

PRESS RELEASE

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Launch of “5G Bavaria” initiative

Erlangen/Munich: The Fraunhofer Institute for Integrated Circuits IIS is launching a 5G initiative in Bavaria. The “5G Bavaria” initiative supports the transition from research on the new 5G mobile communication standard to its application. Specifically, 5G Bavaria involves a test center at Fraunhofer IIS in Erlangen and various testing environments in Bavaria. Here, companies evaluate new mobile communications functionalities in a 5G overall system context by means of simulation and emulation in the laboratory as well as in an actual mobile communications environment.

In the future, the new 5G standard is to deliver more than we are accustomed to from mobile communications. But the transition from standardization to application is complex, especially given that there can easily be a period of three to four years between defining new 5G functions for a particular release and making these available on the market. During this phase, testing and developing future-viable communications applications is almost impossible without suitable testing facilities. The new 5G test center at Fraunhofer IIS in Erlangen and various 5G testing environments (test beds) in Bavaria will simplify this. The project is sponsored by the Bavarian Ministry of Economic Affairs, Regional Development and Energy. Bavaria’s economic affairs minister, Hubert Aiwanger, says: “5G is the fundamental technology for digitization and is important for numerous future technologies such as Industry 4.0, automated driving, medical technology, or intelligent energy systems. We have to defend and strengthen our leading position in this area.”

5G test center at Fraunhofer IIS in Erlangen

“At the test center, users will receive, in an uncomplicated way, consultation on the current usability of 5G for their application,” explains Bernhard Niemann, 5G project head at Fraunhofer IIS. “The test center at Fraunhofer IIS is intended to be the first stop for the implementation of planned 5G applications.” New communication technologies will be simulated at the test center: for example, in order to predict whether they meet the demands of the respective planned applications, or to compare the performance of different technological approaches. If the simulation shows promising results, the first hurdle has been cleared. The next step is emulation, that is, real time testing of wireless technologies in realistic application scenarios. These conditions are created using specialized software and hardware.

Head of Corporate Communications

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FRAUNHOFER INSTITUTE FOR INTEGRATED CIRCUITS IIS**5G test beds in Bavaria**

To complement the 5G test center, Fraunhofer IIS is preparing the setup and operation of an Industry 4.0 test bed in Nuremberg and an automotive test bed in Rosenheim. In Würzburg, a pilot study for a 5G satellite test bed is being created. The test beds are designed to serve the testing of operators' concrete 5G application cases in order to test the possibilities and limits of 5G technology – before 5G networks become extensively available. The 5G testing environments will incorporate real infrastructure such as freeways and industrial buildings to realize initial 5G applications in Bavaria at a small scale.

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The Fraunhofer-Gesellschaft is the leading organization for applied research in Europe. Its research activities are conducted by 69 institutes and research units at locations throughout Germany. The Fraunhofer-Gesellschaft employs a staff of 24,500, who work with an annual research budget totaling more than 2.3 billion euros.

The **Fraunhofer Institute for Integrated Circuits IIS** is one of the world's leading application-oriented research institutions for microelectronic and IT system solutions and services. It is the largest of all Fraunhofer Institutes. Research at Fraunhofer IIS revolves around two guiding topics: In the area of **"Audio and Media Technologies"**, the institute has been shaping the digitalization of media for more than 30 years now. Fraunhofer IIS was instrumental in the development of mp3 and AAC and played a significant role in the digitalization of the cinema. Current developments are opening up whole new sound worlds and are being used in virtual reality, automotive sound systems, mobile telephony, streaming and broadcasting.

In the context of **"cognitive sensor technologies"**, the institute researches technologies for sensor technology, data transmission technology, data analysis methods and the exploitation of data as part of data-driven services and their accompanying business models. This adds a cognitive component to the function of the conventional "smart" sensor.

970 employees conduct contract research for industry, the service sector and public authorities. Founded in 1985 in Erlangen, Fraunhofer IIS has now 14 locations in 11 cities: Erlangen (headquarters), Nuremberg, Fürth, Dresden, further in Bamberg, Weischenfeld, Coburg, Würzburg, Ilmenau, Deggendorf and Passau. The budget of 184 million euros is mainly financed by projects. 22 percent of the budget is subsidized by federal and state funds.

Detailed information on: www.iis.fraunhofer.de/en