Event / Property observe proposal for Plugfest

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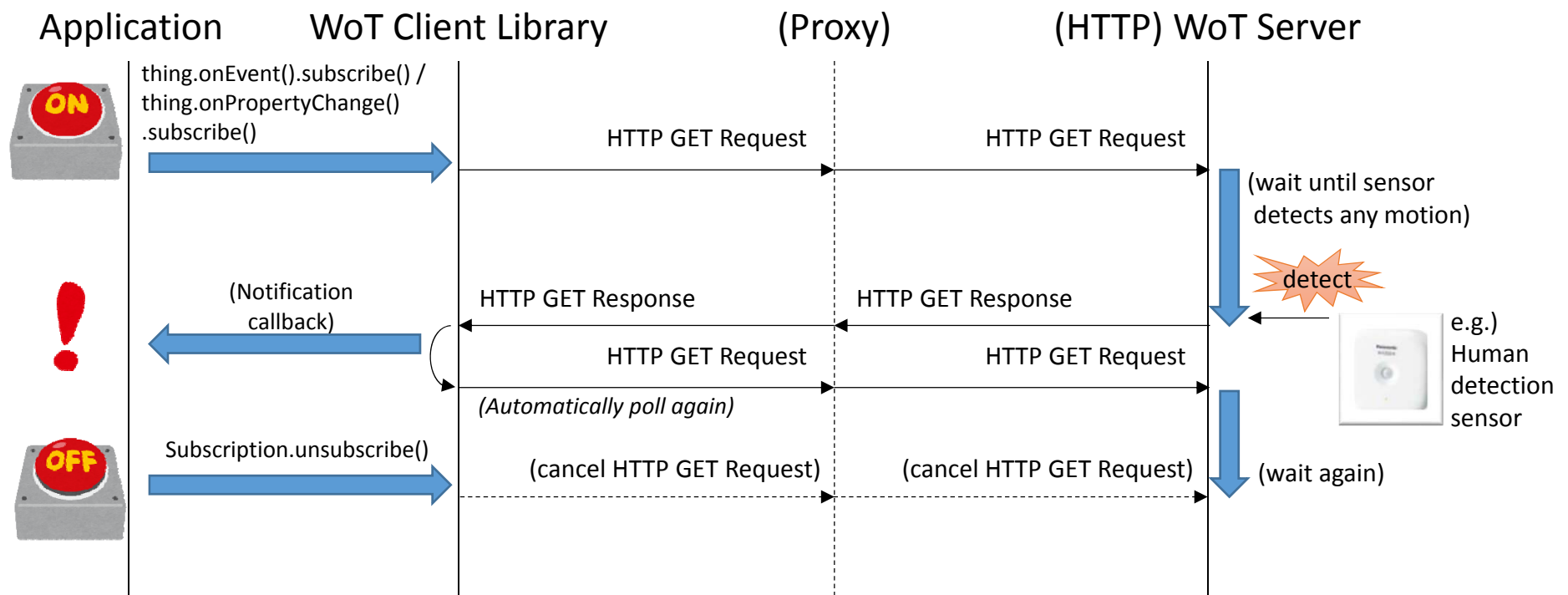
Toru Kawaguchi

Panasonic

Background and motivation

- Event / Property observe is important for Web of Things.
  - There are several possible scenarios which are triggered by sensor detection, e.g.) a person coming back to home.
- At Plugfest, we haven't made interoperability testing of Event or Property observe yet (maybe..).
- As a first step, simple method is preferred.
  - Our previous proposal uses notification method with HTTP + WebSocket late binding, which seems to be too complex as a first step.
  - Considering current Plugfest system configuration, method which can be easily handled by proxy is preferred.

-> We propose to use HTTP long polling
   as a first step at Plugfest.

Example sequence diagram

- Note: Server (endpoint) can be ether the same or different from the endpoint for read/write property or action.

Example TD snippet for Property

```
{
  "@type": ["Property"],
  "name": "operationStatus",
  "outputData": {"type":"boolean"},
  "writable": true,
  "observable": true,
  "form": [
    {
      "href": "operationStatus",
      "mediaType": "application/json"
    },
    {
      "href": "https://aaa.bbb.com:8003/poll/airconditioner/1/operationStatus",
      "mediaType": "application/json",
      "rel": "observe"
    }
  ]
},
```

Binding for long polling
(Tentatively, use
"rel":"observe" as indicator)

Example TD snippet for Event

```json
{
    "@type": ["Event"],
    "name": "change",
    "outputData": {
     "type":"object",
     "field": [
      {
       "name": "operationStatus",
       "value": {"type": "boolean"}
      },
      {
       "name": "operationMode",
       "value": {"type": "string"}
      },
      {
       "name": "desiredTemp",
       "value": {
        "type": "number",
        "minimum": 16,
        "maximum": 30
       }
      },
```

```json
      {
       "name": "windVolumeLevel",
       "value": {
        "type": "number",
        "minimum": 0,
        "maximum": 8
       }
      }
     ]
    },
    "form": [
     {
        "href": "change",
        "mediaType": "application/json"
     },
     {
        "href":
"https://aaa.bbb.com:8003/poll/airconditioner/1/change",
        "mediaType": "application/json",
        "rel": "observe"
     }
    ]
}
```

Binding for HTTP + WebSocket late binding (not used this time)

Binding for long polling (Tentatively, use "rel":"observe" as indicator)

Further issues to consider..

- In TD, how do we identify the different notification method under the same protocol, such as http(s)?
  - Example variations:
    - HTTP Long polling
    - HTTP Server Sent Event
    - HTTP + WebSocket late binding (our prior proposal)
  - Do we need additional vocabulary such as sub-protocol?
    - E.g. "subProtocol: longPoll"
- How do we distinguish the use of Event / Property observe?
  - Should everything causing Property change be "Property observe"?