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Road vehicles — Ergonomic aspects of transport information and control systems — Procedure for assessing suitability for use while driving

Véhicules routiers — Aspects ergonomiques des systèmes de commande et d'information du transport — Procédure d'évaluation de leur adéquation pour une utilisation pendant la conduite



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Contents

Page

Foreword	iv
0 Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
3.1 Terms and definitions related to suitability	2
3.2 Other terms and definitions	2
4 Requirements and recommendations	5
4.1 Summary of requirements	5
4.2 User-oriented TICS description and context of use	5
4.3 Task description and analysis	7
4.4 Assessment	8
4.5 Documentation	11
Annex A (informative) User-oriented TICS description — Examples	12
Annex B (informative) TICS task descriptions — Examples	15
Annex C (informative) Suitability assessment methods and variables	18
Annex D (informative) Example individual assessments — Stages 2 to 6	26
Bibliography	28

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

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.

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 17287 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 13, *Ergonomics applicable to road vehicles*.

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0 Introduction

0.1 General

This International Standard arises from the increasing availability of transport information and control systems (TICS) to support the driver in the primary driving tasks and in other secondary tasks. Drivers require ease of use and high functionality and do not expect this to lead to unsafe driving situations (in use as intended by the manufacturer, or during malfunction).

0.2 Assessment of suitability of TICS

The suitability of TICS is assessed on the basis of compatibility with the primary driving task and is concerned with those aspects of usability which relate most closely to the driver's performance. In particular, suitability focuses on

- interference (with the driving task),
- controllability,
- efficiency, and
- ease of use while learning about the system.

The first three aspects (which are not necessarily mutually exclusive) relate closely to the primary driving task. The fourth is also important, as some features of TICS may be used infrequently, or by drivers who are initially unfamiliar with the systems. Other aspects of usability, such as satisfaction, are less important in assessing the suitability of TICS for use while driving as they are more specific to individual manufacturers and their product profiles, and do not relate so closely to the driver's performance in undertaking the primary driving task.

The importance of the four identified components in an overall assessment of suitability will vary between TICS.

Suitability is a property of TICS and not of their components. It is assessed on the basis of the interaction between the driver and the TICS within the driving environment, and suitability needs to take into account driver's behavioural adaptation induced by the TICS.

This International Standard concerns the process of assessment of a specific TICS product and is intended to ensure that its suitability is considered, assessed and documented as part of the design and development process. It does not attempt to prescribe all the actions that should be taken to assess or ensure suitability. The scope and detail of an assessment is a matter for users of this document. Informative annexes provide examples of aspects of the suitability assessment process.

0.3 Application

This International Standard is intended to assist the assessment of the suitability of TICS in advance of widespread system deployment. It can be used when components from different suppliers are proposed or assembled for use in the in-vehicle environment. The trend of integration of in-vehicle systems is likely to increase the need to consider the impact of multiple and integrated in-vehicle systems and this document could also be applicable to non-TICS functions.

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This International Standard is intended for use by manufacturers or by others concerned with assessing the suitability of TICS for use while driving. It is assumed that the users will have some knowledge of automotive human factors.

This International Standard can be used by manufacturers as part of their own quality processes. The design and implementation of procedures to ensure that TICS suitability is assessed and documented will be influenced by the varying needs of an organization, its objectives, the products and services supplied and existing processes and practices employed.

It is not the purpose of this International Standard to enforce uniformity of TICS. It is independent of the type of vehicle, complexity of TICS, level of integration within a vehicle or the specific TICS application or implementation. It is applicable to all TICS, including, for example, those intended for use by drivers with special needs.