

5G mmWave Experimental Platform

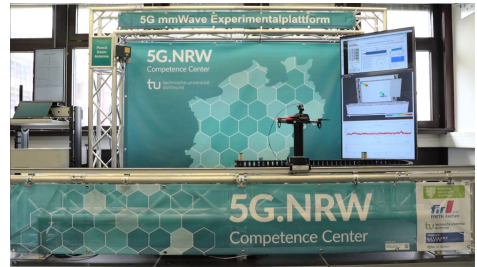
Reliable and high performance communications in dynamic environments

The **5G mmWave experimental platform** of TU Dortmund university is a unique research and demonstration laboratory in North Rhine-Westphalia (NRW), Germany, which provides insights into the evolution of 5G. With the aid of special antenna systems, forming an electronically steerable, directed antenna characteristic (so-called **pencil beam**), radio spectra beyond conventional mobile radio frequencies can be utilized, providing high bandwidths for demanding mobile services.

Software-defined radio systems handle signal generation and processing, providing a high degree of flexibility to serve as a versatile **development platform**.

In order to reproduce the mobility of 5G subscribers (like autonomous robotics in production environments), a rail system is available for generating **reproducible movement patterns** under controlled conditions.

In particular, we investigate the **dynamic tracking of pencil beams** to ensure a stable high-performance communication link for mobile network subscribers, as well as the potential for subscriber positioning services on basis of pencil beam alignment.



Based on this experimental platform, capabilities of novel 5G mmWave technologies are demonstrated to local industrial, commercial and public sectors with the objective of knowledge transfer and discussion of 5G's future economic relevance.

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More info in video



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