iot.schema.org

Community Teleconference

September 20, 2018

Agenda

1. Quick Updates
2. Node-RED
3. iot.schema.org Definitions for diverse ecosystems
4. Developer tools for diverse ecosystems
5. Design Pattern review
6. Next steps
7. AOB

Quick Updates

- Upcoming Plugfests
  - W3C WoT Online Plugfest september 25-28
  - W3C WoT Plugfest at TPAC, Lyon, France October 20, 21
  - WISHI Hackathon at IETF 103, Bangkok November 3, 4
- Talk at 9th SSN Workshop @ ISWC2018, October 9th
  - "Semantic Interoperability for Connected Things - Avoiding the XKCD 927 Effect"
- Work is needed to put new tools in place for developer submissions and schema.org integration

Node-RED Integration

(Presentation from Siemens)

Definitions for Diverse Ecosystems

- OCF, Zigbee/dotdot, LWM2M, Alexa Skills, Bacnet
- Define "high-fidelity" models to represent low level details
- Shared abstract models with protocol bindings to target ecosystem
- iot.schema.org Definitions can be used to create new abstract models, then target to diverse ecosystems using Protocol Bindings
- Payload format, data type, units can be defined in the binding

Developer tools

- Tools that enable maintaining iot.schema.org definitions for Target Ecosystems
- Enable incorporating updates from the target ecosystem into the iot.schema.org definitions
- Enable models for creating new definitions in the target ecosystem using iot.schema.org format with the appropriate protocol binding
- How much effort should be done in iot.schema.org to describe protocol binding?

Design Pattern review

- Granularity of capability definitions
- "Light" vs "on/off" + "level" + "color"
- Examples reuse Interactions and Data definitions
- Capability annotations are more useful in discovery
- Both styles might co-exist, classes like "light" may be used with specific classes for more selectivity

Complex Definition

```
{
"@id": "iot:LightControl",
"@type": "rdfs:Class",
"rdfs:subClassOf": { "@id":
"iot:Capability" },
"rdfs:comment": "A capability
for controlling a light source,
such as an RGB or other light.",
"rdfs:label": "LightControl",
"iot:domain": [
{"@id": "iot:Home"},
{"@id": "iot:Building"}
],
"iot:providesInteractionPattern": [
{
"@id": "iot:BinarySwitch",
"@id": "iot:SwitchStatus",
"@id": "iot:TurnOn",
"@id": "iot:TurnOff",
"@id": "iot:CurrentColour",
"@id": "iot:SetColour",
"@id": "iot:CurrentDimmer",
"@id": "iot:SetDimmer",
"@id": "iot:RampTime"
}]
},
```

Simple Definition

```
{
 "@id": "st:SwitchCapability",
  "@type": "rdfs:Class",
  "rdfs:subClassOf": { "@id":
"iot:Capability" },
  "rdfs:comment": "General On/Off
control capability",
  "rdfs:label":
"BinarySwitchControlCapability",
"iot:providesInteractionPattern":
[
    {
    "@id": "st:Switch",
    "@id": "st:On",
    "@id": "st:Off"
    }
  ]
},
```

```
{
"@id": "st:SwitchLevelCapability",
"@type": "rdfs:Class",
"rdfs:subClassOf": {
"@id":"iot:Capability" },
"rdfs:comment": "A generic level
control that can be used for
proportional control",
"rdfs:label":
"LevelControlCapability",
  "iot:providesInteractionPattern":
[
    {
    "@id": "st:SwitchLevel",
    "@id": "st:SetLevel"
    }
  ]
},
```

Next Steps

- Continue to drive integration with schema.org
- Continue to develop the submission process
- (tools)