

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	Priority Gaps
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