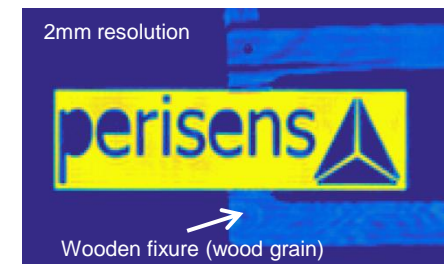
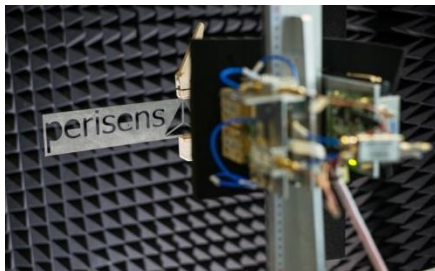


Scanning Imaging Radar 77GHz

Dr. Florian Pfeiffer – perisens GmbH
04.01.2019



Scanning Imaging Radar (SIR)

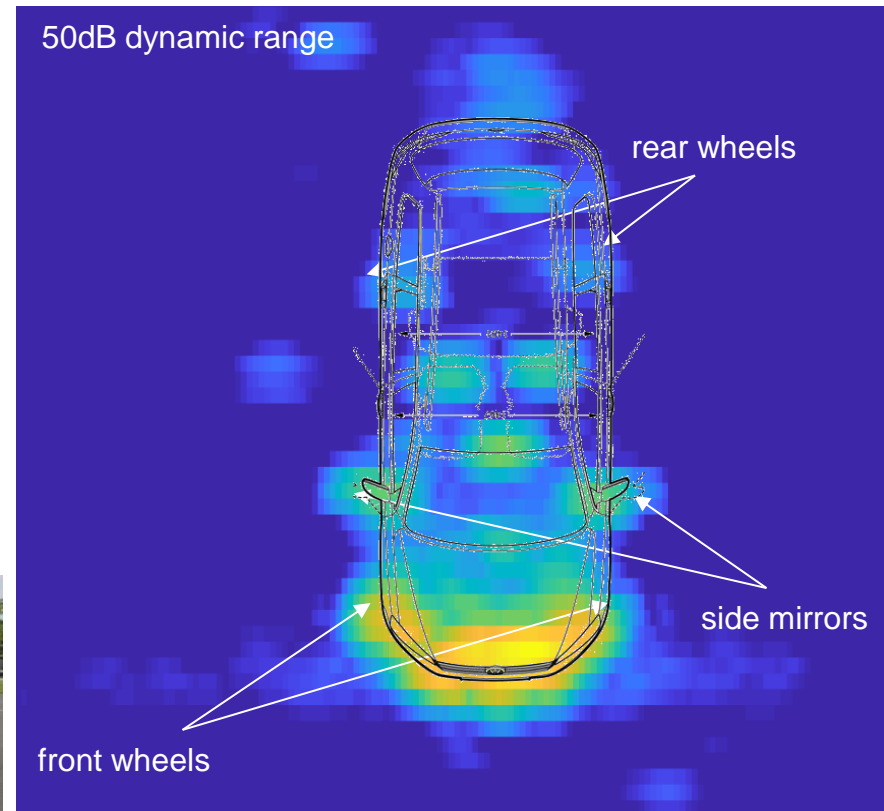
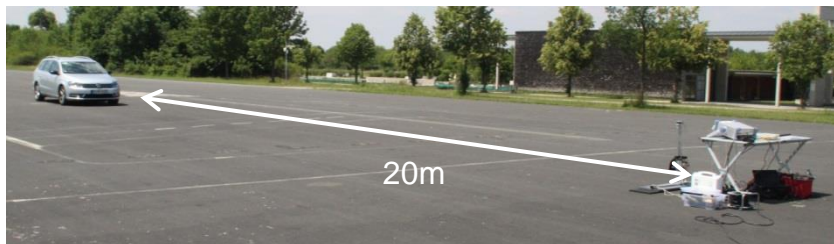
Key figures

- Frequency 76.5GHz
2GHz bandwidth (with a range resolution of 7.5cm)
10GHz bandwidth in development
- Synthetic aperture size of
up to 800mm x 600mm with exceptional resolution
 - Angle resolution $<0.2^\circ$ in far range
 - 2mm transversal resolution in near range
- Field of view $> \pm 30^\circ$
- High dynamic Range $>60\text{dB}$

- In-house development in cooperation with the Technical University of Munich
- Mobile setup for on-site measurements
- Calculation of full 3D radar image from >100.000 measurement positions using near field back projection algorithm

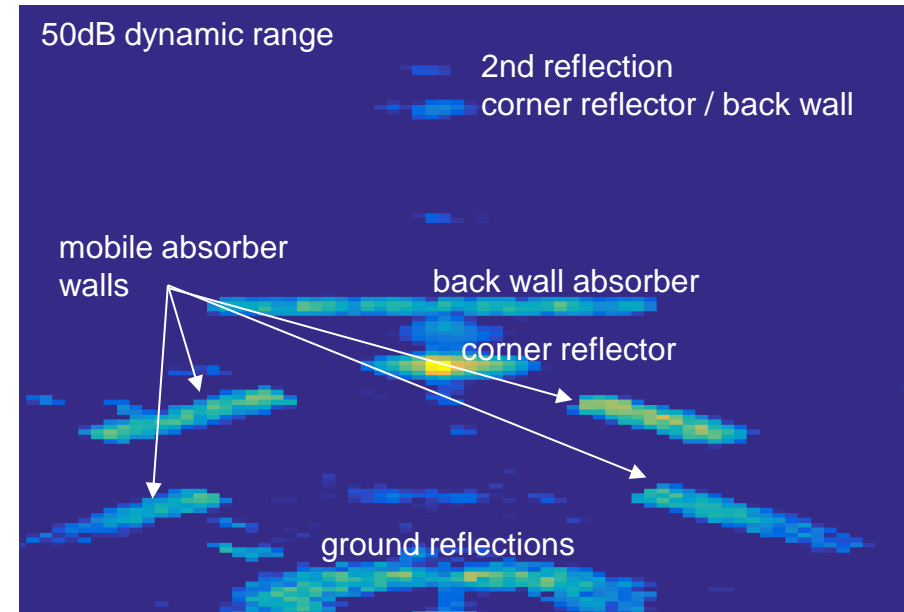
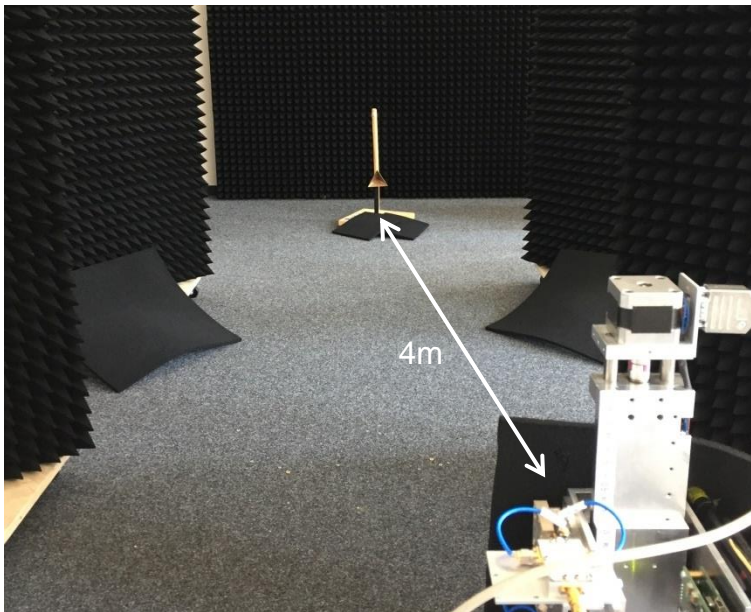
Radar Target Measurement

- High resolution
3D radar images
- Determination of target size
(Radar Cross Section – RCS)
- Target range up to 300m



Anechoic Chamber Evaluation

- Evaluation of anechoic chambers / rooms
- Identification of interfering reflections

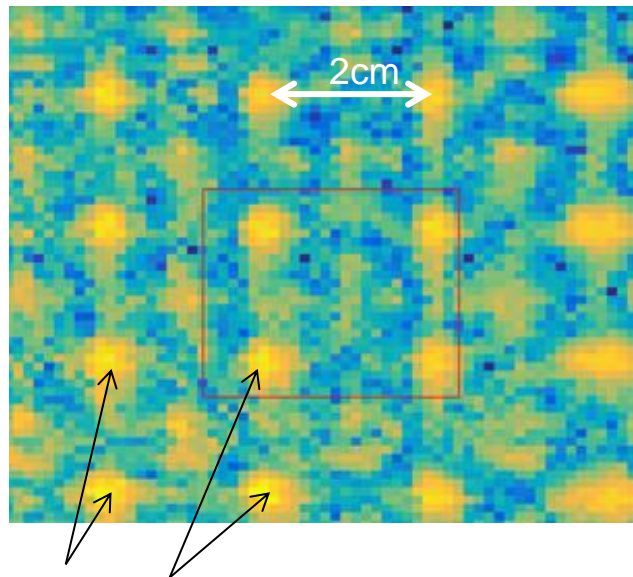


Absorber Evaluation

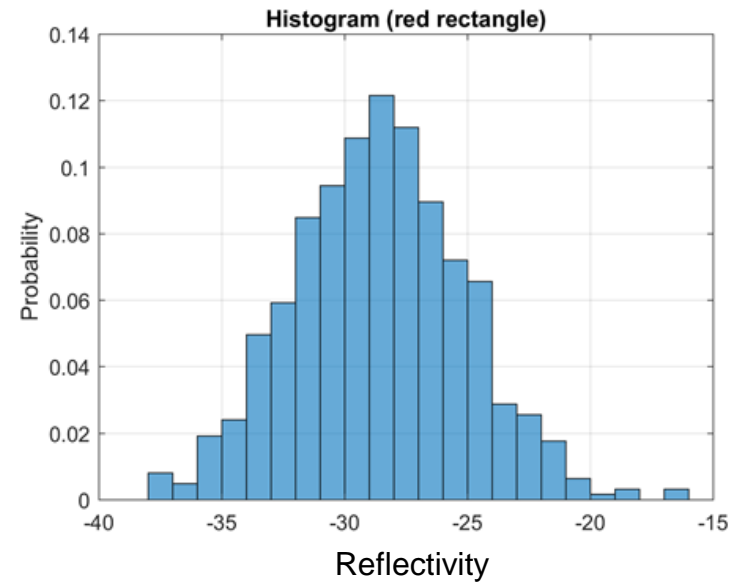
- Spatial reflection and transmission analysis of absorbers



Reflectivity of pyramid absorber

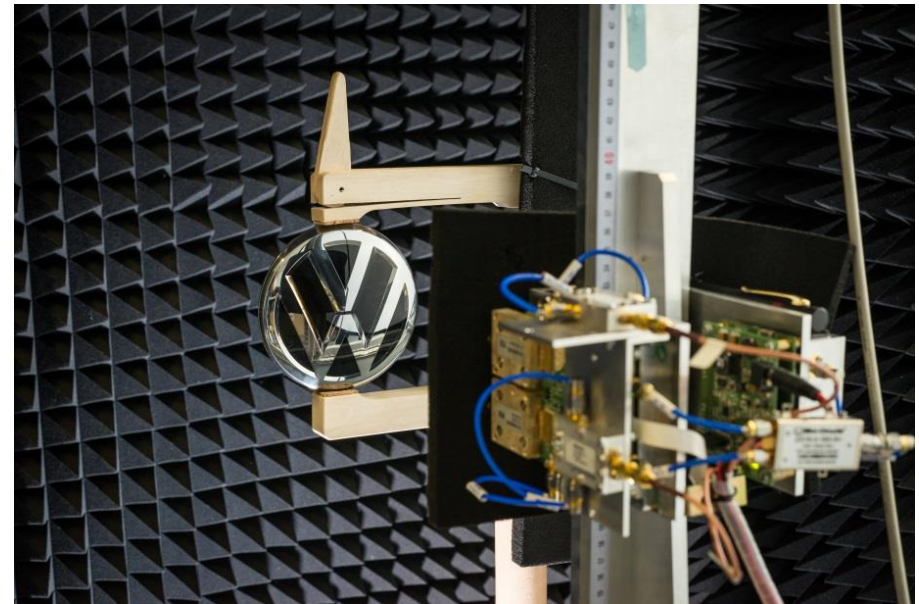
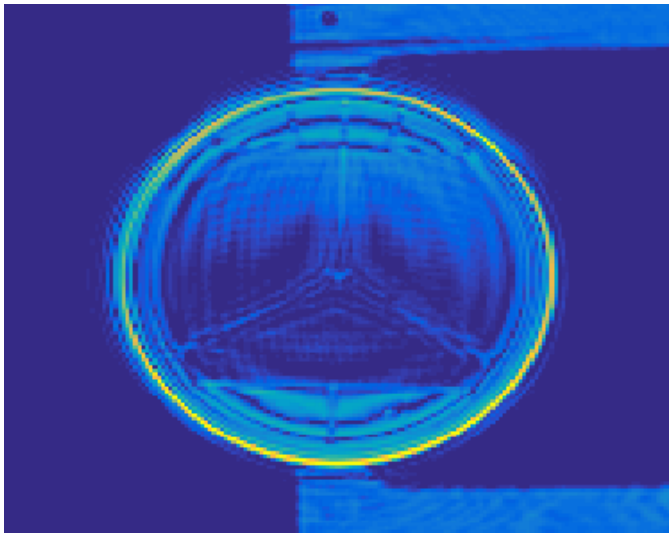


Increased reflection
in the corners of the pyramids



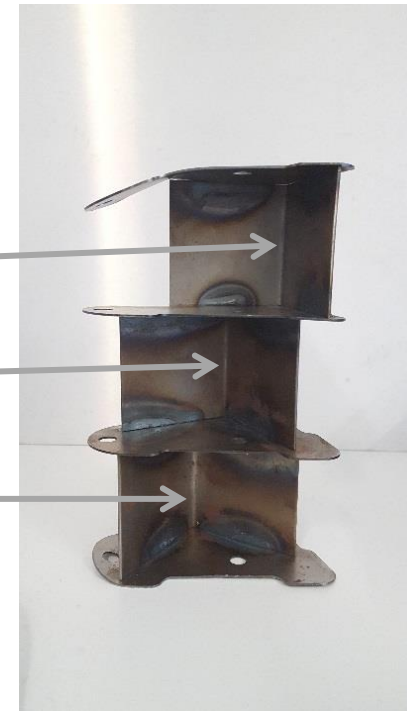
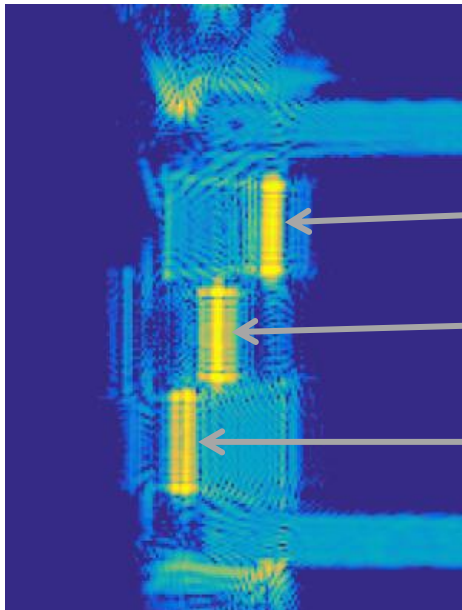
Radar Cover Evaluation

- Evaluation of radar covers (radomes)
- Identification of problematic geometries
- Determination of inhomogeneities in material properties



Reflector Characterization

- Evaluation of reflectors
- Identification of high retro-reflecting areas



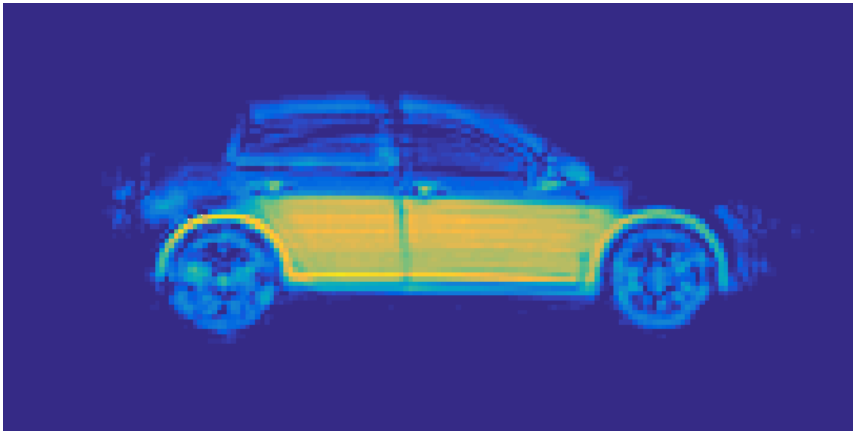
Polarimetric Measurements

Full flexibility in wave polarization

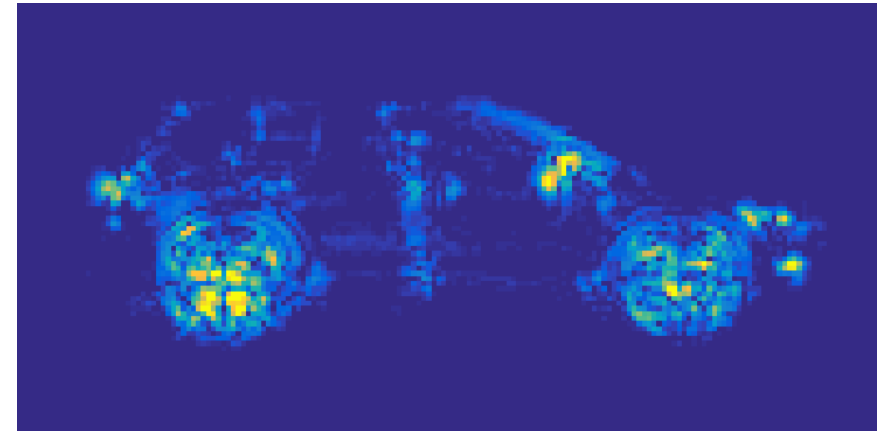
- Linear
- Circular
- co and cross



Co-Polarization (horizontal)



Cross-Polarization

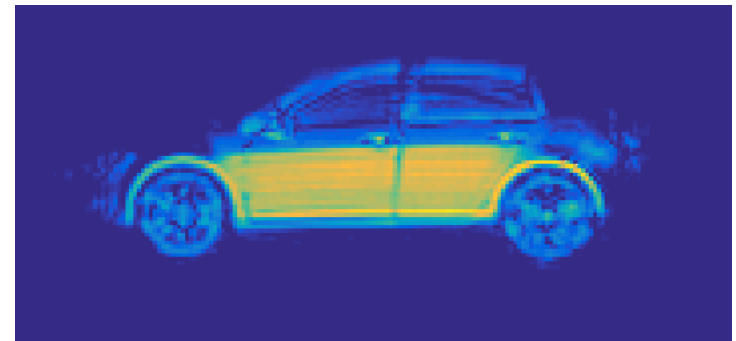


photography, Nikon
380 – 780nm wavelength



1:18 model

3D radar, perisens
3.9 – 4.0mm wavelength



**We are looking forward to a good cooperation
on the same wavelength!**

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