

PRESS RELEASE

PRESS RELEASEMarch 21, 2013 || Page 1 | 2

Fraunhofer IIS to Showcase Embedded Wireless Technologies at Hannover Messe 2013

Industry's need for process integration and hence for information about the current status of processes has led to an increase in the use of embedded wireless technologies. The exchange of data and information between plant and machinery, work pieces and components is becoming ever more important. This presents the manufacturing and supply chain sectors with new challenges, which will be one of the themes of Hannover Messe 2013. The Fraunhofer Institute for Integrated Circuits IIS will be showcasing relevant technologies in the Wireless Pavilion (Hall 8). Its exhibits will demonstrate solutions for object identification as well as for recording and transmitting sensor data.

Object identification using RFID

One of the technologies showcased will be radio frequency identification (RFID), which is used for non-contact, non-line-of-sight identification of objects, known as bulk reading. In order to additionally collect ambient data, passive RFID tags can be combined with sensors. Embedding RFID tags and sensors in materials such as fiber-reinforced composites or metal dramatically increases product safety and security, which can be of decisive importance, for example for applications in aviation or wind farm construction. RFID can also be used to equip products with embedded anti-counterfeiting features.

s-net®: object identification, condition monitoring, tracking

Fraunhofer will also showcase a technology which goes beyond object identification in that it enables recording and transmission of sensor data or stored additional data. Wireless sensor networks using the s-net® technology collect, record, process and communicate current condition data such as temperature. Thanks to the s-net®-Smart Applications technology, it is possible to implement applications in wireless sensor networks using a universal configuration language, i.e. without directly programming firmware. This makes it far easier to create custom applications.

Apart from object identification and condition monitoring, s-net® makes it possible to track objects and so continuously control material flows. This ensures that tools, spare parts, materials or semi-finished products are in the right place at the right time and in the right condition.

Editorial Notes

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FRAUNHOFER-INSTITUT FOR INTEGRATED CIRCUITS IIS**BlackFIR®: tracking for manufacturing environments**

Tracking technologies such as BlackFIR® can help improve automation and manufacturing processes and thus save energy and resources. Based on companies' requirements, Fraunhofer IIS implements client-specific tracking solutions.

PRESS RELEASEMarch 21, 2013 || Page 2 | 2

Technologies for wireless data communication

Wireless communication systems are used for applications which, in addition to object identification and tracking, require data transmission. These include:

- Narrow-band telemetry systems: parallel, direct, point-to-point transfer of sensor data and control information over several kilometers for automation purposes.
- Self-organizing sensor networks: interconnected wireless nodes for data acquisition over large areas.
- Broadband data transmission: transfer of high-resolution data, e.g. image data for industrial environments
- Combined voice and data communication: specific standards, such as DECT (Digital Enhanced Cordless Telecommunications), for combined voice and data communication in reserved frequency bands, e.g. professional audio conferencing systems for challenging production environments.

For each of these applications, Fraunhofer IIS offers an appropriate technology which can be adapted to specific automation and manufacturing environments.

You can find Fraunhofer IIS at Hannover Messe 2013 (April 8–12, 2013): Visit booth D 38/1 in the Wireless Pavilion, Hall 8.



Up-to-date process status information: The s-net®-Smart Applications technology makes it possible to quickly modify applications in wireless sensor networks without directly programming firmware.
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