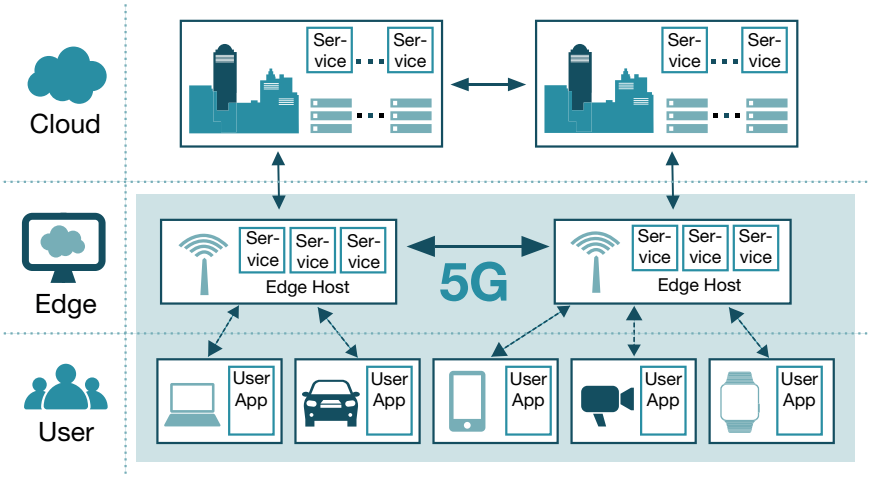
UNIVERSITÄT DUISBURG ESSEN
Open-Minded

5G.NRW Competence Center

5G.NRW Edge Platform: Optimal Data Processing with 5G



Schematic representation of edge computing within a 5G network

The 5th generation of mobile communications (5G) enables a new way of handling data and applications within the network thanks to its very short response times and enormous data transmission rates. With a classic cloud infrastructure, however, the advantages of the new standard cannot be fully exploited: data must be processed in the vicinity of the end user. A key element here is the use of edge computing.

Architecture of speed

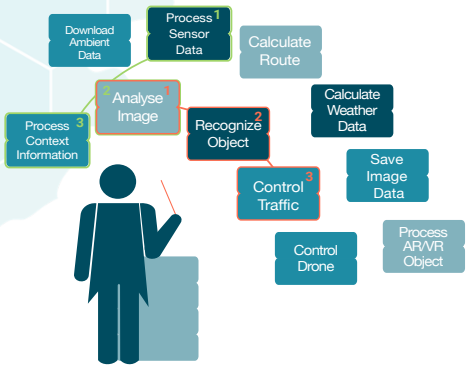
Unlike in the past, the processing of data in edge computing does not work through servers in central cloud data centers, but rather through servers that are positioned on the edge of the 5G network near the end users. All data therefore remain within the 5G network without leaving it. To be able to process all inquiries within the 5G network, a foundation of software architecture is required: the 5G.NRW Edge Platform.

Edge platform for 5G applications

On the 5G edge platform, all user inquiries are processed via web services. Individual services such as “image analysis”, “object recognition” or “traffic control” can be combined and made available on the platform as a distributed business process. When creating such a service composition, an order of the web servies within the sequence can be defined.

Orchestrating the services

The execution of the composition is roughly comparable to a conductor who leads an orchestra of web services and uses the specified order to indicate to the relevant web services when they have to play (or process) what and how. The web services and service compositions can be used again and at the same time. The platform automatically regulates the available resources. This creates an architecture that makes optimal use of the properties of the 5G network.



“Orchestrating” the 5G services on the edge platform

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funded by:
Ministry of Economic Affairs, Innovation, Digitalization and Energy of the State of North Rhine-Westphalia