GATEWAY-IOT

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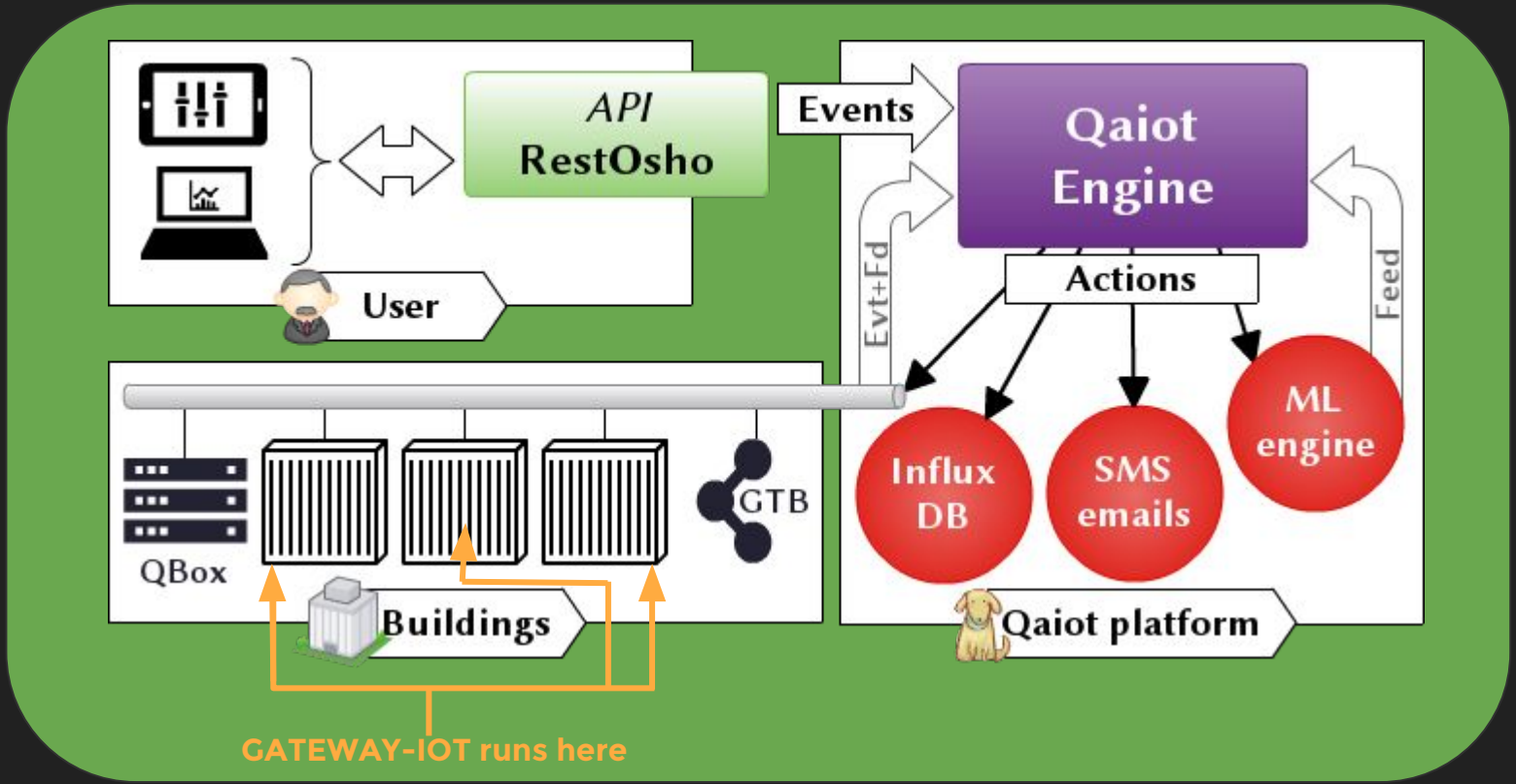
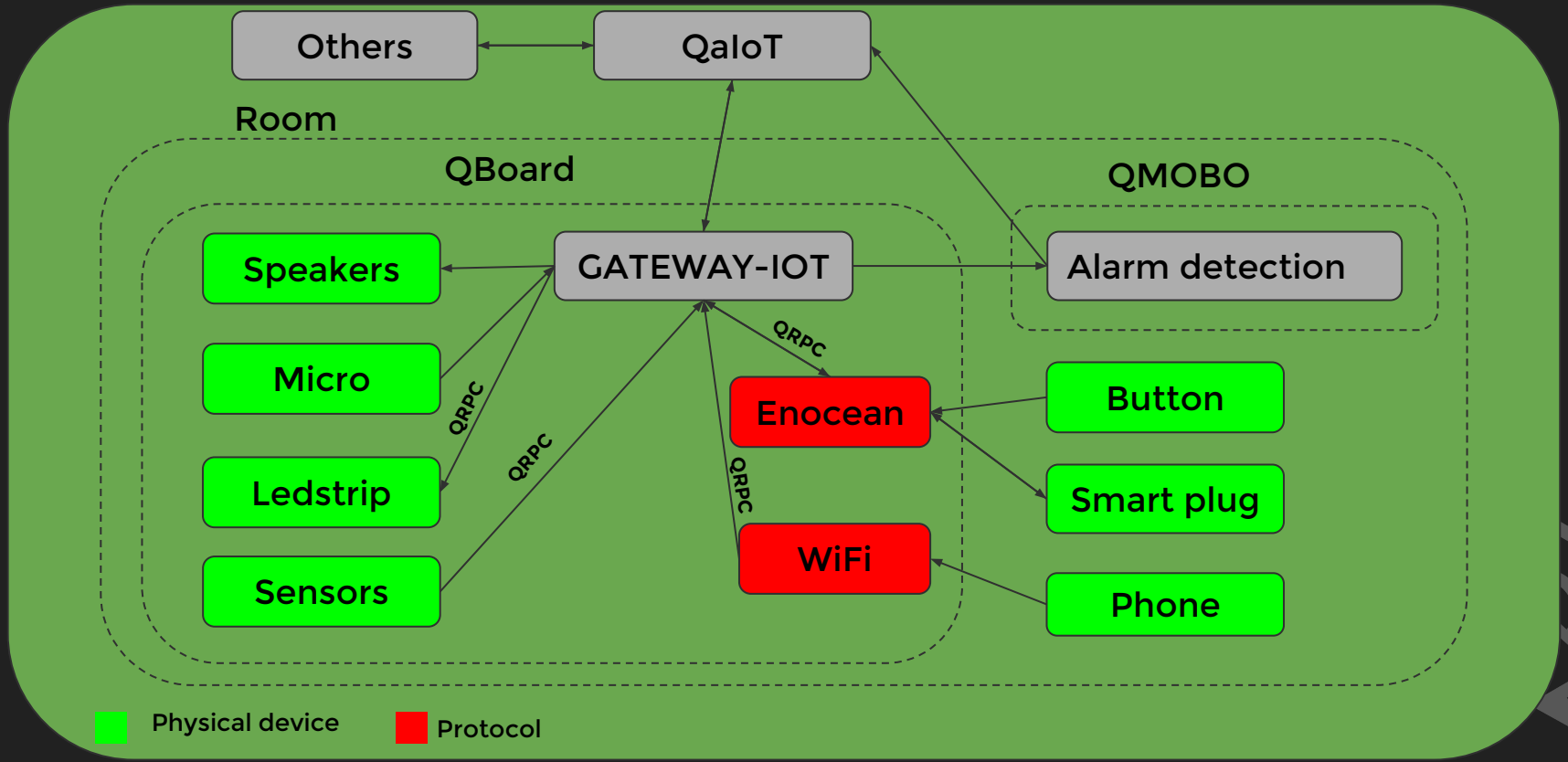
QaIoT reminders



Key features

- QaIoT actors management
- Data handling and conversion
- Abstraction layer for the QRAD and its sensors
- Ease of extension

GATEWAY-IOT's interactions



Handling data coming from a sensor

A QaIoT value notification contains:

- A name (specified in the role)
- A source (QaIoT ID)
- A value (type specified in the role)

QaIoT ID

- Identifies **one** device
- **Unique** for each device
- Hierarchically built
- Fixed size

Motion sensor

Data: sensors.motion.left=true

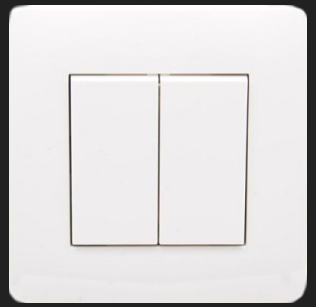
- Name: “motion_detected”
- Value: true (boolean)
- Source:
  - Sensor’s owner: QRAD (51524144)
  - MAC address of the QRAD: 90:59:af:91:37:2a (51524144599091af372a)
  - Motion sensor (ID=0002) (51524144599091af372a0002)
  - Left sensor (ID=00000001) (51524144599091af372a000200000001)

Message sent to QaIoT:

motion_detected=true sent as QRAD-5990-91af-372a-000200000001.

EnOcean

- Radio communication protocol
- Features split in “EEP” (also referred to as “profiles”)
- 8-hexadecimal-digit-identified devices



Door contact sensor

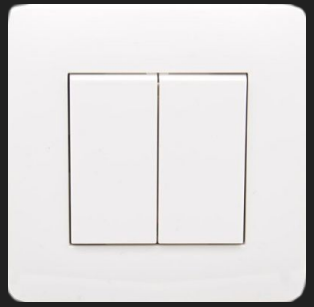
Data: enocean.0198636a.d5-00-01.contact=true

- Name: “contact_sensor_closed”
- Value: true (boolean)
- Source:
  - device type: QDEV (51444556)
  - Protocol: ENOcean (51444556454e)
  - Enocean ID: 0198636a (51444556454e0198636a)
  - Padded with zeros (51444556454e0198636a000000000000)

Message sent to QaIoT:

contact_sensor_closed=true as QDEV-EN-0198-636a-000000000000.

EnOcean button (1/2)



Data: enocean.00295b99.f6-02-01.button_BI="off"

We run in an issue here:

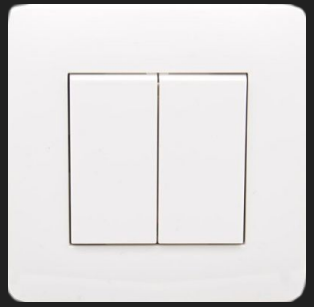
- **Two** buttons on the device…
- A role exists… For **one** button.
- **256** buttons on a QRAD!

The solution:

“Subdevices”, virtual devices children of the real device

- Tied to an EEP
- Have an unique index

EnOcean button (2/2)



Data: enocean.00295b99.f6-02-01.button_BI="off"

- Name:
  - "BI": right button, down part
  - "button_down_pressed"
- Value: false (boolean)
- Source:
  - device type: QDEV (51444556)
  - Protocol: ENOcean (51444556454e)
  - Enocean ID: 00295b99 (51444556454e00295b99)
  - EEP: f6-02-01 (51444556454e00295b99f60201)
  - Index: 000002 (right button) (51444556454e00295b99f60201000002)

Message sent to QaIoT:

button_down_pressed=false as QDEV-EN-0029-5b99-f60201000002.

Handling an action

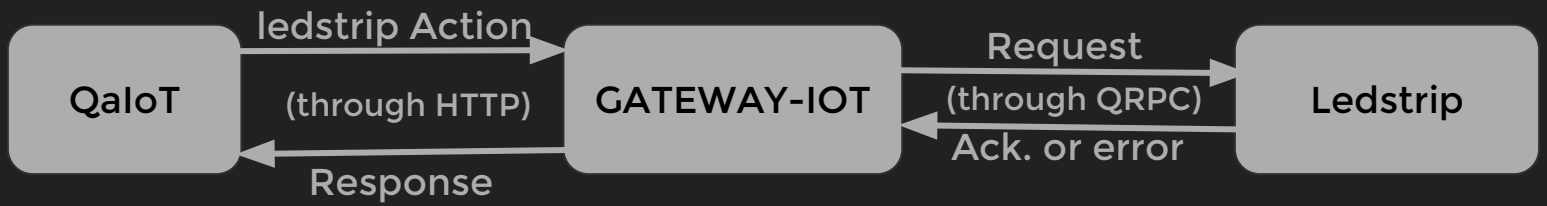
Actions sent by QaIoT contain:

- A target
- A name (specified in the role)
- Parameters (structure specified in the role)

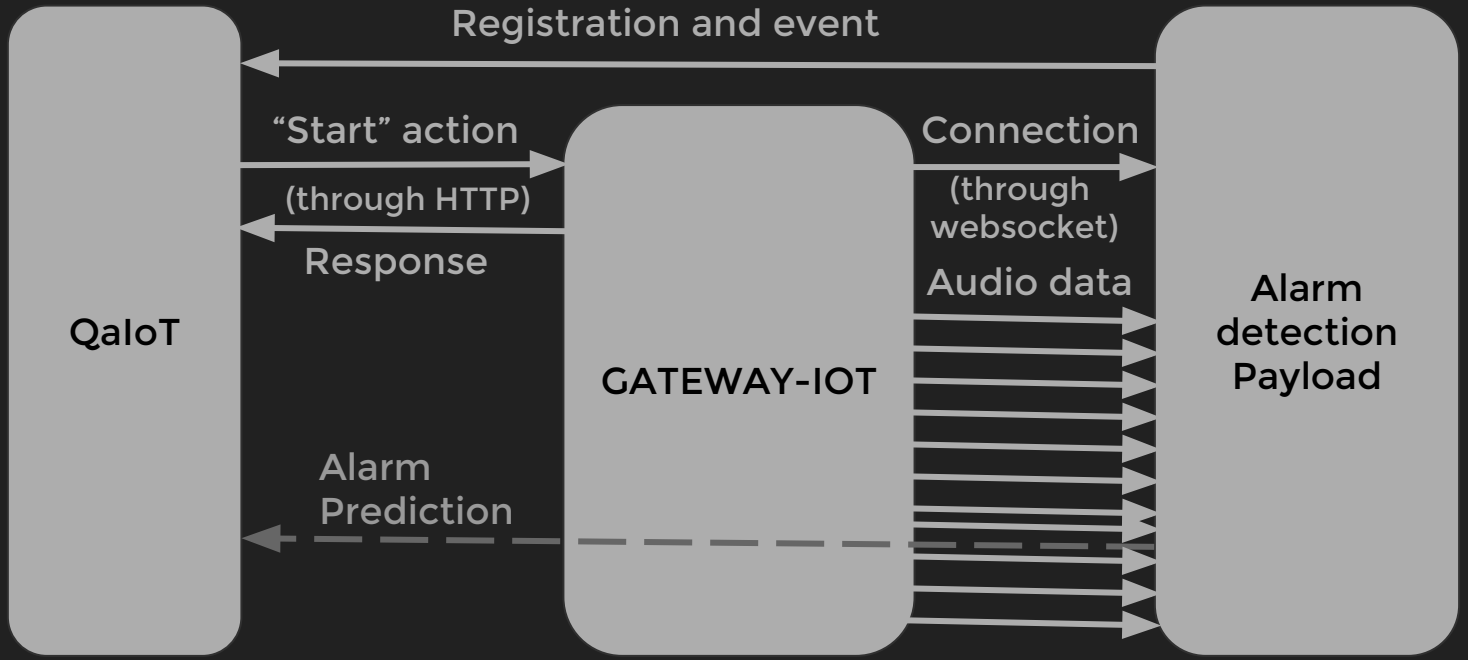
Three steps on reception:

1. Action validation (What ?)
2. Target validation (Who and how ?)
3. Execution and response to QaIoT

Ledstrip effects



Microphone control



Action-related issues

- No acknowledgement on EnOcean commands
- Hard-to-check audio features

Extending GATEWAY-IOT

Easy extension:

- Dispatch tables usage (few code to write)
- simple action management

When adding an EnOcean device:

- 0-2 line per EEP
- 0-1 function per EEP (QRPC/QaIoT format conversion)

ANY
QUESTIONS
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