

# ISO 22735:2021-05 (E)

## Road vehicles - Test method to evaluate the performance of lane-keeping assistance systems

---

Contents		Page
	Foreword .....	v
	Introduction .....	vi
<b>1</b>	<b>Scope</b> .....	<b>1</b>
<b>2</b>	<b>Normative references</b> .....	<b>1</b>
<b>3</b>	<b>Terms and definitions</b> .....	<b>1</b>
<b>4</b>	<b>Variables</b> .....	<b>2</b>
4.1	Coordinate systems .....	2
4.2	Lateral deviation from path ( $Y_{VUT}$ error) .....	2
4.3	Variables to be measured .....	3
<b>5</b>	<b>Measuring equipment</b> .....	<b>3</b>
5.1	General .....	3
5.2	Transducer installation .....	3
5.3	Calibration .....	3
5.4	Data processing .....	4
<b>6</b>	<b>Test conditions</b> .....	<b>4</b>
6.1	General .....	4
6.2	Test data .....	4
6.3	Test track .....	4
6.3.1	General .....	4
6.3.2	Lane marking .....	4
6.4	Environmental conditions .....	5
6.5	Test vehicle .....	5
6.5.1	General condition .....	5
6.5.2	LKAS settings .....	5
6.5.3	Tyres .....	5
6.5.4	Wheel alignment measurement .....	6
6.5.5	Loading conditions .....	6
6.6	Vehicle preparation .....	6
<b>7</b>	<b>Test procedure</b> .....	<b>7</b>
7.1	Pre-test conditioning .....	7
7.1.1	General .....	7
7.1.2	Brakes conditioning .....	7
7.1.3	Tyres conditioning .....	8
7.1.4	System check .....	8
7.2	Test scenarios .....	8
7.3	Test execution .....	10
<b>8</b>	<b>Performance metrics</b> .....	<b>11</b>
8.1	General .....	11
8.2	Lateral speed of VUT during a test run ( $V_{latVUT}$ ) and last lateral speed of VUT before line crossing ( $V_{latVUT})_{blc}$ .....	11
8.3	Lane departure warning activation time during a test run ( $T_{LDW}$ ) and last lane departure warning activation time before line crossing ( $T_{LDW})_{blc}$ .....	11
8.4	LKAS activation time during a test run ( $T_{LKAS}$ ) and last LKAS activation time before line crossing ( $T_{LKAS})_{blc}$ .....	11

8.5	Time to line crossing during a test run ( $T_{TLC}$ ) and last $T_{TLC}$ before line crossing ( $T_{TLC}$ ) <sub>blc</sub> .....	11
8.6	Distance to line crossing during a test run ( $D_{TLC}$ ) and last $D_{TLC}$ before line crossing ( $D_{TLC}$ ) <sub>blc</sub> .....	11
8.7	Maximum yaw velocity during a test run ( $\dot{\Psi}_{VUT}$ ) <sub>max</sub> and last ( $\dot{\Psi}_{VUT}$ ) <sub>max</sub> before line crossing ( $\dot{\Psi}_{VUT}$ ) <sub>max,blc</sub> .....	11
8.8	Maximum lateral acceleration during a test run ( $A_{latVUT}$ ) <sub>max</sub> and last ( $A_{latVUT}$ ) <sub>max</sub> before line crossing ( $A_{latVUT}$ ) <sub>max,blc</sub> .....	11
8.9	Maximum steering torque during a test run ( $M_{VUT}$ ) <sub>max</sub> and last ( $M_{VUT}$ ) <sub>max</sub> before line crossing ( $M_{VUT}$ ) <sub>max,blc</sub> .....	12
<b>Annex A (informative) Road markings</b> .....		<b>13</b>
<b>Annex B (informative) Test report</b> .....		<b>21</b>
<b>Bibliography</b> .....		<b>23</b>