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Ceremony to mark the start of the anniversary year / Statement of intent to set up Institute for Cognitive Systems

70 years of Fraunhofer – 70 years of future

The Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V. was founded in Munich on March 26, 1949, to help rebuild Germany's economy. It is celebrating its 70th anniversary in 2019, as are the Federal Republic of Germany and its constitution, the Basic Law. With its clear focus on new key technologies and markets, the Fraunhofer-Gesellschaft has become the German economy's innovation engine and Europe's leading organization for applied research. The anniversary year is an occasion for the Fraunhofer-Gesellschaft not only to look back, but also to look ahead to the future by preparing strategic initiatives for Germany and Europe. The anniversary year will kick off with a ceremony on the date of the founding, followed by a Bavarian State Reception in Munich. The Ludwig-Maximilian-Universität München (LMU) and the Technical University of Munich (TUM) will join the Fraunhofer-Gesellschaft at the event to state their intent to establish an Institute for Cognitive Systems in Bavaria.

"The future has always been the force that drives the Fraunhofer-Gesellschaft. How do we build smart, universally trusted machines? How do we manufacture drugs that provide faster, more affordable relief to patients? How do we live up to the responsibility of making everyone feel safe? We answer these questions as researchers and entrepreneurs, and see ourselves as responsibility-minded pacesetters for the economy and for society," says Fraunhofer president Prof. Reimund Neugebauer, describing the organization's mission. A ceremony to be held on March 26, 2019, at the Bavarian Ministry of Economic Affairs will commemorate the Fraunhofer-Gesellschaft's 70-year success story. With the motto "Research for Europe" setting the tone, it will also look ahead to the global innovation stakes at the crossroads of business and science. Distinguished policymakers from Munich, Berlin and Brussels will be on hand, as will select entrepreneurs and scientists, including Bavaria's Minister President Dr. Markus Söder and Minister of State Hubert Aiwanger, Germany's Federal Minister of Education and Research Anja Karliczek, Paul de Krom M.A., CEO of TNO, the Netherlands organization for applied scientific research, Infineon AG CEO Dr. Reinhard Ploss, and Prof. Heinz Jörg Fuhrmann, Chairman of the Executive Board at Salzgitter AG and Chairman of the Senate of the Fraunhofer-Gesellschaft.

Editorial Notes

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This occasion will also set the stage for a joint statement of intent by the Fraunhofer-Gesellschaft, LMU and TUM. The three organizations aim to establish an Institute for Cognitive Systems in Bavaria to find solutions to pressing questions about artificial intelligence (AI), machine learning and cyber security. They will pool their expertise in these cutting-edge fields to build the bridge needed to cross the divide between basic and applied research. Joining forces with other players, this Munich-based alliance aims to develop the outlines of a concept to be implemented as a key component of the German government's AI strategy. Research and development efforts will focus on AI in combination with resilient cognitive systems and specific AI solutions for autonomous systems.

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Challenges and future issues

Anja Karliczek, Germany's Federal Minister of Education and Research, says, "As a pioneer of applied research, the Fraunhofer-Gesellschaft is an excellent catalyst for the German and European economy. I hope the Fraunhofer-Gesellschaft will carry on exploring new avenues to ensure research outcomes and new technologies reach industry and society quickly and efficiently. I look forward to many more results of the Fraunhofer-Gesellschaft's research and development efforts; results that will benefit humankind and secure Germany's position as a hub of business. On its 70th birthday, I wish Fraunhofer brilliant new ideas, an intrepid spirit of scientific inquiry and a feel for the next breakthrough innovation.

Minister President Dr. Markus Söder says, "Bavaria and Fraunhofer are the dream-team for cutting-edge research and innovation. Founded in Bavaria, Fraunhofer set out from Munich to create a research network unlike any other worldwide. This is no random happenstance; it is the result of a resolute effort to rise to ever-new challenges. Bavaria and Fraunhofer go hand in hand. Twenty new research facilities have been built in Bavaria alone in the last five years. The number of Fraunhofer employees in Bavaria has increased nearly 60 percent this decade. Collectively, they have succeeded in creating outstanding innovation centers in all parts of Bavaria, from IT security research in Garching and biotechnology in Straubing to research into the Internet of Things at the Fraunhofer IIS in Franconia. We are proud of Fraunhofer and will continue to ensure that research remains our priority in the future."

Bavarian Minister of State for Economic Affairs Hubert Aiwanger says, "On its 70th anniversary, the Fraunhofer-Gesellschaft is Europe's largest organization for applied research and has evolved to become our economy's innovation engine. It plays a key role in Bavaria's success as a hub of business and science. With 10 independent institutes and departments as well as 20 other facilities, it has a footprint in all Bavarian districts. More than 4700 Fraunhofer employees work in Bavaria today. Fraunhofer is an important partner for companies engaging in research and development, and for medium-sized enterprises especially. This is how Fraunhofer is doing its part to secure the future viability of business in Germany and Europe."

Prof. Reimund Neugebauer adds: "Excellence in research is essential, but it is no less important to identify emerging issues early on and set the course for the future with fresh ideas. This enables us to respond that much faster to market demands. Our employees are the key to our success. Like our eponymous founder, they strike the right balance between research and entrepreneurship, take responsibility for the future, develop solutions for tomorrow's challenges, and keep asking: What's next?"

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Prof. Heinz Jörg Fuhrmann, Chairman of the Executive Board at Salzgitter AG and Chairman of the Senate of the Fraunhofer-Gesellschaft, says, "It is very important for us to walk the sustainability talk. Energy and resources, health and the environment, manufacturing and services – these important topics are among the Fraunhofer-Gesellschaft's key fields of research, alongside mobility, communication and security. For example, we are now working with Fraunhofer on the SALCOS project to significantly reduce the steel industry's CO2 emissions with new processes. I wish us every success with this ambitious project – and on its 70th birthday, I wish the Fraunhofer-Gesellschaft continued innovation to benefit all of society."

Dr. Reinhard Ploss, CEO Infineon Technologies AG, says, "Innovative power is a key success factor for industry. The Fraunhofer-Gesellschaft, like no other organization, stands for application-oriented research and the successful transfer of new insights and technologies to the market. Research organizations and companies in Germany and Europe must further accelerate the transfer of knowledge to achieve enduring success against competition from other regions of the world in the innovation stakes. The decisive factor will be to combine different fields of knowledge and focus on key technologies for applications of great economic and social import, such as energy, mobility, industrial manufacturing and cyber security."

Paul de Krom M.A., CEO of TNO, the Netherlands organization for applied scientific research, adds, "The ambition of defending what we have is not good enough. Our ambition, our mission, must reach far beyond that. Our goal has to be to be the best. Europe must remain the best at evolving its businesses and growing and applying its knowledge. This is the only way we will be able to take a leading position amid international competition and hold it over the long term."

Presentation of the Fraunhofer Medal

The organization's highest distinction, the Fraunhofer Medal, will be presented to Günther H. Oettinger, EU Commissioner for Budget and Human Resources, at the subsequent Bavarian State Reception. This award acknowledges his meritorious achievements on behalf of the pursuit of innovation in Germany and Europe. According to Commissioner Oettinger, "With digitalization fast-tracking the advance of technologies, business and society's ability to innovate is becoming the key to sustaining our society's prosperity. This is why the European Union is going to significantly step up its efforts to research and innovate in Horizon Europe, its next research framework programme. But if European research is to lead to European

innovation, it is imperative for organizations such as Fraunhofer to help close the frequently occurring gap between basic research and its commercial exploitation. The Fraunhofer-Gesellschaft's concept is a successful model, particularly because its distributed structure strengthens regional clusters. I wish Fraunhofer continued success with its projects, and I do so also from a European perspective."

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The Fraunhofer-Gesellschaft – a model for success and a success story

On March 26, 1949, State Secretary Hugo Geiger invited 210 scientists, entrepreneurs and members of society to the Bavarian Ministry of Economic Affairs. He aimed to help revive the economies of Bavaria and Germany by setting up the Fraunhofer-Gesellschaft. While children played amid the rubble, and the Wirtschaftswunder – Germany's postwar economic miracle – was yet a distant prospect, the Munich office's staff of just three people took up the challenge of advancing applied research in Germany. Electing Hermann von Siemens president in the mid-1950s and founding the first of its institutes, Fraunhofer-Gesellschaft gradually evolved to become a mainstay of research in Germany. In the mid-1960s, Fraunhofer was officially designated the German science community's umbrella organization for applied research. In the mid-1970s, the Fraunhofer model of performance-based funding sparked the dynamic success that shows no signs of slowing. Germany's reunification presented unexpected opportunities to expand. Moving swiftly and resolutely, Fraunhofer-Gesellschaft was quicker than other research organizations to seize the day, setting up more than 20 new institutes and facilities in the states that had newly joined the Federal Republic.

Strategic initiatives for Germany's and Europe's economies and societies

a third. Building on these assets and its clear focus on new technologies and markets, the Fraunhofer-Gesellschaft has become the German economy's innovation engine. Its inventions range from airbags, white LEDs and dandelion rubber to mp3 technology. The Fraunhofer-Gesellschaft charted a roadmap for its research activities with the Agenda 2022. One of its key goals is to develop end-to-end solutions to provide the systems Germany needs as a hub of business. The organization launched a set of Key Strategic Initiatives (KSIs) centered on seven priority research topics to make that happen. Fraunhofer pools the expertise of its 72 institutes in these KSIs with the aim of developing comprehensive system solutions for tomorrow's strategic challenges. All of these topics are of great relevance to the economies and societies of Germany and Europe. The current topics are cognitive systems, artificial intelligence and data sovereignty, battery cell production, programmable materials, quantum technology, translational medicine, public safety and biological transformation.

The **Fraunhofer-Gesellschaft** is the leading organization for applied research in Europe. Its research activities are conducted by 72 institutes and research units at locations throughout Germany. The Fraunhofer-Gesellschaft employs a staff of more than 26,600, who work with an annual research budget totaling more than 2.5 billion euros. Of this sum, more than 2.1 billion euros is generated through contract research. Around 70 percent of the Fraunhofer-Gesellschaft's contract research revenue is derived from contracts with industry and from publicly financed research projects. International collaborations with excellent research partners and innovative companies around the world ensure direct access to regions of the greatest importance to present and future scientific progress and economic development.