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# Design Analysis For the SafeHome Product Software

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# Overview - Use-case Diagram

## 1 Overall Use-case Diagram

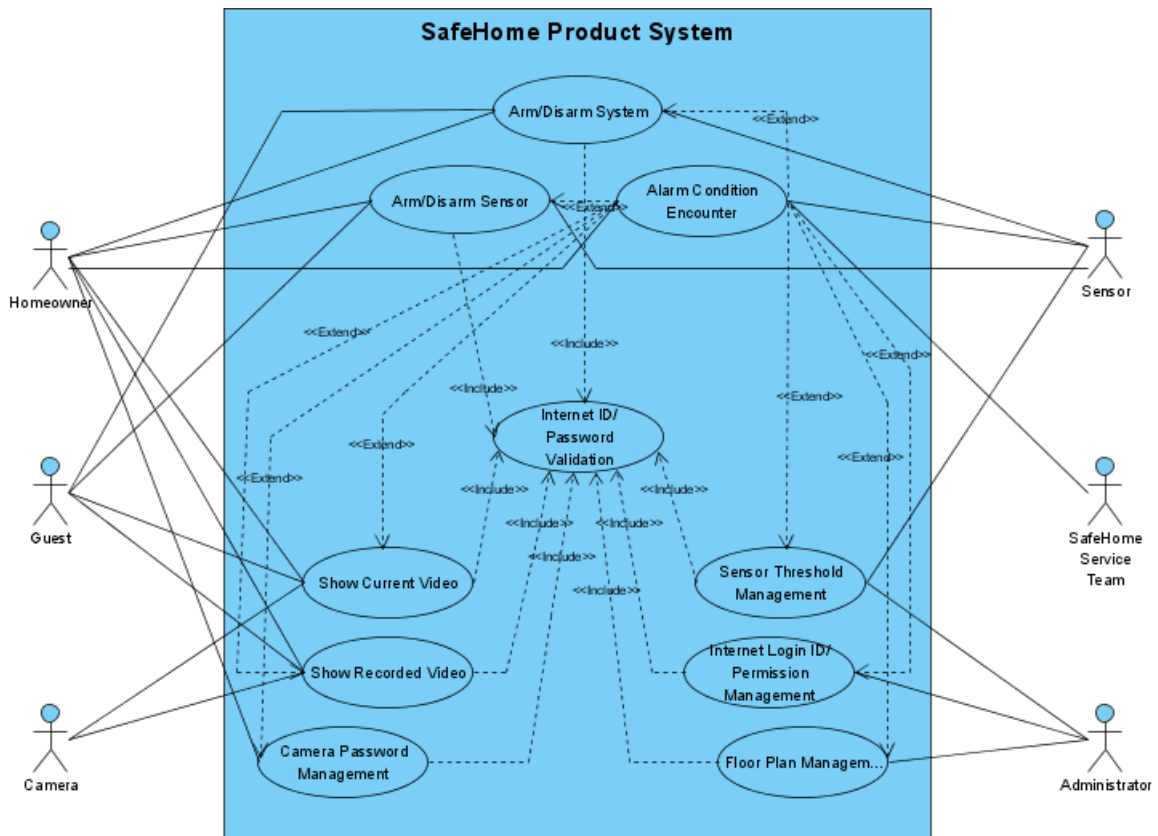


Figure 1. Overall Use-case Diagram of SafeHome Product System

- There are 6 actors - Homeowner, Guest, Camera, Sensor, SafeHome Service Team, and Administrator.
- The homeowner is the user who has all permissions.
- The administrator is the user who has administration permission.
- The guest is the user who has some permissions except administration permission.

## 2 Include & Extend Diagram

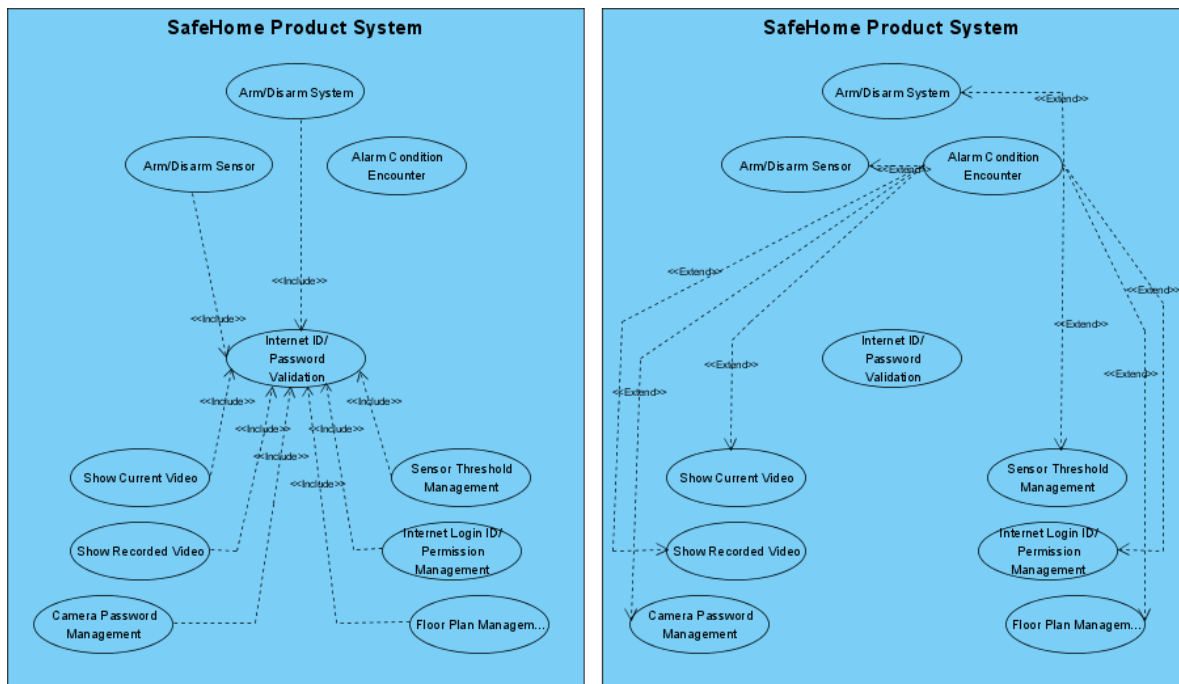
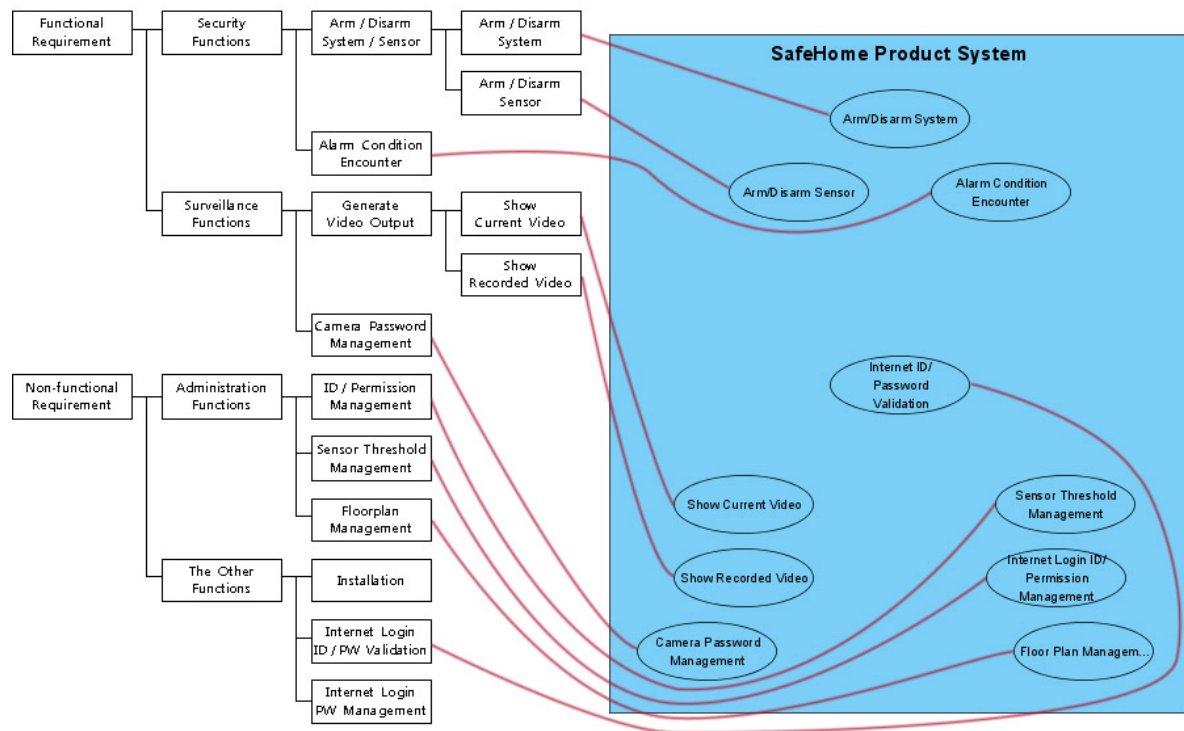


Figure 2. <left> Include Relation, <right> Extend Relation

- All use-cases except Alarm Condition Encounter has <<Include>> to Internet ID/Password Validation because all these use-cases need to be validated.
- Alarm condition encountered has <<Extend>> to all other use-cases because all use-cases can encounters alarm conditions.

### 3 Traceability Diagram



**Figure 3.** <left> Requirement Specification Structure, <right> Entities of Use-case Diagram

- We reconstructed our requirement specification in order that each use-cases corresponds to requirement specification structure's entities. So this traceability diagram is simple.

# Use-case Descriptions

## 1 Use-case : Arm/Disarm System

### ***1.1 Primary actor***

The homeowner

### ***1.2 Goal in context***

To activate some sensors, to deactivate sensors, or to test if all sensors are working correctly.

### ***1.3 Preconditions***

- The homeowner or the guest must have the appropriate permission if using this function via internet.
- The system must be fully configured.
- The system must be "ready state". It means 'all doors and windows are closed'.

### ***1.4 Trigger***

The homeowner decides to activate some sensors, to deactivate sensors, or to test if all sensors are working correctly.

### ***1.5 Scenario***

**\* If the homeowner or the guest uses the control panel directly, the scenario starts at 10.**

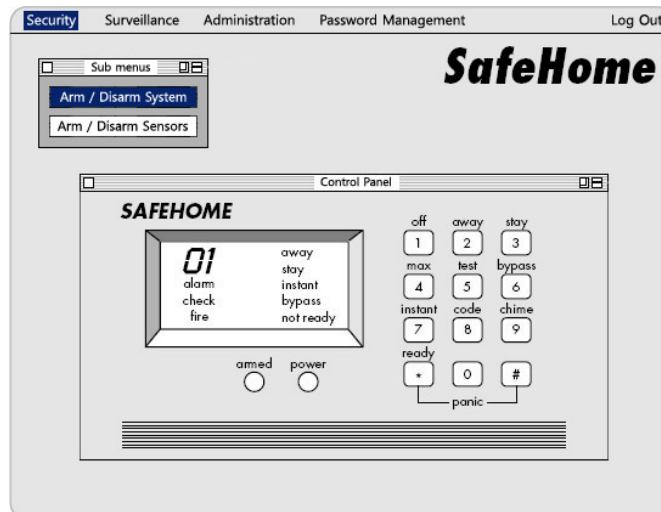
1. The homeowner or the guest enters the SafeHome Product Web site.
2. The system displays input boxes to receive internet login ID and passwords of the web site.
3. The homeowner or the guest inputs his/her internet login ID and two passwords.
4. The system verifies ID and the passwords and loads the level data of inputted ID.
5. The system is changed to log on mode and displays major functions of SafeHome Product.
6. The homeowner or the guest selects "Security" from menu.
7. The system displays the sub menu.





**Figure 1-1.**  
The sub menu of  
Security Function

8. The homeowner or the guest selects "Arm/Disarm System" from sub menu.
9. The system displays the picture of the control panel.



**Figure 1-2.**  
Control Panel

10. The homeowner or the guest enters his/her password.
- A. When the homeowner or the guest arms the system**
    11. The homeowner or the guest pushes 'away' button.
    12. The system activates all sensors after tolerance time.
  - B. When the homeowner or the guest disarms the system**
    11. The homeowner or the guest pushes 'stay' button.
    12. The system activates perimeter sensors. Motion detecting sensors are not activated.
  - C. When the homeowner or the guest turns off the system**
    11. The homeowner or the guest pushes 'off' button.
    12. The system deactivates all sensors.
  - D. When the homeowner tests the sensors**
    11. The homeowner or the guest pushes 'test' button.
    12. If all sensors are working correctly, the system displays an 'OK' sign.

#### **E. When the homeowner modify the master password**

11. The homeowner pushes 'code' button.
12. The homeowner inputs a current master password.
13. The homeowner inputs a new master password.
14. The homeowner inputs the password again.
15. The system stores the password.

#### **F. When the homeowner adds a new secondary password**

11. The homeowner pushes 'bypass' button,
12. The homeowner inputs a new secondary password.
13. The homeowner inputs the password again.
14. The system stores the password.

### **1.6 Exceptions**

- If the internet login ID or password is incorrect, the system displays "Wrong ID or password" message box.
- If any errors are detected in D, the system beeps and displays the ID of erroneous sensor.
- If he/she inputs incorrect control panel password twice, the system beeps three times and does not accept user's input for 5 minutes.
- If the system encounters an alarm condition, all arm/disarm functions does not work until an alarm condition is destroyed or the homeowner calls off an alarm by setting "off" mode.

### **1.7 Priority**

Highest

### **1.8 When available**

First increment

### **1.9 Frequency of use**

Many times per day

### **1.10 Channel to actor**

Via the SafeHome Product WebSite or via the control panel

### **1.11 Secondary actors**

Sensors

### **1.12 Channel to secondary actors**

Hardwired and wireless interfaces.

## **2 Use-case : Arm/Disarm Sensors**

### **2.1 Primary actor**

The homeowner or the guest

### **2.2 Goal in context**

To activate or deactivate some sensors, to deactivate sensors

### 2.3 Preconditions

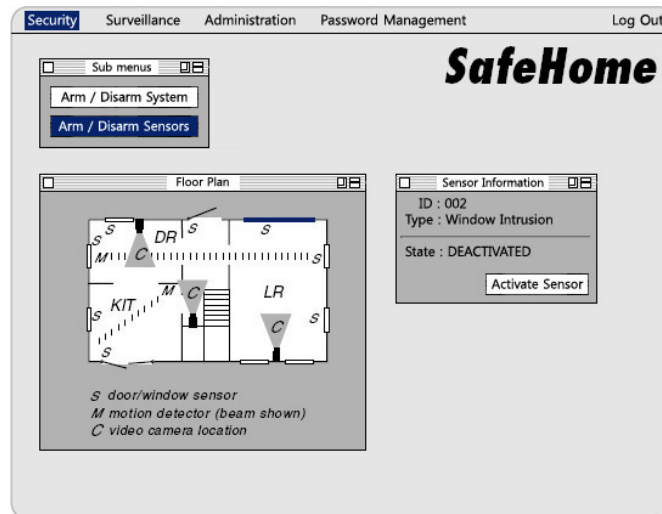
- The homeowner or the guest must have the appropriate permission.
- The system must be fully configured.

### 2.4 Trigger

The homeowner decides to activate/deactivate sensors via internet.

### 2.5 Scenario

1. The homeowner or the guest enters the SafeHome Product Web site.
2. The system displays input boxes to receive internet login ID and passwords of the web site.
3. The homeowner or the guest inputs his/her internet login ID and two passwords.
4. The system verifies ID and the passwords and loads the level data of inputted ID.
5. The system is changed to log on mode and displays major functions of SafeHome Product.
6. The homeowner or the guest selects "Security" from menu.
7. The system displays the sub menu.
8. The homeowner or the guest selects "Arm/Disarm Sensors" from sub menu.
9. The system displays a floor plan of the house.
10. The homeowner selects a sensor icon from the floor plan.
11. The system displays the status of the sensor - "Activated" or "Deactivated" or "Alarm" and menu - "Activate sensor", "Deactivate sensor".



**Figure 2-1.**  
Selecting a sensor  
from the floor plan

#### A. When the homeowner activates sensor

12. The homeowner selects "Activate sensor" button.
13. The system activates selected sensor of the house.
14. The system changes the status of selected sensor to "Activated".
15. The system displays "Sensor is activated." message box.

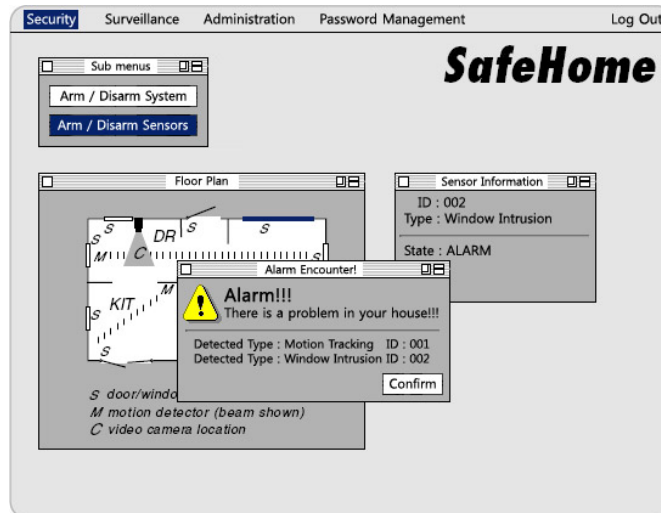
#### B. When the homeowner deactivates sensor

12. The homeowner selects "Deactivate sensor" button.

13. The system deactivates selected sensor of the house.
14. The system changes the status of selected sensor to "Deactivated".
15. The system displays "Sensor is deactivated." message box.

## 2.6 Exceptions

- If the internet login ID or password is incorrect, the system displays "Wrong ID or password" message box.
- If the system encounters an alarm condition, all arm/disarm functions does not work until an alarm condition is destroyed or the homeowner calls off an alarm by setting "off" mode.



**Figure 2-2.**  
Alarm condition encounter on the security functions

## 2.7 Priority

Medium

## 2.8 When available

Second increment

## 2.9 Frequency of use

Some times per week

## 2.10 Channel to actor

Via the SafeHome Product Website

## 2.11 Secondary actors

Sensors

## 2.12 Channel to secondary actors

Hardwired and wireless interfaces.

# 3 Use-case : Alarm Condition Encounter

## 3.1 Primary actor

The sensor

### 3.2 Goal in context

To servers a notice to the homeowner and the SafeHome service team when a sensor event is occurred.

### 3.3 Preconditions

- The system must be fully configured.

### 3.4 Trigger

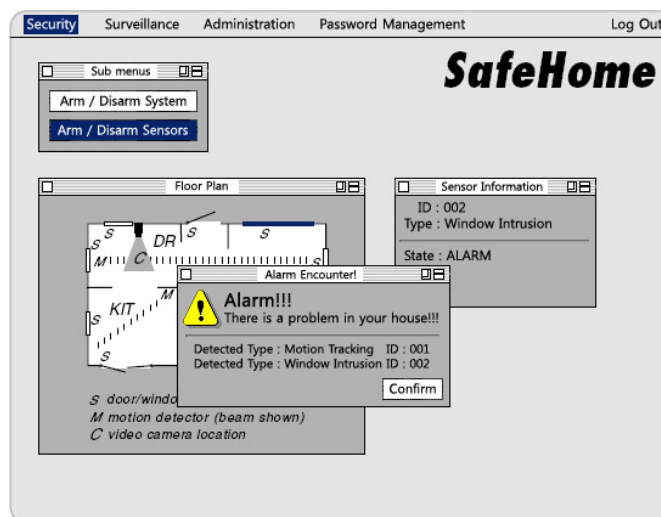
When any abnormality detected by the sensors.

### 3.5 Scenario

1. The system recognizes an alarm event from sensors.
2. The system calls to monitoring service and provides informations about the location of the house and what has been detected after tolerance time.
3. The system reports what happened to homeowner via control panel, PC, web browser, and telephone. It displays the message box which contains prompting messages and system status information.

### 3.6 Exceptions

- If the internet login ID or password is incorrect, the system displays "Wrong ID or password" message box.
- If the system encounters an alarm condition, all arm/disarm functions does not work until an alarm condition is destroyed or the homeowner calls off an alarm by setting "off" mode.



**Figure 3-1.**  
Alarm condition  
encounter on the  
security functions

### 3.7 Priority

Highest

### 3.8 When available

First increment

### ***3.9 Frequency of use***

Few times

### ***3.10 Channel to actor***

Via the SafeHome Product Website

### ***3.11 Secondary actors***

The SafeHome service team

### ***3.12 Channel to secondary actors***

Via phone call

## **4 Use-case : Show Current Video**

### ***4.1 Primary actor***

The homeowner or the guest

### ***4.2 Goal in context***

To view current output of camera placed throughout the house from any remote location via the Internet for surveillance.

### ***4.3 Preconditions***

- The homeowner or the guest must have the appropriate permission.
- Cameras must be fully configured.
- Cameras must be well-positioned to pan in all of range without any interruption.

### ***4.4 Trigger***

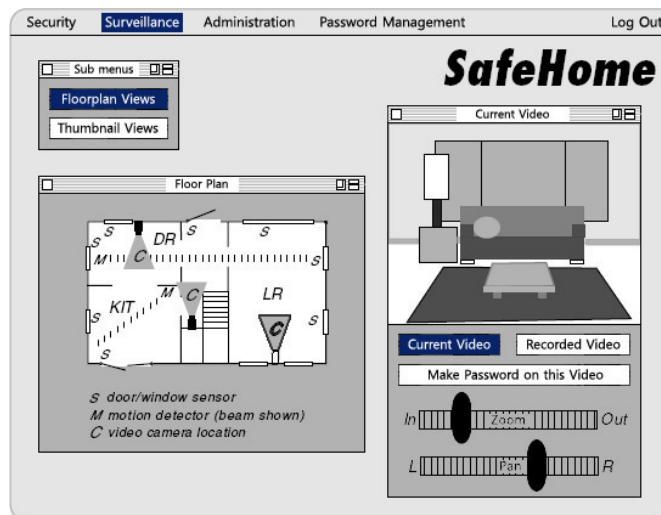
The homeowner or the guest decides to view the current video via the Internet.

### ***4.5 Scenario***

1. The homeowner or the guest enters the SafeHome Product Web site.
2. The system displays input boxes to receive internet login ID and passwords of the web site.
3. The homeowner or the guest inputs his/her internet login ID and two passwords.
4. The system verifies ID and the passwords and loads the level data of inputted ID.
5. The system is changed to log on mode and displays major functions of SafeHome Product.
6. The homeowner or the guest selects "Surveillance" from menu.
7. The system displays the sub menu and the floor plan of the house.

#### **A. When the homeowner uses the floor plan to select a camera**

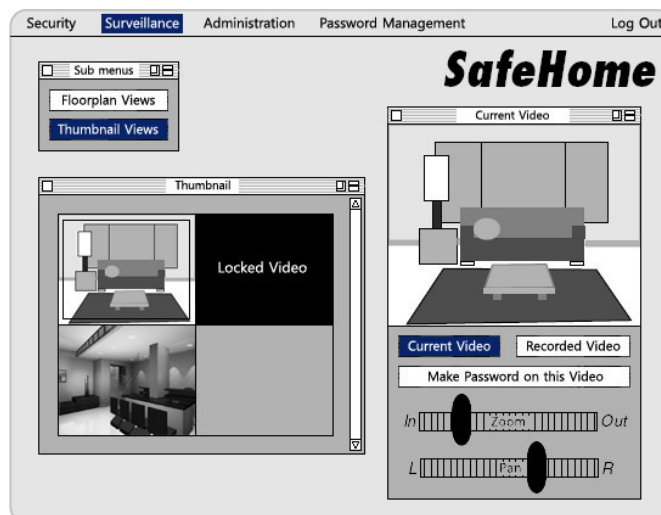
8. The homeowner or the guest selects a camera icon from the floor plan.
9. The system displays current video at one frame per second and zoom scroll bar and pan scroll bar in the bottom of window.



**Figure 4-1.**  
Selecting a video  
from the floor plan

#### **B. When the homeowner uses the thumbnail to select a camera**

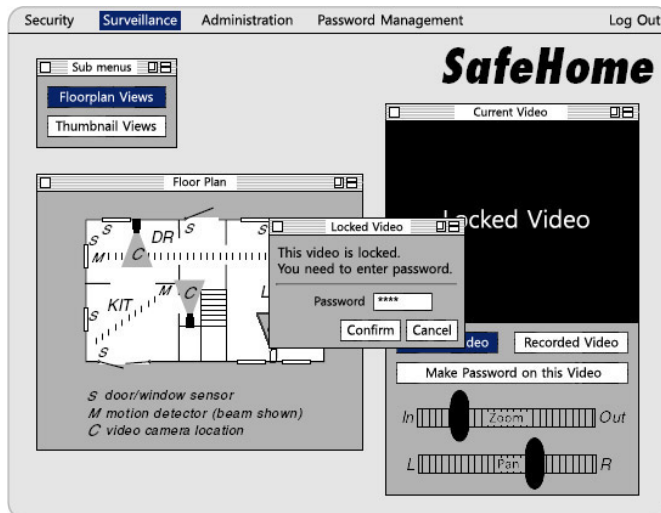
8. The homeowner or the guest selects "Thumbnail views" from sub menu.
9. The system displays thumbnail of videos.
10. The homeowner or the guest selects an image to view.
11. The system displays current video at one frame per second and zoom scroll bar and pan scroll bar in the bottom of window.



**Figure 4-2.**  
Selecting a video  
from the thumbnail

### **4.6 Exceptions**

- If the internet login ID or password is incorrect, the system displays "Wrong ID or password" message box.
- If the guest selects any locked video, the system displays a password input window and guest can see video only if he/she enters correct camera password. if not, the system shows only black screen.

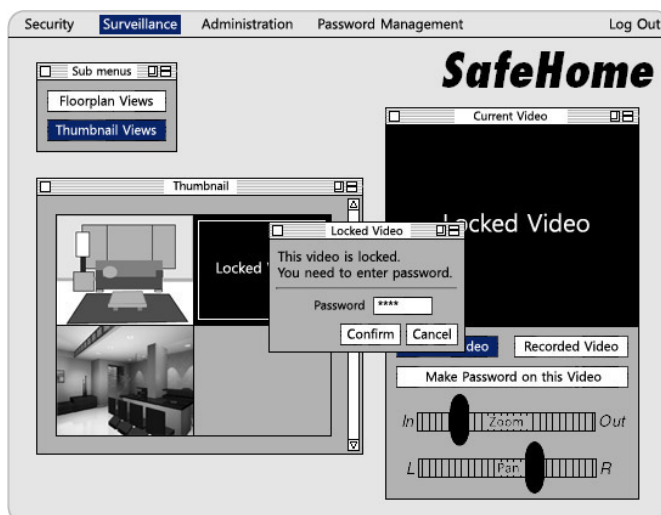


**Figure 4-3.**  
Selecting a locked video



**Figure 4-4.**  
The camera password is incorrect

- If there is any locked video, the system displays "locked video" thumbnail image.



**Figure 4-5.**  
Selecting a locked video from the thumbnail

- If the system encounters an alarm condition, the system displays a message box that contains an alarm message and why the alarm is activated.





**Figure 4-6.**  
Alarm condition  
encounter on the  
surveillance  
functions

#### **4.7 Priority**

Moderate

#### **4.8 When available**

Second increment

#### **4.9 Frequency of use**

Some times per month

#### **4.10 Channel to actor**

Via the Internet for surveillance.

#### **4.11 Secondary actors**

The cameras

#### **4.12 Channel to secondary actors**

Hardwired and wireless interfaces.

## **5 Use-case : Show Recorded Video**

### **5.1 Primary actor**

The homeowner

### **5.2 Goal in context**

To view recorded output of camera placed throughout the house from any remote location via the Internet for surveillance.

### **5.3 Preconditions**

- The homeowner or the guest must have the appropriate permission.
- Cameras must be fully configured.

## 5.4 Trigger

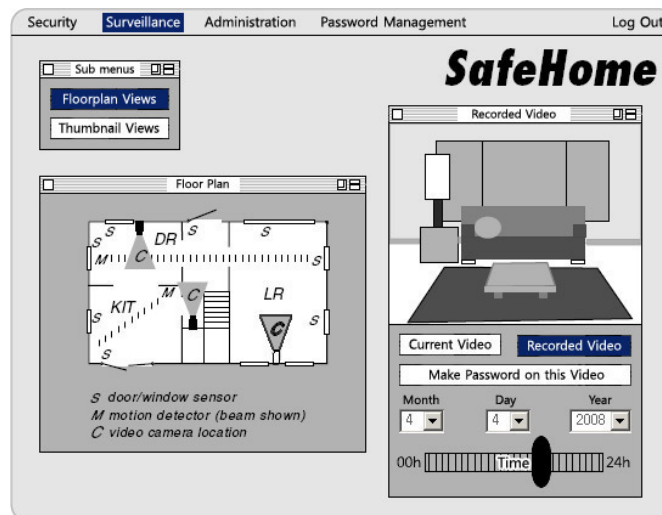
The homeowner decides to view the recorded video via the Internet.

## 5.5 Scenario

1. The homeowner or the guest enters the SafeHome Product Web site.
2. The system displays input boxes to receive internet login ID and passwords of the web site.
3. The homeowner or the guest inputs his/her internet login ID and two passwords.
4. The system verifies ID and the passwords and loads the level data of inputted ID.
5. The system is changed to log on mode and displays major functions of SafeHome Product.
6. The homeowner or the guest selects "Surveillance" from menu.
7. The system displays the sub menu and the floor plan of the house.

### A. When the homeowner uses the floor plan to select camera

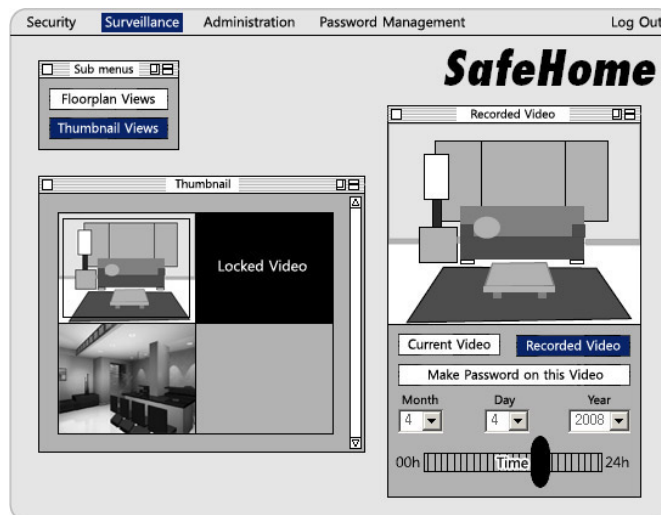
8. The homeowner or the guest selects a camera icon from the floor plan.
9. The system displays current video.
10. The homeowner or the guest selects "Recorded Video" button.
11. The system displays recorded video at one frame per second and Month-Day-Year button and time slide.



**Figure 5-1.**  
Selecting a  
recorded video  
from the floor plan

### B. When the homeowner uses the thumbnail to select camera

8. The homeowner or the guest selects "Thumbnail views" from sub menu.
9. The system displays thumbnail of videos.
10. The homeowner or the guest selects an image to view.
11. The system displays current video.
12. The homeowner or the guest selects "Recorded Video" button.
13. The system displays recorded video at one frame per second and Month-Day-Year button and time slide.



**Figure 5-2.**  
Selecting a  
recorded video  
from the thumbnail

## 5.6 Exceptions

- If the internet login ID or password is incorrect, the system displays "Wrong ID or password" message box.
- If the guest selects any locked video, the system displays a camera password input window and guest can see video only if he/she enters correct camera password. if not, the system shows only black screen.
- If there is any locked video, the system displays "locked video" thumbnail image.
- If there is no recorded video, the system displays "Data not found" image on the video screen.
- If the system encounters an alarm condition, the system displays a message box that contains an alarm message and why the alarm is activated.

## 5.7 Priority

Low

## 5.8 When available

Third increment

## 5.9 Frequency of use

Some times per month

## 5.10 Channel to actor

Via the Internet for surveillance.

## 5.11 Secondary actors

The cameras

## 5.12 Channel to secondary actors

Hardwired and wireless interfaces.

## 6 Use-case : Camera Password Management

### 6.1 Primary actor

The homeowner

### 6.2 Goal in context

The homeowner sets/modifies/deletes the password to each cameras.

### 6.3 Preconditions

- The homeowner has the administration permission.

### 6.4 Trigger

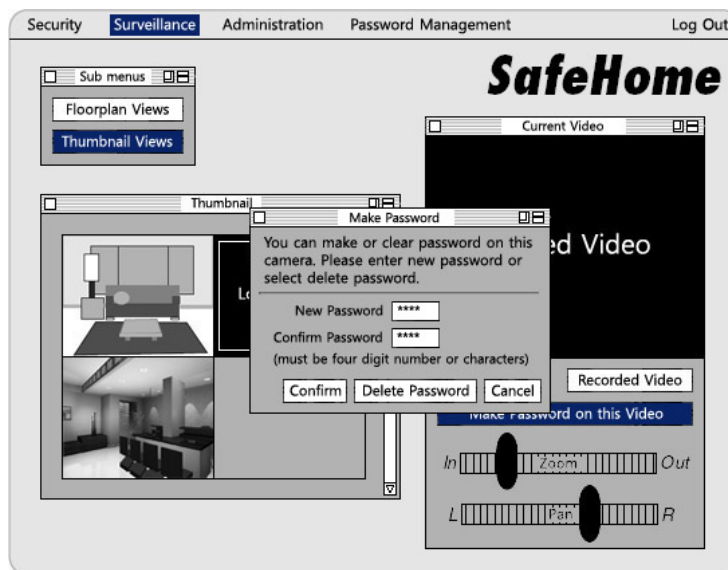
The homeowner decides to set the camera password.

### 6.5 Scenario

\* After selecting a specific camera

#### A. When the homeowner locks video or modify a password

1. The homeowner selects "Make Password on this Video" button.
2. The system displays a window consist of two input boxes.
3. The homeowner inputs same passwords into two input box and selects "Confirm" button.



**Figure 6-1.**  
Locking/modifying/  
deleting a camera  
password

#### B. When the homeowner deletes a password

1. The homeowner selects "Make Password on this Video" button.
2. The system displays a window consist of two input boxes.
3. The homeowner selects "Delete Password" button.

### 6.6 Exceptions

- If the internet login ID or password is incorrect, the system displays "Wrong ID or password" message box.
- If the homeowner inputs different passwords at A.3, the system displays an alert message box and blank input boxes to input passwords again.

- If the system encounters an alarm condition, the system displays a message box that contains an alarm message and why the alarm is activated.

### **6.7 Priority**

Low

### **6.8 When available**

Third increment

### **6.9 Frequency of use**

Some times per month

### **6.10 Channel to actor**

Via the Internet for surveillance.

### **6.11 Secondary actors**

The cameras

### **6.12 Channel to secondary actors**

Hardwired and wireless interfaces.

## **7 Use-case : Internet Login ID/Permission Management**

### **7.1 Primary actor**

The administrator

### **7.2 Goal in context**

To register new IDs or change other ID's permission to access SafeHome Product Website's functionality.

### **7.3 Preconditions**

- The homeowner has the administration permission.

### **7.4 Trigger**

The Administrator decides to register new IDs or change other ID's permission to access SafeHome Product Website's functionality..

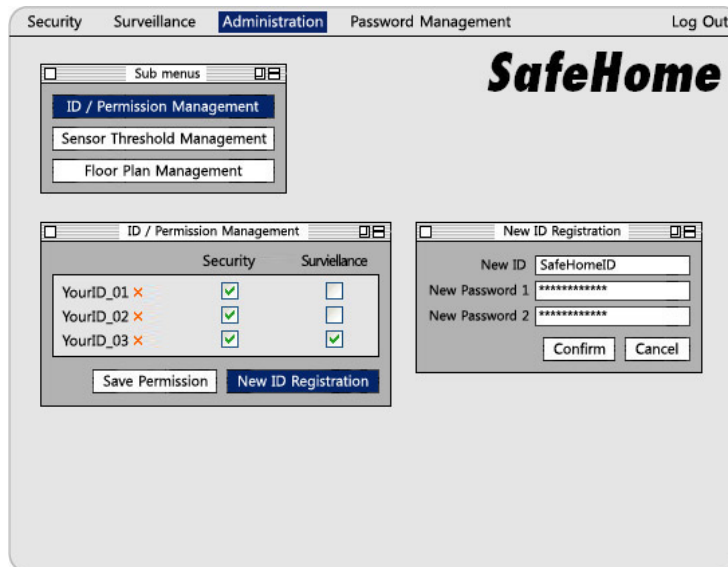
### **7.5 Scenario**

1. The administrator enters the SafeHome Product Web site.
2. The system displays input boxes to receive internet login ID and passwords of the web site.
3. The administrator inputs his/her internet login ID and two passwords.
4. The system verifies ID and the passwords and loads the level data of inputted ID.
5. The system is changed to log on mode and displays major functions of SafeHome Product.
6. The administrator selects "Administration" from menu.
7. The system displays the sub menu.

8. The administrator selects "ID/Permission Management" from sub menu.
9. The system displays IDs which is registered to the system and check boxes.

#### A. When the administrator registers a new secondary ID

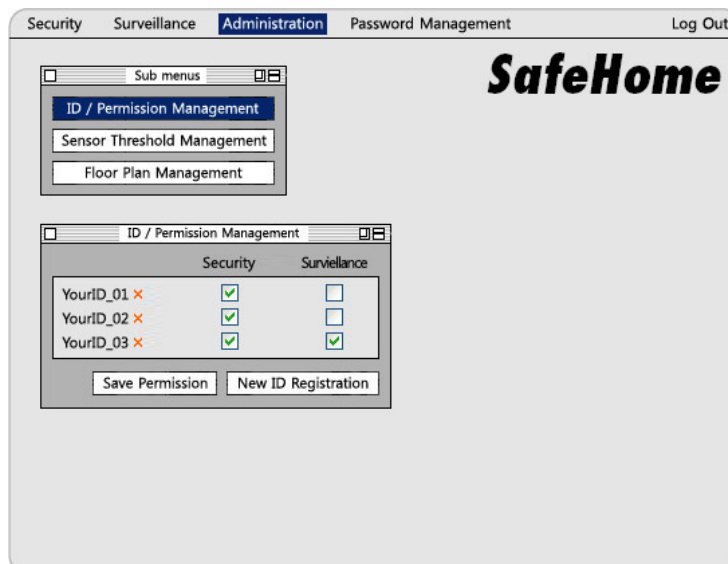
10. The administrator selects "New ID Registration" buttons.
11. The system displays input boxes to receive ID and passwords of the new secondary ID.
12. The administrator inputs a new ID and two passwords and selects "Confirm" button.
13. The system stores the new ID's data and refreshes the ID list of 9.



**Figure 7-1.**  
Registration of a  
new secondary ID

#### B. When the administrator changes other ID's permission.

10. The administrator changes other ID's permission using the check boxes and selects "Confirm" button.
11. The system stores the permission data.



**Figure 7-2.**  
Changing ID's  
permission

### C. When the administrator delete existing ID

10. The administrator selects "X" buttons exists by each of IDs.
11. The system displays confirming window.
12. The administrator selects "Confirm" button.
13. The system deletes the ID's data and refreshes the ID list of 9.



**Figure 7-3.**  
ID deletion  
confirming window

## 7.6 Exceptions

- If the internet login ID or password is incorrect, the system displays "Wrong ID or password" message box.
- If the system encounters an alarm condition, the system displays a message box that contains an alarm message and why the alarm is activated.

## 7.7 Priority

Low

## 7.8 When available

Third increment

## 7.9 Frequency of use

Some times per month

## 7.10 Channel to actor

Via the SafeHome Website

## 7.11 Secondary actors

None

## 7.12 Channel to secondary actors

None

## 8 Use-case : Sensor Threshold Management

### 8.1 Primary actor

The administrator

### 8.2 Goal in context

To set tolerance time from perceiving intrusion state to alarm state(alarm) or from pushing armed button to armed state(away) or sets up CO, smoke, and water level sensor's threshold.

### 8.3 Preconditions

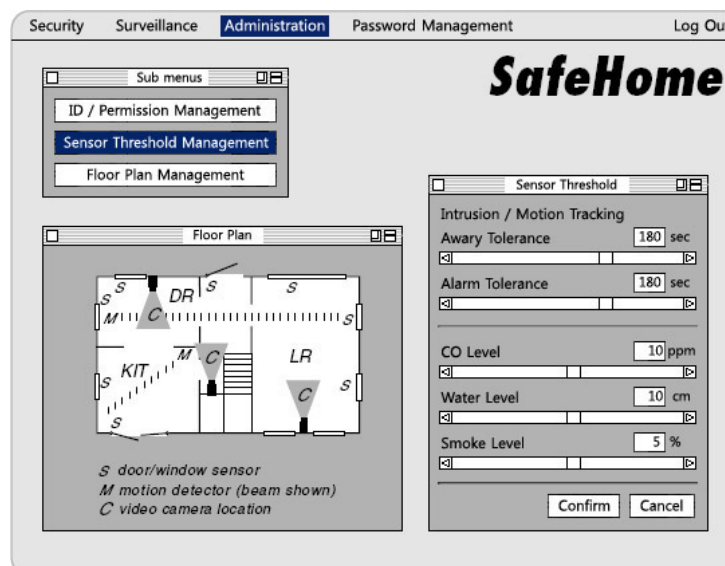
- The homeowner must have the administration permission.
- The system must be fully configured.

### 8.4 Trigger

The administrator decides to register new IDs or change other ID's permission to access SafeHome Product Website's functionality..

### 8.5 Scenario

1. The administrator enters the SafeHome Product Web site.
2. The system displays input boxes to receive internet login ID and passwords of the web site.
3. The administrator inputs his/her internet login ID and two passwords.
4. The system verifies ID and the passwords and loads the level data of inputted ID.
5. The system is changed to log on mode and displays major functions of SafeHome Product.
6. The administrator selects "Administration" from menu.
7. The system displays the sub menu.
8. The administrator selects "Sensor Threshold" menu.
9. The system displays floor plans and threshold control slide bars.



**Figure 8-1.**  
Changing the  
sensor threshold  
values

10. The administrator controls threshold of each sensor with its own control slide bar and selects "Confirm" button.



11. The system stores the sensor threshold values.

### **8.6 Exceptions**

- If the internet login ID or password is incorrect, the system displays "Wrong ID or password" message box.
- If the system encounters an alarm condition, the system displays a message box that contains an alarm message and why the alarm is activated.

### **8.7 Priority**

Low

### **8.8 When available**

Third increment

### **8.9 Frequency of use**

Few times

### **8.10 Channel to actor**

Via the SafeHome Product WebSite

### **8.11 Secondary actors**

The sensor

### **8.12 Channel to secondary actors**

Hard wired and wireless interfaces

## **9 Use-case : Floor Plan Management**

### **9.1 Primary actor**

The administrator

### **9.2 Goal in context**

To set up an appropriate floor plan and settings for cameras and sensors via Internet to use whole sensors and cameras.

### **9.3 Preconditions**

- The homeowner must have the administration permission.
- All sensors and cameras can be represented by the library of sensors and cameras.

### **9.4 Trigger**

The administrator decides to set up or change an floor plan.

### **9.5 Scenario**

1. The administrator enters the SafeHome Product Web site.
2. The system displays input boxes to receive internet login ID and passwords of the web site.
3. The administrator inputs his/her internet login ID and two passwords.

4. The system verifies ID and the passwords and loads the level data of inputted ID.
5. The system is changed to log on mode and displays major functions of SafeHome Product.
6. The administrator selects "Administration" from menu.
7. The system displays the sub menu.
8. The administrator selects "Floor Plan Management" from sub menu.
9. The system displays the sub-sub menu.

#### **A. When the administrator draws a new floor plan**

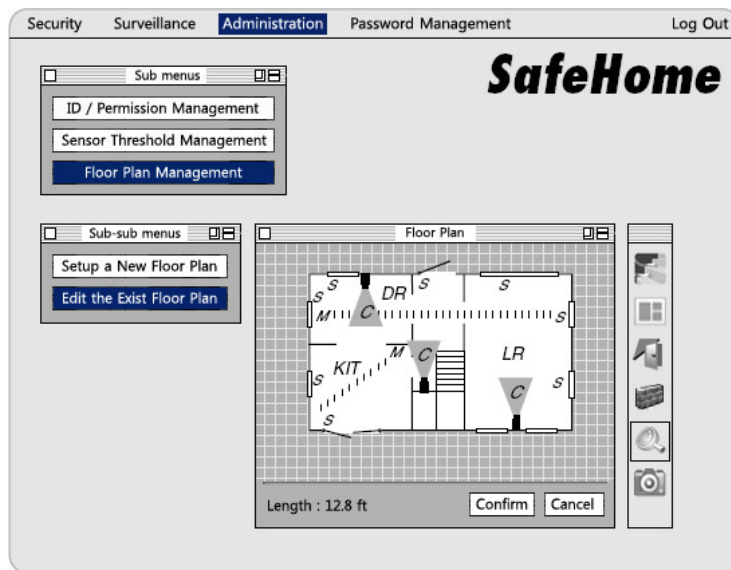
10. The administrator selects "Setup a New Floor Plan" from sub-sub menu.
11. The system displays grid, icons which stand for walls, doors, and windows, and libraries of sensors and cameras.
12. The administrator draws a floor plan on the grid using appropriate icons and libraries.
13. The system stores the floor plan data.



**Figure 9-1.**  
Drawing a new floor plan

#### **B. When the administrator edits the existing floor plan.**

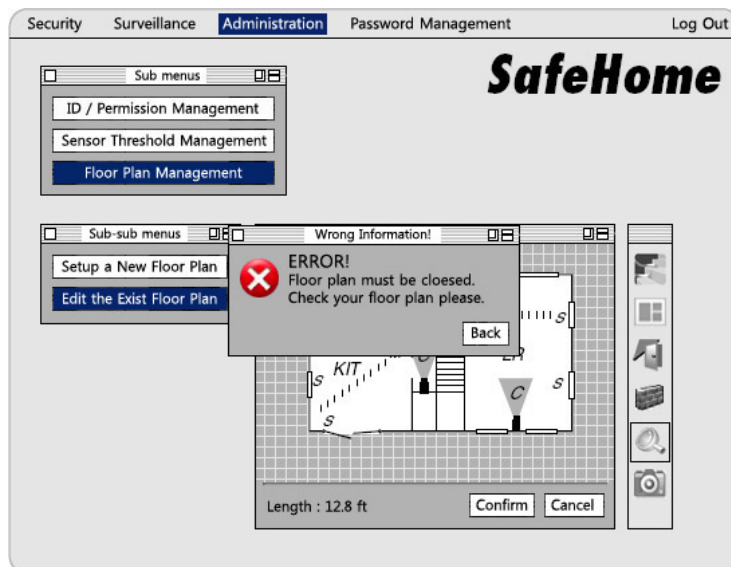
10. The administrator selects "Edit the Existing Set-up" from sub-sub menu.
11. The system displays pre-defined floor plans with grid, icons, and libraries.
12. The administrator changes the floor plan, and selects "Confirm" button (moving sensors or cameras, adding new ones, deleting existing ones, editing setting for cameras and sensors, or editing the floor plan).
13. The system stores the floor plan data.



**Figure 9-2.**  
Editing the existing floor plan

### 9.6 Exceptions

- If the internet login ID or password is incorrect, the system displays "Wrong ID or password" message box.
- If the system encounters an alarm condition, the system displays a message box that contains an alarm message and why the alarm is activated.
- If the floor plan isn't closed, the system displays "The floor plan must be closed" message box.



**Figure 9-3.**  
None-closed floor plan error

### 9.7 Priority

Low

### 9.8 When available

Third increment

### 9.9 Frequency of use

Few times

### ***9.10 Channel to actor***

Via the SafeHome Product WebSite

### ***9.11 Secondary actors***

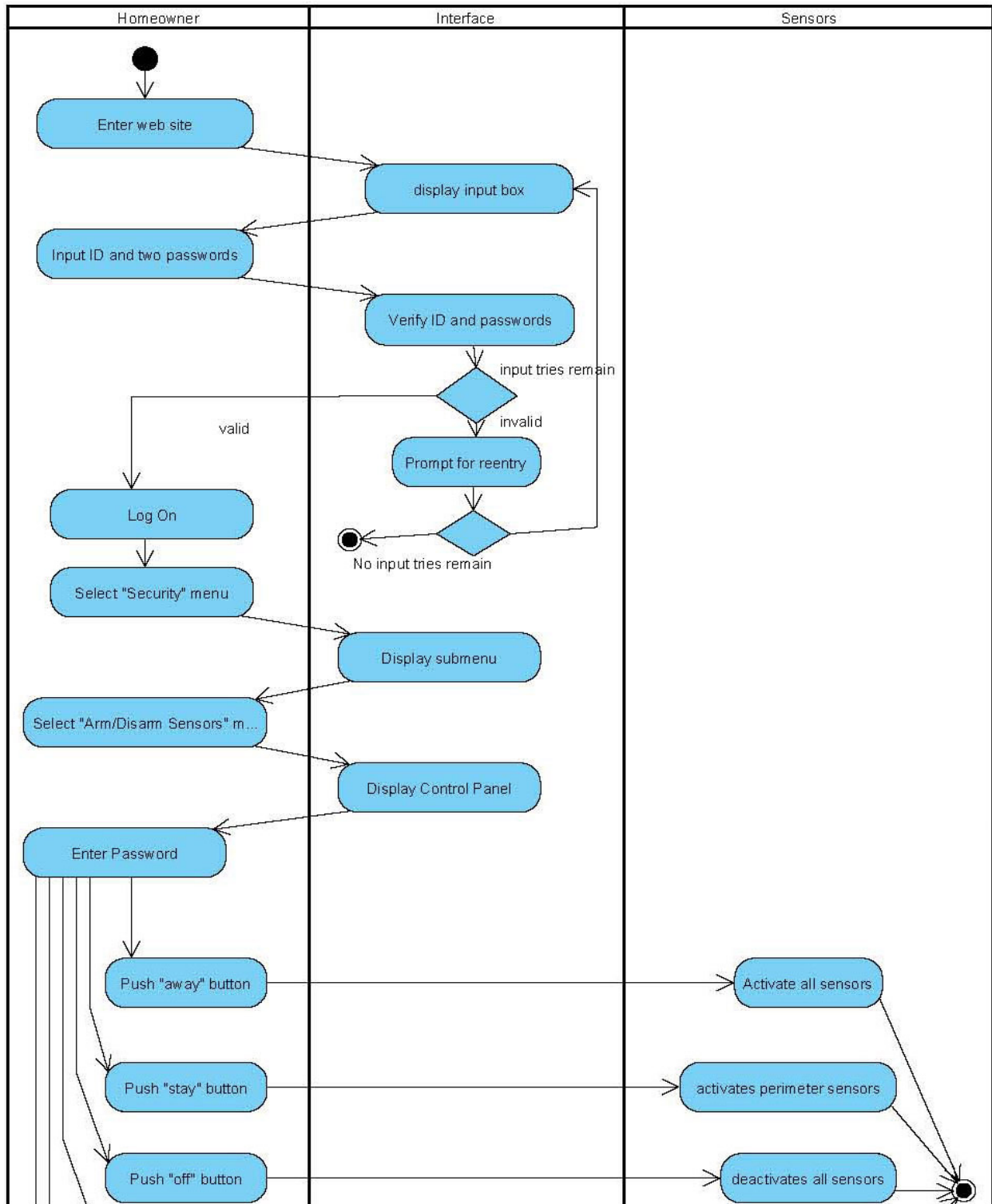
None

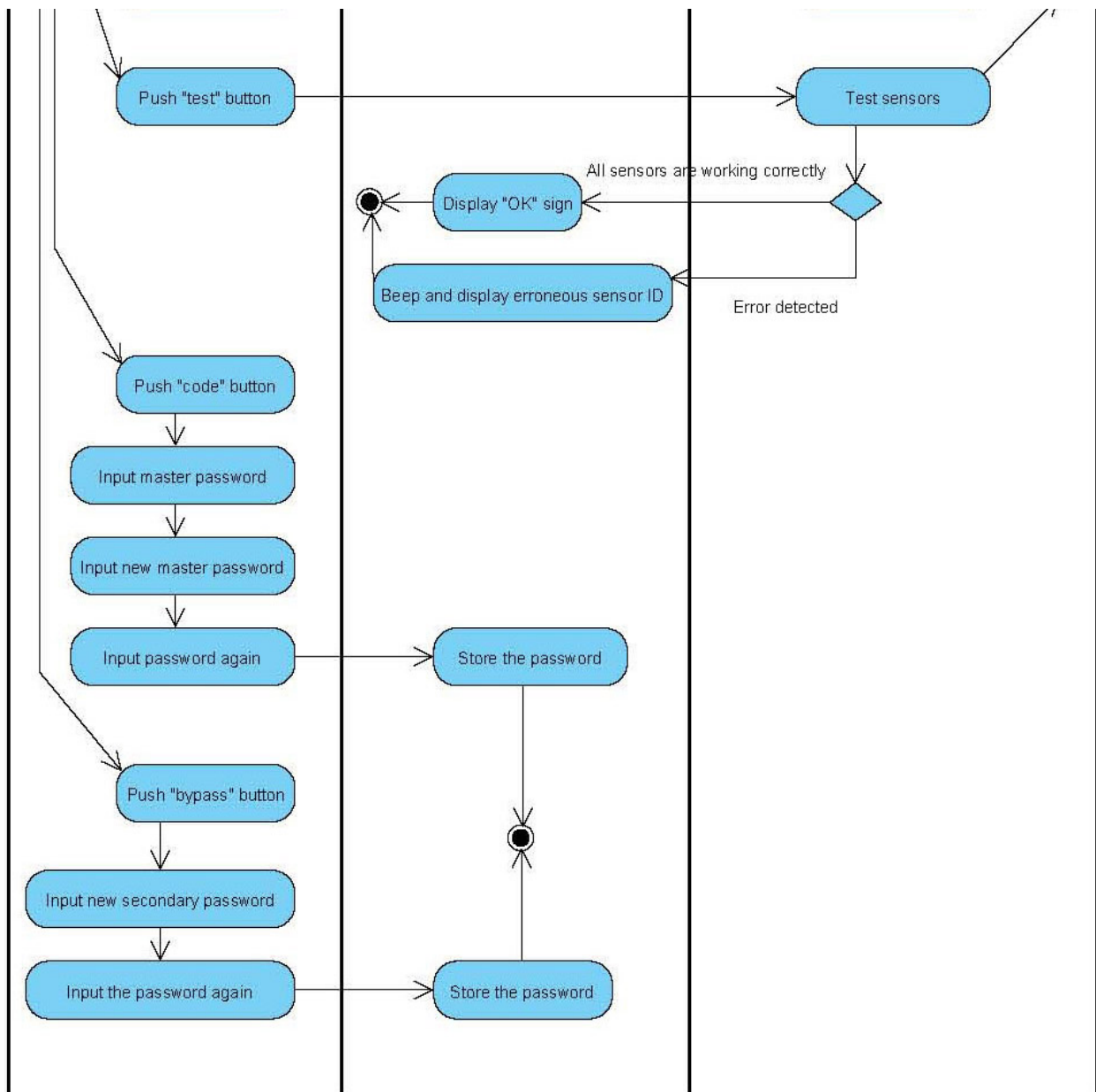
### ***9.12 Channel to secondary actors***

None

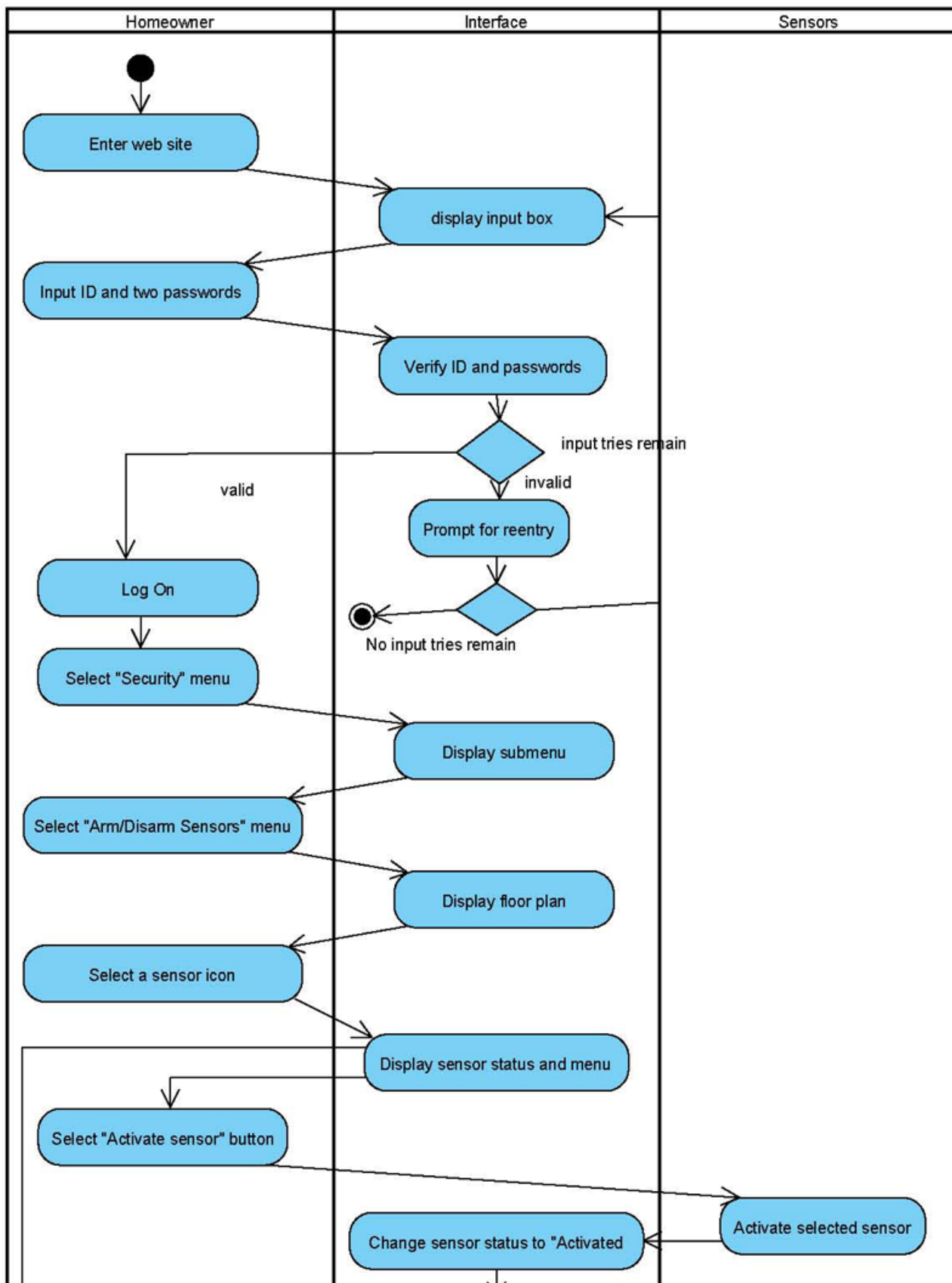
# Swimlane Diagrams

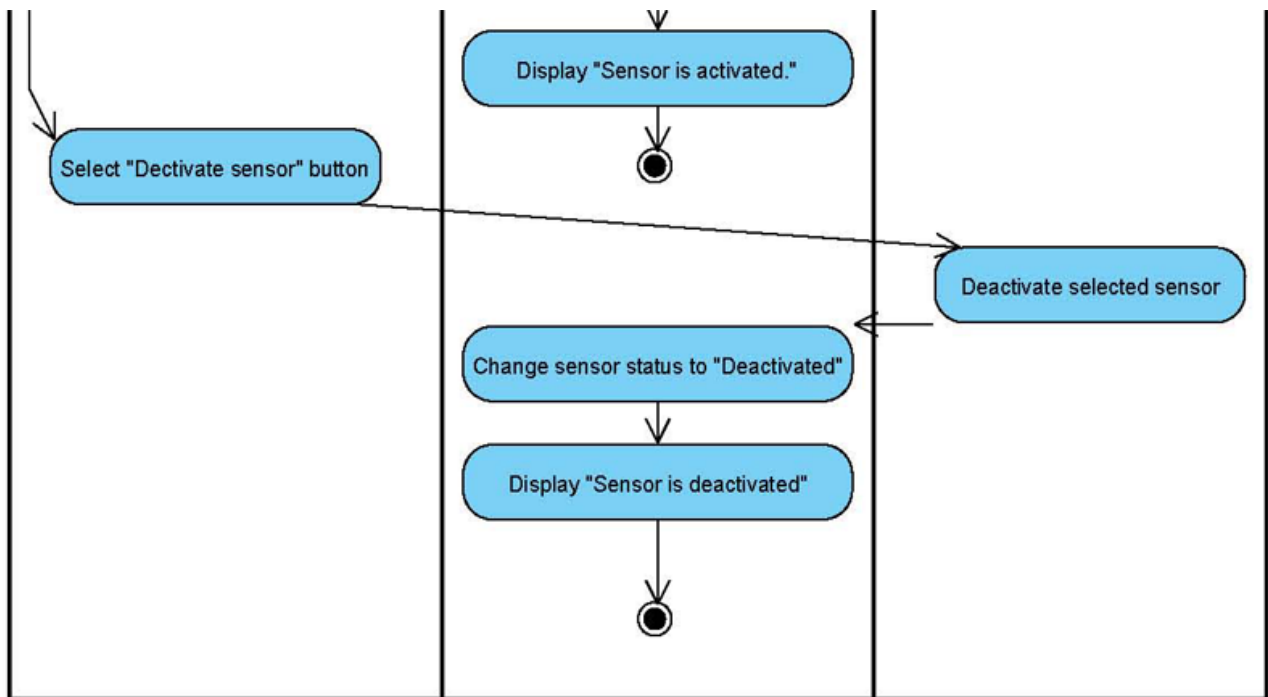
## 1 Arm/Disarm System





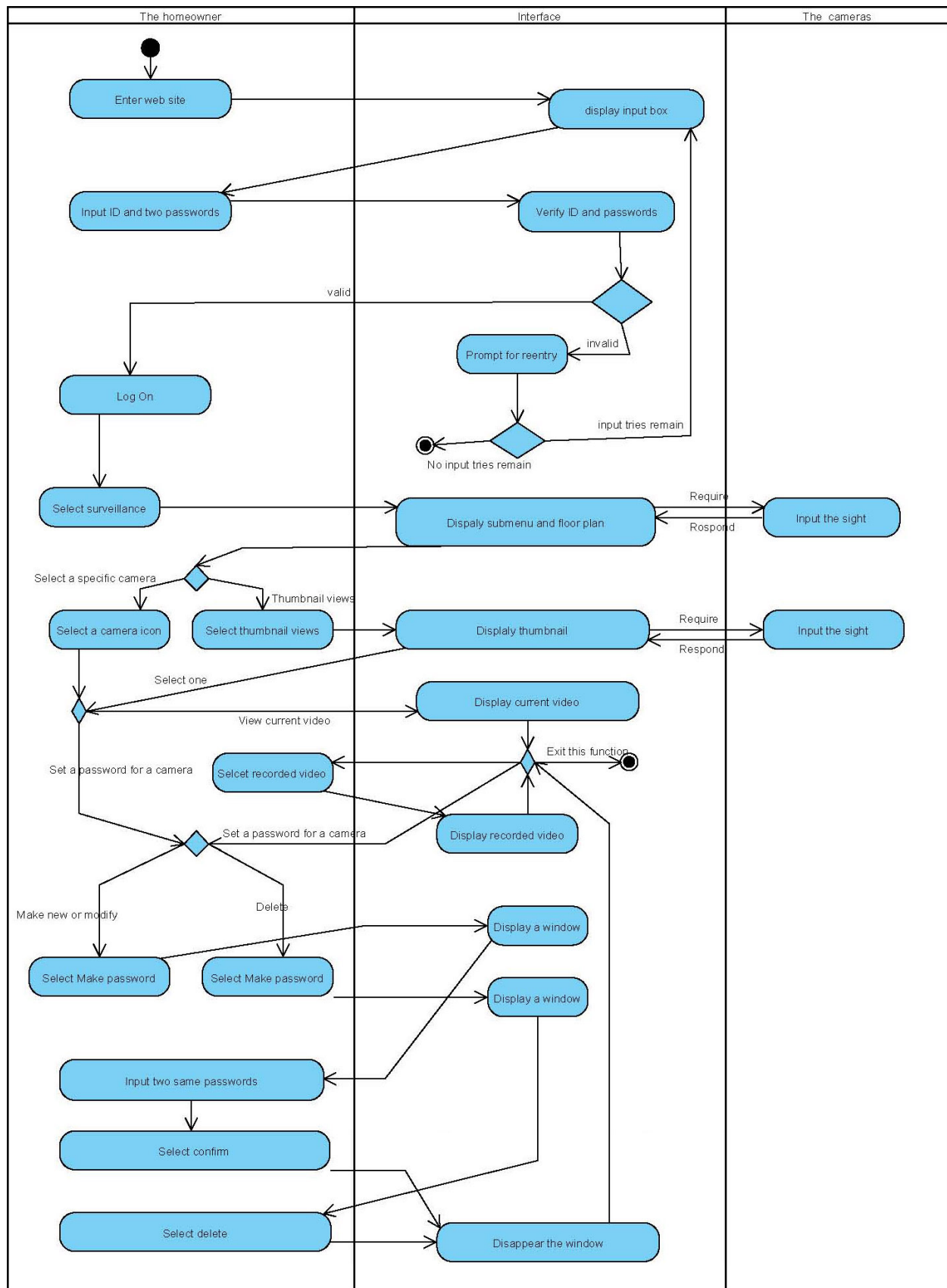
## 2 Arm/Disarm Sensors



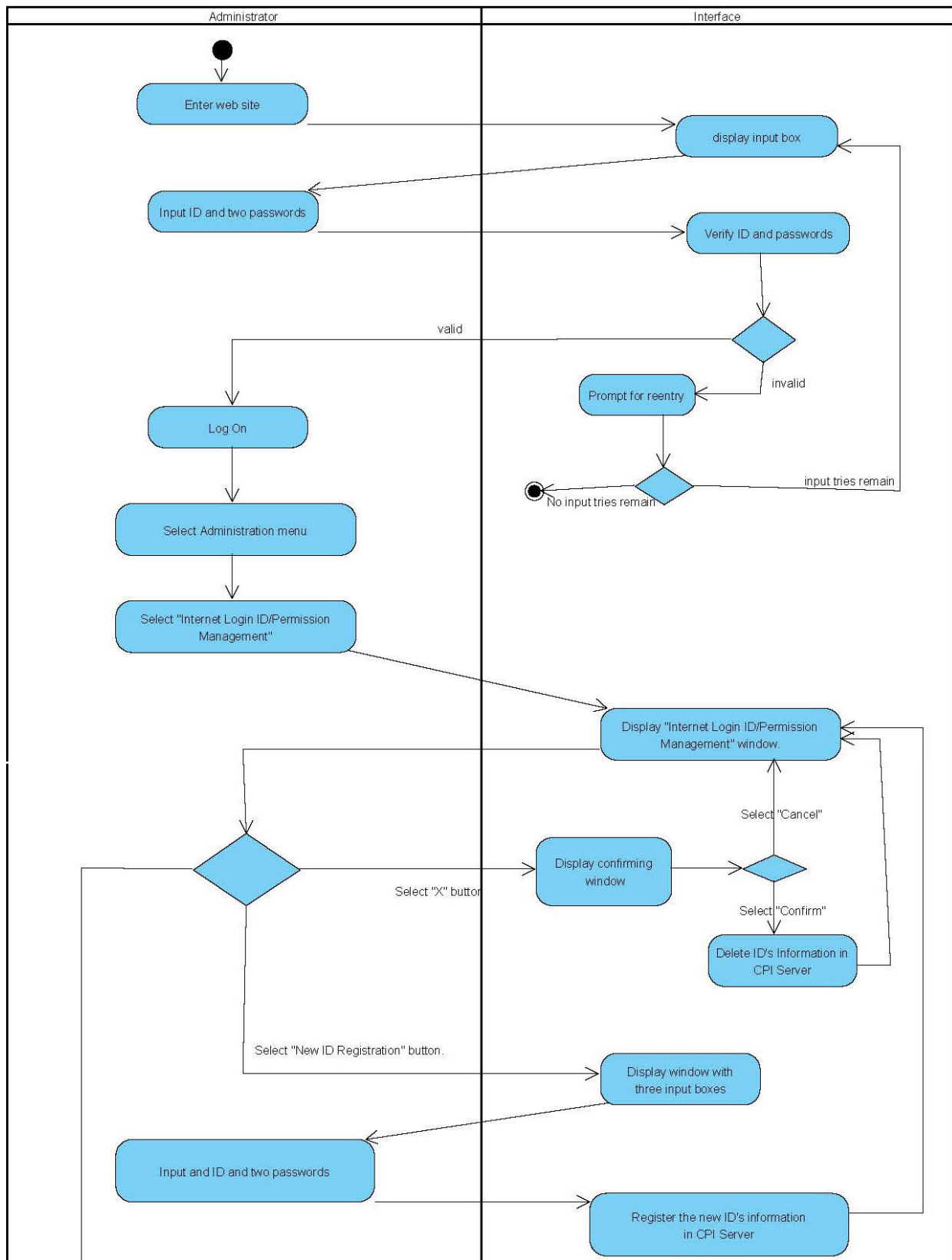


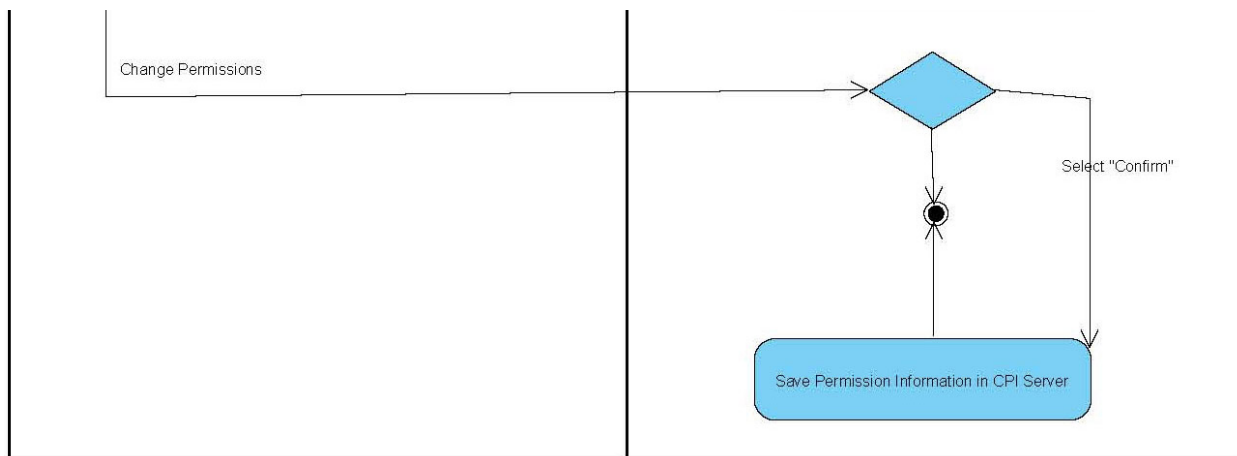


### 3 Surveillance

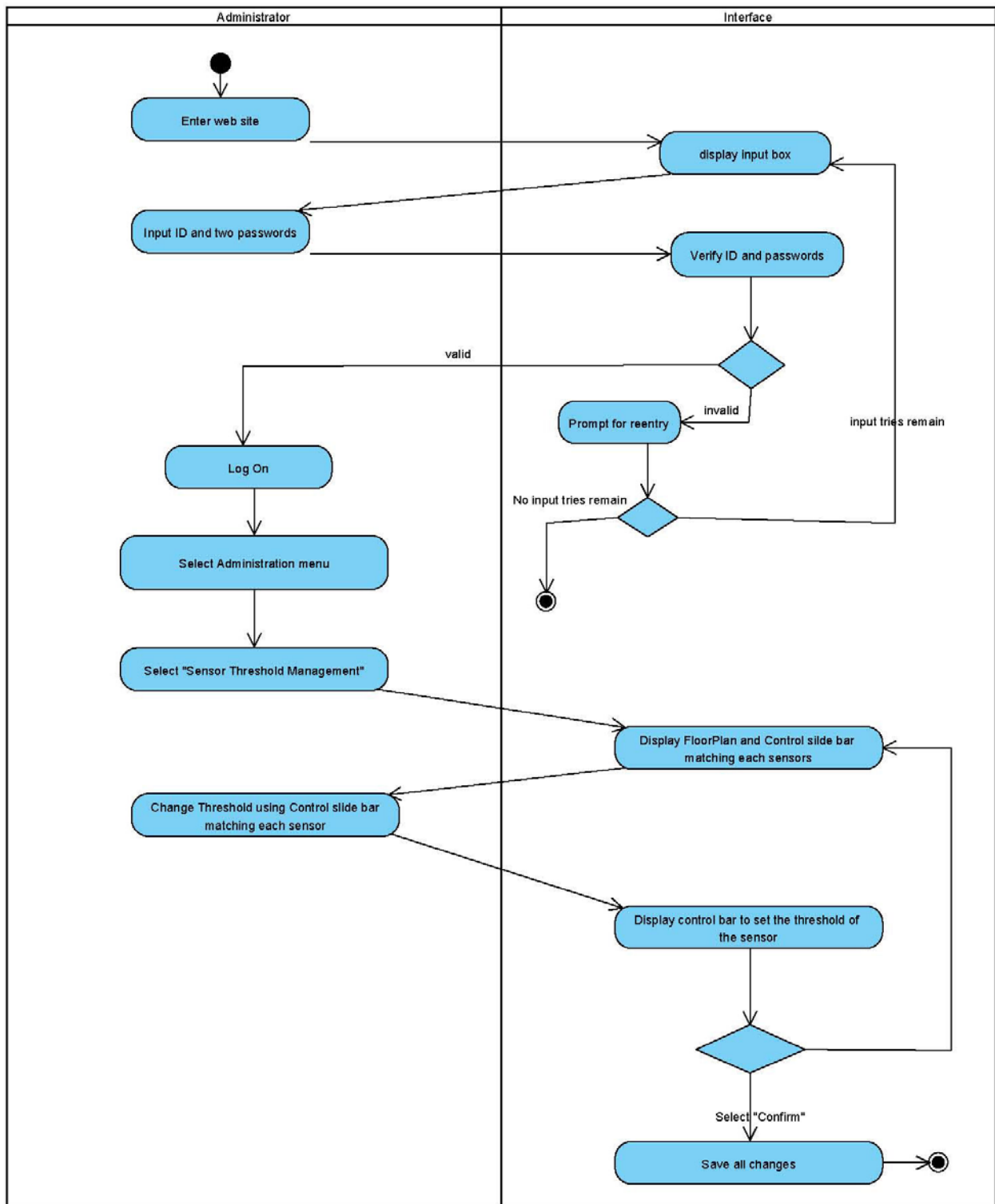


## 4 Internet Login ID/Permission Management

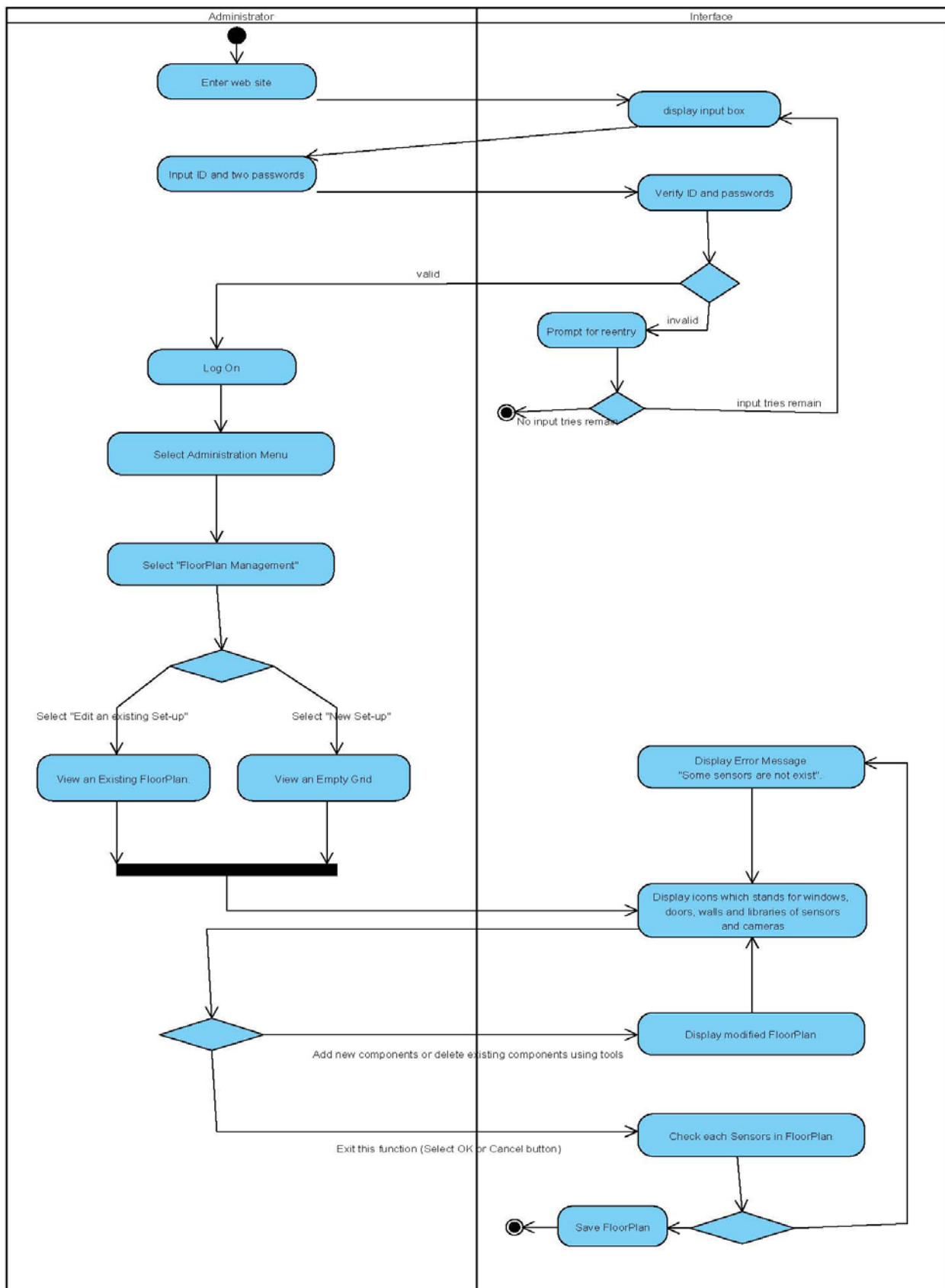




## 5 Sensor Threshold Management

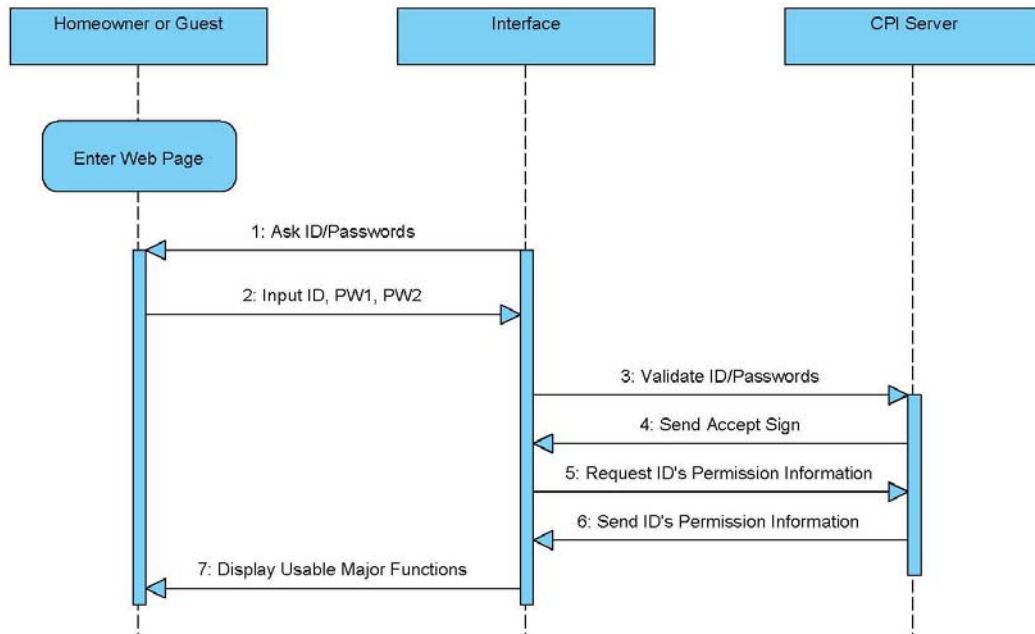


## 6 Floor Plan Management



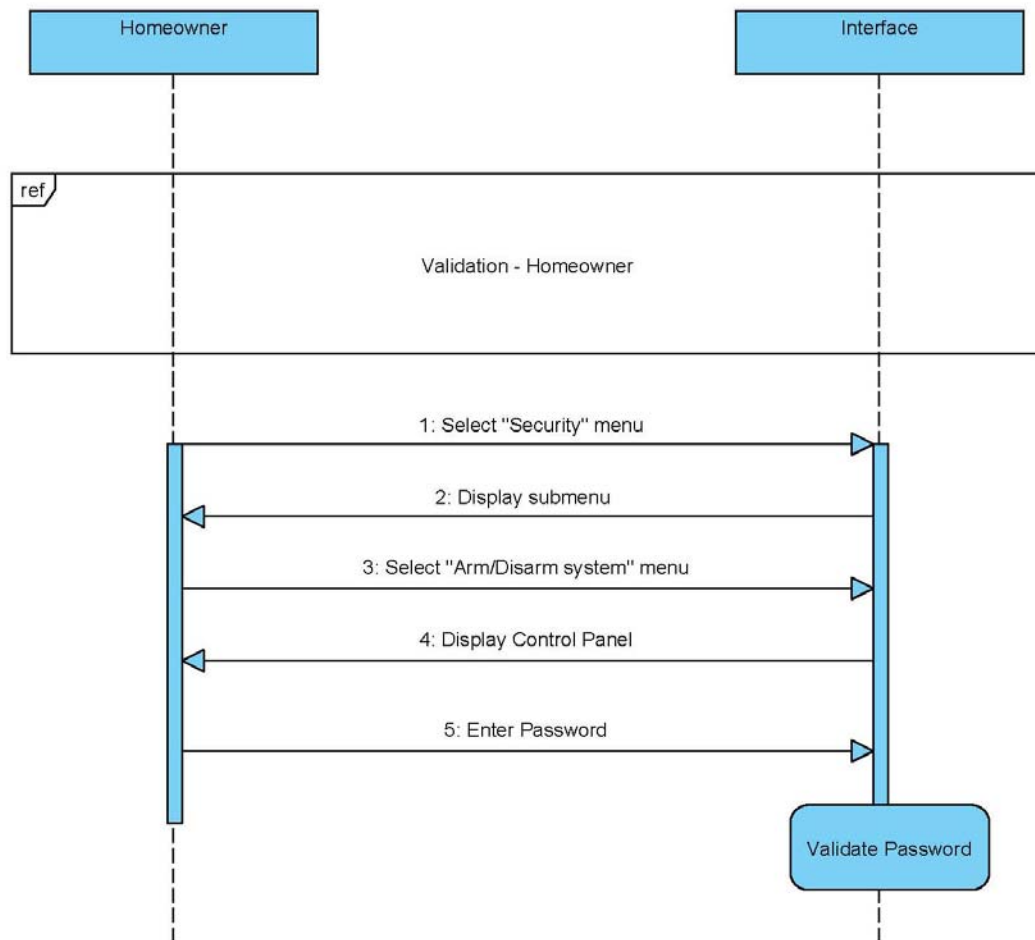
# Sequence Diagrams

## 1 Validation

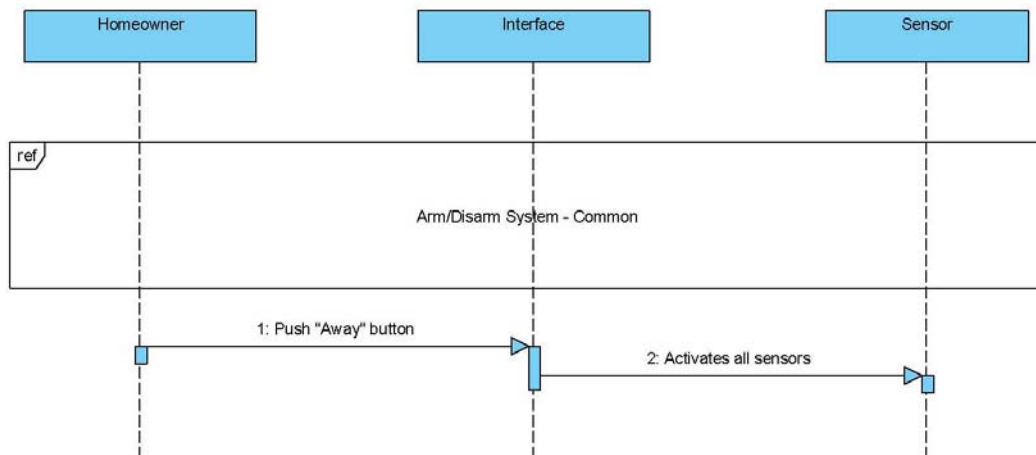


## 2 Arm/Disarm System

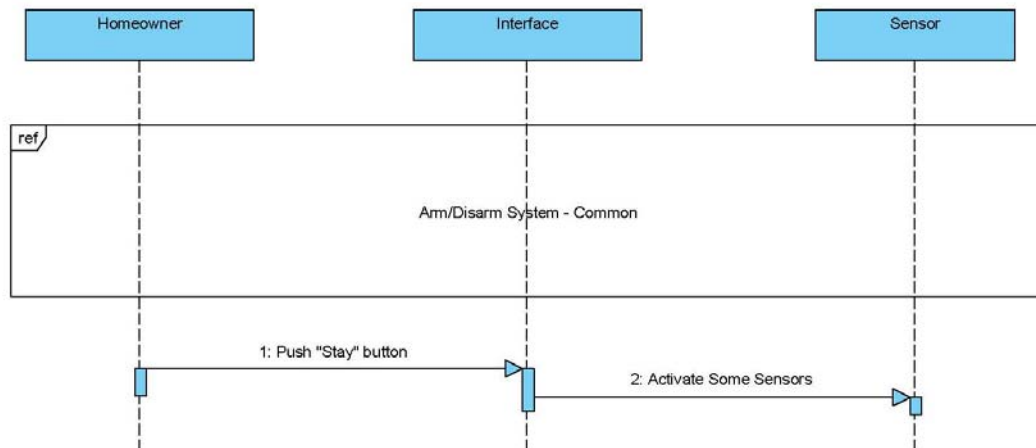
### 2.1 Common



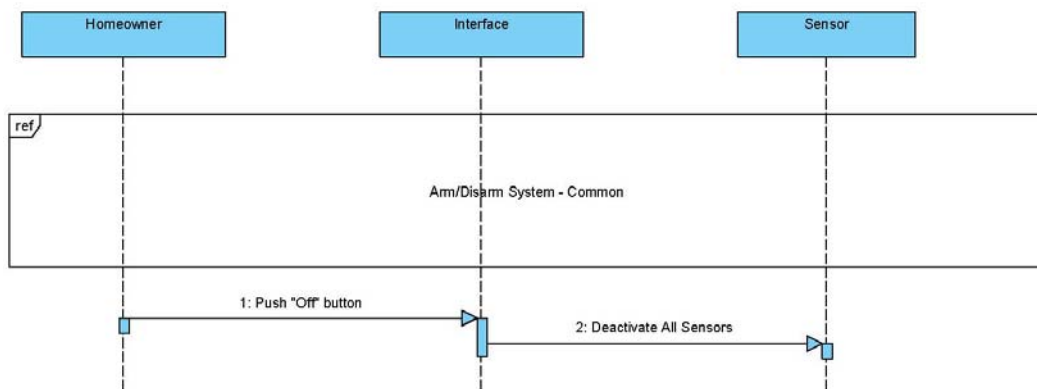
## 2.2 Mode Change - Away



## 2.3 Mode Change - Stay

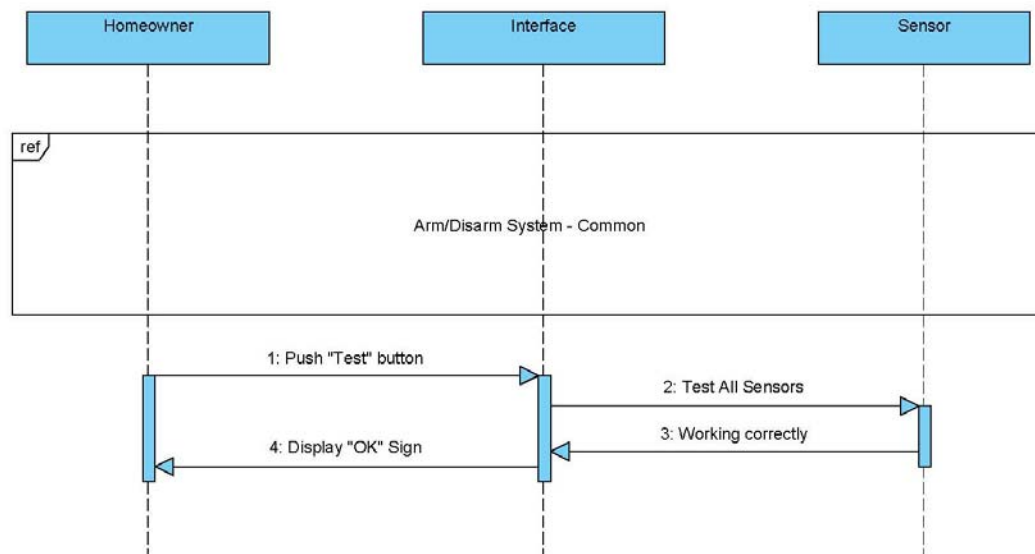


## 2.4 Mode Change - Off

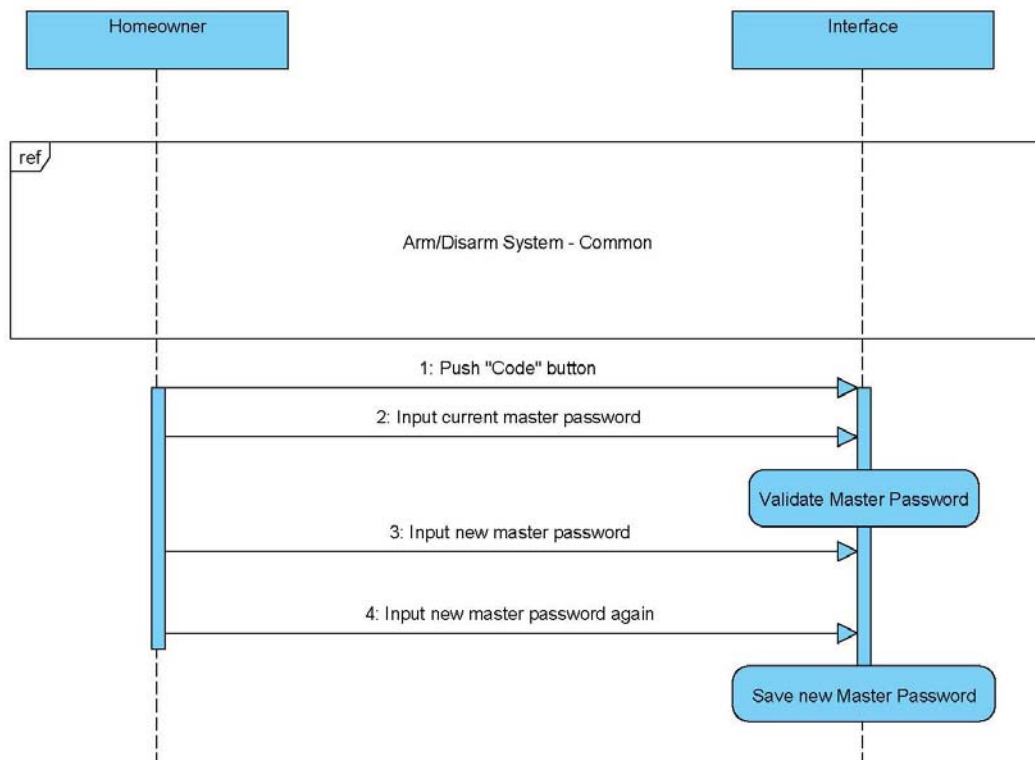




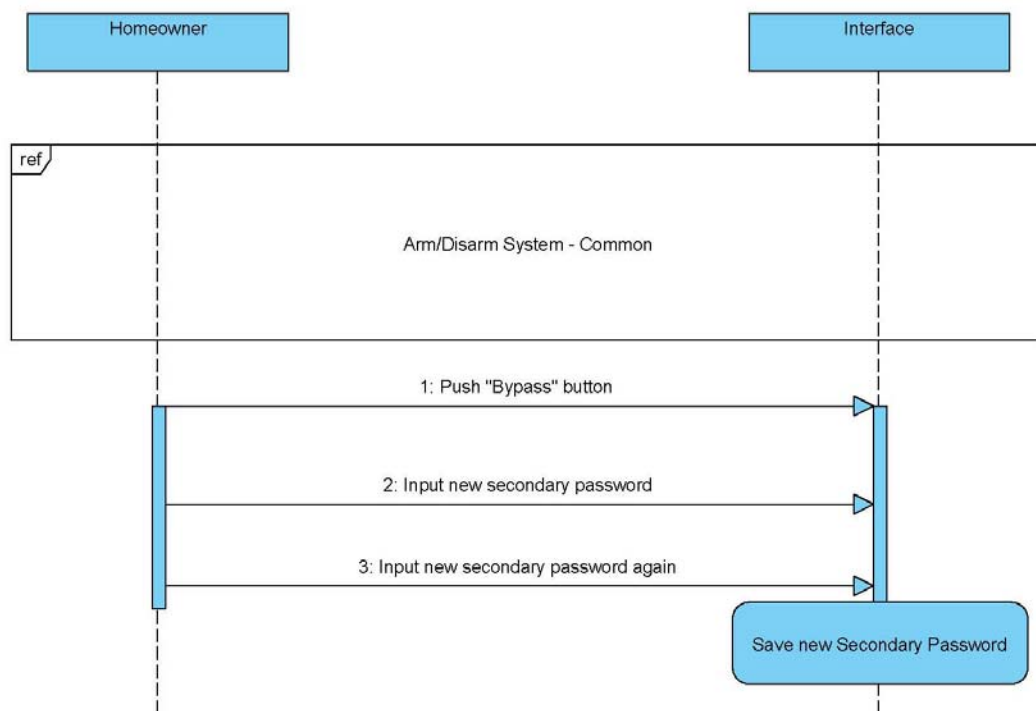
## 2.5 Mode Change - Test



## 2.6 Master Password Change

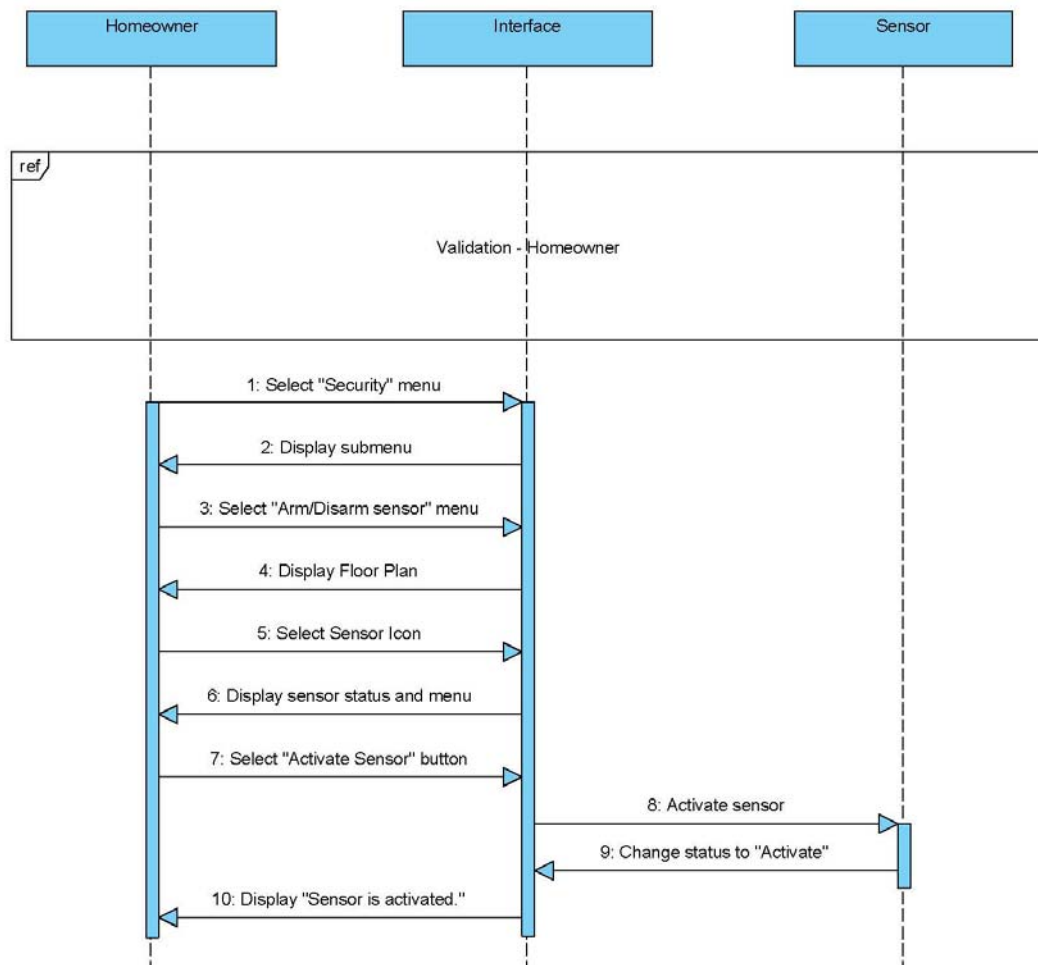


## 2.7 Secondary Password Change

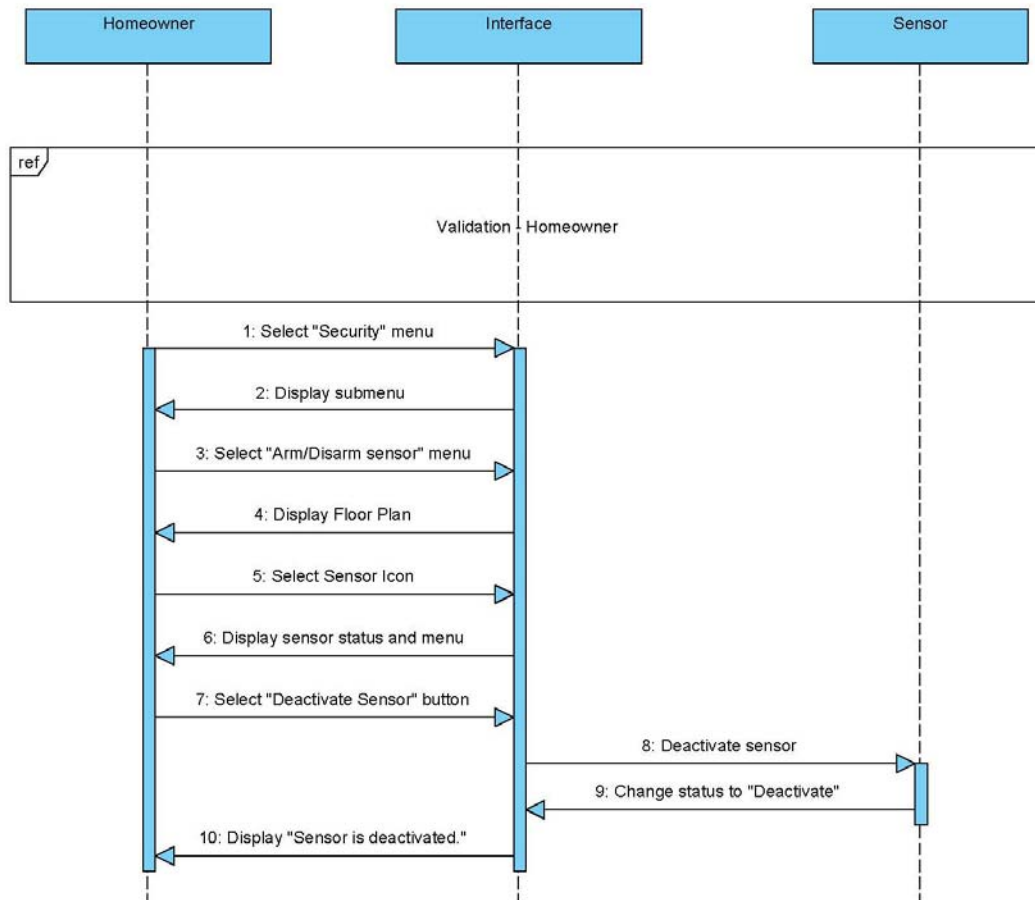


### 3 Arm/Disarm Sensors

#### 3.1 Activate Sensor

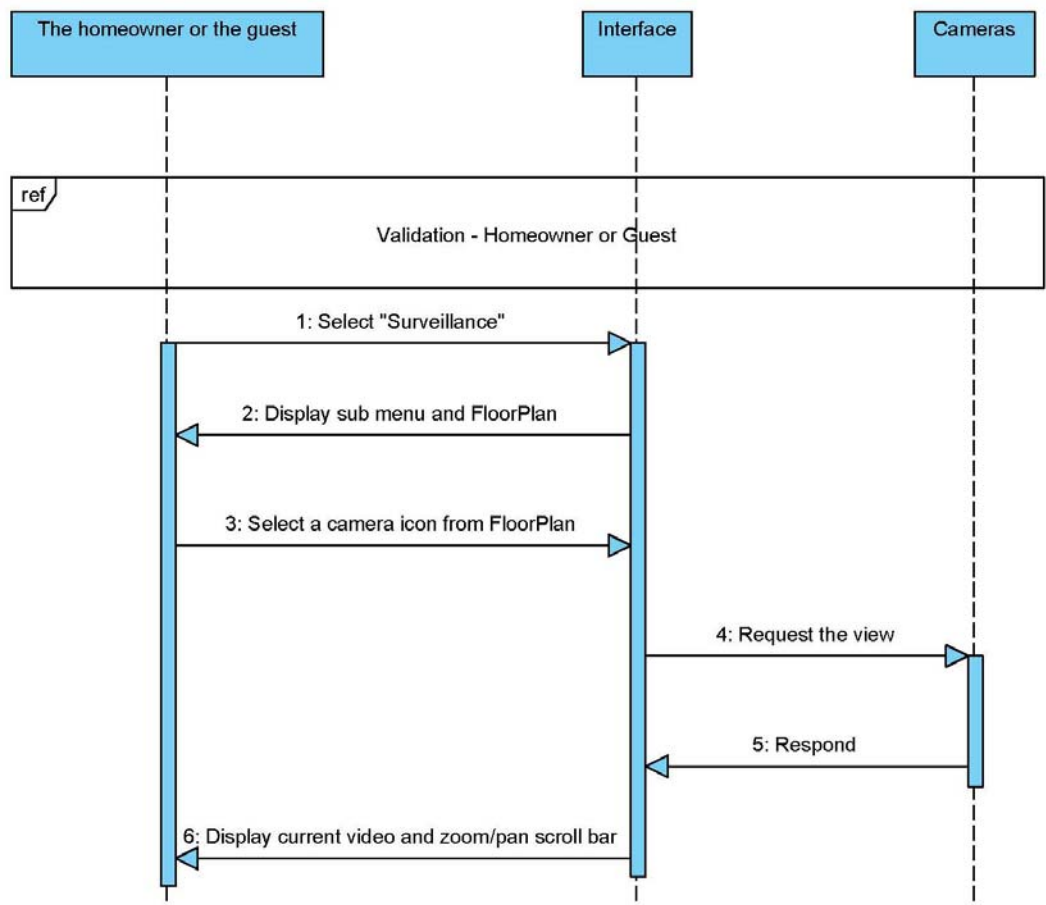


## 3.2 Deactivate Sensor

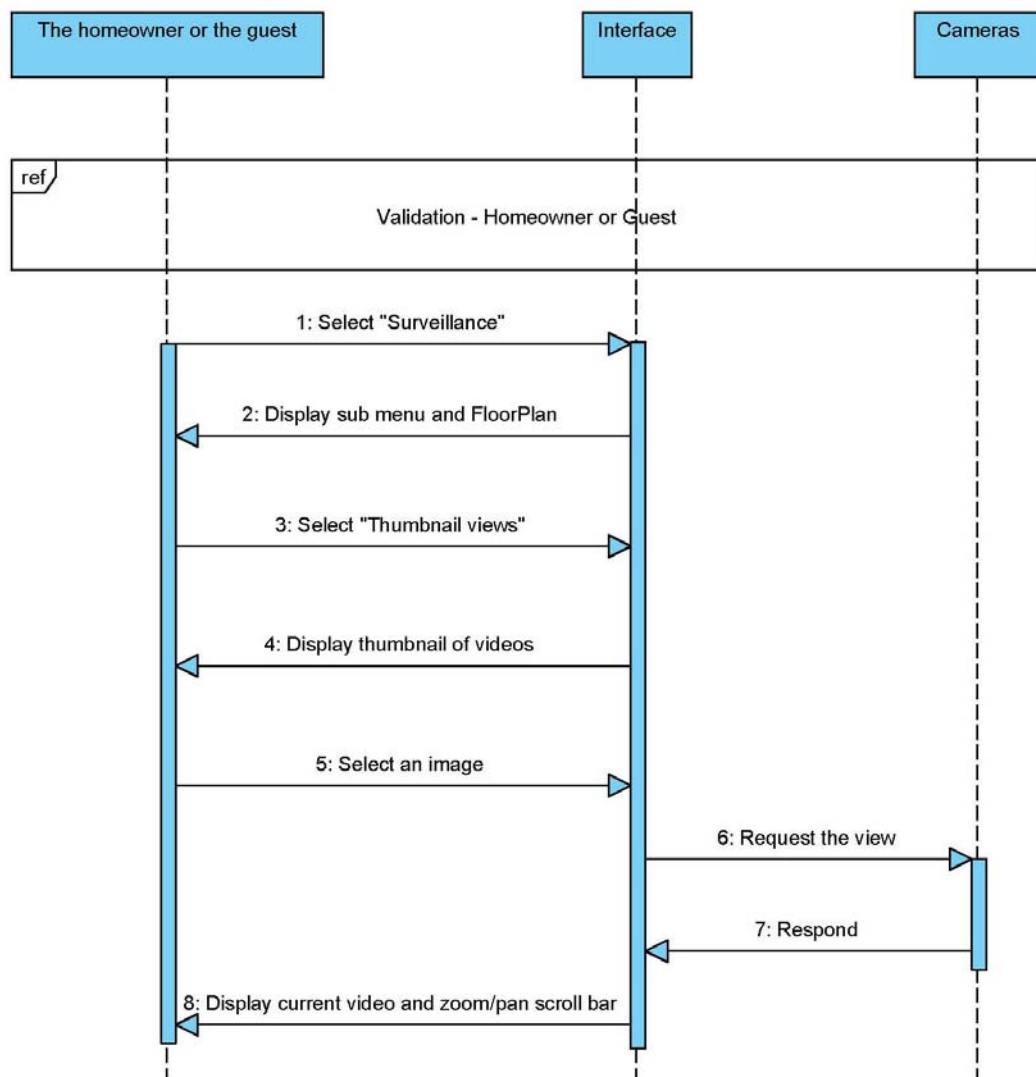


# 4 Show Current Video

## 4.1 Use Floor Plan

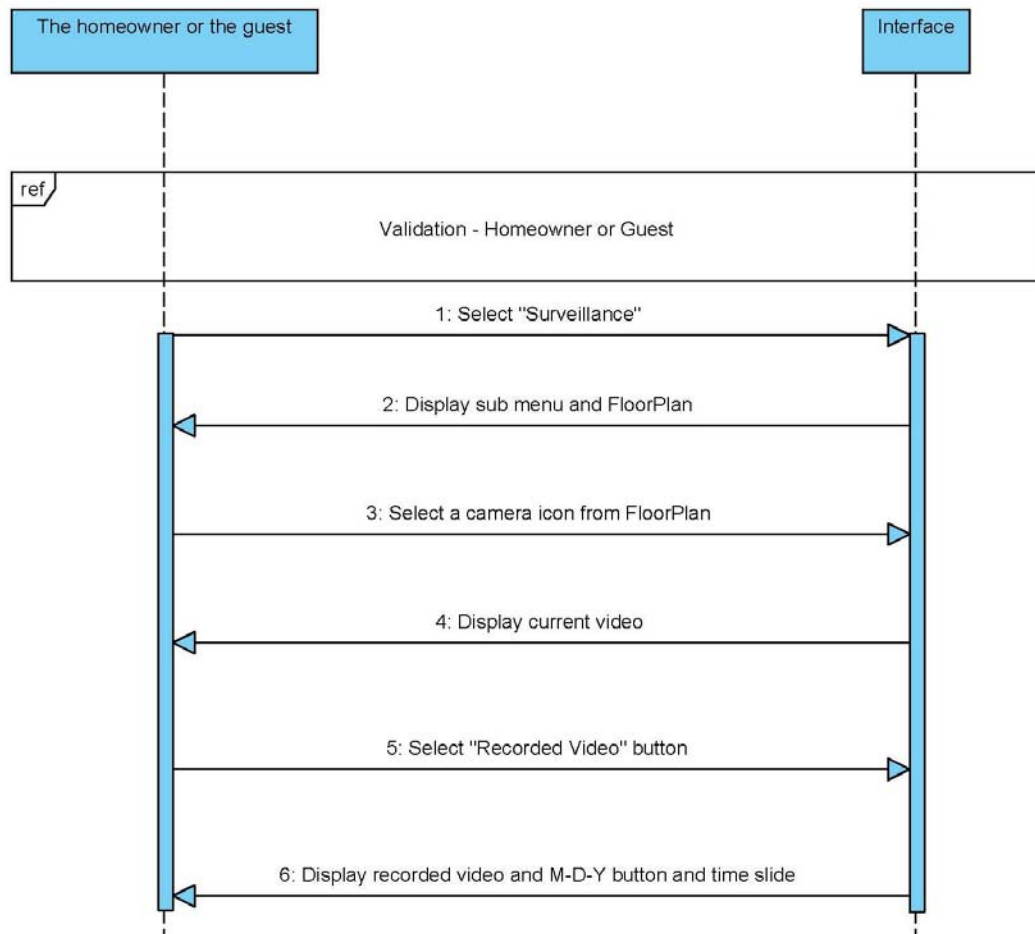


## 4.2 Use Thumbnail

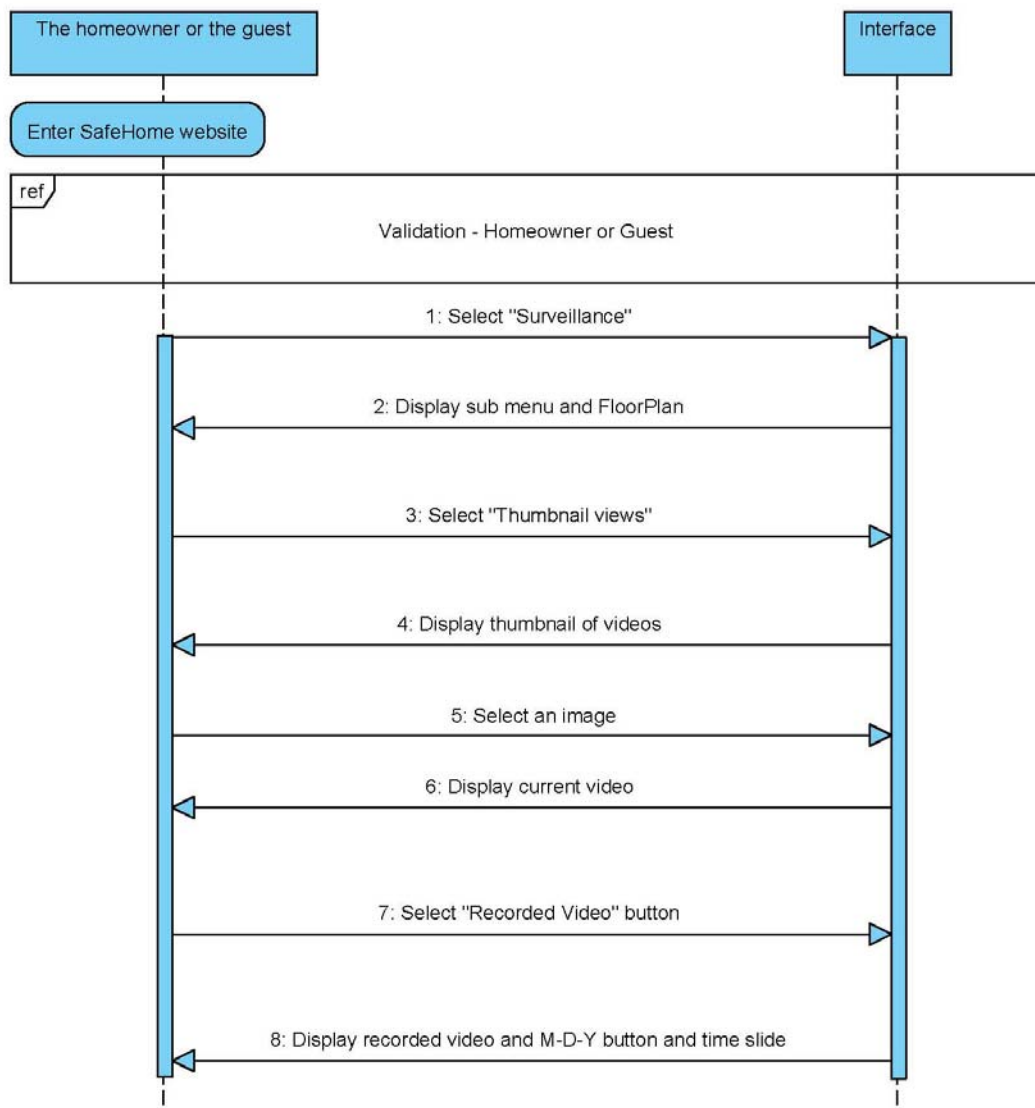


## 5 Show Recorded Video

### 5.1 Use Floor Plan



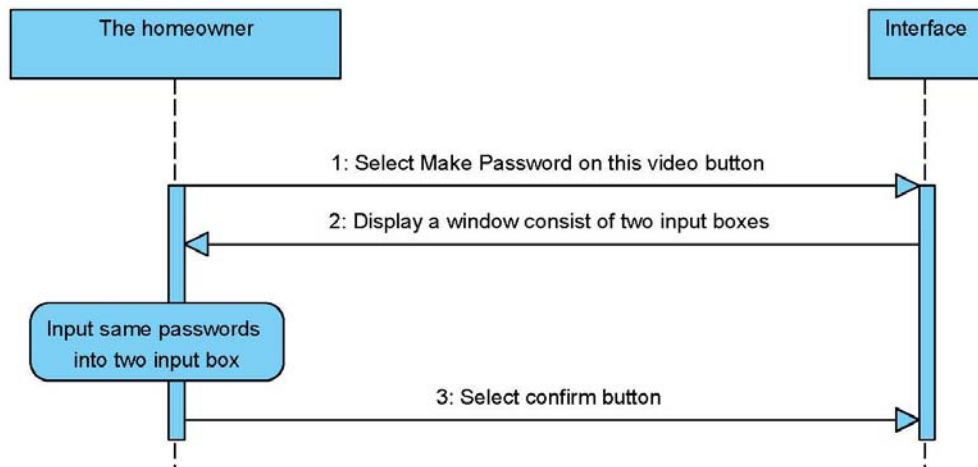
## 5.2 Use Thumbnail



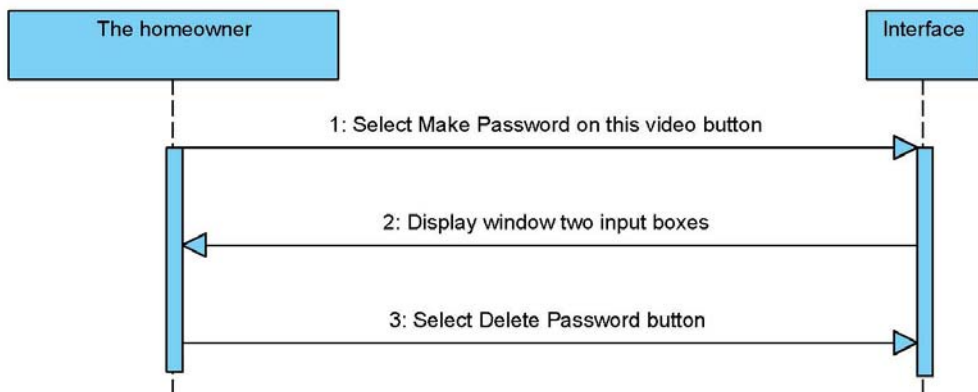


## 6 Camera Password Management

### 6.1 Use Floor Plan

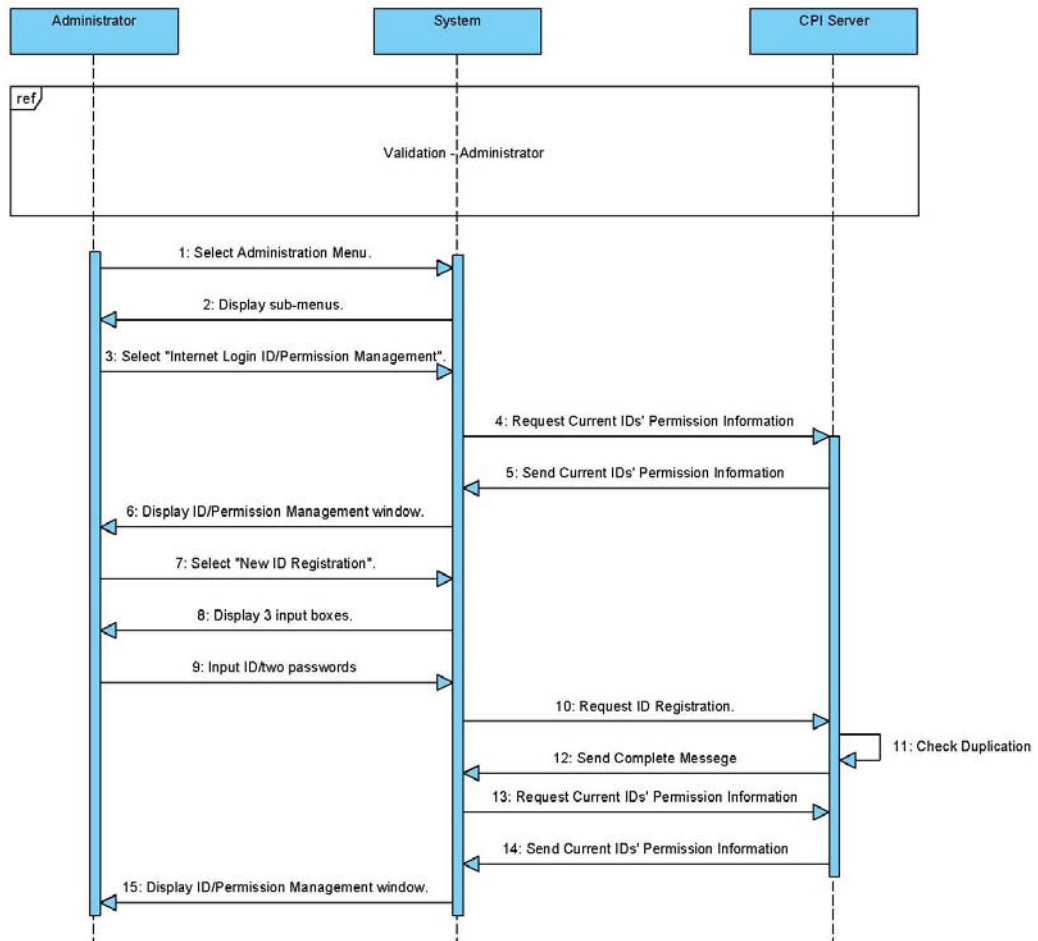


### 6.2 Use Thumbnail

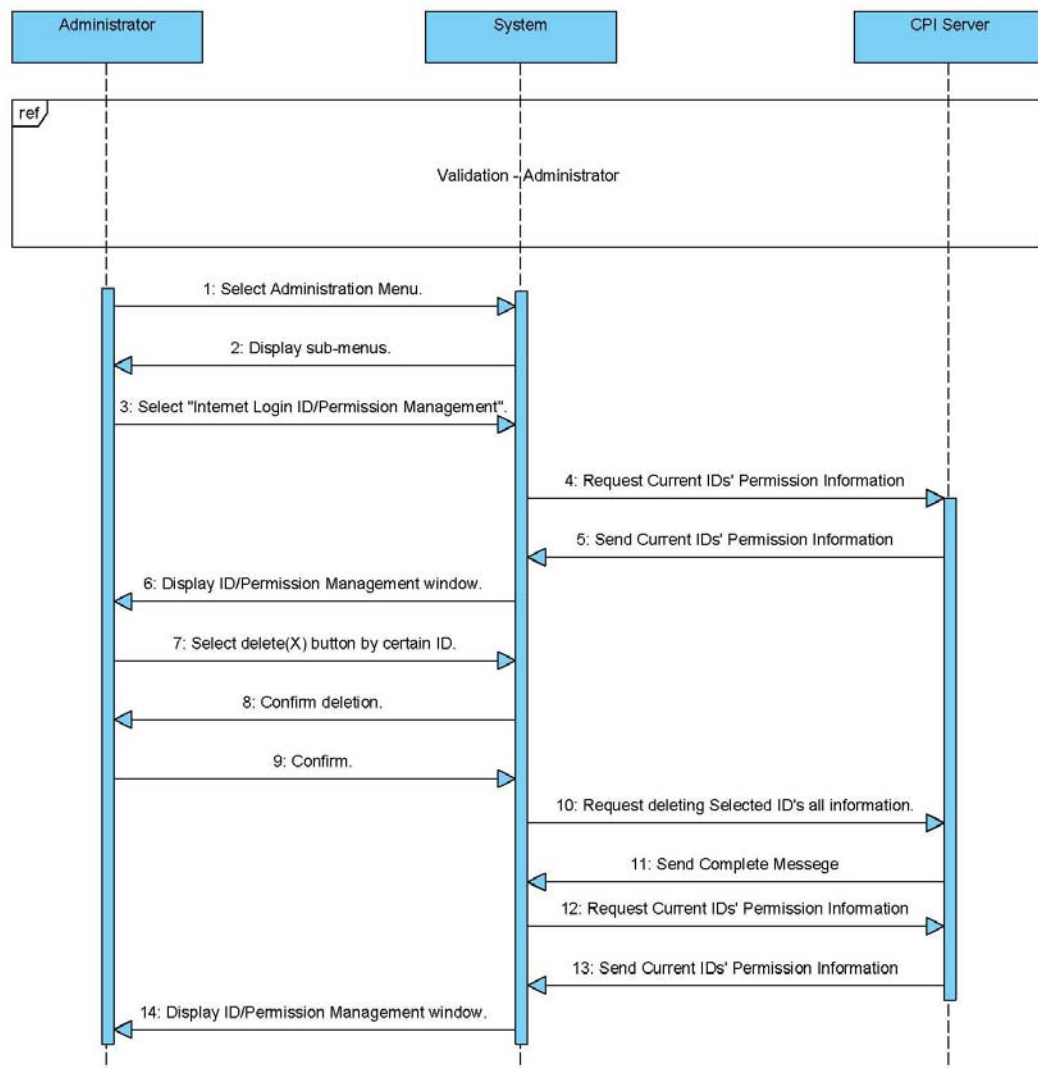


## 7 Internet Login ID/Permission Management

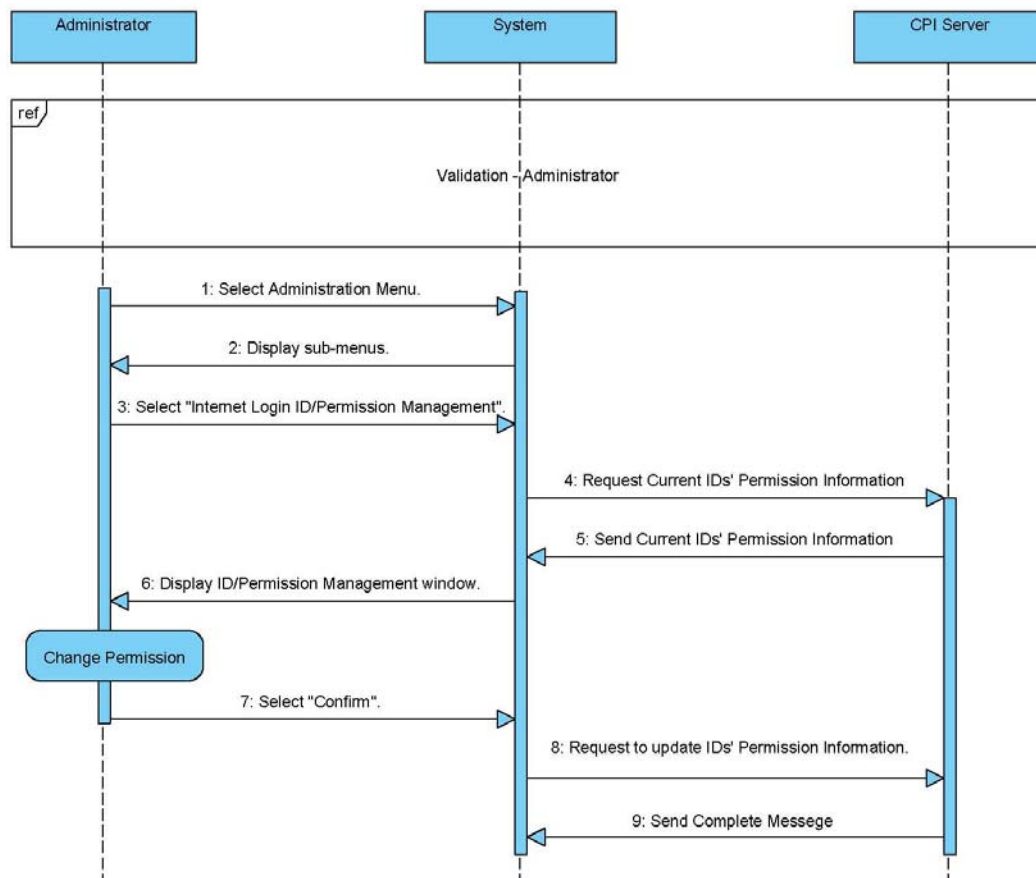
### 7.1 New ID Registration



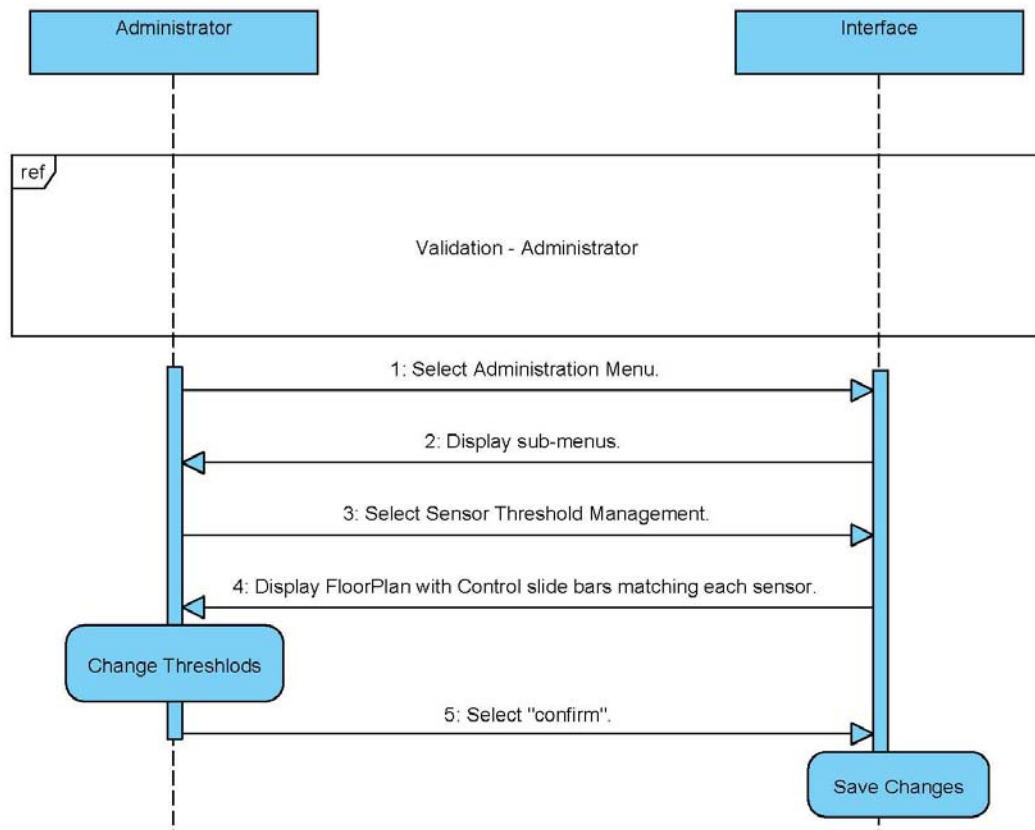
## 7.2 Delete an existing ID



## 7.3 Permission Management

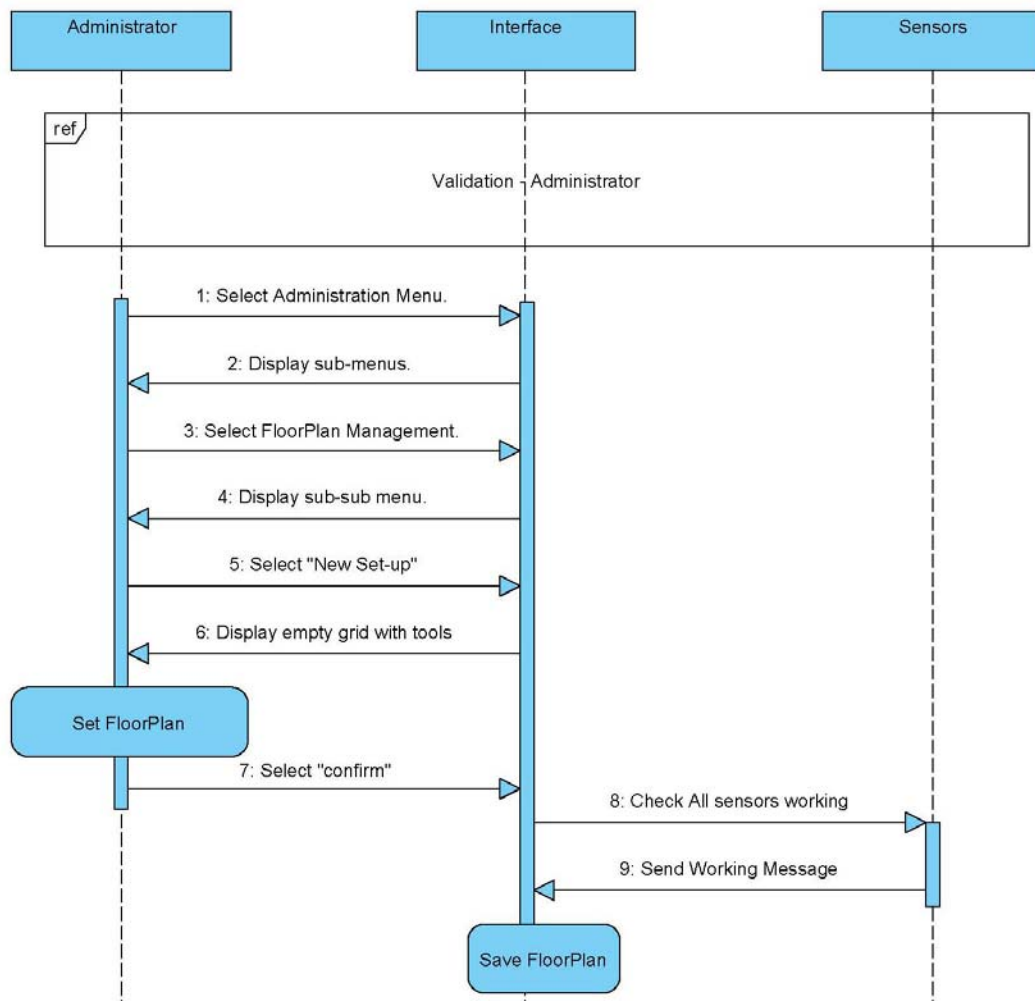


## 8 Sensor Threshold Management

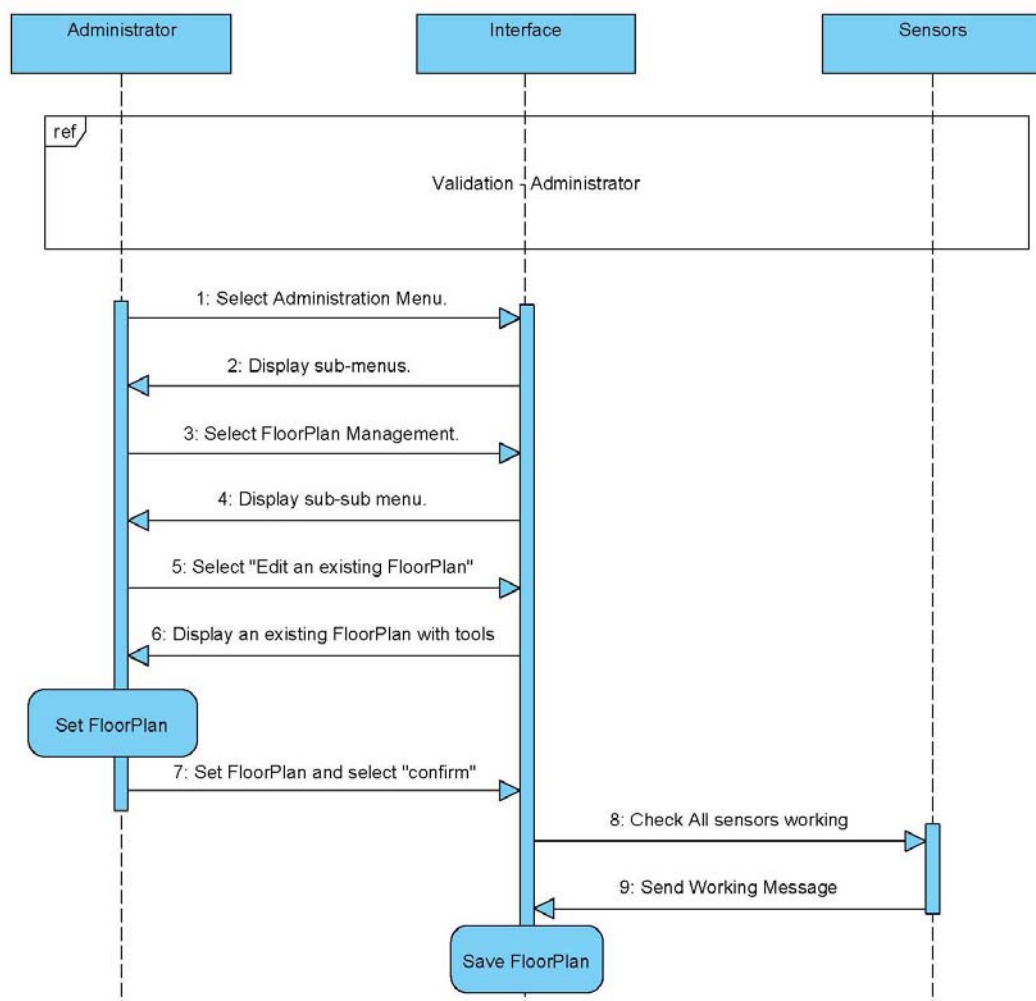


## 9 Floor Plan Management

### 9.1 Set-up a New Floor Plan



## 9.2 Edit and existing FloorPlan



# APPENDIX

## A. Glossary

### **SafeHome Product**

The product that consists of the SafeHome Product software, home-based PC, control panel, wireless box, sensors, cameras, accessibility to CPI servers and service team.

### **SafeHome Product software**

The software that manages storing data, sensor and camera setting and external access.

### **SafeHome Product service team, service team**

The division of the SafeHome company that provides the password-missing case disposal service, the sensor-detection disposal service and so on.

### **SafeHome Product Web site**

The web site that operates SafeHome Products.

### **administration**

The permission level that allows user to use all functions of the SafeHome Product software.

### **administrator**

The user who has the administration permission.

### **camera**

A optical device that records video

data.

### **control panel**

The interface located in the house of the homeowner and providing security mode changing functions.

### **CPI server**

The server computer located in the SafeHome company and providing the web service.

### **guest**

A person who doesn't have the administrator permission or isn't the homeowner.

### **home-based PC or PC**

The computer located in the house of the homeowner, storing all data except web data and providing exceptional access gate.

### **homeowner**

The user who has the house and purchases the SafeHome Product.

### **input box**

A blank form that the system displays to receive data from the homeowner or guest.

### **internet login ID/password**

A ID and passwords that needs to log in to SafeHome Web site.



**master password**

A password that needs to operate the control panel. Master password owner can make/delete secondary passwords.

**message box**

A box form that the system displays to inform the homeowner or the guest.

**permission**

The authority that needs to use some functions.

**priority**

The order that how much the user want to use.

**secondary password**

A password that needs to operate the control panel. Secondary password owner can not make/delete another secondary passwords.

**sensor**

A device that detects specified objects.

**thumbnail**

Snapshots provided by the SafeHome Product software to let users know the content of the video file.

**threshold**

A bounded value that doesn't make sensors to respond.

**tolerance time**

The time that the system waits after the first sensor response. After tolerance time, if there is the sensor response yet, the system makes phone call to SafeHome Product service team.

**validation**

The process that the system verifies a internet login ID and passwords, changes user state to log-in state and gives appropriate permission.

**wireless box**

The device located in the house of the homeowner and providing wireless transmission among the home-based PC, control panel, cameras and sensors.

## B. Word Index

### A

activate 10  
administrator 20  
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arm/disarm 7  
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## D. Meeting Records

To be continued on the next page.

The 8th Meeting Record					
<b>Course</b>	CS350 Software Engineering		<b>Instructor</b>	prof. Moon-zoo Kim	
			<b>Recorder</b>	Eut-deum Kim	
<b>Time</b>	March. 28th, 2008. p.m. 05:00~07:00		<b>Location</b>	Resting room in CS building	
<b>Subject</b>	Supplementary requirement, division of jobs in drawing diagrams				
<b>Attendant</b>	<b>Student Num</b>	<b>Name</b>	<b>Remark</b>		
	20010090	Eut-deum Kim			
	20030364	Myung-kyung Lee			
	20060034	Ji-seong Gu			
	20060340	Da-bi Ahn			
<b>C o n t e n t s</b>	◎ The Contents of the meeting <b>1. The Essential Activities</b> <ul style="list-style-type: none"> <li>· Based on professor's comment, we conclude to add more details, pictures and link table.</li> <li>· Are there need to be separated the interface section out of the functional requirements? We will first add pictures on the requirement specifications with captions and later talk about separating.</li> <li>· The link table generating function of DOORS is not so excellent. It can't show abstraction of entire link table, even the whole number of generated links. So, we will make out the link table by a word processor.</li> <li>· We agree to draw the swim-lane diagrams about the parts written by each and later integrate and modify them.</li> <li>· But there was some questions about principles in drawing diagram, so we are scheduled to have a meeting with TA - after midterm exam, in April 4th.</li> </ul>				
	※ We admit and agree with the contents of this meeting record.				
	<b>Signature</b>	Eut-deum Kim _____		Myung-kyung Lee _____	
		Ji-seong Gu _____		Da-bi Ahn _____	

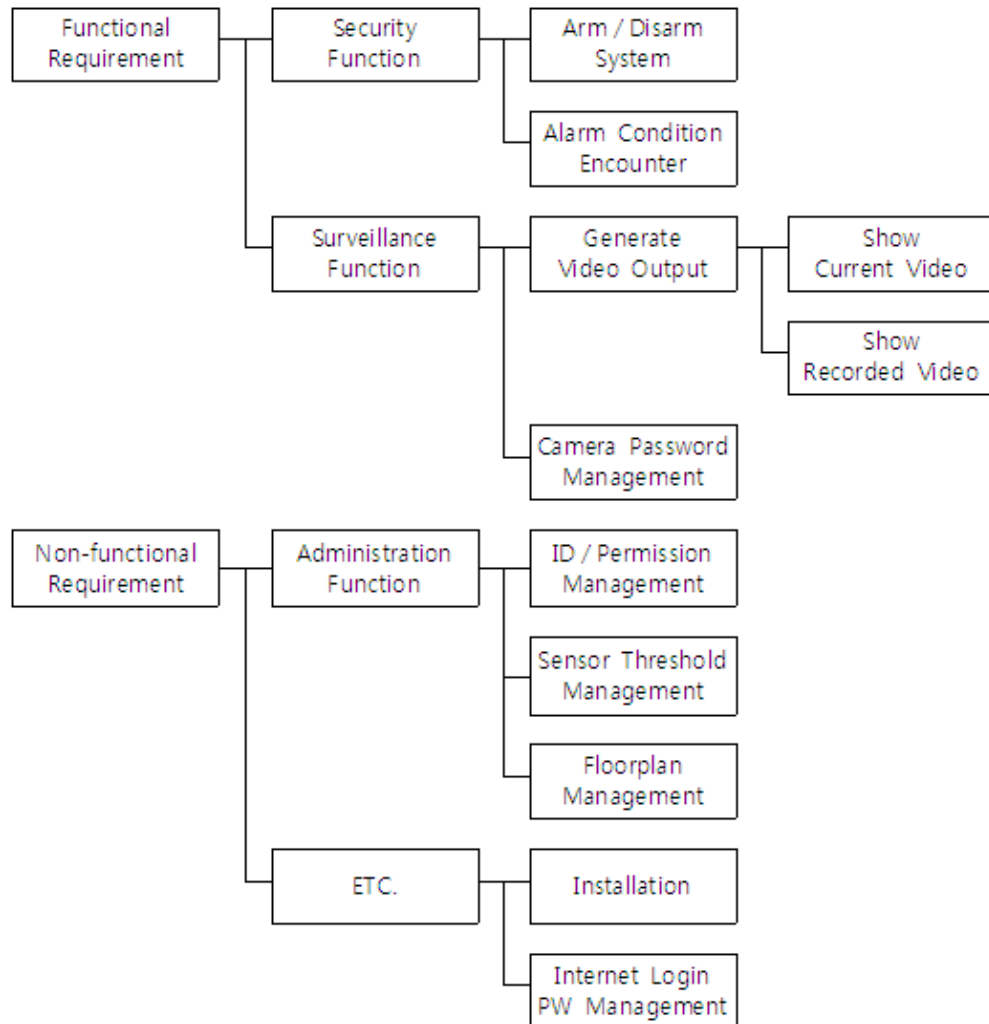
The 9th Meeting Record					
<b>Course</b>	CS350 Software Engineering		<b>Instructor</b>	prof. Moon-zoo Kim	
			<b>Recorder</b>	Eut-deum Kim	
<b>Time</b>	April. 4th, 2008. p.m. 03:00~05:00		<b>Location</b>	Meeting room in CS building	
<b>Subject</b>	Talk with TA about drawing diagrams				
<b>Attendant</b>	<b>Student Num</b>	<b>Name</b>	<b>Remark</b>		
	20010090	Eut-deum Kim			
	20030364	Myung-kyung Lee			
	20060034	Ji-seong Gu			
	20060340	Da-bi Ahn			
<b>C o n t e n t s</b>	◎ The Contents of the meeting <b>1. The Essential Activities</b> · We have the meeting with Chang-hee Lee, TA to ask advice. · He advises us like below. ① It is necessary to reconstruct the existing requirement specification. Divide specifications into items that have same abstraction level. If you do so, drawing use-case diagram and writing descriptions will be much easier. ② The items must be labeled detailed. Which object does that function? ③ Do not afraid of duplication in scenario - for example, duplicated scenario like 'validation of ID'. It will be better to remove 'general function' item. It can make the clients confused. The most important point in requirement specification is 'easy to understand to the clients'. ④ Consider about 'cross cutting concern' like validation. If any item is used widely in many functions, you can describe more detailed in the separated module and link them. ⑤ Pay attention to these questions: 'What kind of functions in the system?', 'How can the client use that functions?' ⑥ Use-case diagram is drawn in one feature as possible as you can. If you need, you can extend use-case entity about one level, but the entities must be in similar abstraction level. Dividing diagram will be executed in the design step. · We agree to talk about reconstruction and abstraction structure of the requirement specification in next meeting.				
	※ We admit and agree with the contents of this meeting record.				
	<b>Signature</b>	Eut-deum Kim _____		Myung-kyung Lee _____	
		Ji-seong Gu _____		Da-bi Ahn _____	

The 10th Meeting Record					
Course	CS350 Software Engineering		Instructor	prof. Moon-zoo Kim	
			Recorder	Eut-deum Kim	
Time	April. 6th, 2008. p.m. 03:00~05:00		Location	Resting room in CS building	
Subject	Reconstruction of the Requirement Specification				
Attendant	Student Num	Name	Remark		
	20010090	Eut-deum Kim			
	20030364	Myung-kyung Lee			
	20060034	Ji-seong Gu			
	20060340	Da-bi Ahn			
C o n t e n t s	◎ The Contents of the meeting <b>1. The Essential Activities</b> · We talk about how to reconstruct requirement specifications. · To achieve similar abstraction levels among items, we divide items into two parts. ① Functional Requirements includes core functions - security and surveillance function. Different access method will be described in the same item as alternative scenario. ② Non-functional Requirements includes additional functions for user's convenience - administration functions and the others. · Some similar detailed items are deleted and merged. ① All 'general functions' are deleted and their contents are merged with appropriate items. ② In surveillance function - pan & zoom and thumbnail processing are merged with general functions and become initial scenario of surveillance function. The other functions are reorganized into 'show current video' and 'show recorded video'. ③ In administration function - ID registration and permission management are merged. Sensor threshold management and tolerance time management are merged, Because these functions have similar role.				
	※ We admit and agree with the contents of this meeting record.				
	Signature	Eut-deum Kim _____		Myung-kyung Lee _____	
		Ji-seong Gu _____		Da-bi Ahn _____	

© The Contents of the meeting

## 2. the essential structure of the requirement specifications.

· As a result, we have a abstraction diagram like below.



## 3. Next schedule

- Because we have lots to do - preparing for presentation - we agree to finish reconstruction and diagrams until this weekend.
- We are scheduled to have next meeting on Friday.

## E. Who-did-what list

Here is our who-did-what list in student number order.

Eut-deum Kim	Wrote all meeting records. Made document forms. Drew a use-case diagram
Myung-kyung Lee	Drew the Security Functions swimlane diagram Drew the Security Functions sequence diagram
Ji-seong Gu	Drew the Administration Functions swimlane diagram Drew the Administration Functions sequence diagram
Da-bi Ahn	Drew the Surveillance Functions swimlane diagram Drew the Surveillance Functions sequence diagram