

# PRESS RELEASE

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## 868 MHz Traffic Detective – A Cost-Efficient and Mobile Tool for Wireless Analysis

**Nuremberg, 24<sup>th</sup> February 2015 – embedded world, Hall 4, Stand 548: In the license-free frequency bands there are more and more wireless applications arise. The increased number of communication nodes leads to overcrowding, collisions, and loss of data. Researchers at the Fraunhofer Institute for Integrated Circuits IIS have developed the Traffic Detective which aids in analyzation of wireless traffic. Using a DVB-T USB receiver, this Android app allows classification of several well-known communication standards in the 868 MHz frequency band.**

### Traffic Detective – A User-Friendly, App-Based Wireless Analysis Tool

Many analytical tools for wireless networks have a high purchase price, require special expertise, and are often not suitable for mobile use. Often a simple and user-friendly tool will be completely sufficient. Fraunhofer IIS has developed an easy to use Android app that uses a DVB-T receiver to analyze the license-free 868 MHz frequency band. Different standards can be recognized locally and without specific knowledge. The Traffic Detective is a valuable radio analysis tool for areas such as Smart Metering, home and building automation, Ambient Assisted Living as well as for industrial production and communication environments.

### Well-Prepared for Applications of the Digital and Interconnected Age in the 868 MHz-Band

Wireless communication becomes more important in many areas of daily life. For this reason, the number of radio based communication nodes increased considerably which can lead to overcrowding of available frequency bands. This might result in collisions and loss of data within individual nodes. During the planning and installation of wireless networks, it will be necessary to detect and evaluate the existing utilization of the radio channels. This is particularly true if a high reliability of wireless communication is necessary for an offered service such as alarm messages. The Traffic Detective is therefore a versatile and mobile tool which is intended for use in planning, fault diagnosis, detect attacks on the wireless network as well as searching for deliberately induced disturbances.

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#### Editorial notes

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### Combination of Classification Algorithm and DVB-T Stick for Use on a Tablet

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Using a feature-based classification algorithm, the Traffic Detective identifies the received wireless standards and graphically displays their occurrence and occupancy on a tablet. In addition, the received signals are visualized in time and frequency range. As a radio receiver, we use a commercially available DVB-T USB stick. The digital signal processing and graphical representation are done inside the Android app. The Traffic Detective automatically recognizes the most common radio standards in the 868 MHz - band:

- ZigBee / IEEE 802.15.4
- Wireless M-Bus / DIN EN 13757-4
- KNX RF / DIN EN 13757-4
- EnOcean Radio Protocol / ISO / IEC 14543-3-10
- s-net®



**868 MHz Traffic Detective – for cost-efficient and mobile planning and troubleshooting in wireless networks.** © Fraunhofer IIS | Picture in color and print quality: [www.iis.fraunhofer.de/pr](http://www.iis.fraunhofer.de/pr)

**FRAUNHOFER INSTITUTE FOR INTEGRATED CIRCUITS IIS****Unique Selling Proposition and Possible Extensions**

The Traffic Detective runs on mobile devices with Android operating system. Since commercially components can be used, it is a cost-effective analysis tool. The user can easily and quickly use the Traffic Detective without deep technical knowledge. Customer-specific adaptations such as the integration of additional wireless standards or analysis of other frequency ranges as well as individual functional extensions like statistical and long-term analysis, or detailed customer specific graphics are possible.

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**Event information**

Presentation »A User-Friendly Android-Based Tool for 868 MHz RF Traffic- and Spectrum-Analysis«, Nuremberg, embedded world Conference, Session 13, 25<sup>th</sup> February 2015, 2:30 pm, Dipl.-Inform. Jens Saalmüller, Fraunhofer IIS.

For more information, please visit [www.iis.fraunhofer.de/trafficdetective](http://www.iis.fraunhofer.de/trafficdetective)

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The **Fraunhofer-Gesellschaft** is the leading organization for applied research in Europe. Its research activities are conducted by 67 institutes and research units at locations throughout Germany. The Fraunhofer-Gesellschaft employs a staff of more than 23,000, who work with an annual research budget totaling 2 billion euros.

Founded in 1985, **Fraunhofer Institute for Integrated Circuits IIS** in Erlangen, Germany, 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. In close cooperation with partners and clients the Institute provides research and development services in the following areas: Audio & Multimedia, Communications Systems, Energy Management, IC Design and Design Automation, Imaging System, Medical Technology, Non-destructive Testing, Positioning, Safety and Security Technology, Sensor Systems plus Supply Chain Management.

More than 830 employees conduct contract research for industry, the service sector and public authorities. Fraunhofer IIS with its headquarters in Erlangen, Germany, has further branches in Dresden, Fuerth, Nuremberg, Coburg, Deggendorf, Ilmenau, Wuerzburg, Bamberg and Waischenfeld. The budget of 108 million euros is mainly financed by projects. Less than 25 percent of the budget is subsidized by federal and state funds.

Detailed information on [www.iis.fraunhofer.de/en](http://www.iis.fraunhofer.de/en).