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DKD-E 0-2

Common requirements for machine-
readable certificates in the ISO 17000
series

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Deutscher Kalibrierdienst (DKD) – German Calibration Service

Since its foundation in 1977, the German Calibration Service has brought together calibration laboratories of industrial enterprises, research institutes, technical authorities, inspection and testing institutes. On 3rd May 2011, the German Calibration Service was reestablished as a *technical body* of PTB and accredited laboratories.

This body is known as *Deutscher Kalibrierdienst* (DKD for short) and is under the direction of PTB. The guidelines and guides developed by the DKD represent the state of the art in the respective areas of technical expertise and can be used by the *Deutsche Akkreditierungsstelle GmbH* (the German accreditation body – DAkkS) for the accreditation of calibration laboratories.

The accredited calibration laboratories are now accredited and supervised by DAkkS as legal successor to the DKD. They carry out calibrations of measuring instruments and measuring standards for the measurands and measuring ranges defined during accreditation. The calibration certificates issued by these laboratories prove the traceability to national standards as required by the family of standards DIN EN ISO 9000 and DIN EN ISO/IEC 17025.

Contact:

Physikalisch-Technische Bundesanstalt (PTB)
DKD Executive Office
Bundesallee 100 38116 Braunschweig
P.O. Box 33 45 38023 Braunschweig
GERMANY
Phone: +49 531 592 8021
Internet: www.dkd.eu

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Authors:

Dr. Thomas Krah, Physikalisch-Technische Bundesanstalt, Braunschweig, Deutschland
Dr. Martin Czaske, Physikalisch-Technische Bundesanstalt, Braunschweig, Deutschland
Muhammed-Ali Demir, Physikalisch-Technische Bundesanstalt, Braunschweig, Deutschland
Dr. Lutz Doering, Physikalisch-Technische Bundesanstalt, Braunschweig, Deutschland
Dr. Frank Härtig, Physikalisch-Technische Bundesanstalt, Braunschweig, Deutschland
Dr. Daniel Hutzschenreuter, Physikalisch-Technische Bundesanstalt, Braunschweig, Deutschland
Dr. Shanna Schönhals, Physikalisch-Technische Bundesanstalt, Braunschweig, Deutschland

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Foreword

DKD expert reports aim to provide background information and references in connection with other DKD documents as, for example, the DKD guidelines. In some cases, they may even go far beyond these documents. They do not replace the original DKD documents but do provide a lot of supplementary information worth knowing. The expert reports do not necessarily reflect the views of the DKD's Management Board or Technical Committees in all details.

DKD expert reports are intended to present significant aspects from the field of calibration. Through publication by the DKD they are made available to the large community of calibration laboratories, both nationally and internationally.

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1 Introduction

The DKD, with its current 13 Technical Committees and almost 500 member organisations, supports the sustainable digital transformation in the metrological infrastructure through extensive harmonisation of machine-readable digital calibration certificates (DCC) for industrial applications. A series of different expert reports is being developed as a recommendation for dealing with DCCs in various metrological areas and applications. The reports are aimed at both the creators and users of DCCs and represent a technical supplement to the general manuals on the DCC XML data structure at www.ptb.de/dcc [1].

This expert report helps to ensure a standardised use of administrative data across all certification and testing services listed in the ISO 17000 series of standards. In the context of sustainable development of digital formats, it is essential that administrative data – for which the same requirements apply in all forms of reporting under this series of standards – is also conceived and applied in the same way in digital formats. With regard to the broad range of practical applications, the digital processing of administrative data is the first and most important step. Against this background, this report provides a list of administrative data requiring the same treatment in digital formats.

Figure 1 provides an overview of the development plan for expert reports for DCCs in the DKD. The expert report on the ISO 17000 series serves as basis for a DKD-wide expert report that deals with the uniform handling of administrative data for calibration reports. The expert report on administrative data will in turn be supplemented with various subject-specific expert reports regarding the specification and use of measurement results in DCCs.

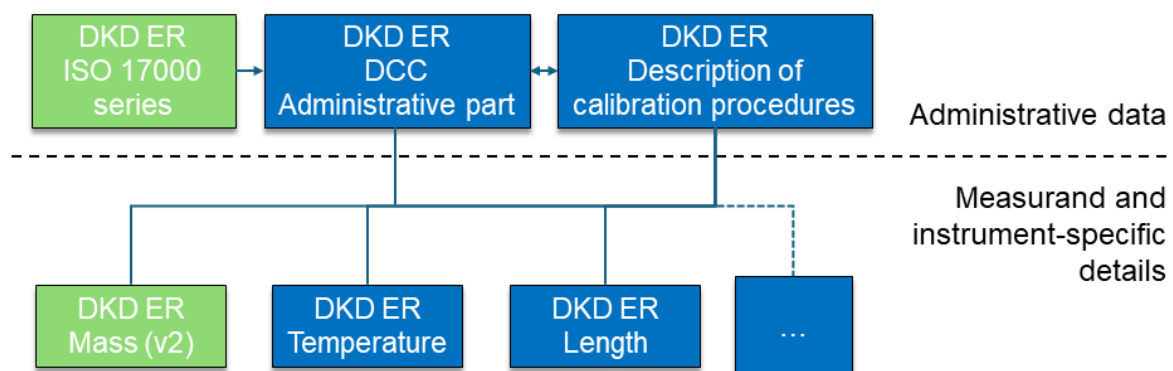



Figure 1: Development plan DKD Expert Reports (ER) for the DCC; reports already available shown in green.

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2 Procedure for evaluating administrative data

Here, we are focusing on standards containing higher-level (administrative) requirements for reports on conformity assessments. These requirements are specified internationally in a separate series of standards, the basic standard of which is ISO/IEC 17000. For this reason, the term “**17000 series of standards**” is used here. Under the heading of conformity assessment, it contains general statements on conformity assessment, calibration, testing and certification. In particular, the following documents were used for evaluation:


- ISO/IEC 17000:2020 *Conformity assessment – Vocabulary and general principles* [2]
- ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories* [3]
- ISO 17034:2016 *General requirements for the competence of reference material producers* [4]
- ISO/IEC 17043:2023 *Conformity assessment – General requirements for the competence of proficiency testing providers* [5]
- ISO/IEC 17065:2012 *Conformity assessment – Requirements for bodies certifying products, processes and services* [6]
- WELMEC Guide 8.3 *Application of module B: EU-type examination, Under directive 2014/32/EU (MID) or directive 2014/31/EU (NAWID)* [7]

The standards ISO 17034 [4], ISO/IEC 17043 [5] and ISO/IEC 17065 [6] refer to parts of ISO/IEC 17025. This affects the content of the certificates. Certificates according to ISO/IEC 17065 [6] also refer to ISO/IEC 17067 [8] and numerous different certification programmes. Therefore, a simple and clear presentation in this report is difficult.

Further harmonized information already exists with regard to the Digital Calibration Certificate (ISO/IEC 17025 [3]) but has not yet been incorporated into a standard. The information referred to here are the so-called refTypes for addressing specific content in the certificate. The refTypes are created by subcommittees of the DKD Technical Committees and made available in a machine-interpretable thesaurus [9]. Such systems are not yet available for other certificates of the 17000 series of standards. It is also important to ensure that the refTypes are thought of and used in the same way in the various metrological areas and applications.


Under the heading of **administrative data**, the evaluation considers information that is typically found on the first page of a report or certificate. This includes information on the subject of the conformity assessment, the organisations that commissioned and carried out the assessment, the date of issue, etc. To a certain extent, the information in the results section based on the documents mentioned also shows overlaps, albeit to a smaller extent. And there are greater differences in the meaning of the corresponding terms. For this reason, the focus of the present version of the expert report is on the information relating to the administrative part.

Section 3 lists the results of the evaluation. It is a list of terms that identify the types of administrative data requiring uniform treatment in accordance with the aforementioned standards and guidelines. For each term, the following information is summarised:

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- a general term
- a short description of the meaning of the term
- an overview of specific references in the relevant standards for which the term applies
- a cardinality for indicating whether the use is mandatory or optional, as well as for indicating a possible multiple entry

ISO/IEC 17000 [2] and ISO/IEC 17025 [3] refer to different definitions in the various standards of the series. This fact is taken into account by the listing of references given here. In order to avoid misunderstandings, the term *certificate* is used consistently in the descriptions to refer to all written reports in general.


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3 Standardised administrative data from the ISO 17000 series of standards

The following table shows the results of the investigation. What is shown here is the recommendation as to which requirements should be treated equally in all certificates. The entries in the columns “*Term*” and “*Description and references*” differ in wording from the text in the standards. Reproducing the requirements in a clear and unambiguous way – adhering to the original meaning – is meant to avoid misunderstandings.

Term	Description and references	Cardinality
Type of certificate	<p>The type of certificate must be indicated in the title, for example. Types include test reports, calibration certificates, sampling reports (according to ISO/IEC 17025), proficiency test reports and reference material certificates.</p> <ul style="list-style-type: none"> – ISO/IEC 17025:2017; 7.8.2.1 a) – ISO 17034:2016; 3.2, 3.3, 7.14.2 a) – ISO/IEC 17043:2023; 7.4.3.2 g) – ISO/IEC 17065:2012; 7.7.1 d) – WELMEC Guide 8.3; Annex 2 	1
Certificate number	<p>The certificate number is used to uniquely identify the certificate. These are, for example, calibration marks and report numbers.</p> <ul style="list-style-type: none"> – ISO/IEC 17025:2017; 7.8.2.1 d) – ISO 17034:2016; 2, 7.9.1, 7.14.2 b) – ISO/IEC 17043:2023; 7.4.3.2 e) – ISO/IEC 17065:2012; 7.7.1 f) – WELMEC Guide 8.3; Annex 2 	1
Revision number	<p>A revision number identifies changes or additions to previous certificates. Revisions must be clearly marked.</p> <ul style="list-style-type: none"> – ISO/IEC 17025:2017; 7.8.8.2, 7.8.8.3 – ISO 17034:2016; 7.14.2 k) ‘Document version’ – ISO/IEC 17043:2023; 7.4.3.5 – ISO/IEC 17065:2012; 7.7.1 f) (depending on the certification programme) – WELMEC Guide 8.3; Annex 2 	0..1

Table 1: List of administrative data for certificates of conformity assessment based on the ISO 17000 series of standards that require uniform treatment in digital reporting formats.

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Term	Description and references	Cardinality
Number of the first certificate issued	<p>In the case of a revision or addition, the number of the first certificate issued to which the revision or addition refers is indicated.</p> <ul style="list-style-type: none"> – ISO/IEC 17025:2017; 7.8.8.3 – ISO 17034:2016; 7.14.2 k) – ISO/IEC 17043:2023; 7.4.3.2 g) – ISO/IEC 17065:2012; 7.7.1 f) (depending on the certification programme) <p>WELMEC Guide 8.3; Annex 2</p>	0..1
Name of issuing organisation	<p>The name of the organisation that issues the certificate in the context of the conformity assessment service.</p> <ul style="list-style-type: none"> – ISO/IEC 17025:2017; 7.8.2.1 b) 'Name of issuer' – ISO 17034:2016; 7.14.2 d) 'Name RM producer' – ISO/IEC 17043:2023; 7.4.3.2 a) 'Name PT provider' – ISO/IEC 17065:2012; 7.7.1 a) – WELMEC Guide 8.3; Annex 2 'Number Notified Body' 	1
Address issuing organisation	<p>Contact details of the organisation that issues the certificate as part of the conformity assessment service. In addition to a postal address, this can also include a telephone number and an e-mail address.</p> <ul style="list-style-type: none"> – ISO/IEC 17025:2017; 7.8.2.1 b) 'Address issuer' – ISO 17034:2016; 7.14.2 d) 'Contact RM producer' – ISO/IEC 17043:2023; 7.4.3.2 a) 'Contact PT provider' – ISO/IEC 17065:2012; 7.7.1 a) – WELMEC Guide 8.3; Annex 2, 'NB address'¹ 	1
Date of issue of the certificate	<p>The calendar date on which the certificate is issued by the organisation responsible for the conformity assessment.</p> <ul style="list-style-type: none"> – ISO/IEC 17025:2017; 7.8.2.1 j) – ISO 17034:2016; 7.14.2 g) 'period of validity' – ISO/IEC 17043:2023; 7.4.3.2 d) – ISO/IEC 17065:2012; 7.7.1 b) – WELMEC Guide 8.3; Annex 2 	1

Table 1 continued: List of administrative data for certificates of conformity assessment based on the ISO 17000 series of standards that require uniform treatment in digital reporting formats.

The cardinality is to be interpreted as follows:

- *Value 1*: Indication is mandatory and is to be indicated exactly once (ISO/IEC 'shall').
- *Wert 0..1*: Indication is optional (ISO/IEC 'should').

¹ NB = Notified Body

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Physikalisch-Technische Bundesanstalt

Deutscher Kalibrierdienst

Bundesallee 100

38116 Braunschweig

GERMANY

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