



Fact Sheet

Designing the Future Internet

The CRC 1053 MAKI researches for a stable Internet

As of January 1st, 2013, the German Research Foundation (DFG) has approved the collaborative research center (CRC) 1053 MAKI – “Multi-Mechanisms Adaptation for the Future Internet”. Initially, the CRC was funded with 8 Million Euros over the first four years. The second funding period of the CRC was financed from January 1st, 2017 with 11 Million Euros. The DFG approved the final funding period, which started with a volume of approx. 15 Million Euros on January 1st, 2021.

MAKI creates an innovative premise for communication systems in the future. Its aim is to be more adaptive to changes, particularly during ongoing operations. For instance, this could facilitate the ability to stream a video on a smartphone in high quality and without interruptions in spite of busy or overloaded mobile networks. Users could rely on a steady and reliable reception even when attending festivals or crowded sporting events.

The Internet has vastly evolved into an integral part of our everyday life, which is shown very noticeable during the COVID-19-pandemic. Consequently, the necessary communication mechanisms and equipment are changing on a constant basis. The individual solutions related to this rapid evolution are widely considered as problematic. Currently, as many as three standards exist for Wireless Connections: Bluetooth, Wi-Fi, and 5G. The result: a multitude of services, often based on different technologies. MAKI considers this diversity as an opportunity by optimizing the individual attributes of particular mechanisms to meet the desired quality objectives.

MAKI is the first CRC of its kind in the field of Electrical Engineering and Information Technology and Computer Science at TU Darmstadt. In CRC 1053, engineers and computer scientists are concerned with the issue of “Mechanisms for the Future Internet”. A total of nine departments of the TU Darmstadt work in collaboration. These include five departments from the area of Computer Science and four from the area of Electrical Engineering and Information Technology. In addition, one research group each from the University RWTH Aachen, Goethe-University Frankfurt, University Mannheim, University Koblenz-Landau, Philipps-University Marburg and University Duisburg-Essen are participating in the CRC. Their collaboration ensures extensive and comprehensive expertise in the research of communication mechanisms.

Chairperson and coordinator of the CRC 1053 MAKI is Prof. Dr.-Ing. Ralf **Steinmetz**, Head of the Multimedia Communications Lab at TU Darmstadt.

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