



Press Release

For Immediate Release: Tuesday November 3, 2020

MORE LIGHT, BETTER CONNECTION WITH OUTSIDE WORLD:

Miniaturization for autonomous driving

Autonomous driving and self-driving cars represent one prominent example for the use of microelectronics and sensors, most importantly RADAR and LiDAR sensors. Their respective markets have a big potential, e.g. it is estimated that the market size of LiDAR in automotive will double itself in the next two years (within 2020 to 2022). The public awareness and the industrial need for further miniaturization of such sensor packages is the main driver of ongoing efforts in the automotive sector to be able to integrate such devices into the car body like in the bumpers, grilles and exterior lamps (headlights & rear lamps) instead of attaching them (e.g. on top of the car in case of LiDAR device). Safety (for the driver and others) is the most important key aspect of the automotive sector. Therefore, highly-value and high-performance RADAR and LiDAR systems are required for advanced driver-assistance systems (ADAS) as well as autonomous cars. Current bottlenecks are relevantly large size of such sensor devices, their weight and power consumption. Since these factors are highly limited within cars, further miniaturization and improving functionality and efficient use of resources is highly demanded.

In the period of 3 years, starting from 1st of October 2020, European Union's H2020 funded TINKER project is set to develop a new reliable, accurate, functional, cost- and resource efficient pathway for RADAR and LiDAR sensor package fabrication, following 2 main objectives: *Establishing the TINKER platform based on Additive Manufacturing {AM}* and *Fabrication of RADAR and LiDAR sensor packages as use cases*. TINKER's approaches to use "key enabling technologies, especially inkjet printing and nanoimprint lithography", as disruptive and flexible manufacturing techniques in micro-part assembling is in alliance with the overall scope of the call Transforming European Industry. The proposed TINKER pilot represents a high degree of flexibility and reliability due to its modular character.

According to the work program, TINKER addresses the expected impacts, such as decrease of production time, measurable increase of automation level, higher or similar precision level and reduction in rejection rates during the production process. The main purposes of this project is to widen the range of available miniaturization and microelectronic fabrication possibilities including the novel approaches in assembly processes directly in production steps. This supports the constitution of a resilient economy of Europe and enhances resource efficiency. In addition, this enhances the competitiveness by creating

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jobs, new business models and new innovative production methods in various industries. TINKER will contribute to European innovation capacity on the one hand with patents, training of PhD and Diploma students, more scientific papers, protection of intellectual property, on the other hand by strengthening the European competitiveness with the development of design-driven and market demanding sensor packages. Similarly, new knowledge created by the TINKER research is the source of innovation and in return, new market prospects for innovation identified by the industrial partners can point towards new avenues for research.

About TINKER

The TINKER consortium consists of 10 the most excellent industrial companies, 3 research specialists, one consultancy and a service association, who are major players in the field of semiconductor and microelectronic manufacturing, as well as in the fields of material and process development and industrial fields applying or interested in applying AM for their needs. All the partners have a track of nationally and internationally funded projects in their special research fields and as the best-in-class they defend the European leadership in miniaturization by gaining new know-how and skills for involved SMEs and R&D companies.

In addition, an External Advisory Board, consisting of experts in the field of microelectronics and automotive sectors will support activities of and within TINKER. Moreover, TINKER aims to exploit the results also via Business Interest Group. Acting as an external body of the project, companies and network organizations are part of this group, preliminary board members are European Photonics Industry Consortium, Organic and Printed Electronics Association and Virtual Vehicle Research GmbH.

This project has received funding from the European Union's Horizon 2020 research and innovation program under the Grant Agreement n° 958472 with an overall budget of € 10,241,526.25. The project is coordinated by scientist Leo Schranzhofer at PROFACTOR GmbH.

The project website is under preparation (www.project-tinker.eu) and additional information can be found on [linkedin.com/in/tinker-eu](https://www.linkedin.com/in/tinker-eu) and twitter.com/project_tinker.

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