First edition 2002-07-01

# Road vehicles — Ergonomic aspects of transport information and control systems — Dialogue management principles and compliance procedures

Véhicules routiers — Aspects ergonomiques des systèmes de commande et d'information du transport — Principes de gestion du dialogue et essais de conformité



Reference number ISO 15005:2002(E)

#### **PDF** disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

ISO copyright office Case postale 56 • CH-1211 Geneva 20 Tel. + 41 22 749 01 11 Fax + 41 22 749 09 47 E-mail copyright@iso.ch Web www.iso.ch Printed in Switzerland

<sup>©</sup> ISO 2002

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

## Contents

Forewordiv	
Introductionv	
1	Scope1
2	Normative references1
3	Terms and definitions1
4	Application4
5	Dialogue principles4
5.1 5.2	General
5.2.1	Explanation of principle
5.2.2	Compatibility with driving
5.2.3 5.2.4	Simplicity
5.3	Appropriate for the TICS task9
5.3.1 5.3.2	Explanation of principle
5.3.2 5.3.3	Controllability
5.4	Appropriate for the driver
5.4.1 5.4.2	Explanation of principle
5.4.3	Conformity with driver expectations
5.4.4	Error-tolerance
Bibliography14	

### 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 3.

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 International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 15005 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 13, *Ergonomics applicable to road vehicles*.

### Introduction

This International Standard deals with the ergonomic design of transport information and control systems (TICS) and provides general ergonomic principles for their dialogues, independent of any specific dialogue techniques.

The utmost care needs to be taken in the design and installation of TICS equipment in order to ensure that it does not impair the driver's safe control of the vehicle. This is in recognition of the fact that the driving environment has variable conditions, such as road surface, visibility, weather, ambient lighting and traffic conditions.

Dialogue management principles for TICSs are characterized by the need to take into account the following:

- TICSs are intended for use in a moving vehicle;
- TICSs help functions need to be appropriate to a moving vehicle;
- TICS dialogues take place in a constantly changing vehicle environment;
- TICS technologies need to be suited to that environment;
- TICS dialogues include the driver's vehicle-control actions in response to the TICS.

The driver of a vehicle equipped with a TICS device is responsible for the safety of the vehicle, its occupants and other road users. A dialogue therefore needs to take into account the driver workload as a whole, including the cognitive, perceptual and physical tasks associated with driving, so that there will be no impairment of the safe and effective operation of the vehicle. An important objective is to ensure effective and efficient TICS operation while respecting the in-vehicle environment and recognizing the paramount importance of the primary driving task.

In addition to the recommendations and requirements related to the principles it presents, ISO 15005 also gives the conditions for compliance. As the manner in which each dialogue principle is applied will depend on the particular characteristics of the TICS function and the specific dialogue technique used, application examples have been provided.

The ultimate beneficiary of this International Standard will be the TICS end-user: the driver of the road vehicle. It is the needs of the driver that have determined the ergonomic requirements included by the developers of ISO 15005.