TECHNICAL SPECIFICATION

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## Road vehicles — Ergonomic aspects of transport information and control systems — Calibration tasks for methods which assess driver demand due to the use of in-vehicle systems

*Véhicules routiers — Aspects ergonomiques des systèmes d'information et de contrôle du transport — Tâches de calibration pour méthodes qui évaluent la distraction du conducteur due à l'utilisation des systèmes embarqués*

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# Foreword

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The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

In other circumstances, particularly when there is an urgent market requirement for such documents, a technical committee may decide to publish other types of normative document:

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An ISO/PAS or ISO/TS is reviewed after three years in order to decide whether it will be confirmed for a further three years, revised to become an International Standard, or withdrawn. If the ISO/PAS or ISO/TS is confirmed, it is reviewed again after a further three years, at which time it must either be transformed into an International Standard or be withdrawn.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO/TS 14198 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 13, *Ergonomics applicable to road vehicles*.

# Introduction

The number of standardized methods to assess driver attentional demand due to the use of in-vehicle information and communication devices is continuing to increase. In applying these methodologies, it is important to understand and document variability in participants' performance of standard calibration tasks and procedures across laboratories and/or time.

A suitable calibration task should have the following attributes:

— It should be robust against the variations in cultural background of participants.

— Properly applied, the task should give repeatable quantitative results. It should be sensitive to inappropriate variations in participants, equipment, location, experimenter and instruction.

— It should use durable and readily available equipment for conducting the task

— It should apply to the driver population and be usable in a driving-like context.

A standardized calibration task can be used to produce a range of statistically stable, repeatable and comparable secondary task demands for a participant in an experimental setting. This setting can be used to assess the effect on driving performance of the attentional demand due to driver interaction with an information, entertainment, and control or communication system while a vehicle is in motion.

Different calibration tasks are specified in this Technical Specification to cover calibration manual and visual aspects of various secondary task characteristics.

# Road vehicles — Ergonomic aspects of transport information and control systems — Calibration tasks for methods which assess driver demand due to the use of in-vehicle systems

## 1 Scope

This Technical Specification provides procedures that can be used as a secondary task in a dual task setting to determine whether that evaluation setting is standardized and valid for purposes of assessing driver attentional demand due to the use of an in-vehicle system. This Technical Specification does not define calibration procedures for other evaluation activities that a laboratory might undertake.

This Technical Specification provides advice on the selection of an appropriate candidate calibration task, given an attentional demand evaluation procedure that uses primary driving-like task settings and procedures which are defined outside of this Technical Specification.

The description of a calibration task includes its application, experimental set-up, data collection, and procedures for analysis of results.

The purpose of this Technical Specification is not to define a reference criterion as to whether a given secondary task is suitable for use while driving. Although specific settings of parameters of a calibration task might be used to realize such a predefined pass/fail criterion, this Technical Specification does not provide such a criterion for a given level of attentional demand.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 15008, *Road vehicles — Ergonomic aspects of transport information and control systems — Specifications and test procedures for in-vehicle visual presentation*

ISO 26022, *Road vehicles — Ergonomic aspects of transport information and control systems — Simulated lane change test to assess in-vehicle secondary task demand*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

**3.1**
**calibration task**
type of reference task used for the purpose of comparing different tests or test results between sites, or over time at a given site

**3.2**
**criterion**
threshold or value of a variable to be met

**3.3**
**demand**
total visual, auditory, cognitive, or physical resources required of the driver to accomplish the primary driving task and interact with a Transport Information and Control System (TICS) in a dual task setting