

Road Traffic Safety - Problem, Cause and Technical Solution Matrix – OVIG 20TH June 2007

Safety Problem	Problem Items	Cause of Items	Priority (High/ low/ no importance)	Docs.	Possible Technical Solution (as applic. to vehicles)	Possible Technical Solution (as applic. to devices/)	Veh. Cats.	Item addressed by group
Governments	Governments / IWG	IWG	IWG	IWG	OICA	CLEPA/IEC	IWG	IWG
Road users glared by oncoming vehicle in reduced ambient lighting conditions	Discomfort/disability glare from dipped beam headlamp Reported excessive light output in-use	Overdriving of headlamp device with voltage higher than that for which it is designed and tested/approved		German data collection. SAE-830567 (1983)	Some vehicle manufacturers use voltage management (e.g. voltage limitation, etc.), including PWM. Large commercial vehicle manufacturers use reduced voltage to solve problem	Can offer plug in voltage stabilisers and voltage control devices for all vehicles	M N	Yes
					HID and LED lamps already have voltage control			
		Mis-aim of headlamp in-use		UK survey on vehicles <3yrs indicates most vehicles outside OEM spec but within COP spec	Calibration of set up/checking equip in line regulation requirements ? (not in IG mandate)			No
		Light source OE			COP	COP		No
		Light source After market/illegal bulbs				COP/tolerance		No
		Incorrect insertion of the light source into the lamp			Condition for simple replacement PTI	Socket tolerance		
		Dirt on headlamp lens –			No solution – advise user to keep clean in owners manual ? (not in IG mandate)			
		Dirt on headlamp lens –			Lamps over 2000l have auto clean in line with R-45. Assume all >2000l (not in IG mandate)			
Diminished presence / conspicuity of vehicle	Light out Increased incidence of light source failure over and above the cycle of light source replacement expected from currently available light sources	Driving of light sources with voltage higher than that for which it is designed and tested/approved, reduces rated light source lifetime			Some vehicle manufacturers use voltage management (e.g. voltage limitation, etc.), including PWM. Large commercial vehicle manufacturers use reduced voltage to solve problem	Good knowledge of usage conditions. Design of new light sources.	M, N, O	
	Diminished light source luminance	Driving of headlamp/signalling device with voltage lower than that for which it is designed and tested/approved				Can offer plug in voltage stabilisers and voltage control devices for all devices		
Diminished presence / conspicuity of vehicles	Signalling light sources	As per headlamp			As per headlamp			
		Installation of low quality approved light sources			Manuf to add suitable advise in owners manual for replacing light sources			
		No standard available for vehicle testing that matches vehicle voltage condition in-use			Create a definition of the vehicle voltage specifications during normal operating conditions (must be harmonised with R-48) Definition to be used as test criteria for COP and checking vehicles in-use		M1 N1 N3?	
EMC immunity		0	UNECE R10	Compliance with UNECE R10 must be assured			No	

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Malfunction of vehicle electrical system	EMC radiation		0	UNECE R10	Compliance with UNECE R10 must be assured			No
Malfunction of electrical systems in vehicle environment								
	variance between vehicle type approval and in-service operating voltage	Installation regulation not harmonised with real world conditions (current fleet)					M, N	Yes
	variance between component type approval voltage and vehicle type approval voltage, with said lighting devices installed	Inconsistency between installation regulation and component regulations					M, N	Yes