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Code of PLM Openness (CPO) – Zertifizierungshandbuch

Code of PLM Openness (CPO) –
Certification Handbook

Code of PLM Openness (CPO) –
Manuel de certification

Zur Erstellung einer DIN SPEC können verschiedene Verfahrensweisen herangezogen werden:
Das vorliegende Dokument wurde nach den Verfahrensregeln einer PAS erstellt.

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Dieses Dokument wurde durch die im Vorwort genannten Verfasser erarbeitet und verabschiedet.

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Foreword

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 workshops and does not require the participation of all stakeholders.

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At present, there are no standards covering this topic.

DIN SPECs are not part of the body of German Standards.

A draft of this DIN SPEC has not been published.

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Introduction

With the initiation and development of the Code of PLM Openness (CPO), prostep ivip e.V. has created a unique approach to promoting openness in PLM solutions. The CPO links technical IT requirements with business requirements and goes far beyond the need to provide IT standards and relevant IT interfaces. It provides measurable criteria for interoperability, infrastructure, extensibility, interfaces, standards, architectures and partner relationships. The CPO is supported by many well-known companies and global players (<http://www.prostep.org/en/cpo/>).

To promote the dissemination of – and improve the quality of – the implementation of open PLM systems, prostep ivip e.V., with the support of the German Federal Ministry of Economics and Energy (BMWi), has developed a conformity assessment scheme on the basis of the CPO.

This document forms the basis for an organization's conformity assessment regarding openness and the creation of open IT products in the area of Product Lifecycle Management (PLM). The final goal is to provide a basis for assessing the openness of IT products.

1 Scope

This DIN SPEC defines the preparation, procedure and requirements for conformity assessment related to DIN SPEC 91372-1.

This DIN SPEC aims to ensure that comparable standards and assessment criteria are used as the basis for carrying out conformity assessments. In this first version, this DIN SPEC focuses on the conformity assessment of organizations regarding openness and the ability to create open IT products.

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 91372-1:2018-01, *Code of PLM Openness (CPO) — Part 1: IT Openness Criteria*

ISO/IEC 17000:2005-03, *Conformity assessment — Vocabulary and general principles (ISO/IEC 17000:2004); Trilingual version EN ISO/IEC 17000:2004*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in DIN SPEC 91372-1:2018 and DIN EN ISO/IEC 17000:2005-03 and the following apply.

3.1 certification

third-party attestation (conformity assessment body) related to products, processes, systems, persons or organizations

[SOURCE: ISO/IEC 17000:2005-03, 5.5, modified: conformity assessment body and organizations added.]

3.2 attestation

issue of a statement, based on a decision following review, that fulfilment of specified requirements has been demonstrated

[SOURCE: ISO/IEC 17000:2005-03, 5.2, modified: notes deleted.]

3.4**audit**

systematic, independent, documented process for obtaining records, statements of fact or other relevant information and assessing them objectively to determine the extent to which specified requirements are fulfilled

[SOURCE: ISO/IEC 17000:2005-03, 4.4, modified: note deleted.]

3.5**specified requirement**

need or expectation that is stated

[SOURCE: ISO/IEC 17000:2005-03, 3.1, modified: note deleted.]

3.6**conformity assessment**

demonstration that specified requirements relating to a product, process, system, person, body or an organization are fulfilled

[SOURCE: ISO/IEC 17000:2005-03, 2.1, modified: notes deleted.]

3.7**conformity assessment system**

rules, procedures and management for carrying out conformity assessment

[SOURCE: ISO/IEC 17000:2005-03, 2.7, modified: note deleted.]

3.8**conformity assessment scheme / conformity assessment program**

conformity assessment system related to specified objects of conformity assessment, to which the same specified requirements, specific rules and procedures apply

[SOURCE: ISO/IEC 17000:2005-03, 2.8, modified: note deleted.]

3.9**conformity assessment body**

body that performs conformity assessment services

[SOURCE: ISO/IEC 17000:2005-03, 2.5, modified: note deleted.]

3.10**accreditation body**

authoritative body that performs accreditation

[SOURCE: ISO/IEC 17000:2005-03, 2.6, modified: note deleted.]

3.11**product**

result of a process (see Figure 1)

[SOURCE: ISO/IEC 17000:2005-03, 3.3, modified: notes deleted.]

3.12**process**

set of interrelated or interacting activities that use inputs to deliver an intended result (see Figure 1)

3.13 organization

person or group of people that has its own functions with responsibilities, authorities and relationships to achieve its objectives (see Figure 1)

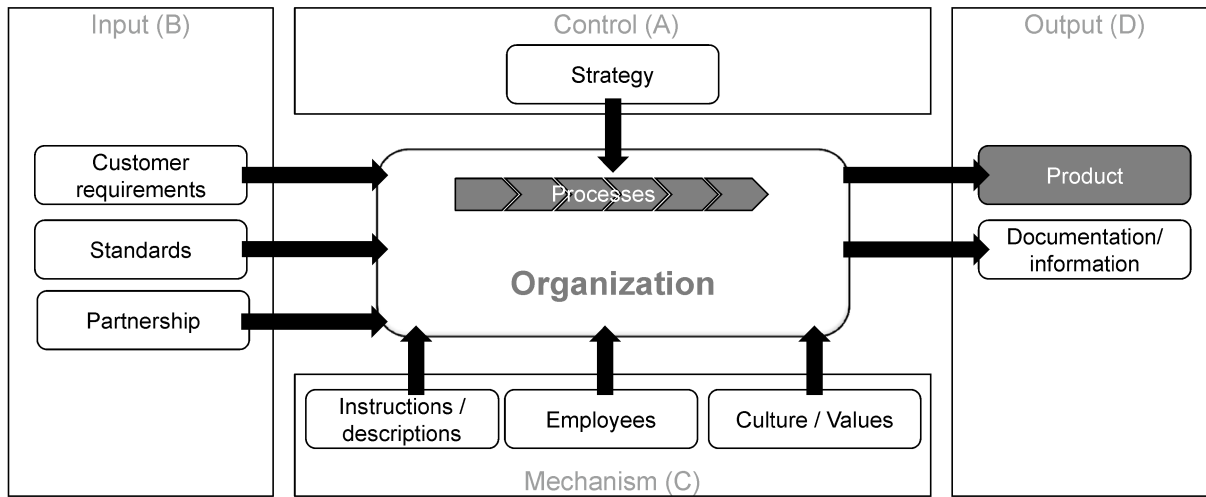


Figure 1 — Concept of an organization, with potential levers for influence

4 Conformity assessment procedure

4.1 General

There is a clear procedure for establishing the conformity of an organization as regards the set criteria of the "Code of PLM Openness (CPO)". This sequence is characterized by three parties:

- Certified party (IT vendor),
- Conformity assessment body (certification body) and
- Evaluation scheme owner (e. g. prostep ivip e.V.¹⁾).

The individual steps of the scheme are shown for each of these parties in the flow chart in Figure 2.

Within the framework of the conformity assessment procedure of an organization, the evaluation is carried out by checking the following:

- The existence of documents describing how the organization meets the criteria of the "Code of PLM Openness (CPO)"; and
- Whether there is an awareness and knowledge about the existence of related documents, as well as the fact that the contents are integrated into the organization's processes.

4.2 Evaluation of documents

A document check is carried out as part of the conformity assessment. All documents and document groups provided to the certification body (see Clause 6) are examined regarding completeness (all documents are to be provided) and conformity with the stipulated requirements (the required contents are listed) is examined.

1) prostep ivip e. V. is an example of a suitable commercially available service provider. This information is provided for the convenience of users of this document and does not constitute an endorsement by DIN of the service provider named. Equivalent service providers may be used if they can be shown to lead to the same results.

The result of the document audit is the audit plan (see Clause 4.3) and, where appropriate, a request for any missing documents.

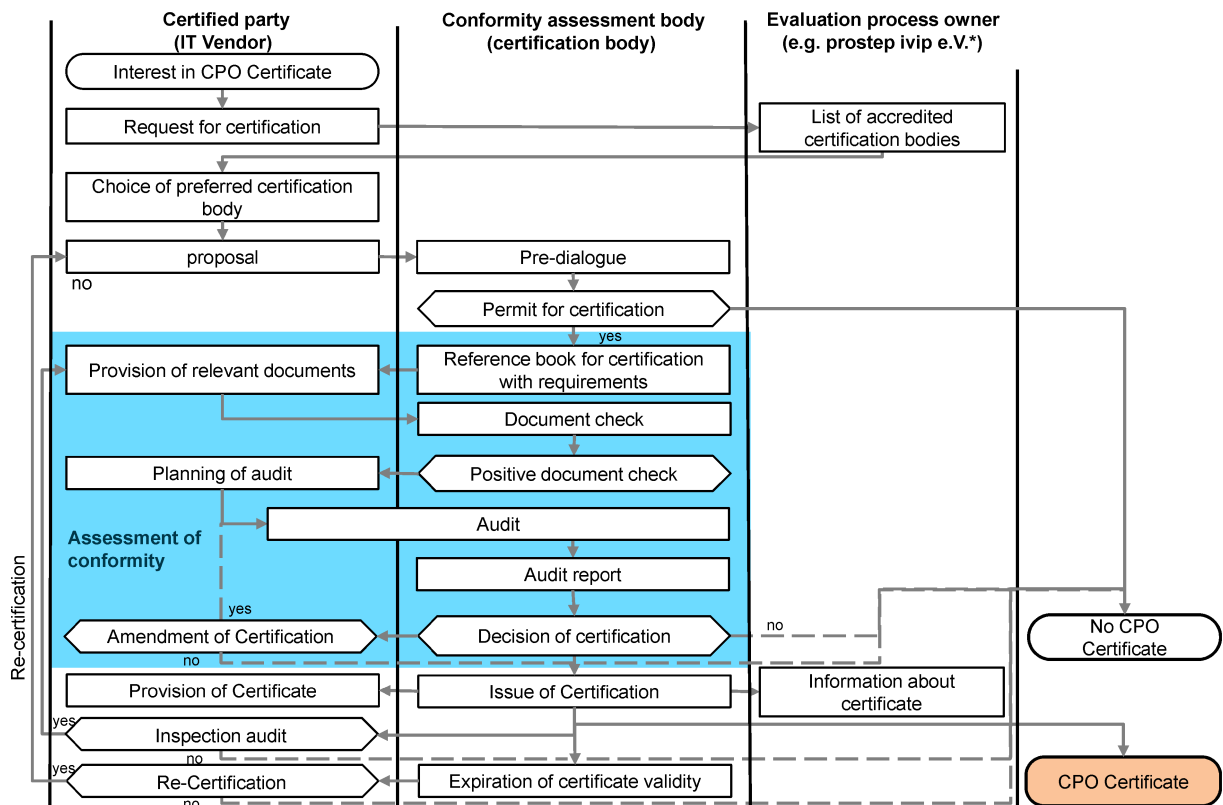


Figure 2 — Flow chart for CPO conformity assessment in an organization²⁾

4.3 Audit plan

The audit plan has only limited relevance for the certification process. This documentation can help both the certification applicant and the conformity assessment body ensure completeness and objectivity. The audit plan consists of two components:

The first component is the planning of the audit, which is also to be made available to the certification recipient. This document summarizes all information on the process of the audit and lists information such as contacts, time periods, themes and potential employees to be interviewed. The certifying party uses this as the basis for providing suitable capacities for the audit and minimizing internal processes. It also makes clear to the certification body what information should be communicated to the certification recipient. As a result, communication is structured and institutionalized.

The second component is the internal preparation of the conformity assessment body for the audit. The specific interview questions are compiled for the respective departments / employees. This is done based on the established requirements. In addition, individual questions are derived from the document check. All of this is also used to estimate expenses and information needed to make the assessment objective and robust.

²⁾ prostep ivip e.V. (see * in Figure 2) is an example of a suitable commercially available service provider. This information is provided for the convenience of users of this document and does not constitute an endorsement by DIN of the service provider named. Equivalent service providers may be used if they can be shown to lead to the same results.

5 Specified requirements

5.1 General

The specified requirements can be divided into two categories. For each category, the degree of fulfilment is to be evaluated according to the Code of PLM Openness (CPO).

SHALL – To attain a successful certification the specified requirements need to be fulfilled in whole. Minor non-conformities will result in a negative review and conformity cannot be attested.

SHOULD – These requirements are important and therefore compliance with the certification should be sought. However, these requirements are not exclusion criteria, since their fulfilment cannot always be demanded.

5.2 Criteria of the Code of PLM Openness

In the Code of PLM Openness, 7 "levers" are defined as being relevant for ensuring openness.

- Interoperability
- Infrastructure
- Extensibility
- Interfaces
- Standards
- Architecture
- Partnership

Within each of these levers, criteria are defined which are specified as requirements. Conformity assessment is based on fulfilment of these criteria.

5.3 Evaluation approach for certification

The evaluation scheme is derived by means of mapping CPO criteria to evaluation (conformity assessment) criteria for each lever in an organization. This approach ensures that all CPO criteria are checked and evaluated for all relevant levers.

The defined requirements are formulated as questions.

The criteria formulated are divided into two categories: "shall" and "should".

Requirements marked "shall" must be met. Non-compliance leads to a material non-conformity, which leads to a negative conformity assessment. A negative conformity assessment does not allow a certificate to be issued.

Requirements labelled "should" are sufficient requirements in the context of openness. Fulfilment is recommended, whereby non-compliance does not lead to material non-conformity. Compliance with these criteria can be noted in the certificate as a special feature.

5.4 Evaluation scheme for specified requirements

5.4.1 Themes

The assessment scheme considers different areas of the organization in order to objectively evaluate the conformity (see Figure 3).

The evaluation scheme is structured into eight thematic areas. Through this structuring, related requirements can be combined.

The eight themes are:

- Management
- Transparency
- Quality management
- Product roadmap
- Organizational measures for ensuring interfaces
- Organizational measures for supporting integration
- Customer focus
- Organizational measures for ensuring modularization.

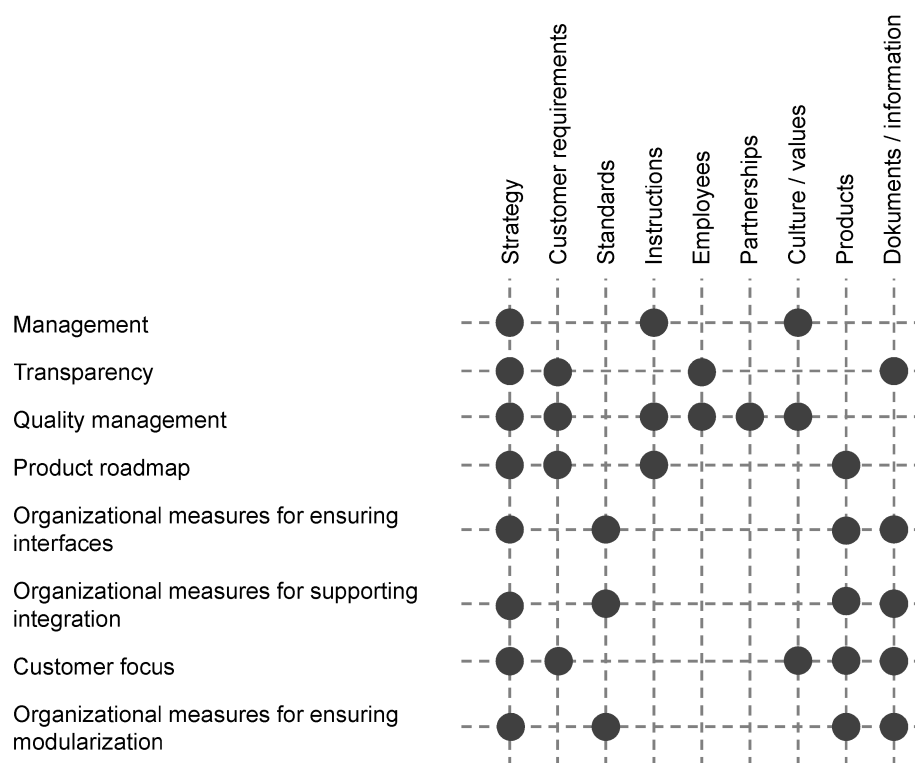


Figure 3 — Evaluation scheme - themes with their reference to the CPO levers

5.4.2 Management

When assessing the Management, the efforts made by the organization's Management are to be evaluated to ensure the openness of developed and distributed systems (see Table 1). The evaluation is to consider the approval and support of openness within the organization, and how openness is represented externally (in relation to the public).

Table 1 — Management Evaluation

No.	Evaluation question	Instructions	Basis of evaluation	Evaluation finding	Class
1	Is the CPO presented and explained by the Vendor using different channels?	Clearly recognizable commitment should be visible in different channels. Ensure easy access to process owner (e. g. prostep ivip e. V. ^a) and CPO information. Provide relevant documents with reference to CPO, including version, storage location, access location. Easy to find without prior knowledge - ensure logical links.		Information about CPO is provided via at least 2 channels Examples of each channel provided	Shall
2	Is the fulfilment of SHALL/SHOULD criteria in the CPO published and explained in detail – "CPO Vendor Statement"?	"CPO Vendor Statement" as a product-specific document for all products. List of products and associated CPO vendor statements. List of supported media (web, print, blog, social media) provided together with explanation on linkage.	Document: "CPO Vendor Statement" for all products and current revision	Link to public accessible documents provided CPO Vendor statement, pdf online, up-to-date - publishing date - major release version	Shall
3	Do employees have the competencies required for realizing a high-level of openness in the product?	Is the employee appropriately qualified to evaluate the subject of openness accordingly? Competence profile offers an overview: - Professional competence (training, experience); - Methodological competence (tools and special knowledge);	Interview: during audit	Person named, role in quality management system, knowledge about CPO and openness	Shall

No.	Evaluation question	Instructions	Basis of evaluation	Evaluation finding	Class
		• Social and intercultural competence (languages, leadership / project); • Functional competence (position, role, transferred decision-making & management competence).			
^a prostep ivip e. V. is an example of a suitable commercially available service provider. This information is provided for the convenience of users of this document and does not constitute an endorsement by DIN of the service provider named. Equivalent service providers may be used if they can be shown to lead to the same results.					

5.4.3 Transparency

To assess transparency, an evaluation of the organization regarding external communication is to be carried out. This involves active participation in standardization and standardization bodies to provide a basis for cooperation across the company's boundaries. The evaluation also takes account of specialist publications and the dissemination of specialist knowledge. The means of communicating with existing or potential customers is also included in the evaluation (see Table 2).

Table 2 — Transparency Evaluation

No.	Evaluation question	Instructions	Basis of evaluation	Evaluation finding	Class
1	Does the company actively take part in the CPO initiative, or is the company represented in at least one standards committee by an employee who takes active part (e.g. ISO, national standards bodies, technical associations)?	50% participation rate of an employee within the past 3 years. Name of the participant in the committee, name of the respective committee. Protocols, slides, etc. - all types of information from previous meetings plus subscriber lists within the reporting period Participation by telephone conferencing is permitted.	Document: Participation documentation, Protocols Reference list of bodies available	Active CPO initiative participation or Active member in referenced bodies	Shall