

IoT Extensions for schema.org

Community Teleconference

January 20, 2020

Agenda

- Agenda review
- Announcements – T2TRG Workshop on Data Models and One Data Model + WISHI Hackathon
- Recent developments – Project CHIP
- Proposal for adding a thing class
- Availability of iotschema4Node-RED over npm
- Hosting and schema.org extension
- AOB

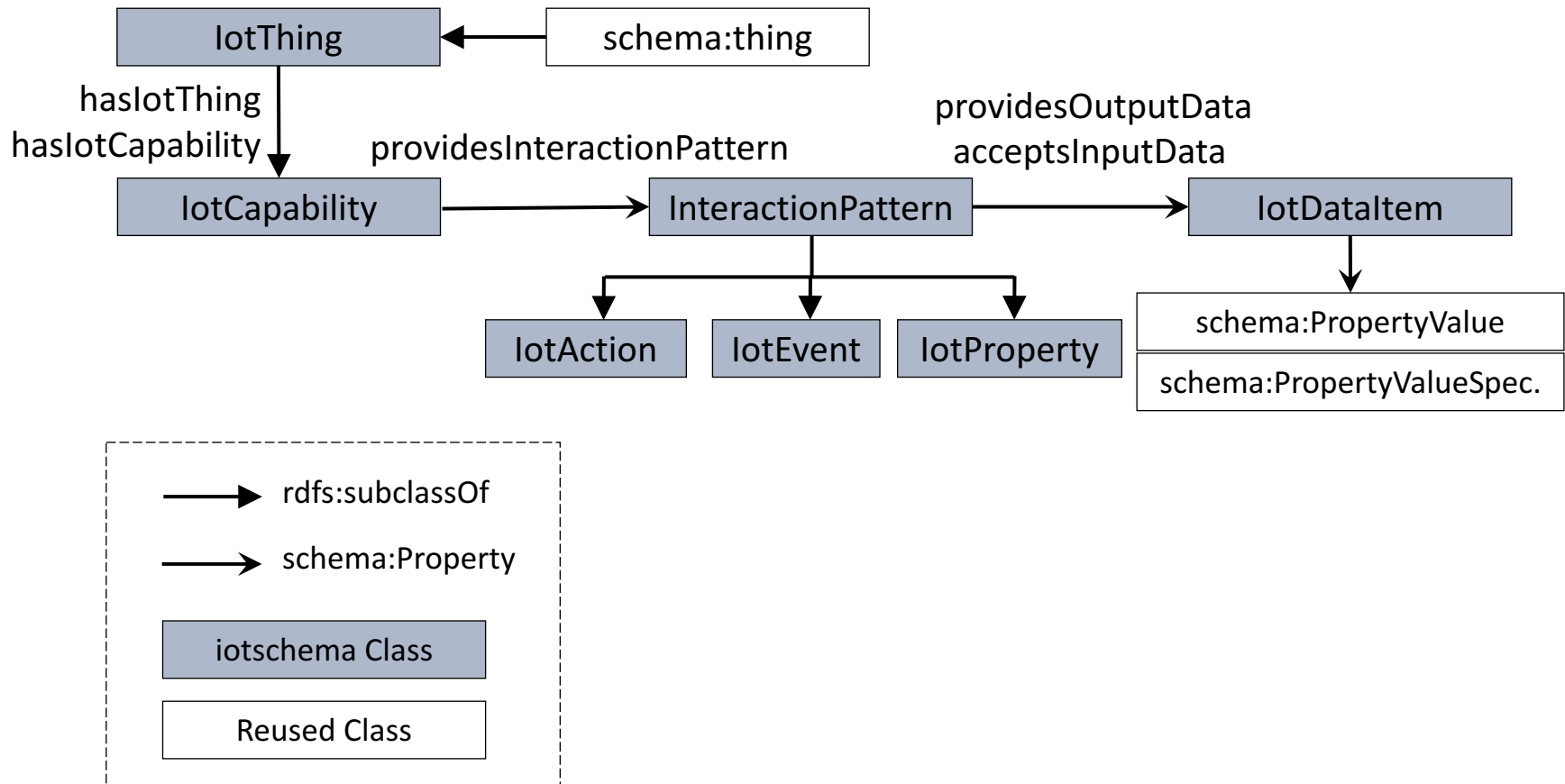
Announcements

- W3C WoT Online Virtual F2F March 16-18
- T2TRG Workshop March 20 at IETF 107 Vancouver
 - Technical review of SDF language (OneDM)
- WISHI Hackathon March 21 and 22 at IETF 107
 - Semantic Proxy using W3C WoT and iotschema annotation from OneDM definitions
- OneDM F2F late April, Qualcomm in San Diego
- W3C WoT Helsinki June 6-11 with T2TRG

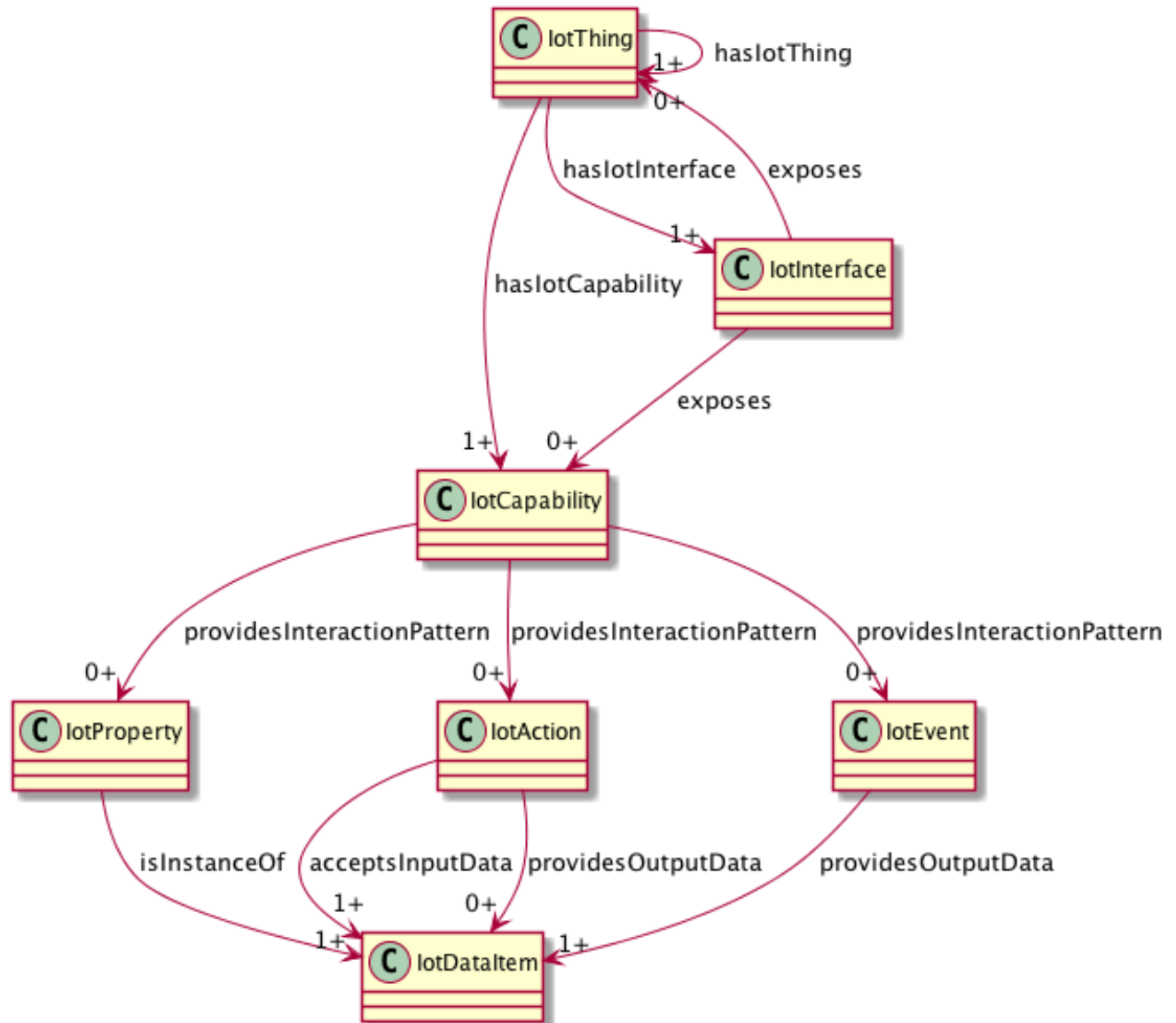
Project CHIP

- Google and Apple joined Zigbee Alliance to create a new interoperable network standard for connected homes – Project Connected Home over IP
- Deliver a standard, open source reference stack, and certification program for interoperable devices
- What it means to iotschema - standardized data models for connected home devices + Event, Action, Property model + open source license
- Still need to address system level modeling with location, context , behavior + application domains

schema.org IoT Extension Meta Model with Thing Class



UML



iotschema4Node-RED

Schema.org Integration

- Class names Event, Action, Property conflict
- iotschema has diverse semantic types for objects, schema.org has diverse property types
- Property types could be synthesized from objects but...
- iotschema will potentially define hundreds of types for physical quantities (temperature, humidity, voltage, acceleration...), control affordances (open/close, brightness, color control, camera controls, operating modes...), and features of interest (rooms, machines...)

Schema.org Integration

- The WoT use case is based on annotation consisting of RDF @type statements that point to URIs of defined terms for specialized types that conform to the classes in the meta-model
- These meta-model classes would only add about 6 new property types to schema.org
 - `iotCapability`, `iotEvent`, `iotAction`, `iotProperty`, `iotData`, `iotFeatureofInterest`
 - new types like `iotInterface`, `iotThing`, etc. as needed

Schema.org Integration

- There is a potential example pattern in schema.org
 - MedicalEntity, with about 7 property types
- Likewise, an instance of IoT Schema would contain some set of `iotCapability`, `iotAction`, `iotProperty`, `iotEvent`, `iotFeatureOfInterest` properties
- Specialization of `iot` types would happen at the next level in the graph – hosted in a separate namespace
 - URIs that point to accepted specialized definitions in one or more specialized namespaces
 - lighting controls, thermostats, etc. that conform to the base types but have their own properties

Conclusion

- Summary
- AOB