

ISO 23150:2023-05 (E)

Road vehicles - Data communication between sensors and data fusion unit for automated driving functions - Logical interface

Contents

	Page
Foreword	vi
Introduction	viii
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
3.1 Architectural components	1
3.2 Terms for logical interface layers	2
3.3 Structure terms	3
3.4 Measurement terms	3
3.5 Requirement level terms	6
3.6 Road user relevant entity types	7
3.7 Axis and coordinate system terms	9
4 Abbreviated terms	15
5 Structure of the interface description	16
5.1 General	16
5.2 Signal	17
5.3 Interface	17
5.4 Specific signal grouping	18
5.5 Profile	19
6 Logical interface from a sensor as well as a sensor cluster to a fusion unit	19
6.1 General	19
6.2 Generic interface header	22
6.3 Generic interface entity	22
6.4 Profile: Uniqueness of interface versioning	23
7 Object level	23
7.1 General	23
7.2 Generic object level interface	24
7.2.1 Generic object level header	24
7.2.2 Generic object level entity	25
7.3 Potentially moving object interface	25
7.3.1 Potentially moving object header	34
7.3.2 Potentially moving object entity	35
7.3.3 Profile: Motion type	36
7.3.4 Profile: Motion state vector	37
7.4 Road object interface	38
7.4.1 Road object header	49
7.4.2 Road object entity	51
7.4.3 Profile: Colour model for RDOI	53
7.5 Static object interface	53
7.5.1 Static object header	81
7.5.2 Static object entity	83
7.5.3 Profile: Colour model for SOI	91
7.5.4 Profile: Detection references for 3D detections	91

7.6	Free space area object interface	94
7.6.1	Free space area object header	99
7.6.2	Free space area object entity	100
8	Feature level	101
8.1	General	101
8.2	Generic sensor cluster feature interface	102
8.2.1	Generic sensor cluster feature header	102
8.2.2	Generic sensor cluster feature entity	103
8.3	Camera feature interface	103
8.3.1	Camera feature header	107
8.3.2	Camera feature entity	108
8.3.3	Profile: Colour model for CFI	109
8.4	Ultrasonic feature interface	110
8.4.1	Ultrasonic feature header	113
8.4.2	Ultrasonic feature entity	114
9	Detection level	114
9.1	General	114
9.2	Generic sensor detection interface	115
9.2.1	Generic sensor detections header	115
9.2.2	Generic sensor detections entity	116
9.3	Radar detection interface	117
9.3.1	Radar detections header	119
9.3.2	Radar detections entity	121
9.3.3	Profile: Radar ambiguity	121
9.4	Lidar detection interface	121
9.4.1	Lidar detection header	124
9.4.2	Lidar detection entity	125
9.5	Camera detection interface	125
9.5.1	Camera detection header	130
9.5.2	Camera detection entity	131
9.5.3	Profile: Colour model for CDI	132
9.6	Ultrasonic detection interface	132
9.6.1	Ultrasonic detection header	135
9.6.2	Ultrasonic detection entity	136
9.6.3	Profile: Ultrasonic sensor cluster	137
10	Supportive sensor interfaces	139
10.1	General	139
10.2	Generic supportive sensor interface	140
10.2.1	Generic supportive sensor header	140
10.2.2	Generic supportive sensor entity	141
10.3	Sensor performance interface	141
10.3.1	Sensor performance header	145
10.3.2	Sensor performance entity	147
10.3.3	Profile: Uniqueness of interface versioning of SPIs	147
10.4	Sensor health information interface	147
10.4.1	Sensor health information header	150
10.4.2	Sensor health information entity	151
11	Sensor input interface	151
11.1	General	151
11.2	Generic sensor input interface	151
11.2.1	Generic sensor inputs header	151
11.2.2	Generic sensor inputs entity	152
11.2.3	Profile: Uniqueness of interface versioning of SII	152
11.3	Common sensor input interface	152
11.3.1	Common sensor input header	156
11.3.2	Common sensor input entity	156

Annex A (normative) Interface signals	158
Annex B (normative) Options and constraints	328
Bibliography	344