

How the Department of Veterans Affairs is Implementing the NICE Cybersecurity Framework

Welcome and Introduction

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Importance of Cybersecurity

“America's economic prosperity in the 21st century will depend on cybersecurity... Cyber threat is one of the most serious economic and national security challenges we face as a nation.”

—President Barack Obama

Today's Agenda

- VA ITWD Overview
- NICE and the National Cybersecurity Workforce Framework
- VA OIT Competency Model Overview
- How VA is Implementing the Framework
- ITWD's Next Steps

VA ITWD Overview

- ITWD prepares VA's IT professionals to better serve our nation's Veterans through the delivery of targeted, competency-based skills and development programs



NICE and the National Cybersecurity Workforce Framework

Overview of NICE and the Framework

NIST



The National Initiative for Cybersecurity Education (NICE) developed the National Cybersecurity Workforce Framework (the Framework) to define the cybersecurity workforce and provide a common taxonomy and lexicon by which to classify and categorize cybersecurity professionals.

Framework Categories

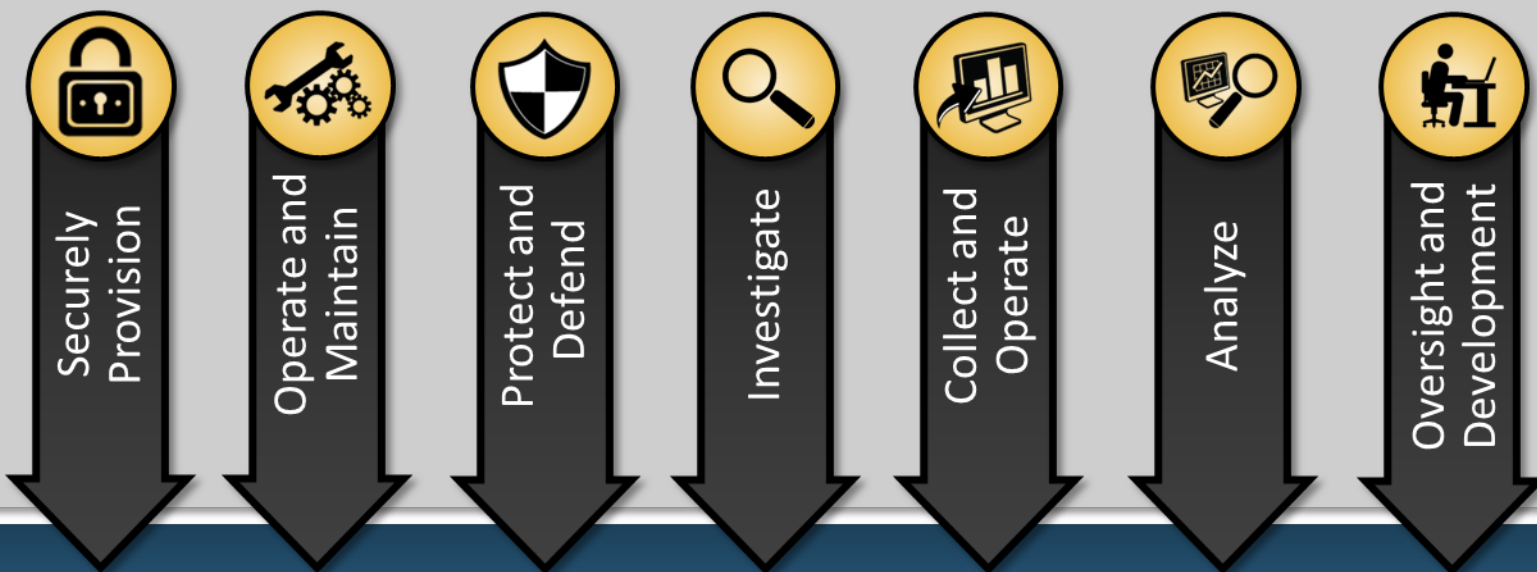


Seven Categories

- Provide overarching structure of the Framework
- Group cybersecurity specialty areas
- Provide flexibility for organizations

Framework Specialty Areas

National Cybersecurity Workforce Framework



31 Specialty Areas
(each with typical job titles, tasks, and KSAs)

Framework Specialty—Example

National Cybersecurity Workforce Framework



Securely
Provision



Operate and
Maintain



Protect and
Defend



Investigate



Collect and
Operate



Analyze



Oversight and
Development

Example!

Specialty: Test and Evaluation
Role/Title: Software Quality Engineer
Task: Analyze the results of end-to-end testing
(e.g., software, hardware, transport, seams, interfaces)
KSA: Knowledge of computer networking fundamentals

VA OIT Competency Model Overview

ITWD Alignment with NICE Goals



Develop and maintain a highly skilled and motivated IT workforce



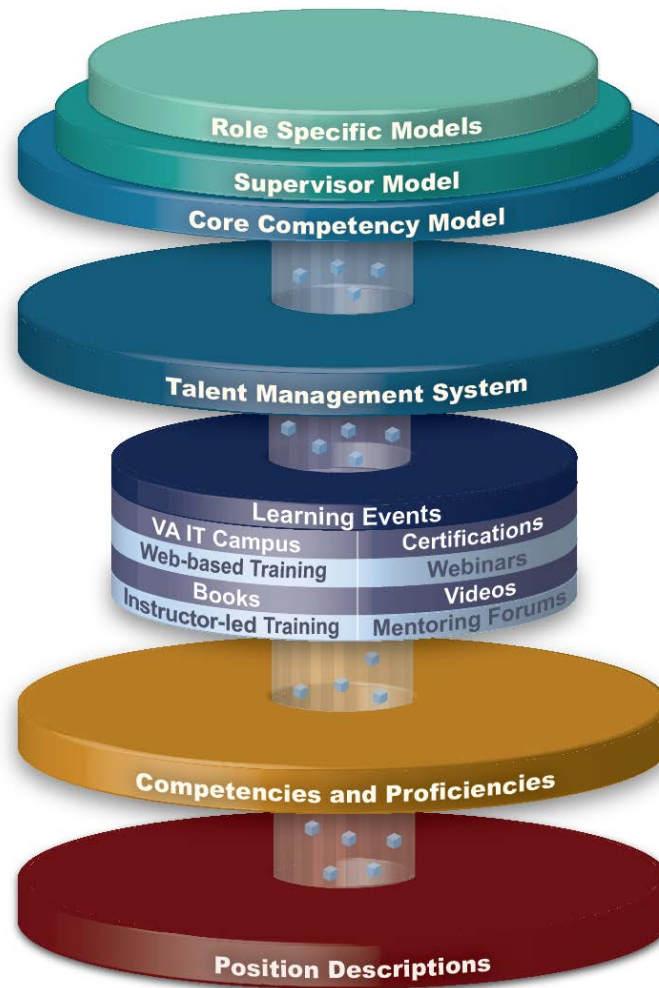
Evaluate cybersecurity professionals' skills and identify skill areas that can be improved upon



Professionalize OIT staff through training and certification programs

Overview of OIT Competency Models

- VA uses competencies based on KSAs and behaviors
- Models comprised of role-specific profiles
- Program provides continuous training for workforce
- Models administered through VA's TMS



VA's Talent Management System

Ethics Training Assigned
Annual Government Ethics training is now available via the TMS. Here information about the training requirements mandated by VA's Chief of Staff can be found by [clicking on this link to get the VA Ethics Training and Office of General Counsel Notices page](#). The Ethics training requirement applies to, as a minimum:

- All VA Employees;
- Hosts Professions, Trainers, and Staff from the Office of the Inspector General.

VA Network Limitations May Affect TMS Content
If you are experiencing issues with TMS online content loading and playback delays, you are not alone. Users downloading content from their computers on the VA network have reported long wait times for online content to appear, as well as slow playback of that content. The VA network team has a long-term solution to this problem, but after the following suggestions to help you complete important learning content on the TMS:

- Launch content outside of peak business hours (before 9:00 am and after 4:00 pm EST); or
- Launch content from a computer on a non-VA internet connection (e.g., from home, library or other public connection).

The TMS team is working with content providers, VA IT offices and the TMS vendor to resolve these issues. Your patience is greatly appreciated.

Books 24x7
In today's dynamic business climate you need to know and do more, which demands immediate knowledge and expertise. To help you build your skills and stay up-to-date on current business trends, the VA offers TMS users online access to thousands of current business, technology, and personal well-being books via the [Book24x7 Performance Center](#). [Click to find out more.](#)

- [How to launch Book24x7 from TMS](#)
- [How to access Book24x7 from your mobile device](#)
- [How to download Book24x7 from your mobile device](#)

To-Do List

Search Learning Plan Show: Everything

Search Catalog Go

Browse

Easy Links

- ADVANCE Approvals
- Inside TMS
- MyCareer@VA
- News
- Options and Settings
- Record Learning
- Reports
- Start a Self Assessment
- TMS Help Desk
- USA Jobs
- VA Home Page
- VA Learning University
- VA Mandatory Training Info
- VAKN Calendar
- VHA Desktop Library

Show Less

Due later
6/2/2014

VA Privacy and Information Security Awareness and Rules of Behavior
Due by 6/2/2014 | Required | Assigned by System AP | Originated From Curriculum

Department of Veterans Affairs 10176
VA Privacy and Information Security Awareness and Rules of Behavior provides information security and privacy training important to...[more](#)

Online Item

In progress

Go to Content

View Details

Competency Assignments and Ratings

View Competencies

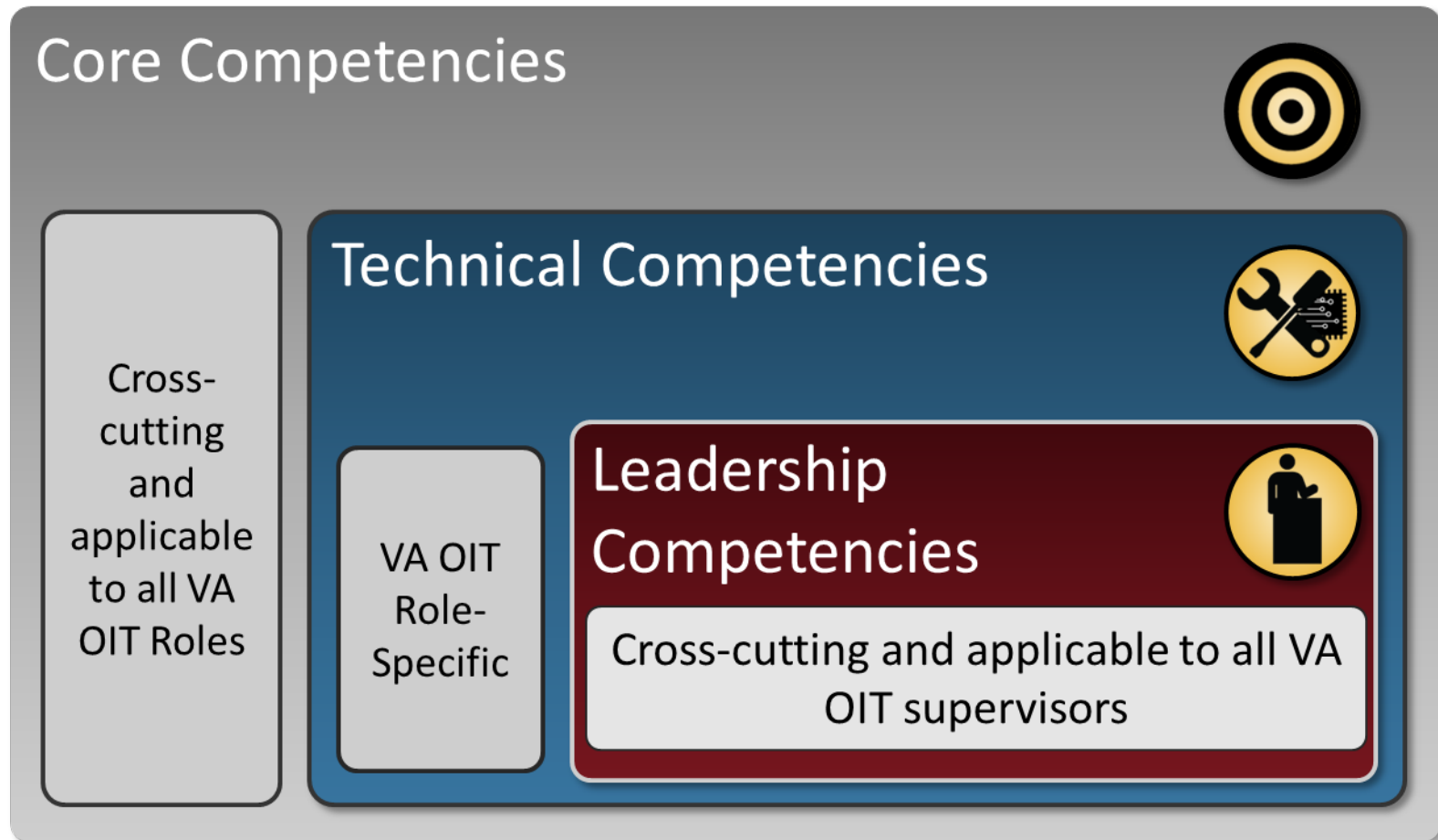
The following details the status of the competencies assigned to you, grouped by competency profile. Competencies without associated competency profiles are listed under **Free-Floating Competencies**. The icon to the right of each competency profile, indicates whether or not it is complete. Use the **Action** column to assign yourself an item that will allow you to meet your required rating. Competency results will not be used to assess or evaluate individual performance.

There are no Free-Floating Competencies assigned to you.

Cumulative Relative Competency Gap (%): -39.22

Competency Profile	Assigned Date	Gap	Action
OIT Entry IT Project Manager	5/3/2012		
Technical	Information Technology Architecture Knowledge of architectural methodologies used in the design and development of information systems, including the physical structure of a system's internal operations and interactions with other systems.	0.0 / 5.0 Actual: 3.00 Req: 1	
Technical	Contracting/Procurement Knowledge of various types of contracts, techniques for contracting or procurement, and contract negotiation and administration.	0.0 / 5.0 Actual: 1.00 Req: 1	
Technical	Product Evaluation Knowledge of methods for researching and analyzing external products to determine their potential for meeting organizational standards and business needs.	0.0 / 5.0 Actual: 1.00 Req: 2	Assign Related Items

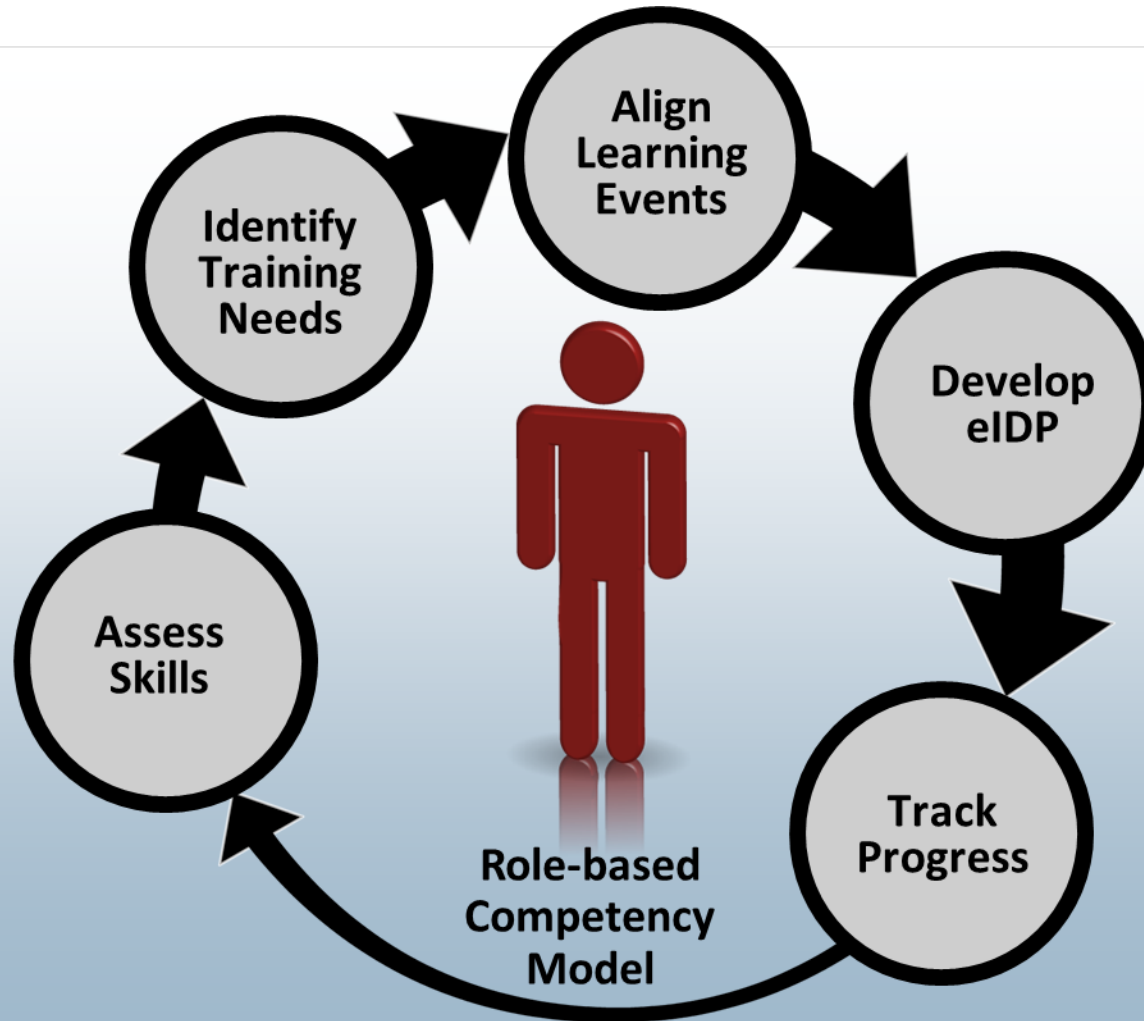
OIT Competency Framework



OIT Competency Model Development

VA OIT Competency Models		
Information Security	Data Manager	Enterprise Architect
Chief Information Officer	IT Project Manager	IT Operations
Core/Supervisory	IT Program Manager	Network Security Operations Center
Software Developer	Customer Support	Financial Management
Network Administrator	System Analysis	Management and Program Analyst
System Administrator	Internet	

Applying OIT Competency Models



Competency/Proficiency—Example

Information Assurance	Knowledge of methods and procedures to protect information systems and data by ensuring their availability, authentication, confidentiality, and integrity
Proficiency Level	Behavioral Indicators
Level 5— Expert	<ul style="list-style-type: none"> Coordinates and builds consensus internal and external to the organization for the integration and implementation of information assurance strategies Establishes audit policy and reporting mechanisms for ensuring compliance with the information assurance standards
Level 4— Advanced	<ul style="list-style-type: none"> Implements and supports security software and hardware across multiple platforms, applications, and architectures Develops and administers policies, procedures, and standards to ensure desired levels of enterprise-wide information assurance
Level 3— Intermediate	<ul style="list-style-type: none"> Understands and applies knowledge of information assurance concepts and their impact on the organization Tracks audit findings to recommend changes to information assurance standards and procedures
Level 2— Foundational	<ul style="list-style-type: none"> Describes basic information assurance concepts and vulnerabilities in applying technology to secure organizational data Complies with information assurance standards, practices, and procedures to perform routine operations
Level 1— Novice	<ul style="list-style-type: none"> Familiar with the coordination of routine activities relating to information assurance Understands basic concepts of information assurance

Identifying Training Needs

- Determine Competency and Proficiency gaps via the TMS competency assessment
- Select from learning events suggested by the TMS to add to the eIDP

The screenshot displays a competency assessment interface. At the top, a progress bar shows a score of 2.00 out of a required 3.00. Below this, a window titled "Competency Assignments and Ratings" is open, showing a list of related items for the "Change Management" competency. The item "Preparing for Organizational Change" is highlighted with a red circle.

Technical Change Management
Knowledge of change management principles, strategies, and techniques required for effectively planning, implementing, and evaluating change in the

0.0 5.0
Actual:2.00 Req:3 Assign Related Items

Competency Assignments and Ratings Help

Assign Items
Competency: Change Management

Previous Assign Selected Item

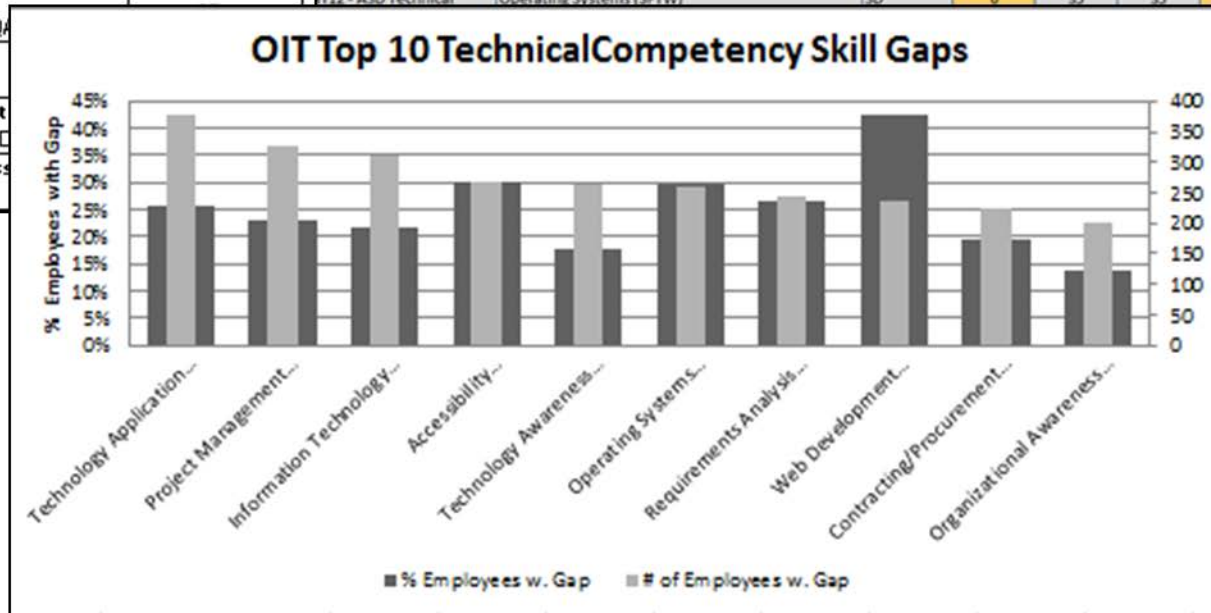
Related Items

Item Title	Rating Provided	Action
Managing Your Team through Change	4	<input type="checkbox"/>
Leading Change Initiatives: Orchestrating as a Team Leader	4	<input type="checkbox"/>
Preparing for Organizational Change	3	<input type="checkbox"/>
Managing Self through Change	3	<input type="checkbox"/>
Managing Change: Building Positive Support for Change	3	<input type="checkbox"/>

Identifying Skill Gaps

OIT - Top 10 Technical Skill Gaps			
Competency (Models with Gap Present)	% Employees w. Gap	# of Employees w.	Total Employees Assessed
Technology Application (All Models)	26%	379	1483
Project Management (All Models)	23%	337	1465
Information Technology Architecture	22%	317	1465
Accessibility (ISO, IT'wD, SD, SD ITPM, SD SQA)	30%	423	1410
Technology Awareness (All Models)	18%	254	1410
Operating Systems (DM, NA, SA, SD, SD ITPM, SD SQA)	29%	405	1397
Requirements Analysis (CIO, NA, SD, SD ITPM, SD SQA)	27%	374	1385
Web Development (SD, SD ITPM, SD SQA)	25%	347	1385
Contracting/Procurement (CIO, ISO, SA, SD, SD ITPM, SD SQA)	24%	333	1385
Organizational Awareness (All Models)	14%	196	1385

VA OIT Software Developer Technical Competency Training Gap Analysis								
Competency ID	Competency Description	Model	1	2	3	4	5	Grand Total
IT72 - ASD Technical	Accessibility (SFTW)	SD	8	9	18	8	5	48
IT78 - ASD Technical	Computer Languages (SFTW)	SD	34	55	139	72	2	302
IT80 - ASD Technical	Configuration Management (SFTW)	SD	13	29	81	22	2	147
IT71 - ASD Technical	Contracting/Procurement (SFTW)	SD	12	13	16	5	4	50
IT98 - ASD Technical	Data Handling (SFTW)	SD	14	45	78	24	4	165
IT91 - ASD Technical	Human Factors (SFTW)	SD	7	6	2	1	1	17
IT92 - ASD Technical	Information Assurance (Core)	SD	44	68	81	17	2	212
IT03 - ASD Technical	Information Technology Architecture (SFTW)	SD	13	57	51	11	1	133
IT11 - ASD Technical	Object-Oriented Technology (SFTW)	SD	10	10	73	8	1	102
IT12 - ASD Technical	Operating Systems (SFTW)	SD	6	35	35	9	3	88



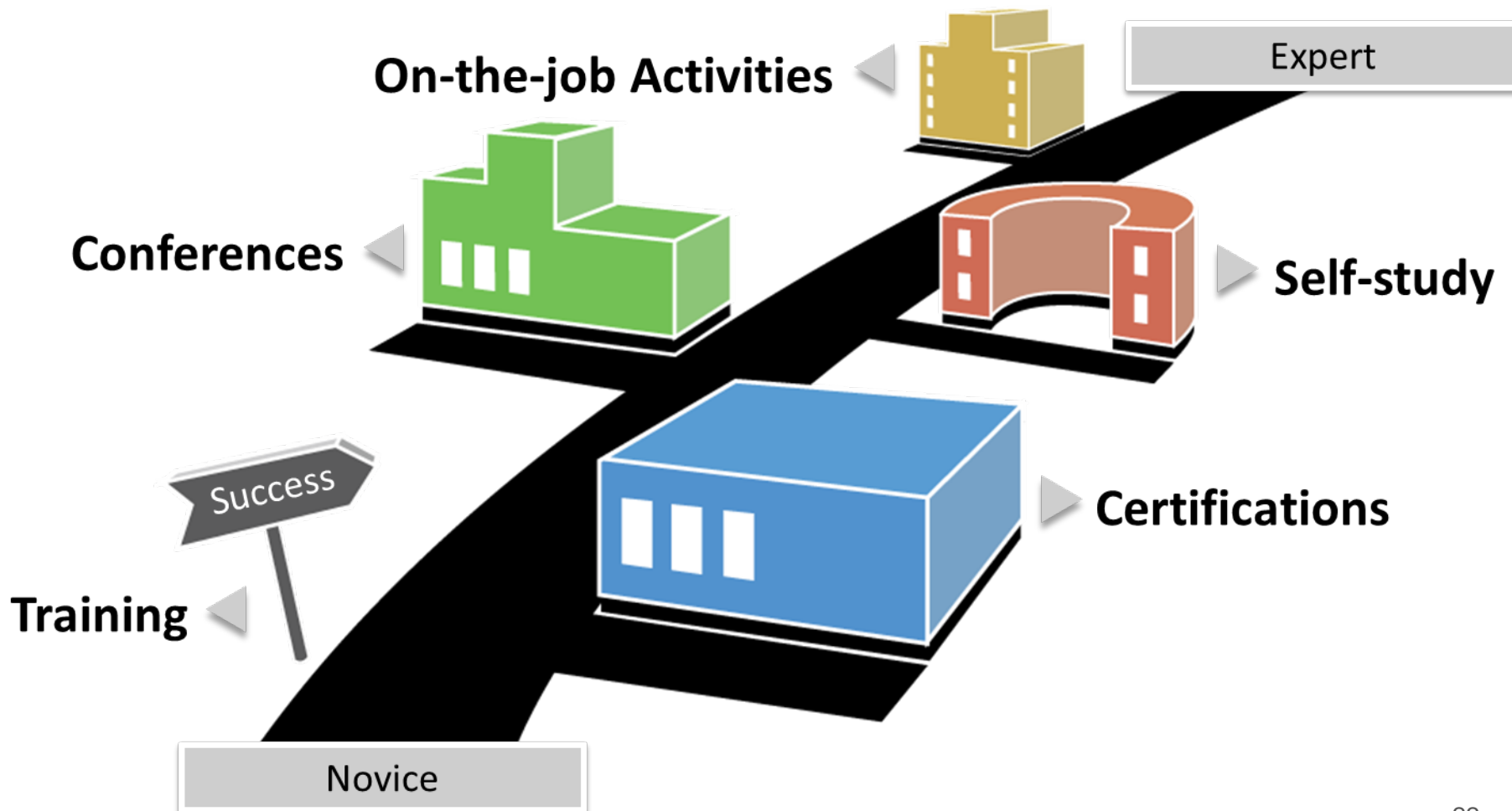
4	2	63
9	11	147
8	3	89
18	1	222
13	3	83
0	0	22
38	3	281
8	3	84
10	2	79
6	1	94

Competency-based Training

Competency-based Training and Development

- *Informs the design of training and learning experiences (including scenario-based training)*
 - *Serves as the foundation of a training curriculum and provides a data-driven approach to ensuring and tracking role-based training*
 - *Allows cyber staff to link development needs to learning opportunities*

Integrating Role-based Training



How VA is Implementing the Framework

Aligning to the NICE Framework



SECURELY PROVISION

- Enterprise Architect
- Information Security
- Network Security Operations Center
- Software Developer
- Software Quality Assurance
- System Analysis



OPERATE AND MAINTAIN

- Customer Support
- Data Manager
- Information Security
- Internet
- Network Administrator
- Network Security Operations Center
- Operating Systems
- Systems Administrator



PROTECT AND DEFEND

- Network Administrator
- Network Security Operations Center



INVESTIGATE

- Network Security Operations Center



COLLECT AND OPERATE

- Network Security Operations Center



ANALYZE

- Network Security Operations Center

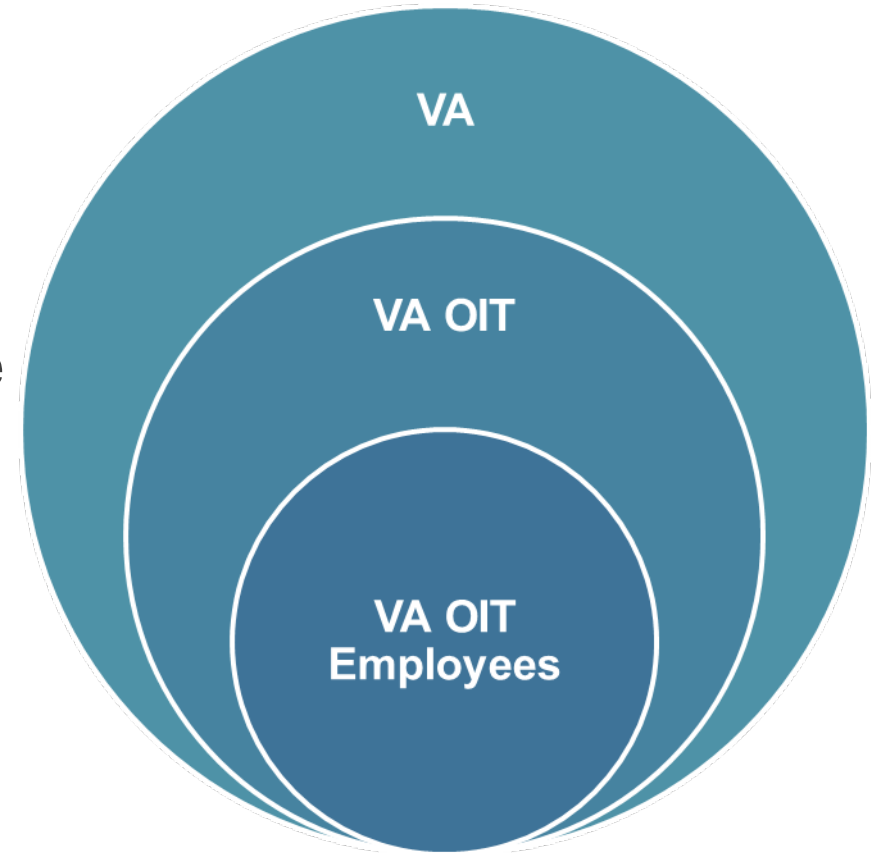


OVERSIGHT AND DEVELOPMENT

- Chief Information Officer
- Information Security
- IT Project Manager
- IT Program Manager
- Network Security Operations Center
- Operating Systems
- Policy and Planning

Integration of the NICE Framework

- Benefits:
 - The combination of NICE Framework and VA's competency model program provides multiple benefits:
 - Organizational
 - Employee
- <http://csrc.nist.gov/nice/>



ITWD's Next Steps

Next Steps

- Expand our role-based training programs to strengthen our cybersecurity capabilities
- Collaborate with NICE to integrate ITWD training titles into NICCS catalog
- Develop additional competency profiles for non-2210 roles within OIT (Management/Program Analyst, Financial/Budget, Admin/Clerical)
- Determine data-driven training topics to address skill gaps

Summary

- NICE has created an effective Framework for cybersecurity professionals
- Competency models provide an excellent complement to the Framework for professional development tracking
- Tracking data from the models provides a more effective way to determine training priorities

Closing/Questions



Contact Information

For questions or additional information, please contact:

- VA IT Workforce Development
vaitwd@va.gov