

## Challenge of communication and access to information

Communication and information sharing have always been key elements for the development of societies but these challenges are even greater in modern societies that are increasingly mixed and connected: *e.g.* French and Mexican students may have to work together, a Romanian biologist needs access to research articles published by colleagues from any country, the patients want to understand the scientific literature produced by medical professionals. The goal is to help individuals to communicate with each other across the boundaries of language and expertise and to appropriate the information they want to access, and that may difficult to find, understand or translate into their language.

The Labex EFL tackles this challenge of communication and access to information.

Communication between humans must be mediated whenever it is hampered by the language barrier (problem of automatic translation), by disability or distance (issue of speech synthesis and recognition) or by the degree of specialization (mediation issue). By modelling and documenting a large number of languages, the Labex EFL has embarked on a vast effort to develop resources (corpus and analysers) for of low-ressourced or non-standard languages such as tweets. This effort will be continued in the years to come. Research on spoken language is crucial for the improvement of conversational agents or linguistic mediation tools facilitating communication between people. Based on its results on multilingualism, natural language processing and speech processing, the Labex EFL is committed to designing devices to help actors from different cultures and languages to get in touch and exchange.

Access to information raises other challenges. The first one is related to scale because we have to analyse, translate and / or index large volumes of data, which implies to implement robust analysers and/or to learn them from of annotated corpora. It is also important to design tools for querying, exploring and retrieving information in line with user expectations, beyond general search engines. For example, one aim is to develop for jurists document searching tools that take into account the status and interconnection of legal sources and complex search criteria adapted to legal reasoning. Labex EFL members also aim at designing social networks watch tools to detect and accompany crisis situations reading aids that help users navigating complex texts such as a corpus of philosophical works. In line with past work on automatic reading and the semantic information retrieval, the Labex EFL aims to design tools for annotation, exploration and, more broadly, access to information.

To meet these challenges of communication and access to information, the labex EFL aims to develop resources – corpus and software tools – which will be made freely available, to design proof of concept applications but also to industrialize tools in partnership with institutional and industrial actors, providers of data (eg BNF, tweeter) or software editors.