Task title: Design of an On-Chip E/W-Band Area Efficient Antenna for Autonomous Driving

Task Description: In automotive applications, the distance between the car and another object is not fixed. A common technique to measure the distance is radar. One component of a radar system is the TX and RX antenna. If this antenna is implemented as off chip antenna, high loss, introduced by the bondwires, lowers the transmit power of the TX and the sensitivity of the RX. Nevertheless, on chip antenna needs a lot of chip space. Within this thesis, an area efficient on chip antenna for E & W band (60 GHz-110 GHz) should be designed.

Skills required:
- Fields and Waves (2.0 or better)
- High frequency behavior of passive components (only Masterthesis)
- Introduction to High Frequency Engineering or comparable (only Masterthesis)

Additional skills:
- Matlab / Simulink
- Empire XPU
- Cadence Virtuoso

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