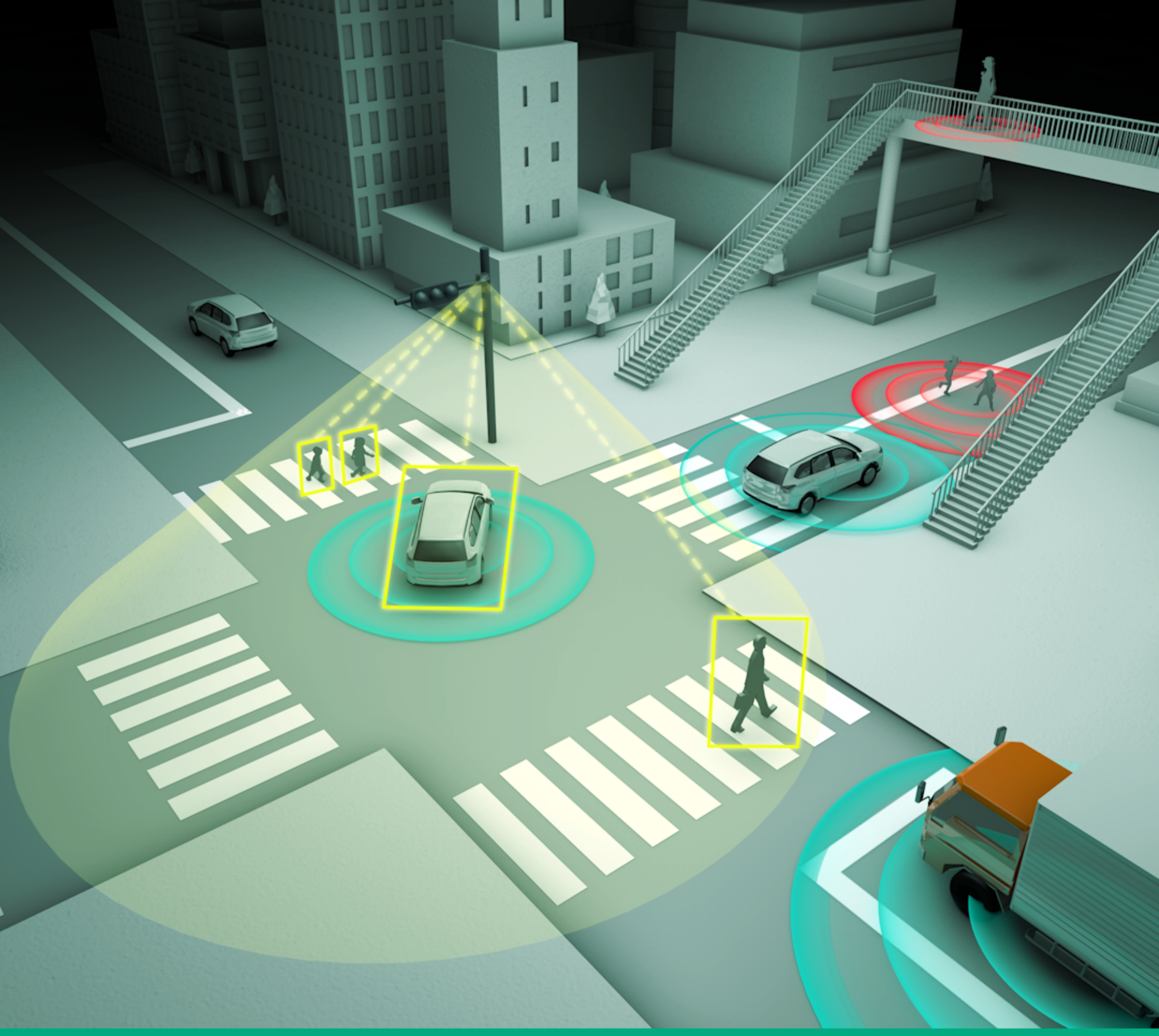

V2P & 79GHz Radar

V2P Communication

- New pedestrian support system by means of V2P(Vehicle-to-Pedestrian), wireless direct communications

79GHz Infrastructure Radar

- Wider Area and Higher precision - Millimeter Wave Radar Technology
- Roadside to Vehicle - Cooperative Safety System

This work is part of the R&D commissioned by the Ministry of Internal Affairs and Communications (MIC) as "Next - generation ITS utilizing ICT" for the Cross - ministerial Strategic Innovation Promotion Program (SIP).

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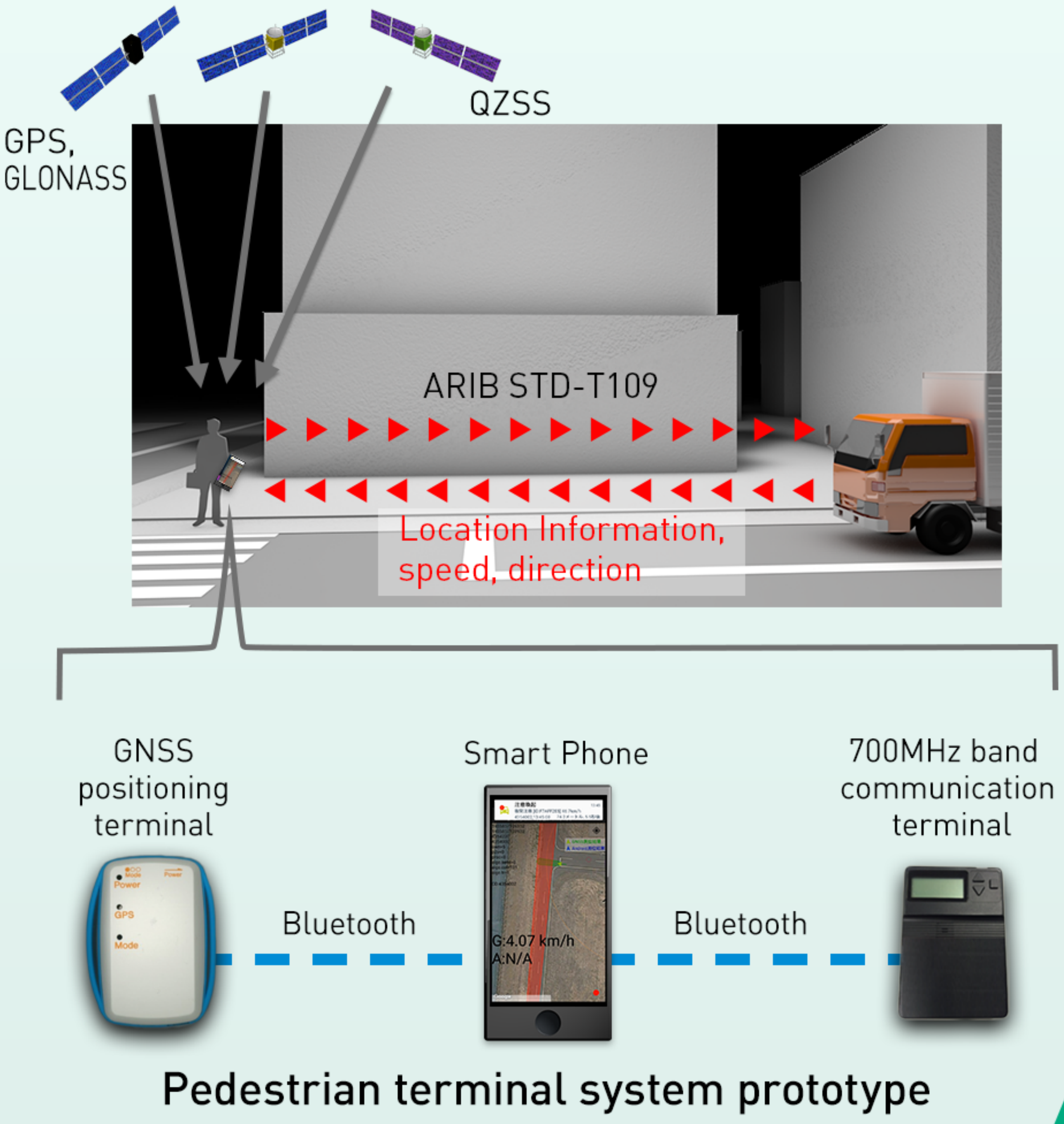
V2P

System outline

To realize a direct V2P communication system that can alert pedestrians or drivers in appropriate situations and with suitable timing to reduce traffic accidents involving pedestrians, we develop element technologies required for a pedestrian terminal.

- 700-MHz band communication
- High-precision positioning
- Danger identification & pedestrian support



Pedestrian terminal system prototype

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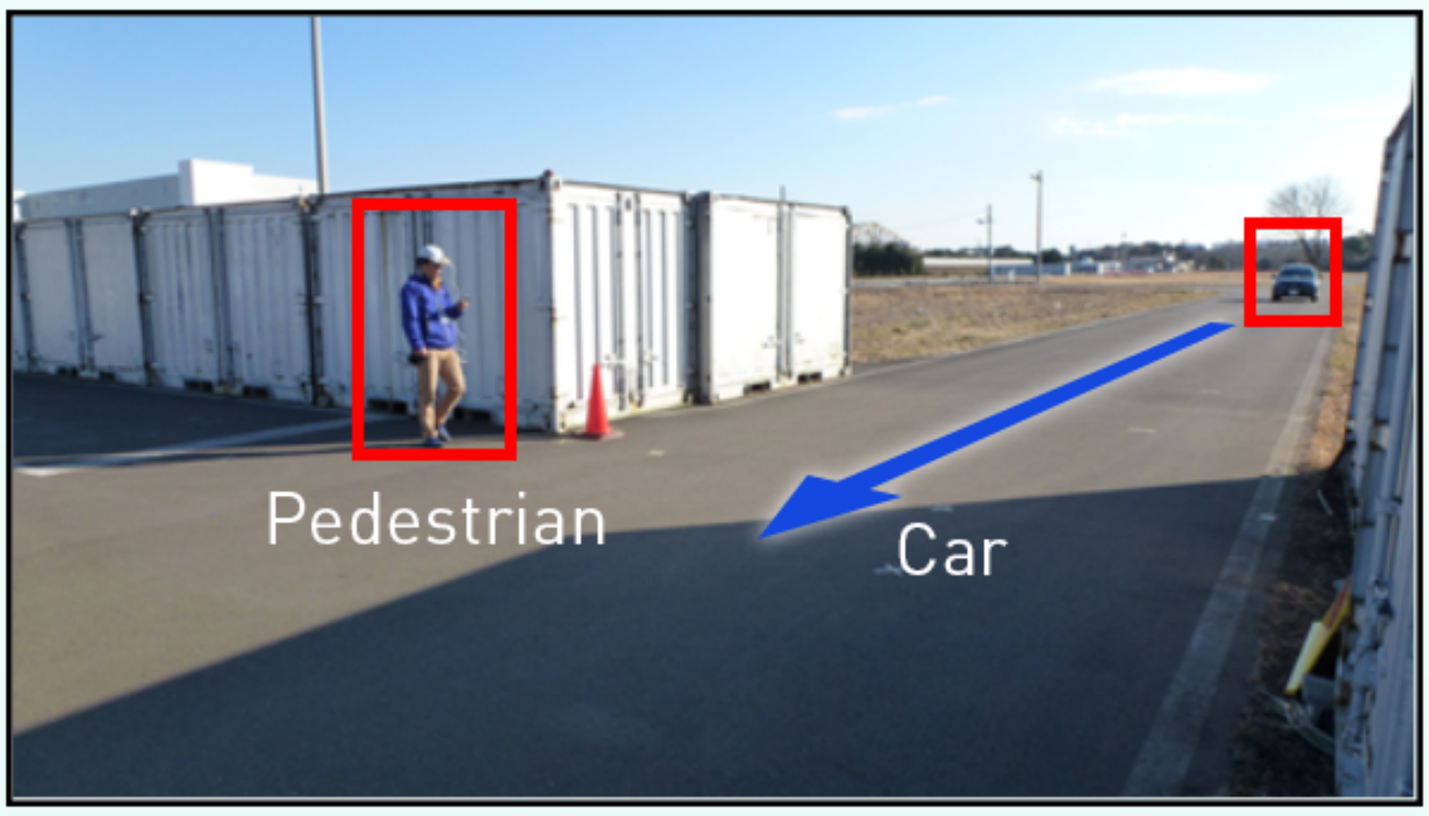
Proof-of-concept experiments

This test scenario assumed collision avoidance at the blind intersection without traffic signal.

Test application for Pedestrian terminal



Waring point: distance from collision point

Target value:Before the road crossing	6m
Mean values of measurement	6.5m

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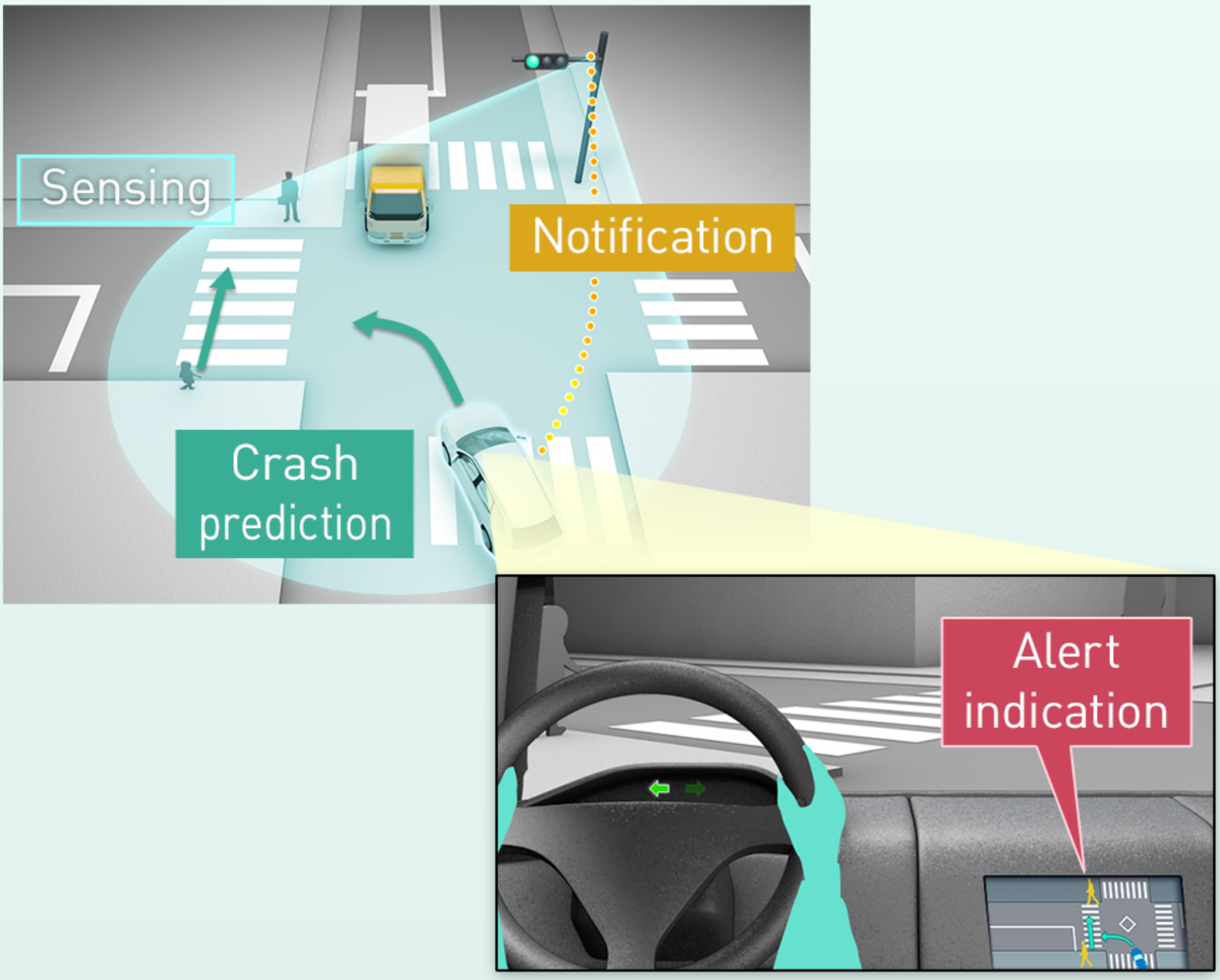
79GHz Radar

Application

Application image using 79GHz millimeter-wave radar for road-vehicle cooperation safety system

- Sensing each location of pedestrian and car by using millimeter-wave radar from roadside of intersection
- Notifying the object location, via wireless channel, to vehicle-mounted system aiming to prevent accident



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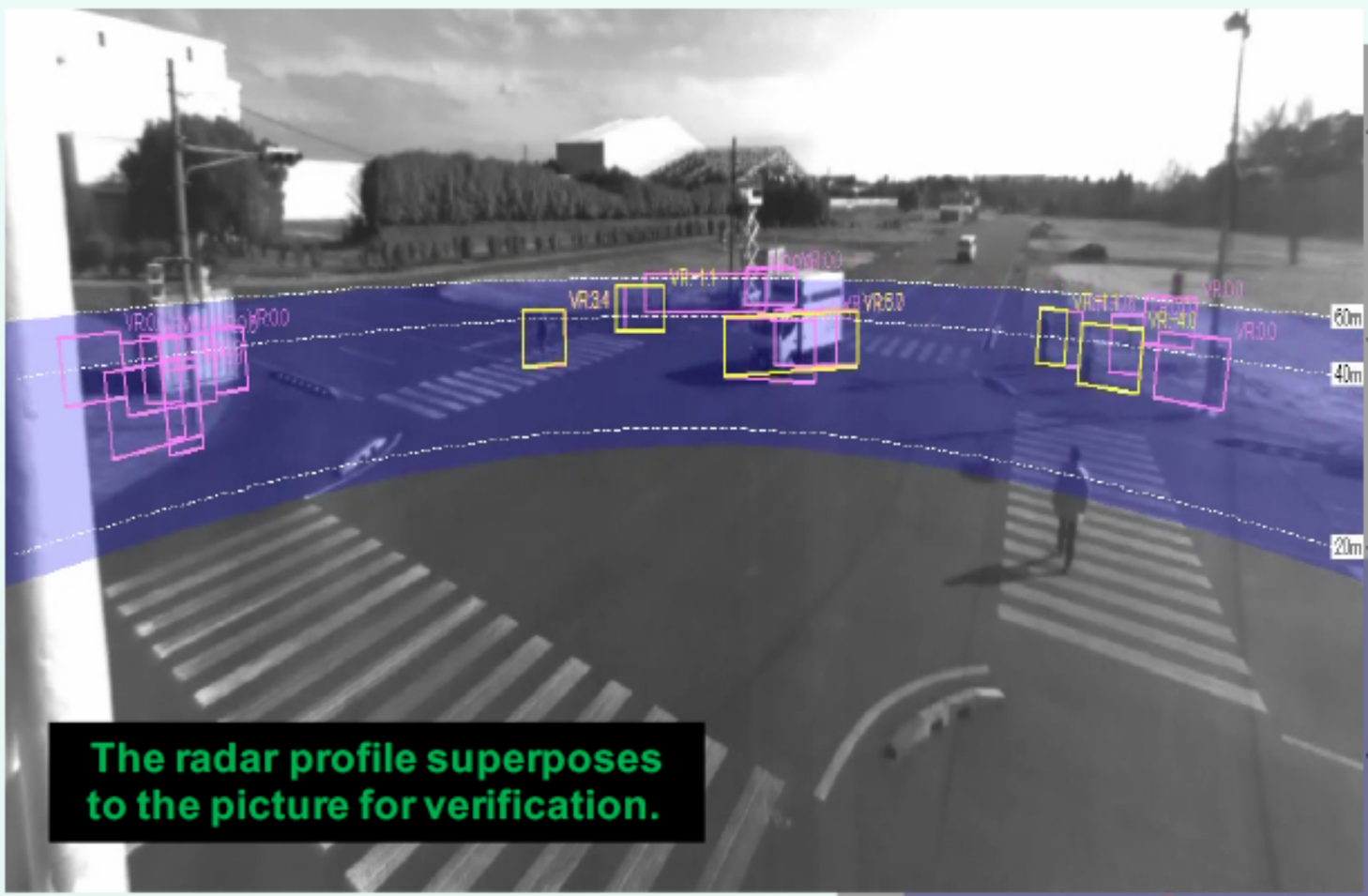
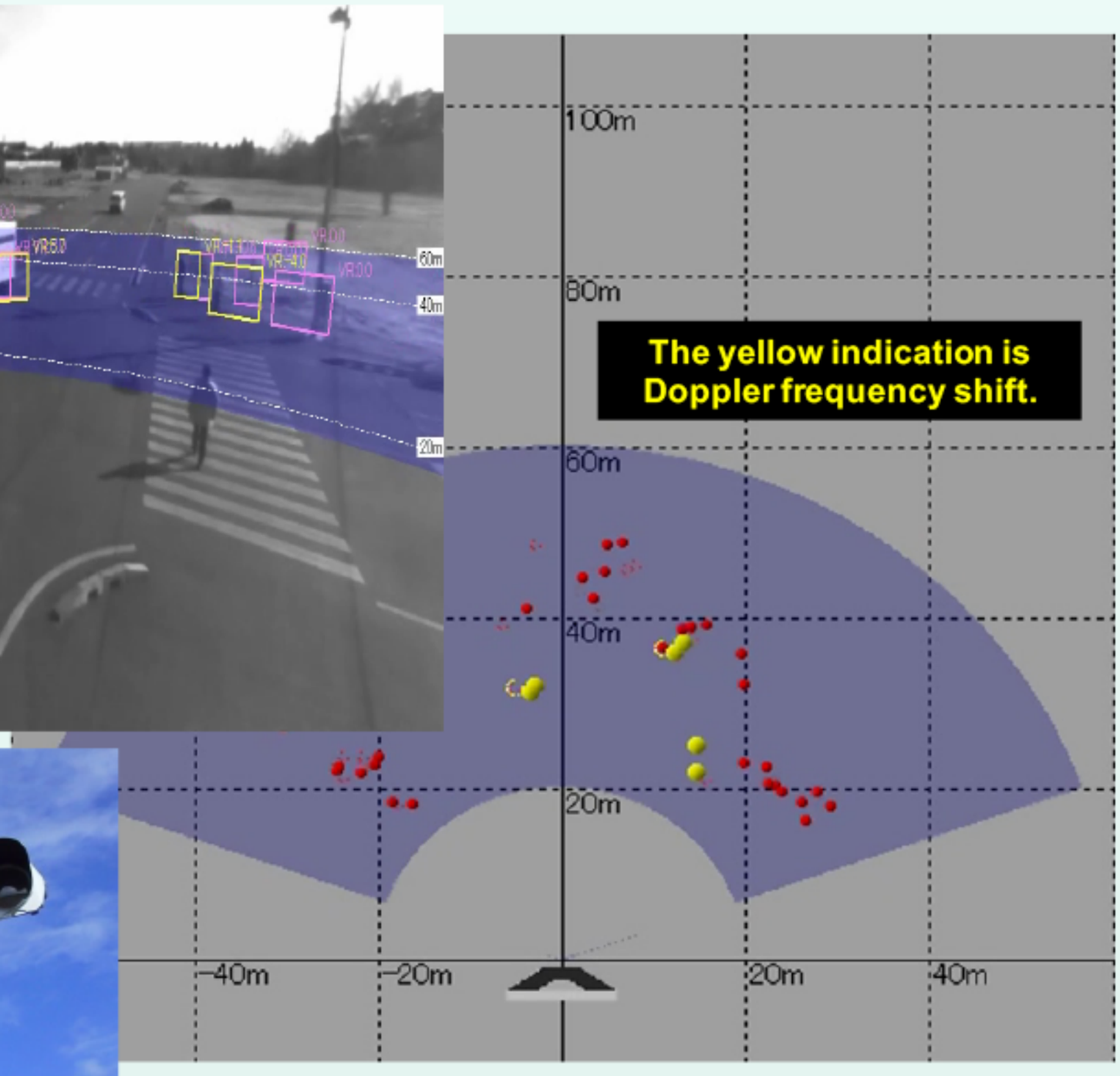
79GHz Radar

Technical Advantage

- Wide field-of-view area to scan/High accuracy to detect multiple targets
- High resolution to separate pedestrians and cars
- Robustness under bad weather conditions (fog, snow, etc.) and at night



The radar profile superposes to the picture for verification.



The yellow indication is Doppler frequency shift.

The 79GHz radar set up to the roadside pole.

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