

# Press Release

Erlangen,  
September 28, 2011

Visit us at **Metering Europe**  
October 4 – 6, 2011, Amsterdam  
Booth B86

## Smart Metering – no Battery, no Wire

Fraunhofer IIS will present its resource-efficient smart metering solutions at the Metering Europe 2011 exhibition from October 4 to 6 in Amsterdam. Utility consumption data can be continuously radio read and transmitted using self-sufficient power supply.

Researchers of Fraunhofer IIS have consolidated their competencies in the areas energy harvesting and sensor network technology. By combining the in-house s-net technology for highly energy efficient, wireless networks with pioneering energy harvesting technologies, they are taking another step towards a greener future.

s-net facilitates automatic remote reading of home supply meters for gas, water, electricity and heat. End consumers have a much higher transparency of what they consumed and billing can be based on consumption-based tariffs and accurate estimates. s-net's dynamic network structure and self-organizing topology require minimum configuration and maintenance while providing a high level of robustness. Bidirectional multi-hop meter to meter communication eliminates radio cell range restrictions. Control commands are sent directly to the smart meters, which can be installed precisely where needed. The meters network independently and do not require wiring, allowing easy replacement during operation.

Powered by energy harvesting technologies, the sensor networks are extremely flexible as they operate without battery. Conventional power generating systems are replaced by

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technologies, which generate energy available in the natural environment, like temperature gradients or ambient vibrations.

Energy harvesting offers the unique potential to supply energy-efficient sensors and radio transmitters with infinite clean power. Measuring systems powered by energy harvesting technologies are particularly suitable for difficult-to-access areas. Energy harvesting technologies are offered as stand-alone components as well as turnkey or customized systems for system and device integration.

## **Background: Fraunhofer IIS s-net technology**

The Fraunhofer IIS s-net technology combines all key components for radio-based smart metering systems: Hardware design for the radio modules in the meter, modular application and service modules, and individually adaptable protocol software to network the radio nodes. Flexible interfaces integrate the specific meter and meter protocol applications into the s-net system environment. Ultra-low power consumption allows for battery operated systems with up to twelve years of battery lifetime.

Fraunhofer experts will showcase demonstrations of various application scenarios at the Metering Europe in Amsterdam, booth B86.

## About Fraunhofer IIS

Founded in 1985 the Fraunhofer Institute for Integrated Circuits IIS in Erlangen, today with more than 750 staff members, ranks first among the Fraunhofer Institutes concerning headcount and revenues. As the main inventor of mp3 and universally credited with the co-development of AAC audio coding standard, Fraunhofer IIS has reached worldwide recognition. It provides research services on contract basis and technology licensing.

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The research topics are: Audio and video source coding, multimedia realtime systems, digital radio broadcasting and digital cinema systems, integrated circuits and sensor systems, design automation, wireless, wired and optical networks, localization and navigation, imaging systems and nanofocus X-ray technology, high-speed cameras, medical sensor solutions and supply chain services. The budget of more than 92 million Euro is mainly financed by projects from industry, the service sector and public authorities. Less than 25 percent of the budget is subsidized by federal and state funds.

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