WoT Protocol Bindings

Protocol Vocabularies and Next Work Items

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Protocol Vocabularies

Thanks to Victor Charpenay, initial vocabulary files for CoAP and MQTT are created. They are also used to render the HTML versions to generate more human-readable documentation.

Protocol Vocabularies

- Turtle files at the GitHub repository
  - https://github.com/w3c/wot-binding-templates/tree/master/ontology
- Rendered HTML available online
  - CoAP: https://w3c.github.io/wot-binding-templates/ontology/coap
  - MQTT:
  - https://w3c.github.io/wot-binding-templates/ontology/mqtt

Protocol Vocabularies

- Some improvements are still needed but a very good starting point and workflow

Interest Check: Protocols

The first issue was created to collect the interest in protocols

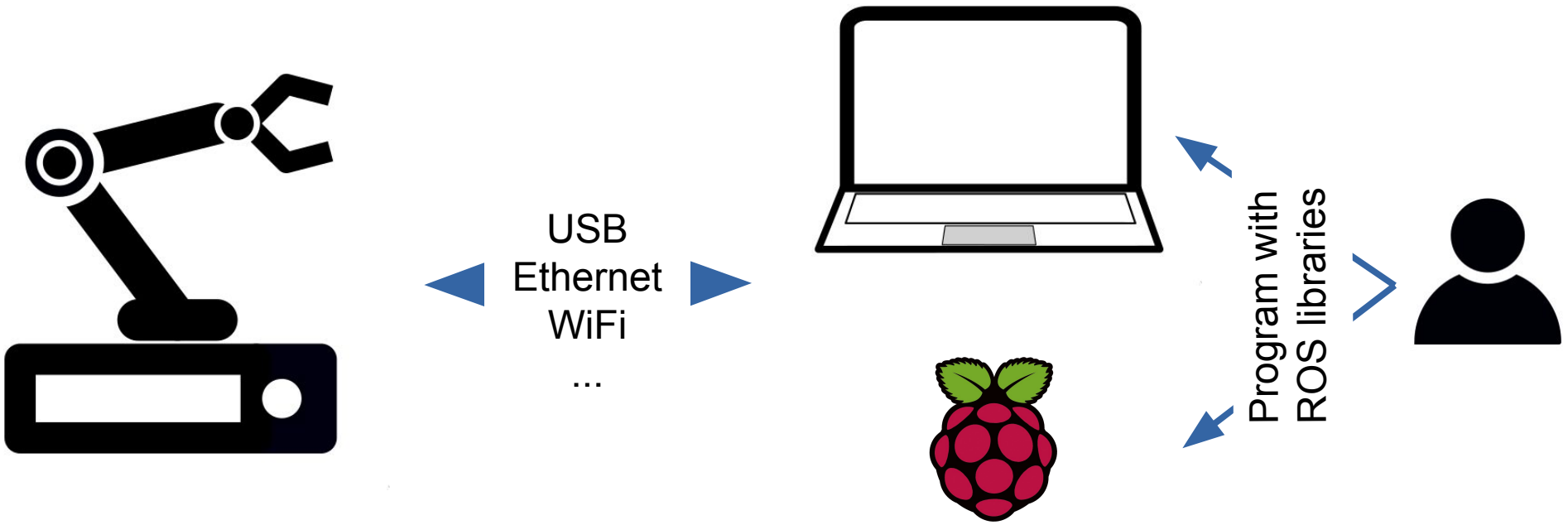
- → *We have worked on most of these, what is next?*

Interest Check: Protocols

Identifying Next **Protocols** to Work:
https://github.com/w3c/wot-binding-templates/issues/92

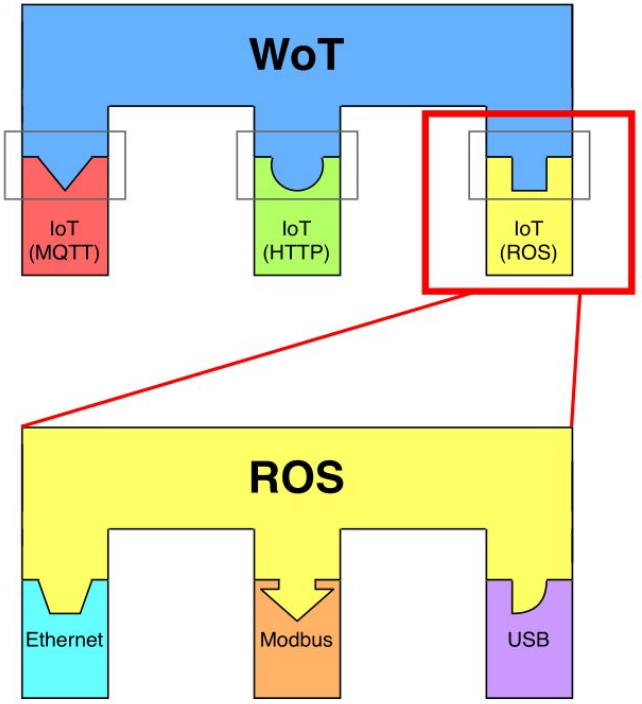
Interest Check: Protocols

Robotic Operating System (ROS)



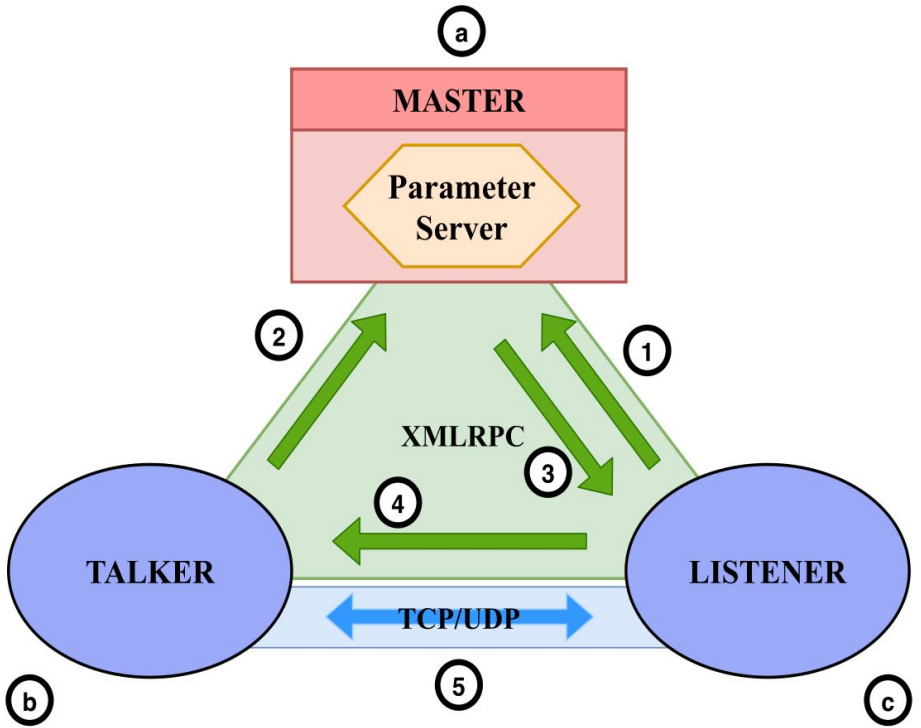
Interest Check: Protocols

ROS: Has similar goals to the WoT



Interest Check: Protocols

ROS: Mixed broker and P2P communication



Interest Check: Protocols

ROS: Binding Proposal to the WoT almost ready, will be presented on 3rd of July

Interest Check: Protocols

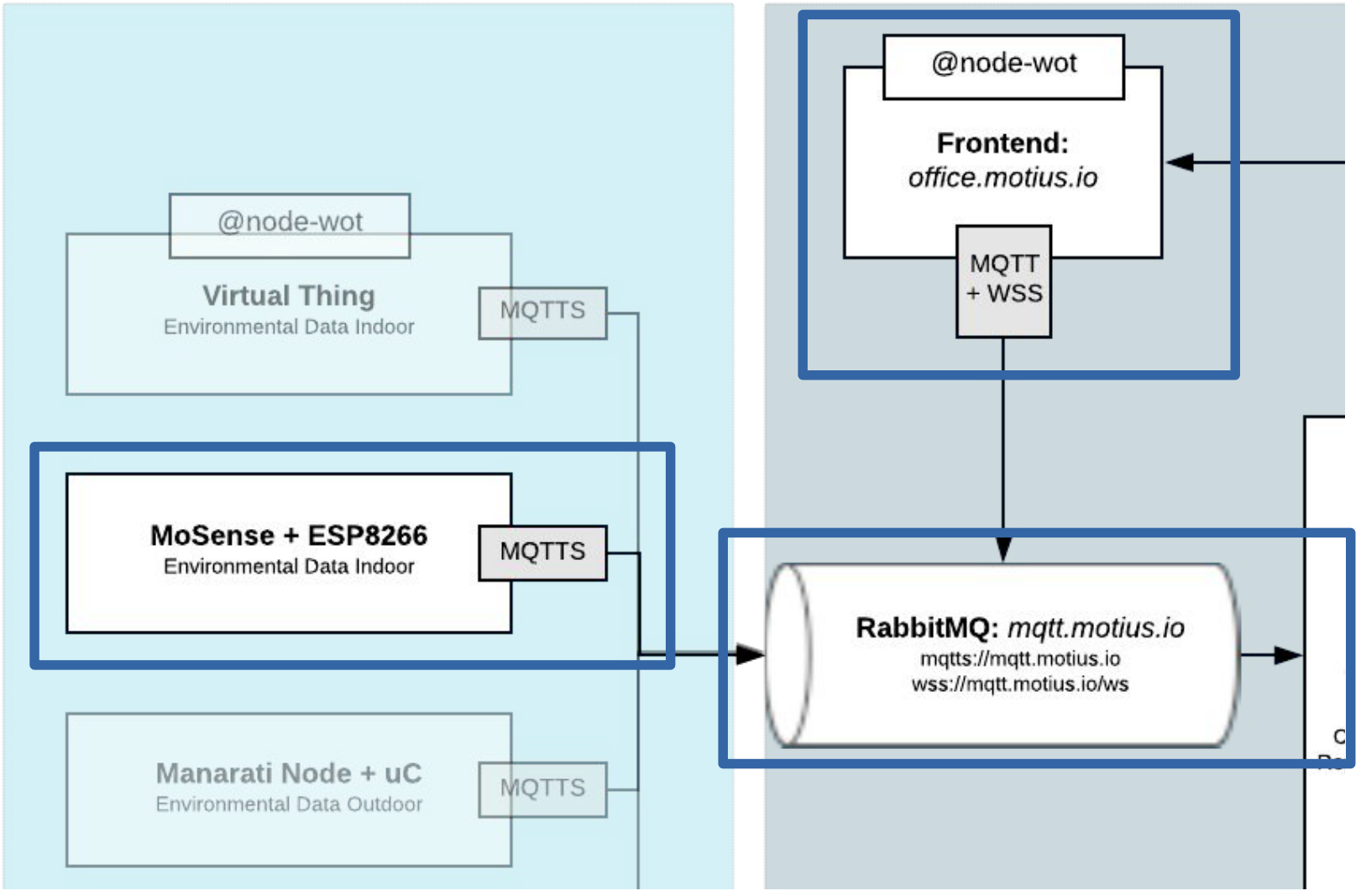
What about **subprotocols**?

- Server Sent Events
  - Unidirectional eventing from the Server side
  - Available (experimental) in node-wot
    - https://github.com/eclipse/thingweb.node-wot/pull/247
  - Used in OpenHAB (home automation)

Interest Check: Protocols

What about **subprotocols**?

- MQTT over WS (x over WS)
  - No Thing implementation required, can be done in the broker
  - Experimental implementation from Motius (Benjamin Braun)
  - Seems to be supported by reference MQTT implementations


@node-wot
Frontend:
office.motius.io
MQTT
+ WSS
@node-wot
Virtual Thing
Environmental Data Indoor
MQTTS
MoSense + ESP8266
Environmental Data Indoor
MQTTS
RabbitMQ: mqtt.motius.io
mqtts://mqtt.motius.io
wss://mqtt.motius.io/ws
Manarati Node + uC
Environmental Data Outdoor
MQTTS

Paho in Python

```
client = paho.Client("control1",transport='websockets')
```

MQTT.js in Node.js

```
var host = 'wss://localhost:3001/Mosca'

var client = mqtt.connect(host, options)
```

Next Work Items

- Improving Protocol Vocabularies
- Error Mapping as mentioned in Scripting API
- ROS Binding

- Given that node-wot has OPC-UA, NETCONF and Modbus, should they be in Binding Templates?

Any other ideas or inputs?