iot.schema.org

Scope and Charter

Agenda

- Introduction (5 Min)
- Review strawman charter (20 min)
- Discussion and develop some consensus for going forward (15 min)
- Take actions and wrap up (10 min)

Review to date

- IOTSI workshop March 2016
  - Well attended, broad representation
  - Problem statement was generally agreed on
  - Common themes emerged around normalization of information models and translation
- iot.schema.org exploration and information exchange
  - Three (3) teleconferences to date
  - Examples of definitions submitted for review
  - Next steps?

What Problems are being solved

- Semantic Interoperability for connected things is needed to grow a bigger ecosystem for all
- Incompatible data models (information models) for things from different organizations
  - Thing definitions from different organizations define the atomic granularity of the language
  - OCF, dotdot, IPSO, OneM2m, Allseen, UPnP
- Enable web applications to interact with the physical world based on machine comprehensible information
  - Provide a common way for web applications to understand and integrate machine readable information from things and their environment

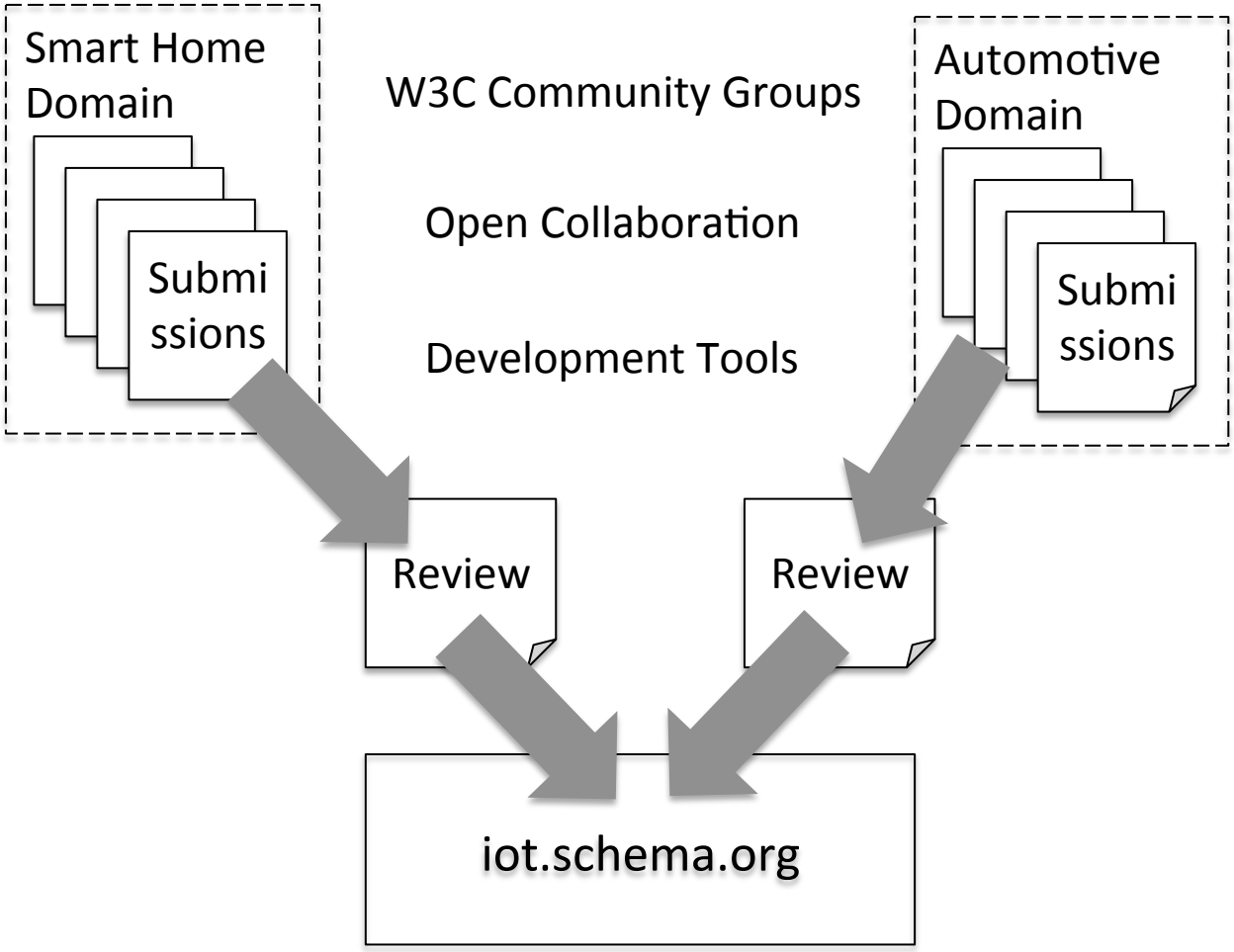
How

- Re-use and extend schema.org
- Rosetta stone approach
  - Use a common media type (rdf/rdfs) to encode and extend existing diverse information models
  - Interoperability through translation at first
  - Common vocabulary may emerge
- Open participation in communities around vertical domains and functional areas
  - Smart home, automotive, industrial, mhealth

Venue

- Central organization for iot.schema.org
  - Common **tools** and design **patterns**
  - Repositories and web facing data sets
  - Review for publication
- W3C community groups
  - Focus on application domains and common **definitions**
  - Use the common data model and media types
  - Develop best practices for each vertical area

Work Flow


Smart Home Domain
Submi ssions
W3C Community Groups
Open Collaboration
Development Tools
Automotive Domain
Submi ssions
Review
Review
iot.schema.org

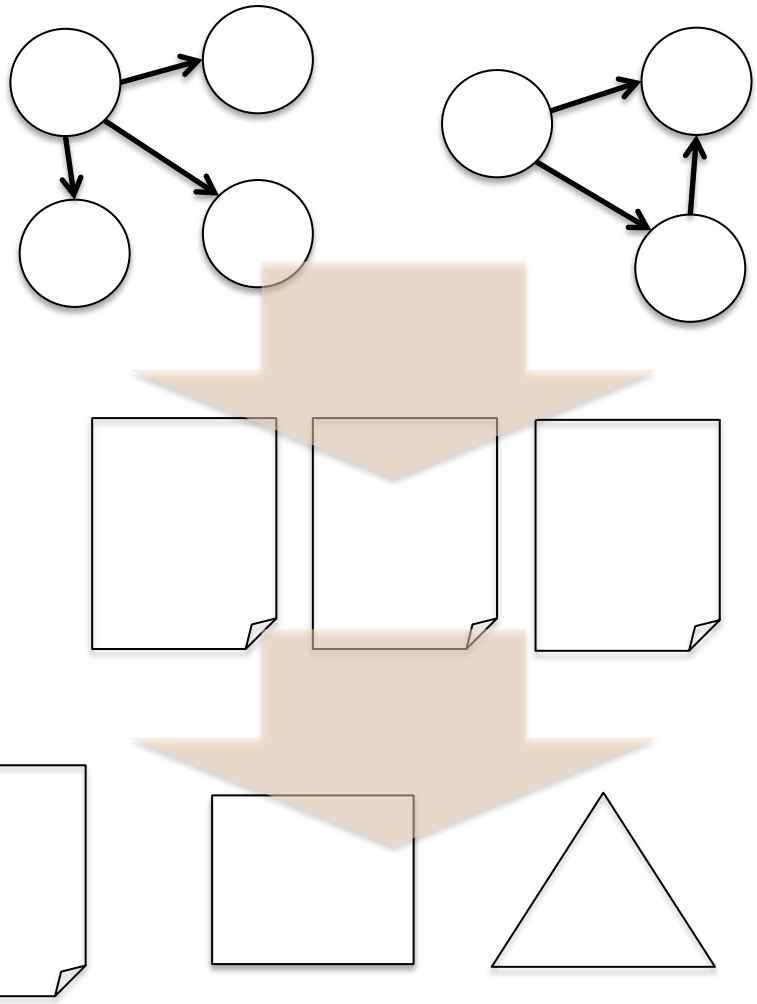
Initial work items

- Develop a common media type and style for definitions and models
- Develop a common structure for development repositories and a hosting plan (Github?)
- Create a central organization and operational process
- Create an initial community group to address some emerging application domain (Smart Home?)

Scope in the Standards Stack

Functional Layer	Documents	Governing body
Ontologies and Taxonomies	SAREF, SSN, IoT-Lite, Haystack, QUDT	Various
Semantic Interoperability	Simple schemas and common definitions	iot.schema.org community
Modeling and Description Language	Thing Description High Level API	OCF, W3C Web of Things WG
Device Definitions	Clusters, Resource types, Device Types	OCF, Zigbee Alliance (dotdot)
Transfer Protocols	CoAP, Zigbee	IETF, Zigbee
Networks and Transports	IPV6, TCP, UDP, Thread, ZIgbee	IETF, Thread, Zigbee

Information Models



Ontologies and Taxonomies
SSN, SAREF
Haystack

Common Semantics
iot.schema.org
schema.org

Things and Web Applications
W3C Thing Descriptions
Bridges and Translators

Deliverables

- A public resource, extending schema.org
  - A set of "schemas" that enable modeling, machine readable description, and discovery of common connected things, their behaviors, and context
  - Common vocabulary that spans across device ecosystems and vertical application domains
  - A lightweight collaborative process for development and maintenance of iot.schema.org data sets
  - Tools that enable developers to construct and use the schemas without needing to become semantic web experts

Related Work

- W3C WoT IG/WG - Thing Description
- OneM2M MAS Group
- SAREF Ontology
- OCF Data Modeling project
- IPSO Smart Object definitions
- Zigbee alliance dotdot device definitions
- Allseen Common Data Model CDM v16.10
- UPnP Data Models
- ISO/IEC JTC 1 WG 10 - Common IoT Ontology