

AS/NZS ISO/IEC 24773.2:2024
ISO/IEC 24773.2:2024



Australian/New Zealand Standard™

Software and systems engineering — Certification of software and systems engineering professionals

**Part 2: Guidance regarding description of knowledge, skills, and
competencies contained in schemes**



AS/NZS ISO/IEC 24773.2:2024

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Preface

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee IT-015, Software and Systems Engineering.

The objective of this document is to provide guidance for certification that can be used by certification or qualification bodies regarding the description of knowledge, skill and competence within their particular schemes based on AS/NZS ISO/IEC 24773.1.

This document is identical with, and has been reproduced from, ISO/IEC 24773-2:2024, *Software and systems engineering — Certification of software and systems engineering professionals — Part 2: Guidance regarding description of knowledge, skills, and competencies contained in schemes*.

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

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 document 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 or www.iec.ch/members_experts/refdocs).

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This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 7, *Software and systems engineering*.

A list of all parts in the ISO/IEC 24773 series can be found on the ISO and IEC websites.

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 and www.iec.ch/national-committees.

Introduction

The ISO/IEC 24773 series replaces and expands upon ISO/IEC 24773:2008.

The ISO/IEC 24773 series consists of the following parts.

- ISO/IEC 24773-1 serves as the basis for the ISO/IEC 24773 series. It contains terminology, concepts, and requirements which are common to the remaining parts.
- This document contains guidance which can be used by certification bodies regarding the definition of knowledge, skills and competencies that are to be incorporated into a certification scheme for professionals in software and systems engineering.
- ISO/IEC 24773-3 provides specific requirements for certification schemes for professionals in systems engineering.
- ISO/IEC 24773-4 provides specific requirements for certification schemes for professionals in software engineering.

The ISO/IEC 24773 series is applicable across all organizations and for conducting assessments using a variety of methods, techniques and tools.

This document also contains additional discussion and guidance concerning the requirements for certification schemes defined in ISO/IEC 24773-1. It contains general guidance concerning the elements of a certification scheme, particularly as they apply within the domain of software and systems engineering. It contains guidance for the description of several key elements of certification schemes which are generated or referenced by the certification body:

- body of knowledge (BOK);
- skills;
- competency.

In addition to addressing technical skills, knowledge and competence, ISO/IEC 24773-1:2019, 6.3.1 requires that a conformant certification scheme address other aspects of professionalism, such as professional skills/attributes and a code of ethics. This document provides additional descriptions and guidance regarding these other aspects of professionalism to be addressed by a conformant scheme.

This document is useful to certification bodies offering schemes for the certification of professionals in the domain of systems or software engineering. It offers guidance for certification bodies when defining or designing the various elements of their respective certification schemes, as well as guidance for description of these scheme elements.

[Annex A](#) contains further explanation about the distinction between certification and professional licensure. [Annex A](#) also contains additional guidance to encourage harmonization between a certification scheme and the requirements of regulators.

By considering the guidance contained in this document, certification bodies can provide a clearer and more precise description of their certification schemes. This in turn benefits the other stakeholders (potential certificants, accreditation bodies, professional and technical groups, and employers), allowing them to more accurately assess the certification scheme and compare to other schemes. This document is also useful to (potential) applicants or candidates of certification schemes, in that they can obtain additional background information concerning the requirements for certification schemes claiming conformance to the ISO/IEC 24773 series. Understanding the requirements for a certification scheme (as expressed in ISO/IEC 24773-1, ISO/IEC 24773-3, and ISO/IEC 24773-4) along with the guidance contained in this document, helps the candidate to compare various schemes, and understand where/how such guidance is reflected in and incorporated into the various schemes. Similarly, employers; evaluators of professional personnel who are certificants; and evaluators of certification schemes in the domain of software and systems engineering can also use the contents of this document to better understand the requirements, as well as the differences between various schemes.

NOTES

Australian/New Zealand Standard

Software and systems engineering — Certification of software and systems engineering professionals

Part 2: Guidance regarding description of knowledge, skills, and competencies contained in schemes

1 Scope

This document contains guidance for certification that can be used by certification or qualification bodies regarding the description of knowledge, skill and competence within their particular schemes based on ISO/IEC 24773-1.

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.

ISO/IEC 17024, *Conformity assessment — General requirements for bodies operating certification of persons*

ISO/IEC 24773-1:2019, *Software and systems engineering — Certification of software and systems engineering professionals — Part 1: General requirements*

3 Terms and definitions

For the purposes of this document, the terms and definitions in ISO/IEC 17024, ISO/IEC 24773-1, and the following apply.

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

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

KA

knowledge area

sub-area or grouping of related topics within a body of knowledge (BOK)

Note 1 to entry: See [5.2](#) and [5.3](#).

4 Major elements of certification and qualification scheme

This clause introduces the major elements of a certification and qualification scheme as listed in ISO/IEC 24773-1.

[Clauses 5](#) to [8](#) discuss the various elements in greater detail.

Conforming certification schemes have the following major elements at a minimum:

- body of knowledge (BOK);
- skills;
- competencies.

Figure 1 depicts these elements and the relationship between them within the context of a certification scheme.

The body of knowledge (BOK) associated with a certification scheme contains items of knowledge which are relevant to the engineer or professional in the domain being targeted by that certification scheme. Recommendations for describing the BOK for use in a certification scheme are explained in detail in [Clause 5](#).

NOTE 1 Also see ISO/IEC 24773-1:2019, 5.3 for the explanation of knowledge, BOK and cognitive level.

Skills defined for a certification can represent various abilities of the certificant, such as the ability to apply specific knowledge in the performance of an action, or a single step within a sequence. Recommendations for describing skills are explained in detail in [Clause 6](#). Since skills are defined based on a certain set of knowledge topics, [Clause 6](#) also contains recommendations about relationship between knowledge and skills.

NOTE 2 Also see ISO/IEC 24773-1:2019, 5.4 for the explanation of skill and performance level.

Competencies represent the ability to successfully complete tasks that certified persons are expected to undertake. Each competency required by the certification scheme is associated with appropriate proficiency levels (see ISO/IEC 24773-1:2019, 6.5.3). A competency area may be defined and may include various related competencies. Recommendations for describing competencies for use in a certification scheme are explained in detail in [Clause 7](#). Since competencies are defined based on a certain set of knowledge topics and skills, [Clause 7](#) also contains recommendations about relationship among knowledge, skills and competencies.

NOTE 3 Also see ISO/IEC 24773-1:2019, 5.5 for the explanation of competence and proficiency level.

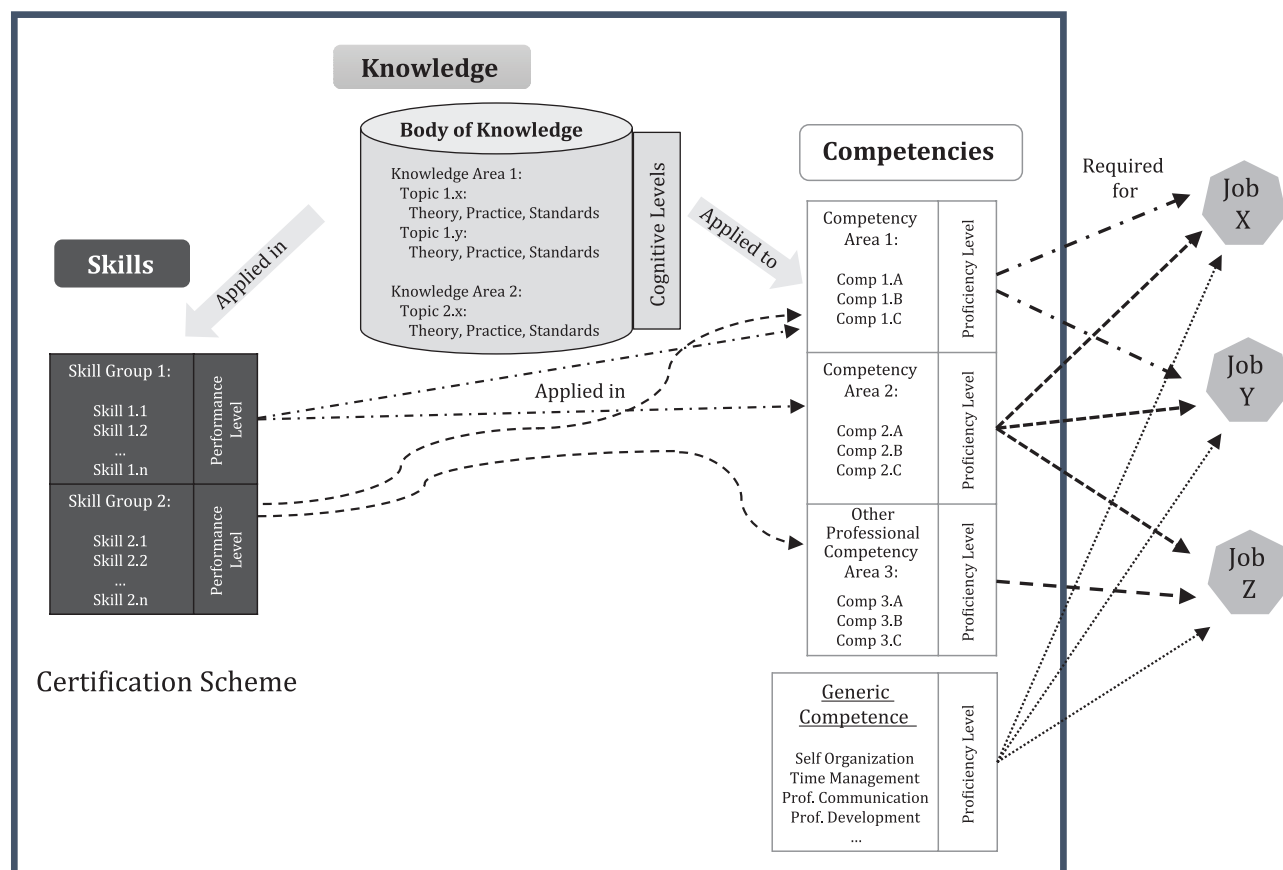


Figure 1 — Major elements of certification scheme and relationships among them