

W3C WoT IG Thing Description

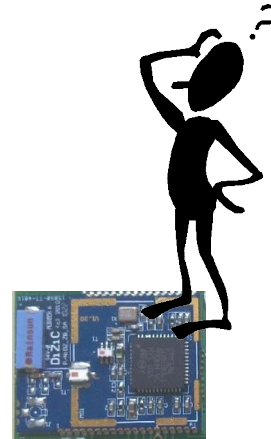
Status Report
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F2F Sunnyvale CA

Sebastian.Kaebisch@siemens.com

Motivation

What kind of data do you serve?

Who are you?



What kind of function do you have?

How can I access the data/function?

Atomic use cases: engineering, discovery / identification, plug & play, monitoring, ...

TD-TF Scope

- Clarify and define what the TDL can be used for
- Clarify and define what aspects of a Thing can be described
- Agreement on the three building elements:
 - What is a suitable data model underlying TDL
 - How would a vocabulary used in thing descriptions look like
 - What is an appropriate syntax / serialization format of TDL which is feasible for the Things (may be synchronized with the AP task force)

Web Meetings

- begin: 13th of May 2015; weekly meetings
- 10 x web meetings so far
- participants: 4 – 13 (average 7)
- 10 presentations / contributions

Technical Landscape

Data Model & Vocabulary & TD model

OpenIoT, Semantic Sensor Network (SSN); Spatial Data on the Web Working Group (SDWWG), IPSO, WoT Label

Representation

JSON(-LD), RDF/EXI

Data Type Description

SenML, XSD

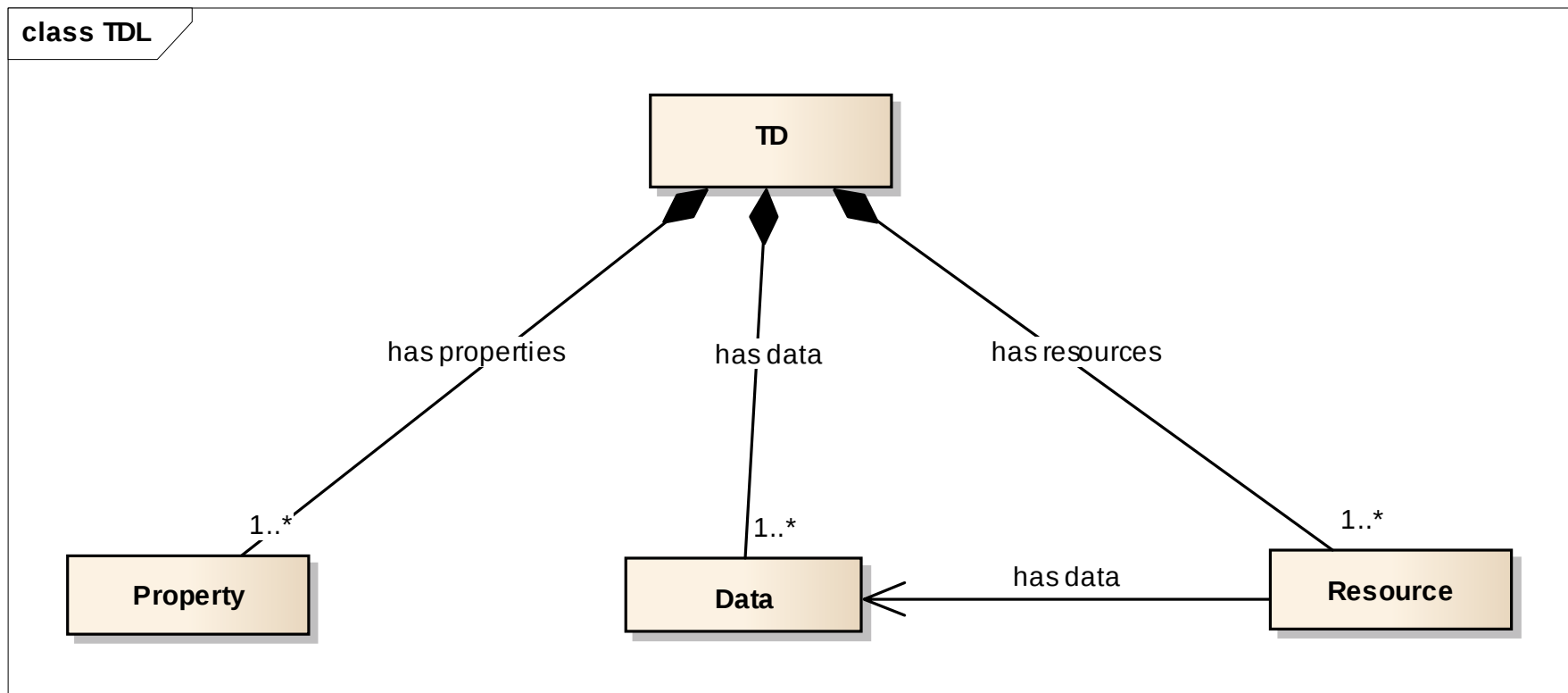
Functional Description

Hydra, Functional Semantics for WoT Devices

More details see:

https://www.w3.org/WoT/IG/wiki/Thing_Description

TD Model (Draft)

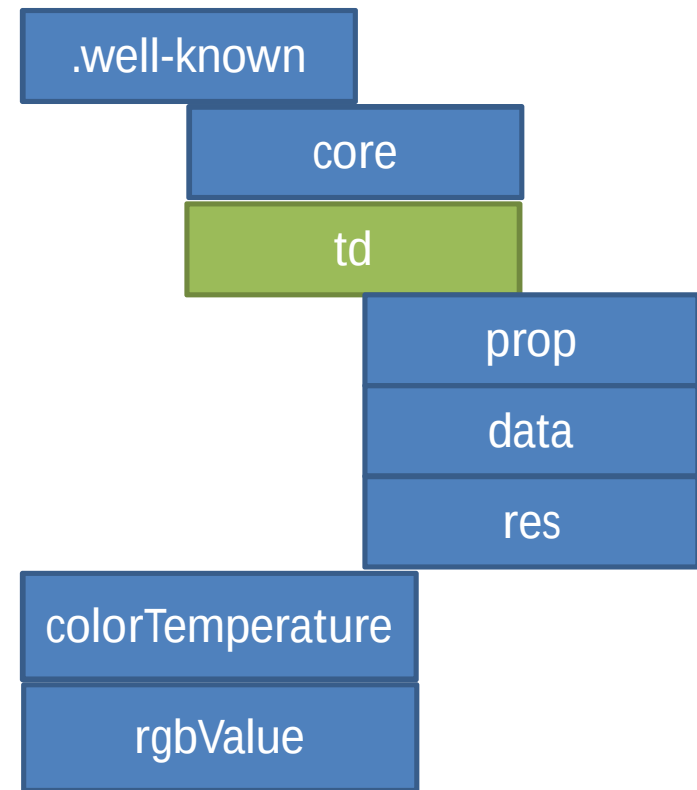


Example (LED Lamp)

- Properties
 - Name: MyLED123
 - Description: 'Control LED lamp'
 - ContextType: #lampActuator
 - Location: Room 10
 - Data
 - Name: ColorTemperaturType (simpleType)
 - Type: short
 - Unit: K
 - Name: RGBValuesType (complexType)
 - Name: R Type: byte
 - Name: G Type: byte
 - Name: B Type: byte
 - Resources
 - Name: colorTemperature
 - ResourceType : writeable-stream
 - DataType: ColorTemperaturType
 - Name: rgbValues
 - ResourceType : writeable-stream
 - DataType : RGBValueType
- Who (and where) are you?
- What kind of data is provided/needed?
- What kind of resources is served?

Example for REST with CoAP

- each Thing has a fix resource to retrieve its TD
- depending on the application, subset of the TD can be retrieved (e.g., for discovery: `/.well-known/td/prop`)
- a returning link would be also possible



JSON-LD (Snippet)

```
{
  "@context": "http://w3c.org/wot/td.jsonld",
  "prop":
  {
    "@context":
    {
      "name": "http://w3c.org/wot#name",
      "description": "http://w3c.org/wot#description",
      "contextType":
      {
        "@id": "@type"
      },
      ...
    },
    "@id": "http://myled.org/ledThing1/prop",
    "name": "MyLED123",
    "description": "Control LED lamp",
    "contextType": "#lampActuator",
    "location": "room10",
    ...
  },
  "data":
  ...
}
```

Serialization Size (LED Example)

- JSON-LD: 1,8 kBytes
 - plain-text representation
- EXI/RDF: 460 Bytes
 - binary representation

Plans for Breakout & Expectations

- Refinement of the TD model and define basic vocabulary
- How to define data types that is served or consumed by a Thing
- Use Cases / Examples using the TDL
- Gap analysis
- Plans for implementations

Questions?