TECHNICAL REPORT

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Acoustics — Software for the calculation of sound outdoors —

Part 4: Recommendations for a quality assured implementation of the COMMISSION DIRECTIVE (EU) 2015/996 in software according to ISO 17534-1

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

Partie 4: Recommandations pour l'assurance qualité de la mise en œuvre de la DIRECTIVE (UE) 2015/996 de la COMMISSION EUROPÉENNE dans les logiciels selon l'ISO 17534-1

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Contents

Page

Foreword ..... **v**
Introduction ..... **vi**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
4 Identification of the official documentation **1**
5 Uniform and agreed interpretation of ambiguities **2**
5.1 General 2
5.2 Sloping objects 2
5.3 Equivalent heights 2
5.4 Alternative statistical approach 3
5.5 Octave band centre frequency f_m 3
5.6 Ground factor of the source area, G_S 3
5.7 Distances in Figure 2.5.b of CNOSSOS-EU:2015 3
5.8 Equivalent heights in Equation (2.5.20) of CNOSSOS-EU:2015 3
5.9 Rayleigh's Criterion 4
5.10 Parameter *e* *4*
5.11 Diffraction under favourable conditions 4
5.12 Error in Figure 2.5.f and Equation (2.5.29) of CNOSSOS-EU:2015 5
5.13 Lateral diffraction 5
5.14 Reflection on nearly vertical objects 6
5.15 Retrodiffraction 6
6 Test cases **7**
6.1 General 7
6.2 Test cases with intermediate and final results 8
6.2.1 TC01-TC03 — Flat ground with homogeneous acoustic properties 8
6.2.2 TC01 — Reflecting ground (G = 0) 8
6.2.3 TC02 — Mixed ground (G = 0,5) 9
6.2.4 TC03 — Porous ground (G = 1) 10
6.2.5 TC04 — Flat ground with spatially varying acoustic properties 10
6.2.6 TC05 — Ground with spatially varying heights and acoustic properties 12
6.2.7 TC06 — Reduced receiver height to include diffraction in some frequency bands 14
6.2.8 TC07 — Flat ground with spatially varying acoustic properties and long barrier 17
6.2.9 TC08 — Flat ground with spatially varying acoustic properties and short barrier 20
6.2.10 TC09 — Ground with spatially varying heights and and acoustic properties and short barrier 24
6.2.11 TC10 — Flat ground with homogeneous acoustic properties and cubic building — Receiver at low height 30
6.2.12 TC11 — Flat ground with homogeneous acoustic properties and cubic object – receiver at large height 33
6.2.13 TC12 — Flat ground with homogeneous acoustic properties and polygonal object — Receiver at low height 38
6.2.14 TC13 — Ground with spatially varying heights and acoustic properties and polygonal object 42
6.2.15 TC14 — Flat ground with homogeneous acoustic properties and polygonal object — Receiver at large height 47
6.2.16 TC15 — Flat ground with homogeneous acoustic properties and four buildings 53
6.2.17 TC16 — Reflecting barrier on ground with spatially varying heights and acoustic properties 57

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6.2.18 TC17 — Reflecting barrier on ground with spatially varying heights and acoustic properties — Reduced receiver height 62
6.2.19 TC18 — Screening and reflecting barrier on ground with spatially varying heights and acoustic properties 66
6.2.20 TC19 — Complex object and 2 barriers on ground with spatially varying heights and acoustic properties 70
6.2.21 TC20 — Ground with spatially varying heights and acoustic properties 76
6.2.22 TC21 — Building on ground with spatially varying heights and acoustic properties 78
6.2.23 TC22 — Building with receiver backside on ground with spatially varying heights and acoustic properties 84
6.2.24 TC23 — Two buildings behind an earth-berm on flat ground with homogeneous acoustic properties 89
6.2.25 TC24 — Two buildings behind an earth-berm on flat ground with homogeneous acoustic properties – receiver position modified 94
6.2.26 TC25 — Replacement of the earth-berm by a barrier 100
6.2.27 TC26 — Road source with influence of retrodiffraction 106
6.2.28 TC27 — Source located in flat cut with retro-diffraction 109
6.2.29 TC28 — Propagation over a large distance with many buildings between source and receiver 114
6.3 Summary of the final results 121
7 Example of a template form for the declaration of conformity 122
Bibliography 124

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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 of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 43, *Acoustics*, Subcommittee SC 1, *Noise*.

A list of all parts in the ISO 17534 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

The structure of the ISO 17534 series is shown in Figure 1. ISO 17534-1 describes the general approach of the ISO 17534 series, aiming to facilitate a standardized interpretation and a verifiably consistent software implementation of outdoor sound calculation methods. ISO/TR 17534-2 contains general recommendations for test cases and for a quality assurance interface. Further parts of the ISO 17534 series each address a specific outdoor sound calculation method for which they provide an agreed interpretation of ambiguous aspects, a set of illustrative test cases along with reference solutions, and an example of a template form for the declaration of conformity for software developers.

This document addresses the calculation method laid down in the COMMISSION DIRECTIVE (EU) 2015/996, hereafter referred to as CNOSSOS-EU:2015.

The European Commission developed Common NOise aSSessment methOdS (CNOSSOS-EU) for road, railway, aircraft and industrial noise for the purpose of strategic noise mapping. CNOSSOS-EU aims at improving the consistency and comparability of noise assessment results across the EU Member States which are performed on the basis of the data becoming available through the consecutive rounds of strategic noise mapping in Europe.

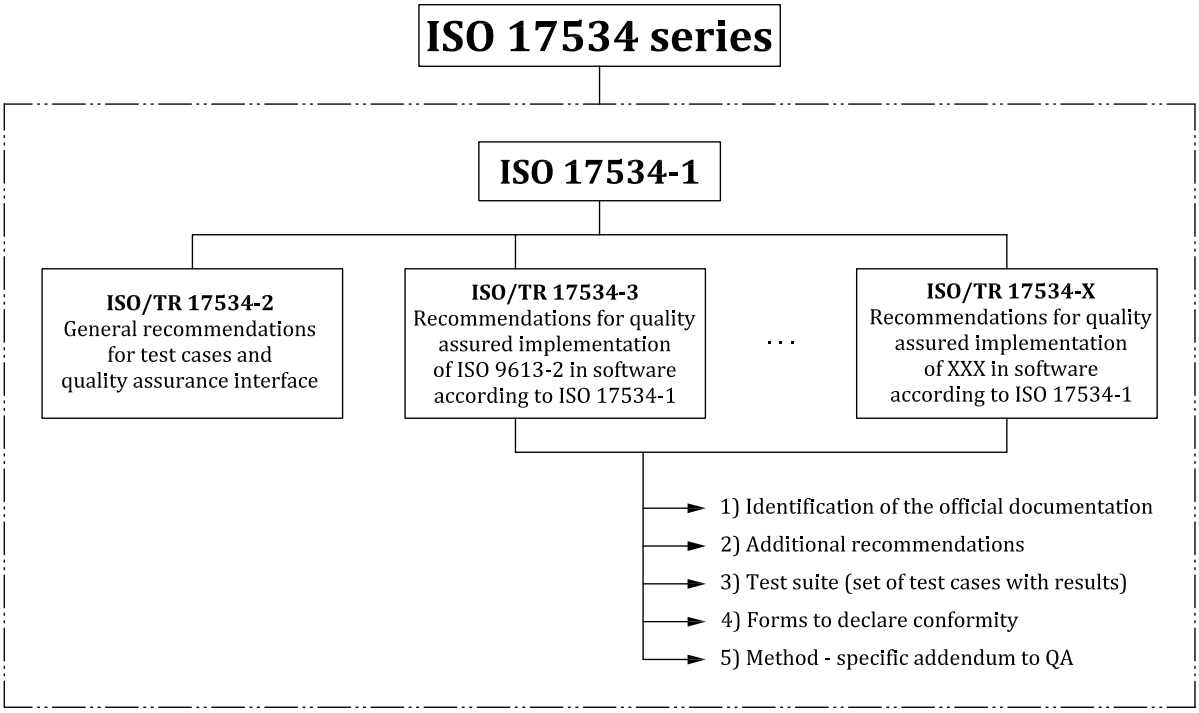


Figure 1 — Structure of the ISO 17534 series

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Acoustics — Software for the calculation of sound outdoors —

Part 4: Recommendations for a quality assured implementation of the COMMISSION DIRECTIVE (EU) 2015/996 in software according to ISO 17534-1

1 Scope

This document facilitates a standardized interpretation and a verifiably consistent software implementation of the sound propagation part of the calculation method CNOSSOS-EU:2015 according to ISO 17534-1. Other parts of CNOSSOS-EU:2015, such as the source models or the calculation method for aircraft noise, are beyond the scope of this document. This document provides an agreed interpretation of ambiguous aspects of the sound propagation part of CNOSSOS-EU:2015, a set of illustrative test cases along with reference solutions, and an example of a template form for the declaration of conformity for software manufacturers.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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*

COMMISSION DIRECTIVE (EU) 2015/996 of 19 May 2015 establishing common noise assessment methods according to Directive 2002/49/EC of the European Parliament and of the Council, Official Journal of the European Union, L 168/1

3 Terms and definitions

For the purposes of this document, the terms and definitions given in CNOSSOS-EU:2015, ISO 17534-1, and ISO/TR 17534-2 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

4 Identification of the official documentation

COMMISSION DIRECTIVE (EU) 2015/996 of 19 May 2015 establishing common noise assessment methods according to Directive 2002/49/EC of the European Parliament and of the Council, Official Journal of the European Union, L 168/1, herein referred to as CNOSSOS-EU:2015.

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