



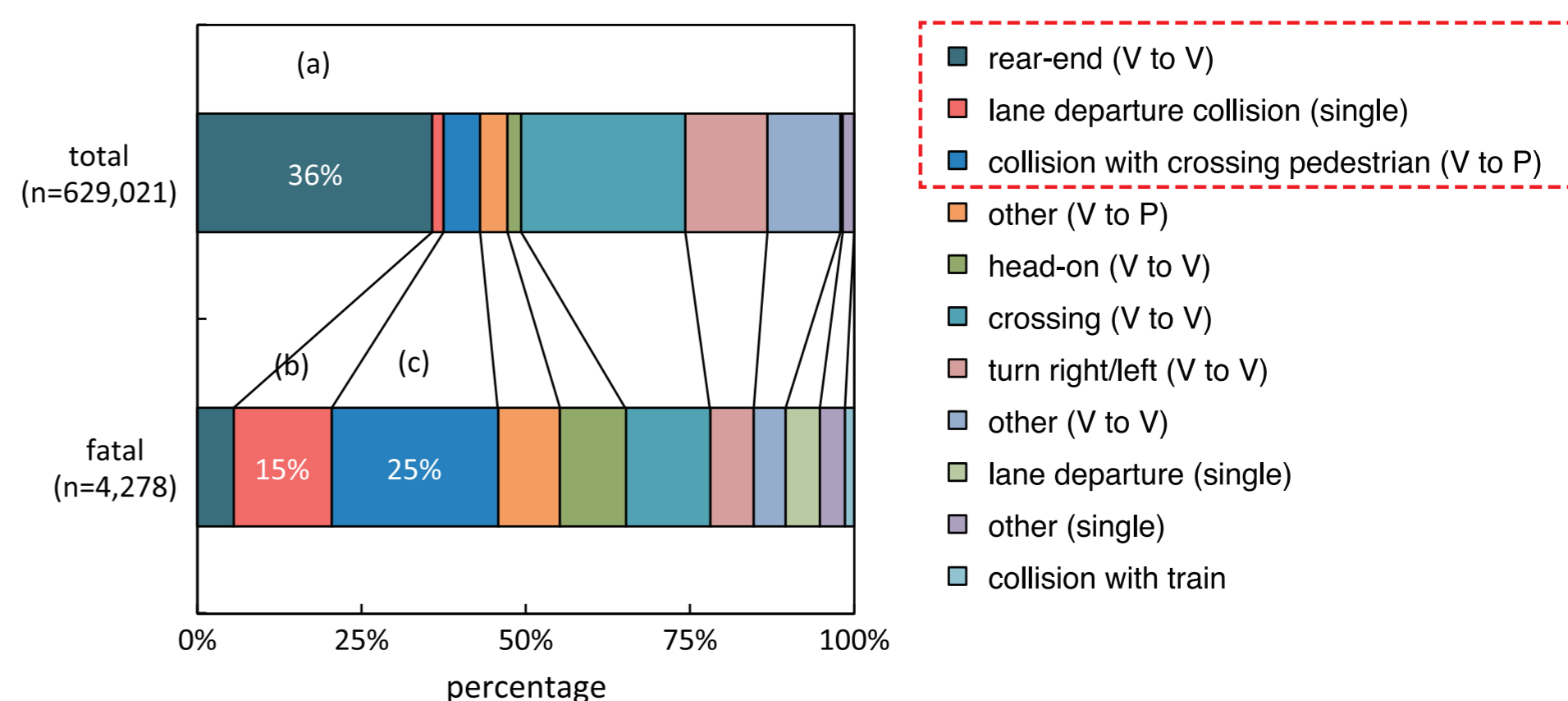
Impact Assessment

Development and substantiation of simulation technology for estimation of detailed traffic accident reduction effects

Objective of the project

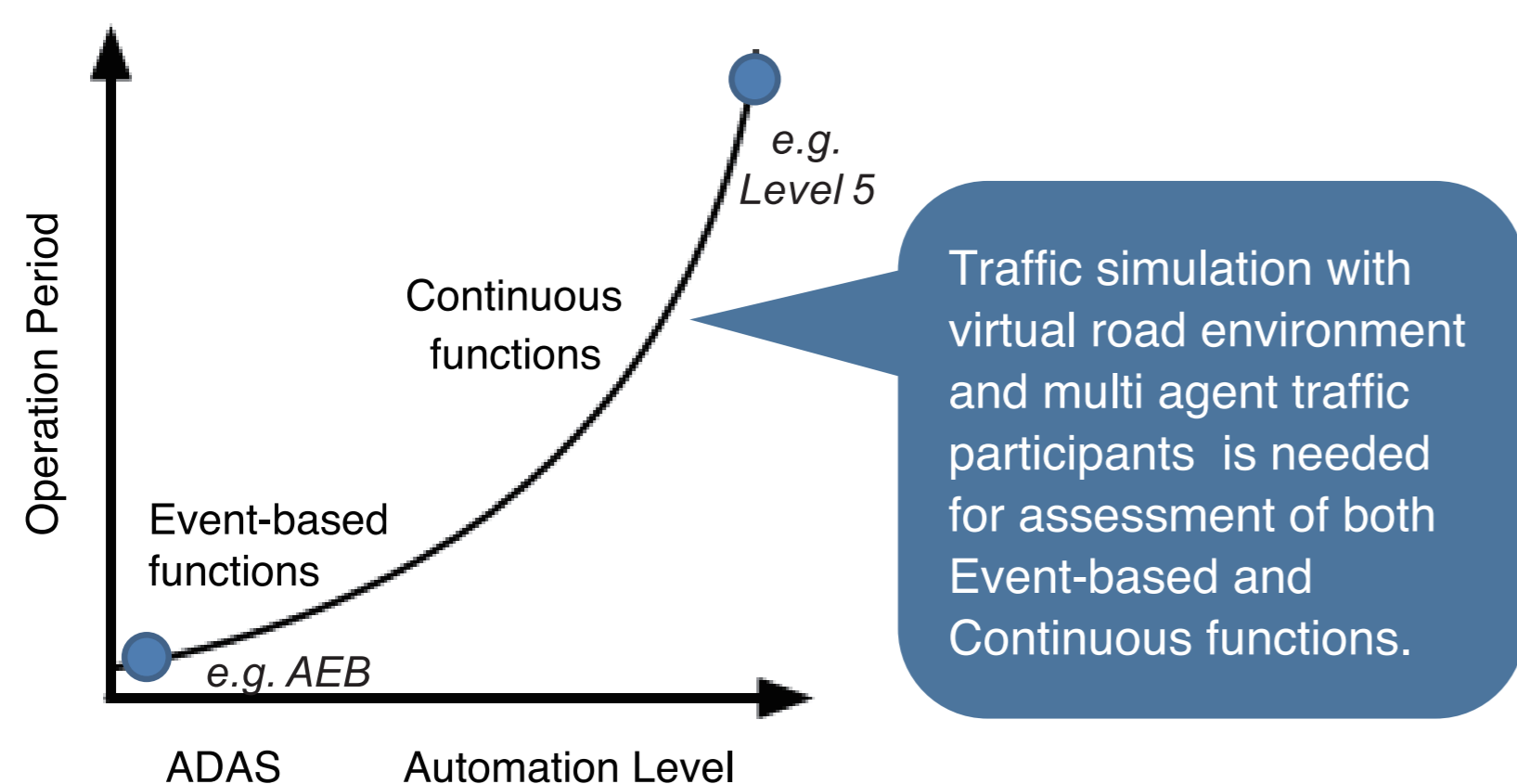
In order to achieve the safest automobile transportation society in the world, early practical use and promotion of the automated driving system have been expected. In this project, the simulation technology of the traffic environment reproduction to figure out the quantitative reduction effect of traffic accidents with such system is developed and contributes to the achievement of the above target.

	2015 (a)	2016 (b)	2017 (c)	2018
Scenario	Rear-end collision + Car-following	Lane departure collision + Steering	Collision with crossing pedestrian + stop -red signal -stop line	Integrating three scenarios Multiple Intersection Traffic environment reproduction Traffic jam
Driver model	Looking aside • Driver parameters • Regulation observance disposition • Driving skill • Arousal level, • Information processing ability	Sleeping Driver parameter study	Side mirror/Room mirror Drunken Drive/Disease	
Advanced driver assistant system/ Automated vehicle	Collision warning Brake assist Autonomous brake	Emergency Steering System Lane Departure Warning System Lane Keeping Assist System	Automated Driving	

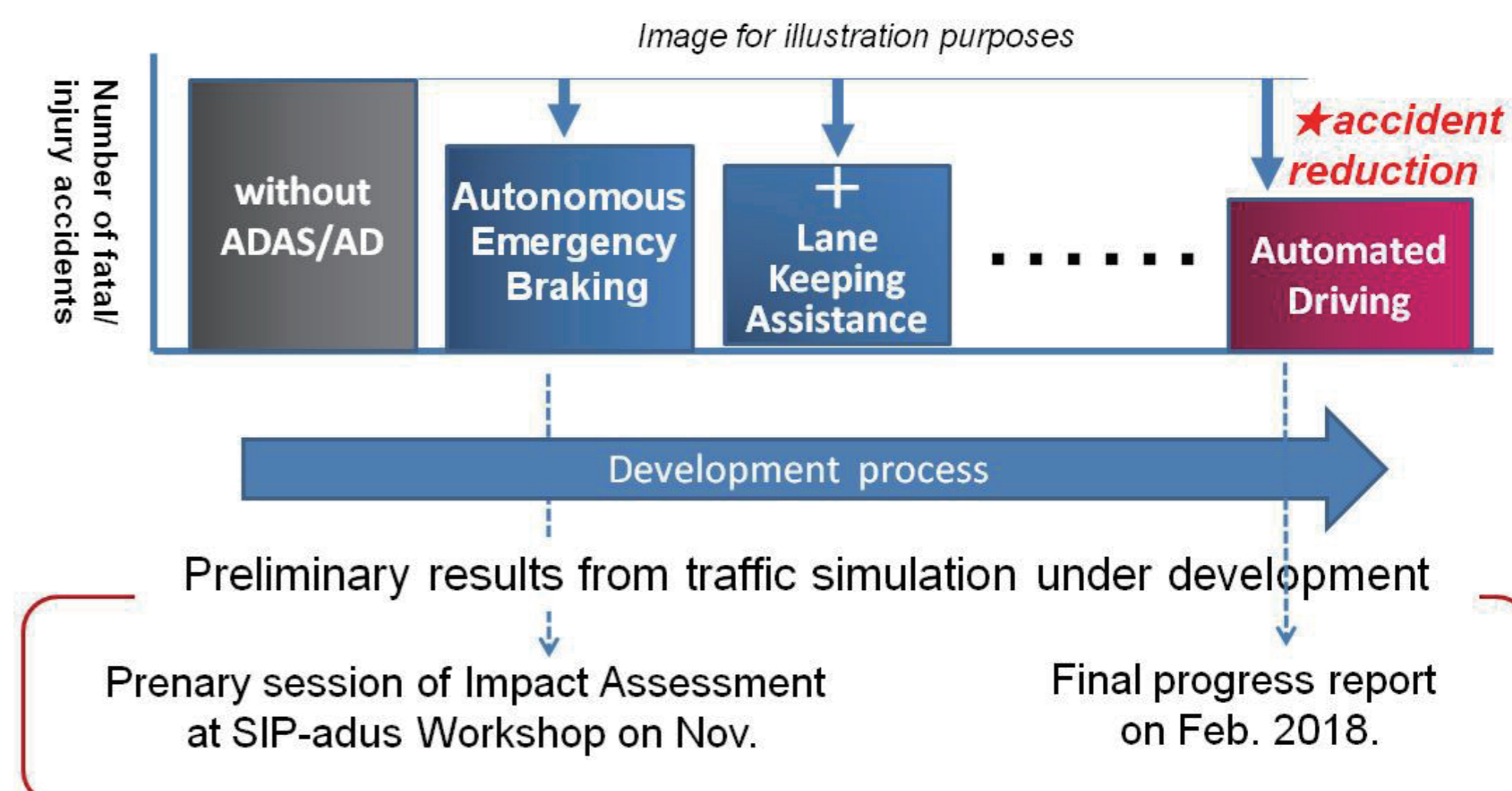


Type of functions in ADAS/Automated driving systems

"Event-based functions" and "Continuous functions" (Adaptive)



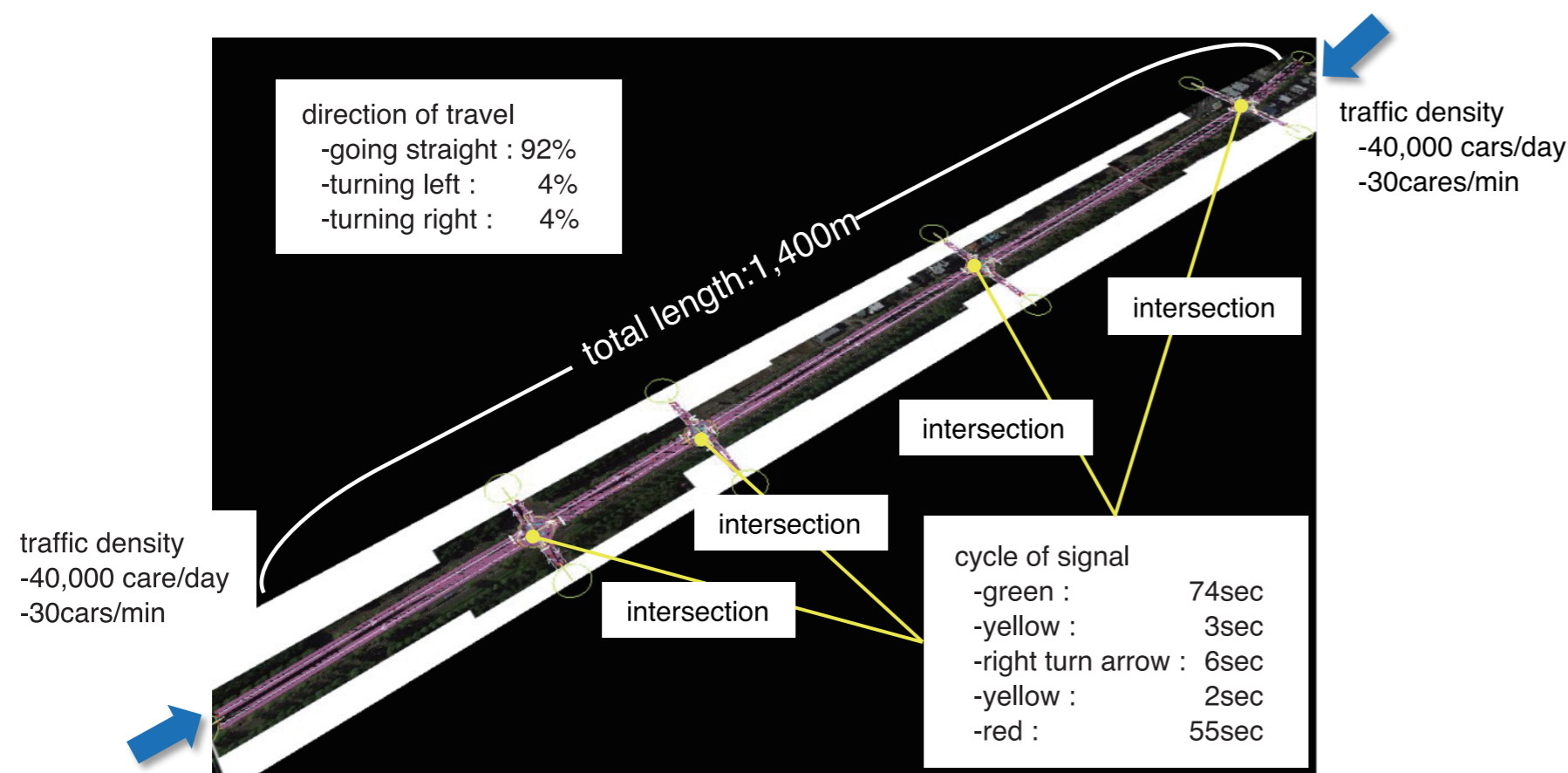
Target systems for safety impact assessment



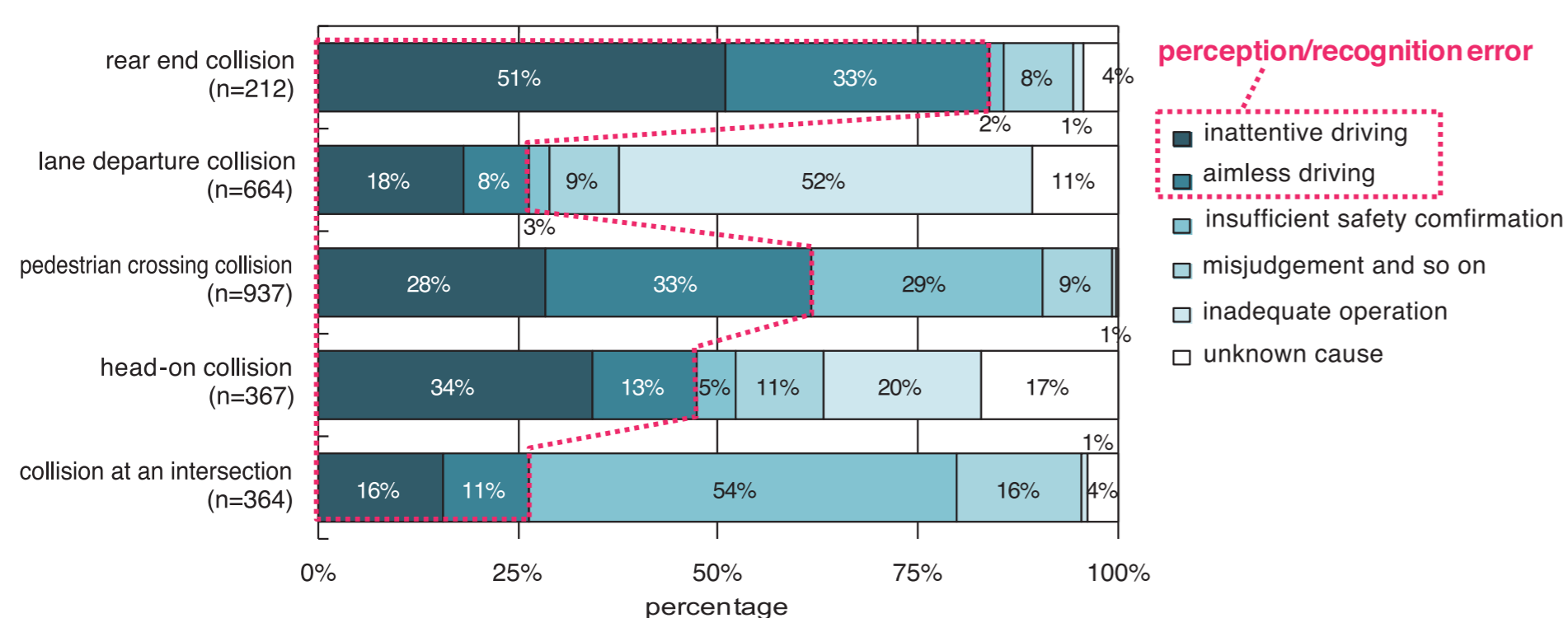
Simulation of safety system for rear end collision

Simulation conditions

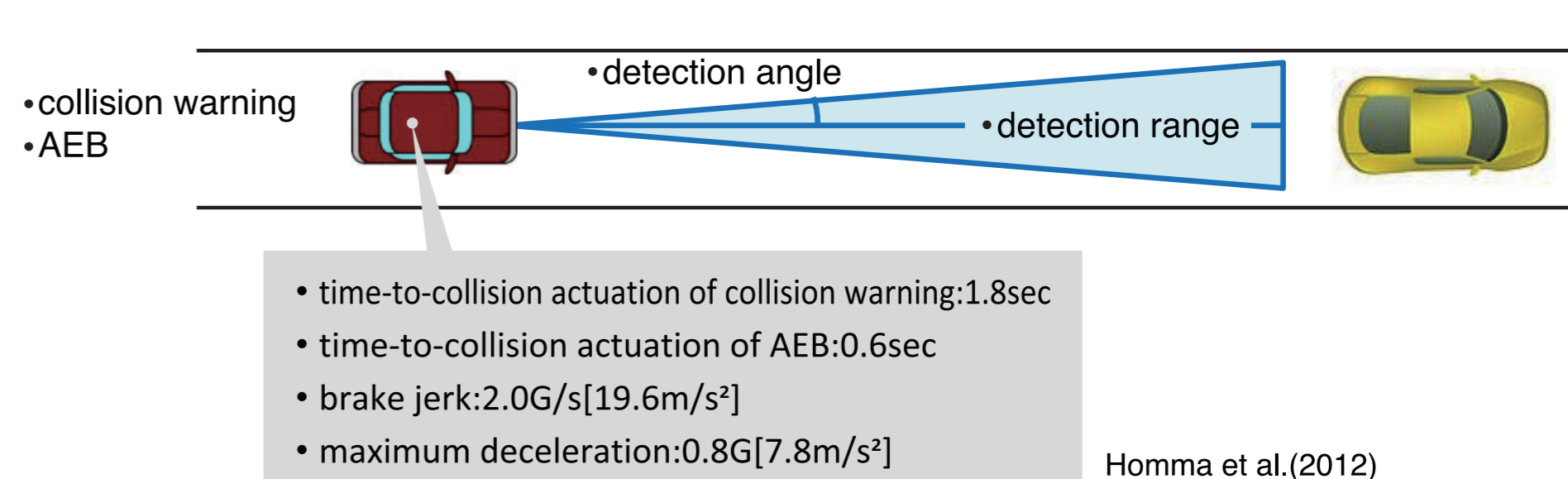
(1) Road environment: straight road section including 4 signalized intersections



(2) Driver error: inattentive driving/ aimless driving

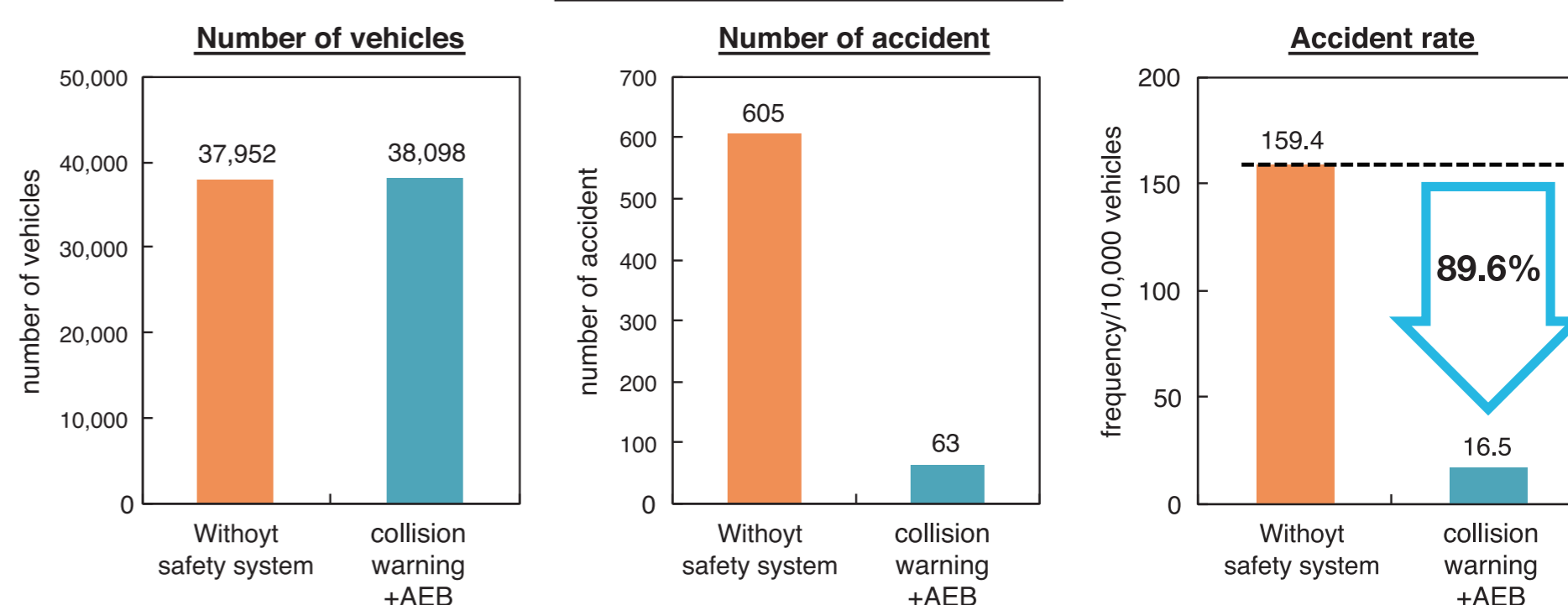


(3) Safety system: collision warning/ autonomous emergency braking (AEB)



Simulation result

Reduction of accident rate: 89.6% (Preliminary result)



Reproduction
-real traffic flow at straight road section
-driver error(perception/recognition) relevant to rear end collision

Estimation
-effect of safety system for rear end collision