

---



# FITSI Job Analysis Report 2023



A Job Analysis  
Conducted by FITSI to  
support the FITSP  
Certification Program

Version 1.0

Published 04/30/23



---

This page is left intentionally blank.

---

**TABLE OF CONTENTS**

**Contents**

**1. OVERVIEW..... 4**

**2. APPLICABILITY ..... 5**

**3. OVERVIEW OF THE STUDY..... 6**

    A. METHOD ..... 6

    B. SECTIONS OF THE SURVEY ..... 6

    C. INVOLVEMENT OF APPROPRIATE EXPERTS ..... 6

    D. MAPPING SUBJECT MATTER EXPERTS (SMEs) TO FITSI'S INTERESTED PARTIES ..... 8

    E. DETERMINING CONSENSUS ..... 9

**4. TASKS/DOMAIN ANALYSIS ..... 11**

    A. HOW FITSI DETERMINES THE TASKS, KNOWLEDGE, AND SKILLS ..... 11

    B. IDENTIFICATION OF TASK FOR SUCCESSFUL PERFORMANCE..... 11

    C. IDENTIFICATION OF REQUIRED COMPETENCE FOR EACH TASK ..... 11

    D. DOMAIN WEIGHTING ..... 12

**5. CERTIFICATION PREREQUISITES ..... 13**

**6. CONFIRMATION OF ASSESSMENT MECHANISM AND EXAMINATION CONTENT ..... 16**

    A. TYPE OF EXAMINATION ..... 16

    B. EXAMINATION CONTENT ..... 18

**7. RECERTIFICATION REQUIREMENTS AND INTERVAL ..... 21**

    A. RECERTIFICATION REQUIREMENTS ..... 21

    B. RECERTIFICATION INTERVAL..... 22

**8. SUMMARY AND CONCLUSIONS..... 23**

    A. TASK/DOMAIN WEIGHTING: ..... 23

    B. CERTIFICATION PREREQUISITES: ..... 23

    C. TYPE OF EXAMINATION ..... 23

    D. EXAMINATION CONTENT ..... 24

    E. RECERTIFICATION REQUIREMENTS ..... 24

    F. RECERTIFICATION INTERVAL..... 24

**9. APPENDIX..... 25**

    A. FITSP-AUDITOR ROLE - JOB ANALYSIS - 2023 SURVEY ..... 25

    B. FITSP-DESIGNER ROLE - JOB ANALYSIS - 2023 SURVEY..... 25

    C. FITSP-MANAGER ROLE - JOB ANALYSIS - 2023 SURVEY ..... 25

    D. FITSP-OPERATOR ROLE - JOB ANALYSIS - 2023 SURVEY ..... 25

Figure 1: FITSI Job Analysis - SME Review Form ..... 7

---

## 1. Overview

This document describes the job analysis conducted by FITSI in March of 2023 for the FITSP Certification Program. As a best practice and in conformity with FITSI's ANAB accreditation under ISO 17024:2012, a job analysis is conducted every 5-7 years as the basis for the validity of the assessment used by FITSI in issuing credentials. A job analysis as defined by *ISO 17027:2014, Conformity assessment — Vocabulary related to competence of persons used for certification of persons*, is:

***Job Analysis** - method(s) used to identify the tasks and the associated competence. Job analysis provides the basis for the validity of any assessments used in issuing credentials.*

According to *ISO CASCO GD Clause 8 - How to develop schemes for the certification of persons*, page 18, "there are several methods for conducting a job analysis such as interviews, focus groups, surveys, and job observation. Regardless of the method used, sufficient detail should be provided to assist in the development of fair and valid assessments."

---

## **2. Applicability**

This Report applies to the FITSI Board of Directors, FITSI Officers, and others involved in the operation of the FITSI organization. It also applies to all persons (employees, consultants, volunteers, and outsourcing organizations) involved with certifying persons with the FITSP Certification Program.

---

### 3. Overview of the Study

#### A. Method

The method used to conduct the Job Analysis detailed in this Report was a multipart survey conducted with Subject Matter Experts in March of 2023. As FITSI has four different roles-based certifications (Auditor, Designer, Manager, and Operator), four distinct surveys were constructed and administered to groups of SMEs. The four surveys are detailed in Appendix A of this Report.

#### B. Sections of the Survey

The survey is broken down into the following sections:

- Section 1: Introduction
- Section 2: Certification Overview
- Section 3: Task/Domain Analysis
- Section 4: Certification Prerequisites
- Section 5: Type of Examination
- Section 6: Examination Content
- Section 7: Recertification Requirements

#### C. Involvement of Appropriate Experts

Four separate groups of Subject Matter Experts were recruited to complete the surveys. FITSI has a formal definition for a Subject Matter Expert. That definition is:

FITSI's definition of a Subject Matter Expert - is "An SME is a person who has mastery in a particular area or topic. This person must have 10+ years of experience in the cybersecurity industry. SMEs have practical job experience in the field and may understand the industry's inner workings, organization, or department from the bottom up."

The following number of SMEs for each role were recruited:

- Auditor – 6 Auditor-focused Subject Matter Experts
- Designer – 5 Designer-focused Subject Matter Experts
- Manager – 9 Manager-focused Subject Matter Experts
- Operator – 7 Operator-focused Subject Matter Experts

The SMEs were vetted using the *FITSI Job Analysis – SME Review Form*. The resume of each SME was used to help ensure conformity with FITSI's definition of a Subject Matter Expert. This form is displayed below:



### Job Analysis – SME Review Form

Candidate Name:  Date of JA Survey:

Resume on File:  Years of Cybersecurity Experience:

Certification Role Representing: Auditor:  Designer:  Manager:  Operator:

Interested Party: (select one)

FITSI certified person  Use services of FITSI certified person

Employer or manager of FITSI certified person  FITSI membership

Government representation

Is this candidate a SME based upon the following FITSI definition:

*“A SME is a person who has mastery in a particular area or topic. This person must have 10+ years of experience in the cybersecurity industry. SMEs have practical job experience in the field and may understand the industry's inner workings, organization, or department from the bottom up.”*

Yes:  No:

Reviewed by:  Review Date:

Notes:

Figure 1: FITSI Job Analysis - SME Review Form

---

## **D. Mapping Subject Matter Experts (SMEs) to FITSI's Interested Parties**

The recruited SMEs can be mapped to 1 of 5 "Interested Parties" that FITSI has defined to represent key stakeholder groups. The five interested parties are:

- FITSI certified person
- Organization or individual that could use the services of a FITSI-certified person
- Employer or manager who could hire a FITSI-certified person
- FITSI certification body membership
- Governmental authority representation (civil service, foreign service, intelligence community, military, or DoD).

The mapping of the different SMEs to Interest Parties is listed below:

### Auditor

- SME Number 1 – Governmental authority representation
- SME Number 2 – Organization or individual that could use the services of a FITSI-certified person
- SME Number 3 – Employer or manager who could hire a FITSI-certified person
- SME Number 4 – FITSI certified person
- SME Number 5 – FITSI certification body membership
- SME Number 6 – Governmental authority representation

### Designer

- SME Number 1 – FITSI certified person
- SME Number 2 – FITSI certification body membership
- SME Number 3 – Employer or manager who could hire a FITSI-certified person
- SME Number 4 – Governmental authority representation
- SME Number 5 – Organization or individual that could use the services of a FITSI-certified person

### Manager

- SME Number 1 – Employer or manager who could hire a FITSI-certified person
- SME Number 2 – FITSI certification body membership
- SME Number 3 – Organization or individual that could use the services of a FITSI-certified person
- SME Number 4 – Employer or manager who could hire a FITSI-certified person
- SME Number 5 – Organization or individual that could use the services of a FITSI-certified person
- SME Number 6 – Governmental authority representation
- SME Number 7 – FITSI certified person
- SME Number 8 – FITSI certification body membership
- SME Number 9 – Governmental authority representation



---

## Operator

- SME Number 1 – Employer or manager who could hire a FITSI-certified person
- SME Number 2 – FITSI certified person
- SME Number 3 – Organization or individual that could use the services of a FITSI-certified person
- SME Number 4 – Governmental authority representation
- SME Number 5 – FITSI certification body membership
- SME Number 6 – Employer or manager who could hire a FITSI-certified person
- SME Number 7 – FITSI certified person

This section demonstrates that FITSI has used a structure that fairly represents the interests of all parties significantly concerned, without any interest predominating.

## **E. Determining Consensus**

In this Report, we have chosen to employ the Majority Voting method to achieve consensus among Subject Matter Experts (SMEs) for sections 5 (Certification Prerequisites), 6 (Confirmation of Assessment Mechanism and Examination Content), and 7 (Recertification Requirements and Interval) due to the following reasons:

- **Simplicity:** Majority Voting is a straightforward and easy-to-understand method that relies on counting the number of experts who favor a specific decision or outcome. By choosing the option that receives the majority of votes, we ensure the decision-making process is transparent and easily digestible for all stakeholders.
- **Collective Wisdom:** This approach leverages the collective wisdom of the group of SMEs, which is often more reliable than individual opinions. By selecting the outcome that receives the most support, we ensure that our decision aligns with the overall knowledge and experience of the group.
- **Minimized Bias:** Majority Voting helps to minimize the impact of individual biases, as it aggregates the opinions of multiple experts. This process reduces the risk of over-reliance on a single perspective and promotes more objective decision-making.
- **Efficient Decision-Making:** In comparison to other approaches, Majority Voting requires less time and resources to implement. This efficiency enables us to make decisions more quickly.
- **Fairness:** By giving each expert an equal voice in decision-making, Majority Voting promotes fairness and ensures that no single opinion disproportionately influences the outcome.

---

For the specific context of this Report, we believe that Majority Voting offers a reasonable balance of simplicity, efficiency, and robustness, making it an appropriate method for reaching a consensus among our SMEs.

---

## 4. Tasks/Domain Analysis

### A. How FITSI Determines the Tasks, Knowledge, and Skills

The United States Congress mandates federal IT security requirements through laws. In 2002, Congress passed the Federal Information Security Management Act (FISMA). In section § 11331. **Responsibilities for Federal information systems standards** of FISMA, the National Institute of Standards and Technology (NIST) is instructed to prescribe standards and guidelines pertaining to Federal information systems. NIST is required to provide minimum information security requirements and standards that apply to all Federal information systems. These standards are compulsory and binding to the extent determined necessary by the Secretary of Commerce to improve the efficiency of operation or security of Federal information systems.

In March 2006, NIST published Federal Information Processing Standard 200 (FIPS 200) entitled "Minimum Security Requirements for Federal Information and Information Systems." Federal agencies are required to be in compliance with this standard no later than one year from its effective date. FIPS 200 outlines all the tasks Federal information security practitioners must follow to protect and defend Federal information systems. **Noncompliance with these tasks in this standard is a violation of federal law.**

In 2014, Congress passed the Federal Information Security Moderation Act (FISMA 2014), reaffirming NIST's role in section § 11331 (above). Federal agencies are required to ensure timely agency adoption of and compliance with and compliance with standards promulgated under section 11331 of Title 40.

FIPS 200 defines the tasks that Federal IT Security Professionals must implement to support the requirements of federal agencies. The Tasks, Knowledge, and Skills defined in the surveys conducted by the SMEs come directly from the FIPS 200 standard.

### B. Identification of Task for Successful Performance

As mentioned above, the tasks for each certification role are derived from NIST Federal Information Processing Standard 200.

**Please note:** The complete task breakdown for each certification role is referenced in the accompanying file for each survey listed in Appendix A.

### C. Identification of Required Competence for Each Task

As mentioned above, each certification role's knowledge and skills (competence) are derived from NIST Federal Information Processing Standard 200.

**Please note:** The complete competence (knowledge and skills) for each task for each certification role is referenced in the accompanying support file for each survey listed in Appendix A

---

## D. Domain Weighting

During the survey, the SMEs were asked about each role-specific task and aligned them to specific domains based on a factor of importance. This process allows FITSI to assign domain weighting for each certification role.

The following were the results of the Tasks/Domain Weighting responses:

<b>Auditor</b>					
NIST Special Publications	NIST FIPS	NIST Control Families	Laws and Regulations	NIST RMF	NIST Interagency Reports
<b>21</b>	<b>13</b>	<b>21</b>	<b>17</b>	<b>20*</b>	<b>8</b>

<b>Designer</b>					
NIST Special Publications	NIST FIPS	NIST Control Families	Laws and Regulations	NIST RMF	NIST Interagency Reports
<b>20</b>	<b>13</b>	<b>22</b>	<b>19</b>	<b>20*</b>	<b>6</b>

<b>Manager</b>					
NIST Special Publications	NIST FIPS	NIST Control Families	Laws and Regulations	NIST RMF	NIST Interagency Reports
<b>22</b>	<b>12</b>	<b>23</b>	<b>13</b>	<b>21</b>	<b>9</b>

<b>Operator</b>					
NIST Special Publications	NIST FIPS	NIST Control Families	Laws and Regulations	NIST RMF	NIST Interagency Reports
<b>20</b>	<b>13</b>	<b>22</b>	<b>19</b>	<b>19</b>	<b>7</b>

\* Constraint Rounding

---

## 5. Certification Prerequisites

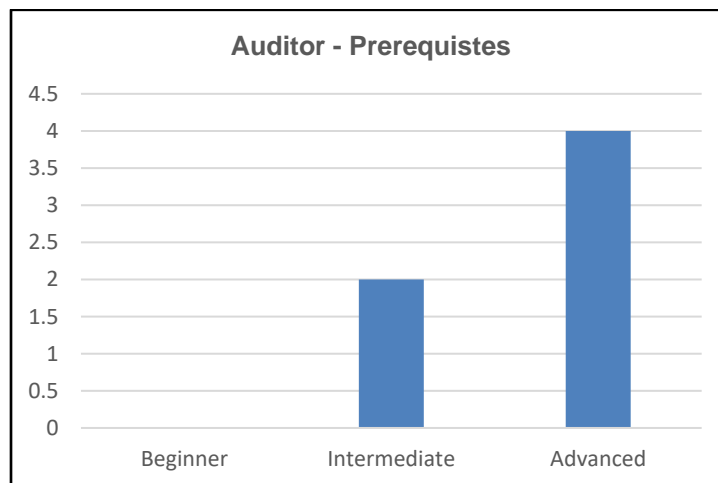
During the survey, each SME was asked about the experience level requirements of FITSP candidates to identify requirements for certification prerequisites. The SMEs were asked to consider giving the Knowledge Statements and Skills Statements for each task, which of the following professional experience levels appropriately aligned. Specifically, SMEs were asked to select from the following choices:

- Beginner (1-2 years of professional experience)
- Intermediate (3-4 years of professional experience)
- Advanced (5+ years of professional experience)

The following were the results of the Certification Prerequisites responses:

### Auditor

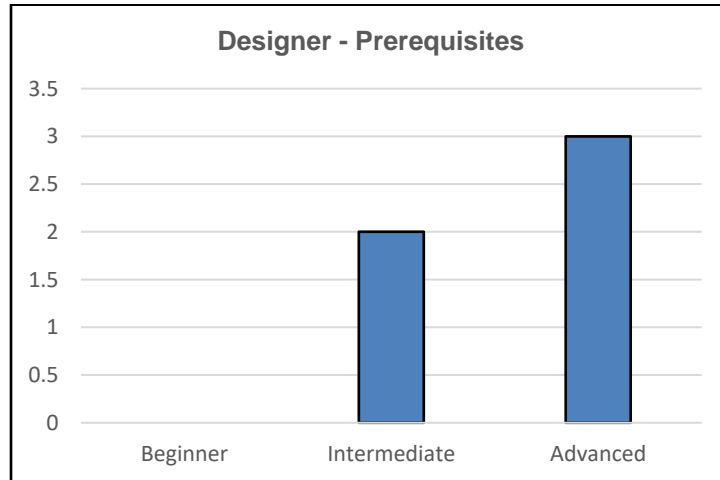
The Auditor Subject Matter Experts (SMEs) reached a consensus through a majority vote, identifying "Advanced" as the desired prerequisite for Auditor candidates. Of the experts, four selected "Advanced," while two selected "Intermediate."



---

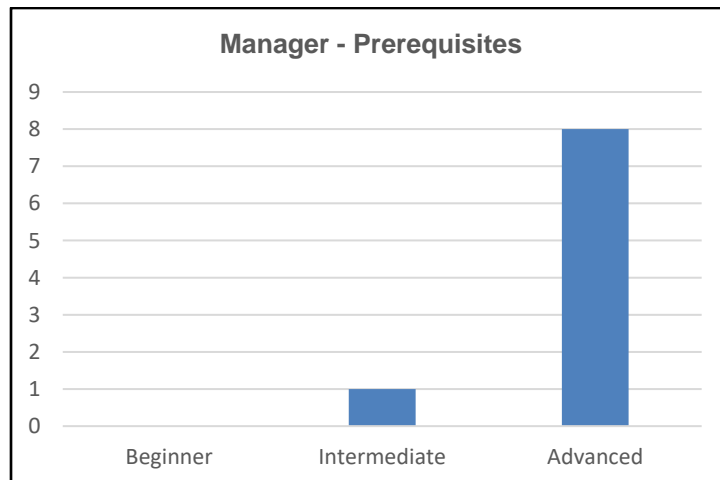
## Designer

Through a majority vote, the Designer Subject Matter Experts (SMEs) determined that "Advanced" should be the preferred prerequisite for Designer candidates. Among the experts, three selected "Advanced," while two selected "Intermediate."



## Manager

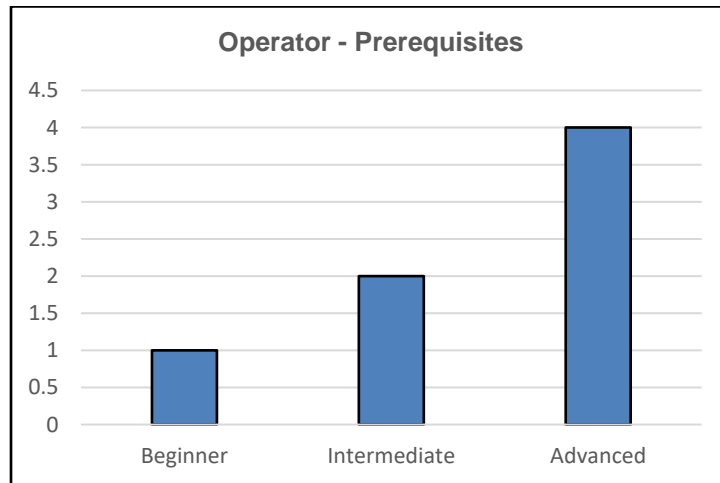
The Manager Subject Matter Experts (SMEs) agreed upon "Advanced" as the ideal prerequisite for Manager candidates by utilizing a majority vote. Of the experts, eight selected "Advanced," and one selected "Intermediate."



---

## Operator

Using a majority vote, the Operator Subject Matter Experts (SMEs) determined that "Advanced" should be the preferred prerequisite for Auditor candidates. Among the experts, four selected "Advanced," two selected "Intermediate," and one selected "Beginner."



---

## 6. Confirmation of Assessment Mechanism and Examination Content

FITSI uses the definition of mechanism from ISO 17024:2012. Specifically, the mechanism represents the examination.

*"Examination - mechanism that is part of the assessment (3.8) which measures a candidate's (3.14) competence (3.6) by one or more means, such as written, oral, practical and observational, as defined in the certification scheme."*

### A. Type of Examination

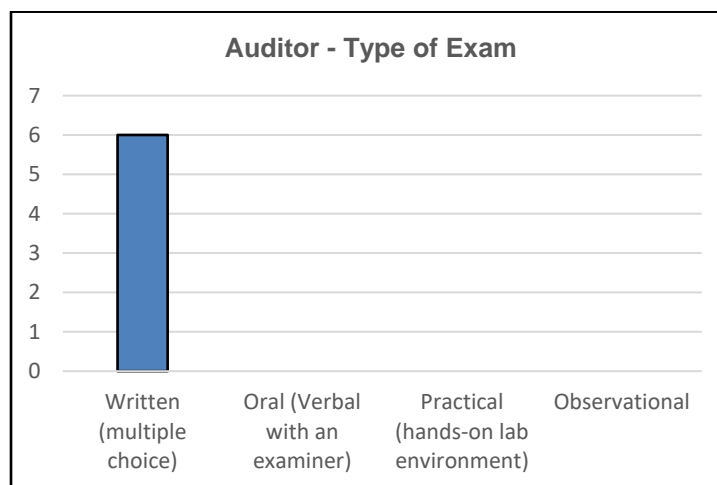
During the survey, each SME was asked to confirm the type of examination to be used. The SMEs were asked to consider giving the Knowledge Statements and Skills Statements for each task, which of the following level appropriately aligned. Specifically, SMEs were asked to select from the following choices:

- Written (multiple choice)
- Oral (Verbal with an examiner)
- Practical (hands-on lab environment)
- Observational

The following were the results of the Type of Examination responses:

#### Auditor

By a majority vote, the Auditor SMEs identified "Written (multiple choice)" as the type of examination to be used with Auditor FITSP candidates. Six selected "Written (multiple choice)" unanimously.

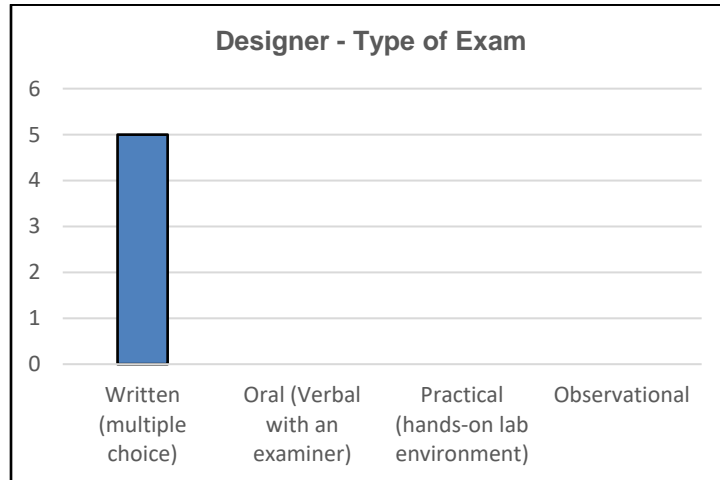




---

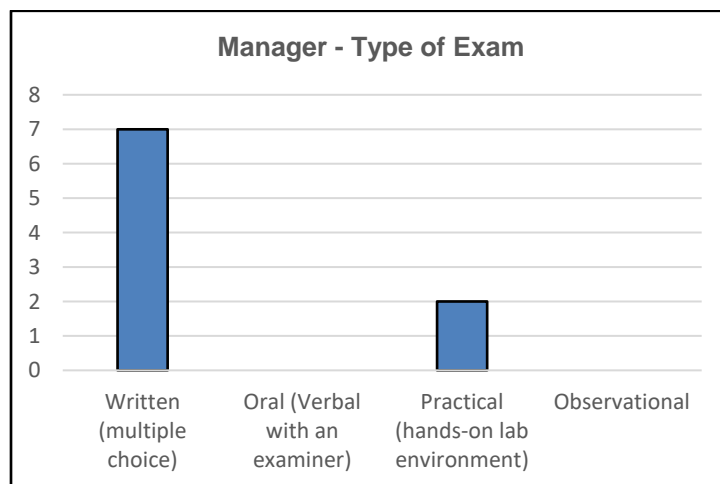
## Designer

By a majority vote, the Designer SMEs identified "Written (multiple choice)" as the type of examination for Designer FITSP candidates. All five SMEs selected "Written (multiple choice)" unanimously.



## Manager

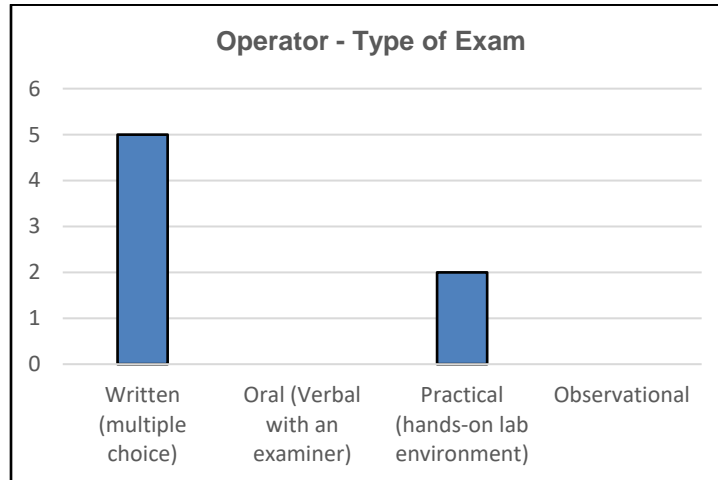
By a majority vote, the Manager SMEs identified "Written (multiple choice)" as the type of examination to be used with Manager FITSP candidates. Seven selected "Written (multiple choice)," and two selected "Practical (hands-on lab environment)."



---

## Operator

The Operator SMEs by a majority vote identified "Written (multiple choice)" as the type of examination to be used with Operator FITSP candidates. Five selected "Written (multiple choice)," and two selected "Practical (hands-on lab environment)."



## B. Examination Content

During the survey, each SME was asked to review the current FITSI Federal Body of Knowledge Guide (v2.2) that was approved by the FITSI Scheme Committee that includes the following domains:

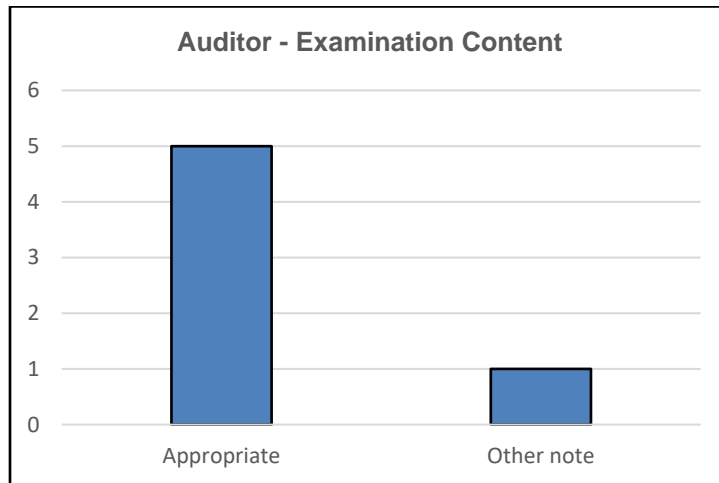
- NIST Special Publications
- NIST Federal Information Processing Standards
- NIST Control Families
- NIST Risk Management Framework
- NIST Interagency Reports
- Government Laws and Regulations

The SMEs were asked to determine if any content areas were missing. The following were the results of the Examination Content responses:

---

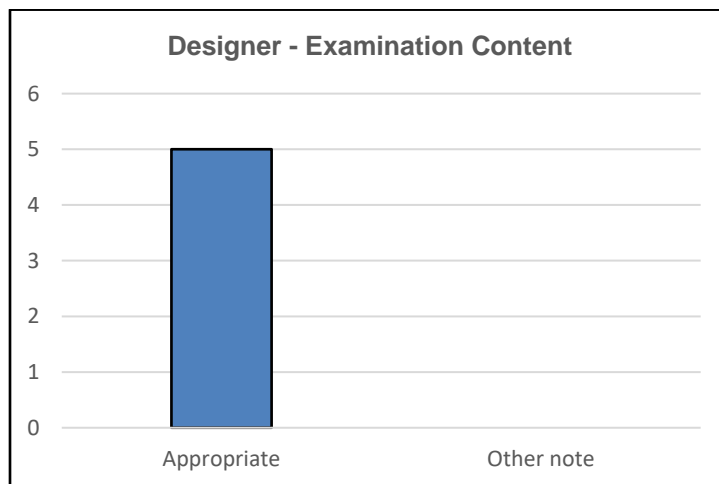
### Auditor

By a majority vote, the Auditor SMEs identified "Appropriate" to confirm the current state of examination content. Five selected "Appropriate," and one suggested a minor resource to include, which is planned for the following FITSI scheme committee review. No structural recommendations to the domain boundaries or content areas were made.



### Designer

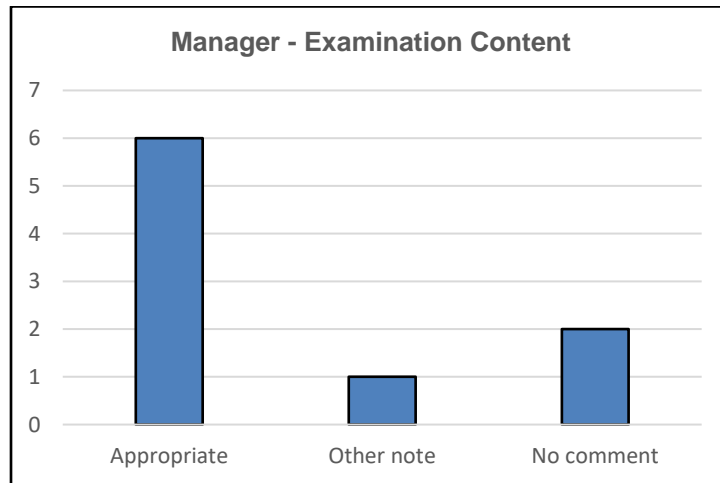
The Designer SMEs by a majority vote, identified "Appropriate" to confirm the current state of examination content. Five selected "Appropriate" unanimously. No structural recommendations to the domain boundaries or content areas were made.



---

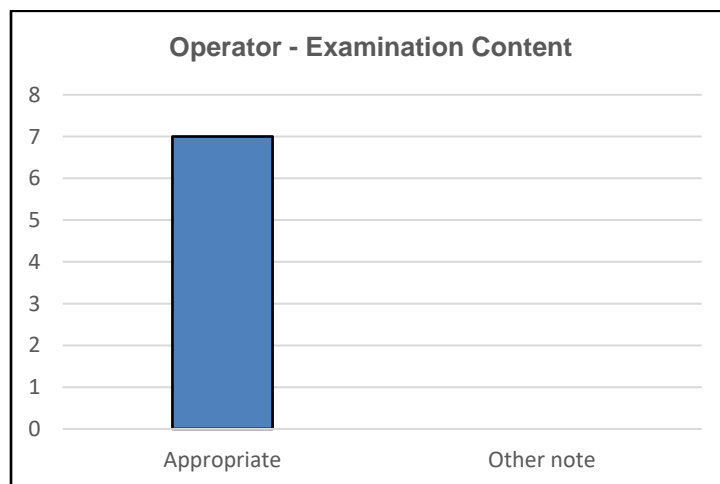
### Manager

By a majority vote, the Manager SMEs identified "Appropriate" to confirm the current state of examination content. Six selected "Appropriate," one included a general note, and two provided no comment. No structural recommendations to the domain boundaries or content areas were made.



### Operator

By a majority vote, the Operator SMEs identified "Appropriate" to confirm the current state of examination content. Seven selected "Appropriate" unanimously. No structural recommendations to the domain boundaries or content areas were made.



---

## 7. Recertification Requirements and Interval

### A. Recertification Requirements

During the survey, each SME was asked what method a FITSP Certification Holder should use to recertify. SMEs were asked to select from the following choices:

- Retesting
- Professional Development - CPEs/CEUs
- Interview

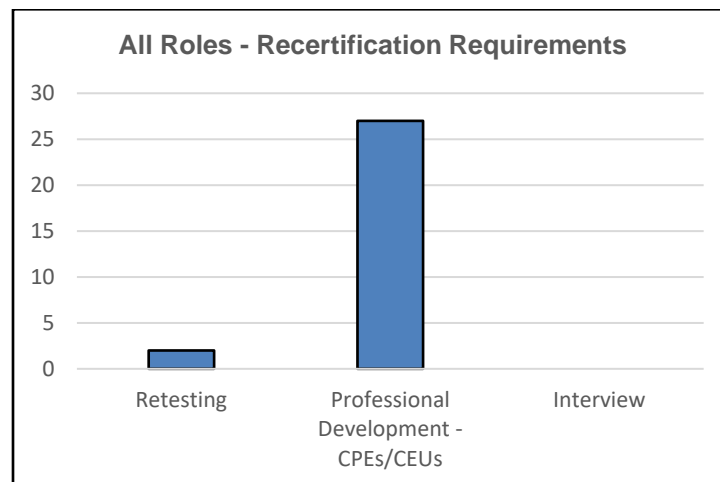
Other options that were considered for inclusion in the survey but were ultimately not incorporated were:

- on-site assessments
- confirmation of continuing satisfactory work and work experience records
- checks on physical capability in relation to the competence concerned.

These other options were not used due to 1) logistical challenges with getting access to government facilities (on-site assessments), 2) lack of rigor (confirmation of continued satisfactory work), and 3) the highly technical nature of the FITSP job (checks on physical capability).

The following were the results of the Recertification Requirements responses:

By a majority vote, SMEs identified "Professional Development - CPEs/CEUs" as the method for all FITSP Certification Holders to recertify. Twenty-five SMEs across all four selected "Professional Development - CPEs/CEUs," and two selected "Retesting."



---

## B. Recertification Interval

During the survey, each SME was asked, "What is the ideal recertification cycle for FITSP Certification Holders?" SMEs were asked to select from the following choices:

- Every three years
- Every four years
- Every five years
- Every six years

A number of different options were considered by FITSI in selecting these time periods to ask the SMEs. Rationale for these recertification periods (interval) included:

- regulatory requirements
- changes to normative documents
- changes in the relevant scheme requirements
- the nature and maturity of the industry or field in which the certified person is working
- the risks resulting from an incompetent person
- ongoing changes in technology, and requirements for certified persons
- requirements of interested parties
- the frequency and content of surveillance activities, if required by the scheme.

The rationale which ultimately influenced FITSI to use these time periods was:

- the nature and maturity of the industry or field in which a FITSP Certification Holder is working. IT security is a fast-moving industry and having options between 3-6 years provided SMEs with a balance of choices to pick from.

The following were the results of the Recertification Interval responses:

Across the twenty-seven SMEs, by majority vote, they chose three years as the ideal recertification cycle. Fifteen SMEs selected "Every three years," Three SMEs selected "Every four years," six SMEs selected "Every five years," and three SMEs selected "Every six years."



---

## 8. Summary and Conclusions

In conclusion, this Report highlights the efforts of the Subject Matter Experts (SMEs) in determining key aspects related to the FITSP Certification Program. The following areas were addressed: Task/Domain weights, certification prerequisites, assessment mechanisms, and recertification requirements. Specifically, the following elements were determined:

### A. Task/Domain weighting:

<b>Auditor</b>					
NIST Special Publications	NIST FIPS	NIST Control Families	Laws and Regulations	NIST RMF	NIST Interagency Reports
<b>21</b>	<b>13</b>	<b>21</b>	<b>17</b>	<b>20*</b>	<b>8</b>

<b>Designer</b>					
<b>20</b>	<b>13</b>	<b>22</b>	<b>19</b>	<b>20*</b>	<b>6</b>

<b>Manager</b>					
<b>22</b>	<b>12</b>	<b>23</b>	<b>13</b>	<b>21</b>	<b>9</b>

<b>Operator</b>					
<b>20</b>	<b>13</b>	<b>22</b>	<b>19</b>	<b>19</b>	<b>7</b>

\* Constraint Rounding

### B. Certification Prerequisites:

- Auditor – 5+ years of professional experience
- Designer – 5+ years of professional experience
- Manager – 5+ years of professional experience
- Operator - 5+ years of professional experience

### C. Type of Examination

- Auditor – Written (multiple choice)
- Designer – Written (multiple choice)
- Manager – Written (multiple choice)
- Operator - Written (multiple choice)

---

#### **D. Examination Content**

- Auditor – Appropriate – No Changes Needed
- Designer – Appropriate – No Changes Needed
- Manager – Appropriate – No Changes Needed
- Operator - Appropriate – No Changes Needed

#### **E. Recertification Requirements**

- Auditor – Professional Development - CPEs/CEUs
- Designer – Professional Development - CPEs/CEUs
- Manager – Professional Development - CPEs/CEUs
- Operator - Professional Development - CPEs/CEUs

#### **F. Recertification Interval**

- Auditor – Every three years
- Designer – Every three years
- Manager – Every three years
- Operator - Every three years



---

## 9. Appendix

### **A. FITSP-Auditor Role - Job Analysis - 2023 Survey**

Due to its size (50 pages), the complete survey that was used is documented in the following file:

- FITSP-Auditor Role - Job Analysis 2023.pdf

### **B. FITSP-Designer Role - Job Analysis - 2023 Survey**

Due to its size (50 pages), the complete survey that was used is documented in the following file:

- FITSP-Designer Role - Job Analysis 2023.pdf

### **C. FITSP-Manager Role - Job Analysis - 2023 Survey**

Due to its size (50 pages), the complete survey that was used is documented in the following file:

- FITSP-Manager Role - Job Analysis 2023.pdf

### **D. FITSP-Operator Role - Job Analysis - 2023 Survey**

Due to its size (50 pages), the complete survey that was used is documented in the following file:

- FITSP-Operator Role - Job Analysis 2023.pdf