
|  | 1. Elevator arrives at desired floor |
|  | 1. Elevator opens doors |
| **Alternative flows** | **Alarm Code**   1. Elevator receives alarm call while in route to floor 2. Elevator proceeds per UC3 Alarm Code   **Elevator breaks**   1. Elevator remains at floor it’s broken on until fixed by maintenance   **Stop Request**   1. Elevator receives stop request 2. Elevator follows protocol from UC Stop Code |

|  |  |
| --- | --- |
| **Use Case Name** | **Alarm Code** |
| **Scope** | **Elevator** |
| **Level** | Passenger Goal |
| **Primary Actor** | Passenger, Elevator |
| **Stakeholders and Interests** | Passenger   1. Stop at nearest floor and exit elevator |
| **Preconditions** | 1. Elevator currently has passengers on it |
| **Post Conditions** | 1. Elevator stops wherever button is pressed |
| **Main Success Scenario**  **Actor Action** | **System Action** |
| 1. Actor presses stop button |  |
|  | 1. Elevator stops wherever it’s at |
| **Alternate Flows** | **Alarm is activated**   1. Elevator follows protocol from Alarm Code UC. |