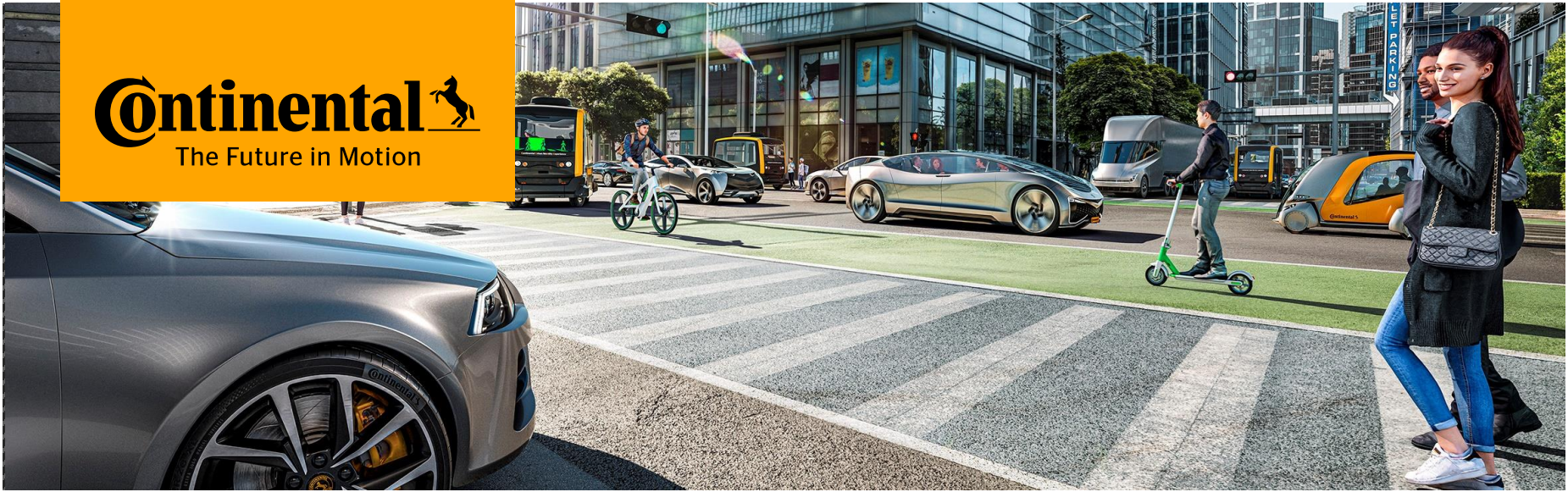


Continental 
The Future in Motion



How Road Infrastructure Can Support Automated Driving


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Automotive Technologies

EU CCAM-Platform WG3:

Physical/digital infrastructure matrix (pdi-matrix), work in progress

	Physical road attribute	Digital road attribute	AD support in driving tasks		
			Sensing & perception (localization / awareness / enhanced perception)	Planning (dynamic information & regulation, navigation)	Actuation
 example	Lanes	HD map / C-ITS	<i>Lateral positioning</i>	<i>Lane specific navigation</i>	-
	Traffic signs	HD map / C-ITS			
	Road works	HD map / C-ITS			
	Traffic lights	C-ITS			
	Localization stations	Correction signals			
	...				

Current work package: How can Road Infrastructure Support Automated Driving (AD)?

Priority List

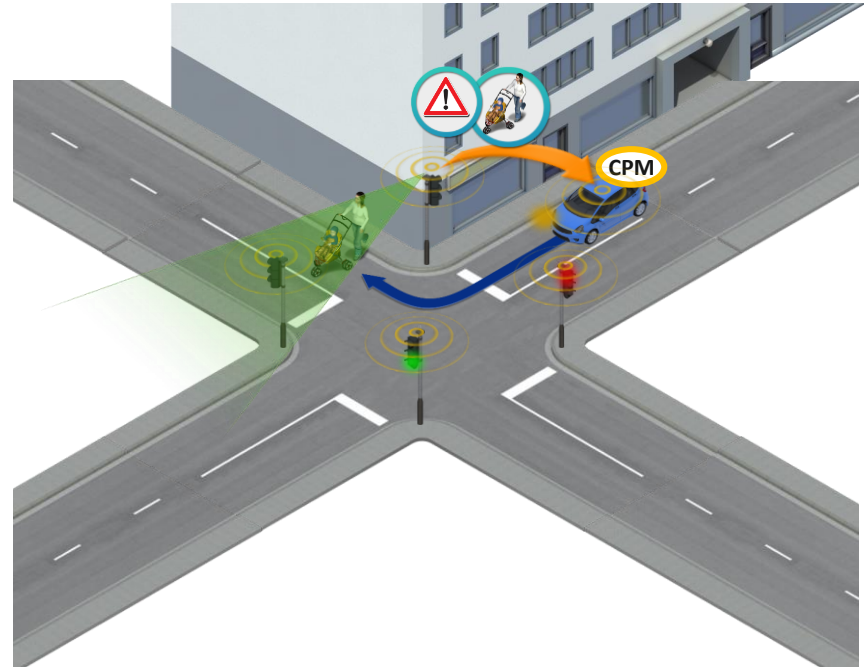
Road Infrastructure Investments for AD

Physical road	Digital road	Road invest in
Horizontal Traffic Signs: Lane markings (for human, video and lidar sensors)	HD map	Physical and Digital
Stationary roadworks	HD map and C-ITS	Physical and Digital
Moving roadworks	C-ITS (MAP and DENM)	Physical and Digital
Variable message signs : for traffic regulations and real-time guidance, speed, headway, lane and platooning guidance	C-ITS (IVI)	Physical and Digital
Pedestrian crossings, other Vulnerable Road User (VRU) facilities, intersections, urban/dense cities	C-ITS (CPM, DENM)	digital
Traffic lights	C-ITS (SPaT, CPM, MAP, DENM)	digital

One Example:

C-ITS, Collective Perception Service at Smart Intersections

- › Vulnerable Road User (VRU) awareness with Collective Perception Message (CPM)
- › Reliable detection also in Non-Line-of-Sight / obstructed situations
- › For AD and non-AD vehicles
- › Prevent collisions with pedestrians, bicyclists, scooters, motorcycles as well as non-connected other vehicles



Digital Road Infrastructure can extend AD functions and Operational Design Domain (ODD)

› If information is

+ Trustful }
+ Secure } Security certificate

+ Reliable } Safety qualifier according to functional safety

= Then automated driving ODD can be extended!

Thank you

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