# Session 1.1

##### Session 1.1 (SEMANTiCS)

#### Time: Wednesday, September 18, 2024 - 10:40 to 12:00

#### Chair: TBA

## **Talks**

### A model and case study for searching and reading cross-border multilingual legislation on the Semantic Web

This paper concerns the problem of searching legislative documents in an international cross-broader multilingual setting. Here, legal documents are originally published in different countries using different local languages, and the end-users search for the documents using their own languages. Furthermore, different country-specific semantic keyword and classification systems for indexing the contents may have been used. Cross-border services are needed, e.g., when moving from one country to another and looking for regulations for immigration, heath care, education, etc. To address the challenge, a cross-border solution based on Linked Open Data and Semantic Web technologies is presented, and a proof-of-concept system was designed and implemented, using consolidated laws of Finland and Estonia and EU directives as a case study. The demonstrator includes a semantic portal and a LOD service. Based on the so-called Sampo Model, the main novelty of the FINESTLAWSAMPO demonstrator presented is the provision of heterogeneous cross-country, multilingual, distributed legal data through multiple application perspectives for faceted searching and exploring the data as well as for data analysis in legal informatics.

| Eero Hyvönen | Hien Cao | Rafael Leal |
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| Heikki Rantala | Aki Hietanen |  |

### Bringing distributed knowledge to humans [SP]

| Aad Verstedenredpencil.io |
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### A linked data ecosystem for generating information products

| Wouter BeekTriply | Flores Bakker |
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### Securing Linked Data: Authorisation Ontology and Enforcement Mechanisms in the Dutch Federated Data System Context

To advance the adoption of linked data in the context of the Dutch Federated Data System (Dutch synonym: FDS), it is necessary to have robust access control for native linked data sources. For this purpose, research was initiated to assess whether it is feasible to implement access controls on linked data sources in this context. A four-phase design science research methodology is applied. The first phase defines both the question guiding this research and the context in which the research was conducted. The second phase includes a review of the state-of-the-art and an evaluation of the existing approaches to access control could support the FDS use case. Having determined that no existing approaches completely fulfil the requirements of the FDS use case, the third phase describes a prototype enforcement mechanism designed and developed as part of this research. The fourth and final phase evaluates this protype with respect to its feasibility to support the requirements of the FDS context. At present, there are no standardized solutions for securing native linked data sources. Existing literature and industry examples from the Netherlands and Europe highlight several potential solution directions for access control on SPARQL endpoints. These solution directions are used as inspiration for the development of a prototype enforcement mechanism. This prototype shows potential when applied to the Dutch Federated Data System and suggests a more generic approach could be taken when applying these controls to a broader context. Further research, testing and standardization efforts are required to bring such an approach to maturity. Any linked data ecosystem containing closed information requires a robust approach to access control. This research contributes to the existing literature on approaches taken to such access controls and highlights the increasing need for, and the feasibility of implementing, these controls in governmental contexts. Bringing such a solution to maturity would support wider adoption of linked data technologies in this context.

| Alexandra Rowland | Hans Schevers | Erwin Folmer |
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| Sven Mol | Janneke Michielsen | Marc van Andel |

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