



SURFACE VEHICLE RECOMMENDED PRACTICE

J2802™

OCT2021

Issued 2010-01
Revised 2015-06
Stabilized 2021-10

Superseding J2802 JUN2015

Blind Spot Monitoring System (BSMS): Operating Characteristics and User Interface

RATIONALE

This document has been determined to contain basic and stable technology which is not dynamic in nature. This document contains "basic" BSMS and is not intended to ever change.

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FOREWORD

This recommended practice is intended to be consistent only with the “Blind Spot Warning Function” in ISO FDIS 17387-Lane Change Decision Aid System. The functionality of the “Closing Vehicle Warning” and the “Lane Change Warning” are not considered in this document.

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1. SCOPE

This document specifies the minimum recommendations for Blind Spot Monitoring System (BSMS) operational characteristics and elements of the user interface. A visual BSMS indicator is recommended.

BSMS detects and conveys to the driver via a visual indicator the presence of a target (e.g., a vehicle), adjacent to the subject vehicle in the “traditional” Adjacent Blind Spot Zone (ABSZ). The BSMS is not intended to replace the need for interior and exterior rear-view mirrors or to reduce mirror size. BSMS is only intended as a supplement to these mirrors and will not take any automatic vehicle control action to prevent possible collisions. While the BSMS will assist drivers in detecting the presence of vehicles in their ABSZ, the absence of a visual indicator will not guarantee that the driver can safely make a lane change maneuver (e.g., vehicles may be approaching rapidly outside the ABSZ area).

This document applies to original equipment and aftermarket BSMS systems for passenger vehicles. This document does not apply to installing a BSMS on either motorcycles or commercial vehicles. Finally, this document does not address Lane Change Warning systems, which monitor areas substantially farther back than the side blind spot areas monitored by the BSMS (See ISO FDIS 17387).

2. REFERENCES

2.1 Applicable Documents

The following publications form a part of this specification to the extent specified herein. Unless otherwise specified, the latest issue of ISO publications shall apply.

2.1.1 ISO Publications

Available from American National Standards Institute, 25 West 43rd Street, New York, NY 10036-8002, Tel: 212-642-4900, www.ansi.org.

ISO FDIS 17387 Intelligent transport systems—Lane change decision aid systems—Performance requirements and test procedures (ISO/TC204WG14/N40.32)

ISO 2575 Road vehicles—Symbols for controls, indicators and tell-tales

2.1.2 NHTSA Publication

Available from US Department of Transportation, NHTSA, 1200 New Jersey Ave., SE, West Building, Washington, DC, 20590, Tel: 888-327-4236, www.nhtsa.gov.

National Highway Traffic Safety Administration. Laboratory Test Procedure for FMVSS 111-Rearview Mirrors (Other than School Buses) (TP111V-000). Washington, DC: US Department of Transportation.

2.2 Related Publications

The following publications are provided for information purposes only and are not a required part of this SAE Technical Report.

2.2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

SAE J941 Motor Vehicle Drivers' Eye Locations

SAE J2830 Process for Comprehension Testing of In-Vehicle Icons

2.2.2 FHWA Publication

Available from US Department of Transportation, FHWA, 1200 New Jersey Ave., SE, Washington, DC, 20590, www.fhwa.dot.gov.

Campbell, J. L., Richman, J. B., Carney, C., and Lee, J. D. (2004). In-Vehicle Display Icons and Other Information Elements Volume I: Guideline (Technical Report FHWA-RD-03-065). Federal Highway Administration, Washington DC.

2.2.3 Elsevier Publication

Available from Elsevier Customer Service Department, 11830 Westline Industrial Drive, St. Louis, MO 63146, Tel: 800-545-2522 (inside USA), www.elsevier.com.

Kiefer, R. J., and Hankey, J. M. (2008) Lane Change Behavior with a Side Blind Zone Alert System. Accident Analysis and Prevention, 40, 683-690.

2.2.4 HFES Publication

Available from HFES, 1124 Montana Ave., Suite B, Santa Monica, CA 90403-1617, Tel: 310-394-1811, www.hfes.org.

Olsen, E. (2004). Lane Change Warning Design Guidelines. Proceedings of the 48th Annual Meeting of the Human Factors and Ergonomics Society. Santa Monica, CA: Human Factors and Ergonomics Society.

3. DEFINITIONS

3.1 BLIND SPOT MONITORING SYSTEM (BSMS)

A combination of sensor(s) and visual display(s) that detect and communicate to the driver the presence of a target in the left and/or right side operation zone(s).

3.2 LANE CHANGE WARNING SYSTEM

Any system that employs an additional operating zone extending rearward from the BSMS rearmost boundaries and is capable of providing warning(s) when a vehicle is detected in those zone(s).

3.3 SUBJECT VEHICLE

The vehicle equipped with the BSMS.