

IEEE Recommended Practice for Defining Competencies

IEEE Computer Society

Developed by the
Learning Technology Committee

IEEE Std 1484.20.2™-2022

STANDARDS

IEEE Recommended Practice for Defining Competencies

Developed by the

Learning Technology Committee
of the
IEEE Computer Society

Approved 21 September 2022

IEEE SA Standards Board

Abstract: Recommended practices for defining competencies are provided. IEEE P1484.20.3/D1 (February 2022), a technical standard for competency definitions data, is supported. Recommended practices are given for defining the kinds of information that IEEE P1484.20.3/D1 (February 2022) encodes as interoperable data, i.e., data that defines a skill, knowledge, ability, attitude, habit of practice, behavior, or learning outcome.

Keywords: competency, competency definition, competency framework, IEEE 1484.20.2

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PDF: ISBN 978-1-5044-9088-7 STD25721
Print: ISBN 979-1-5044-9089-4 STDPD25721

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Introduction

This introduction is not part of IEEE Std 1484.20.2-2022, IEEE Recommended Practice for Defining Competencies.

This recommended practice has been developed to promote a common understanding for those involved in defining policies, standards, and data structures for competency definitions and frameworks. This document also discusses various approaches for developing competency definitions and frameworks. This recommended practice incorporates and promotes the principles of ethical development, definition, documentation, and reuse of competency definitions and frameworks. As a guide, it cannot replace the role of experts who have developed specific domain expertise that are invaluable to organizations that are developing specific competency definitions and frameworks. This recommended practice does not attempt to define systems or products that might be used to deliver the benefits of using well-defined competencies.

The role of competency definitions and frameworks

With the advances of technology, the velocity of change, and increased complexity, the world of learning, credentialing, work, and policymaking is changing. Tasks once performed by humans are now being automated. As repetitive and logical tasks are handed off to machines new competencies are required. Well-defined competencies are needed to inform specific functions within educational systems, credentialing organizations, employers, and government.

Ineffective communications between stakeholders results in increased costs for employers to train new staff to provide organizations with the levels of competence required. Historical performance data and lessons learned should be used to document the competencies required to operate an organization's processes and tools. Ineffective use of data and experience leads to hidden costs that are often under-estimated. Without transparency of the competencies required, too many potential superstars are sidelined. To compete in the 21st century, organizations must establish and sustain a reliable pipeline of high potentials and high performers.

Defined competencies can be used as a communication tool to promote understanding and align stakeholder expectations. Ill-defined competencies can be confusing and may be misinterpreted. For example, stating that new employees need to be good communicators does not provide important information about the type of capability required (e.g., writing, speaking, listening, presentation) or the context of the communication. Context often dictates how an individual behaves and how well they can use their skills. For example, an employee communicating with a fellow oil rig worker about a hazardous situation, a nurse communicating with a surgeon in an operating theater, or a manager describing a vision at a town hall meeting will require somewhat different communication skills.

Competency definitions are often clustered into competency frameworks to make them suitable for specific purposes. These clusters might inform training requirements, learning outcomes, job descriptions, interview processes, assessments, and performance evaluations. The same competency definition might be used within different frameworks, enabling a common understanding as individuals move from course to course or role to role. Additionally, competency frameworks might be connected to other competency frameworks to promote understanding, avoid repetition, and ease maintenance.

The need for well-defined competencies

In the 21st century, skills and competencies will be the currency to enable the free movement of workers both geographically and economically. To support these, there need to be well-defined competencies. This means that competency definitions and frameworks should consist of well-written competency statements that are understandable and informative for humans with metadata appropriately structured. Metadata should be stored so that competency definitions and frameworks can be machine-readable and tagged to be discoverable, transformable, tradeable, transparent, as well as assure confidentiality and well-definedness.

Understandable

Competency definitions and frameworks have moved from specialist domains of competency management to be an important communication tool that informs and aligns stakeholders, including individuals. Using well-defined competencies that are easy to understand, stakeholders can use them to communicate effectively. For example:

- Employers and employees can identify and communicate about upskilling and reskilling needs and opportunities.
- Employees can refer to an organization's competency framework to self-direct their learning with the confidence that it aligns with their employer's expectations.
- Employers can communicate their needs to educational systems and learning platforms.
- Educational systems, learning platforms, and credentialing organizations can share common sets of definitions to assist individuals to make informed choices.

Informative

To support stakeholders, competency definitions should be constructed to inform the tasks that individuals need to perform. Well-defined competencies can be used to assist with:

- Defining learning outcomes, curricular, programs, courses, and learning design
- Prescribing learning experiences, personal development, upskilling, and reskilling
- Marketing programs, courses, and learning to individuals and employers
- Designing assessments, performance criteria, and evaluations
- Designing credentials, certifications, and qualifications
- Representing the value of credentials and micro-credentials to others
- Meeting organizational design objectives while ensuring equity and inclusion
- Drafting job posting and descriptions
- Identifying shortage and abundance of skills and competencies to inform policies

Discoverable

To enable the reuse of competency definitions and frameworks they need to be easily discovered by people and machines. Discoverable competency definitions and frameworks will assist various functions within an organization, or those seeking to trade within a marketplace. Metadata representing key aspects of the competency statement(s) and usage will be important to enhance discoverability.

Machine-actionable

In order for competency definitions and frameworks to be discoverable, tradeable, and transformable, it is vital that competency definitions and frameworks be designed to be machine-actionable, or at least stored in machine-actionable formats.

Transformable

It is realistic to assume that there will be more than one data model available to store competency definitions and frameworks. Legacy and proprietary competency management systems will use their own data models, and new systems might base their data models on international metamodel interchange standards. Regardless of the data format a system uses, once competency definitions and frameworks become machine-readable with useful metadata, they can be cross-walked and transformed to other data models.

Tradeable

With competency definitions and frameworks available in machine-readable formats, scalable marketplaces can evolve to enable their trade. As in any marketplace, there will be suppliers, collaborators, and users. Governments, non-governmental agencies, consultants, commercial entities, trade associations, professional associations, and the open-source communities will be empowered to be suppliers. Educational systems, learning systems, credentialing organizations, and employers will have easy access to machine-readable competency definitions and frameworks with a variety of licensing models possible.

Transparent

Educators and employers create and maintain definitions to ensure clarity as to the set of skills and behaviors required in the performance of a task or activity within a specific context. Learners and workers can then use these well-defined competencies to assess whether their own skills and behaviors match those described by educational programs and employers.

To promote trust, understanding, and use, competency definitions and frameworks must be easy to access and transparent. By using machine-readable and well-defined formats, systems can be easily developed to provide visibility and value to stakeholders. As individuals pursue life-long improvement of skills and behaviors to stay relevant in the job market, transparency helps them make informed choices about potential career paths and to pursue skills and competencies required to pursue their interests.

Well-defined competencies can enable organizations and government agencies to provide transparency by reporting data on shortages and abundances of skills and competencies in order to inform policies and decision-making by educational systems and employers.

Journey to well-defined competencies

As organizations embark on improving the creation, curation, use, and re-use of well-defined competencies, they will first look to solve the most pressing issues. To maintain the value created during the initial phase, organizations should move from a chaotic to an ordered state that requires:

- Moving from relying on the heroics of individuals to defining, documenting, and improving systems and processes
- Moving human-readable documents to structured data formats that can be easily processed by machines and transposed to human-readable formats
- Engaging with subject matter experts and facilitators to help them move from ill-defined to well-defined competencies
- Ensuring that well-defined competencies are discoverable, transformable, tradeable, understandable, informative, and transparent

Confidentiality

Competency definitions and frameworks may be proprietary—as they might reveal clues to an organization’s “secret sauce”—or may be “open” to enable communications between stakeholders. The level of confidentiality required for competency definitions and frameworks should be evaluated to determine the level of security required.

This document does not provide recommendations related to data privacy or security of personal data. It is recognized that personally identifiable information might be linked to competency data for learning, credentialing, qualifications, and performance purposes. All learning, credentialing, and performance systems should be evaluated to ensure the level of security required is met.

This standard does not provide recommendations related to the security systems required to maintain the confidentiality, integrity, or availability of competency definitions and frameworks. Other standards have been designed to specifically address these needs.

The future of competency definitions and frameworks

New systems and data models are evolving to promote the useful interchange of competency definitions and frameworks and help align stakeholders in their use. To enable effective communication of skills and competencies required by employers, authenticated by a credential, and taught by a variety of learning experiences, a common style of communicating competency definitions and frameworks is required.

Competency definitions are written by humans for humans and contain statements written in text. Natural language processing (NLP) can assist with harvesting existing competency definitions and frameworks into data models to improve their discoverability and use. NLP and authors need guidance to ensure that the resultant competency definitions and frameworks can be used widely. As historical content is merged to provide a more coherent view de-duplication and consolidation will be required.

This recommended practice explains how competency definitions and frameworks can be created and managed to provide the features required in the 21st century. This document was developed through a collaborative process that included participation from a wide range of stakeholders and informative presentations to the working group experts in competency framework development.

How this document is structured

It is recommended to read this document straight through, but since each section stands on its own, readers may skip around as much as they wish. If readers are experts in a section’s subject or feel out of their depth, they should feel free to skip ahead. The document is structured as follows:

Clause 1—Overview

This section explains the concepts and value of using well-defined competencies and sets the context for the remainder of the document.

Normative references

Not applicable for this document.

Clause 2—Definitions, acronyms, and abbreviations

The vocabulary used within competency definitions is, by its nature, precise and specific and this section promotes a specific vocabulary to assist stakeholders to align without debating the meanings of specific words.

Clause 3—Writing competency definitions

This section provides guidance for writing competency definitions and includes principles for transferring and transposing competency definitions for different uses.

Clause 4—Competency frameworks

This section provides the context for the information found in competency frameworks, including the relationships with and between competency definitions and other competency frameworks.

Informative annexes

Annex A—Applications

This section represents how various roles and stakeholders benefit from using well-defined competencies to achieve individual, team, organizational, and community objectives.

Annex B—Hosting, alignment, and integrations

This section explains how well-defined competencies are stored, placed, and used within the context of larger ecosystems.

Annex C—Lifecycle management

This section guides operational processes and governance structures designed to ensure proper lifecycle management of competency frameworks and the components within them.

Annex D—Examples of registries and repositories

This section provides a list of examples of registries and repositories that contain multiple competency frameworks and related information.

It is hoped that readers will reference this recommended practice when they encounter issues and need to refresh their understanding.

Acknowledgments

A number of experts in competency development and related disciplines presented to the working group during the development of this document. The working group would like to acknowledge the following contributing experts for their insights and contributions:

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IEEE Recommended Practice for Defining Competencies

1. Overview

1.1 Scope

This document provides recommended practices for defining competencies.

It supports IEEE P1484.20.3™/D1 (February 2022), a technical standard for competency definitions data. This document gives recommended practices for defining the kinds of information that P1484.20.3/D1 (February 2022) and other technical standards encode as interoperable data, i.e., data that defines a skill, knowledge, ability, attitude, habit of practice, behavior, or learning outcome.

1.2 Purpose

The purpose of this document is to provide guidelines for well-defined competency definitions.

1.3 Word usage

The word *shall* indicates mandatory requirements strictly to be followed in order to conform to the standard and from which no deviation is permitted (*shall* equals *is required to*).^{6, 7}

The word *should* indicates that among several possibilities one is recommended as particularly suitable, without mentioning or excluding others; or that a certain course of action is preferred but not necessarily required (*should* equals *is recommended that*).

The word *may* is used to indicate a course of action permissible within the limits of the standard (*may* equals *is permitted to*).

The word *can* is used for statements of possibility and capability, whether material, physical, or causal (*can* equals *is able to*).

⁶ The use of the word *must* is deprecated and cannot be used when stating mandatory requirements; *must* is used only to describe unavoidable situations.

⁷ The use of *will* is deprecated and cannot be used when stating mandatory requirements; *will* is only used in statements of fact.

2. Definitions, acronyms, and abbreviations

2.1 Introduction

For the purposes of this document, the following terms and definitions apply. The *IEEE Standards Dictionary Online* should be consulted for terms not defined in this clause.⁸

When defining and communicating competency definitions and frameworks, stakeholders are challenged for the following reasons:

- Words used to label and describe competencies originated in the 16th century, before the first industrial revolution. Dictionaries have not updated their explanations of the terms used for competency definitions.
- Competency framework stakeholders define and use terms to serve their needs and are generally more complete than dictionary definitions.
- Different stakeholders use competency definitions and frameworks for various purposes, and each has developed its use of terms. Some stakeholders have documented their glossaries, and others have not.

The following recommendations are provided for stakeholder alignment and clarity. Providing a glossary of terms will allow competency definitions to be more discoverable, transportable, and usable. This document considers the following stakeholders:

- a) Individuals or groups of individuals
- b) Employers and labor market intermediaries, such as employment agencies, etc.
- c) Public and private education and training systems (schools, colleges, universities, online training providers, etc.)
- d) Credentialing bodies
- e) Policy makers

2.2 Definitions

The following definitions clarify how some key terms are used in this document. It is recognized that different communities of practice and different linguistic communities use terms in different ways, and the definitions here are not intended to suggest that any particular use is correct, incorrect, superior, or inferior.

activity: A pursuit in which a person or team uses effort.

behavior: The way someone acts in response to a particular situation or stimulus.

competence: The ability to perform an activity or task, or groups of activities or tasks. Competence may require performance at a specified level or in a specified fashion.

competencies: The plural of competency and describes the set of skills, knowledge, abilities, attitudes, behaviors, and habits of practice required in the performance of an activity or task within a specific context.

competency: The set of skills, knowledge, abilities, attitudes, behaviors, and habits of practice required in the performance of an activity or task within a specific context.

⁸ *IEEE Standards Dictionary Online* is available at: <http://dictionary.ieee.org>. An IEEE Account is required for access to the dictionary, and one can be created at no charge on the dictionary sign-in page.

competency definition: A resource that includes a statement that describes a competency and may include a specific context and reference definitions of potential levels of proficiency.

competency framework: A collection of competency definitions and additional related information used to serve a specific need of an individual, organization, or community.

context: A description of the setting to which a competency applies or in which competence is measured or observed. Context might include, without limitation, a job, role, occupational category, physical and psychological environment, and required or expected tools, information, and incentives.

direct association: A relationship that takes place directly between two objects (in this document, a competency definition or competency framework), meaning that a property in one references another.

indirect association: A relationship that takes place indirectly between two objects (in this document, a competency definition or competency framework) through the creation of a third object.

level of proficiency: The level of behavior, knowledge, skill, or other attribute required to meet the criteria for competence.

performance: An observable or measurable act.

resource association: A resource that defines a relationship between two resources.

skill: The capacity to effectively use cognitive and physical abilities to perform a task or activity.

task: A pursuit that requires effort to complete within a certain time with a measurable outcome.

2.3 Acronyms and abbreviations

API	Application Program Interface
CLR	comprehensive learner records
HTTP	HyperText Transfer Protocol
JSON	JavaScript Object Notation
LOM	Learning Object Metadata
SCD	Shareable Competency Definitions
RDF	Resource Description Framework
URI	Uniform Resource Identifier
URL	Uniform Resource Locator
XML	Extensible Markup Language

3. Writing competency definitions

3.1 Overview

This clause provides guidance for writing information resources for competency definitions. This includes assistance in transferring and transposing competency definitions for different uses.

This clause is limited to some broad principles of how competency definitions can be written in alignment with the model described within IEEE P1484.20.3/D1⁹ (February 2022) [B15].¹⁰

3.2 Contents of a competency definition

3.2.1 Overview

Competency definitions are used to describe a competency in different situations (e.g., employment, education, certification, regulation), therefore all these uses make a prescriptive model impossible. This document presents key principles that support the various methodologies used by subject matter experts and curriculum designers who write definitions to reflect the skills, knowledge, abilities, and personal characteristics essential for successful outcomes aligned to IEEE P1484.20.3/D1 (February 2022) [B15].

The contents of a competency definition should include:

- **Competency ID**, a unique identifier in a context for the competency definition that may be human generated or generated by a system.
- **Competency name** that provides a short name for the competency.
- **Competency statement** that details the behaviors and capabilities required to perform a task including conditions as further defined within the metadata.

The contents of a competency definition may also include:

- **Competency description** which is a narrative in plain language that may describe and contextualize the competency.
- **Levels of proficiency** provide descriptions of the potential levels of proficiency.
- **Competency metadata** that provide information about other data. For example, metadata about a competency definition could include additional attributes related to the competency. This may be accomplished by extending IEEE P1484.20.3 or other data model.
- **Relationships** that exist between this competency definition and other resources (including competency frameworks and other competency definitions).

As a part of this process, resource association objects may be created, but for most use cases are better served as parts of competency frameworks.

It is important to note that practices provided in this document are provided to recommend ways of writing definitions that are reusable and transposable. Any profiles provided can be adapted to create competency definitions to suit the organization as long as they can be translated back to a model that provides reusability.

⁹ Numbers preceded by P are IEEE authorized standards projects that were not approved by the IEEE-SA Standards Board at the time this publication went to press. For information about obtaining drafts, contact the IEEE.

¹⁰ The numbers in brackets correspond to those of the bibliography in Annex F.

3.2.2 Conceptual model structure for constructing competency definitions

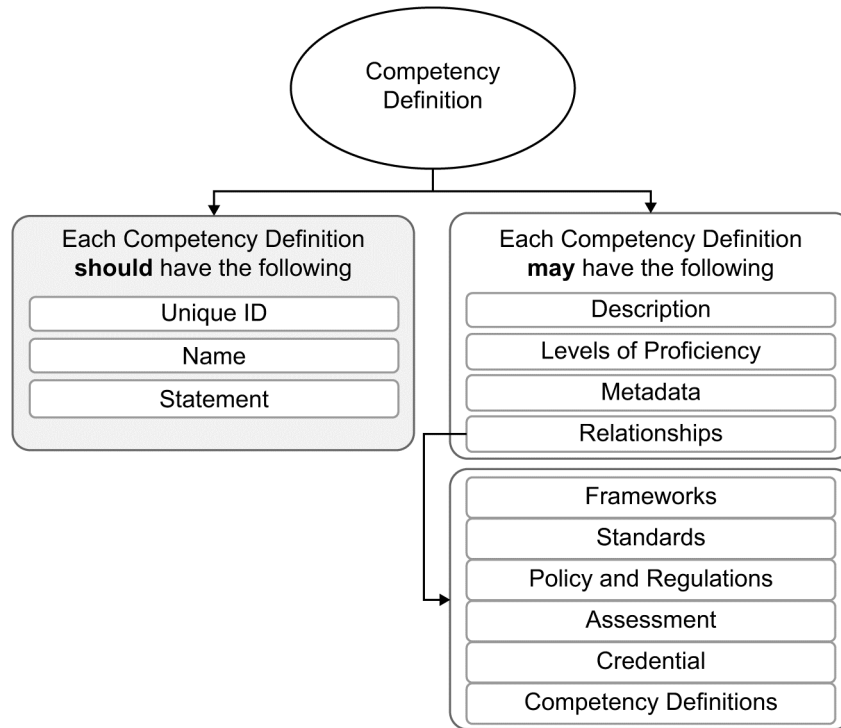


Figure 1—Key components and relationships of a competency definition

3.2.3 Competency ID

This is a unique code or identifier for the competency definition. This may be a manually assigned (human generated) code that follows a numbering convention determined by the developer and/or a unique Uniform Resource Identifier (URI) generated by a system.

3.2.4 Competency name

This is the short name or label for the competency definition. At a minimum, this should be a human-readable identifier that can allow categorization or search parameters to help users find the definition from within a library of content. In many situations, there are hundreds of definitions in a single framework and many hundreds of definitions in an organization, so the ability to be found by a search is key to usability.

3.2.5 Competency statement

The competency statement is a human-readable expression that describes a competency. Personal and organizational preferences influence the structure of a competency statement, however, at a minimum, a statement should include:

- An action verb indicating what is to be done
- An instruction or object to the verb of what action has been carried out
- An expected outcome or behavior

3.2.6 Competency description

The competency description is a human-readable expression that contextualizes a competency. The description may indicate additional context or further describe how the competency may be applied to an activity, task, or role.

3.2.7 Levels of proficiency

Competency definitions may identify the level of behavior, knowledge, or skill required to meet the criteria for competence. These may be present or absent in the competency definition. Proficiency examples may be: novice, developing, advanced, and expert, where these may be also subdivided into high, mid, and low sublevels.

3.2.8 Competency metadata

Contextual metadata about the competency definition may not be limited to the details of the context in which an individual will have to perform a task or activity, it can also include any relationships to other competency definitions and competency frameworks.

Metadata provides information about other data. For example, metadata about a competency definition could include the copyright holder. Many types of metadata can be used, such as descriptive text, or references, and these types are typically described by the data model being used. The examples of metadata described below are aligned to IEEE P1484.20.3/D1 (February 2022) [B15] that defines the data model for shareable competency definitions (SCD). Other standards, such as IEEE Std 1484.12.1™ [B16] describing IEEE learning object metadata (LOM), also provide useful references for search or reporting capabilities. Metadata properties should not be populated through templates or other manual means if a system is going to update those same properties.

3.2.9 Relationships

A competency definition could link to policies, procedures, laws, regulations, definitions, assessments, credentials, learning and development opportunities, and other useful references.

Resource associations are a subset of relationships and defined in IEEE P1484.20.3/D1 (February 2022) and include both direct and indirect associations.

Direct associations are a direct link between competency definitions that indicate an external relationship, or a relationship indicated through the use of an association object. Direct relationships should be used as described in IEEE P1484.20.3/D1 (February 2022).

Indirect associations should be represented through creation of competency association objects. A competency association object is a container that contains a set of instructions for any competency definitions and/or other competency framework components linked to the association object. Competency association objects should be used in the context of competency frameworks whenever possible. See Clause 4 for details on how to create a competency association object.

An advantage to using direct associations is that they are part of the competency definition and move with it. They can only be created by an entity with permission to edit the competency definition. An advantage of indirect associations is that the entity defining them does not need permission to edit the competency definition to create them. The disadvantage is that they are disassociated from the competency definition and therefore can be lost (although an advantage is that they can be private).

3.3 Construction of a competency definition

3.3.1 Construction of a competency definition

Table 1 describes a suggested way to construct the competency definition. Not all of the suggested metadata or relationship attributes may be necessary for every use case and, conversely, additional user-defined attributes can be inserted into the template when needed for a specific purpose.

Table 1—Sample components of a competency definition

Attribute	Attribute description
RECOMMENDED ATTRIBUTES	
ID	A unique identifier used by systems to retrieve or reference the competency definition.
Name	A user-defined short name or label for the competency definition to help users identify the competency definition.
Competency statement	A human-readable expression that describes a competency.
ADDITIONAL ATTRIBUTES	
Levels of proficiency	Defines the grades or competence levels associated with this definition.
Description	A human-readable description in plain language that describes and further explains the competency statement.
Metadata related to the competency definition	
Reference code	A user-defined identifier for internal use that can be used to search for the competency definition and align with internal systems.
Language used	Language used to write definition, e.g., English.
Type	A human-readable label for type, class, or category of the competency definition. The type or class may indicate the competency definition's level in a hierarchical framework (e.g., "subject," "strand," "standard," "benchmark," "indicator") its functional class (e.g., "condition," "context," "criteria," "outcome"), or category (e.g., "knowledge," "skill," "ability," "behavior," "habit of practice").
Publisher	Individual or organization that is responsible for making the competency definition available.
Rights to use	Identifies any rights to use, distribute, or maintain the definition.
Date published	Date when the definition was first published.
Date updated	Date when the definition was last updated.
Period for which this is current	Identifies the date range when definition applies.
Review date	Identifies the date when definition is due for review.
Status	Position in competency definition lifecycle, e.g., draft, approved for publication, published.
History	User- or machine-defined information on lifecycle and workflow.
Extensions	Additional attributes defined by the creator of the definition or framework.
Relationship information	
Competency sub-statement	A human-readable expression that has a child relationship with the parent competency statement. For example, a competency statement may include sub-statements identifying the specific knowledge, skills, and behaviors required for the competency.
Rubrics	Link to a structured resource used to define and assess levels of proficiency.
Credential type	Identifies the type of credential that specifically applies to this competency definition, if any.
Relationship to other competency standards	Links to other competency definitions, competency frameworks, and industry skills standards that apply to this definition.
Relationship to other competency definitions IDs	Links to other competency definitions that impact, or partner with, this definition, such as predecessors or successors in a required order.
Relationship to policies and regulations	Reference the policy or regulation that the competency definition supports. For example, schools may refer to government education policies, and employers may reference laws to link competency definitions to their obligation to comply with regulations.

Additional metadata may be relevant regarding ownership, name of author, name of reviewer, and their relevant dates depending on the workflow that is deployed. Refer to Annex C for more information.

3.4 Writing competency statements

3.4.1 Considerations when writing competency statements

Authors of competency definitions should be subject matter experts, or have access to a pool of subject matter experts in order to:

- Understand the context or situation being described
- Write statements using verbs that relate to the level of performance required
- Identify the statement type, e.g., behavior, knowledge, skills
- Ensure that the competency definition is validated as described in Annex C.

3.4.2 Methods for writing competency statements

3.4.2.1 Introduction

A structured text (templated) methodology should be used to create statements so they are consistent and understandable.

The following are some examples that demonstrate different approaches to writing competency definitions.

3.4.2.2 CAR model (Oliver [B19])

Order: **Context** (circumstances, role, or topic under consideration), **Action** (verb), **Result** (what's done and how it's done)

Example: As a **Learning Technologist**, construct the process demonstrating the *creation and review cycle of a content storyboard*.

Example: As a **Health and Safety Officer**, participate in regular *safety and emergency training events*.

3.4.2.3 STAR model (Civil Service Resourcing [B6])

Order: **Situation** (circumstances where it takes place [similar to context]), Task(s) (activities, can be list), **Action** (verb), **Result** (what's done and how it's done)

Example: **For the quality assurance process**, devise a data model and compile the data so it can *identify where delays are occurring*.

3.4.2.4 AIR model

Order: **Action** (verb), Instruction (object of the verb), **Result expected** (what's done and how it's done)

Example: Select tools and equipment *appropriate for the task*.

3.4.2.5 Avoiding compound statements

Compound statements, such as a sentence or short paragraph stating a number of different actions and expected outcomes, can present challenges. This example demonstrates how to rework existing compound statements and apply a systematic approach more conducive to Shareable Competency Definition models.

Identify the following elements in the following compound statement:

- Order: **Action** (verb), **Instruction** (object of the verb), **Result expected** (what's done and how it's done)

Example: **Police Officer** communicates ideas and information *effectively both verbally and in writing*. Uses a language style that is appropriate to the situation *for the people being addressed*. Assures that others *understand what is going on*.

This compound statement can be written into several simple sub-statements using the following structured approach:

- *Verbally* communicates ideas *effectively*
- Communicates ideas *effectively in writing*
- Assures others *understand the ideas expressed in writing*
- Assures others *understand the ideas expressed verbally*
- Uses language and style *appropriately to the situation when communicating verbally*
- Uses language and style *appropriately to the situation when communicating in writing*

3.4.3 Proposed practice for use of types within a competency definition

“Type” may be user defined and should be used to indicate the factor(s) that is/are being recognized in the competency statement such as:

- Behaviors
- Knowledge
- Skills
- Abilities
- Habit of practice
- Attitudes
- Composite

3.4.4 Simple and composite competency definitions

Competency definitions can be simple or composite.

Simple competency definitions (see Figure 2) are those in which a single factor is recognized.

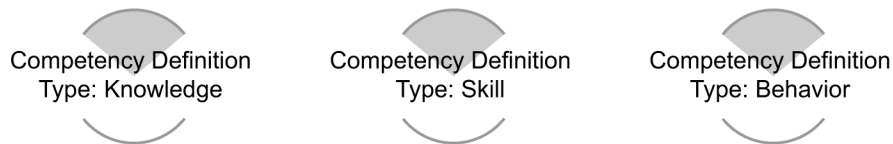


Figure 2—Examples of simple competency definitions

Composite competency definitions (see Figure 3) are those in which multiple factors are recognized. Composite types always include sub-competencies or relations to competency definitions or frameworks.

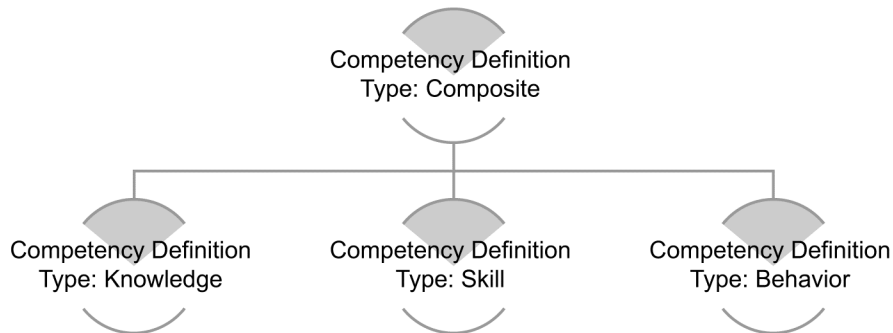


Figure 3—Example of composite competency definition

3.5 Examples of a competency definition

3.5.1 Introduction

The following examples are provided for information and show some different ways competency definitions may be displayed.

- Tabular (usually Word or PDF)
- Spreadsheet
- Linked data model (diagram)

3.5.2 Example A

3.5.2.1 Example A—tabular format

The tabular format is most commonly used for published, human-readable documents (Figure 4).

Unique Identifier (Reference Code)	OHS-03C
Categories (Tags)—separate with commas if multiple	Workplace Safety, Foundational
Competency Title (Name)	Handle Hazardous Materials
Competency Statement	Handle hazardous materials according to occupational health and safety (OHS) regulations and workplace requirements.
Performance Criteria (Competency sub-statements-type: Behavior)	• Select hazardous materials according to OHS regulations and workplace requirements • Use hazardous materials according to OHS regulations and workplace requirements • Store and dispose of hazardous materials according to OHS regulations and workplace requirements
Supporting Skills and Knowledge (Competency sub-statements-type: Knowledge) (Competency sub-statements-type: Skills)	Knowledge: • Correct identification and handling of hazardous materials (e.g. WHMIS training and symbols) • Understanding of OHS regulations, particularly related to using hazardous materials • Location of Safety Data Sheets and how to read them • Workplace policies and procedures related to using hazardous materials • Types of personal protective equipment (PPE) and their uses when handling hazardous materials Skills: Ability to accurately measure quantities and concentrations of hazardous materials
Key Terms/Definitions Required (Relationship—links to external glossary for definitions)	hazardous materials • Substances that can cause harm. Hazardous materials designed for commercial use are labelled according to WHMIS standards; those designed for home use carry consumer protection labels. occupational health and safety (OHS) regulations • Legal requirements for working safely, which may include required training and certification, maintaining workplace documentation, and reporting of any incidents or near misses to appropriate regulatory bodies.

Figure 4—Composite competency definition—example A in tabular format

	WHMIS • Workplace Hazardous Materials Information System; a Canadian system of site-specific information about hazardous materials that are present in workplaces and how to use and handle them safely. WHMIS is aligned with the international Globally Harmonized System (GHS) standard for hazardous materials. workplace requirements • Standard policies, operating procedures, and other requirements specific to a workplace as determined by the workplace and/or management.
Context/Examples	• Workers may use hazardous materials for tasks such as cleaning and sanitizing and must do so safely. This may include mixing or diluting concentrated chemicals according to the instructions provided by the supplier. • Supervisors and managers are also responsible for ensuring that everyone has the proper training and knows where to find specific information on the safe use of each hazardous material found in the workplace.
Learning Content/Links (Relationship—links to external resources)	• Link to WHMIS Training/Course • Link to OHS regulation • Links to workplace specific OHS policies and procedures
Levels of Proficiency	• Competent: Has demonstrated all required performance criteria • Not yet competent: Has not yet demonstrated all required performance criteria
Assessment Methods (Relationship—links to Rubric)	• Knowledge: WHMIS test/Certification • Practical: Observation of individuals handling hazardous materials while doing related tasks.

Figure 4—Composite competency definition—example A in tabular format (*continued*)

3.5.2.2 Example A—spreadsheet format

Figure 5 shows the same example in a spreadsheet format, which may be used to manage competency information or upload into a data model.