Connected Vehicles

Infrastructure Radar System

■ Objective

The goal of the R&D initiative is to develop a practical 79GHz band high resolution radar system deployed as roadside sensors that is capable of detecting pedestrians, cyclists, and other smaller objects in or near roadways.
This involves the development of millimeter-wave sensing technology providing reliable detection, and robustness against interference and environment; and development of a cooperative safety support system that mainly contributes to automated and connected vehicle driving in the future.

■ R&D Progress

Ⅰ. We achieved, in an intersection environment, under 5% undetected time rate of passing pedestrian and approaching vehicle and over 95% recognition rate for discriminating motorcycle with car.

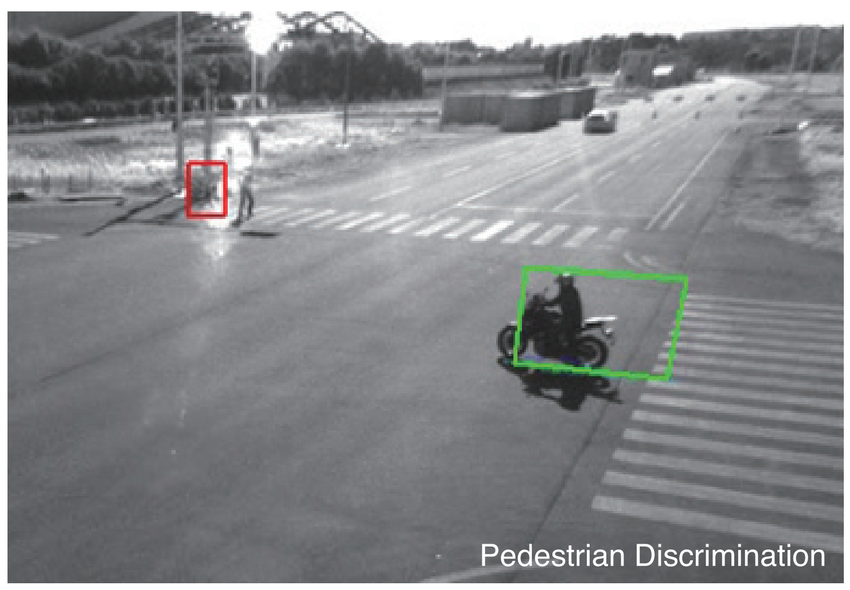
Ⅱ. We carried out a basic test for highway merging assist using 79GHz radar and ITS communication channel. And we have studied on a wireless message set configured by position, velocity, and other measurement data.

Ⅲ. We have practiced an interference propagation test between roadside radars and vehicle mounted radars. Also we have verified a radar scan method for interference mitigation.

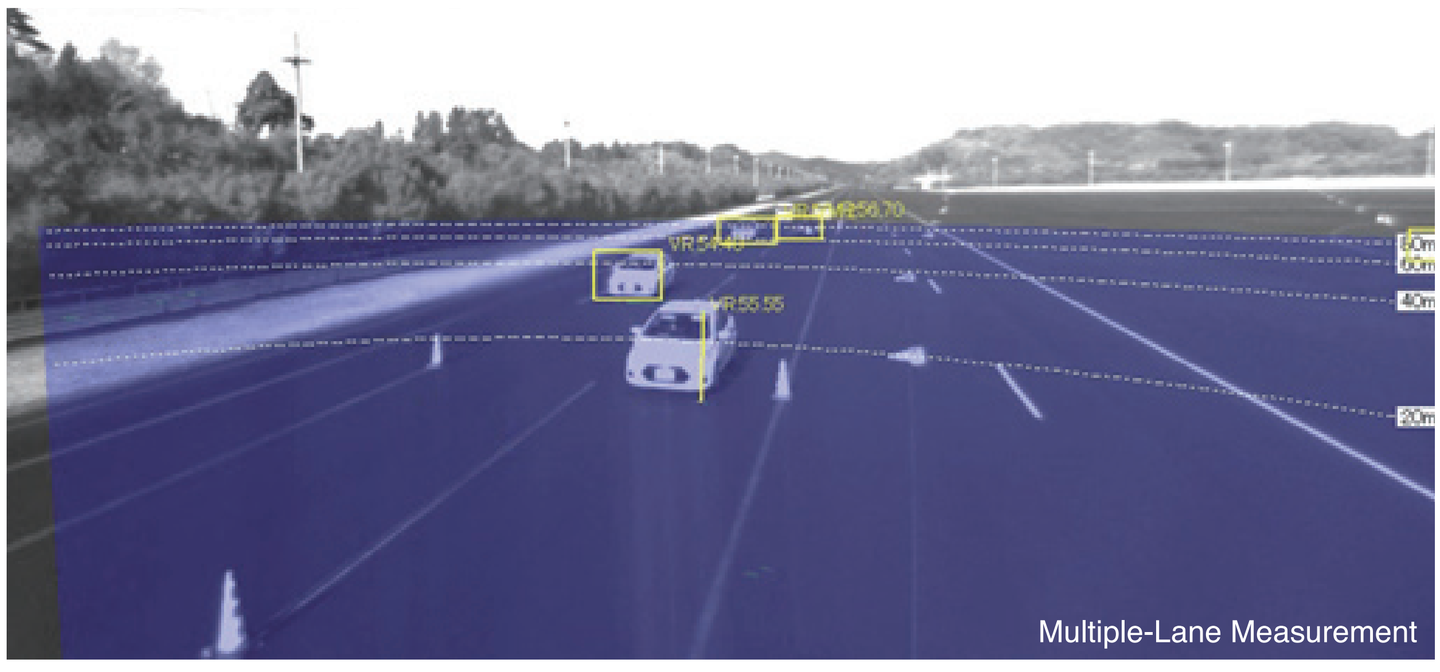
Ⅳ. We measured sensitivity degradation due to snow accreting to a radar dome. Moreover, we addressed on optimization of filtering parameters to suppress false alarm due to heavy rainfall.

Ⅰ

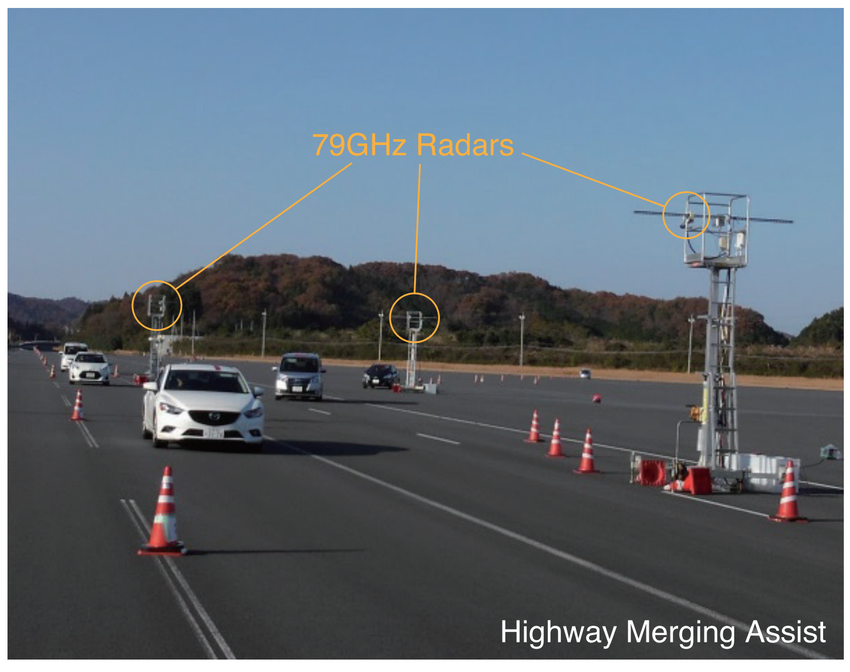
Blind Motorcycle Detection


Pedestrian Discrimination

Ⅱ



Multiple-Lane Measurement



Highway Merging Assist