
Information technology — Future keyboards and other input devices and entry methods

*Technologies de l'information — Claviers futurs, autres dispositifs
d'entrée associés et méthodes d'entrée liées*



COPYRIGHT PROTECTED DOCUMENT

© ISO/IEC 2016, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

	Page
Foreword.....	iv
Introduction.....	v
1 Scope.....	1
2 Terms and definitions.....	1
3 Benefits and disadvantages of current keyboards and data entry devices on the market.....	1
4 Comfort of use and productivity considerations.....	2
4.1 General comfort of use and productivity.....	2
4.2 Ergonomic keytop labelling for keyboards with a secondary group.....	3
5 Keyboard classification [including linear keyboards, segmented keyboards, mono-handed keyboards, keyboards and input devices for disabled persons, specific keyboards for general (fixed and mobile telephones) and/or specific applications (banking, health care, trade, etc.), virtual keyboards].....	4
6 Data entry methods for graphic character sets (including numerical or non-numerical use of numeric keypads, pen-based movements, alphabetic data entry using telephone keypads, alphabetic data entry using telephone keypads).....	4
7 Logical interface with the central unit, methods of recognition of keys (including hardware or software recognized keys, use of scan codes, self-identifying keys, software-hidden keys, etc.).....	5
8 Principles of adaptation related especially to linguistic and cultural characteristics.....	6
8.1 Current situation and perspectives.....	6
8.2 Labelling support for multilingual keyboards.....	6
9 Portability and interchangeability of keyboards and related input devices [drivers, physical (plugs) and electrical connectivity].....	8
10 Consistency of use between desktop and portable keyboards.....	8
11 Related input devices and especially pointing, dragging and tracing devices and free hand-input devices: mouse, track ball, stick, joystick, pen, tablet, stylus, light pen, eye-movement-driven data entry, etc.....	9
12 Control of multimedia actions, mechanical functions (screen reversal, sound and clicker volume, etc.) and new additional functions (Internet integration, telephone, tv-tuner, fax, etc.).....	9
13 Test methods for evaluation and optimization.....	9
14 Function symbols, design and disposition of symbols on keys, consistency between icons and symbols.....	9
15 National keyboard layouts database.....	9
Annex A (informative) Input methods.....	10
Bibliography.....	25

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

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 document 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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/IEC JTC 1, *Information technology*, Subcommittee SC 35, *User interfaces*.

This fourth edition cancels and replaces the third edition (ISO/IEC TR 15440:2005), which has been technically revised.

Introduction

This Technical Report, supported by the history of information technology keyboards during the last three decades, lists current and anticipated problem areas as seen by users and tries to pave the way to foreseen work items in JTC 1 for solving issues of the user interface with keyboards, other input devices and input methods.

Information technology — Future keyboards and other input devices and entry methods

1 Scope

This Technical Report (TR) covers the following:

- different input requirements catering for national and international practices and support of cultural and linguistic diversity;
- recognition of requirements regarding comfort of use (for any user, including children, elderly and disabled people) and improved user productivity related to inputting data;
- enhancements of keyboards and related input devices and methods required for new emerging phenomena such as Internet, multimedia, virtual reality;
- virtual input requirements;
- labelling issues (soft [LCD] and hard, permanent and temporary labels), function symbols and icons.

This Technical Report does not cover implications of biometric input (fingerprint-based, iris-pattern-based, face-shape-based, etc.) devices for access and security.

This Technical Report is aimed at both the users and manufacturers and intends to present the user requirements regarding keyboards and associated devices and methods, at the time of publication of this technical report.