TECHNICAL REPORT

ISO/TR 17534-3

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Acoustics — Software for the calculation of sound outdoors —

Part 3: Recommendations for quality assured implementation of ISO 9613-2 in software according to ISO 17534-1

Acoustique — Logiciels de prévision de bruit dans l'environnement —

PartieParte 3: Recommandations pour l'assurance qualité mise en oeuvre de la norme ISO 9613-2 dans le logiciel selon ISO 17534-1



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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

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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.

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 ISO documents 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 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/TC 43, *Acoustics*, Subcommittee SC 1, *Noise*.

ISO 17534 consists of the following parts, under the general title *Acoustics — Software for the calculation of sound outdoors*:

— *Part 1: Quality requirements and quality assurance*

— *Part 2: General recommendations for test cases and quality assurance interface* [Technical report]

— *Part 3: Recommendations for quality ensured implementation of* ISO 9613-2 *in software according to* ISO 17534-1 [Technical report]

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Introduction

The general structure of the ISO 17534 series and the various Technical Reports are shown in Figure 1. The International Standard itself describes the measures necessary to ensure a high quality of calculation methods implemented in different software products with respect to correctness and precision. The requirements and specifications included are obviously independent from a specific calculation method, because they should be applied for all of them.

This Technical Report contains additional recommendations, test cases of both types according to ISO 17534-1:—, A.2 and A.3, and the forms to declare conformity by software manufacturers related to the quality ensured implementation of the calculation method ISO 9613-2. The test cases are based on the set of test cases and input parameters documented in Reference [1]. This Technical Report is a first step. Contents will be supplemented step by step and or even withdrawn if a standardization committee responsible for this specific calculation method decides about an alternative formulation that is in agreement with the requirements of ISO 17534.

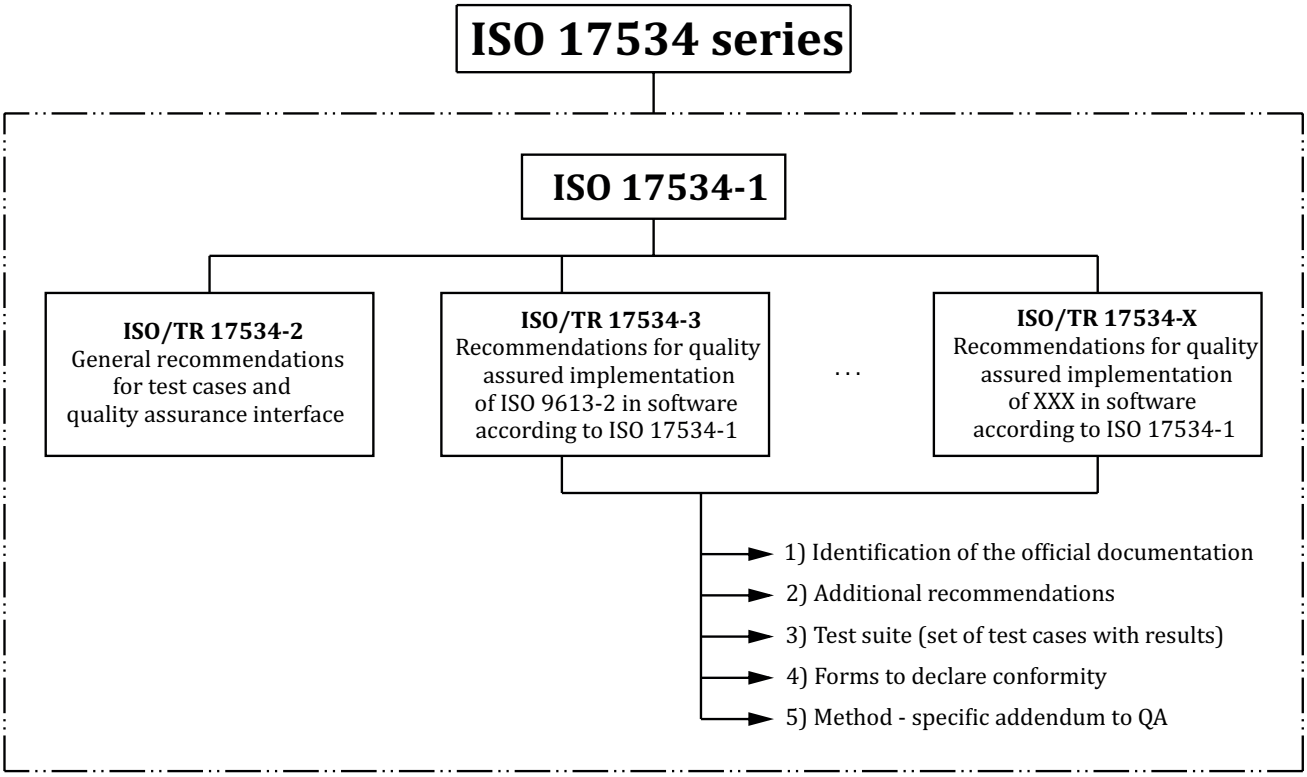


Figure 1 — Structure of ISO 17534 series consisting of the main Part 1 and subordinated Technical Reports

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Acoustics — Software for the calculation of sound outdoors —

Part 3:
Recommendations for quality assured implementation of ISO 9613-2 in software according to ISO 17534-1

1 Scope

This Technical Report contains additional recommendations for the calculation method of ISO 9613-2 that are agreed on to be implemented in software quality ensured test cases with detailed results that allow checking the correct implementation and forms to declare conformity with these requirements by a specified software product.

2 Normative references

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

ISO 9613-2:1996, *Acoustics — Attenuation of sound during propagation outdoors — Part 2: General method of calculation*

ISO 17534-1:—, *Acoustics — Software for the calculation of sound outdoors — Part 1: Quality requirements and quality assurance*

ISO/TR 17534-2, *Acoustics — Software for the calculation of sound outdoors — Part 2: General recommendations for test cases and quality assurance interface*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 9613-2, ISO 17534-1, and ISO/TR 17534-2 apply.

4 Identification of the official documentation

ISO 9613-2:1996, *Acoustics — Attenuation of sound during propagation outdoors — Part 2: General method of calculation*.

NOTE ISO 9613-2 describes a method for calculating the attenuation of sound during propagation outdoors in order to predict the levels of environmental noise at a distance from a variety of sources. The method predicts the equivalent continuous A-weighted sound pressure level (as described in ISO 1996) under meteorological conditions.

5 Additional recommendations

5.1 General

The calculation of sound propagation with the engineering method specified in ISO 9613-2 is an approximation where the sound wave propagating over a structured terrain with any complexity is replaced by some few ray paths. In many cases, there are more alternatives to define these paths and for each of these alternatives examples can be constructed where the method fails. It is important to keep

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