Peace of mind

DENSO
Crafting the Core

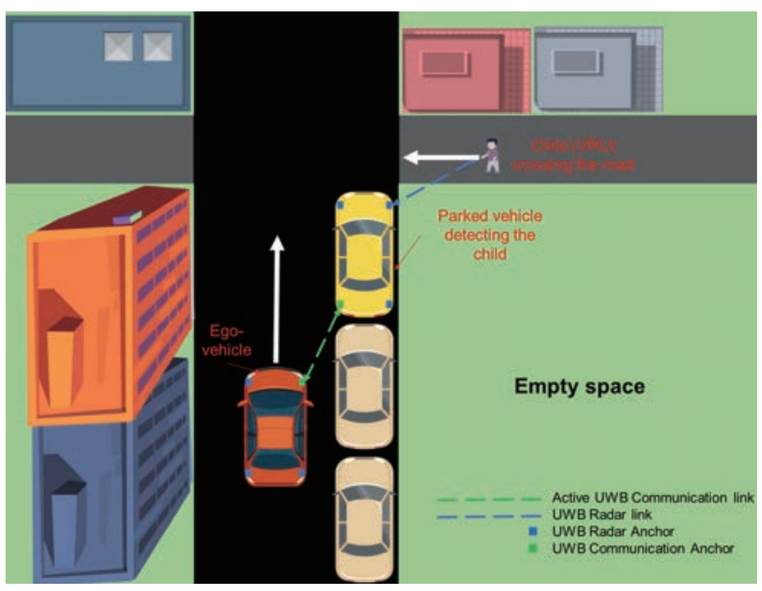
UWB BASED VRU DETECTION

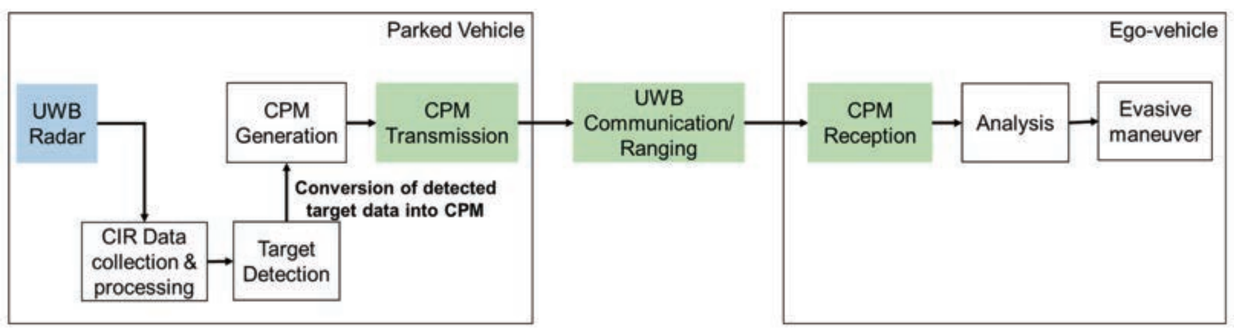
Safety of VRUs in complex urban scenarios using UWB

Highlights

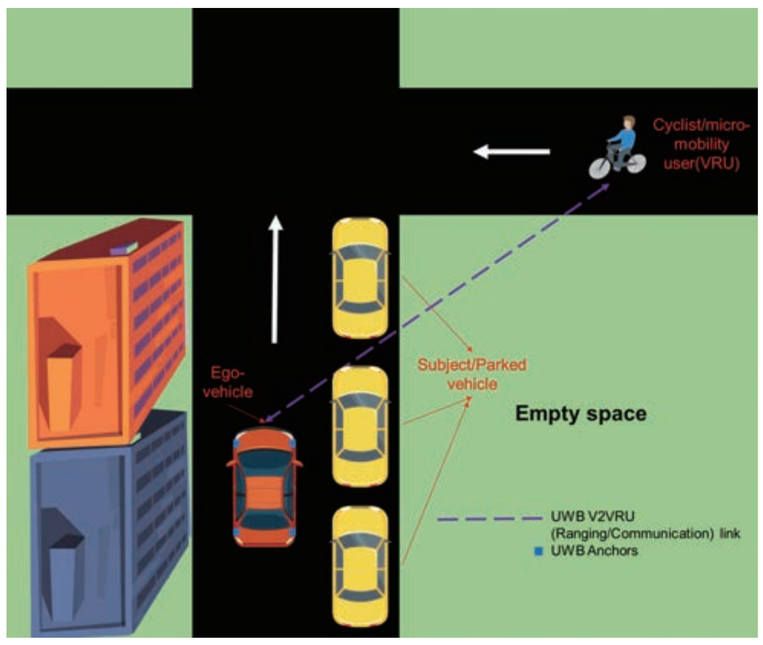
- Public funded EU project HIDDEN focuses on VRU safety in complex urban scenarios that causes different levels of occlusions
- UWB based system architectures for VRU protection in complex scenarios
- VRU detection followed by CAM/CPM broadcast using UWB communication

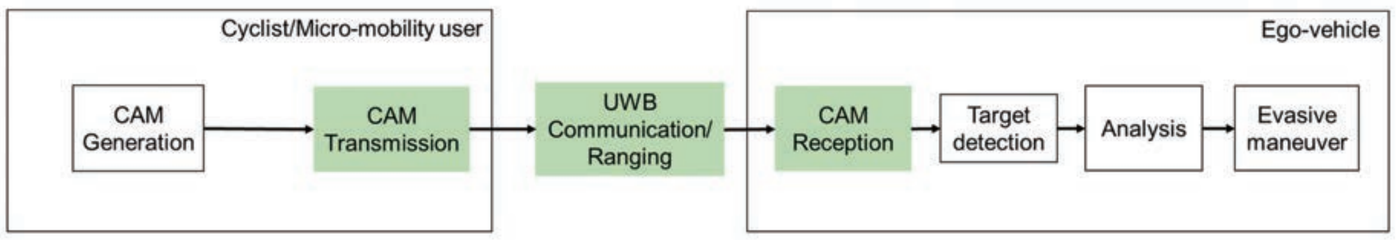
UWB based system architectures for different complex urban scenarios





- Pedestrian occlusion by parked vehicles.
- Parked vehicle with UWB sensing capability detects the pedestrian and the sensing results are shared using CPM via UWB.





- Micro-mobility user equipped with UWB device and occluded by parked vehicles is detected by the ego-vehicle either by UWB communication or ranging.

Funded by the European Union

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Conclusions

- Reusing existing UWB hardware for VRU detection and tracking.
- Critical VRU safety scenarios addressed by UWB system architectures proposed.
- Some challenges such as continuous UWB operation, stability of UWB ranging and communication amid frequent LoS and NLoS transitions and standardization of CAM/CPM over UWB needs to be addressed.