International Standard

ISO 22133

First edition
2026-01

Road vehicles — Test object monitoring and control for active safety and automated/autonomous vehicle testing — Functional requirements, specifications and communication protocol

Véhicules routiers — Surveillance et contrôle des objets de test pour l'évaluation de la sécurité active et des véhicules automatisés/autonomes — Exigences fonctionnelles, caractéristiques et protocole de communication

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 33, *Vehicle dynamics, chassis components and driving automation systems testing*.

This first edition cancels and replaces the first edition of ISO/TS 22133:2023, which has been technically revised.

The main changes are as follows:

- update of the test coordinate system (6.3.2);
- update of the local test object and global geofence (7.2);
- redesign of the test object and control centre state diagram (9.2 and 9.3);
- extension of MONR-struct with StopTrigger, ObjectAction, etc.;
- increase of position accuracy (MONR, TRAJ, GEOF);
- introduction of monitoring mode;
- increase of the DRES message (added supported modes);
- update of diagrams (e.g. Estop, NormalStop);
- introduction of a normal stop by a test object;
- improvement and development of object discovery detection;
- added the dynamic position point message.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Testing of collision avoidance systems, active safety functions and more advanced autonomous functions in vehicles require testing on proving grounds. The purpose is to expose the vehicle under test to potentially dangerous traffic situations in a safe manner. The evaluation is done during development and in voluntary and mandatory test procedures.

To orchestrate these traffic scenarios, various impactable targets representing traffic actors are controlled. The number of controlled targets can be one or many depending on the required traffic situation scenario. Several requirements are important ranging from safety to position and speed precision, to logging capabilities.

This document specifies requirements, functionality and a protocol allowing for multivendor target carrier systems to be controlled according to the required traffic situation scenario, to report expected information for logging purposes and other functions required.