PD ISO/TR 13519:2012

BSI Standards Publication

Guidance on the development and use of ISO statistical publications supported by software

bsi.

...making excellence a habit.™

Document Sharing Hub

National foreword

This Published Document is the UK implementation of ISO/TR 13519:2012.

The UK participation in its preparation was entrusted to Technical Committee SS/6, Precision of test methods.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2013

Published by BSI Standards Limited 2013

ISBN 978 0 580 74971 1

ICS 03.120.30

Compliance with a British Standard cannot confer immunity from legal obligations.

This Published Document was published under the authority of the Standards Policy and Strategy Committee on 31 January 2013.

Amendments issued since publication

Amd. No.	Date	Text affected

Documents
Document Sharing Hub

Full document details: PD ISO/TR 13519:2012

TECHNICAL REPORT

ISO/TR 13519

First edition
2012-09-01

Guidance on the development and use of ISO statistical publications supported by software

Lignes directrices pour la rédaction et l'application de publications statistiques ISO utilisant des logiciels

Reference number
ISO/TR 13519:2012(E)

Documents
Document Sharing Hub

© ISO 2012

Full document details: PD ISO/TR 13519:2012

COPYRIGHT PROTECTED DOCUMENT

© ISO 2012

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.

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.org
Web www.iso.org

Published in Switzerland

© ISO 2012 – All rights reserved

Documents
Document Sharing Hub

Full document details: PD ISO/TR 13519:2012

Contents

Page

Foreword iv
Introduction v
1 Scope 1
2 Terms and definitions 1
3 Traceability of data products 2
4 Specification of software 3
5 Software support 5
5.1 Support for software implementation 5
5.2 Nature of supporting software 7
5.3 Software languages 7
6 Quality 8
6.1 General 8
6.2 Software performance 9
6.3 Maintenance of software 12
7 Legal implications 12
8 Illustration 13
8.1 General 13
8.2 Examples of particular software 13
Bibliography 15

© ISO 2012 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/TR 13519:2012

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.

In exceptional circumstances, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example), it may decide by a simple majority vote of its participating members to publish a Technical Report. A Technical Report is entirely informative in nature and does not have to be reviewed until the data it provides are considered to be no longer valid or useful.

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/TR 13519 was prepared by Technical Committee ISO/TC 69, *Applications of statistical methods*.

© ISO 2012 – All rights reserved
Documents
Document Sharing Hub
Full document details: PD ISO/TR 13519:2012

Introduction

This document contains guidance on software to support the development and use of ISO statistical publications.

Aspects covered within this document include

— traceability of data products (figures, tables and other numerical results),

— specification of software,

— categories of support for software, and

— software performance including the use of reference data for testing purposes.

Any references to commercial products of any kind (including but not restricted to software, data or hardware) or links to websites do not imply any approval, endorsement or recommendation by ISO, or any liability.

© ISO 2012 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/TR 13519:2012

Guidance on the development and use of ISO statistical publications supported by software

1 Scope

This document provides guidance on the development and use of ISO publications supported by software. The software largely relates to statistical calculations considered by the subcommittees of ISO/TC 69, *Application of statistical methods*, but many other numerical calculations are covered by similar considerations.

In terms of the development of ISO publications, this document gives guidance on the traceability of data products (figures, tables and other numerical results) reproduced in normative-type documents.

In terms of assisting users of ISO publications, this document gives guidance on information that should be included in ISO publications regarding software specification, categories of support for software, and software performance including the use of reference data sets for testing purposes.

Examples are included that illustrate aspects of the guidance provided.

Reference to 'the Committee' in this document relates to the ISO body concerned with developing the relevant ISO publication.

2 Terms and definitions

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

2.1
algorithm
step-by-step procedure describing a specific calculation, given in sufficient detail that it can be implemented in software

2.2
data product
digital data, including graphical figures expressed digitally, in an ISO publication

EXAMPLE 1 A numerical table in an ISO publication.

EXAMPLE 2 A graphical figure expressed digitally as an array of pixels in an ISO publication.

2.3
domain of applicability
set of inputs for which software can be expected to operate in a valid manner

2.4
numerical accuracy
quality of a numerical value expressed in terms of the number of correct decimal digits in absolute or relative form

2.5
problem parametrization
mathematical representation of a problem involving a specific set of defining parameters

NOTE Generally, a problem has more than one parametrization.

EXAMPLE Straight line in two variables: ISO/TS 28037:2010, *Determination and use of straight-line calibration functions*.

A straight line in the variables X and Y can be parametrized as $Y = A_1 + A_2X$ and as $Y = B_1 + B_2(X - 100)$ (and in other ways). The second form is superior to the first when it is to be used as the model in straight-line regression, where X denotes Celsius temperature, taking values close to 100 °C. See ISO/TS 28037:2010[12].

© ISO 2012 – All rights reserved

Documents
Document Sharing Hub

Full document details: PD ISO/TR 13519:2012