CLEPA
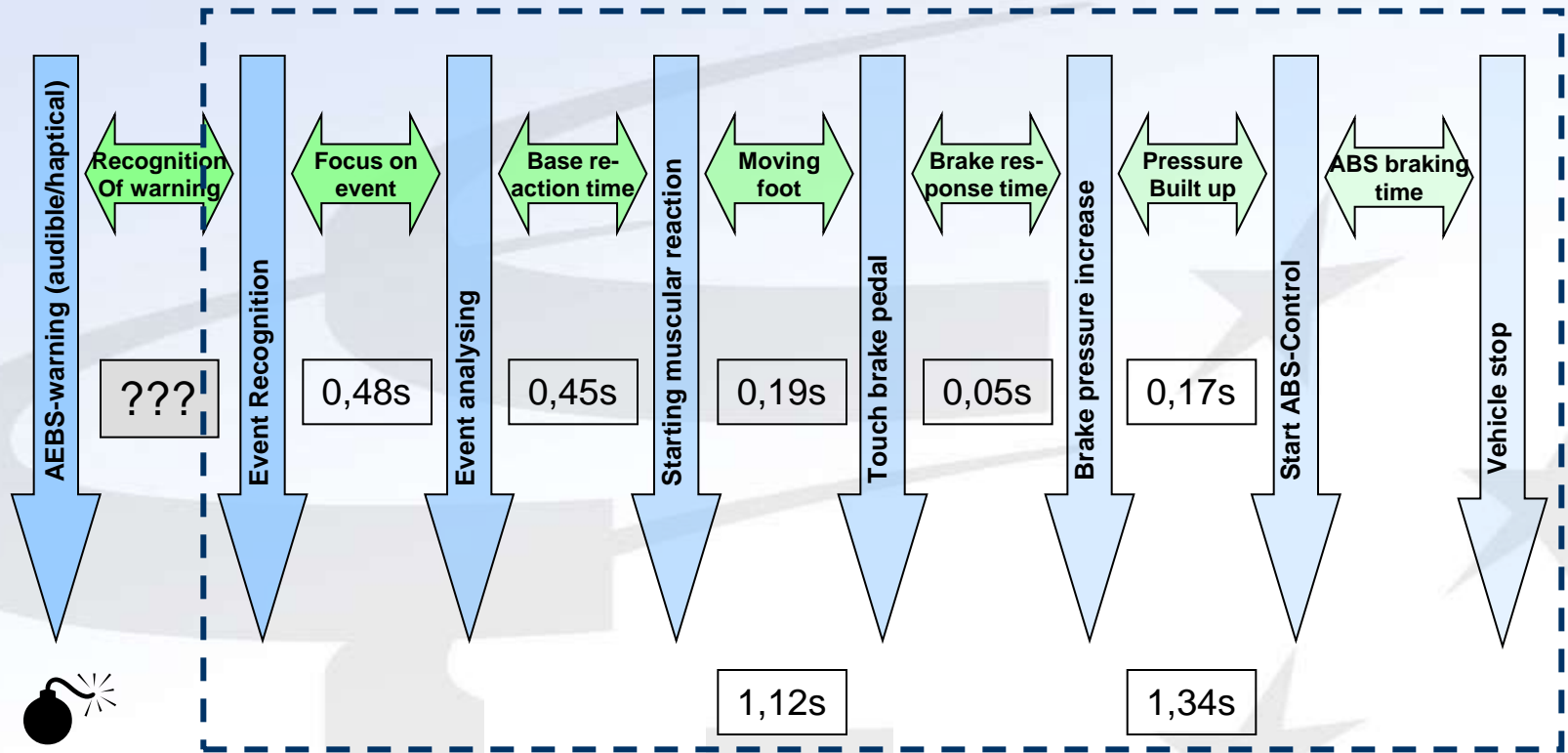European Association of
Automotive Suppliers

Driver Reaction Time

The „Kölner-Modell" was defined in 1982 and is still today legal basis for the German legal practice for traffic jurisdiction for passenger cars. (Burkhardt)

"Kölner-Modell"

Influence factors

Shorter | Longer

- **Anticipation of a incident**

Subjective!!

Overview of research results

	Situation	Brake reaction time
Rumar, K. (1971)	surprise situation in traffic	Av. 0,9s, 75%: 1,2s
Olson, P.L. (2002)	„straightforward"	90-95% between 0,75s and 1,5s
Green, M. (2000)	- Expected event - Unexpected event (e.g. Brake lights) - Surprise intrusion event (e.g. objects moving suddenly into the drivers path)	Av. = 0,75s Av. = 1,20s to 1,35s Av. = 1,50s
Summala (1990)	Real driving: suddenly stationary object	Reaction time between 0,86s and 1,39s
Mehmood (2009)	Driving simulator* - normal - surprise condition - stationary object	 Reaction time between 0,92s und 1,94s Reaction time between 0,66s und 1,04s Reaction time between 0,58s und 0,94s
Burckhard (1985)	Tests and accident reality	Reaction time between 0,7s (2%) and 1,34s (98%)
Schmitt (2007)	Real driving: Emergency braking of preceeding vehicle	Reaction time between 0,51s ((5%) and 0,99s (95%)
Schittenhelm (2005)	Driving simulatior*: end of traffic jam, cut in of a vehicle	Av. Reaction time (w/o evasion manoeuvre): 0,95s Av. Reaction time (w/ evasion manoeuvre): 1,12s
Krause et al. (2007)	Real driving: suddenly critical object (bike coming from the right)	Av: 0,43-0,6s, 98%: 0,88s-1,13s

CLEPA opinion:

to give the driver a realistic chance, to react on the warning, we propose a warning time of min. 2s before the system reacts with emergency braking