



# The Evolving NICE Framework: Incorporating OT, Cyber Resiliency, and More

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# NICE Mission

To energize, promote, and coordinate a robust community working together to advance an integrated ecosystem of cybersecurity education, training, and workforce development.

[www.nist.gov/nice](http://www.nist.gov/nice)



# NICE Workforce Framework for Cybersecurity (NICE Framework)

NIST SP 800-181r1 (2020) | NISTIR 8355 (2023) | Components v1.0.0 (2024)



- ✓ A **common language** to clearly share about what a workforce needs to know
- ✓ A **modular, building-blocks approach** based on Task, Knowledge, and Skill (TKS) statements
- ✓ Defined **Work Roles** and **Competency Areas** for use in:
  - Career discovery
  - Education and training
  - Workforce planning and assessment
  - Hiring and career development

# WHO USES THE NICE FRAMEWORK?

GOVERNMENT • INDUSTRY • ACADEMIA



## Employers

- Track workforce capabilities
- Create position descriptions
- Perform skills-based hiring
- Provide career development



## Education & Training Providers

- Develop a learning program and curricula
- Map teaching to the NICE Framework
- Create hands-on assessments



## Learners (students, job-seekers, & employees)

- Discover careers
- Build capability
- Establish career paths

# NICE FRAMEWORK COMPONENTS V1.0.0

7 WORK ROLE CATEGORIES

52 WORK ROLES



OVERSIGHT & GOVERNANCE



DESIGN & DEVELOPMENT



IMPLEMENTATION & OPERATION



PROTECTION & DEFENSE



INVESTIGATION



CYBERSPACE INTELLIGENCE



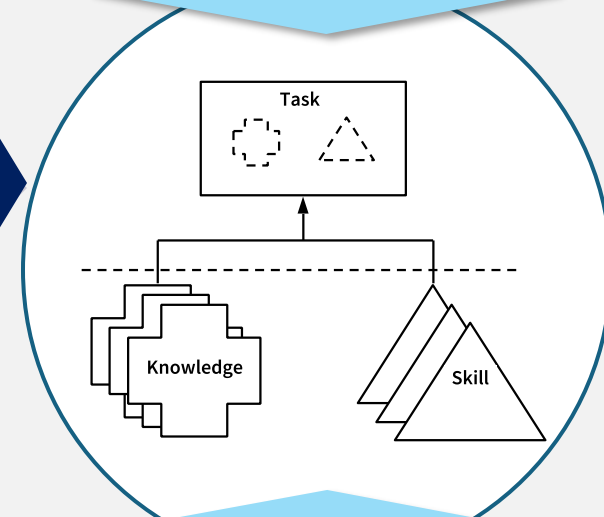
CYBERSPACE EFFECTS

## 11 COMPETENCY AREAS

- ▶ Access Controls
- ▶ Artificial Intelligence (AI) Security
- ▶ Asset Management
- ▶ Cloud Security
- ▶ Communications Security
- ▶ Cryptography
- ▶ Cyber Resiliency
- ▶ DevSecOps
- ▶ Operating Systems (OS) Security
- ▶ Operational Technology (OT) Security
- ▶ Supply Chain Security

OVER 2,000 TASK, KNOWLEDGE, & SKILL (TKS) STATEMENTS

Describes the Work



Describes the Learner

# Recent Updates

## 3 Work Roles | 1 Competency Area

- ✓ **Digital Evidence Analysis (Work Role IN-WRL-002 / OPM Code 211)**  
A thorough review of this existing Work Role in the Investigation Work Role Category. Updated Task, Knowledge, and Skill (TKS) statements and alignment of Knowledge and Skill statements to each of the Tasks.
  - FBI/DOJ
- ✓ **Insider Threat Analysis (Work Role PD-WRL-005)**  
Minor changes to some TKS statements and alignment of Knowledge and Skill statements to each of the Tasks
  - SSA
- ✓ **Operational Technology (OT) Cybersecurity Engineering (New WR DD-WRL-009)**  
New Work Role in the Design & Development Work Role Category.
  - NIST/NCCoE, INL, MITRE, SANS, ISU, DCWF, Industry
- ✓ **Cyber Resiliency (Competency Area NF-COM-007)**  
Knowledge and Skill statements added.
  - NIST, Industry



**Expected March 2025**  
**NICE Framework**  
**Components V.2.0.0**

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framework](http://www.nist.gov/nice/framework)

# Work Role Categories Update



## NICE Framework / DCWF Framework Harmonization

The NICE Framework serves as the foundation for DoD cybersecurity workforce elements. However, DoD's unique mission authorities necessitate the use of the DCWF for DoD-focused work roles.

### DCWF Elements:

- Information Technology
- Cybersecurity
- Cyber Enablers
- Cyber Effects
- Intel (Cyber)
- Data/AI
- Software Engineering

— Title 50: Legal authority to conduct intelligence operations and covert action

— Title 10: Provides the legal basis for military operations (including cyber)

As such, NICE will be removing these two categories from the NICE Framework so that they can be separately maintained in the DCWF, reducing redundancy and increasing consonance between the two complementary frameworks.

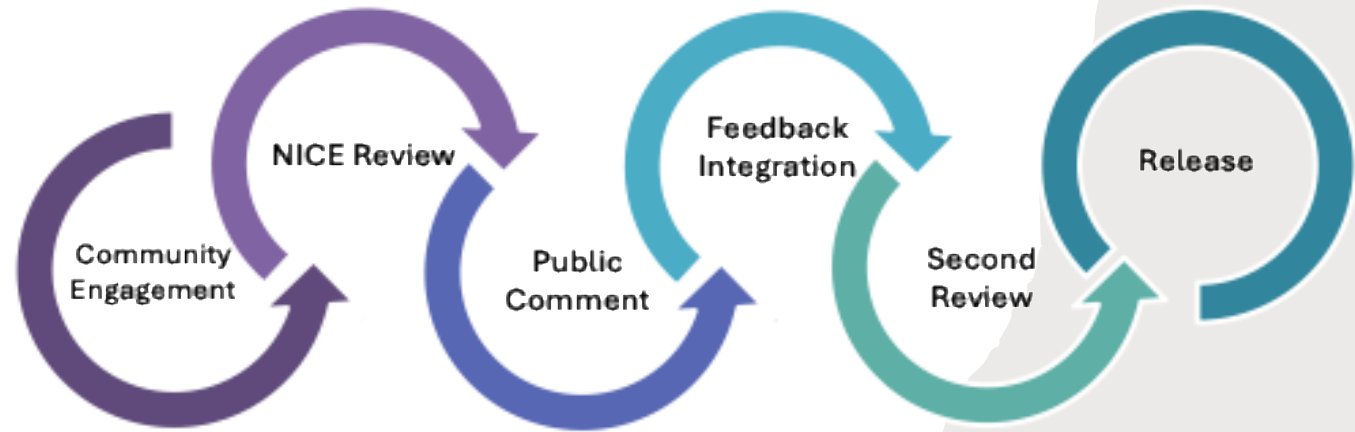
# Coming Soon!

## In Development:

- AI Security Competency Area (NIST AI RMF)
- Supply Chain Security Competency Area (NIST C-SCRM)
- OT Security Competency Area (NIST 800-82r3, DD-WRL-009)
- Risk Management Work Role (NIST RMF, AI RMF, C-SCRM)
- Learning Program Management Work Role (NIST 800-50r1)
- NIST SP 800-181r2 Update

## In Queue:

- AI TKS Updates for Existing Work Roles
- New & Updated Work Roles: Product Security, Secure Procurement, OT Incident Response...
- Additional Competency Areas: Access Controls, Asset Management, Cloud Security, Communications Security, Cryptography, DevSecOps, OS Security
- Other areas under review (e.g., data, offensive cyber...)





# Building the Cyber Resiliency CA

## Starting from:

- Perspective that is distinct from (but augmentative of) that of traditional cybersecurity Work Roles.
- Well-established resources and frameworks: NIST SP 800-160v2, MITRE CREF.
- Emerging communities and best practices: ISSA Cyber Resilience SIG, 2024 PCAST report.

## Our definition:

*This Competency Area describes a learner's capability related to architecting, designing, developing, implementing, and maintaining the trustworthiness of systems that use or are enabled by cyber resources in order to anticipate, withstand, recover from, and adapt to adverse conditions, stresses, attacks, or compromises that use or are enabled by cyber resources.*

>> What knowledge and skills are need to demonstrate this type of competency?

# Development process

- NF Components published
- Background research and SME engagement
- SME workshop (MITRE convened)
- Draft Knowledge & Skill development/publication
- Incorporation of public comments

Topics surfaced for inclusion as Knowledge & Skill statements:

- Data vaulting
- Advanced persistent threats
- Loss scenarios, business impact forecasts, and developing contingency plans
- Inventory and segmentation of high-value assets

>> Competency Area can and should evolve with future review

# For More Information

- **Engage with Us**

[www.nist.gov/nice](http://www.nist.gov/nice)

- NICE Interagency Coordinating Council
- NICE Community Coordinating Council
- NICE Framework Users Group
- NICE Webinars & Events
- NICE Announcements List

- **NICE Framework Resource Center**

[www.nist.gov/nice/framework](http://www.nist.gov/nice/framework)

- Learn, Plan, Do, Share

## NICE Framework Resource Center

- NICE Framework Formats
  - XLSX, JSON, CTDL
  - Online (Browsable, Searchable)
  - Translations
- Public Comments, Change Request FAQs, Change Logs, Revisions
- NICE Framework Tools
- Workplace Skills (Soft Skills)
- Occupations v. Jobs v. Work Roles
- Employer, Education & Training Provider, and International Resources
- In dev: NICE Framework for Small Businesses, NICE Framework Alignment and Mapping Guidance, AI and the NICE Framework, O\*NET/NICE Mapping, CSF2.0/NICE Mapping

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