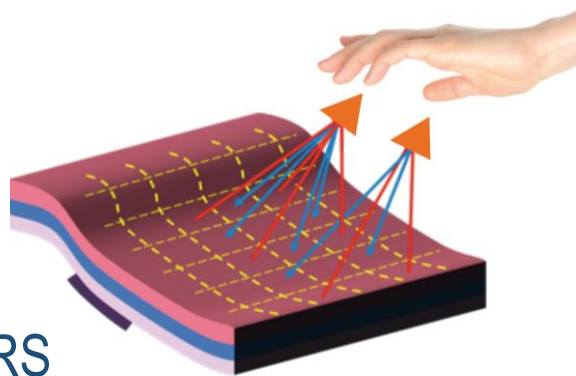




(ULTRA)SOUND INTERFACES AND LOW ENERGY INTEGRATED SENSORS



OBJECTIVES

SILENSE researches acoustic technologies and develops concepts to activate and control devices by gesture, data communication, and indoor positioning, exclusively based on these innovative technologies. These concepts can be used in different domains:

- wearables,
- automotive,
- smart home.

RELEVANCE AND IMPACT

Humans communicate mainly with speech and body gestures. The technologies SILENSE is to develop, take the way we naturally communicate one step further - from communication between humans, to communication between humans and objects. This will become increasingly important in an IoT dominated world. The application of the developed technologies in numerous areas will bring lot of benefits to the general public ranging from enhanced user experience to improved health and safety.

APPLICATION AREAS

- **Intuitive user interface in mobile and wearable devices:** creation of interfaces, allowing audio sensing for the activation and control of mobile devices without touching them.
- **Improved hygiene by touchless control:** implementation of technologies enabling touchless control of objects can lead to improved hygiene conditions in buildings, hospitals and home.
- **Enhanced safety by touchless control:** sound/voice activation/control of systems in cars (navigation, entertainment, air condition) and control of machinery in industrial applications.
- **Enhanced security by gestural authentication:** to ensure stronger authentication process, gestural identification increases the diversity and the robustness of authentication scenarios.
- **Enhances quality of life** for disabled persons, hearing impaired or elderly unable to move much it will ease the interaction audio and gesture recognition.

TECHNICAL INNOVATION

SILENSE will develop and improve smart acoustic technology blocks on different levels – hardware, software and system – to achieve these many applications. It will lower the cost and energy consumption whilst improving the performance of micro-acoustic transducers. SILENSE develops package and assembly technology. More specifically heterogeneously and monolithically integrated arrays of micro-acoustic transducers with their supporting electronics. The project also provides dedicated low-power IC design. SILENSE will provide smart algorithms for acoustic data communication and sensing, thus enabling the combination of voice/speech, digital sound modulation and gesture control by means of the same transducer(s).

SILENSE is a 36-months project co-financed by the European Union's HORIZON 2020 programme and coordinated by NXP Belgium.

www.silense.eu

SILENSE CONSORTIUM

Partnership of 31 highly specialized organizations from industry and academia of 9 European countries.

Austria

- CARINTHIAN TECH RESEARCH AG
- INFINEON TECHNOLOGIES AUSTRIA AG
- LINZ CENTER OF MECHATRONICS GMBH
- UNIVERSITÄT LINZ

Belgium

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- INSTITUT OF MICROELECTRONIC APPLICATIONS
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- FUNDACIÓN PRODINTEC
- GRUPO ANTOLIN INGENIERIA S.A.

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