# 1.5 DEVICE MANAGEMENT – SYSTEMS TESTING AND EVALUATION



IoT Security Technician Skill Zone - CSSIA.ORG

# 1. Device Management

## 1.5 Systems Testing & Evaluation

- Describe the type of testing tools and procedures in IoT and industrial control systems.
- 2. Explain what's meant by a test-plan, requirements and specifications.
- 3. Demonstrate understanding of how testplans can be used and implemented.
- 4. Describe the testing results of diverse IoT implementations.
- 5. Make recommendations based on testing results.

# **System Testing & Evaluation**

IoT environments can be fluid and experience continuing change. These changes require highly dependable systems that need to be tested and evaluated on a regular basis. Testing would include evaluating the proper installation and configuration. Systems should also be tested and evaluated to analyze operations during failures and under peak loads. Testing and evaluation may also include the creation of system and device baselines and tracking utilization rates.

The testing and evaluation process also requires the IoT security technician to perform basic research and collect data including mean time between failure (MTBF) and mean time to repair (MTTR). System testing and evaluation also involves the use of advanced evaluation and testing tools.

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## **Existing Course Cross Reference**

## **Cisco Networking Academy Courses**

**IT Essentials** 

Introduction to IoT

**NDG Linux Essentials** 

**CCNA Security** 

### **Cisco Partner Courses**

ICS and SCADA Security (CSSIA.ORG)
CISSP (CSSIA.ORG)

#### Non-Cisco Partner Courses

Internet of Things - Innovation Labs
Introduction to the Internet of Things and
Embedded Systems - Coursera

### **Curriculum Resources**

#### **Videos**

YouTube.com – Security Testing Fundamentals

<u>YouTube.com – Cisco Enhance Your IoT</u> <u>Security</u>

Youtube.com Swimming with sharks - security in the internet of things: Joshua Corman at TEDxNaperville

### **Web Links**

<u>Configuration Management: Best Practices</u> <u>White Paper</u>

SANS Institute InfoSec Reading Room, Secure Configuration Management Demystified

NIST Special Publication 800-82 Section 6.2

#### **Textbooks**

Calder-Watkins, IT Governance: A Manager's Guide to Data Security and ISO 27001 / ISO 27002: Kogan Page, 4th Edition (2008), ISBN: 978-0-7494-5271-1

NIST Special Publication 800-12
An Introduction to Computer Security: the NIST Handbook

NIST Special Publication 800-14
Generally Accepted Principles and Practices
for Securing Information Technology Systems

### **Assessment Resources**

#### Labs

Assignment 3A – SWOT Analysis Worksheet Assignment 3B – Risk Analysis Worksheet Assignment 5A – Physical Audit Worksheet Assignment 6A – Controls List

## **Quizzes/Exams**

### **CSSIA CISSP Course**

Security Operations - Chapter Exam

### Quizlet.com

Security Compliance and Operational Security

<u>Threats & Vulnerabilities - Explaining</u>
Penetration Testing vs Vulnerability Scanning