

Towards Integration of Latvian Web Services

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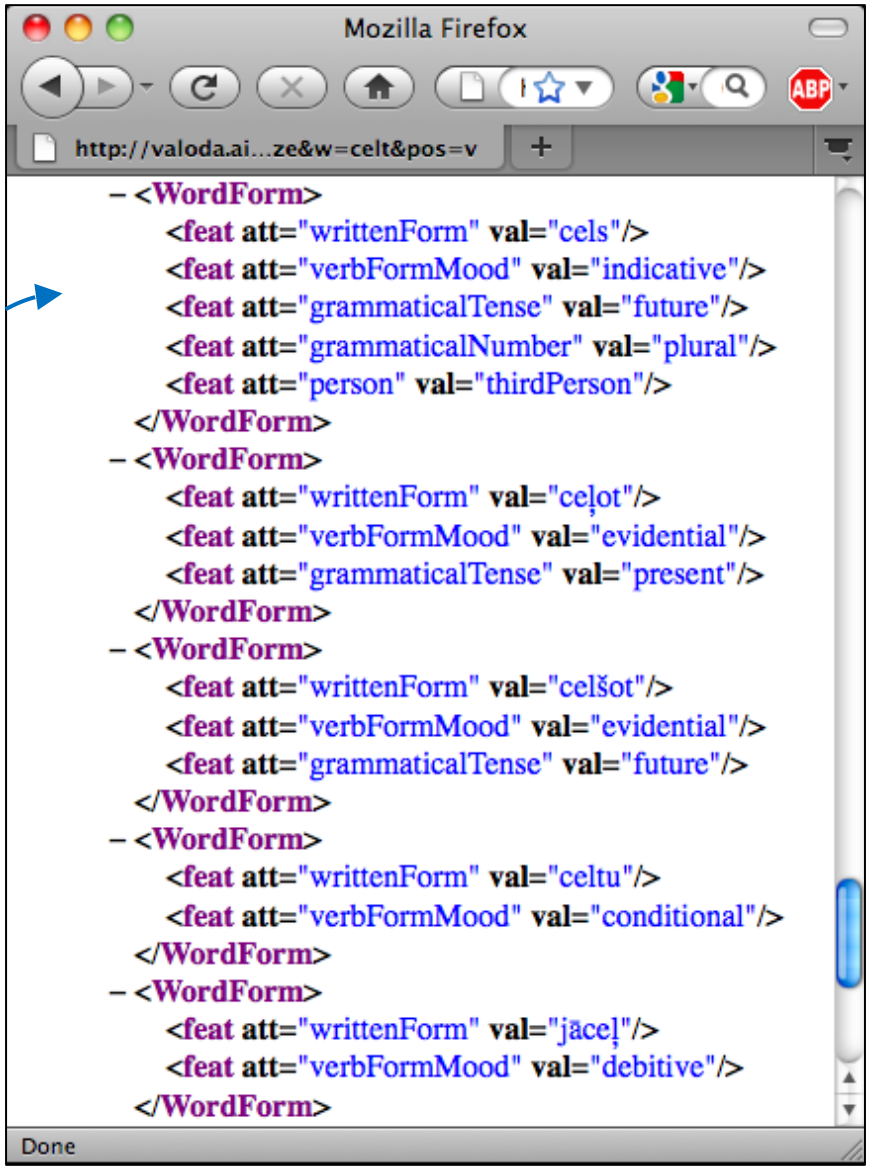
IMCS UL Web Services

- http://valoda.ailab.lv/ws/
  - Morphological **analyzer** & **synthesizer**
  - Morphological **tagger**
    - Tokenizer
    - Sentence splitter
    - Tagger
  - **Text-to-speech** synthesizer
  - **Dictionary** of the Standard Latvian Language
- Future plans: corpus query service
- Forthcoming: parser/generator of controlled Latvian

Morphological Analyzer/Synthesizer



Morphological Lexicon

POS	Lemmas	Word forms
Nouns	32 537	294 647
Verbs	12 007	347 874
Adjectives	6 098	682 976
Adverbs	6 508	6 508
Pronouns	51	472
Other	412	412
Total	**57 613**	**1 332 889**

- **Past participle** forms currently are not supported
- **Analytical verb forms** (syntactic units) are not taken into account
  - Atomic constituents only (either functional or content words)

Annotation Standards Used

- Done: an ad-hoc (POS-specific) format → **LMF**
  - The **feature structure model** is generic, flexible and simple
    - For each particular category/word form: provide only those features that are actually **appropriate**
    - For a particular set of feature-values (for the same lemma) **alternative** word forms can be provided in the uniform way
- "Done": compliance with **DCR** (**ISOcat**)
  - With slight **extensions**: e.g., values **`evidential`** and **`debitive`** are also used for the **`verbFormMood`** category
    - **Missing** concepts (terms)
    - **Different** linguistic traditions: how to categorize the same phenomenon
    - **Which** concept to choose: which is the primary component to use for classification
  - Use **PID**s or the lexical identifiers?

POS Tagger

- Current output: ad-hoc feature structure in JSON
  - Tagset: kind of **Multext-East**
- Under development: standardization towards **ISOcat** and **MAF**

http://85.254.250.22:8080/tagexplain/Ārzemju%20tūristi%20Latvijas%20suvenīrus%20pērkot%20aizvien%20mazāk%20.

http://85.254.250.22:8080/tagexplain/Ārzemju%20tūristi%20Latvijas%20suvenīrus%20pērkot%20aizvien

Google


```
{
    "input": "\u0100rzemju t\u016bristi Latvijas suven\u012brus p\u0113rkot aizvien maz\u0101k .",
    "result": [
        {
            "infinitive": "\u0101rzemes",
            "parsed_guess": {
                "case": "g",
                "code": "n",
                "gender": "f",
                "number": "p",
                "declension": "-",
                "type": "-"
            },
            "word": "\u0100rzemju",
            "our_guess": "n-fpg-"
        },
        {
            "infinitive": "t\u016brists",
            "parsed_guess": {
                "case": "n",
                "code": "n",
                "gender": "m",
                "number": "p",
                "declension": "-",
                "type": "-"
            },
```


→

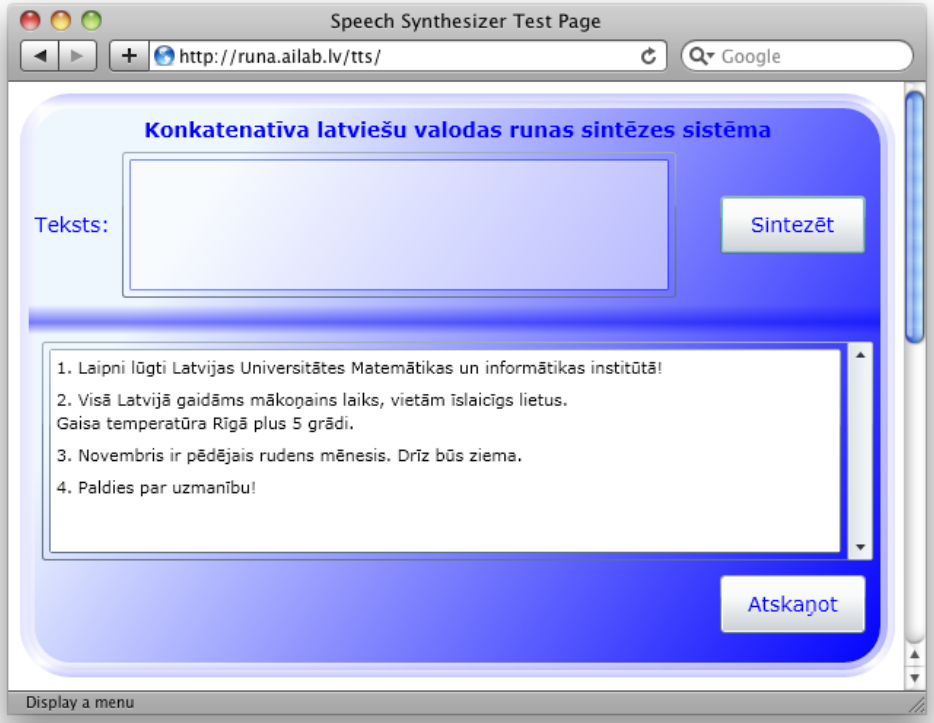
case = genitiveCase
partOfSpeech = noun
grammaticalGender = male
grammaticalNumber = plural

TODO: Text Processing Chain

- ISO (LAF/MAF): *stand-off* annotations
  - Tokenization
  - Sentence splitting
  - Tagging
- Looking towards integration in WebLicht
  - TCF → MAF; and vice versa?
- P.S. The current ISO status of LAF and MAF: international draft
  - Hopefully, converters to/from other well-known formats will be eventually available

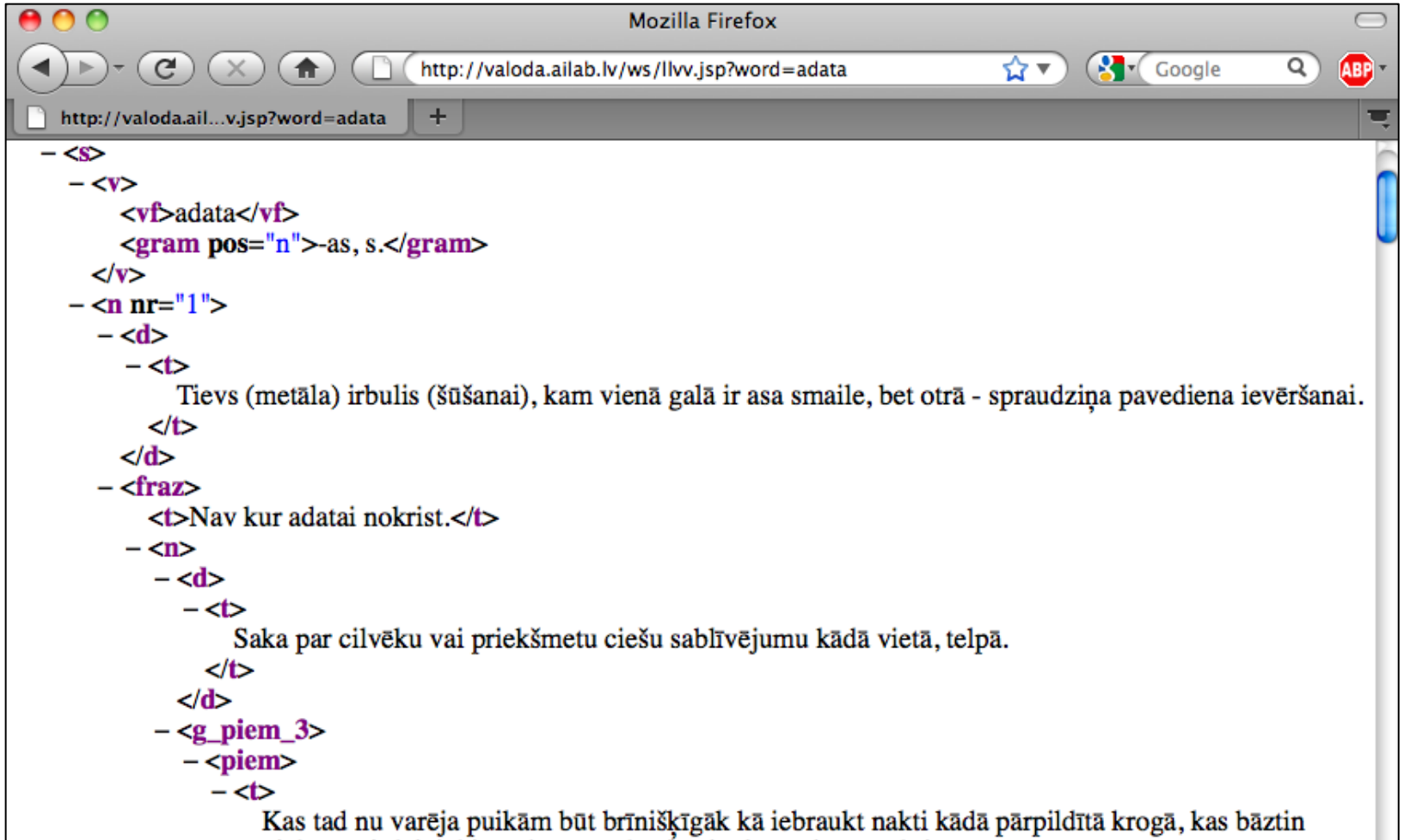
Text-to-Speech Service

- The system is specifically adapted for **weather news**
  - Can be used for general language as well
- Response: **`audio/mpeg`** (MP3) or **`text/plain`** (URL)
- UI also available:

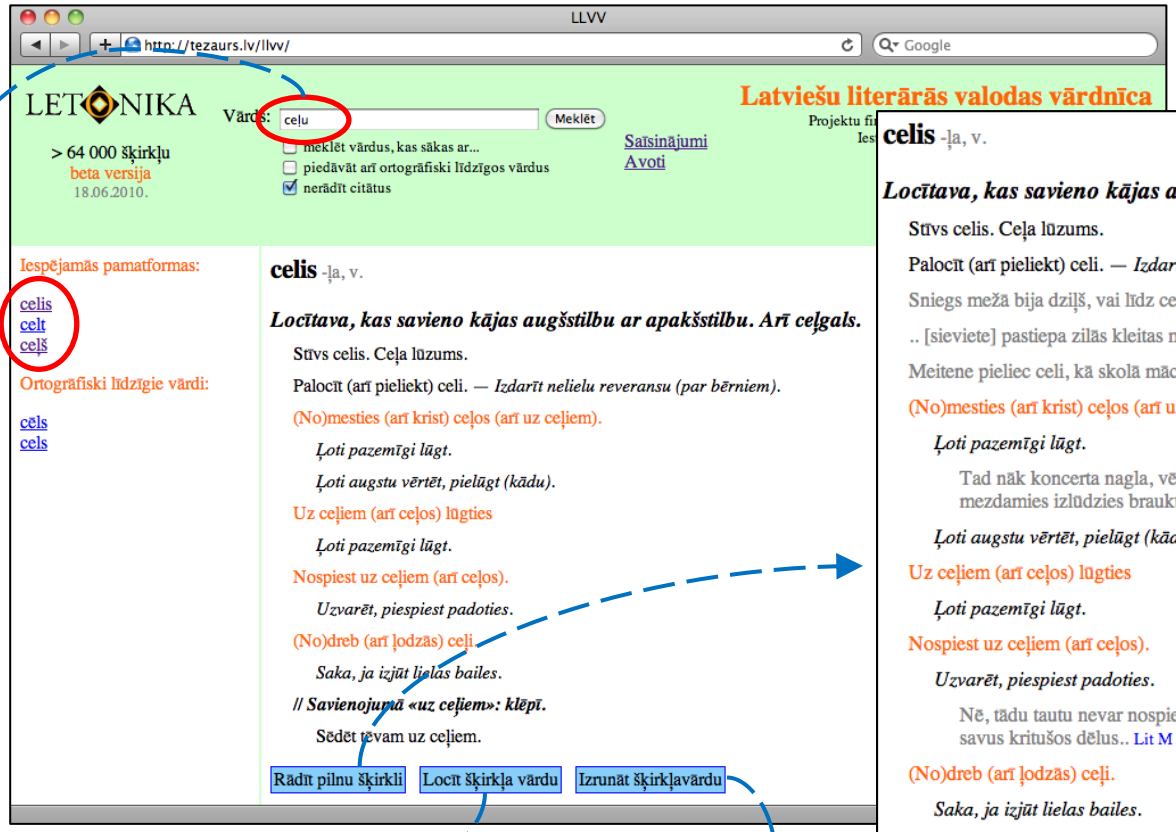


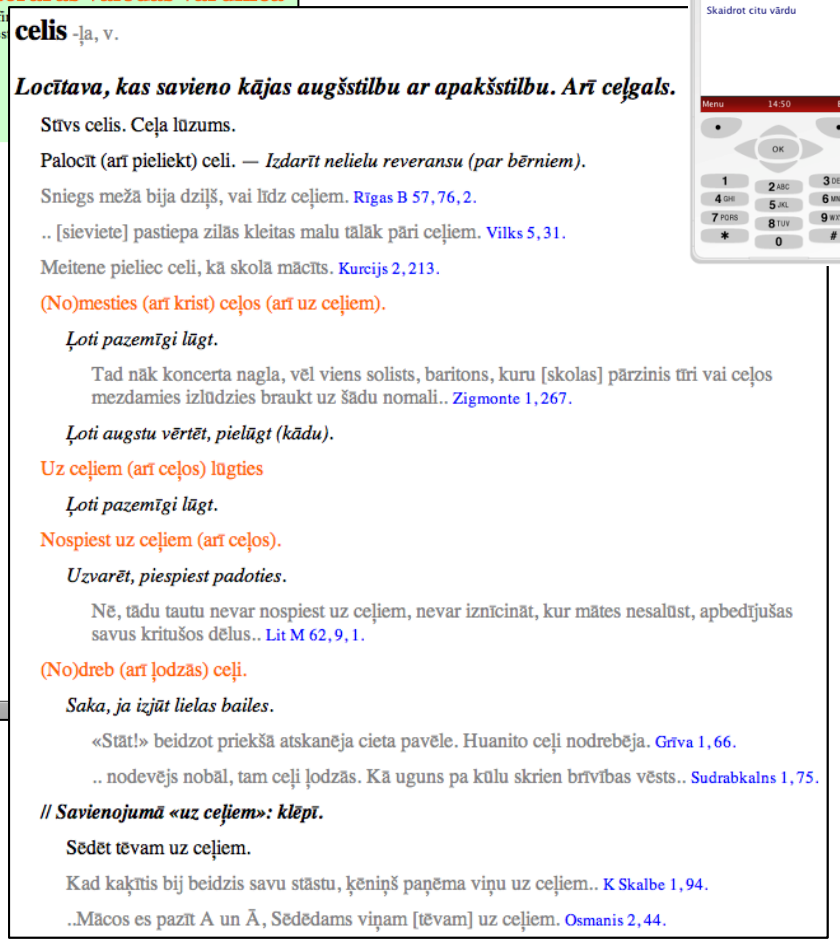
Dictionary of Latvian Language

- Rich entries (> 64 000), fine-grained structural annotations
- TODO: conversion from the proprietary format into LMF



Online Dictionary of Latvian: a Mash-up





Locījums	Vienskaitlis	Daudzskaitlis
Nominatīvs	celis	ceļi
Ģenitīvs	ceļa	ceļu
Datīvs	celim	ceļiem
Akuzatīvs	celi	ceļus
Lokatīvs	celī	ceļos

Thank you!