

Extract product line from Smart Home specifications

lopb

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1 Scenario LOPB-SC01

1.1 Description:

This scenario allows the home owner to register new inhabitants. In this way, the policies for getting access in the home are applied.

1.2 Flow of events

Code	Feature	User Action	System Response
LOPB-SC01-STEP01	-	The home owner selects the register inhabitant option in the security configuration menu.	The inhabitant personal form is displayed.
LOPB-SC01-STEP02	-	The home owner selects the proceed option.	The system asks the home owner her configuration password.
LOPB-SC01-STEP03	-	The home owner fills in the configuration password and selects the proceed option	The system register the new inhabitant, allowing she to get access to the smart house.

2 Scenario LOPB-SC02

2.1 Description:

This scenario allows a registered inhabitant to enter into the house.

2.2 Flow of events

Code	Feature	User Action	System Response
LOPB-SC02-STEP01	-	-	The system displays the message of successful authorization.
LOPB-SC02-STEP02	-	-	The system opens the front door and register the occurrence.
LOPB-SC02-STEP03	-	-	After $jSEG_L$ seconds, the front door is closed.

3 Scenario LOPB-SC03

3.1 Description:

This scenario allows a guest to enter into the house, but there is no resident there. This scenario is useful, for example, when the home owner family is traveling but an employee, a relative or a closer friend needs access to the house

3.2 Flow of events

Code	Feature	User Action	System Response
LOPB-SC03-STEP01	-	The guest request access to the home at the main entrance.	The system asks the guest name and the reason for requesting access to the house.
LOPB-SC03-STEP02	-	The guest fills in the requested information.	The system takes a guest photograph and sends one message to the home owner mobile device.
LOPB-SC03-STEP03	-	-	The system asks for the guest to wait a few minutes.
LOPB-SC03-STEP04	-	The home sends an authorization allowing the guest to enter into the house.	The system receives the authorization message.
LOPB-SC03-STEP05	-	-	The system displays the message of successful authorization.
LOPB-SC03-STEP06	-	-	The system opens the front door and register the occurrence
LOPB-SC03-STEP07	-	-	After $jSEG_L$ seconds, the front door is closed.

4 Scenario LOPB-SC04

4.1 Description:

This scenario describes the behavior that is triggered when an event of attempting to intrude the house is detected.

4.2 Flow of events

Code	Feature	User Action	System Response
LOPB-SC04-STEP01	-	The presence sensor identifies that someone (or something) is trying to intrude into the smart home. This might be deduced by observing any suspect event (forcing or braking) in the external doors and windows	The system emits the configured internal sound alarm.
LOPB-SC04-STEP02	-	-	The system places a call to the police department.

5 Scenario LOPB-SC05

5.1 Description:

This scenario describes the behavior that have to be triggered when an event that might characterizes fire or smoke in the smart home is detected.

5.2 Flow of events

Code	Feature	User Action	System Response
LOPB-SC05-PROD1	-	The fire sensor identifies a possible fire occurrence (based on smoke or temperature variation).	The system emits the configured internal sound alarm.
LOPB-SC05-PROD2	-	-	The system places a call to the fire guard department.

6 Scenario LOPB-ADV01

6.1 Description:

registrar habitante por impressao digital

6.2 Pointcut:

lopb-SC01-step01

6.3 Flow of events

Code	Feature	User Action	System Response
LOPB-ADV01-STEP01	-	The home owner fills in the inhabitant personal form and selects the proceed option.	The system asks the inhabitant to capture her fingerprint
LOPB-ADV01-STEP02	-	The new inhabitant put her finger in the fingerprint reader.	The system captures the mark of the inhabitant fingerprint and asks the home owner to proceed.

7 Scenario LOPB-ADV02

7.1 Description:

registrar habitante por usuario e senha

7.2 Pointcut:

lopb-SC01-step01

7.3 Flow of events

Code	Feature	User Action	System Response
LOPB-ADV02-STEP01	-	The home owner fills in the inhabitant personal form and selects the proceed option.	The system asks for the inhabitant password (and password confirmation) that allows her to get access to the home.
LOPB-ADV02-STEP02	-	The new inhabitant fills in the password (and confirmation password) for getting access to the home.	The system verifies that the password and confirmation password are equal. The system asks the home owner to select the proceed option.

8 Scenario LOPB-ADV03

8.1 Description:

requer acesso por usuario e senha

8.2 Pointcut:

lopb-SC02-step01

8.3 Flow of events

Code	Feature	User Action	System Response
LOPB-ADV03-STEP01	-	The inhabitant request access to the home at the main entrance.	The system requests to the user to pass the smart card
LOPB-ADV03-STEP02	-	The inhabitant inserts the smart card into the card reader.	The system asks the inhabitant's password, in order to authorize her access to the smart home.
LOPB-ADV03-STEP03	-	The inhabitant informs her password.	The system verifies that the password is valid for the registered inhabitant.

9 Scenario LOPB-ADV04

9.1 Description:

requer acesso por impressao digital

9.2 Pointcut:

lopb-SC02-step01

9.3 Flow of events

Code	Feature	User Action	System Response
LOPB-ADV04-STEP01	-	The inhabitant request access to the home at the main entrance.	The system asks the inhabitant to capture her fingerprint.
LOPB-ADV04-STEP02	-	The new inhabitant put her finger in the fingerprint reader.	The system recognizes the fingerprint impression.

10 Scenario LOPB-ADV05

10.1 Description:

sistema de travas e luzes

10.2 Pointcut:

lopb-SC04-step02

10.3 Flow of events

Code	Feature	User Action	System Response
LOPB-ADV05-STEP01	-	-	The system locks the access to the bedrooms.
LOPB-ADV05-STEP02	-	-	The system turns on the external and internal lights.

11 Configuration Knowledge

Expression	Transformations
Smart Home	bind parameter $iSEG_i$ to Smart Home
And(Lock Doors, Switch the lights on)	evaluate advise lopb-ADV05
Password	evaluate advise lopb-ADV03
Fingerprint	evaluate advise lopb-ADV04
Password	evaluate advise lopb-ADV02
Fire Detection	select scenario lopb-SC05
Intrusion Detection	select scenario lopb-SC04
Smart Home	select scenario lopb-SC03
Smart Home	select scenario lopb-SC02
Smart Home	select scenario lopb-SC01
Fingerprint	evaluate advise lopb-ADV01