

ISO 23792-1:2026-03 (E)

Intelligent transport systems - Motorway chauffeur systems (MCS) - Part 1: Framework and general requirements

Contents		Page
	Foreword	v
	Introduction	vi
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Abbreviated terms	4
5	Characteristics of motorway chauffeur systems (MCS)	4
5.1	General.....	4
5.2	Operational design domain (ODD).....	5
5.2.1	General.....	5
5.2.2	Roadway physical characteristics.....	6
5.2.3	Traffic in the surrounding environment.....	6
5.2.4	Abnormalities in roadway operational condition.....	6
5.2.5	Ambient environmental conditions.....	6
5.3	System functionalities.....	7
5.3.1	General.....	7
5.3.2	Basic functionalities to realize in-lane operation.....	7
5.3.3	Lane changing functionalities.....	7
5.4	Classification.....	8
5.5	System limitations.....	8
5.6	Providing information to the user.....	8
6	General system requirements	8
6.1	Operating conditions.....	8
6.1.1	General.....	8
6.1.2	Engagement conditions.....	8
6.1.3	Disengagement-triggering conditions.....	8
6.1.4	Direct disengagement conditions.....	9
6.2	State transition.....	9
6.2.1	General.....	9
6.2.2	Off state.....	10
6.2.3	Standby state.....	10
6.2.4	Nominal operation state.....	11
6.2.5	Requesting fallback state.....	12
6.3	System functions.....	13
6.3.1	General.....	13
6.3.2	Object and event detection and response (OEDR).....	13
6.3.3	Vehicle motion control (VMC).....	14
6.3.4	Generation of request to intervene (RTI).....	14
6.3.5	Status indication.....	15
6.3.6	User control interface.....	16
6.3.7	Fallback-ready user (FRU) input detection.....	17
6.3.8	Motorway chauffeur system (MCS) monitoring the fallback-ready user (FRU).....	18
6.3.9	Subject vehicle condition monitor.....	18
6.3.10	Motorway chauffeur system (MCS) condition monitor.....	18
6.3.11	Localization.....	18
6.3.12	External warning generation.....	18
6.3.13	Function required for route-following functionalities.....	18

6.3.14	Related functions.....	19
6.4	Requirements for continuing operation after detecting disengagement-triggering conditions.....	19
6.4.1	General.....	19
6.4.2	Classification of adverse situations.....	19
6.4.3	Responses to adverse situations.....	20
6.5	Misuse countermeasures.....	21
6.5.1	General.....	21
6.5.2	Hazardous situations involving reasonably foreseeable misuse.....	21
7	Minimum performance requirements of the dynamic driving task (DDT).....	21
7.1	General.....	21
7.2	Following traffic rules.....	22
7.3	Operating speed range.....	22
7.4	Normal operation.....	22
7.4.1	General.....	22
7.4.2	Sustained longitudinal vehicle motion control.....	22
7.4.3	Sustained lateral vehicle motion control.....	23
7.4.4	Crash avoidance.....	23
7.5	Performance-impaired operation.....	24
7.6	Reaction to unresponsive fallback ready user (FRU).....	24
8	Test procedures.....	24
8.1	General.....	24
8.1.1	Purpose.....	24
8.1.2	Driving environment.....	24
8.1.3	System settings and test driver roles.....	25
8.1.4	Common test pass criteria.....	25
8.1.5	Confirmation of the human machine interface (HMI) design.....	25
8.1.6	Success rate and number of trials.....	25
8.1.7	List of test scenarios.....	25
8.1.8	Test sites.....	26
8.2	Scenario 1: Reaction to unresponsive fallback-ready user.....	26
8.2.1	Test scenario.....	26
8.2.2	Pass criteria.....	26
8.3	Scenario 2: Direct disengagement by steering input.....	27
8.3.1	Test scenario.....	27
8.3.2	Pass criteria.....	27
8.4	Scenario 3: Continued operation after brake input.....	27
8.4.1	Test scenario.....	27
8.4.2	Pass criteria.....	27
8.5	Scenario 4: Forward vehicle braking hard.....	27
8.5.1	Test scenario.....	27
8.5.2	Pass criteria.....	28
8.6	Scenario 5: Aggressive cut-in from the adjacent lane.....	28
8.6.1	Test scenario.....	28
8.6.2	Pass criteria.....	29
8.7	Scenario 6: Obstacle in lane.....	29
8.7.1	Test scenario.....	29
8.7.2	Pass criteria.....	30
8.8	Scenario 8: Approaching geographical operational design domain (ODD) boundary.....	30
8.8.1	Test scenario.....	30
8.8.2	Pass criteria.....	30
8.9	Scenario 9: Engagement restricted outside ODD.....	30
8.9.1	Test scenario.....	30
8.9.2	Pass criteria.....	30
	Annex A (informative) MCS Type 2 description and design considerations.....	31
	Bibliography.....	38