

# ***Project proposal: Living Scenarios***

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# 1 Project Description

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One of the functionality normally provided by an home automation system is called “scenario”. The word “scenario” normally refers to the execution of a list of actions triggered by the user (push button, application ...) or by the validation of a condition (date, time, temperature ...).

The actions activated by a “scenario”, have normally an impact on different eco-systems of a standard home automation installation (lights, shutters, thermoregulation ...), and is normally different house by house. They strongly depend on the use cases imagined by the user/installer and the knowledge of the capabilities of the involved eco-systems.

The purpose of this project is to define a new type of scenario, the “living scenario”. A living scenario can be seen as a signal/event sent through the “home network” that map the very basic behavior / desires of the dwellers (i.e. “going out of home”, “go to sleep”, “watching TV”, “Go to home”, etc ...). One of the key point is that the meaning of the events is shared and known by the home eco-system/device and that every eco-system/device can react as they prefer to the event.

So, the living scenario can be seen as a “ready to use interoperability functionalities” that respects the limits of each manufacturers and so the way each manufacturers have to “propose to the market” their own solution (installation, configuration, user approach, etc ...).

There will be two main categories of functionalities / devices:

- a. “Living Scenario Sender”
- b. “Living Scenario Executors”

The Living Scenario Sender sends the “Living Scenario” event. It does not need to know the type of devices that execute actions. A sender can be a push button, a wall mounted touch screen, an app, etc ... but it can also be something of more “smart” like a scheduler, a virtual butler, a smart service like Google Now, a Voice recognizer (Siri), a wearable device, an algorithm that “detect / estimates” the activity of the users and send the event in according to what has been detected, etc..

The “Living scenario Executors” are devices or more generic eco-systems that receives the “living scenario events” (i.e. going out, relax, go to bed, etc) and (eventually) reacts performing actions.

The “Living Scenario Executors” could perform no action (so do not recognize the event) or could have a default behavior (embedded by the manufactures). If the default behavior is what the users need in his/her house, then no effort will be requested to the user that will have a “ready to use” device/ecosystem able to react to “living scenario”.

In the following two use cases will be described:

- a) The user goes outside, the Smartphone detects it and sends the living scenario “Away from home”. The connected locker on the door could verify the user hasn’t forgot to lock it, the light turns off, the colling/heating system manages the situation in order to save energy; the oven sends a notification if it is on, etc ...
- b) The user always leaves the office around 6 P.M; his Smartphone gives him the weather prediction, the traffic jam information, and sends the living scenario “I’ll be at home in X time” to the house. So, the heating system calculates how much time it need to reach the set point

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temperature and defines the time when it need to start heating to have the set point temperature only when the user arrives.

Also a mechanism to change the default behavior of a device associated to a living scenario, will be introduced. Such a functionalities should be performed also by the final user itself. A first proposal is to use a mechanism based on auto-learning approach.

For example, if the user need to change the default behavior of a device/ecosystem when a specific living scenario will be sent, the following flow could be put in place:

- Act (also physically) on the device/ecosystem to define the desired behavior (or the status the device will have to reach when the scenario is sent)
- Send a message “associate to the living scenario X the current behavior” thank to an AllJoyn compatible devices (App, wall mounted touch screen, etc ..)

To sum up; the Living scenario will introduce a functional layer able to provide a basic interoperability among different devices/ecosystems preserving the business model of each manufactures. This goal is reachable thanks to the sharing of some (not too much) basic (not too complicated) “sentences” (the “living scenario”) that will have to map the most part of the actions that all of us perform every day.

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## 2 Scope

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The scope of the Living Scenario Project is:

- to find new living scenario based on a common user activity
- to provide a common implementation that could be embedded in any AllJoyn compatible devices.

The common implementation should contain at least 2 methods:

- The activation of a living scenario, with parameters to define depending on the type of scenario (time, date, area ...).
- The association of the status of a device/subsystem at a T time with a living scenario. (smart learning auto configuration)

Example: the standard behavior of a lamp is to be turned off when the scenario “away from home” is sent. But the user wants that when he goes out, the garden light is on. For this, he has to turn off all the lights (or send the scenario “away from home”) and turn on the garden’s light. He then sends the association command to associate the current house configuration to the scenario “away from home”.

In the following tables some examples of use-cases can be found.

	<b>Video dooy Entry System</b>	<b>Lighting</b>	<b>Autom-ation</b>	<b>Thermoregu-lation e.g: Heating, Cooling, Hot Water</b>	<b>Alarm intrusion</b>	<b>Multime dia</b>	<b>Home Appliances e.g: Washing machine, dishwasher, Fridge, Hood...</b>	<b>Jacuzzi &amp; Pool</b>
<b>Going out</b>	In record mode	Switch off all the lights	Close all the shutters, gates	Switch off the thermoregulation	Activate the Alarm	Switch off all the A/V equipment	Manufacturer choice	Manufacturer choice
<b>Coming home</b>		Entrance light ON 45%	Entrance Shutter 66 %UP	Set point 20°C	Deactivate the Alarm	Switch On the entrance loud speaker	Manufacturer choice	Manufacturer choice

<b>Going to bed</b>		Switch off all the lights, the bedroom light in relaxing color	Close all the shutters, gates ...	Set point 18°C	Activate the Alarm	Switch off all the A/V equipment	Manufacturer choice	Manufacturer choice
<b>Waking up</b>		bedroom light on timed 10 min	bedroom Shutters open 30%	Set point 20°C	Deactivate the Alarm	Switch On the bedroom loud speaker with the favorite radio	Manufacturer choice	Manufacturer choice
<b>Party</b>	Disable the locker	Party effect lights in all the house	Open all the shutters to 50%	Set point 20°C	Deactivate the Alarm	Switch On all the loud speakers	Manufacturer choice	Manufacturer choice
<b>Holiday</b>	In record mode	Switch off all the lights	Close all the shutters, gates	Switch off the thermoregulation	Activate the Alarm	Switch off all the A/V equipment	Manufacturer choice	Manufacturer choice
<b>Technical alarm event</b>		All the light start blinking	Depending on the event (water, gaz, ...), close the corresponding actuator			The sound system in siren mode	Manufacturer choice	Manufacturer choice
<b>Intrusion</b>		All the lights start blinking in red			Start recording with the internal cameras	The sound system in siren mode	Manufacturer choice	Manufacturer choice
<b>Eco mode</b>		Dim all the light by 30%		Set point 16°C		Multimedia system in eco-mode	Manufacturer choice	Manufacturer choice
<b>User defined</b>	Actions defined by the user	Actions defined by the user	Actions defined by the user	Actions defined by the user	Actions defined by the user	Actions defined by the user	Actions defined by the user	Actions defined by the user

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User fall (elderly people)					The alarm calls the healthcare center	Diffuse the call from healthcare center		
Others...								

## 3 Dependencies

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The project is dependent on the 14.06 release of the AllJoyn core

## 4 Proposed Working Group

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As far as we know, there is currently no WG, working on the notion of living scenario as described here; therefore we propose to create a new working group called "Connected Home and Building" and a Git repository "Connected\_Home\_and\_Building/living\_scenarios".

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## 5 Committers and Contributors

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