## Triggers and Events

Sensors

Actuators

Triggers

Actions

Events

Timers

A Trigger always includes one Timer, one Event, one Action Group, many Action items. An action item is related to an actuator.

A trigger is On (currentstatus=1) when the Timer currentstatus = 1 and the Event currentstatus = 1

A Trigger can be one of these types

* 0 = Local (the trigger is managed by the HUB. Commands to the remote nodes are sent is actions are required)
* 1 = Remote (the trigger is managed by the remote node)   
  On when the condition is in range.   
  Off when the condition is out of range  
  On until a reset command is sent)
* 2 = Remote temporary (the trigger is managed by the remote node)  
  On when the condition is in range  
  Off when the condition is out of range
* 3 = Remote toggle (the trigger is managed by the remote node)  
  On when the condition is in range  
  Off when the condition is in range again
* 4 = Remote timer (the trigger is managed by the remote node)  
  On for n seconds when the condition is in range, then turn to Off

A Event is something that happens in a place and in a certain condition

Es. In the bedroom (place) the temperature (sensor) is 20C° (condition)

An event is linked to the Event Logic that can include one or more conditions (many conditions are supported only when the trigger type = 0)

Es. In the bedroom (place) the temperature (sensor) is 20°C (condition) AND External (place) the temperature (sensor) is less than 10°C

## Timers

A timer is composed by

One daily timer, set the time period

One weekly timer, set the week days

One monthly timer, set the months

Es. timer = morning, weekend, winter

the timer is On from 00:00 to 12:00 on Saturday and Sunday on November, December, January, February, March, otherwise is Off.

## Systems and Functions

A System is a group of sensors. Used to group sensors and events

Es. Clima control, Alarm etc..

A Function is a group of triggers. Used to group triggers and actuators

Es. All Off/On, Always, Back home

## Sensors and Actuators

A **sensor** is an object whose purpose is to detect events or changes in its environment, and then provide a corresponding output. A sensor is a type of [transducer](https://en.wikipedia.org/wiki/Transducer); sensors may provide various types of output, but typically use electrical or optical signals. For example, a [thermocouple](https://en.wikipedia.org/wiki/Thermocouple) generates a known voltage (the output) in response to its temperature (the environment). A [mercury-in-glass thermometer](https://en.wikipedia.org/wiki/Mercury-in-glass_thermometer), similarly, converts measured temperature into expansion and contraction of a liquid, which can be read on a calibrated glass tube. (wikipedia)

Type of sensors

0 for internal use only

1 Elettricity

2 Gas

3 Light analog GA1A12S202

4 Movement

5 Pressure

6 Noise

7 Temp DHT21

8 Temperature

9 External Temp

10 Umidity DH21

11 External Umidity

12 Pollution

13 Electric Power

14 Meteo

A Actuator is a Electrical, hydraulic, or pneumatic device (such as a relay, servo, remote control, motor etc...) that controls the flow of material or power. Also called actuation device.

Actuator types

1 Lamp

2 Ceiling lamp

3 Relay

4 Buzzer

5 Camera

6 Key

7 Plug

8 Servo

9 LED Analog

10 Inactive

11 Sockets

12 Door

13 Switch

14 Table lamp

15 Window

16 Air conditioner

17 Fan

18 TV

19 RGB

20 IP Camera

21 Thermostat

22 Smart Light White

23 Smart Light 3 Colors

24 Smart Light RGB

25 Smart Light Group

An actuator type can have methods to define the characteristics of an actuator

0 Mandatory On/Off

1 Optional Dimmer

2 Optional Range

3 Optional AC Fan 1

4 Optional AC Fan 2

5 Optional AC Fan 3

6 Optional AC Fan Auto

7 Optional AC Mode Cool

8 Optional AC Mode Dry

9 Optional AC Mode Heat

10 Optional AC Mode Auto

11 Optional AC Temperature

12 Optional AC Swing

13 Optional Volume +

14 Optional Volume -

15 Optional Channel +

16 Optional Channel -

17 Optional Mute

18 Optional Source

19 Optional Home

20 Optional red

21 Optional green

22 Optional yellow

23 Optional blue

24 Optional up

25 Optional down

26 Optional left

27 Optional right

28 Optional ok

29 Optional return

30 Optional color picker

31 Optional TM Mode

32 Optional TM Prog

33 Optional TM Fire

34 Optional TM Manual temp adjust

35 Optional SmartLight color temperature

36 Optional Smartlight Dimmer

37 Optional Smartlight Color Picker

38 Optional Smartlight on-off

39 Optional Smartlight Mood

## Hierarchy

Environment

Actuators

Node

Sensor

Room

Methods