

### Project name:

A Flexible Interactive Reading Support Tool (FIRST)

**Contract number:** 287607

**Total budget:** €2,507,218.00

### Main goal:

The main goal of this project is to develop and evaluate software that will assist in adapting written documents into a format that is easier to read and understand for people with high-functioning Autism Spectrum Disorder (ASD). It will empower people with ASD to access any document with confidence and autonomy. As a result, their social inclusion will be increased as they gain better access to educational, vocational, cultural and social opportunities in Europe.

### Key issues:

As a result of their condition, people with ASD may experience difficulties in:

- Comprehending speech and writing;
- Interpreting figurative / non-literal language;
- Understanding complex instructions;
- Deriving the meaning or gist of written documents.

### List of participants:

- University of Wolverhampton, UK
- Central and North West London NHS Foundation Trust, UK
- Universidad de Alicante, Spain
- Autisme-Europe aisbl, Belgium
- Universidad de Jaen, Spain
- Parallel World Sdruzhenie, Bulgaria
- Deletrea SL, Spain
- iWeb Technologies LTD, UK
- Kodar OOD, Bulgaria

### Coordinator contact details:

Ruslan Mitkov  
Professor of Computational Linguistics & Language Engineering  
Research Institute for Information and Language Processing  
University of Wolverhampton  
United Kingdom  
Phone: +44 (0) 1902 322 471  
Fax: +44 (0) 1902 323 543  
Email: [contact@first-asd.eu](mailto:contact@first-asd.eu)  
Website: <http://first-asd.eu>



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**Software to simplify  
documents and text  
for people with  
high-functioning autism**

[www.first-asd.eu](http://www.first-asd.eu)

The reading difficulties experienced by people with ASD can present a significant barrier to their participation and inclusion in all aspects of society, including education, employment, health care and social activities.

This software aims to reduce these barriers by providing a tool that empowers people with ASD to read a broad range of documents without assistance. This tool will help to reduce the risk of social exclusion for people with ASD.

As ASD encompasses a spectrum of symptoms that vary in severity among individuals, the software must be personalisable, enabling users to adapt documents to match their own reading and comprehension abilities.

#### **Technical approach:**

The software is being developed by a team of computer programmers who specialise in language technology and experts in the field of autism.

This team will work with a large sample of people who have ASD to research and evaluate the software as a tool for enhancing reading comprehension ability.

The software will utilise language technology to adapt the language used in written documents by reducing complexity, removing ambiguity and improving readability.

This process includes:

1. Replacement of...
  - long complex sentences with several short, simple sentences;
  - long / technical words with short, simple words;
  - non-literal language with literal substitutes.
2. Provision of definitions for ambiguous words and phrases;
3. Addition of...
  - images;
  - concise summaries;
  - document navigation tools for long documents.

#### **Expected achievements / impact:**

The software developed will primarily assist people with ASD to access written information, thereby increasing their quality of life and social inclusion.

The software will also assist clinicians, support workers, teachers and family members by enabling them to provide the most effective support for the understanding of written information. The software can also be helpful for people with low literacy or learning difficulties, as well as people who are learning a foreign language and the elderly.

#### **Priority / priority component:**

The objective of this project is to enhance social inclusion for people with ASD by creating software that adapts documents into a format that is easier for them to read and understand.

This software will address the European Commission's priority need for "Research on ICT for smart and personalised inclusion addressing advanced solutions to improve social and economic inclusion by means of inclusive design, accessible, personalisable and human-ICT interfaces, social computing and advanced solutions for learning and skills acquisition as well as Brain-Neural Computer Interfaces (BNCI)"\*.

\* European Commission, Seventh Framework Programme, Information and Communication Technologies Work Programme 2011-2012, Challenge 5: ICT for Health, Ageing well, Inclusion and Governance, Objective ICT-2011.5.5: ICT for smart and personalised inclusion.