

# CLARIN in Estonia – closer to Digital Humanities or Language Technology?

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# Center of Estonian Language Resources (CELR, ee.clarin.eu)

- The research infrastructure of national importance in the Estonian Research Infrastructures Roadmap
  - To **make Estonian language data and tools available** to everyone working with digital language materials
  - To coordinate and organise the **documentation** and **archiving** of the language data and tools
  - To develop and promote **LR standards in Estonia**
  - To draw up necessary legal contracts and **licences** for **different types of users**: public, academic, commercial, etc
  - **CELR performs the obligations of Estonia** as the member in CLARIN ERIC



[ee.clarin.eu](http://ee.clarin.eu)



Euroopa Liit  
Euroopa  
Regionaalarengu Fond



Eesti tuleviku heaks

# Center of Estonian Language Resources (CELR)

- Consortium of 4 partners: **University of Tartu, TalTech, Institute of Estonian Language** and **Estonian Literary Museum**
- Archives and makes available LR and LT, incl. all outcomes of NPs “Estonian Language Technology” and “Estonian Language and Culture in the Digital Age”
- [Catalogue](#) and META-SHARE [Registry](#) of Estonian LRs and LTs
- Provides know-how and expertise about Estonian LR and LT, but also supports researchers with Data Management Planning, data and (web) tools in Digital Humanities



# EESTI KEELETEHNOLOGIA

## NATIONAL PROGRAMME FOR ESTONIAN LANGUAGE TECHNOLOGY

“...to achieve a level of language technology support for the Estonian language to enable the language to successfully operate and thrive in today's information technology-based world. ”

**2006-2010:** 33 R&D projects for software prototypes and language resources

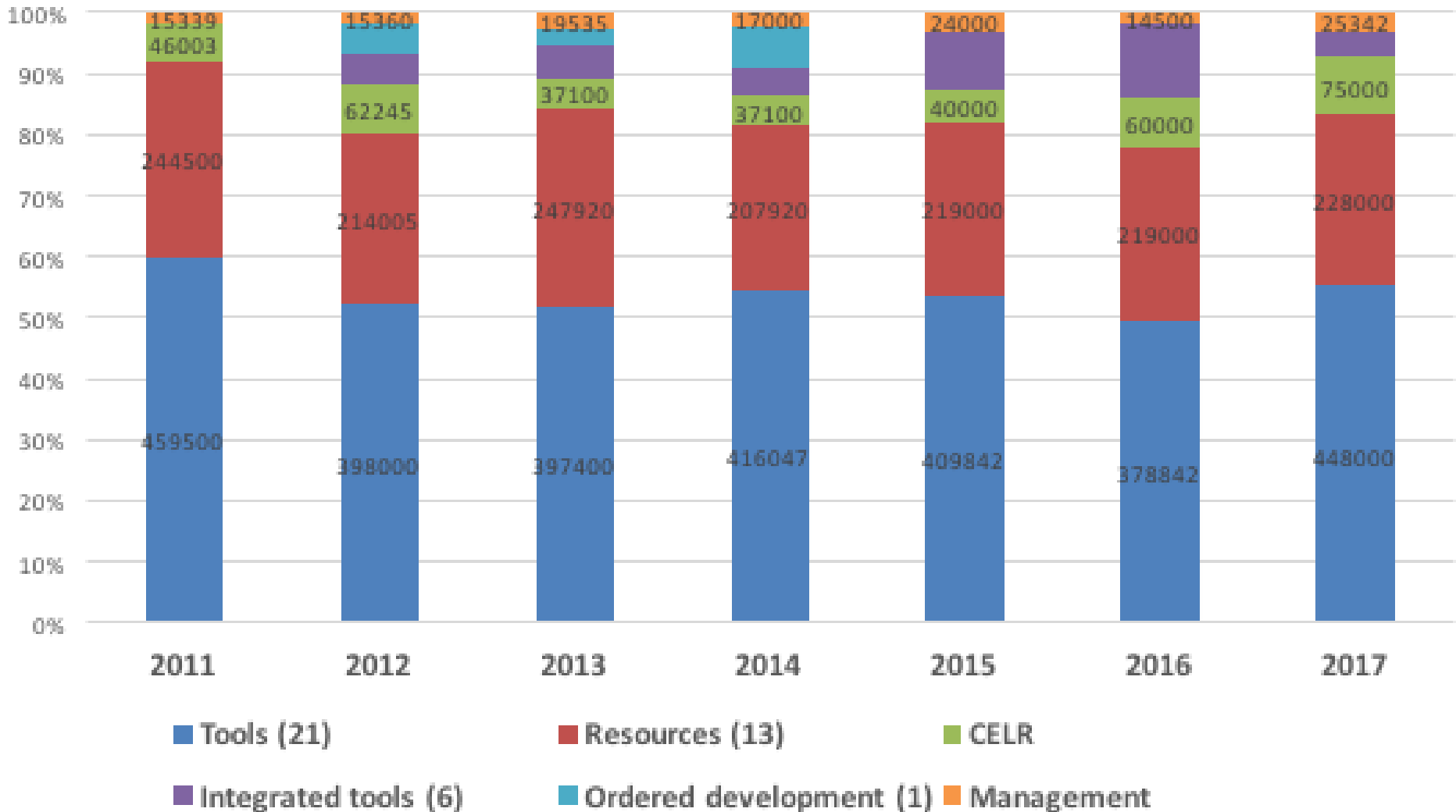
**2011-2017:** 43 R&D projects in 5 sub-objectives

- + **CELR** has an obligation to manage and to deposit all resources and tools developed within NPELT for preservation and long-term access

All project results (software and resources) are **Open Access, Open Data and Open Source as much as possible.**



# NPELT (2011 - 2017) 765 342 €/year





## Current period 2018-2027

### 1) basic technologies and resources:

Estonian Open Parallel Corpora  
Phonetic Corpus of Spontaneous Estonian Speech III  
Estonian Universal Syntax: Resources and Applications  
Estonian Wordnet as applicable language resource  
Further development of EstNLTK library and related web services  
Speech recognition  
Grammar checker prototype  
Neurotõlge: Adaptive, Multilingual and Reliable Machine  
Translation for Estonian  
Neural network based text analysis models for Estonian  
Diversification of Estonian text-to-speech synthesis

### 2) applications of technology:

TEXTA Toolkit 2.0  
Võro and Seto integrated language technology and language  
resources



# Estonian Language and Culture in the Digital Age (2019–2027)

- compiling monolingual and bilingual dictionaries and comprehensive studies
- Support the use of language technology tools in studying the language.
- Support the prevalence of language technology applications
- Support wider implementation of data collections and technologies

From subobjectives of the programme:

2. Introducing **digital tools in research**, especially results of NPELT

4. The results being **as widely accessible as possible** - publishing research data in repositories, and introducing their (re-)use as **FAIR Open Data**.

# Estonian Language and Culture in the Digital Age 2019–2027

## Current projects

- Lexis and planning of Estonian: descriptive and prescriptive aspects – Institute of Estonian Language
- Source documents in the cultural process: Estonian materials in the collections and databases of the Estonian Literary Museum - Estonian Literary Museum
- Data and corpora of Estonian children and youth multilingual communication – University of Tallinn
- Possibilities of automatic analysis of historical texts by the example of 19th-century Estonian communal court minutes - UT
- The Ethnic History of Estonian Peoples in the light of new research
- Digi-OWLDI: Five centuries of written Estonian vocabulary, morphology and phonology
- Interdisciplinary corpus of Seto
- Teen speak in Estonia
- The prosody and information structure of surprise questions in Estonian in comparison with other languages



# Registry for LR-s - META-SHARE

The screenshot shows the META-SHARE website interface. At the top, there is an orange navigation bar with a home icon, the text "META-SHARE", and buttons for "Register", "SSO Login", and "Login". Below this, there are buttons for "en", "Browse Resources", "Community", "Documentation", and "Statistics". The main content area features the META-SHARE logo, a "CONTRIBUTION TO CLARIN" logo, and the DataCite logo. Below these are logos for the "Center of Estonian Language Resources" and the "CORE TRUST SEAL". A text line states "230 language resources at your disposal". At the bottom, there is a search bar with the placeholder text "Type in your keywords, please..." and a yellow "Search" button.



<https://metashare.ut.ee>

# Registry for LR-s - META-SHARE

**META-SHARE** Register SSO Login Login

en Browse Resources Community Documentation Statistics

Filter by:

- Language
  - Estonian (184)
  - English (9)
  - Russian (7)
  - French (4)
  - Latvian (4)
  - more
- Resource Type
  - Corpus (91)
  - Lexical Conceptual Resource (79)
  - Tool Service (55)
  - Language Description (5)
  - Media Type
  - Availability
  - Licence
  - Restrictions of Use
  - Validated
  - Foreseen Use

230 Language Resources

« Previous | Next » Order by: Resource Name A-Z

1,001 children's games from the year 1935	65  264
Aligned Estonian-Icelandic ICD-10	0  454
Android Newsreader	0  331
Application for voicing texts	1  38
Application suite for voicing and broadcasting subtitles	0  31
Arvutaja	0  312



<https://metashare.ut.ee>

# Registry for LR-s - META-SHARE

## Livonian prosody corpus

 80  1

▶ View resource name in all available languages

DOI: [10.15155/1-00-0000-0000-0000-0014EL](https://doi.org/10.15155/1-00-0000-0000-0000-0014EL)

Cite as: Lippus, P. (2018). <i>Liivi prosoodia korpus</i>. Center of Estonian Language Resources. <https://doi.org/10.15155/1-00-0000-0000-0000-0014EL>

Recordings from 12 speakers reading 102 Livonian test words embedded in carrier sentences. Most of the speakers read a similar sentence list in Latvian.

The data is collected for: Lehiste, I., Teras, P., Ernštreits, V., Lippus, P., Pajusalu, K., Tuisk, T., & Viitso, T.-R. (2008). Livonian... [Read More](#)

▶ View resource description in all available languages

« Back

Download

Edit Resource

### Distribution

#### Availability

Under Negotiation

#### Licence

### audio

### Bilingual audio corpus

#### Linguality

**Linguality type:** Bilingual

**Multi-linguality type:** Other (sarnase fonoloogilise struktuuriga material)

### Resource Creation

#### Resource Creator

[Pire Teras](#) 

[Karl Pajusalu](#) 

[Tõnu Pajusalu](#) 



<https://metashare.ut.ee>

# Corpus Query Service KORP

The screenshot shows the KORP web interface. At the top, there are navigation links for 'Eesti', 'Suomi', 'Svenska', and 'English'. The main header includes the EKRK logo and the KORP logo. A search bar shows '9 korpust valitud (kõik) — 712,093 sõnet'. Below the search bar, there are tabs for 'Lihtne', 'Laiendatud', and 'Edasijõudnuile'. A search filter box contains 'algvorm' set to 'on' and 'keel' set to 'Aa'. Below the filter box, there are buttons for 'Otsi', 'ulatus', and 'lauses'. A KWIC section shows search results for 'keele' with a KWIC: 'tabamusi lehel: 25', 'sorteeri korpuse sees: ei ole sorteeritud', and 'Statistika: pane kokku: sõna'. The main content area displays a KWIC snippet with the word 'keele' highlighted in blue. The snippet is: '... telefonivestluses, et ta on praegu puhkusel ja võtab inglise keele tunde ning tööasjadega ei tegele. ... nindava personaliga suheldes üsna mõeldamatu ilma vene keeleta toime tulla ning eks tule veel praegugi ette juhtumeid ... Kuna ER-il puudusid keeletespialistid, kes hindaksid eesti keele oskust, pöörduti abi saamiseks keeleameti poole, mis ... assiffitseeriti järgmiselt: puudus keeletunnistus ja ei osanud keelt, oli keeletunnistus ja ei osanud keelt ning keeleoskus ... tunnistus ja ei osanud keelt, oli keeletunnistus ja ei osanud keelt ning keeleoskus vastas nõuetele. ... us selgus, et oli ka täiesti legaalse tõendiga inimesi, kes aga keelt ei osanud. ... Kui leiti, et inimene valdas keelt piisavalt, siis anti talle võimalus muretseda endale 1.

On the right side, there is a sidebar with sections: 'Korpus', 'Ajakirjandus I', 'Allikaviited', 'Morfoloogilised tunnused', and 'sõnaliik: \_S\_'. The 'Allikaviited' section lists: 'pealkiri: Siseminister Edgar Savisaar salatseb autor: Kärt Karpa, Kirsi Kender aasta: 1995 undefined: Eesti Päevaleht'.

# Federated Content Search Raba



**RABA**  
ühendatud  
sisuotsing



Simple (CQL)

Advanced (FCS-QL)

Elephant



Search for

Estonian ▼

in

128 selected collections ▼

and show up to

10

hits per endpoint



<https://raba.keeleressursid.ee/>

# Federated Content Search Raba

## Collections

128 selected collections

<input checked="" type="checkbox"/>	<b>Eesti Wordnet</b> - Homepage 🏠 Eesti Wordnet <a href="#">+ Expand (1 subcollections)</a>	🏛️ Eesti Wordnet 📖 Estonian 🔍 CQL
<input checked="" type="checkbox"/>	<b>EKI Sõnaveeb</b> - Homepage 🏠 EKI Sõnaveebis ehk Ekilexis olevad sõnastikud <a href="#">+ Expand (3 subcollections)</a>	🏛️ EKISõnaveeb 📖 Estonian 🔍 CQL
<input checked="" type="checkbox"/>	<b>EKRK KORP</b> - Homepage 🏠 Eesti Keeleressursside Keskuse korpused <a href="#">+ Expand (121 subcollections)</a>	🏛️ EKRK KORP 📖 Estonian 🔍 FCS-QL
<input checked="" type="checkbox"/>	<b>TTÜ keeletehnoloogia labor</b> - Homepage 🏠 TTÜ keeletehnoloogia labori korpused <a href="#">+ Expand (3 subcollections)</a>	🏛️ TTÜ keeletehnoloo... 📖 Estonian 🔍 FCS-QL



<https://raba.keeleressursid.ee/>

# Thank you!

[www.keeletehnoloogia.ee](http://www.keeletehnoloogia.ee)

[ee.clarin.eu](http://ee.clarin.eu)



# Lessons and risks of NPELT

- R&D projects within an open competition do not cover the full spectrum of goals to support Estonian language in technology
- Researchers are mostly interested in a result (prototype) rather than the stable application which can be integrated into software products
- Relation to IT business and production is weak
- NP does not deal explicitly with the education of new generation of language technologists
- Language data is often subject to copyright protection or sensitive personal data