Part 2 Community-based assessment

Foreword

This DIN SPEC is part of a DIN pilot project for the cooperation with open source communities.

The pilot project elaborates the possibilities to publish DIN SPECs under a free/open license, which could enable the cooperation with open source communities. Since the publication under CC-BY-SA 4.0 allows everyone to use, share and adapt the content of this document under the same or compatible licenses, the maintenance procedure of such a DIN SPEC needs to be elaborated during the pilot project.

This document is the first edition released by DIN and has the version number 0.10 given by the open source hardware community. The document will be shared on https://din.one and https://gitlab.com/OSEGermany/OHS/ for further revision based on external contributions.

This DIN SPEC has been developed according to the PAS procedure. The development of a DIN SPEC according to the PAS procedure is carried out in DIN SPEC (PAS)-consortiums and does not require the participation of all stakeholders.

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At present, there are no standards covering this topic.

DIN SPEC (PAS)s are not part of the body of German Standards.

A draft of this DIN SPEC (PAS) has not been published.

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For current information on this standard, please go to DIN's website (www.din.de) and search for the document number in question.

Introduction

This standard defines a community-based assessment procedure enabling open source hardware (OSH) originators to make trustable claims regarding the compliance of their creations with the requirements of the DIN SPEC 3105-1. It supports the consistent and transparent labelling of OSH and helps building the necessary trust to enable a more mainstream adoption of the principles of open source in the creation of physical artefacts.

The community-based assessment is not equivalent to an ISO/IEC 17067 certification scheme. Therefore the requirements on community-based assessment should not be compared to a usual certification scheme.

The concept of open source is rooted in values of transparency and participative governance. This standard defines an assessment process that aligns with these values and builds upon the open review process model at work in academic publication. It sets the requirements for an online process enabling any interested person to contribute to the assessment of a piece of hardware and to support best practices of OSH.

Alongside with DIN SPEC 3105-1 "Open source hardware — Part 1: Requirements for technical documentation"[2] this standard is the first standard published by DIN e.V. under a free/open license. Following the principles of open source, anybody can contribute to its further development online. Please refer to https://gitlab.com/OSEGermany/OHS to review the current state of ongoing processes and to contribute.

1 Scope

This document defines requirements for implementing a community-based assessment procedure for open source hardware. It aims at groups or persons willing to build an assessment procedure as well as groups or persons willing to attest the compliance of the documentation of a piece of hardware with the requirements set in the DIN SPEC 3105-1.

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.

DIN SPEC 31051:2020-07, *Open Source Hardware — Requirements for technical documentation*

E DIN EN ISO/IEC 17000:2019-05, *Konformitätsbewertung — Begriffe und allgemeine Grundlagen (ISO/IEC DIS 17000:2019; Deutsche und Englische Fassung prEN ISO/IEC 17000:2019*

DIN EN ISO/IEC 17065:2013-01, *Konformitätsbewertung — Anforderungen an Stellen, die Produkte, Prozesse und Dienstleistungen zertifizieren (ISO /IEC 17065:2012); Deutsche und Englische Fassung EN ISO/IEC 17065:2012*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in DIN SPEC 31051 and the following apply.

DIN and DKE maintain terminological databases for use in standardization at the following addresses:

- DIN-TERMinologieportal: available at https://www.din.de/go/din-term
- DKE-IEV: available at http://www.dke.de/DKE-IEV

3.1 conformity assessment body

body that performs conformity assessment activities, excluding accreditation

Note 1 to entry: A conformity assessment body is a natural or legal person that

1. maintains a process and IT infrastructure that fully supports the implementation of the community-based assessment process defined in this standard;;
2. publicly acknowledges the compliance of piece of hardware (DIN SPEC 3105-1:2020-07, 3.1) with the requirements set in the DIN SPEC 3105-1 based on information gathered in their self-hosted assessment process;
3. ensures access to all attested documentation releases (DIN SPEC 3105-1:2020-07, 3.8), *reviews* (3.3), *attestations* (3.5) and *complaints* (3.6)), regardless of their formal validity, under a free/open license (DIN SPEC 3105-1:2020-07, 3.2).

Note 2 to entry: It is under the own responsibility of the conformity assessment body to maintain compliance with all requirements stated in the present standard.

[SOURCE: E DIN EN ISO/IEC 17000:2019-05, 2.1.6 modified – note 1 and 2 to entry added]

3.2 client

organization or person responsible to a *conformity assessment body* (3.1) for ensuring that assessment requirements (DIN EN ISO/IEC 17065:2013-01, 3.7), are fulfilled

Note 1 to entry: Within this standard “assessment requirements” are the requirements stated in the DIN SPEC 31051.

Note 2 to entry: A client is not necessarily a originator of the piece of hardware (DIN SPEC 3105-1:2020-07, 3.1) or an author of the corresponding documentation release (DIN SPEC 3105-1:2020-07, 3.9). The client has however sufficient resources to support the application along the assessment process (e.g. as point of contact for the *conformity assessment body* (3.1)).

[SOURCE: DIN EN ISO/IEC 17065:2013-01, 3.1 modified – certification body changed to conformity assessment body; certification requirement changed to assessment requirement; removed “including product requirements (3.8)”; note 1 and 2 to entry added]

3.3 review

consideration of the suitability, adequacy and effectiveness of selection and determination activities, and the results of these activities, with regard to fulfilment of specified requirements (DIN EN ISO/IEC 17000:201905, 2.2.1) by an object of conformity assessment (DIN EN ISO/IEC 17000:2019-05, 2.1.2)

Note 1 to entry: Within this standard the “object of conformity assessment” is a documentation release (DIN SPEC 3105-1:2020-07, 3.9) or a defined part of it; “specified requirements” are the requirements stated in the DIN SPEC 3105-1. In other words, a review checks the compliance of a documentation release (DIN SPEC 31051:202007, 3.9) over all requirements of the DIN SPEC 3105-1.

Note 2 to entry: A review is a digital document.

Note 3 to entry: A reviewer is:

1. a natural person that is neither client nor author of the documentation release (DIN SPEC 3105-1:2020-07, 3.9) and has no conflict of interest regarding the outcome of the assessment process;
2. a recipient of the documentation release (DIN SPEC 3105-1:2020-07, 3.8) he/she reviews.

It is the own responsibility of the reviewer to make an honest statement regarding their belonging to the group of recipients (DIN SPEC 3105-1:2020-07, 3.6) and about their absence of conflict of interest regarding the outcome of the assessment process. The conformity assessment body (3.1) may ask reviewers to make a public declaration on their conflicts of interest.

[SOURCE: E DIN EN ISO/IEC 17000:2019-05, 2.4.1 modified – Note 1, 2, 3 and 4 to entry added]

3.4 decision

conclusion based on the results of *review* (3.3), that fulfilment of specified requirements (DIN EN ISO/IEC 17000:2019-05, 2.2.1) has or has not been demonstrated.

Note 1 to entry: Within this standard “specified requirements” are the requirements stated in the DIN SPEC 3105-1.

Note 2 to entry: Decision is made by reviewers.

3.5 attestation

issue of a statement, based on a *decision* (3.4) that fulfilment of specified requirements (DIN EN ISO/IEC 17000:2019-05, 2.2.1) has been demonstrated

Note 1 to entry: The resulting statement, referred to in this document as a “statement of conformity”, is intended to convey the assurance that the specified requirements have been fulfilled. Such an assurance does not, of itself, afford contractual or other legal guarantees.

Note 2 to entry: Within this standard “specified requirements” are the requirements stated in the DIN SPEC 3105-1.

[SOURCE: DIN EN ISO/IEC 17000:2019-05, 2.4.3 modified – note 2 to entry replaced]

3.6 complaint

expression of dissatisfaction, other than appeal (DIN EN ISO/IEC 17000:2019-05, 2.5.6), by any person or organization to a *conformity assessment body* (3.1), relating to the activities of that body, where a response is expected

Note 1 to entry: A complaint may, among others, be triggered in case:

- the documentation release (DIN SPEC 3105-1:2020-07, 3.8) is not accessible anymore or parts of it disappeared,
- the licensing terms have been changed and are not compliant anymore with the requirements of the DIN SPEC 3105-1 or
- any other relevant information has been changed or disappeared.

[SOURCE: DIN EN ISO/IEC 17000:2019-05, 2.5.7 modified – or accreditation body (2.1.7) removed; note 1 to entry added]

4 Symbols and abbreviations

OSH Open Source Hardware

TsDC Technology-specific Documentation Criteria

5 Community-based assessment

5.1 General requirements

All actions performed by conformity assessment bodies, clients, reviewers or individuals or organizations submitting complaints in the context of procedures defined in section 5.2 are performed online and are publicly visible. This means that the information relative to these actions (e.g. date, author, content) can be viewed online by anyone without any restricted access and is released under a free/open license (DIN SPEC 3105-1:2020-07, 3.2). This information is at the earliest visible when the action has been performed and at the latest when the conformity assessment body decides upon the delivery of an attestation. The attestation automatically becomes void in the moment and for the period of time where the access to this information becomes restricted or lapses.

Along review processes, some inadequacies in the definition of TsDC may come into light. These should be reported by the conformity assessment body in order to motivate the development of a new version of the concerned TsDC.

5.2 Issue and challenge attestation

5.2.1 Application

Once the conformity assessment body receives an application, it opens the assessment process by sending a written confirmation to the client and accepts corresponding reviews from this moment on.

An application includes:

1. name and contact details of the client;
2. the permanent URL to the documentation release;
3. the application date.

The reviewing process is generally community-based and for testing the compliance of the documentation release to the requirements stated in DIN SPEC 3105-1. However, the conformity assessment body may support the assessment process; this includes requesting reviews from individuals selected by the conformity assessment body.

5.2.2 Reviews and decisions

A review includes:

1. an unambiguous reference to the corresponding documentation release;
2. a mention of the documents that have been reviewed;
3. an unambiguous reference to the reviewer (e.g. full name and contact details);
4. textual comments from the reviewer justifying his/her decision;
5. the decision of the reviewer.

The reviewer can take two mutually exclusive decisions:

a. Approval, when the performed review confirmed the compliance of the submitted documentation release with the requirements of the DIN SPEC 3105-1.
b. Approval subject to revision, when the review identified misalignment of the submitted documentation release with the requirements of the DIN SPEC 3105-1 that need to be clarified prior to final approval.

Misalignments can be clarified through two routes:

i. the client submits a revised documentation release that is reassessed and approved by the reviewer;
ii. the client submits sufficient arguments to correct an eventual misinterpretation of the reviewer.

5.2.3 Attestation

An attestation is issued as valid when the submitted documentation release has been completely approved at least twice by decisions.

Reviews and complaints from already attested documentation releases may be valid for the assessment process when the referred parts of the documentation are identical.

An attestation:

1. makes a mention of its state which is either valid or void;
2. clearly identifies the conformity assessment body as its author;
3. is accessible through a permanent URL;
4. bears a release date;
5. includes the permanent URL to the corresponding documentation release;
6. contains all corresponding reviews and unresolved complaints or includes permanent URLs to them.

Annex A gives an example to communicate the compliance of a documentation release with the DIN SPEC 3105-1 via a label.

After an attestation is issued the reviewing process is closed and further decisions will not affect the state of the attestation.

However, an attestation can be challenged by complaints. The conformity assessment body may void the attestation and reopen the reviewing process in order to clarify the misalignments stated in the complaints. When the clarification of the misalignments has been confirmed at least twice by decisions the attestation regains its valid state and the reviewing process is closed again.

EXAMPLE Client submits a documentation release to a conformity assessment body and it gets approved by reviewer A and reviewer B. Now a reviewer C identifies misalignments. The conformity assessment body has practically two options then:

a. moderate the discussion between client and the three reviewers until all misalignments are resolved, then issue a valid attestation;
b. issue a valid attestation, since the submitted documentation release has been approved twice. Reviewer C can now submit a complaint to the conformity assessment body.

Option a is recommended as best practice. Regarding option 2: As according to the general requirements (5.2) all actions are publicly visible and information is released under a free/open license, an unprocessed, but justified complaint may cause rejection within the open source hardware community, on which this attestation process is based. The open source hardware community may also copy all or a selection of the information published under a free/open license in the history of that conformity assessment body, creating a new conformity assessment body. In software development, this would be called a fork.

Annex A (informative) - Label: Formal specification

The label shown in Figure 1 provides a way for conformity assessment bodies to communicate the compliance of a documentation release with the DIN SPEC 3105-1.

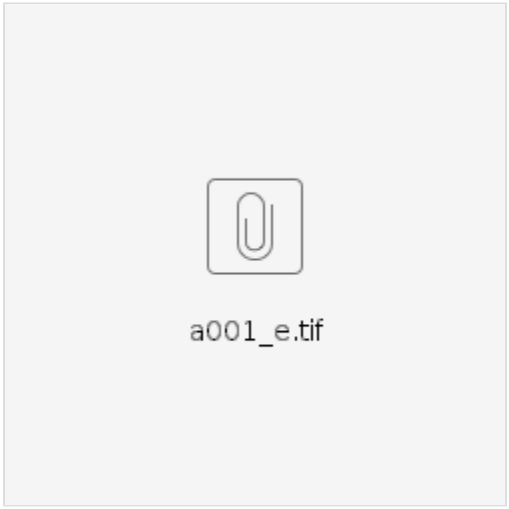

Figure A.1 — Label sample for an attestation

The label contains:

1. the phrase “Open Source Hardware according to DIN SPEC 3105-1:2020-07”;
2. the name of the conformity assessment body delivering the label;
3. the permanent URL linking to the attestation of the conformity assessment body.

Formal specifications:

The label shown in Figure A.1 is monochrome black (hex code #000000) and consists of a gear logo and text.

The gear logo, “Open Source Hardware Logo” by Macklin Chaffee, is used under CC-BY-SA 4.0[3]; all text has been removed from the original and the colour has been changed to black.

Measure *a* is the width of one tooth of the gear logo without rounding.

The font, “Open Sans” by Steve Matteson is used under Apache License, Version 2[4].

The text is subject to the following formal specifications:

1. font style: bold for “Open Source Hardware”, semibold for the rest of the text;
2. font size: half of measure *a*;
3. centred to the vertical symmetry axis of the gear logo;
4. line spacing: single;
5. spacing under paragraph: quarter of measure *a*.

Bibliography

[1] Open Source Initiative, “The Open Source Definition 1.0,” 22-Mar-2007. [Online]. Available: https://opensource.org/osd-annotated. [Accessed: 30-Mar-2016].

[2] DIN SPEC 31051:2020-07, *Open Source Hardware — Teil 1: Requirements for technical documentation*

[3] Creative Commons Corporation, “Attribution ShareAlike 4.0 International,” 25-Nov-2013 [Online]. Available: https://creativecommons.org/licenses/by-sa/4.0/ [Accessed: 31-Mar-2020]

[4] Apache Software Foundation, “Apache License, Version 2,” Jan-2004 [Online]. Available: https://www.apache.org/licenses/LICENSE-2.0.html [Accessed: 31-Mar-2020]