Competency Areas Authoring Guide for Workforce Frameworks

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Note to Readers

This publication identifies best practices in authoring workforce framework Competency Areas. A Task, Knowledge, and Skill (TKS) Statements Authoring Guide for Workforce Frameworks is also available, and a third guide focused on authoring Work Roles is in development.

These authoring guides and other materials that support a standard approach to developing workforce frameworks can be found in the Playbook for Workforce Frameworks developed by NICE, a program of the National Institute for Standards and Technology (NIST) in the U.S. Department of Commerce that is advancing cybersecurity education and workforce. The playbook defines a model workforce framework based on the principles of agility, flexibility, modularity, and interoperability. It details framework components and provides developers with resources on how to build the components and describe common uses with their community.

1. Introduction

This guide is intended to support the creation of Competency Areas in workforce frameworks.[1] As a common lexicon, a workforce framework improves communication about how to identify, recruit, develop, and retain talent. It facilitates coordination among various stakeholders by describing and sharing information about a defined field of work (e.g., cybersecurity or privacy), expressed via the core building blocks of Task, Knowledge, and Skill (TKS) statements. These core building blocks are then applied to defined Competency Areas and Work Roles.

A workforce framework offers benefits to a broad variety of stakeholders, including:

- **Employers** can use a workforce framework to conduct workforce assessments and identify gaps, improve recruitment and retention efforts, provide career development pathways, and establish strategic workforce development initiatives.

- **Education, Training, and Certification Providers** can use a workforce framework in developing learning programs and skills assessments that reflect real-world needs.

- **Learners** can use a workforce framework to learn about the wide range of work in a particular field and build capability in defined Competency Areas and Work Roles to prepare for a career in that area of work. Job seekers can use it to better understand position requirements and to demonstrate their capabilities. Finally, employees can use it in career planning and development.

Consistent use of a workforce framework's building blocks enables communication at a peer level, sector level, state level, national level, or international level. This communication can drive innovative solutions to common challenges, lower barriers to entry for new organizations and individuals, and facilitate workforce mobility.

> **Learners:** Individuals who perform work, including students, job seekers, and employees.

2. What Are Competency Areas?

Competency Areas offer a high-level description of what learners need to know and be able to do in defined areas of work. As hiring becomes more inclusive of using an assessment-based approach to determine capabilities, applicant pools are broadened to more successfully identify candidates, particularly in areas such as emerging and rapidly evolving technologies. Competency Areas can also be used in identifying career paths, determining current and future workforce demands, and developing education and training to meet defined needs. Learner capability in a particular Competency Area can be improved through education, training, or other learning experiences.

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[1] This publication was developed using the NICE Workforce Framework for Cybersecurity (NICE Framework) (NIST SP 800-181 Rev. 1) structure as a model for how a workforce framework is defined and the *NICE Framework Competency Areas: Preparing a Job-Ready Cybersecurity Workforce* (NISTIR 8355) publication that provides more insights into how Competency Areas are developed and can be used.

A Competency Area consists of a name, description of the area, and group of associated TKS statements. Instead of specifying only the work to be done (Tasks) or what is needed to do the work (Knowledge and Skills), Competency Areas facilitate assessment of a learner's overall capability for that area of work. They offer an opportunity to increase alignment and coordination between employers, learners, and education, training, and certification providers.

Finally, Competency Areas are flexible, allowing the inclusion or removal of individual TKS statements in response to shifting needs in a changing cybersecurity ecosystem over time.

> **Competency Area**: A cluster of related Knowledge and Skill statements that correlates with one's capability to perform Tasks in a particular domain. Competency Areas can help learners discover areas of interest, inform career planning and development, identify gaps for knowledge and skills development, and provide a means of assessing or demonstrating a learner's capabilities in the domain.

3. Competency Areas and Work Roles

Competency Areas and Work Roles are complementary and may be used together or separately. Competency Areas do not duplicate existing Work Roles, but they may:

- Be **additive** to one or more Work Roles
- Be used **independently** of Work Roles
- Represent a domain that **spans** multiple Work Roles (i.e., incorporate Knowledge and Skill statements from more than one Work Role)
- Represent **emerging domains** that do not yet have established Work Roles

However, there are important differences between them. A Work Role is work-focused and identifies a group of Tasks for which an individual or a team is responsible, while a Competency Area is learner-focused and addresses what a learner must know or be able to do (Knowledge and Skill statements) to complete the work. Assessment for Competency Areas typically is based on capability in an area as a whole, while assessment for Work Roles frequently occurs at the Task level.

4. How to Draft Competency Areas

The following guidelines are intended for the development of individual Competency Areas as part of a workforce framework.

The components of a Competency Area are:

- Name
- Description
- Associated TKS statements

4.1. Competency Area Names

The name of the Competency Area should clearly signal to all stakeholders the area that will be described. It should be unique in the framework (not duplicating an existing Work Role or Work Role Category name), and it should use commonly recognized terminology for broad understanding.

4.2. Competency Area Descriptions

The Competency Area description briefly and broadly describes the domain area. It should do so simply and clearly, so that anyone reading the description should be able to quickly and easily understand the scope and meaning. A goal of a Competency Area is to provide flexibility of application; the description should be detailed enough to clearly define its scope and meaning, but not so narrow as to restrict use by multiple stakeholders or time-date the Competency Area (e.g., by referencing a particular coding language). In addition, Competency Area descriptions:

4.2.1. Begin with "This Competency Area describes a learner's capabilities related to…."

Using the same standard language to introduce each description serves as a signpost for readers that it is a Competency Area description. Beginning each description in this fashion also reinstates at the onset that the focus of the Competency Area is on the learner.

4.2.2. Reflect content from associated TKS statements.

The description may echo language from TKS statements that are associated with the Competency Area but should not wholly duplicate that language.

4.2.3. Omit unnecessary qualifiers.

Qualifiers (e.g., "thorough knowledge," "considerable skill," or "basic understanding") and other proficiency level indicators should not be included in the Competency Area description.

4.3. Competency Area Associated TKS Statements

A Competency Area comprises a cluster of related Knowledge and Skill statements, which signal what a learner may need to know or do to be capable in the domain. Additionally, the Competency Area may also reference related Task statements that can be used to apply the Knowledge and Skill statements and demonstrate capability. All together, these statements provide a more detailed view of the Competency Area.

Note that individual statements may be associated with more than one Competency Area and may also be found in Work Roles. However, statements associated with a Competency Area may also be unique to that area. As such, development of the Competency Area will include the need to engage with subject matter experts to determine if existing workforce framework statements may apply to the area and what new ones may need to be developed. For more information on developing TKS statements, see the Task Knowledge Skill (TKS) Statements Authoring Guide for Workforce Frameworks.

5. Conclusion

This Authoring Guide provides a model to support the creation of Competency Areas in workforce frameworks. The principles and rules outlined above may be applied to the initial creation of Competency Areas or in the review of existing Competency Areas.

NIST welcomes and encourages feedback on this Authoring Guide. It is intended to be a "living" document and may undergo future revisions as needed based on stakeholder needs and other relevant factors. Feedback may be sent to: NICEFramework@nist.gov