

Press Release

Erlangen,
February 27, 2012

Energy-efficient, Smart, Networked – Innovative Embedded Systems Heading for Success

Visit us at the embedded world
February 28 – March 1, 2012
Nuremberg, Germany
Hall 4, Booth 128

2. embedded Talk
February 29, 10.30 a.m.
Hall 5, Exhibitor Forum

Mobile, energy-efficient solutions with great flexibility in adapting to new requirements and changing ambient conditions pose challenges for the design and development of embedded systems. At the embedded world fair 2012 in Nuremberg, Fraunhofer Institute for Integrated Circuits IIS features new generation solutions and results: guaranteeing self-sufficient, long-term operation of embedded sensors and wireless communications technology based on energy harvesting technologies or intelligent energy concepts.

At the Fraunhofer IIS racetrack in hall 4-128, engineers will showcase innovative embedded communications and energy technology. On board a radio-controlled model car, a miniature HDTV camera sends high-resolution image sequences via an integrated DVB-T transmitter directly from the track to the monitor.

Oops, off-road course! Each bump means information for the data logger in the race car. The device stores data for the characterization of vibration energy. This way the degree of utilization of the energy source can be estimated for harvesting energy from the environment to intelligently and efficiently power e. g. low consumers or sensors in vehicles.

Wireless communication – intelligent control: energy-efficient, wireless sensor networks based on the s-net® technology are ideal for data acquisition, tracking and control applications. Ranging from simple point-to-point data transmission to large-scale, self-organizing communication networks, the

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patented single-frame multi-hop method of the s-net® technology for fast data-throughput optimizes applications in the areas smart metering, logistics as well as process control and supervisory control.

As much as necessary, as little as possible. The same applies when it comes to the power supply of embedded systems. In the scope of the European research project Smart Power Management, Fraunhofer IIS develops together with industrial partners a new power supply concept. The new power supply unit can be used for industrial embedded computers, build up with so-called computers-on-modules (COM). Compared to conventional power supplies, the energy required is reduced by up to 20 percent.

All-in-one chip: with the non-contact joystick control for the driver's cab, Fraunhofer IIS demonstrated excellence as specialists for IC design of sophisticated integrated sensor technology and systems. The integrated 3D magnetic field sensor HallinOne® allows for the measurement of five degrees of freedom. The IC designers also present a single-chip solution for the navigation and control of vehicles with GPS-Galileo-Glonass receivers.

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Embedded Talk at the Exhibitor Forum Hall 5

M³ – Multistandard, Miniaturized and Mobile: the partners of the ESI Application Center present innovations in the area embedded wireless communication, technology trends in embedded miniaturized antennas and the latest developments in antennas for automobiles, cellular telephony and base

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stations. ESI's industrial partners have access to the latest research results, are provided with the possibility to cooperate in development projects and to find cooperation partners. The initiative bundles competencies from university-based applied research and industrial development.

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.

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 95 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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