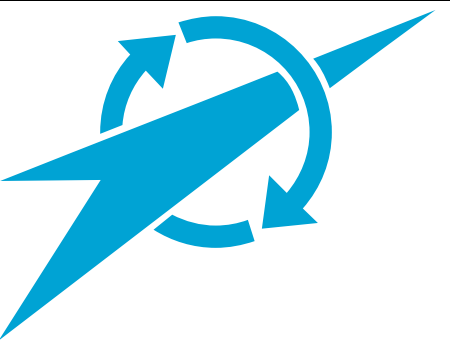


# A Multimodal Database of Russian Sign Language

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## Russian Sign Language as a Low-Resource Language

**Ethnologue**  
Languages of the World

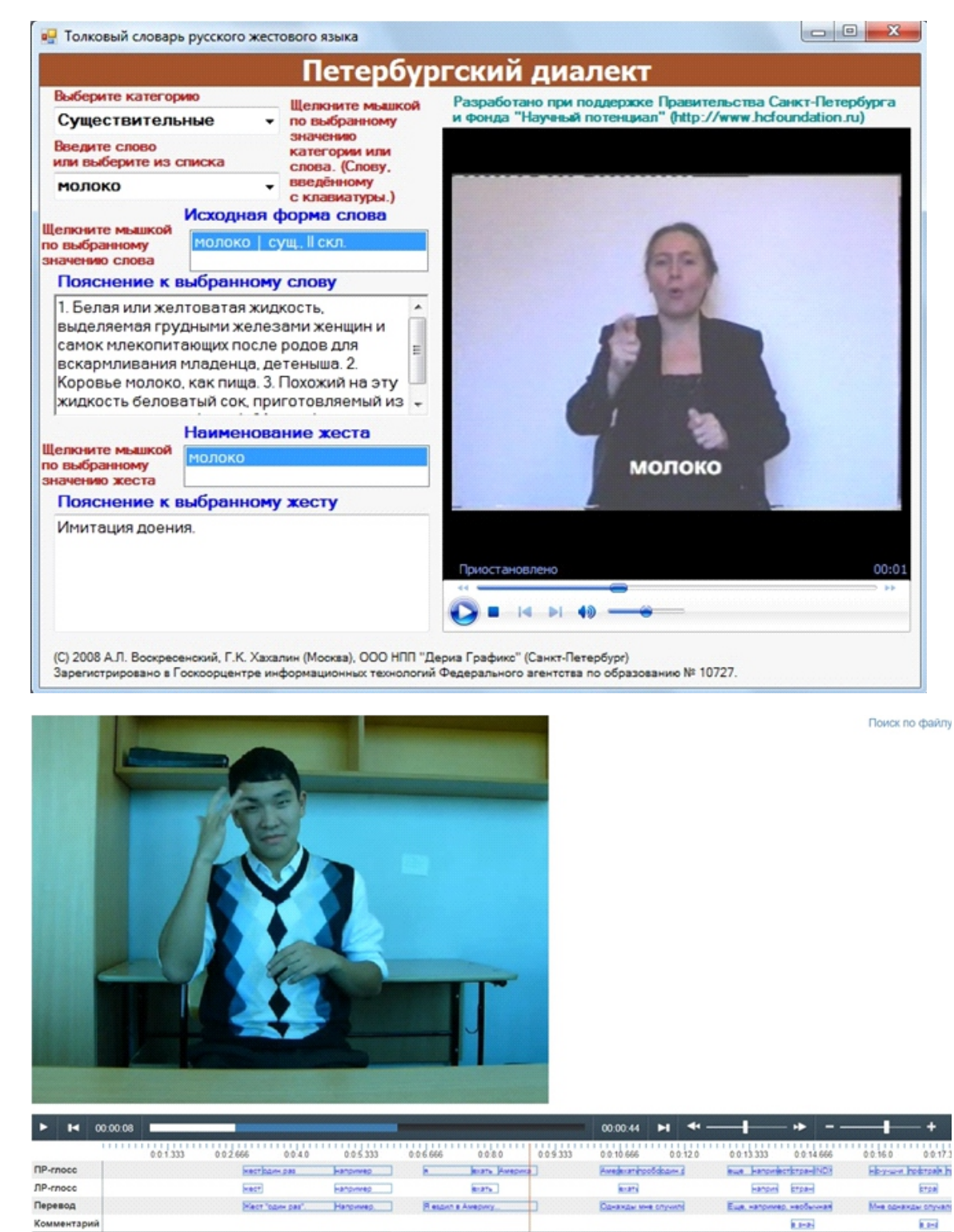
According to the “Ethnologue international catalogue”:  
there are **over 120,000 people** in Russia and its neighboring countries, who use Russian sign language (**RSL**) in everyday life.

- I. The first school for the deaf in Russia **was established in 1806 near St. Petersburg.**
- II. There are **presumably several dialects of RSL**. Investigations reveal at least a number of lexical differences between St. Petersburg, Moscow, and Novosibirsk. However, there has been very little research on grammatical variations in the alleged dialects of RSL.
- III. Dictionaries of RSL comprise **up to 5000 lexical units**. (Everyday words and phrases.) Nonetheless, there is a trend towards presenting **non-colloquial, formal lexica**

Being an independent language with its own grammatical system and vocabulary, RSL has **no writing system**, and books, descriptive grammars, vocabularies and databases therefore **are scarce**.

## Principal Databases of RSL

- ✎ “Thematic dictionary of Russian sign language” developed by the Moscow organization of All-Russian society of the deaf in 2006 (**1480 signs**).
- ✎ “Russian Sign Language Explanatory Dictionary RuSLED” (**2537 videos** with single words and phrases) with etymology of the signs (2002).
- ✎ On-line video dictionary of Russian sign languages, created in the framework of the European project “Spreadthesign” (**14347 videos**, comprising a mixture of words, phrases, utterances and variations).
- ✎ Sign language corpus, recorded by the Novosibirsk State Technical University in 2010-2011 (**230 spontaneous narratives** by 43 native signers, annotated with ELAN tools).
- ✎ Surdoserver on-line dictionary (about **600 words and phrases**)



### SUMMA SUMMARUM:

RSL DB are either **a mixture** of dialectal, colloquial and formal lexical units, or **too small**, or **native signers-oriented**.

None of them was collected in **3D or FullHD**.

## TheRuSLan Database

Multimodality: **FullHD**

**IR**

**depth map**

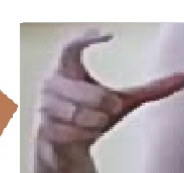
13 deaf signers

164 different lexical units

based on the most reputable  
RSL dictionary (Geilman 2004)



**MS Kinect 2.0**



Class



Phonological  
annotation:  
handshape,  
orientation,  
localization

HamNoSys notation

44 classes identified  
for machine-learning purposes

each handshape and location  
phonologically annotated

Hamburg Notation System  
(HamNoSys)