



Towards the next generation of voice interaction technology



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The scientists from the COMPRISE project are giving themselves three years to develop the next generation of voice interaction technology. It will be more affordable, inclusive and, above all, secure. The COMPRISE project (Cost-effective, Multilingual, Privacy-driven voice-enabled Services) is a Research and Innovation Action (RIA) funded by the European Union's Horizon 2020 programme, and led by Emmanuel Vincent, a researcher at Inria Nancy-Grand Est. The six international partners in the consortium recently met in Paris to officially start the project.

Towards innovative voice interaction technologies

Voice-operated technologies and tools have multiplied in recent years: from Amazon's Alexa to voice-controlled radios or TVs, voice is rapidly replacing touch or text as the main means of interaction with modern devices. COMPRISE aims to support, and even lead on, this expansion by providing the tools and methodology to make voice interaction more secure, more cost-effective, and more inclusive for a variety of languages.

Due to the cost of voice data collection and labelling, current voice interaction technologies have a strong bias in favour of languages with a wider user base (such as English), thus potentially excluding some users. In addition, they often rely on cloud-based algorithms to analyse voice signals, but there are few guarantees (if any) regarding how data stored in the cloud is used and will be used in the future by these companies. The scientists will rely on deep learning methodologies to improve speech-to-text and machine understanding of different languages. In addition, they aim to create a methodology that will protect the users' data, in order to ensure their privacy.

"User's trust and security are essential to ensure that innovative and disruptive technologies can emerge and spread widely," explains Emmanuel Vincent. "We aim to develop the technical tools and methods to make voice-interaction innovations a reality for the wider public."

Such innovations are expected to provide a strong basis for SMEs and European companies at large to design new services and expand.

An international and industry-oriented consortium

The COMPRISE project will last for 36 months. It will be led by Inria, and involve the following organisations:

- Institut National de Recherche en Informatique et Automatique (Inria - France) www.inria.fr
- Universität des Saarlandes (Germany) www.uni-saarland.de/nc/startseite.html
- Netfective Technology SA (France) www.bluage.com/about-us
- Ascora GmbH (Germany) <https://ascora.net/>
- TILDE SIA (Latvia) www.tilde.com/
- Rooter Analysis SL (Spain) www.rooter.es/

More information related to the COMPRISE project is available on the project's website:
www.compriseh2020.eu

Additionally, you can learn more about COMPRISE on social media:

LinkedIn: <https://www.linkedin.com/company/comprise-h2020>

Twitter: <https://twitter.com/compriseh2020>

About Inria: Inria, the French national research institute for the digital sciences, promotes scientific excellence and technology transfer to maximise its impact. It employs 2,400 people. Its 200 agile project teams, generally in collaboration with academic partners, involve more than 3,000 scientists in meeting the challenges of computer science and mathematics, often at the interface of other disciplines. Inria works with many companies and supported the creation of over 160 startups. It strives to meet the challenges of the digital transformation of science, society and the economy.

The Inria Nancy – Grand Est research centre was founded in 1986 to contribute to the economic revival of the region. It grew steadily from 7 project-teams and 50 people in 1990, to 21 project-teams and 450 people today, across three sites: Nancy, Strasbourg, and Saarbrücken. The Inria Nancy - Grand Est research centre develops most of its scientific activities in partnership with the French National Centre for Scientific Research (CNRS), the University of Lorraine and the University of Strasbourg. It also maintains close ties with other research institutes and universities from the wider region, mainly in Saarbrücken and Luxembourg. Its research is structured around five main broad topics that you can find online: <https://www.inria.fr/en/centre/nancy/overview/inria-nancy-grand-est-centre>

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