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# LEGAL ACT VISUALIZATION AS A THREE-DIMENSIONAL TREE

Referencing legal act semantics temporal aspects

**ENDORSE.**

THE EUROPEAN DATA CONFERENCE ON REFERENCE DATA AND SEMANTICS

# Motivation

Legislation changes over time, which makes it challenging to:

- keep track of specific text changes within large legal document collection;
- compare two or more legal act versions in case of necessity;
- keep track of specific legal act transformation over time;
- foresee the amendments going to be enforced in close future.

# The deeper meaning of changes

Changes in legislation may refer not just replacing the text, but also changes in:

- Specific meaning behind the specific term;
  - Term „marriage“ now or in 1821
- General concepts reflecting legal principles or legal values at a time;
  - Individual liberties now or in 1787
- Societal need for regulating specific areas of human activity
  - Telecommunication or cybercrime-related laws.

# Hypotheses

Legal text changes have semantic value and are made at a specific time, therefore legal semantics have temporal properties.

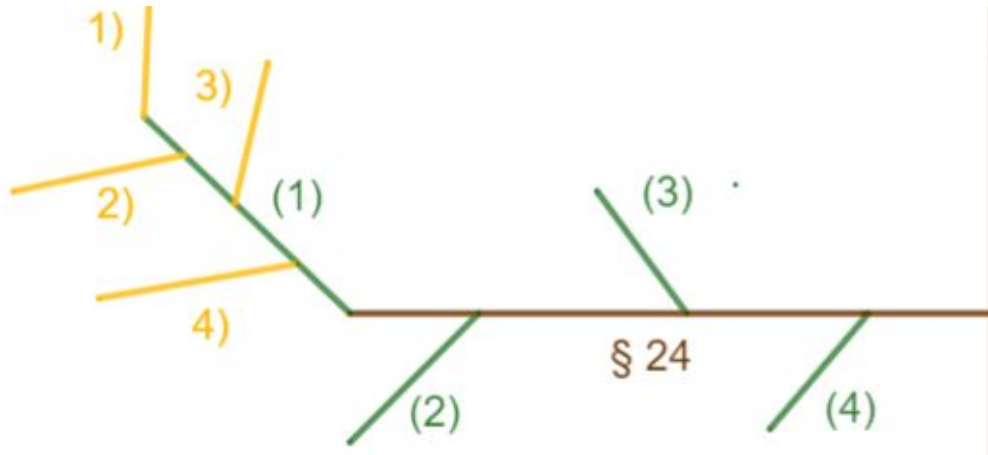
Temporal aspects of legal semantics can be made visible through references between specific changes of specific legal text over time (temporal semantic references).

Temporal aspects of legal semantics can be visualized on a time scale, using temporal semantic references.

## The solution

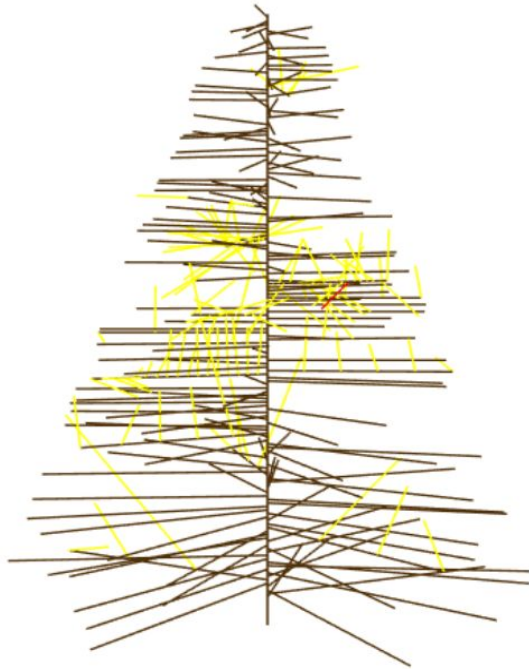
A purpose was to create a web solution to visualize consolidated text of legal acts and amendments made or to be made in the future.

Builtup of the tree-like structure: paragraphs (brown), divisions (green), subdivisions (yellow).

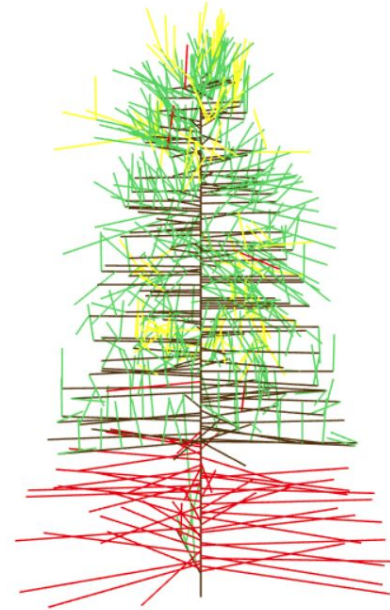


# The solution

The Constitution of the Republic of Estonia

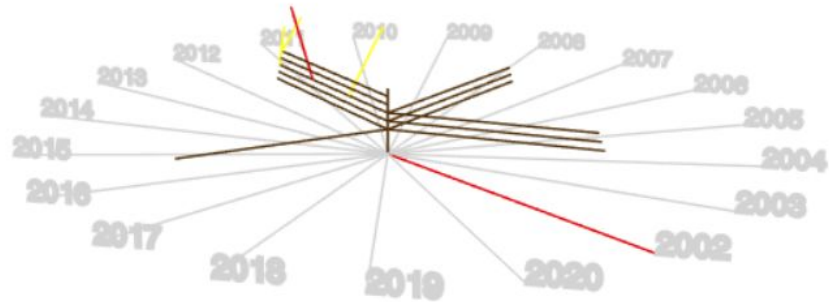


Employment Contracts Act

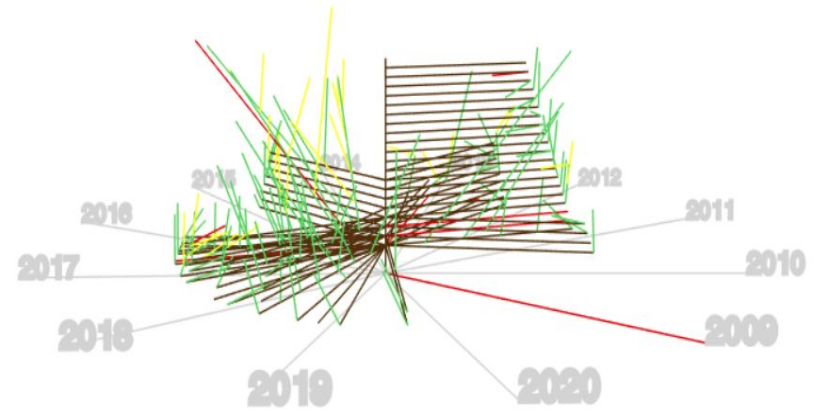


# The solution- visualization of changes

## The Constitution of the Republic of Estonia



## Employment Contracts Act



# Demo

Proof of concept, accessible for testing:

<http://dijkstra.cs.ttu.ee/~hekruu/iaib/resources/index.html>



## Benefits of visualisation

A picture is worth a thousand words;

A compact and high-level view of the legal act;

Allows represent all versions of the legal act in one visualization;

Stretches over the past and present to the known future of the legal act;

Usable for practicing lawyers and also legal drafters for drafting new version(s) of the act;

Expands general understanding regarding legal act dynamic nature and time-related semantic aspects of the legislation;

Opens the way to refer to temporal semantic changes of legal thinking.

## Future works on prototype

Two legal act views (tree-like visualization and changes views) could be molded into one view.

Visualization of changes could be expanded toward statistics regarding legal act dynamic properties- how often changed, which parts are most dynamic, and so forth.

Branches could be linked to the actual paragraphs of the legal act.

Branches could reveal the actual text of the legal act.

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