COMP 3005
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COMP 3004 - Assignment #3

Name: Standard elevator use
Scope: Standard use of an elevator
Goal in Context(level?): To use the elevator to go to the desired level
Primary Actor: Elevator rider (the user)
Preconditions: For an elevator to be in a greater than 1 story building
Postconditions(Main Success scenario):

- User requests elevator to current floor
- Elevator arrives at current floor
- User steps in elevator cart and presses desired floor
- Elevator arrives at desired floor and its doors open
- User steps out safely at desired floor

Extensions:

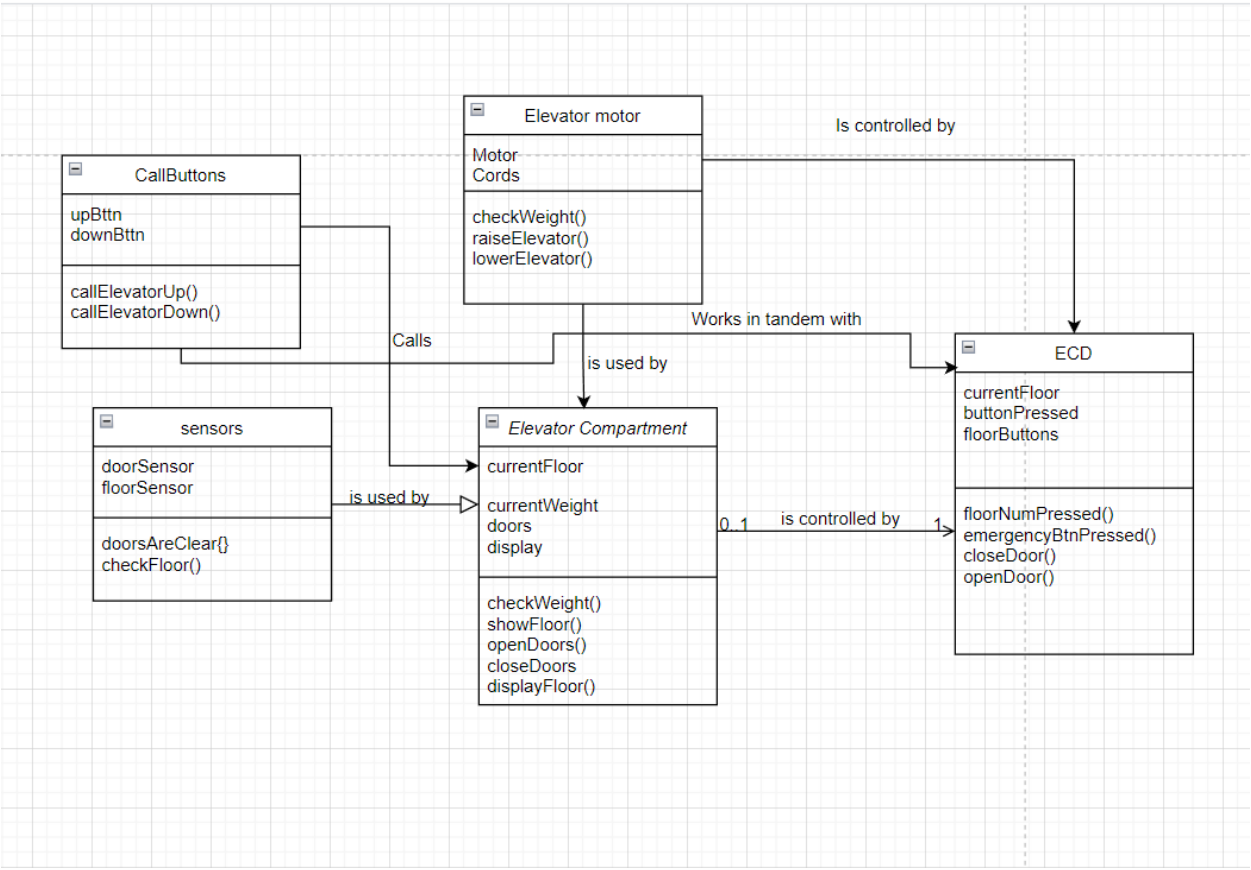
1. Elevator does not arrive at current floor
    a. Elevator maintenance is informed
2. Elevator arrives
    a. User steps in elevator
    b. Elevator informs user that weight limit is exceeded
    c. Elevator maintenance is informed
    d. User leaves elevator and takes the stairs
3. Elevator arrives
    a. User steps in elevator
    b. User selects desired floor
    c. Elevator begins to move but then is stopped
    d. User contacts maintenance by emergency contact device built in
    e. Maintenance safely extracts user from elevator
    f. Maintenance takes not of what caused the issue
4. Elevator arrives
    a. User steps in elevator
    b. User selects desired floor
    c. Elevator begins to move but then is stopped by user
    d. User then restarts elevator by pressing start button
5. Elevator arrives
    a. User steps in elevator
    b. User selects desired floor
    c. Elevator moves to desired floor but doors don’t open
    d. User contacts maintenance by emergency contact device built in
    e. Maintenance safely extracts user from elevator

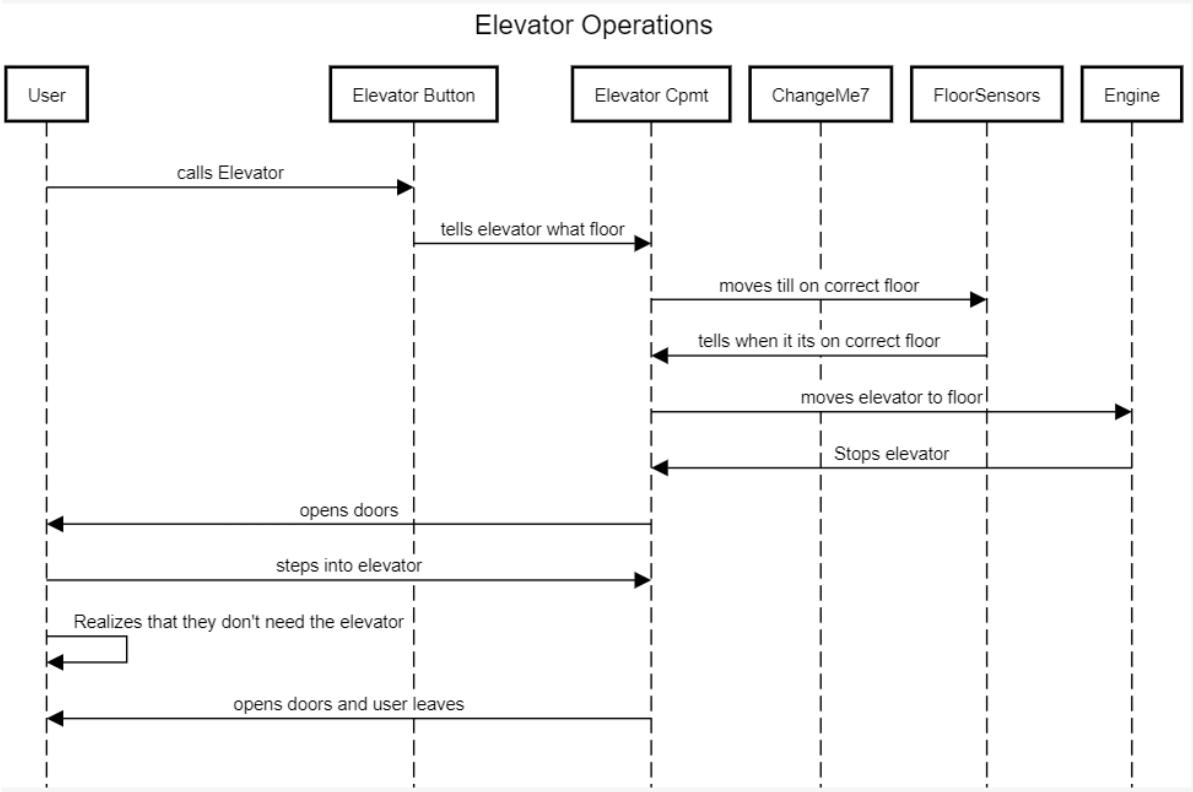
    f. Maintenance takes not of what caused the issue
6. Elevator arrives
    a. User steps in elevator
    b. User selects desired floor
    c. Fire alarm within building goes off
    d. Elevator informs user of fire
    e. Elevator changes course to safe floor
    f. Elevator arrives at safe floor
    g. Doors open, user exits elevator
7. Elevator arrives
    a. User steps into the elevator
    b. Elevator door sensors notice something is blocking the door from closing
    c. The elevator doors stop from trying to close and re-open again
    d. Elevator doors remain open until obstacle in removed from blocking the door
8. Elevator arrives
    a. User steps in elevator
    b. User selects desired floor
    c. Power in building, suddenly goes off
    d. Emergency power turns on
    e. Elevator moves to a safe floor
    f. Doors open, user exits elevator

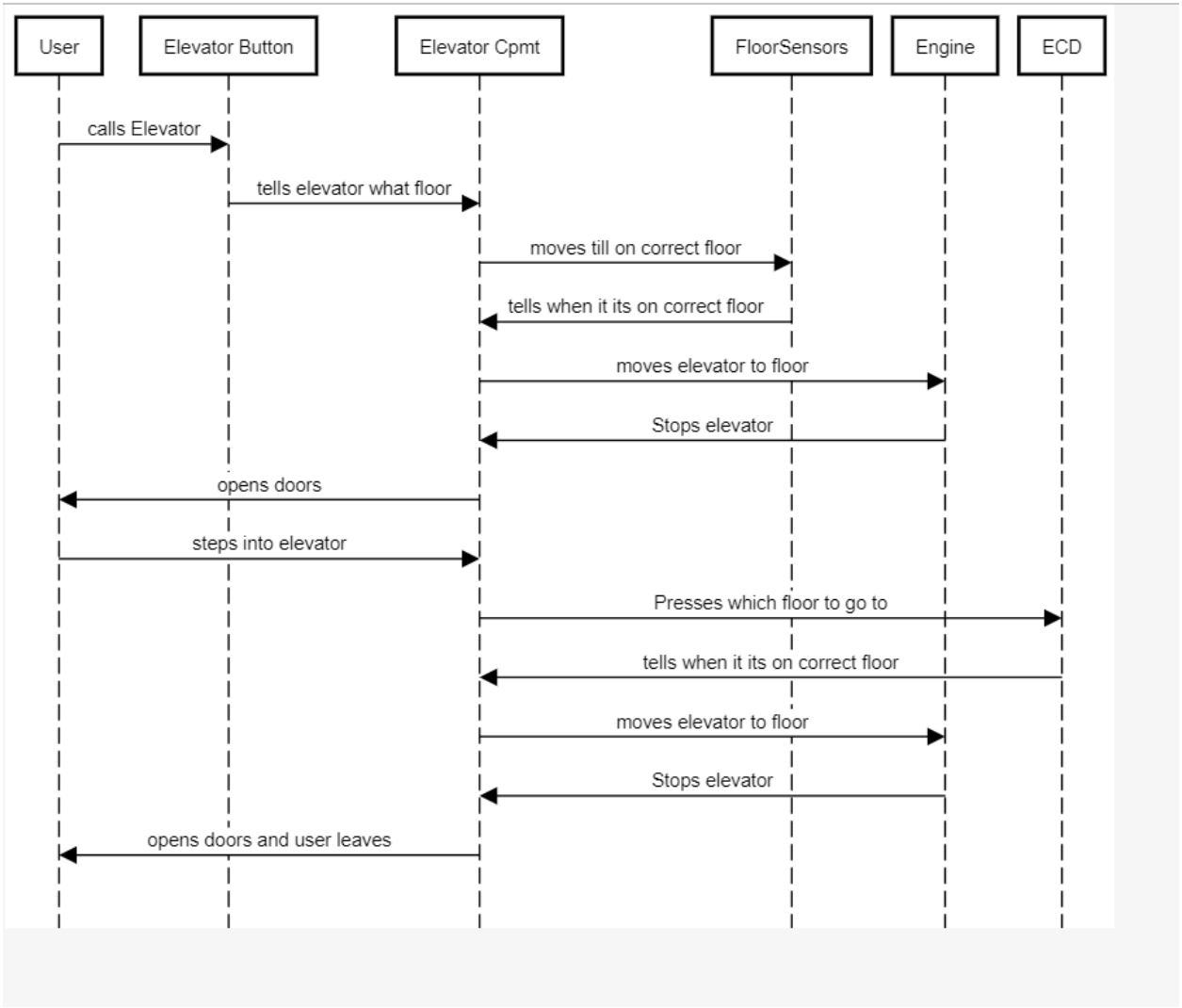
Minimum Requirements: User has left the elevator cart

Stakeholders and Interest:

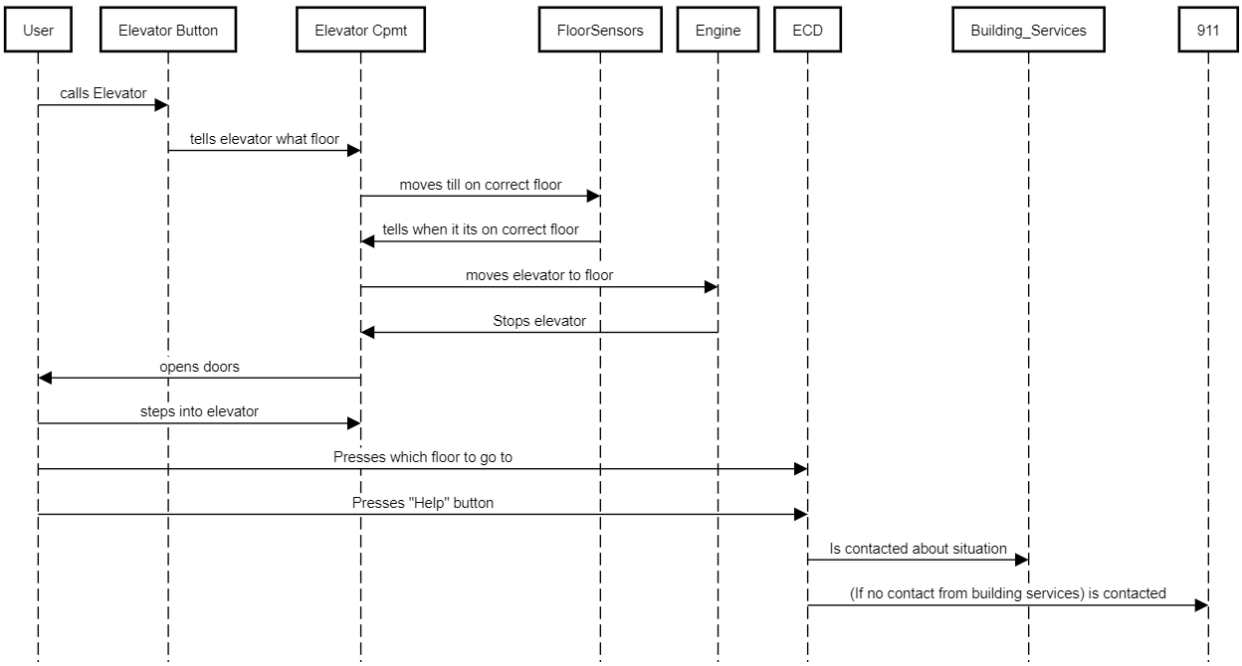
- Elevator user: To take the elevator to desired floor
- Elevator maintenance: to ensure the elevator functions smoothly


Elevator motor
Motor
Cords
checkWeight()
raiseElevator()
lowerElevator()
Is controlled by
CallButtons
upBttn
downBttn
callElevatorUp()
callElevatorDown()
Calls
Works in tandem with
is used by
ECD
currentFloor
buttonPressed
floorButtons
floorNumPressed()
emergencyBtnPressed()
closeDoor()
openDoor()
sensors
doorSensor
floorSensor
doorsAreClear{}
checkFloor()
is used by
Elevator Compartment
currentFloor
currentWeight
doors
display
checkWeight()
showFloor()
openDoors()
closeDoors
displayFloor()
0..1
is controlled by
1

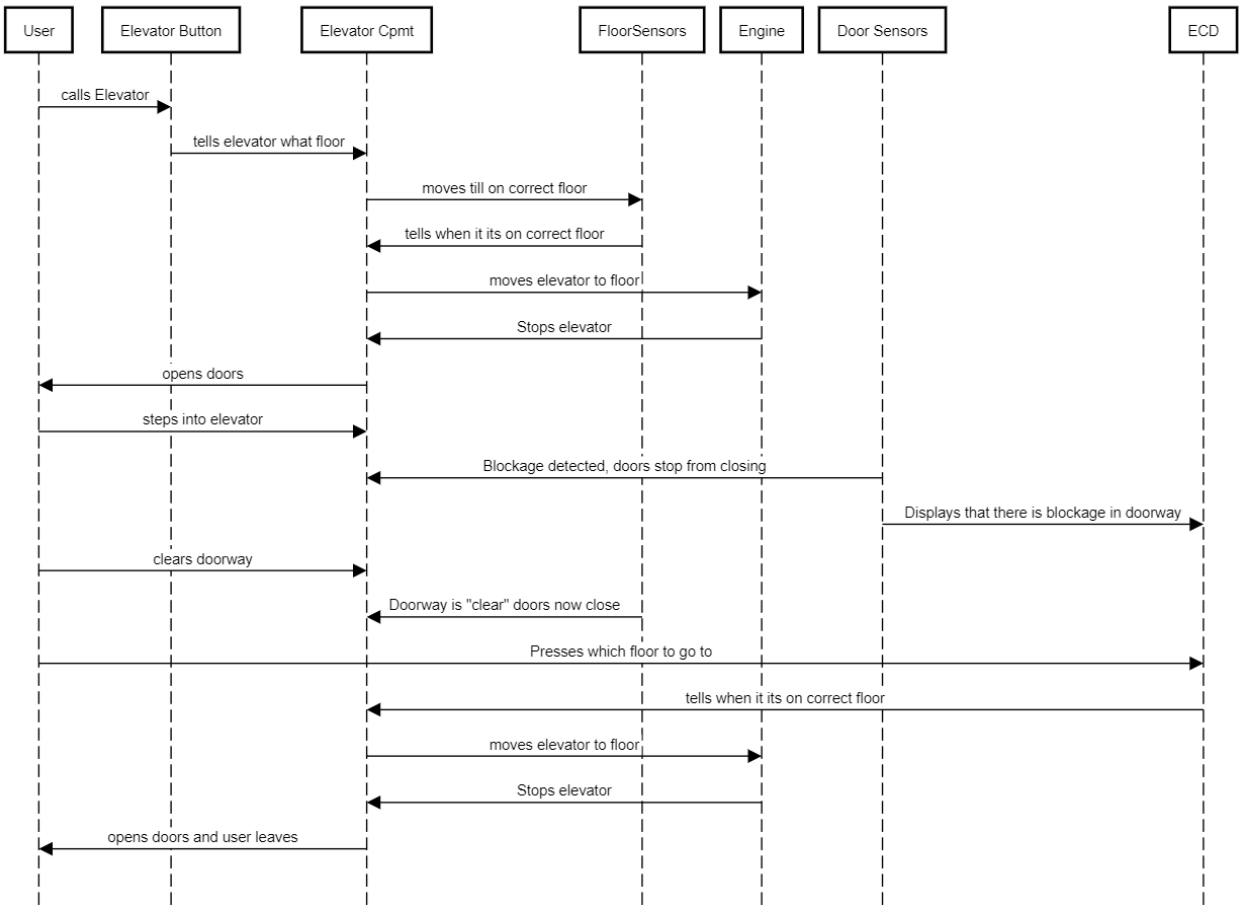

Elevator Operations
User
Elevator Button
Elevator Cpmt
ChangeMe7
FloorSensors
Engine
calls Elevator
tells elevator what floor
moves till on correct floor
tells when it its on correct floor
moves elevator to floor
Stops elevator
opens doors
steps into elevator
Realizes that they don't need the elevator
opens doors and user leaves

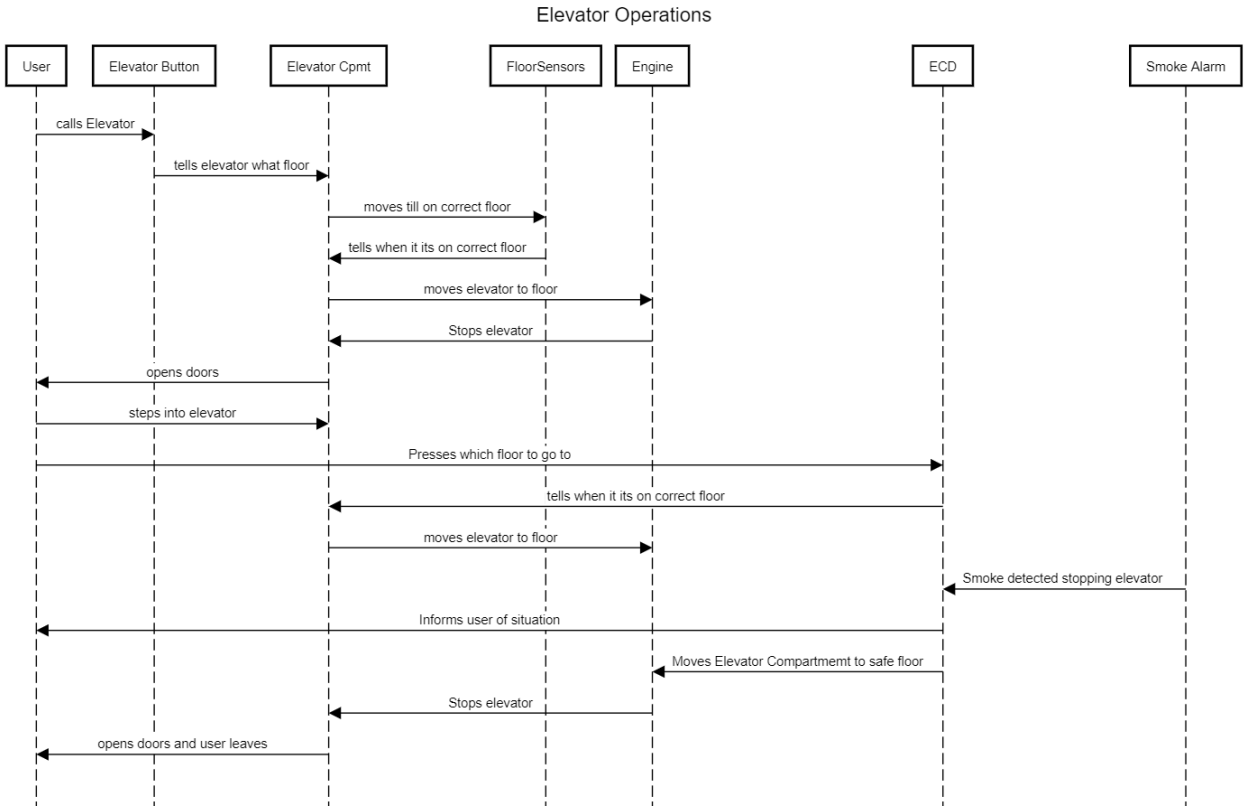

User
Elevator Button
Elevator Cpmt
FloorSensors
Engine
ECD
calls Elevator
tells elevator what floor
moves till on correct floor
tells when it its on correct floor
moves elevator to floor
Stops elevator
opens doors
steps into elevator
Presses which floor to go to
tells when it its on correct floor
moves elevator to floor
Stops elevator
opens doors and user leaves

Elevator Operations

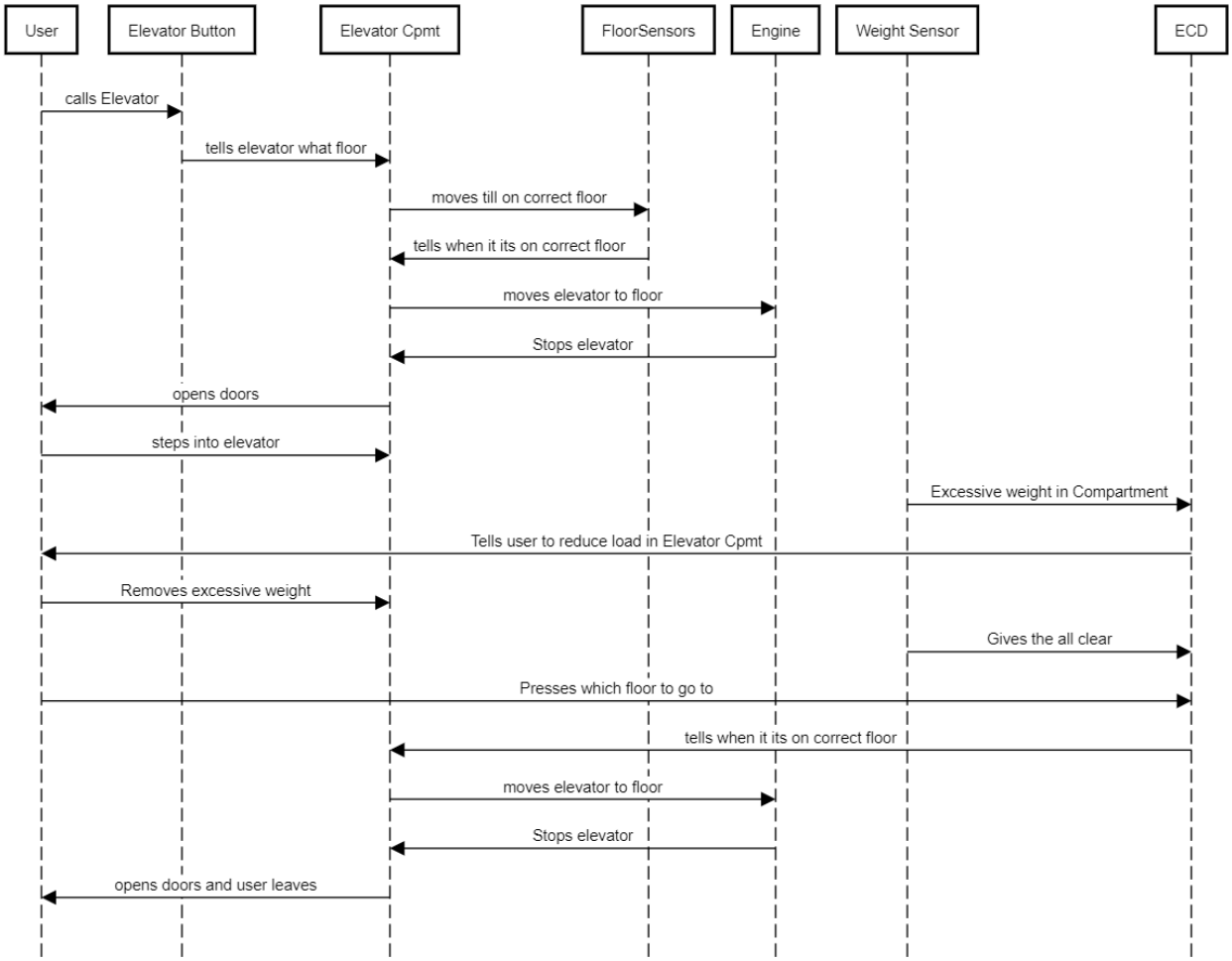


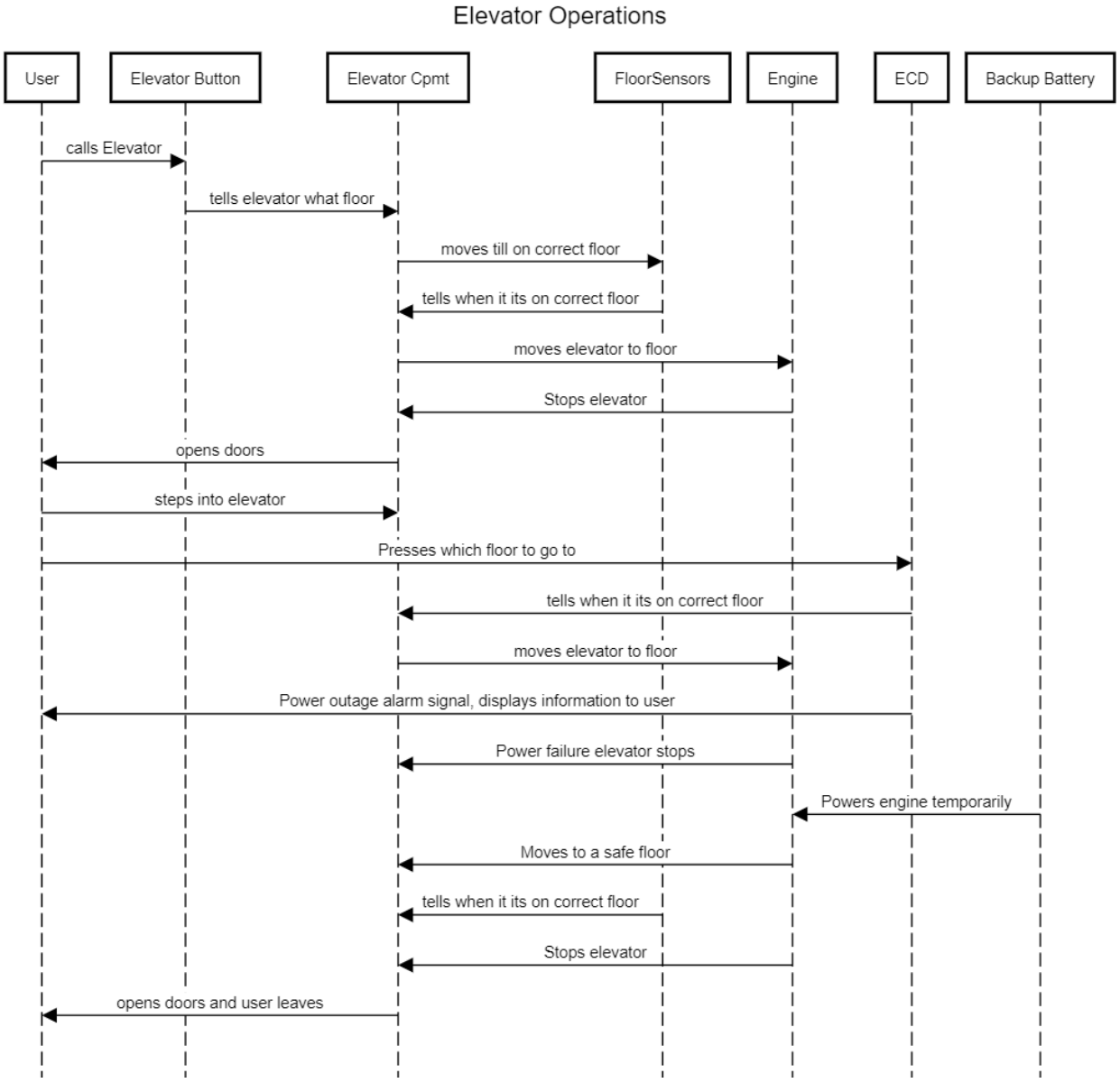
Elevator Operations




Elevator Operations
User
Elevator Button
Elevator Cpmt
FloorSensors
Engine
ECD
Smoke Alarm
calls Elevator
tells elevator what floor
moves till on correct floor
tells when it its on correct floor
moves elevator to floor
Stops elevator
opens doors
steps into elevator
Presses which floor to go to
tells when it its on correct floor
moves elevator to floor
Smoke detected stopping elevator
Informs user of situation
Moves Elevator Compartmemt to safe floor
Stops elevator
opens doors and user leaves

Elevator Operations





ID	Requirement	Related Use Case	Fulfilled by	Test	Description
1	The Elevator is fully functioning and no outside sources are disrupting it	N/A	Engine, ECD, Elevator Cmpt, user Door buttons and sensors	Standard use of an elevator	The standard use of an elevator, tests all the parts that should be used in normal usage, outside of external events

2	The Elevator is fully functioning and no outside sources are disrupting it. The “Help Button is pushed	N/A	Engine, ECD, Elevator Cmpt, user Door buttons and sensors, Building safer services and 911	Standard use of an elevator, but use the built in help button	The standard use of an elevator, tests all the parts that should be used in normal usage, with the exception of the help button being pressed
3	The Elevator is fully functioning and the door has obstacles	N/A	Engine, ECD, Elevator Cmpt, user Door buttons and sensors(especially door sensors	Standard use of an elevator, but there is something blocking the elevator’s doors	The standard use of an elevator, tests all the parts that should be used in normal usage, with the exception the door has obstacles
4	The Elevator is fully functioning and the fire alarms go of	N/A	Engine, ECD, Elevator Cmpt, user Door buttons and sensors, fire alarms	Standard use of an elevator but the fire alarms are going off	The standard use of an elevator, tests all the parts that should be used in normal usage, with the exception that the fire alarm is going off
5	The Elevator is fully functioning and the building is facing a power outage	N/A	Engine, ECD, Elevator Cmpt, user Door buttons and sensors, backup	Standard use of an elevator but there is a power outage	The standard use of an elevator, tests all the parts that should be used in normal usage, with the exception that the building loses power

			battery		