Machine Consumable Legislation

“Legislation-as-code is the most transformative idea we got from the D5 Summit**
Estonian Government CIO, Sllm Sikkut
*4th annual gathering of the world’s most advanced digital nations in February 2018, hosted by New Zealand

1. Introduction
Would you like to participate in a revolution regarding the ways in which society is governed?

"The traditional models of creating, managing, using and improving the 'rules' of government (policy, legislation, regulation and business rules) were developed for use in a non-digital environment, and can result in a mismatch between policy intent and implementation.

New digital technologies and the effective use of government data present opportunities to better deliver to people’s needs. To fully realise these opportunities, however, policy and rules need to be developed in a manner that recognises the context of impacted people and systems, and enables digital service delivery where appropriate." — Better Rules for Government Discovery Report, March 2018

A similar challenge as the one stated above by the Government of New Zealand faces also our own country, which strives to make use of digitalization as a tool to improve the effectiveness of public administration and the improvement of public services, all at a lower cost and with less human participants.

The business rules of government should not only be just human and machine readable, but also machine understandable. Turning the logic of of these rules into reusable, machine consumable programmatic logic at source (rather than through translation) supports service innovation by both government and, where appropriate, by third parties (including artificial intelligence).

The proposed project will create a central tool for the legislative process, used by legislative drafters to produce basically similar versions of law proposals as written today with ordinary word processors. In addition to this, the tool will enable the drafters to link the terminology used to common terminological glossaries and even common public sector data models, thus ensuring that the drafted legislation is consistent and based on a common understanding of the subject area it covers.

2. Project Goals
The main outcome of the project is a semantic editing tool, enabling legislative drafters to create human and machine consumable versions of rules for effective and efficient delivery of services. A Minimum Viable Product (MVP) would be an editor that enables the drafter to generate human readable legislation, in which the terms used are linked to the semantic, linked data resources published through the Interoperability Tools, created by the Population Register Centre. An optional additional feature would be the enabling of creating

- pseudocode, or rule statements that detail the logic of the rules, in a human readable format, and
- software code

based directly on the human readable legislation produced by the editing tool.

Consider the following examples of legislative text, as well as pseudocode and software code based on the legislative text.

<table>
<thead>
<tr>
<th>Legislation</th>
<th>Pseudocode (bold denotes defined terms)</th>
<th>Software code</th>
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A person is eligible for a rates subsidy if, on the relevant date:
1. the person is a ratepayer; and
2. the property for which the rates are paid is a residential property; and
3. the property is the usual place of residence of the ratepayer.

A person is eligible for a rates subsidy for a property only if all of the following is true at the relevant date:
● The person is a ratepayer of the property.
● The property is a residential property.
● The property is the usual place of residence of the person.

3. Technologies
The project will utilize and integrate the following existing resources:

- The Controlled Vocabularies and Data Vocabularies - tools mentioned above in Chapter 2, utilizing the existing interfaces published on:
  [https://sanastot.suomi.fi/swagger/swagger-ui.html](https://sanastot.suomi.fi/swagger/swagger-ui.html)/vocabularies/concepts (format: JSON)
  [https://tietomallit-dev.suomi.fi/api/swagger-ui/#!/Model/json/exportmodel](https://tietomallit-dev.suomi.fi/api/swagger-ui/#!/Model/json/exportmodel)

(formats: RDF/JSON&XML-schema)

4. Requirements for the students
The students will need the ability for programming in a language of their own preference.
The topic requires moderate skills in programming and minor skills in semantic technologies.

5. Legal Issues
IPR: CC BY 4.0 The outcome of the project is not subject to any NDA.

6. Client
The project is collaboratively guided by the Product Owner, Development Specialist, Mr. Mikael af Hällström (Finnish Tax Administration) and Technical Advisor, prof. N.N. (Xxxxx). Mikael af Hällström will mainly be involved in specifications, while N.N. will provide guidance in use of the xxxx technology.

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7. Additional Information