



PRESS RELEASE

MEMS Microphones from STMicroelectronics Build the Foundation of Future Voice-Enabled Homes

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The world-class expertise in MEMS microphone and audio processing technologies of **STMicroelectronics (NYSE: STM)**, a global semiconductor leader serving customers across the spectrum of electronics applications, will play a pivotal role in the European research project on 'Distant Speech Interaction for Robust Home Applications' (DIRHA). The three-year program aims to investigate and prototype solutions for natural voice-enabled interaction between humans and machines in tomorrow's smart homes.

The DIRHA project sets to address the challenge of distant speech interaction in multi-noise, multi-speaker situations of a home environment. The goal is to create a pervasive, always-listening sound space, where users needn't speak into the microphone to get recognized and understood, but the system reaches out, acoustically, to the speakers regardless of their position within the home.

The physical and acoustic parameters of ST's MEMS microphones perfectly fit the challenging requirements of distant-speech interaction systems. The small form factor allows the researchers to easily embed entire arrays of microphones in the walls, desks, or speech-enabled appliances of the automated home, while the microphones' excellent acoustic characteristics, coupled with sophisticated signal-processing technologies, will make it possible to identify and capture an individual speaker from several meters away, in a crowded room with music playing.

The distant-speech interaction capability will not only dramatically change the way people interact with technology, but can make a real difference for those who can't easily move around, such as the elderly or the motor-impaired. In addition to the home scenarios, the distant-speech interaction systems can find use in robotics, telepresence, surveillance and industry automation.

The DIRHA program is organized into a number of work packages, spanning a total duration of 36 months, and the total cost of the project is 4.8 million euros. The main fields of research include multi-channel acoustic processing, distant-speech recognition and understanding, speaker identification/verification, and spoken-dialogue management in four languages - German, Greek, Italian and Portuguese. The final prototypes will be integrated in pilot households and evaluated by real users.

The DIRHA participants are Fondazione Bruno Kessler, Italy (project coordinator); Athena Research and Innovation Center in Information Communication & Knowledge Technologies, Greece; DomoticArea, Italy; INESC ID - Instituto de Engenharia de Sistemas e Computadores, Investigação e Desenvolvimento em Lisboa, Portugal; NewAmuser, Italy; STMicroelectronics, Italy; and Technische Universitaet Graz, Austria.

For more information, please go to <http://dirha.fbk.eu>

About STMicroelectronics

ST is a global leader in the semiconductor market serving customers across the spectrum of sense and power technologies and multimedia convergence applications. From energy

management and savings to trust and data security, from healthcare and wellness to smart consumer devices, in the home, car and office, at work and at play, ST is found everywhere microelectronics make a positive and innovative contribution to people's life. By getting more from technology to get more from life, ST stands for [life.augmented](#).

In 2011, the Company's net revenues were \$9.73 billion. Further information on ST can be found at www.st.com.