

BSI CAV Standards Roadmap 2022

A summary of key standards related to CAVs and priority areas for future development to support the safe testing, trialling and future deployments of CAVs.

	Standards		
	Recently Published	In Development	
Safety & Assurance			Standard behaviours in response to emergency vehicles (incl. high priority messages)
			Library of scenarios/test cases for testing & type approval of CAVs & systems (may include by simulation)
			Guidance on how to apply SOTIF ISO 21448
			Minimal risk manoeuvre & conditions for ADS failures & other malfunctions
			HMI standards for handover & takeback/fallback functionality includes monitoring of safety driver & training
Perception, Decision Making & AI			Verification & validation of machine learning models, systems, & results suitable for safety cases
			Verification & validation of systems by simulation suitable for safety cases, to match real-world ground truth
			Performance metrics for perception including sensor integrity & calibration & data fusion
Data			Benchmarking safety performance of manual & automated vehicles
			Teleoperation system specifications
			Real-time monitoring of AVs (including performance of ADS) for safety
			Using Off-Vehicle Data from C-ITS V2X including perception & situational awareness for safe driving decisions
			External communications for other road users & public that self-driving mode is active and includes standardized behaviour
Security			
Digital Infrastructure			
Human Factors			Teleoperation human factors / training, testing and operator license
			Requirements for interior design for new vehicles without steering wheels / pedals etc.
			Internal communications to AV occupants to explain AV actions to gain trust (includes monitoring occupants for safety)

Key:

Live BSI research projects

Urgent priority gaps as voted by industry experts during BSI's CAV roadmap workshops