**The camera-system**

Our innovation tries to solve the problem of the collision with large animals. So first of all we want to notice these animals in their natural environment. It can be difficult for two reasons: first is, that we can meet them not only on roads, which goes through fields, but also on forest roads; the second is animals move likely at night. In both cases human vision is not able to notice animals, so the driver can’t react before the accident. Our detection based on the thermal radiation. Large mammals (for example deer, roe, boar) have a radiation in the near infrared interval (800 nm – 2500 nm), that is out of the visible spectrum (380 nm – 780 nm). With this type of radiation, animals can be perfectly “visible” for NIR-cameras. The other objects around animals have different thermal radiation, trees, bushes, other plants and the ground have lower temperature.

Our camera-system have two cameras. The cooperation of these cameras supports the the Bosch “Multi Purpose Camera”, which has 3 main functions. We can use the innovation for the “multipath approach” function. (“The benefits of this multipath approach are particularly apparent in real, complex traffic situations. The camera navigates by lines on the asphalt, by other characteristics indicative of a road surface, such as gravel, parked vehicles at the side of the road, and safety barriers. **With this, the reliability of automatic emergency braking systems increases, particularly in chaotic urban traffic, as the multi purpose camera can detect and classify partially obscured pedestrians and cyclists.**” - <https://www.bosch-mobility-solutions.com/en/solutions/camera/multi-purpose-camera/>)

We would like to extend this multipath approach task to country roads to avoid the accident with animals. The two NIR-cameras must detect the large mammal on the road, at the side of the road or in the forest close to the road. The other important task of the NIR-cameras is to determine the distance and calculate the speed and direction of the noticed animal. Because of this second function, we must use 2 cameras to evolve this kind of 3D-vision.