T2TRG

Virtual Vancouver Friday

https://github.com/t2trg/2020-03-vancouver

Background

OneDM is a liaison group bringing IoT SDOs together to agree on common data models (and interaction models) for classes of IoT devices

T2TRG is a Research Group of the IRTF, IETF's research arm, interested in bringing researchers and standards developers together to address the long-term problems of a true Internet of Things

Agenda

Time (PDT), Slot leader	Topic
09:00..09:10 Chairs	Welcome, Logistics
09:10..09:40 Carsten Bormann	Versioning/evolution of data models/ data model language
09:40..11:00 Michael Koster	OneDM key technical issues
11:20..11:50 Carsten Bormann	OneDM SDF and IETF standardization
11:50..12:00 Chairs	Wrap-up and close

Try to have a 10-min break in the middle (~ 10:30)

Logistics

Live notes: https://hackmd.io/R9n8naQcTMeX0n1miV5_Yw?both
== https://u.nu/2-2020-03-notes

WebEx: https://ietf.webex.com/ietf/j.php?MTID=m389d8fb7afe63bcff2b93742c9d6c4ba
== https://u.nu/2-2020-03-webex

Versioning, Features, Revisions, Evolution

Target: One Data Model (OneDM) evolution
(based on various talks at previous T2TRG meetings)

— Model evolution

— SDF Language evolution

What is a "feature"?

- Capability indication
  - unidirectional announcement
  - no consequence if ignored by peer
- Interpretation agreement
  - shared setting, must be heeded by peer
  - result of negotiation/common context
  - need to prevent false interoperability

What is a "version"?

Feature that has been

— blessed a bit,
— named by straightjacketing into a linear space

Can be roll-up of both:
capability and interpretation features

Imagine: feature string "SDF2.0"

Versions vs. Revisions

Revisions of a file need not have semantic implications
(e.g., updating copyright messages)

N.B.:
"fixing typos" often does have a semantic implication
(cf. "writable")

Model features/versions

Availability of a feature can be intended as a capability indication
Distinguish model capability from implementation capability

Also: roll-ups

Language features/versions

Unidirectional interpretation requirement

Can be added to header as `"require": [...]`
Needs stability of overall (data level) syntax

(Being based on JSON reduces issue of surface syntax evolution)

Might have `"optional"` as well, for features that can be ignored (e.g., protocol bindings)

Versioned References

Model specifications are referenced from

— other model specifications (inclusion)

— actual devices

The reference might be to a document that can evolve (not a specific revision).
This is usually addressed by "semantic versioning" (semver).

This is orthogonal to the question which "features" of the referenced specification are actually used/imported.

What are the interfaces?

Model specification uses SDF language that may have evolved:
Indicate "features" needed

Model specification (or device definition) may reference other model specification:
Indicate revision? Indicate semver? Indicate features?

IETF

as an avenue to an SDF standard?

Standardizing SDF – why choose the IETF?

— well-defined way to engage community
— significant quality improvement through thorough review process
— good reputation (resulting from that review process)

vs.

— little IETF history in modeling languages
— starting work is lengthy process, somewhat risky
— might take a year or two until RFC

What do we want to standardize

- SDF the language
  - structure (syntax) of language (JSON-encode, describe in DDL)
  - semantics
  - for that, might need to explain processing model
- The json-schema.org subset that goes into SDF
  - (hint: There is an RFC 8610)

What is the right structure

Probably: create a Working Group in IETF ART area

Then work in Internet-Draft format, develop in WG, ship to IESG

Try to flank by implementation efforts

How to get there

- Need to run a BOF, create a charter (and milestones)
  - Demonstrate industry interest
  - Demonstrate chance for a consensus
- Need WG chairs that are not the authors
  - ART ADs might find some

Timing

New IESG will be installed next week
(stable for one year)

IETF meeting schedule completely disrupted

Might be able to get some AD time end of April

"BOF at Madrid IETF" (July) might be disrupted
— hope that we can run this fully virtual by then