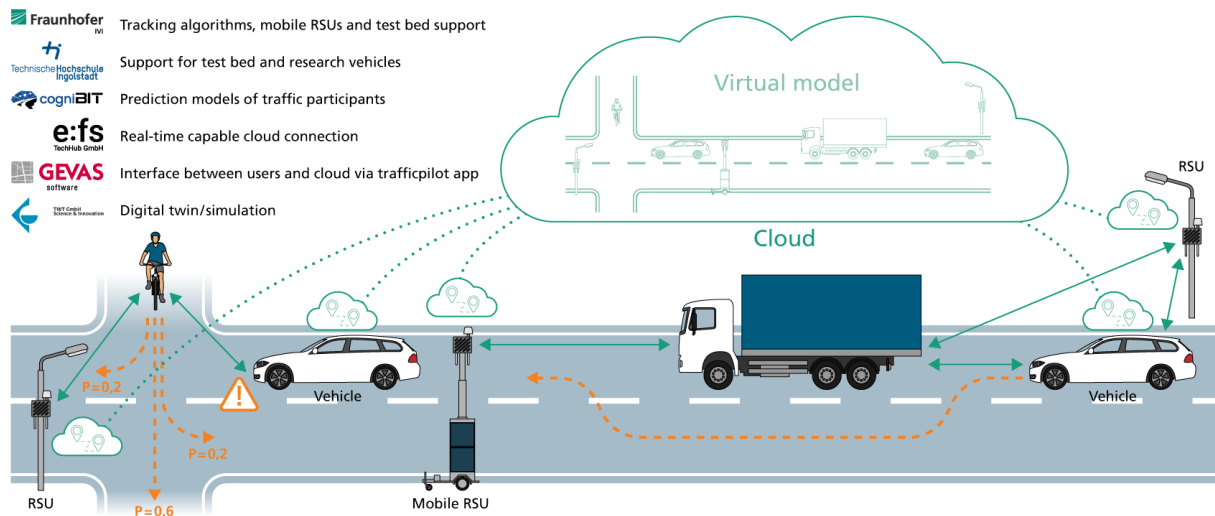


## DISRUPT: Intelligent tracking and prediction system for improved safety and cooperative driving

On January 16<sup>th</sup>, the DISRUPT research project with a planned term of three years was kicked off at the Fraunhofer IVI Application Center »Connected Mobility and Infrastructure«. The project aims at investigating cooperative environment perception and traffic participant prediction with the help of infrastructure and vehicle sensors.



Cooperative tracking and prediction scenario

[Dresden, January 24<sup>th</sup>, 2024]

DISRUPT is short for »Decentralized Intelligent System for Road User Prediction and Tracking«. Two major tasks within the project are the development of connected, decentralized tracking algorithms and the prediction of traffic participants. The work expands the Ingolstadt Innovation Lab (IN2Lab), which will be set up by the end of 2023 within the Free State of Bavaria's »Information and Communication Technology« R&D program, by a complementary data fusion approach and prediction algorithms based on neuro-cognitive models that will allow predicting the state of traffic within the test bed in the near future.

The first step for the development of this algorithm, as well as for future ones, is a digital twin which is to be created in the project of the test bed including all sensors and traffic participants located within. The results of the tracking and predictions will be provided for users in real-time via a cloud-based data platform. Based on the data, danger warnings can then be generated with a special focus on vulnerable road users such as bicycle riders and pedestrians.

In addition, the tracking and prediction algorithms, together with the digital twin, will serve as a basis for the implementation of cooperative, autonomous driving maneuvers. Furthermore, predicted turning probabilities can be used to improve the efficiency of traffic management through traffic lights.



At their first in-person project meeting in Ingolstadt, the consortium partners presented their own expertise among each other. Afterwards, the technical interfaces between work packages were discussed. Fraunhofer IVI is responsible for developing the decentralized tracking algorithms for traffic participants.

The project receives funding from VDI/VDE within the »Digitalization« funding line of the Bavarian Joint Research Program (BayVFP) launched by the Free State of Bavaria. Fraunhofer IVI acts as the project coordinator.

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