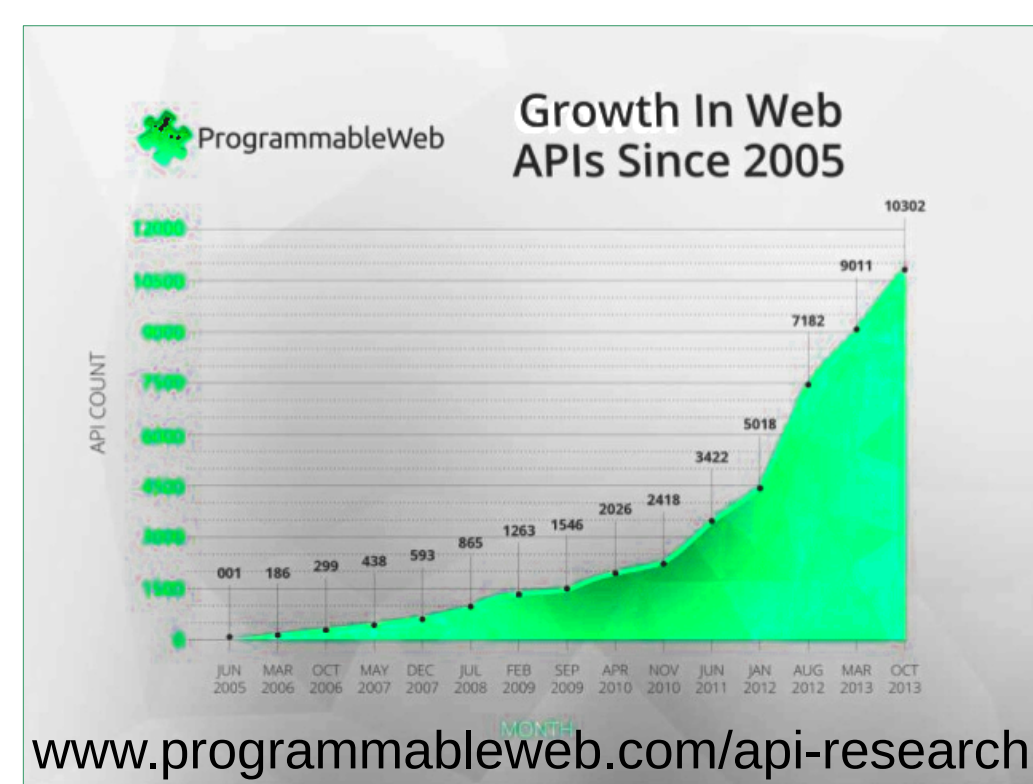


EMPOWERING DEVELOPERS CONSUMING APIS

Collaborative API Annotation for Semantically Structured Format



An approach to not just for API Providers, but for the huge API Consumer community, to create and reuse machine readable descriptions of public APIs.



1. MOTIVATION

- Tremendous growth in number of APIs.
- Only Human-readable documentations.
- Need for smart generic Client
- Reduce the need for hard-coding, the Client applications for API use, which is frequently updated.

3. APPROACH AND UNIQUENESS

▪ Collaborative API Annotation

Collaboration in SMW is supported by keeping track of changes, allowing comments and discussion on every single part of API annotations. They can further assign tasks and honor the activity of users.[1] All developers, consuming the API, will need the same API document since it has to finally be interpreted by machines, which do it in the same way always.

▪ Role of Semantics

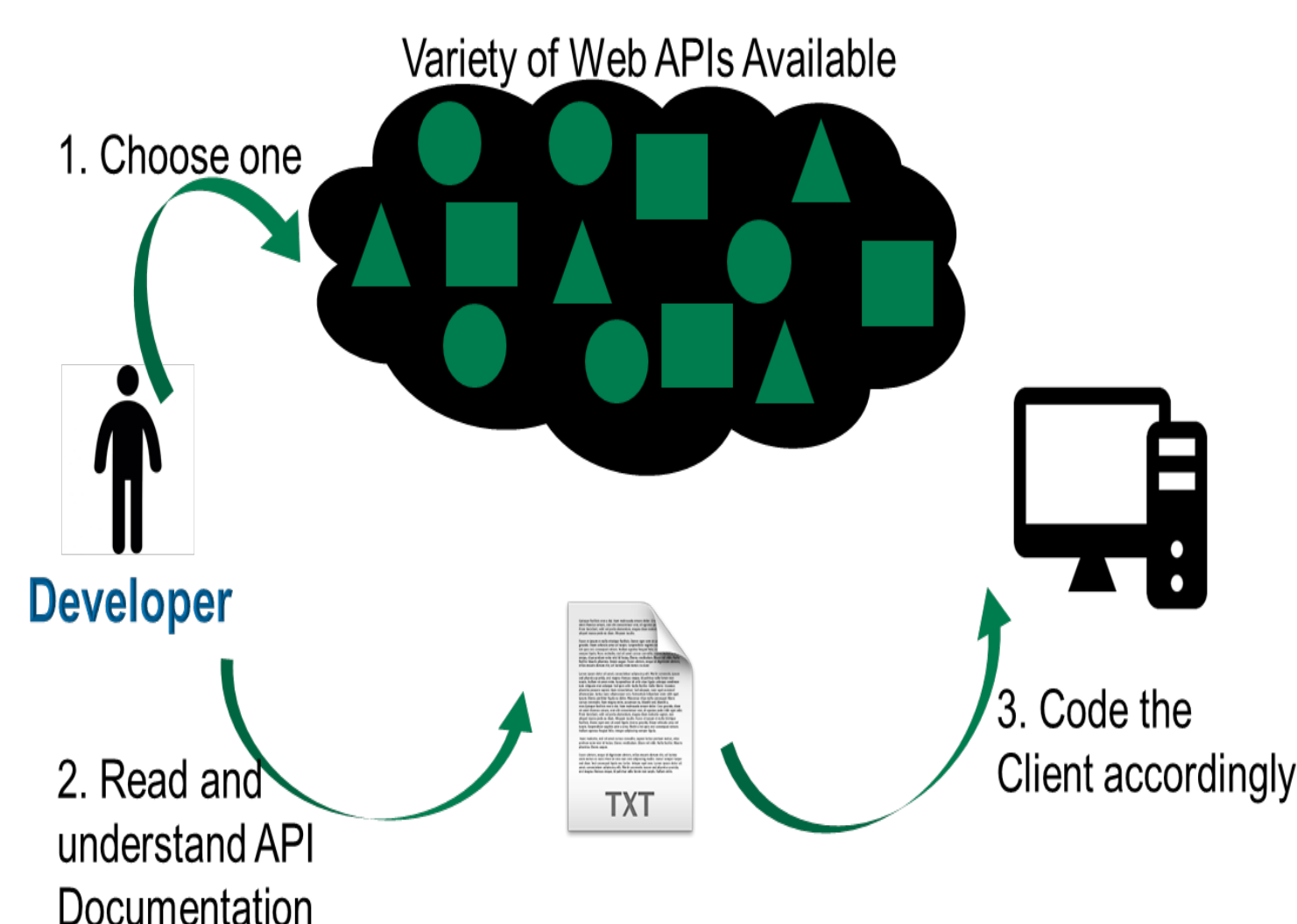
The basic structure of semantic data in SMW is inspired by RDF and OWL. The knowledge of semantics is not a pre-requisite for annotation due to abstraction by Semantic Forms. The input to the forms is used to generate RDF Feed for the machines to understand.[1]

▪ Modelling Vocabulary for Semantic Annotations

The developers can annotate in Semantic Forms structured on Hydra vocabulary to create machine processable hypermedia triple relations from existing human readable descriptions.

CURRENT SCENARIO

For Every Developer
For each API



2. GOAL

Bridge the gap between the existing Web APIs usage and our dream to make them machine processable for automated data integration. We aim to empower the developers who are using APIs to build Generic Clients and often need to rely on API Designers to provide machine processable documentations.

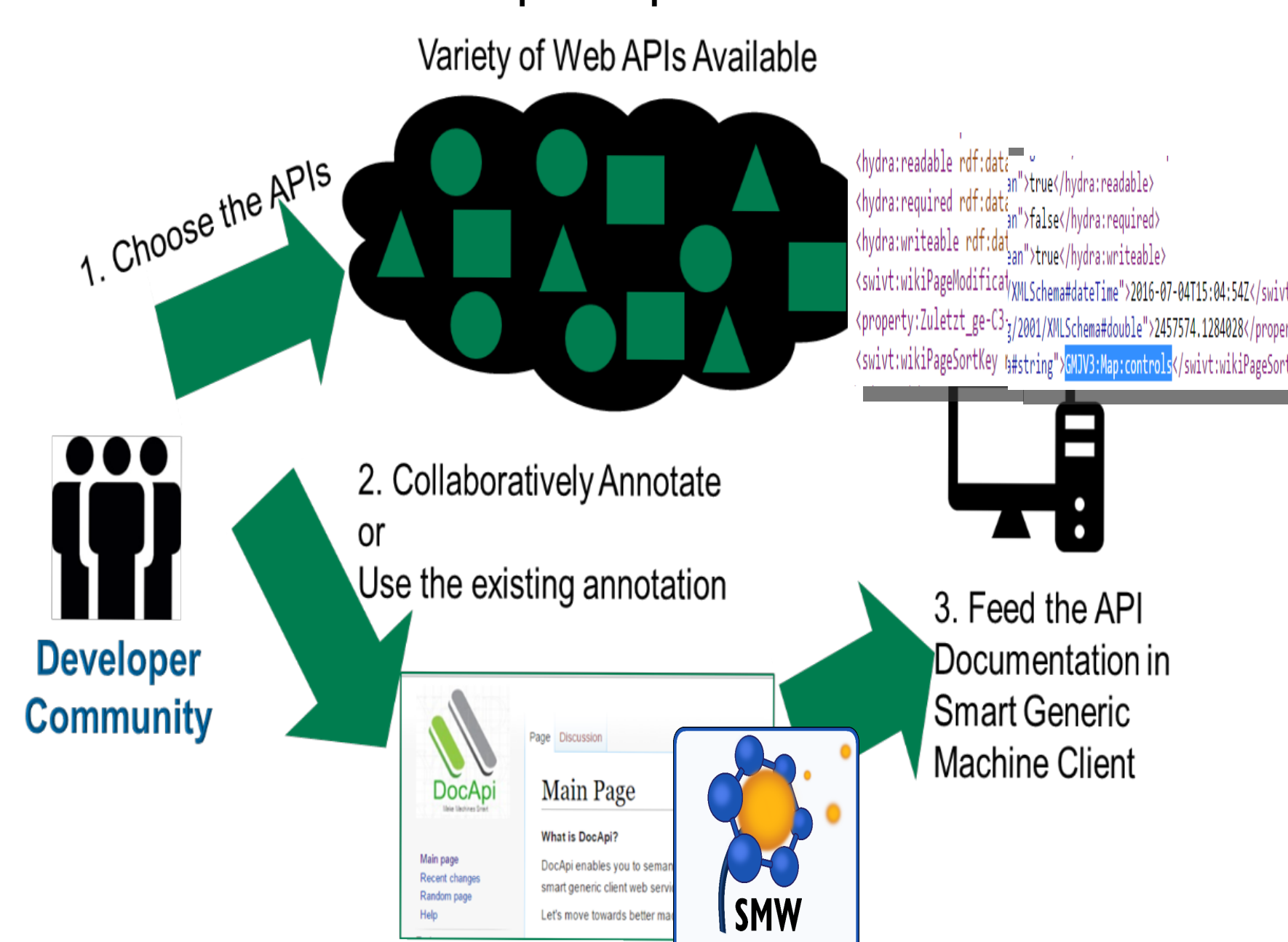
Research Questions:

RQ1 How to model suitable vocabulary for semantic annotation of API documentation?

RQ2 How to ensure automatic processing of collaboratively annotated API documentations by Smart Clients?

PROPOSED SOLUTION

For the Developer Community as a whole
For all possible public APIs



DESIGN OF SEMANTIC FORMS IN DOCAPI

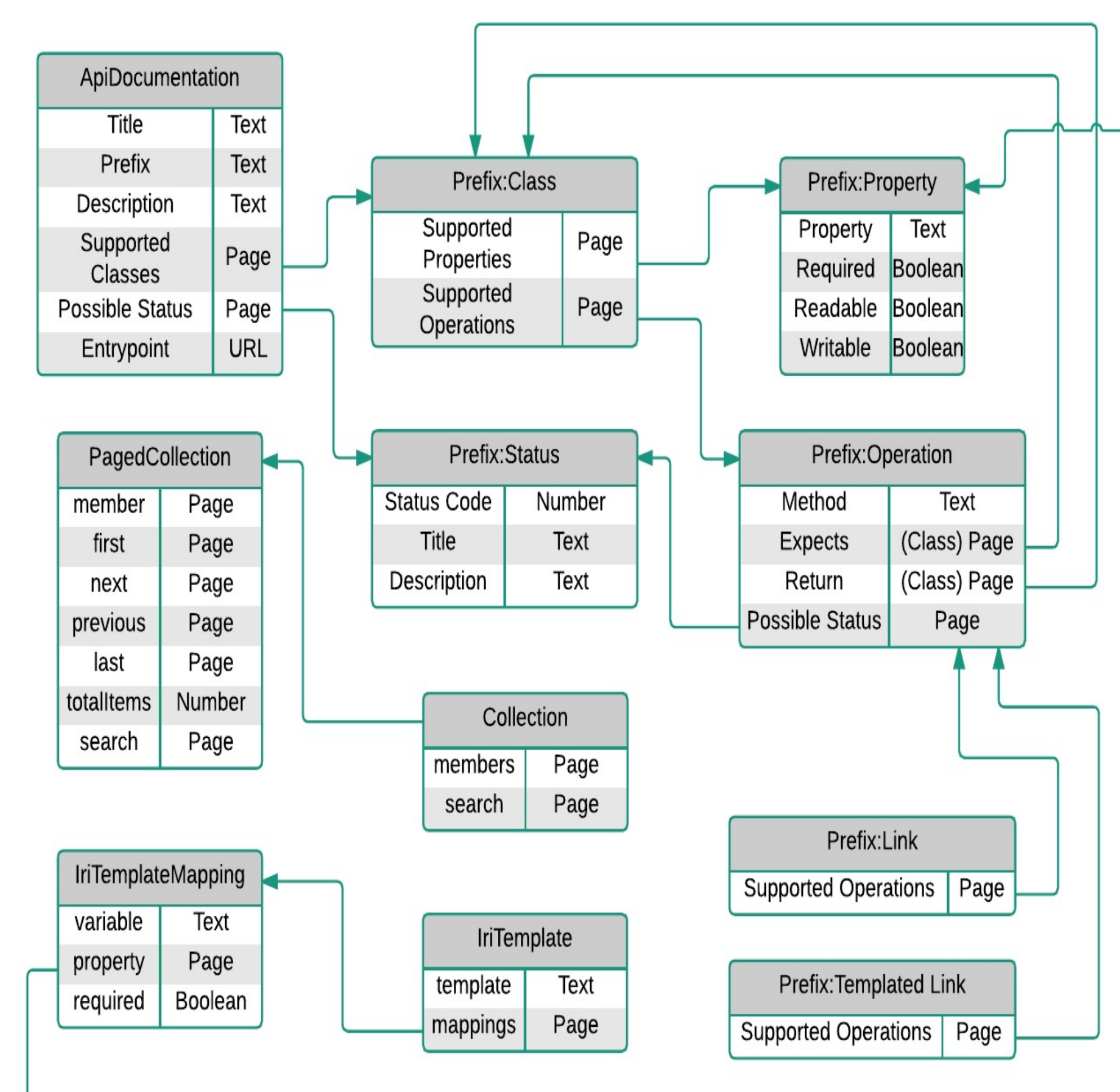


Fig 3 (based on Hydra vocabulary [2])

CONTEXTUAL MODEL OF SMW AND HYDRA VOCABULARY

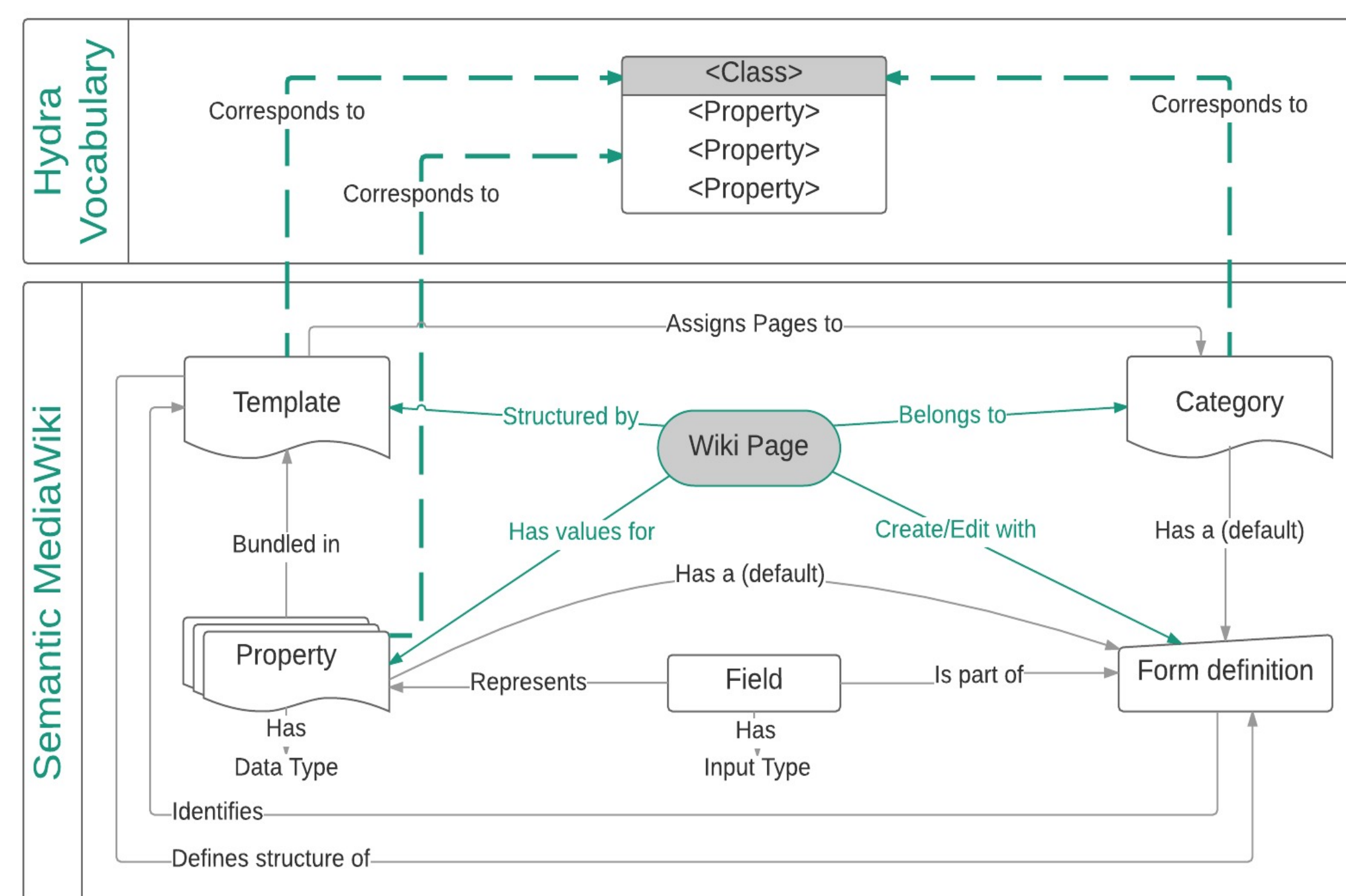


Fig 2 (Inspired from Semantic_Form_Diagram.svg)

4. USE CASE

Our main use-case is to integrate the provenance information from different APIs in an automated way to feed into Decision Support System for project BigGIS [3][4]. Find more at <http://biggis-project.eu/>.

5. CONTRIBUTION

The solution takes us towards a way for API documentation so that they are easily processable both human and machines. The key goals achieved are:

- Analysis of existing annotation tools for the developers consuming the APIs
- Contextual Modelling of Hydra vocabulary in Semantic MediaWiki Forms for annotation

6. RELATED AND FUTURE WORK

While tools like RAML, Apiary and OpenAPI Specification (Swagger) exist, the onus is on API Designer to use them. API consumers can pipeline complex integration tasks with minimum human interference if machines understand the valid state transitions possible in APIs. This is objective of our proposed future extensions:

- Support for enhanced extensions, discussion or talkpages, advance search for better API usage on customised SMW.
- Design of Smart Clients for automatic processing of the API description.

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