

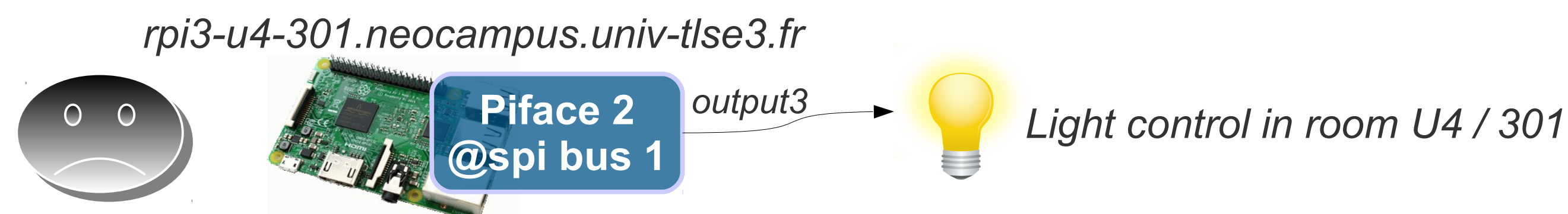
## sens@campus, the ne@campus IoT framework

Campus-wide management of sensors and actuators

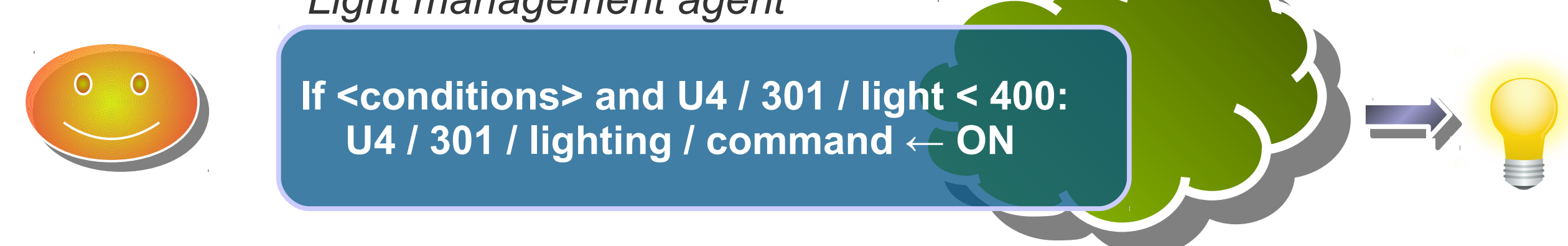
Dr François Thiebolt, Mcf Rahim Kacimi, Pr Marie-Pierre Gleizes - IRIT [thiebolt,kacimi,gleizes@irit.fr](mailto:thiebolt,kacimi,gleizes@irit.fr)

### Context & aims

#### ✗ High level of hardware details



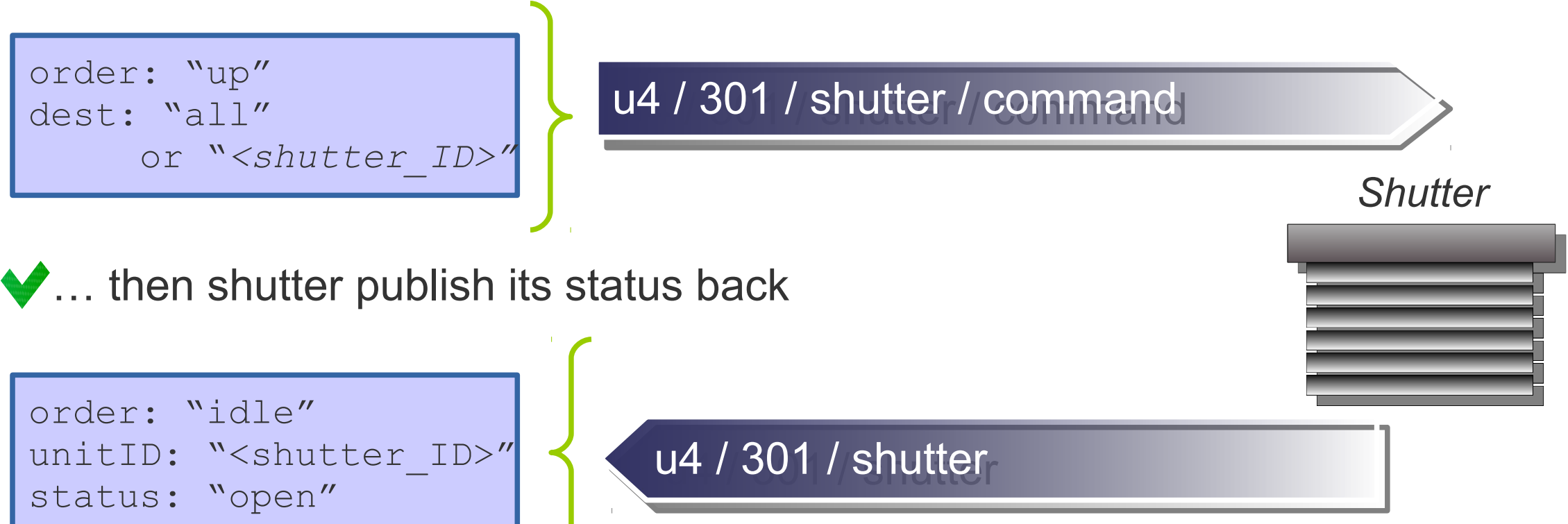
#### ✓ Useful data



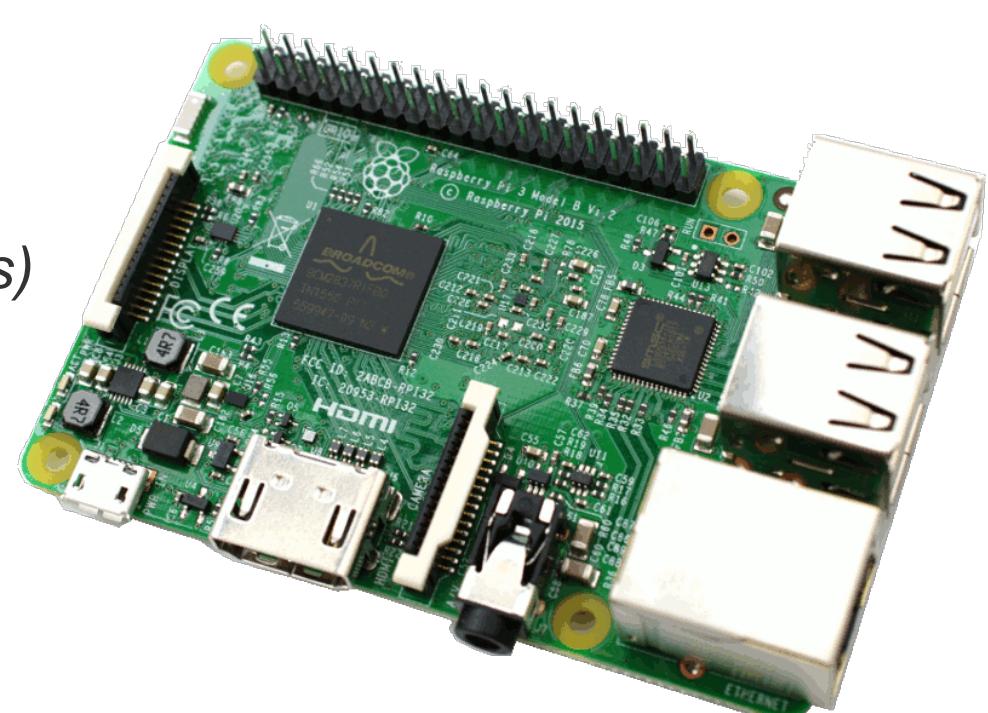
### Features

- Sensors & actuators management across our Campus and beyond,
- MQTT topics conventions  
<building>/<room>/<type>[/command]  
e.g **u4**/302/co2 or **bu**/hall/shutter/**command**,
- Mostly Raspberry Pi & ESP8266 client devices,
- Management of cOnCentrators: open-source PLC featuring up to 1200 inputs & outputs

#### ✓ Sending order to a shutter (with proper mqtt login / passwd)



Network automated install (custom NooBs) + automated app. deployment



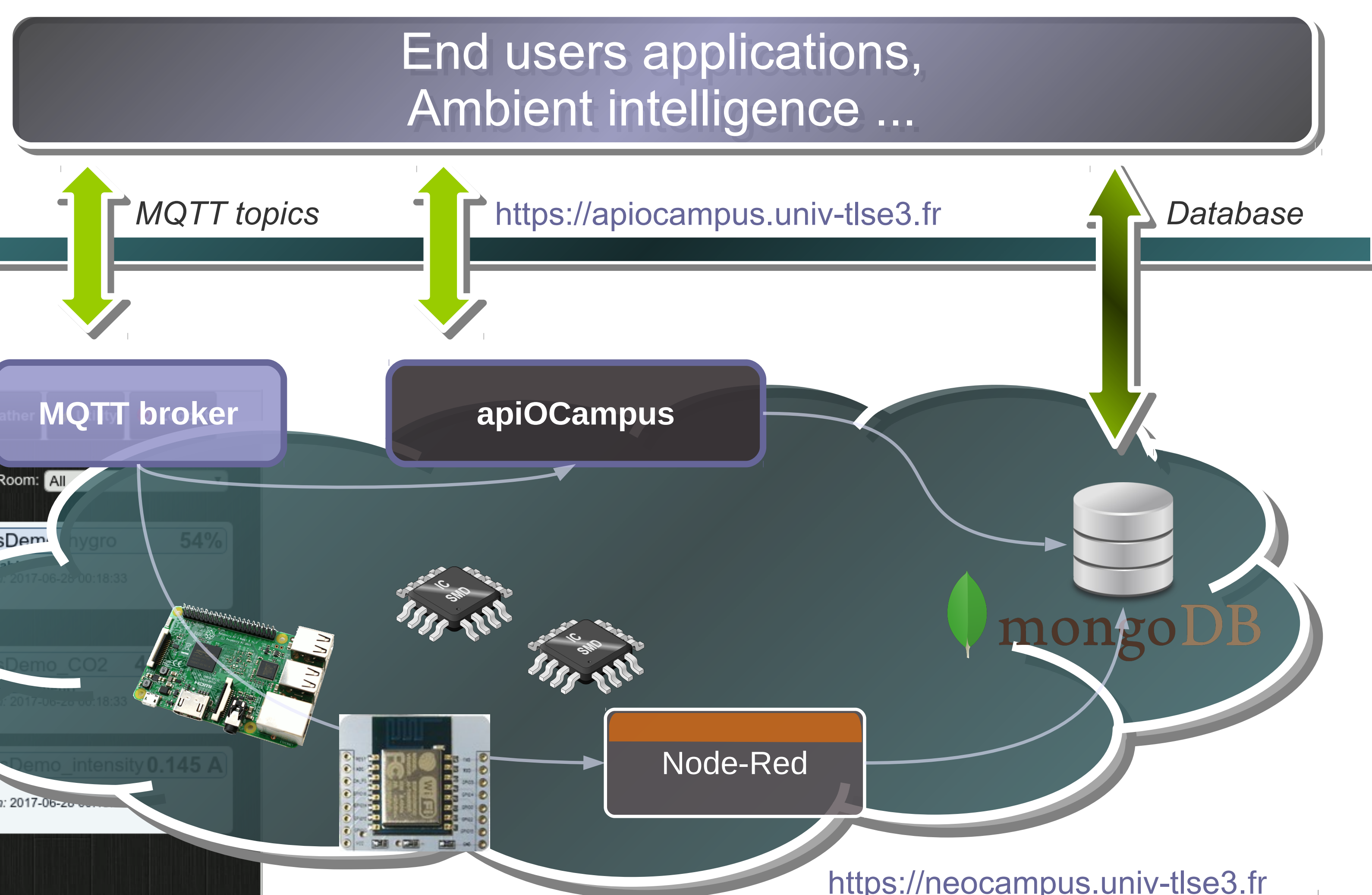
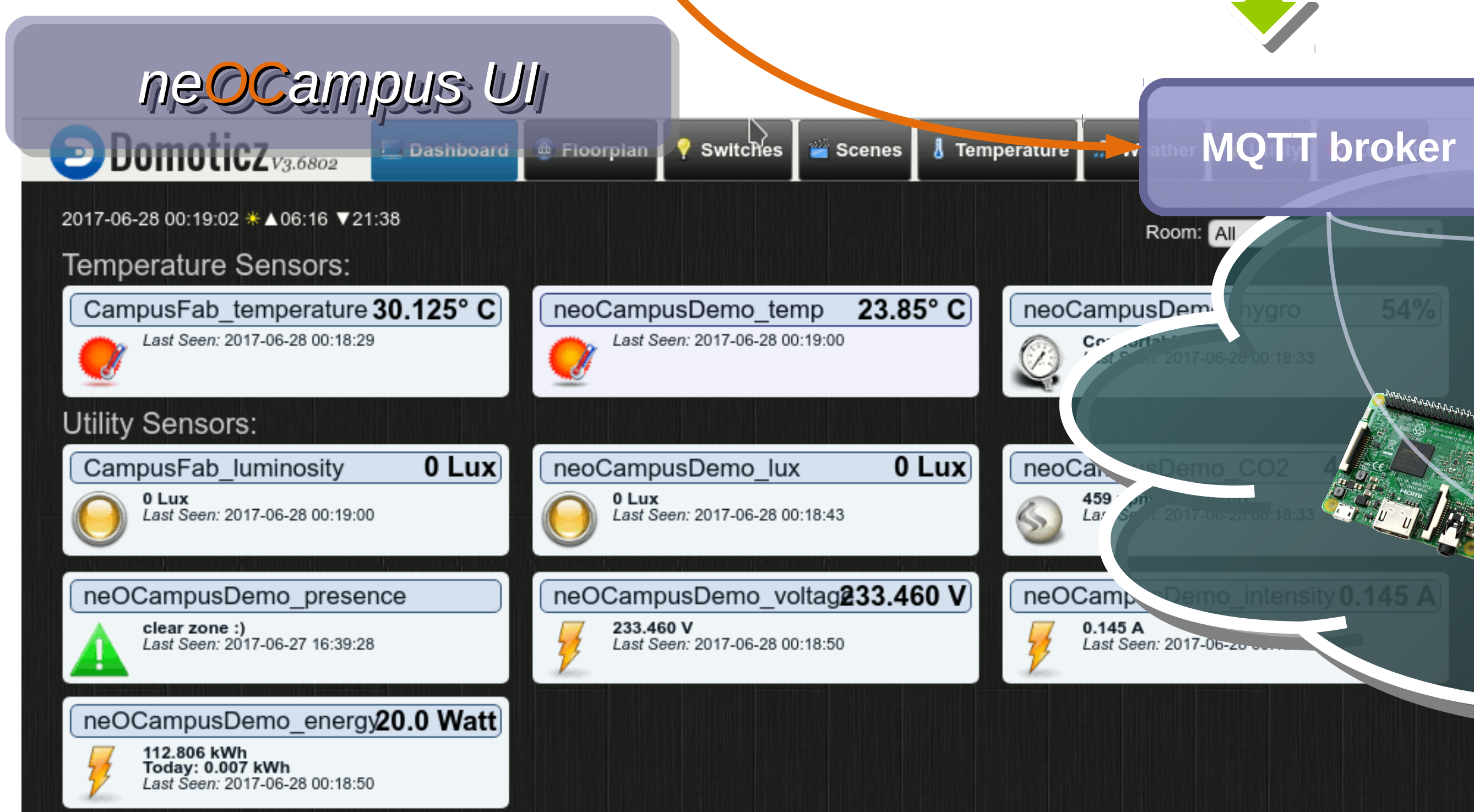
Identity  
(HTTPs)  
MQTT topic & credentials + client modules configuration

### Django administration

| sens@campus UI           |                   |  |                  |                            |             |         |
|--------------------------|-------------------|--|------------------|----------------------------|-------------|---------|
| Home · Devices · Devices |                   |  |                  |                            |             |         |
| Action:                  | -----             | Go   | 0 of 31 selected | ADD DEVICE +               |             |         |
| <input type="checkbox"/> | MAC ADDRESS       | DESCRIPTION  | DEVICE TYPE      | LAST UPDATE                | LAST STATUS | ENABLED |
| <input type="checkbox"/> | B8:27:EB:F2:7A:55 | rpi3-u4-301-7a55 (concentrator) @ u4/301/wall            | rpi3             | May 2, 2018, 11:46 p.m.    | Status.run  | ✓       |
| <input type="checkbox"/> | B8:27:EB:F9:C5:54 | rpi3-u4-hall-scrmaster (screen master) @ u4/hall         | rpi3             | -                          | -           | ✓       |
| <input type="checkbox"/> | 68:C6:3A:9F:4C:23 | neosensor-bu-4c23 @ BU / ESP8266+noise+temp+lux (PCB v3) | esp8266          | March 21, 2018, 11:10 a.m. | OK          | ✓       |
| <input type="checkbox"/> | 68:C6:3A:9F:55:A9 | neosensor-bu-55a9 @ BU / ESP8266+noise+temp+lux (PCB v3) | esp8266          | May 3, 2018, 12:05 a.m.    | OK          | ✓       |

MQTT(s) Publish <MQTT\_BASE\_TOPIC>/<module>

Subscribe <MQTT\_BASE\_TOPIC>/<module>/command



sens@campus

[tags] Raspberry Pi, ESP8266, LoRaWAN, MQTT, nodeRED, Domoticz, docker, ambient systems.

