

Section	Content	Section	Content	Section	Content	Section	Content	Section	Content
Identifier	UC1	Identifier	UC2	Identifier	UC3	Identifier	UC4	Identifier	UC5
Name	Authentication	Name	Restricted Manual Control	Name	Show Data	Name	Data Acquisition	Name	Temperature Rules
Author		Author		Author		Author		Author	
Version		Version		Version		Version		Version	
Change history		Change history		Change history		Change history		Change history	
Priority	Very important	Priority	Somewhat important	Priority	Somewhat Important	Priority	Very Important	Priority	Important
Criticality	Very High	Criticality	Medium	Criticality	Medum	Criticality	Very High	Criticality	Medium
Source		Source		Source		Source		Source	
Short description	Authenticates user	Short description	Limited control	Short description	Show continous updated information from the sensors	Short description	Receives, interpret and store sensor reading	Short description	Define desired Temperature
Goals	Allow access	Goals	Allow manual control	Goals	Show Data on Display	Goals	Capture Real Time Temp, Lum and Hum	Goals	Maintain desired temperature
Primary Actor	General User	Primary Actor	General User	Primary Actor	Actuators	Primary Actor	Sensor	Primary Actor	Home Owner
Other actors		Other actors		Other actors		Other actors	-	Other actors	Sensor, Actuator
Precondition	User enters password	Precondition	Being authenticated	Precondition	Existing data in the database	Precondition	Data being streamed	Precondition	Correct Rules Specification
Postcondition	User gets logged in	Postcondition		Postcondition	Get data	Postcondition	Data received succesfully	Postcondition	Rules stored in database
Result	System login	Result	Manual control	Result	Updated Data on Display	Result	Store data	Result	Set Temperature
Main Scenario	User wants to make changes to the system: Rules, scheduling etc.	Main Scenario	User wants to activate/deactivate actuators	Main Scenario	Allows user to check info on a display	Main Scenario	Updates data for system control	Main Scenario	System tries to achieve/maintain desired temperature with the optimal energy efficiency; if possible take advantage of external conditions; if not turn on heater/ A/C
Alternative Scenarios	None	Alternative Scenarios		Alternative Scenarios		Alternative Scenarios		Alternative Scenarios	
Exception Scenarios	Wrong credentials and/or hardware fault	Exception Scenarios	Actuator fault	Exception Scenarios	Missing information show error message	Exception Scenarios	Sensor Malfunction	Exception Scenarios	Actuators/Sensors Fault

	Content		Content		Content		Content		Content
Identifier	UC6	Identifier	UC7	Identifier	UC8	Identifier	UC9	Identifier	UC10
Name	Luminosity Rules	Name	Water Rules	Name	Emergency Rules	Name	Automatic Control	Name	Master manual control
Author		Author		Author		Author		Author	
Version		Version		Version		Version		Version	
Change history		Change history		Change history		Change history		Change history	
Priority	Important	Priority	Very Important	Priority	Very Important	Priority	Very Important	Priority	Important
Criticality	Medium	Criticality	High	Criticality	High	Criticality	High	Criticality	Medium
Source		Source		Source		Source		Source	
Short description	Define desired Luminosity	Short description	Set conditions to set/reset greenhouse water flow	Short description	Sets rules in case of emergency	Short description	Automatic procedures based on set conditions	Short description	Allow manual control of actuators if desired
Goals	Maintain desired Luminosity	Goals	Turn on/off greenhouse water flow if conditions are met	Goals	Quick and Automatic actuation in case of emergency	Goals	Quick and Automatic actuation	Goals	Manual control of devices (which cannot be controlled by general users)
Primary Actor	Home Owner	Primary Actor	Master	Primary Actor	Master	Primary Actor	Actuators	Primary Actor	Master
Other actors	Sensor, Actuator	Other actors		Other actors		Other actors		Other actors	
Precondition	Correct Rules Specification	Precondition	Correct Rules Specification	Precondition	Correct Rules Specification	Precondition		Precondition	
Postcondition	Rules stored in database	Postcondition	Rules stored in database	Postcondition	Rules stored in database	Postcondition		Postcondition	
Result	Set Luminosity	Result	Automatic watering control	Result	Set of emergency procedure	Result	Autonomous actuation in several different scenarios	Result	Manually operate especific devices

Main Scenario	System tries to achieve desired luminosity with the optimal energy efficiency: if possible take advantage of exterior conditions; if not turn on regular lighting		Main Scenario	Scheduled watering of greenhouse plants		Main Scenario	In case of fire: activate indoor watering, opens doors, open windows. In case of energy fault activate reserved power supply. In case of continuous wrong log in's in system, alert Master.		Main Scenario	Achieve/maintain desired temperature/luminosity - open/close windows or shades, turn on/off heaters/ A/C.		Main Scenario	Manually open doors, shades, turn on/off heaters/ A/C, greenhouse water.
Alternative Scenarios			Alternative Scenarios	In case of no water in reservoir use regular water supply		Alternative Scenarios			Alternative Scenarios	Quick response in case of emergency		Alternative Scenarios	
Exception Scenarios	Actuators/Sensors Fault		Exception Scenarios	Plantation Dies or water shortage		Exception Scenarios	None: must always be operational.		Exception Scenarios	Sensors/actuators fault.		Exception Scenarios	Actuators fault

	Content			Content			Content			Content			Content
Identifier	UC11		Identifier	UC12		Identifier	UC13		Identifier	UC14		Identifier	UC15
Name	Session configuration		Name	Define Rules		Name	Define Permissions		Name	Greenhouse Control		Name	Main House Control
Author			Author			Author			Author			Author	
Version			Version			Version			Version			Version	
Change history			Change history			Change history			Change history			Change history	
Priority	Important		Priority	Important		Priority	High		Priority	High		Priority	High
Criticality	High		Criticality	High		Criticality	Important		Criticality	Important		Criticality	Important
Source			Source			Source			Source			Source	
Short description	Changes users system settings		Short description	Defines Rules		Short description	Master defines what an user can do		Short description	System that controls the greenhouse		Short description	System that controls the house
Goals	Define system users settings		Goals	Automates the system		Goals	User can only control what master allows		Goals	Make greenhouse automated		Goals	Make house automated
Primary Actor	Master		Primary Actor	Master		Primary Actor	Master		Primary Actor	Actuators		Primary Actor	Master
Other actors			Other actors	None		Other actors			Other actors	Master		Other actors	Actuator
Precondition			Precondition	User is logged in the system		Precondition	User is in fact a master		Precondition	User controlling is a master		Precondition	There's no active manual control
Postcondition			Postcondition	System acts accordingly to new rules		Postcondition	Permissions are defined		Postcondition	Plants are watered according to enviromental conditions		Postcondition	Turn on/off actuators according to the house needs
Result	User settings		Result	Automated System		Result	User changes values in database, controlling effectively what an user can do/ remove or add users etc.		Result	Greenhouse is automated, without the need of human intervention		Result	House is automated, without the need of human intervention
Main Scenario	Add/remove Master users; change passwords/id cards; define emergency contacts; etc.		Main Scenario	Master logs in and changes rules		Main Scenario	Master Authenticates and changes permissions		Main Scenario			Main Scenario	
Alternative Scenarios			Alternative Scenarios	-		Alternative Scenarios	None		Alternative Scenarios			Alternative Scenarios	
Exception Scenarios	In case of system fault reset settings until technical support is provided.		Exception Scenarios	Emergency or if Manual Control is activated		Exception Scenarios	None		Exception Scenarios	Fire or malfunction in the greenhouse		Exception Scenarios	

	Content			Content			Content			Content			
Identifier	UC16		Identifier	UC17		Identifier	UC18		Identifier	UC19			
Name	Turn on/off AC		Name	Turn on/off Heater		Name	Turn on/off Lights		Name	Open/Close Blinds			
Author			Author			Author			Author				
Version			Version			Version			Version				
Change history			Change history			Change history			Change history				
Priority	High		Priority	High		Priority	High		Priority	High			
Criticality	Medium		Criticality	Medium		Criticality	Medium		Criticality	Medium			
Source			Source			Source			Source				
Short description	Alters the state of the AC		Short description	Alters the state of the Heater		Short description	Alters the state of the Lights		Short description	Alters the state of the Blinds			

Goals			Goals			Goals					
Primary Actor	End user/Master		Primary Actor	End user/Master		Primary Actor	End user/Master				
Other actors			Other actors			Other actors					
Precondition	User has permissions		Precondition	User has permissions		Precondition	User has permissions				
Postcondition	AC turned On or OFF		Postcondition	Heater turned On or OFF		Postcondition	Lights turned On or OFF		Postcondition	Blinds open or closed	
Result	Changes state of AC		Result	Changes state of Heater		Result	Changes state of Lights		Result	Changes state of blinds	
Main Scenario	User chooses to turn ON or OFF the AC		Main Scenario	User chooses to turn ON or OFF the Heater		Main Scenario	User chooses to turn ON or OFF the Lights		Main Scenario	User chooses to turn open or close the blinds	
Alternative Scenarios			Alternative Scenarios			Alternative Scenarios			Alternative Scenarios		
Exception Scenarios			Exception Scenarios			Exception Scenarios			Exception Scenarios		