Binding Templates

Restructuring

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Agenda

- Explaining Restructuring
- Submission Procedure for New Bindings

Previous Editor’s Draft

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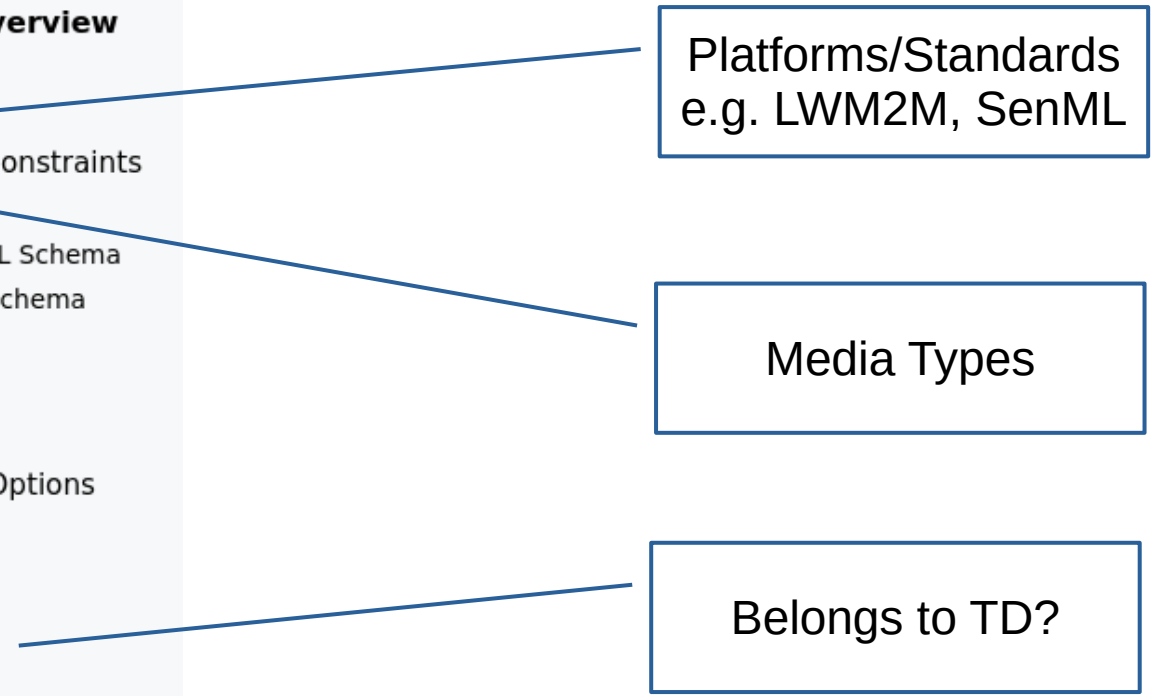
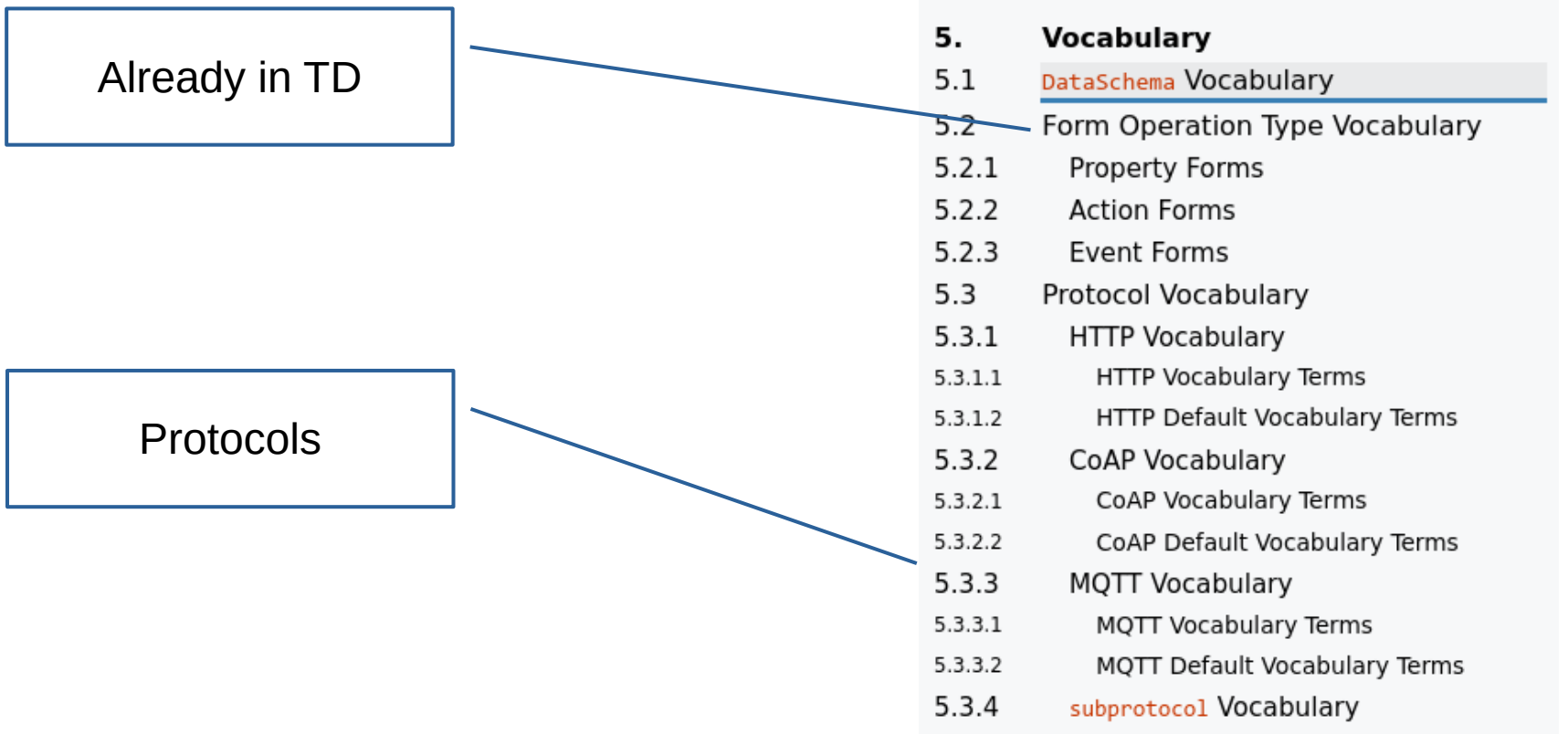


Previous Editor’s Draft



Current Editor’s Draft

- General Idea:
  - Categorize Binding types
  - Externalize specific Bindings

Current Editor’s Draft

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  - Categorize Binding types
    - Protocols
    - Media Types
    - Platforms (and Standards)

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- General Idea:
  - Categorize Binding types
    - Protocols
    - Media Types
    - Platforms (and Standards)
  - Externalize specific Bindings
    - One document per Binding with different authors and publication date

Current Editor’s Draft

§ 1. Introduction

Binding Templates consist of multiple specifications, referred to as a subspecification in this document, that enable an application client (a Consumer) to interact, using WoT Thing Description[[WOT-THING-DESCRIPTION] (TD), with Things that exhibit diverse protocols, payload formats and their usage. These subspecifications are categorized into three:

- § 4.1 Protocols: Application layer protocols (e.g., HTTP[RFC7231], CoAP[RFC7252], MQTT[MQTT], etc.) whose different message types are mapped to the WoT Thing Description[WOT-THING-DESCRIPTION] via reusable vocabulary and extensions.
- § 4.2 Payload Representation: Different payload formats and media types [IANA-MEDIA-TYPES] which can be represented in a TD.
- § 4.3 Platforms: Platforms and frameworks who combine the use of protocols and payloads in a certain way.

Each subspecification is an independent document that has separate list of authors and publication dates. This document explains what each subspecification should contain given their respective category and also links to the respective specification.

Current Editor’s Draft

The table below summarizes the currently specified protocols in their respective subspecification.

Abbreviation	*Name*	*Link*
HTTP	Hypertext Transfer Protocol	Link
CoAP	Constrained Application Protocol	Link
MQTT	Message Queuing Telemetry Transport	Link
Modbus	Modbus	Link

Current Editor’s Draft

MODBUS binding template

W3C Editor's Draft 23 September 2021

This version:

https://w3c.github.io/wot-binding-templates/modbus

Latest published version:

https://www.w3.org/TR/wot-modbus-template/

Latest editor's draft:

https://w3c.github.io/wot-binding-templates/modbus

Editor:

Cristiano Aguzzi (Invited Expert)

Other documentation

MODBUS ontology

Please Review!

- There is significant restructuring. Thus, a more intensive review is required before proceeding to a Working Group Note

Submission Procedure

- Currently, each type of Binding (protocol, media type, platform) has a list of requirements.

Submission Procedure

§ 4.1.1 Creating a new Protocol Binding

When creating a new protocol binding subspecification, e.g. based on a new communication protocol, the proposed document should enable implementations of this binding in an interoperable way for Consumer and Producer implementations. More specifically, each binding *MUST* specify the following:

- **URI Scheme:** For identification of the used protocol, a standardized URI scheme [RFC3986] value *MUST* be declared in the form of a string. This URI Scheme is used in TDs at top level `base` or in the `href` term of the `forms` container. These can be officially registered ones at IANA [iana-uri-schemes] (e.g. `"https://"`, `"coap://"`) or they can be declared in the protocol subspecification (e.g. `"mqtt://"`, `"modbus+tcp://"`). How the full URI can be constructed for different affordances (or resources) *MUST* be specified as well.
- **Mapping to WoT Operations:** Most protocols have a set of methods or verbs that adds a meaning to the messages of the protocol. A protocol binding *MUST* be able to map WoT operation types (`readproperty`, `invokeaction`, etc.) to concrete protocol message types or methods. When specifying the mapping, the mapping *SHOULD* be bidirectional, i.e. it should be clear how to do a `readproperty` operation with the given protocol and how an existing implementation's endpoints can be mapped to a WoT operation should be also clear. A vocabulary detailing the operations methods *SHOULD* be provided to allow semantic annotations of the operations with protocol specific information.
- **Specification:** The official specification document of the protocol *SHOULD* be provided. This *SHOULD* be a static version, i.e. the exact document used during the writing of the binding that is guaranteed to not change. If this is not possible, the specification should be marked with a date of access. When the specification is not publicly available and cannot be linked with a static version, an editor's note should be provided in the introduction, explaining how to get access to the specification.

Submission Procedure

- How to deal with further Binding submissions?
  - https://github.com/w3c/wot-binding-templates/issues/124
  - A registry like the DID WG has ?