# PRESS RELEASE

## Fraunhofer assists with the development of the Coronavirus Warning App

**Munich/Erlangen, Germany: Germany has launched its own Coronavirus Warning App on Tuesday, June 16, 2020. Released by the Robert Koch Institute (RKI), following development by SAP SE and Deutsche Telekom AG, the new app could prove a key digital component in the fight to control and contain the current coronavirus pandemic. The Fraunhofer-Gesellschaft continues to be closely involved in technical aspects of the project – in particular, key components used to estimate physical distance by means of the exposure notification API (application programming interface).**

"Since the end of April, the Fraunhofer-Gesellschaft has been advising the consortium around SAP and Telekom on the important project of developing a German coronavirus warning app under the auspices of the RKI," explains Fraunhofer President Prof. Reimund Neugebauer. In particular, the Fraunhofer Institute for Integrated Circuits IIS has been assisting with the specific technical challenge of optimizing the use of the exposure notification API for the purpose of estimating physical distance. Researchers have drawn on many years of experience in the development of technology to estimate the distance between moving persons by means of signal transfer between two devices on the basis of the Bluetooth® Low Energy standard."

"Fraunhofer IIS advises the project consortium of SAP and T-Systems on specification and use, supports with testing the exposure notification API to the Google und Apple operating systems, and offers guidance for implementation," says Prof. Albert Heuberger, director of Fraunhofer IIS. "We provide technical support, evaluate technical documentation and assist with the harmonization of various functions and formats. In addition, we conduct comparative tests to check the accuracy of the estimates of physical distance. These tests have identified where improvements can be made, for example, to the API and calibration of antenna; both of these issues have now been addressed or resolved by the OS providers."

### Methodologically correct API testing in simulated everyday situations

For this purpose, tests were carried out in simulated conditions designed to correspond to real-life situations. The API was tested in everyday scenarios such as traveling by public transport, waiting in line, dining in a restaurant and being at a party. Each of

these scenarios was defined by the RKI. The results were then discussed with project partners SAP, Deutsche Telekom and the RKI. In addition, the configuration of the app was adjusted in collaboration with the RKI. "These tests combine a dynamic change of location of test persons along with real-time reference estimates of the actual distance between them," explains Steffen Meyer, head of the Cooperative Systems and Locating Group at Fraunhofer IIS. "The only facility where such tests can be conducted in this form and in a methodologically correct manner is the Nuremberg Test and Application Center L.I.N.K of Fraunhofer IIS."

Bluetooth® Low Energy can be used to detect other Bluetooth® devices in the immediate vicinity. Proximity is a necessary but the only criterion for evaluating the risk of infection. The responsibility for determining this lies with the epidemiological community, including the RKI. Device calibration is now being undertaken by providers or manufacturers. The measurements conducted by the app, and the frequency with which these are made, are on the basis of the technical framework currently provided by Google and Apple – the OS (and device) providers and thereby also providers of the corresponding Bluetooth® interface.

Back in April, Fraunhofer placed its work towards an app to fight the coronavirus at the disposal of efforts to produce a solution on the federal level. The idea that the analytic labs responsible for processing PCR tests for COVID-19 should be connected to the app was also first raised by Fraunhofer and has now been adopted in the actual solution. In addition, Fraunhofer has submitted ideas for further possible components such as the voluntary provision of ancillary data to the RKI for future research on the pandemic.
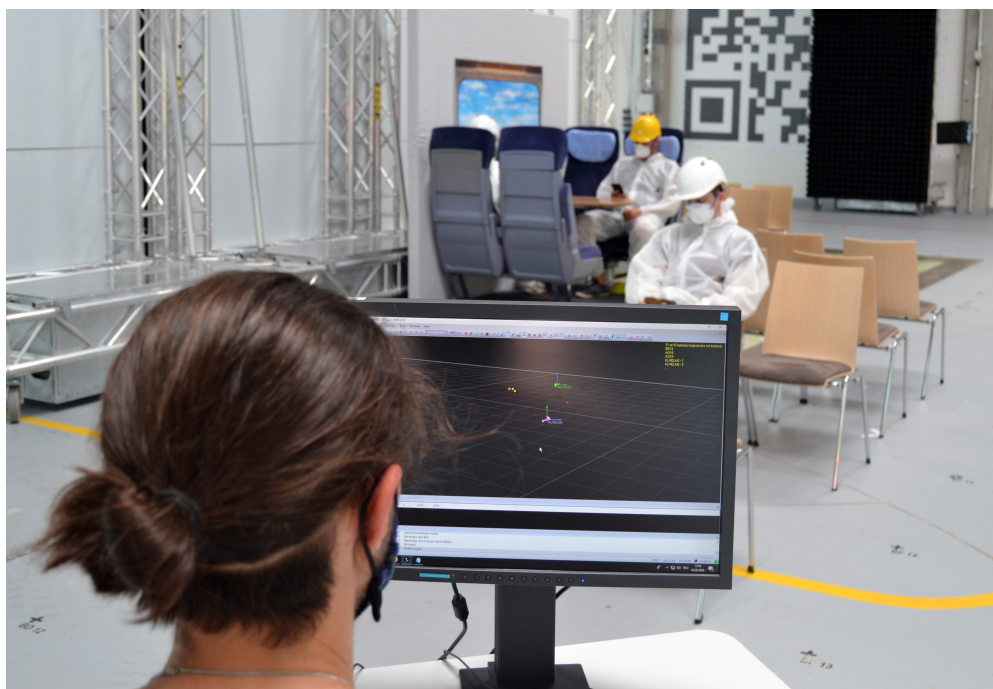
**Testing of the exposure-notification API (application programming interface) for SAP and T-Systems under lab conditions modified to simulate real-life situations. This provides the basis for further improvements during the project partners' implementation of the Coronavirus Warning App. © Fraunhofer IIS**

The Fraunhofer-Gesellschaft is the leading organization for applied research in Europe. Its research activities are conducted by 74 institutes and research units at locations throughout Germany. The Fraunhofer-Gesellschaft employs a staff of 28,000, who work with an annual research budget totaling 2.8 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.

More than 1100 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, Waischenfeld, Coburg, Würzburg, Ilmenau, Deggendorf and Passau. The budget of 169.9 million euros is mainly financed by projects. 26 percent of the budget is subsidized by federal and state funds.

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