VigilOffice

Third Assignment
IoT Lab

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VigilOffice

Objectives

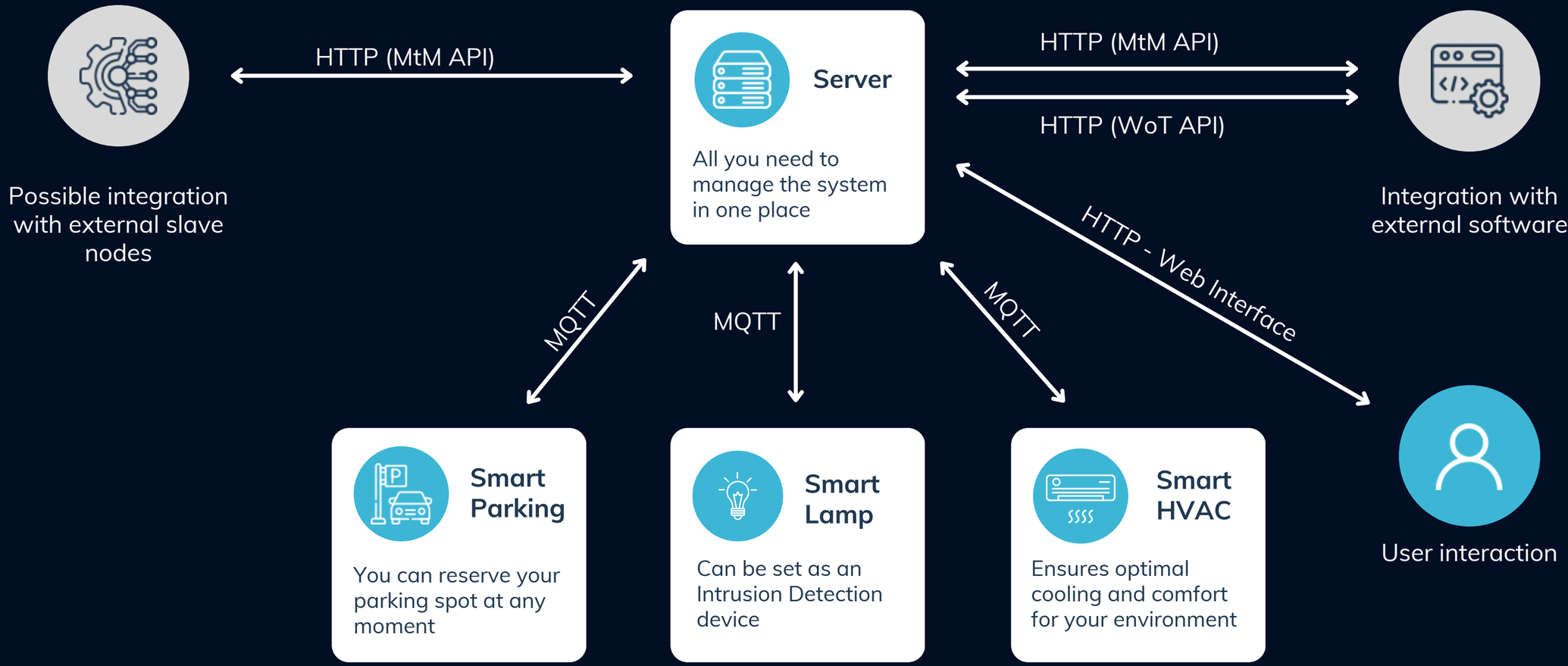
01 Real time office monitoring

02 Dynamic management of devices

03 Control from Master node

VigilOffice

The VigilOffice System



VigilOffice

Parking Node’s sensors and actuators

Avoidance sensor

Flood sensor

Flame sensor

LED

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Lamp Node’s sensors and actuators

LED

Movement sensor (pir)

Flame sensor

Light sensor

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HVAC Node’s sensors and actuators

Temperature sensor (DHT11)

Humidity sensor (DHT11)

Flame sensor

MQTT in depth

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Topic	Method	Operation	Payload
/welcome	subscribe	Get the **register** topic	{registerTopic: “vigiloffice/register”}
/register	**publish**	Introduce to the master	{macAddress:“MAC”, type:“TYPE”}
/register/MAC	subscribe	Get **status** and **control** topic	{statusTopic:“vigiloffice/TYPE/MAC/status”, controlTopic:“vigiloffice/TYPE/MAC/control}
/TYPE/MAC/status	**publish**	Publish device status	Device status json message (see appendix)
/TYPE/MAC/control	subscribe	Receive configuration	Device control json message (see appendix)
/lwt/MAC	**publish**	Send lwt message	Device status json message (see appendix)

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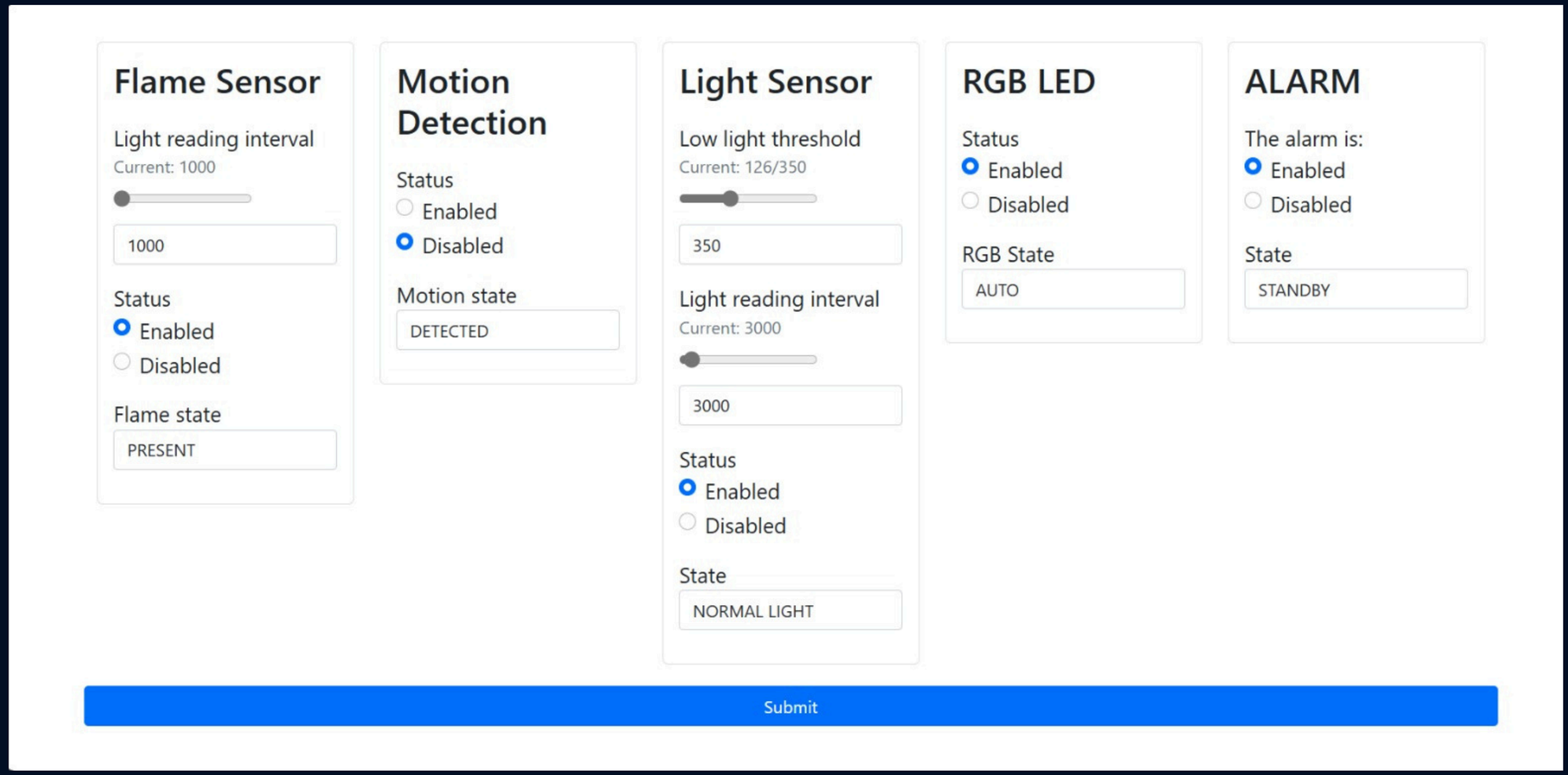
Control everything from the Web Server



VigilOffice

Server implementation

Parking status

```
{
    "type": "parking",
    "macAddress": "2a:2b:2c:3d:3e:3f",
    "floodingSensor": {
        "status": 0,
        "enabled": true,
        "highThreshold": 100,
        "interval": 1000
    },
    "flameSensor": {
        "status": 0,
        "enabled": true,
        "interval": 1000
    },
    "avoidanceSensor": {
        "status": 0,
        "enabled": true
    },
    "rgbLed": {
        "status": 0,
        "enabled": true
    },
    "alarm": {
        "status": false,
        "enabled": true
    }
}
```

Register device

```
{
    "macAddress": "1a:2b:3c:4d:5e:6f",
    "type": "lamp"
}
```

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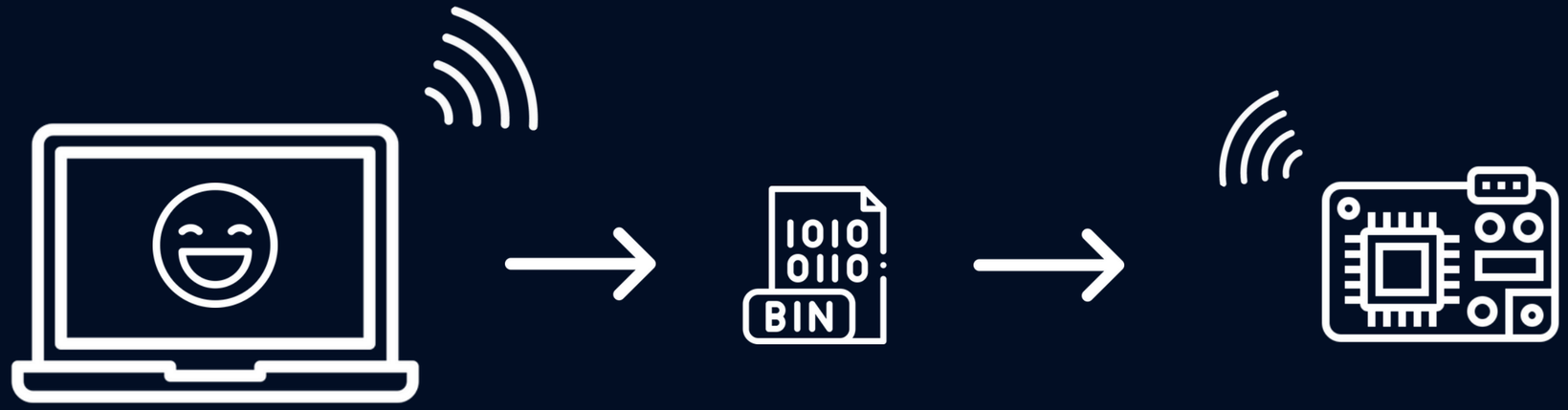
OTA Updates



Arduino IDE

New Firmware

Device

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Thank you!

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Appendix

Server API

Swagger API

Endpoints table

Machine to Machine API

User to Machine API

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Appendix

JSON

Devices JSON

Lamp Status JSON

Hvac Status JSON

Parking Status JSON