virtual vehicle

DDAW & ADDW Validation Testing

Virtual Vehicle Human Factors offers validation of Drowsiness Detection and Attention Warning (DDAW) systems and Advanced Driver Distraction Warning (ADDW) per EU DR 2019/1341, 2023/4523 and the EuroNCAP safety assist protocol for driver monitoring systems (DMS). The test package contains tailorable modules to validate a customer-provided DDAW and ADDW system in a driving simulator and physical vehicle. Driver drowsiness and distraction is safely induced and sensitivity is reliably measured in a state-of-the-art driving simulator with 210 degrees field of view and complete front vehicle cabin. Participants with diverse characteristics are recruited, and DMS performance is assessed under various occlusion and driver behavior conditions to meet EuroNCAP and EU requirements. The validation results include a description of the performed test procedures, test results, and compliance assessment for EuroNCAP and EU.

Contact:
Humanfactors@v2c2.at

Available Validation Testing Modules

Validation Requirements		Module 1	Module 2	Module 3	Module 4
Driver diversity	Age groups		x		
	Sex		x		
	Stature		x		
	Skin Complexion		x		
	Eyelid aperture		x		
Occlusion characteristics	Lighting levels		Low - Med		High
	Eyewear			x	
	Facial Hair			x	
	Hand on wheel			x	
	Facial occlusion			x	
	Eyelash Makeup			x	
	Eating			x	
Various driver behaviors	Talking			x	
	Laughing			x	
	Singing			x	
	Smoking & vaping			x	
	Eye scratching			x	
	Sneezing			x	
Fatigue	Drowsiness		x		
	Microsleep			x	
	Sleep			x	
Distraction	Long distraction		x		
	VATS		x		
	Phone usage		x		
Camera positioning	Five	x			
DR 2019/1341 DDAW	Compliance		x		
DR 2023/4523 ADDW	Compliance		x		
EuroNCAP Dossier TB 036	Compliance	x	x	x	x

#	Module Description
Module 1	Identification of optimal camera positioning in driving simulator and trade-off
Module 2	Empirical study with human participants in driving simulator with 20 Prob
Module 3	Test-session with Test-Ingenieur for EuroNCAP OSM occlusion / behaviors
Module 4	Functionality-check under maximal illumination (outside)

Contact: Humanfactors@v2c2.at

June 2025