Set Theory Relationship Mapping (STRM)

Reference Document : **Secure Controls Framework (SCF) version 2024.1**
Focal Document: **NIST SP 800-171 R3 Final Public Draft (FPD)**
STRM URL: **https://content.securecontrolsframework.com/strm/scf-2024-1-nist-800-171-r3-fpd.pdf**

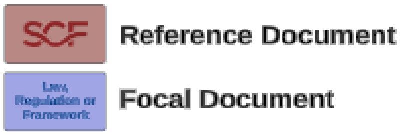
Set Theory Relationship Mapping (STRM) is well-suited for mapping between sets of elements that exist in two distinct concepts that are mostly the same as each other (e.g., cybersecurity & data privacy requirements). STRM also allows the strength of the mapping to be captured.

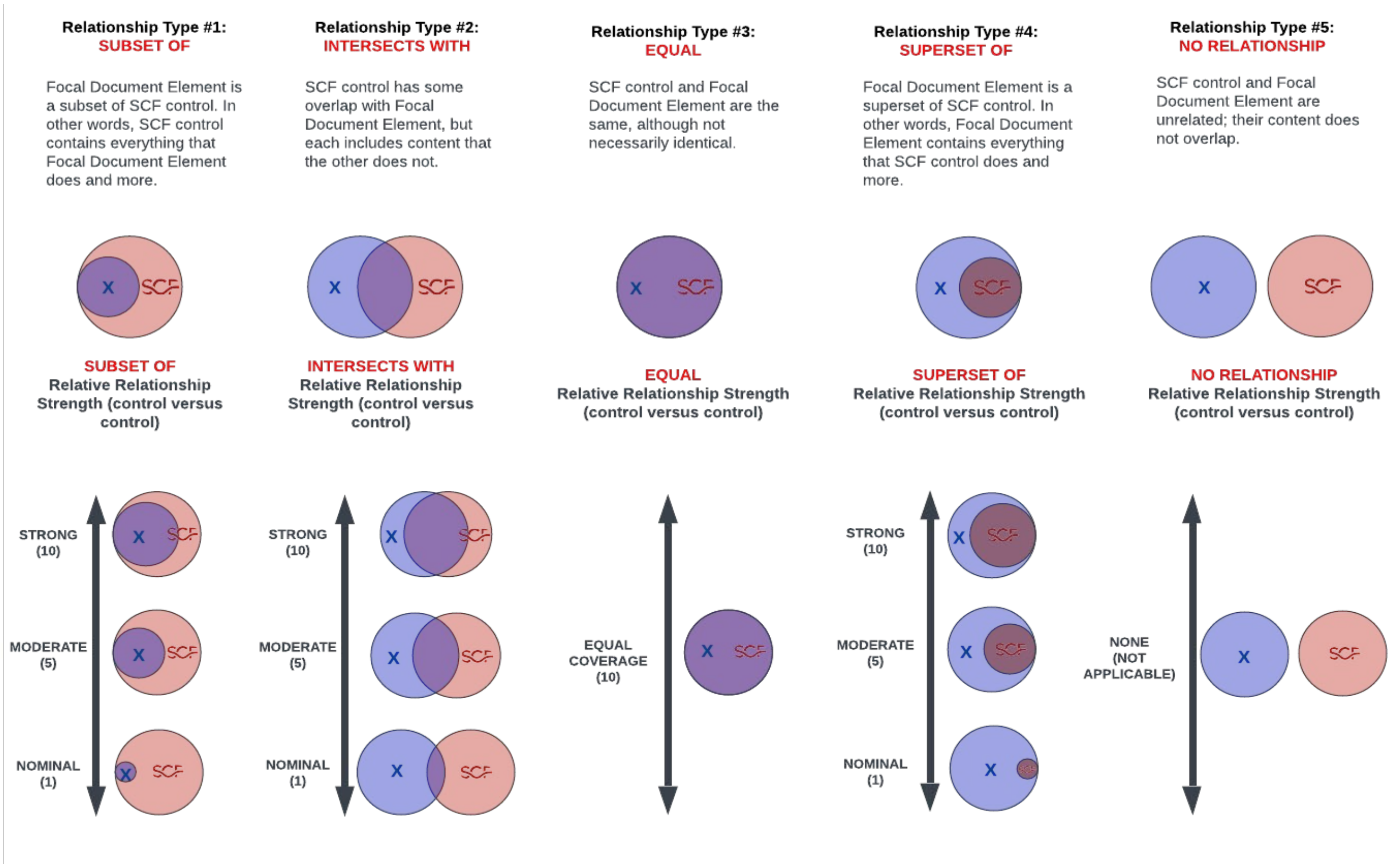
STRM relies on a justification for the relationship claim. There are three (3) options for the rationale, which is a high-level context within which the two concepts are related:

1. **Syntactic**: How similar is the wording that expresses the two concepts? This is a word-for-word analysis of the relationship, not an interpretation of the language.
2. **Semantic**: How similar are the meanings of the two concepts? This involves some interpretation of each concept's language.
3. **Functional**: How similar are the results of executing the two concepts? This involves understanding what will happen if the two concepts are implemented, performed, or otherwise executed.

Based on NIST IR 8477, STRM supports five (5) five relationship types to describe the logical similarity between two distinct concepts:

1. **Subset Of**
2. **Intersects With**
3. **Equal**
4. **Superset Of**
5. **No Relationship**




Relationship Type #1:
SUBSET OF
Focal Document Element is a subset of SCF control. In other words, SCF control contains everything that Focal Document Element does and more.
Relationship Type #2:
INTERSECTS WITH
SCF control has some overlap with Focal Document Element, but each includes content that the other does not.
Relationship Type #3:
EQUAL
SCF control and Focal Document Element are the same, although not necessarily identical.
Relationship Type #4:
SUPERSET OF
Focal Document Element is a superset of SCF control. In other words, Focal Document Element contains everything that SCF control does and more.
Relationship Type #5:
NO RELATIONSHIP
SCF control and Focal Document Element are unrelated; their content does not overlap.
X
SCF
SUBSET OF
Relative Relationship Strength (control versus control)
INTERSECTS WITH
Relative Relationship Strength (control versus control)
EQUAL
Relative Relationship Strength (control versus control)
SUPERSET OF
Relative Relationship Strength (control versus control)
NO RELATIONSHIP
Relative Relationship Strength (control versus control)
STRONG (10)
MODERATE (5)
NOMINAL (1)
EQUAL COVERAGE (10)
NONE (NOT APPLICABLE)

FDE #	FDE Name	Focal Document Element (FDE) Description	STRM Rationale	STRM Relationship	SCF Control	SCF #	Secure Controls Framework (SCF) Control Description	Strength of Relationship (optional)	Notes (optional)
3.1.1.a	Account Management	Define the types of system accounts allowed and prohibited.	Functional	intersects with	Defining Access Authorizations for Sensitive/Regulated Data	DCH-01.4	Mechanisms exist to explicitly define authorizations for specific individuals and/or roles for logical and /or physical access to sensitive/regulated data.	5	
			Functional	intersects with	Account Management	IAC-15	Mechanisms exist to proactively govern account management of individual, group, system, service, application, guest and temporary accounts.	5	
3.1.1.b	Account Management	Create, enable, modify, disable, and remove system accounts in accordance with organizational policy, procedures, prerequisites, and criteria.	Functional	intersects with	Account Management	IAC-15	Mechanisms exist to proactively govern account management of individual, group, system, service, application, guest and temporary accounts.	5	
			Functional	intersects with	Management Approval For New or Changed Accounts	IAC-28.1	Mechanisms exist to ensure management approvals are required for new accounts or changes in permissions to existing accounts.	5	mapping add in version 2024.1
3.1.1.c	Account Management	Specify authorized users of the system, group and role membership, and access authorizations (i.e., privileges).	Functional	intersects with	Position Categorization	HRS-02	Mechanisms exist to manage personnel security risk by assigning a risk designation to all positions and establishing screening criteria for individuals filling those positions.	5	mapping add in version 2024.1
			Functional	intersects with	Role-Based Access Control (RBAC)	IAC-08	Mechanisms exist to enforce a Role-Based Access Control (RBAC) policy over users and resources that applies need-to-know and fine-grained access control for sensitive/regulated data access.	5	
			Functional	intersects with	Account Management	IAC-15	Mechanisms exist to proactively govern account management of individual, group, system, service, application, guest and temporary accounts.	5	mapping add in version 2024.1
3.1.1.d	Account Management	Authorize access to the system based on a valid access authorization and intended system usage.	Functional	intersects with	Users With Elevated Privileges	HRS-02.1	Mechanisms exist to ensure that every user accessing a system that processes, stores, or transmits sensitive information is cleared and regularly trained to handle the information in question.	5	mapping add in version 2024.1
			Functional	intersects with	Account Management	IAC-15	Mechanisms exist to proactively govern account management of individual, group, system, service, application, guest and temporary accounts.	5	
			Functional	intersects with	Least Privilege	IAC-21	Mechanisms exist to utilize the concept of least privilege, allowing only authorized access to processes necessary to accomplish assigned tasks in accordance with organizational business functions.	5	mapping add in version 2024.1
3.1.1.e	Account Management	Monitor the use of system accounts.	Functional	intersects with	Account Management	IAC-15	Mechanisms exist to proactively govern account management of individual, group, system, service, application, guest and temporary accounts.	5	
			Functional	intersects with	System Account Reviews	IAC-15.7	Mechanisms exist to review all system accounts and disable any account that cannot be associated with a business process and owner.	5	
			Functional	intersects with	Anomalous Behavior	MON-16	Mechanisms exist to detect and respond to anomalous behavior that could indicate account compromise or other malicious activities.	5	mapping add in version 2024.1
3.1.1.f	Account Management	Disable system accounts when:	Functional	intersects with	Account Management	IAC-15	Mechanisms exist to proactively govern account management of individual, group, system, service, application, guest and temporary accounts.	5	
3.1.1.f.1	Account Management	The accounts have expired;	Functional	intersects with	Account Management	IAC-15	Mechanisms exist to proactively govern account management of individual, group, system, service, application, guest and temporary accounts.	5	
3.1.1.f.2	Account Management	The accounts have been inactive for [Assignment: organization-defined time period];	Functional	intersects with	Account Management	IAC-15	Mechanisms exist to proactively govern account management of individual, group, system, service, application, guest and temporary accounts.	5	
			Functional	intersects with	Disable Inactive Accounts	IAC-15.3	Automated mechanisms exist to disable inactive accounts after an organization-defined time period.	5	
3.1.1.f.3	Account Management	The accounts are no longer associated with a user or individual;	Functional	intersects with	Personnel Termination	HRS-09	Mechanisms exist to govern the termination of individual employment.	5	
			Functional	intersects with	High-Risk Terminations	HRS-09.2	Mechanisms exist to expedite the process of removing "high risk" individual's access to systems and applications upon termination, as determined by management.	5	
			Functional	intersects with	Termination of Employment	IAC-07.2	Mechanisms exist to revoke user access rights in a timely manner, upon termination of employment or contract.	5	
			Functional	intersects with	Account Management	IAC-15	Mechanisms exist to proactively govern account management of individual, group, system, service, application, guest and temporary accounts.	5	
3.1.1.f.4	Account Management	The accounts are in violation of organizational policy; or	Functional	intersects with	Personnel Sanctions	HRS-07	Mechanisms exist to sanction personnel failing to comply with established security policies, standards and procedures.	5	mapping add in version 2024.1
			Functional	intersects with	Workplace Investigations	HRS-07.1	Mechanisms exist to conduct employee misconduct investigations when there is reasonable assurance that a policy has been violated.	5	mapping add in version 2024.1
			Functional	intersects with	Account Management	IAC-15	Mechanisms exist to proactively govern account management of individual, group, system, service, application, guest and temporary accounts.	5	
			Functional	intersects with	Account Disabling for High Risk Individuals	IAC-15.6	Mechanisms exist to disable accounts immediately upon notification for users posing a significant risk to the organization.	5	
3.1.1.f.5	Account Management	Significant risks associated with individuals are discovered.	Functional	intersects with	Personnel Sanctions	HRS-07	Mechanisms exist to sanction personnel failing to comply with established security policies, standards and procedures.	5	mapping add in version 2024.1
			Functional	intersects with	Workplace Investigations	HRS-07.1	Mechanisms exist to conduct employee misconduct investigations when there is reasonable assurance that a policy has been violated.	5	mapping add in version 2024.1
			Functional	intersects with	Account Management	IAC-15	Mechanisms exist to proactively govern account management of individual, group, system, service, application, guest and temporary accounts.	5	
			Functional	intersects with	Account Disabling for High Risk Individuals	IAC-15.6	Mechanisms exist to disable accounts immediately upon notification for users posing a significant risk to the organization.	5	
3.1.1.g	Account Management	Notify organizational personnel or roles when:	Functional	intersects with	Automated Employment Status Notifications	HRS-09.4	Automated mechanisms exist to notify Identity and Access Management (IAM) personnel or roles upon termination of an individual employment or contract.	5	
			Functional	intersects with	Account Management	IAC-15	Mechanisms exist to proactively govern account management of individual, group, system, service, application, guest and temporary accounts.	5	
3.1.1.g.1	Account Management	Accounts are no longer required;	Functional	intersects with	Automated Employment Status Notifications	HRS-09.4	Automated mechanisms exist to notify Identity and Access Management (IAM) personnel or roles upon termination of an individual employment or contract.	5	
			Functional	intersects with	Change of Roles & Duties	IAC-07.1	Mechanisms exist to revoke user access rights following changes in personnel roles and duties, if no longer necessary or permitted.	5	mapping add in version 2024.1
			Functional	intersects with	Account Management	IAC-15	Mechanisms exist to proactively govern account management of individual, group, system, service, application, guest and temporary accounts.	5	
3.1.1.g.2	Account Management	Users are terminated or transferred; and	Functional	intersects with	Human Resources Security Management	HRS-01	Mechanisms exist to facilitate the implementation of personnel security controls.	5	
			Functional	intersects with	Automated Employment Status Notifications	HRS-09.4	Automated mechanisms exist to notify Identity and Access Management (IAM) personnel or roles upon termination of an individual employment or contract.	5	
			Functional	intersects with	Account Management	IAC-15	Mechanisms exist to proactively govern account management of individual, group, system, service, application, guest and temporary accounts.	5	
3.1.1.g.3	Account Management	System usage or need-to-know changes for an individual.	Functional	intersects with	Automated Employment Status Notifications	HRS-09.4	Automated mechanisms exist to notify Identity and Access Management (IAM) personnel or roles upon termination of an individual employment or contract.	5	
			Functional	intersects with	Account Management	IAC-15	Mechanisms exist to proactively govern account management of individual, group, system, service, application, guest and temporary accounts.	5	
			Functional	intersects with	Periodic Review of Account Privileges	IAC-17	Mechanisms exist to periodically-review the privileges assigned to individuals and service accounts to validate the need for such privileges and reassign or remove unnecessary privileges, as necessary.	5	mapping add in version 2024.1
3.1.2	Access Enforcement	Enforce approved authorizations for logical access to CUI and system resources.	Functional	intersects with	Sensitive / Regulated Data Access Enforcement	CFG-08	Mechanisms exist to configure systems, applications and processes to restrict access to sensitive/regulated data.	5	
			Functional	intersects with	Sensitive / Regulated Data Protection	DCH-01.2	Mechanisms exist to protect sensitive/regulated data wherever it is stored.	5	
			Functional	intersects with	Defining Access Authorizations for Sensitive/Regulated Data	DCH-01.4	Mechanisms exist to explicitly define authorizations for specific individuals and/or roles for logical and /or physical access to sensitive/regulated data.	5	
			Functional	intersects with	Position Categorization	HRS-02	Mechanisms exist to manage personnel security risk by assigning a risk designation to all positions and establishing screening criteria for individuals filling those positions.	5	mapping add in version 2024.1
			Functional	intersects with	Users With Elevated Privileges	HRS-02.1	Mechanisms exist to ensure that every user accessing a system that processes, stores, or transmits sensitive information is cleared and regularly trained to handle the information in question.	5	mapping add in version 2024.1

FDE #	FDE Name	Focal Document Element (FDE) Description	STRM Rationale	STRM Relationship	SCF Control	SCF #	Secure Controls Framework (SCF) Control Description	Strength of Relationship (optional)	Notes (optional)
			Functional	intersects with	Role-Based Access Control (RBAC)	IAC-08	Mechanisms exist to enforce a Role-Based Access Control (RBAC) policy over users and resources that applies need-to-know and fine-grained access control for sensitive/regulated data access.	5	
			Functional	intersects with	Account Management	IAC-15	Mechanisms exist to proactively govern account management of individual, group, system, service, application, guest and temporary accounts.	5	
			Functional	intersects with	Access To Sensitive / Regulated Data	IAC-20.1	Mechanisms exist to limit access to sensitive/regulated data to only those individuals whose job requires such access.	5	
3.1.3	Information Flow Enforcement	Enforce approved authorizations for controlling the flow of CUI within the system and between connected systems.	Functional	intersects with	Asset-Service Dependencies	AST-01.1	Mechanisms exist to identify and assess the security of technology assets that support more than one critical business function.	5	mapping add in version 2024.1
			Functional	intersects with	Network Diagrams & Data Flow Diagrams (DFDs)	AST-04	Mechanisms exist to maintain network architecture diagrams that: • Contain sufficient detail to assess the security of the network's architecture; • Reflect the current architecture of the network environment; and • Document all sensitive/regulated data flows.	5	
			Functional	intersects with	Compliance-Specific Asset Identification	AST-04.3	Mechanisms exist to create and maintain a current inventory of systems, applications and services that are in scope for statutory, regulatory and/or contractual compliance obligations that provides sufficient detail to determine control applicability, based on asset scope categorization.	5	mapping add in version 2024.1
			Functional	subset of	Asset Categorization	AST-31	Mechanisms exist to categorize technology assets.	10	mapping add in version 2024.1
			Functional	intersects with	Defining Access Authorizations for Sensitive/Regulated Data	DCH-01.4	Mechanisms exist to explicitly define authorizations for specific individuals and/or roles for logical and /or physical access to sensitive/regulated data.	5	
			Functional	intersects with	Media Access	DCH-03	Mechanisms exist to control and restrict access to digital and non-digital media to authorized individuals.	5	
			Functional	intersects with	Data Access Mapping	DCH-14.3	Mechanisms exist to develop a data-specific Access Control List (ACL) or Data Information Sharing Agreement (DISA) to determine the parties with whom sensitive/regulated data is shared.	5	mapping add in version 2024.1
			Functional	intersects with	Access To Sensitive / Regulated Data	IAC-20.1	Mechanisms exist to limit access to sensitive/regulated data to only those individuals whose job requires such access.	5	
			Functional	intersects with	Data Flow Enforcement – Access Control Lists (ACLs)	NET-04	Mechanisms exist to design, implement and review firewall and router configurations to restrict connections between untrusted networks and internal systems.	5	
			Functional	intersects with	System Interconnections	NET-05	Mechanisms exist to authorize connections from systems to other systems using Interconnection Security Agreements (ISAs) that document, for each interconnection, the interface characteristics, cybersecurity & data privacy requirements and the nature of the information communicated.	5	
			Functional	intersects with	Internal System Connections	NET-05.2	Mechanisms exist to control internal system connections through authorizing internal connections of systems and documenting, for each internal connection, the interface characteristics, security requirements and the nature of the information communicated.	5	
3.1.4.a	Separation of Duties	Identify the duties of individuals requiring separation.	Functional	intersects with	Separation of Duties (SoD)	HRS-11	Mechanisms exist to implement and maintain Separation of Duties (SoD) to prevent potential inappropriate activity without collusion.	5	
			Functional	intersects with	Incompatible Roles	HRS-12	Mechanisms exist to avoid incompatible development-specific roles through limiting and reviewing developer privileges to change hardware, software and firmware components within a production/operational environment.	5	
3.1.4.b	Separation of Duties	Define system access authorizations to support separation of duties.	Functional	intersects with	Defining Access Authorizations for Sensitive/Regulated Data	DCH-01.4	Mechanisms exist to explicitly define authorizations for specific individuals and/or roles for logical and /or physical access to sensitive/regulated data.	5	
			Functional	intersects with	Access To Sensitive / Regulated Data	IAC-20.1	Mechanisms exist to limit access to sensitive/regulated data to only those individuals whose job requires such access.	5	
			Functional	intersects with	Least Privilege	IAC-21	Mechanisms exist to utilize the concept of least privilege, allowing only authorized access to processes necessary to accomplish assigned tasks in accordance with organizational business functions.	5	mapping add in version 2024.1
3.1.5.a	Least Privilege	Allow only authorized system access for users (or processes acting on behalf of users) that is necessary to accomplish assigned organizational tasks.	Functional	intersects with	Limitations on Use	DCH-10.1	Mechanisms exist to restrict the use and distribution of sensitive / regulated data.	5	
			Functional	intersects with	Least Privilege	IAC-21	Mechanisms exist to utilize the concept of least privilege, allowing only authorized access to processes necessary to accomplish assigned tasks in accordance with organizational business functions.	5	
			Functional	intersects with	Access Enforcement	IAC-20	Mechanisms exist to enforce Logical Access Control (LAC) permissions that conform to the principle of "least privilege."	5	mapping add in version 2024.1
3.1.5.b	Least Privilege	Authorize access to [Assignment: organization-defined security functions and security-relevant information].	Functional	intersects with	Limitations on Use	DCH-10.1	Mechanisms exist to restrict the use and distribution of sensitive / regulated data.	5	
			Functional	intersects with	Role-Based Access Control (RBAC)	IAC-08	Mechanisms exist to enforce a Role-Based Access Control (RBAC) policy over users and resources that applies need-to-know and fine-grained access control for sensitive/regulated data access.	5	
			Functional	intersects with	Access Enforcement	IAC-20	Mechanisms exist to enforce Logical Access Control (LAC) permissions that conform to the principle of "least privilege."	5	mapping add in version 2024.1
3.1.5.c	Least Privilege	Review the privileges assigned to roles or classes of users periodically to validate the need for such privileges.	Functional	intersects with	Account Management	IAC-15	Mechanisms exist to proactively govern account management of individual, group, system, service, application, guest and temporary accounts.	5	mapping add in version 2024.1
			Functional	intersects with	System Account Reviews	IAC-15.7	Mechanisms exist to review all system accounts and disable any account that cannot be associated with a business process and owner.	5	mapping add in version 2024.1
			Functional	intersects with	Periodic Review of Account Privileges	IAC-17	Mechanisms exist to periodically-review the privileges assigned to individuals and service accounts to validate the need for such privileges and reassign or remove unnecessary privileges, as necessary.	5	
3.1.5.d	Least Privilege	Reassign or remove privileges, as necessary.	Functional	intersects with	Account Management	IAC-15	Mechanisms exist to proactively govern account management of individual, group, system, service, application, guest and temporary accounts.	5	mapping add in version 2024.1
			Functional	intersects with	Periodic Review of Account Privileges	IAC-17	Mechanisms exist to periodically-review the privileges assigned to individuals and service accounts to validate the need for such privileges and reassign or remove unnecessary privileges, as necessary.	5	
3.1.6.a	Least Privilege – Privileged Accounts	Restrict privileged accounts on the system to [Assignment: organization-defined personnel or roles].	Functional	intersects with	Role-Based Access Control (RBAC)	IAC-08	Mechanisms exist to enforce a Role-Based Access Control (RBAC) policy over users and resources that applies need-to-know and fine-grained access control for sensitive/regulated data access.	5	
			Functional	intersects with	Privileged Account Management (PAM)	IAC-16	Mechanisms exist to restrict and control privileged access rights for users and services.	5	mapping add in version 2024.1
			Functional	intersects with	Least Privilege	IAC-21	Mechanisms exist to utilize the concept of least privilege, allowing only authorized access to processes necessary to accomplish assigned tasks in accordance with organizational business functions.	5	
			Functional	intersects with	Privileged Accounts	IAC-21.3	Mechanisms exist to restrict the assignment of privileged accounts to organization-defined personnel or roles without management approval.	5	
3.1.6.b	Least Privilege – Privileged Accounts	Require that users (or roles) with privileged accounts use non-privileged accounts when accessing nonsecurity functions or nonsecurity information.	Functional	intersects with	Non-Privileged Access for Non-Security Functions	IAC-21.2	Mechanisms exist to prohibit privileged users from using privileged accounts, while performing non-security functions.	5	
3.1.7.a	Least Privilege – Privileged Functions	Prevent non-privileged users from executing privileged functions.	Functional	intersects with	Privileged Account Management (PAM)	IAC-16	Mechanisms exist to restrict and control privileged access rights for users and services.	5	
			Functional	intersects with	Least Privilege	IAC-21	Mechanisms exist to utilize the concept of least privilege, allowing only authorized access to processes necessary to accomplish assigned tasks in accordance with organizational business functions.	5	
			Functional	intersects with	Privileged Accounts	IAC-21.3	Mechanisms exist to restrict the assignment of privileged accounts to organization-defined personnel or roles without management approval.	5	
			Functional	equal	Prohibit Non-Privileged Users from Executing Privileged Functions	IAC-21.5	Mechanisms exist to prevent non-privileged users from executing privileged functions to include disabling, circumventing or altering implemented security safeguards / countermeasures.	10	mapping add in version 2024.1
3.1.7.b	Least Privilege – Privileged Functions	Log the execution of privileged functions	Functional	intersects with	Privileged Account Identifiers	IAC-09.5	Mechanisms exist to uniquely manage privileged accounts to identify the account as a privileged user or service.	5	
			Functional	intersects with	Privileged Account Management (PAM)	IAC-16	Mechanisms exist to restrict and control privileged access rights for users and services.	5	
			Functional	intersects with	Auditing Use of Privileged Functions	IAC-21.4	Mechanisms exist to audit the execution of privileged functions.	5	
			Functional	intersects with	Privileged User Oversight	MON-01.15	Mechanisms exist to implement enhanced activity monitoring for privileged users.	5	
			Functional	intersects with	Privileged Functions Logging	MON-03.3	Mechanisms exist to log and review the actions of users and/or services with elevated privileges.	5	

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3.1.8	Unsuccessful Logon Attempts	Limit the number of consecutive invalid logon attempts to [Assignment: organization-defined number] in [Assignment: organization-defined time period].	Functional	equal	Account Lockout	IAC-22	Mechanisms exist to enforce a limit for consecutive invalid login attempts by a user during an organization-defined time period and automatically locks the account when the maximum number of unsuccessful attempts is exceeded.	10	
3.1.9	System Use Notification	Display a system use notification message with privacy and security notices consistent with applicable CUI rules before granting access to the system.	Functional	subset of	System Use Notification (Logon Banner)	SEA-18	Mechanisms exist to utilize system use notification / logon banners that display an approved system use notification message or banner before granting access to the system that provides cybersecurity & data privacy notices.	10	
			Functional	intersects with	Standardized Microsoft Windows Banner	SEA-18.1	Mechanisms exist to configure Microsoft Windows-based systems to display an approved logon banner before granting access to the system that provides cybersecurity & data privacy notices.	10	
			Functional	intersects with	Truncated Banner	SEA-18.2	Mechanisms exist to utilize a truncated system use notification / logon banner on systems not capable of displaying a logon banner from a centralized source, such as Active Directory.	10	
3.1.10.a	Device Lock	Prevent access to the system by [Selection (one or more): initiating a device lock after [Assignment: organization-defined time period] of inactivity; requiring the user to initiate a device lock before leaving the system unattended].	Functional	subset of	Session Lock	IAC-24	Mechanisms exist to initiate a session lock after an organization-defined time period of inactivity, or upon receiving a request from a user and retain the session lock until the user reestablishes access using established identification and authentication methods.	10	
3.1.10.b	Device Lock	Retain the device lock until the user reestablishes access using established identification and authentication procedures.	Functional	subset of	Session Lock	IAC-24	Mechanisms exist to initiate a session lock after an organization-defined time period of inactivity, or upon receiving a request from a user and retain the session lock until the user reestablishes access using established identification and authentication methods.	10	
3.1.10.c	Device Lock	Conceal, via the device lock, information previously visible on the display with a publicly viewable image.	Functional	equal	Pattern-Hiding Displays	IAC-24.1	Mechanisms exist to implement pattern-hiding displays to conceal information previously visible on the display during the session lock.	10	
3.1.11	Session Termination	Terminate a user session automatically after [Assignment: organization-defined conditions or trigger events requiring session disconnect].	Functional	equal	Session Termination	IAC-25	Automated mechanisms exist to log out users, both locally on the network and for remote sessions, at the end of the session or after an organization-defined period of inactivity.	10	
3.1.12.a	Remote Access	Establish usage restrictions, configuration requirements, and connection requirements for each type of allowable remote system access.	Functional	intersects with	Jump Server	AST-27	Mechanisms exist to conduct remote system administrative functions via a "jump box" or "jump server" that is located in a separate network zone to user workstations.	5	
			Functional	intersects with	System Hardening Through Baseline Configurations	CFG-02	Mechanisms exist to develop, document and maintain secure baseline configurations for technology platforms that are consistent with industry-accepted system hardening standards.	5	
			Functional	intersects with	Rules of Behavior	HRS-05.1	Mechanisms exist to define acceptable and unacceptable rules of behavior for the use of technologies, including consequences for unacceptable behavior.	5	mapping add in version 2024.1
			Functional	intersects with	Use of Communications Technology	HRS-05.3	Mechanisms exist to establish usage restrictions and implementation guidance for communications technologies based on the potential to cause damage to systems, if used maliciously.	5	mapping add in version 2024.1
			Functional	intersects with	Role-Based Access Control (RBAC)	IAC-08	Mechanisms exist to enforce a Role-Based Access Control (RBAC) policy over users and resources that applies need-to-know and fine-grained access control for sensitive/regulated data access.	5	
			Functional	subset of	Network Security Controls (NSC)	NET-01	Mechanisms exist to develop, govern & update procedures to facilitate the implementation of Network Security Controls (NSC).	10	
			Functional	intersects with	Boundary Protection	NET-03	Mechanisms exist to monitor and control communications at the external network boundary and at key internal boundaries within the network.	5	
			Functional	intersects with	Remote Access	NET-14	Mechanisms exist to define, control and review organization-approved, secure remote access methods.	5	
			Functional	intersects with	Protection of Confidentiality / Integrity Using Encryption	NET-14.2	Cryptographic mechanisms exist to protect the confidentiality and integrity of remote access sessions (e.g., VPN).	5	
			Functional	intersects with	Work From Anywhere (WFA) - Telecommuting Security	NET-14.5	Mechanisms exist to define secure telecommuting practices and govern remote access to systems and data for remote workers.	5	
			Functional	subset of	Secure Engineering Principles	SEA-01	Mechanisms exist to facilitate the implementation of industry-recognized cybersecurity & data privacy practices in the specification, design, development, implementation and modification of systems and services.	10	
			Functional	intersects with	Alignment With Enterprise Architecture	SEA-02	Mechanisms exist to develop an enterprise architecture, aligned with industry-recognized leading practices, with consideration for cybersecurity & data privacy principles that addresses risk to organizational operations, assets, individuals, other organizations.	5	
3.1.12.b	Remote Access	Authorize each type of remote system access prior to establishing such connections.	Functional	intersects with	Remote Access	NET-14	Mechanisms exist to define, control and review organization-approved, secure remote access methods.	5	
			Functional	intersects with	Automated Monitoring & Control	NET-14.1	Automated mechanisms exist to monitor and control remote access sessions.	5	
			Functional	intersects with	Managed Access Control Points	NET-14.3	Mechanisms exist to route all remote accesses through managed network access control points (e.g., VPN concentrator).	5	
3.1.12.c	Remote Access	Route remote access to the system through authorized and managed access control points.	Functional	intersects with	Jump Server	AST-27	Mechanisms exist to conduct remote system administrative functions via a "jump box" or "jump server" that is located in a separate network zone to user workstations.	5	
			Functional	intersects with	Remote Access	NET-14	Mechanisms exist to define, control and review organization-approved, secure remote access methods.	5	
			Functional	intersects with	Managed Access Control Points	NET-14.3	Mechanisms exist to route all remote accesses through managed network access control points (e.g., VPN concentrator).	5	
			Functional	intersects with	Work From Anywhere (WFA) - Telecommuting Security	NET-14.5	Mechanisms exist to define secure telecommuting practices and govern remote access to systems and data for remote workers.	5	
3.1.12.d	Remote Access	Authorize remote execution of privileged commands and remote access to security-relevant information.	Functional	intersects with	Remote Maintenance	MNT-05	Mechanisms exist to authorize, monitor and control remote, non-local maintenance and diagnostic activities.	5	
			Functional	intersects with	Remote Access	NET-14	Mechanisms exist to define, control and review organization-approved, secure remote access methods.	5	
			Functional	intersects with	Remote Privileged Commands & Sensitive Data Access	NET-14.4	Mechanisms exist to restrict the execution of privileged commands and access to security-relevant information via remote access only for compelling operational needs.	5	
3.1.13	Withdrawn	Incorporated into 03.01.12.	Functional	no relationship	N/A	N/A	N/A	N/A	
3.1.14	Withdrawn	Incorporated into 03.01.12.	Functional	no relationship	N/A	N/A	N/A	N/A	
3.1.15	Withdrawn	Incorporated into 03.01.12.	Functional	no relationship	N/A	N/A	N/A	N/A	
3.1.16.a	Wireless Access	Establish usage restrictions, configuration requirements, and connection requirements for each type of wireless access to the system.	Functional	intersects with	System Hardening Through Baseline Configurations	CFG-02	Mechanisms exist to develop, document and maintain secure baseline configurations for technology platforms that are consistent with industry-accepted system hardening standards.	5	
			Functional	intersects with	Wireless Access Authentication & Encryption	CRY-07	Mechanisms exist to protect wireless access via secure authentication and encryption.	5	
			Functional	subset of	Network Security Controls (NSC)	NET-01	Mechanisms exist to develop, govern & update procedures to facilitate the implementation of Network Security Controls (NSC).	10	
			Functional	intersects with	Wireless Networking	NET-15	Mechanisms exist to control authorized wireless usage and monitor for unauthorized wireless access.	5	
			Functional	intersects with	Authentication & Encryption	NET-15.1	Mechanisms exist to protect wireless access through authentication and strong encryption.	5	
			Functional	intersects with	Restrict Configuration By Users	NET-15.3	Mechanisms exist to identify and explicitly authorize users who are allowed to independently configure wireless networking capabilities.	5	
			Functional	subset of	Secure Engineering Principles	SEA-01	Mechanisms exist to facilitate the implementation of industry-recognized cybersecurity & data privacy practices in the specification, design, development, implementation and modification of systems and services.	10	
			Functional	intersects with	Alignment With Enterprise Architecture	SEA-02	Mechanisms exist to develop an enterprise architecture, aligned with industry-recognized leading practices, with consideration for cybersecurity & data privacy principles that addresses risk to organizational operations, assets, individuals, other organizations.	5	
3.1.16.b	Wireless Access	Authorize each type of wireless access to the system prior to establishing such connections.	Functional	subset of	Network Security Controls (NSC)	NET-01	Mechanisms exist to develop, govern & update procedures to facilitate the implementation of Network Security Controls (NSC).	10	
			Functional	intersects with	Wireless Networking	NET-15	Mechanisms exist to control authorized wireless usage and monitor for unauthorized wireless access.	5	
			Functional	intersects with	Authentication & Encryption	NET-15.1	Mechanisms exist to protect wireless access through authentication and strong encryption.	5	
			Functional	subset of	Secure Engineering Principles	SEA-01	Mechanisms exist to facilitate the implementation of industry-recognized cybersecurity & data privacy practices in the specification, design, development, implementation and modification of systems and services.	10	
			Functional	intersects with	Disable Wireless Networking	NET-15.2	Mechanisms exist to disable unnecessary wireless networking capabilities that are internally embedded within system components prior to issuance to end users.	5	

FDE #	FDE Name	Focal Document Element (FDE) Description	STRM Rationale	STRM Relationship	SCF Control	SCF #	Secure Controls Framework (SCF) Control Description	Strength of Relationship (optional)	Notes (optional)
3.1.16.c	Wireless Access	Disable, when not intended for use, wireless networking capabilities prior to issuance and deployment.	Functional	intersects with	Restrict Configuration By Users	NET-15.3	Mechanisms exist to identify and explicitly authorize users who are allowed to independently configure wireless networking capabilities.	5	
			Functional	subset of	Secure Engineering Principles	SEA-01	Mechanisms exist to facilitate the implementation of industry-recognized cybersecurity & data privacy practices in the specification, design, development, implementation and modification of systems and services.	10	
3.1.17	Withdrawn	Incorporated into 03.01.16.	Functional	no relationship	N/A	N/A	N/A	N/A	
3.1.18.a	Access Control for Mobile Devices	Establish usage restrictions, configuration requirements, and connection requirements for mobile devices.	Functional	intersects with	Asset Governance	AST-01	Mechanisms exist to facilitate an IT Asset Management (ITAM) program to implement and manage asset management controls.	5	
			Functional	intersects with	Use of Personal Devices	AST-12	Mechanisms exist to restrict the possession and usage of personally-owned technology devices within organization-controlled facilities.	5	
			Functional	intersects with	Use of Third-Party Devices	AST-13	Mechanisms exist to reduce the risk associated with third-party assets that are attached to the network from harming organizational assets or exfiltrating organizational data.	5	
			Functional	intersects with	Usage Parameters	AST-14	Mechanisms exist to monitor and enforce usage parameters that limit the potential damage caused from the unauthorized or unintentional alteration of system parameters.	5	
			Functional	intersects with	Bring Your Own Device (BYOD) Usage	AST-16	Mechanisms exist to implement and govern a Bring Your Own Device (BYOD) program to reduce risk associated with personally-owned devices in the workplace.	5	mapping add in version 2024.1
			Functional	intersects with	System Hardening Through Baseline Configurations	CFG-02	Mechanisms exist to develop, document and maintain secure baseline configurations for technology platforms that are consistent with industry-accepted system hardening standards.	5	
			Functional	intersects with	Rules of Behavior	HRS-05.1	Mechanisms exist to define acceptable and unacceptable rules of behavior for the use of technologies, including consequences for unacceptable behavior.	5	mapping add in version 2024.1
			Functional	intersects with	Use of Communications Technology	HRS-05.3	Mechanisms exist to establish usage restrictions and implementation guidance for communications technologies based on the potential to cause damage to systems, if used maliciously.	5	mapping add in version 2024.1
			Functional	intersects with	Use of Mobile Devices	HRS-05.5	Mechanisms exist to manage business risks associated with permitting mobile device access to organizational resources.	5	mapping add in version 2024.1
			Functional	intersects with	Access Agreements	HRS-06	Mechanisms exist to require internal and third-party users to sign appropriate access agreements prior to being granted access.	5	mapping add in version 2024.1
			Functional	subset of	Centralized Management Of Mobile Devices	MDM-01	Mechanisms exist to develop, govern & update procedures to facilitate the implementation of mobile device management controls.	10	
			Functional	intersects with	Access Control For Mobile Devices	MDM-02	Mechanisms exist to enforce access control requirements for the connection of mobile devices to organizational systems.	5	
			Functional	intersects with	Personally-Owned Mobile Devices	MDM-06	Mechanisms exist to restrict the connection of personally-owned, mobile devices to organizational systems and networks.	5	
			Functional	intersects with	Organization-Owned Mobile Devices	MDM-07	Mechanisms exist to prohibit the installation of non-approved applications or approved applications not obtained through the organization-approved application store.	5	
			Functional	intersects with	Network Security Controls (NSC)	NET-01	Mechanisms exist to develop, govern & update procedures to facilitate the implementation of Network Security Controls (NSC).	5	
			Functional	intersects with	Secure Engineering Principles	SEA-01	Mechanisms exist to facilitate the implementation of industry-recognized cybersecurity & data privacy practices in the specification, design, development, implementation and modification of systems and services.	5	
			Functional	intersects with	Alignment With Enterprise Architecture	SEA-02	Mechanisms exist to develop an enterprise architecture, aligned with industry-recognized leading practices, with consideration for cybersecurity & data privacy principles that addresses risk to organizational operations, assets, individuals, other organizations.	5	
3.1.18.b	Access Control for Mobile Devices	Authorize the connection of mobile devices to the system.	Functional	intersects with	Use of Personal Devices	AST-12	Mechanisms exist to restrict the possession and usage of personally-owned technology devices within organization-controlled facilities.	5	
			Functional	intersects with	Use of Third-Party Devices	AST-13	Mechanisms exist to reduce the risk associated with third-party assets that are attached to the network from harming organizational assets or exfiltrating organizational data.	5	
			Functional	intersects with	Bring Your Own Device (BYOD) Usage	AST-16	Mechanisms exist to implement and govern a Bring Your Own Device (BYOD) program to reduce risk associated with personally-owned devices in the workplace.	5	
			Functional	subset of	Identity & Access Management (IAM)	IAC-01	Mechanisms exist to facilitate the implementation of identification and access management controls.	10	
			Functional	intersects with	Identification & Authentication for Devices	IAC-04	Mechanisms exist to uniquely identify and centrally Authenticate, Authorize and Audit (AAA) devices before establishing a connection using bidirectional authentication that is cryptographically- based and replay resistant.	5	
			Functional	intersects with	Identification & Authentication for Third Party Systems & Services	IAC-05	Mechanisms exist to identify and authenticate third-party systems and services.	5	
			Functional	intersects with	Access Control For Mobile Devices	MDM-02	Mechanisms exist to enforce access control requirements for the connection of mobile devices to organizational systems.	5	
			Functional	intersects with	Personally-Owned Mobile Devices	MDM-06	Mechanisms exist to restrict the connection of personally-owned, mobile devices to organizational systems and networks.	5	
			Functional	intersects with	Organization-Owned Mobile Devices	MDM-07	Mechanisms exist to prohibit the installation of non-approved applications or approved applications not obtained through the organization-approved application store.	5	
			Functional	intersects with	Restricting Access To Authorized Devices	MDM-11	Mechanisms exist to restrict the connectivity of unauthorized mobile devices from communicating with systems, applications and services.	5	
			Functional	subset of	Network Security Controls (NSC)	NET-01	Mechanisms exist to develop, govern & update procedures to facilitate the implementation of Network Security Controls (NSC).	10	
3.1.18.c	Access Control for Mobile Devices	Implement full-device or container-based encryption to protect the confidentiality of CUI on mobile devices.	Functional	intersects with	Use of Personal Devices	AST-12	Mechanisms exist to restrict the possession and usage of personally-owned technology devices within organization-controlled facilities.	5	
			Functional	intersects with	Use of Third-Party Devices	AST-13	Mechanisms exist to reduce the risk associated with third-party assets that are attached to the network from harming organizational assets or exfiltrating organizational data.	5	
			Functional	intersects with	Bring Your Own Device (BYOD) Usage	AST-16	Mechanisms exist to implement and govern a Bring Your Own Device (BYOD) program to reduce risk associated with personally-owned devices in the workplace.	5	
			Functional	intersects with	System Hardening Through Baseline Configurations	CFG-02	Mechanisms exist to develop, document and maintain secure baseline configurations for technology platforms that are consistent with industry-accepted system hardening standards.	5	
			Functional	intersects with	Full Device & Container-Based Encryption	MDM-03	Cryptographic mechanisms exist to protect the confidentiality and integrity of information on mobile devices through full-device or container encryption.	5	
			Functional	intersects with	Personally-Owned Mobile Devices	MDM-06	Mechanisms exist to restrict the connection of personally-owned, mobile devices to organizational systems and networks.	5	
			Functional	intersects with	Organization-Owned Mobile Devices	MDM-07	Mechanisms exist to prohibit the installation of non-approved applications or approved applications not obtained through the organization-approved application store.	5	
3.1.19	Withdrawn	Incorporated into 03.01.18.	Functional	no relationship	N/A	N/A	N/A	N/A	
3.1.20.a	Use of External Systems	Prohibit the use of external systems unless the systems are specifically authorized.	Functional	intersects with	Sensitive / Regulated Data Protection	DCH-01.2	Mechanisms exist to protect sensitive/regulated data wherever it is stored.	5	
			Functional	intersects with	Use of External Information Systems	DCH-13	Mechanisms exist to govern how external parties, systems and services are used to securely store, process and transmit data.	5	
			Functional	intersects with	Limits of Authorized Use	DCH-13.1	Mechanisms exist to prohibit external parties, systems and services from storing, processing and transmitting data unless authorized individuals first: • Verifying the implementation of required security controls; or • Retaining a processing agreement with the entity hosting the external systems or service.	5	
			Functional	intersects with	Portable Storage Devices	DCH-13.2	Mechanisms exist to restrict or prohibit the use of portable storage devices by users on external systems.	5	
			Functional	intersects with	Non-Organizationally Owned Systems / Components / Devices	DCH-13.4	Mechanisms exist to restrict the use of non-organizationally owned information systems, system components or devices to process, store or transmit organizational information.	5	
			Functional	intersects with	Ad-Hoc Transfers	DCH-17	Mechanisms exist to secure ad-hoc exchanges of large digital files with internal or external parties.	5	mapping add in version 2024.1
			Functional	subset of	Third-Party Management	TPM-01	Mechanisms exist to facilitate the implementation of third-party management controls.	10	
			Functional	intersects with	Sensitive / Regulated Data Protection	DCH-01.2	Mechanisms exist to protect sensitive/regulated data wherever it is stored.	5	
			Functional	intersects with	Use of External Information Systems	DCH-13	Mechanisms exist to govern how external parties, systems and services are used to securely store, process and transmit data.	5	

FDE #	FDE Name	Focal Document Element (FDE) Description	STRM Rationale	STRM Relationship	SCF Control	SCF #	Secure Controls Framework (SCF) Control Description	Strength of Relationship (optional)	Notes (optional)
3.1.20.b	Use of External Systems	Establish the following terms, conditions, and security requirements to be satisfied on external systems prior to allowing use of or access to those systems by authorized individuals: [Assignment: organization-defined terms, conditions, and requirements].	Functional	intersects with	Limits of Authorized Use	DCH-13.1	Mechanisms exist to prohibit external parties, systems and services from storing, processing and transmitting data unless authorized individuals first: • Verifying the implementation of required security controls; or • Retaining a processing agreement with the entity hosting the external systems or service.	5	
			Functional	intersects with	Protecting Sensitive Data on External Systems	DCH-13.3	Mechanisms exist to ensure that the requirements for the protection of sensitive information processed, stored or transmitted on external systems, are implemented in accordance with applicable statutory, regulatory and contractual obligations.	5	mapping add in version 2024.1
			Functional	intersects with	Transfer Authorizations	DCH-14.2	Mechanisms exist to verify that individuals or systems transferring data between interconnecting systems have the requisite authorizations (e.g., write permissions or privileges) prior to transferring said data.	5	mapping add in version 2024.1
			Functional	subset of	Third-Party Management	TPM-01	Mechanisms exist to facilitate the implementation of third-party management controls.	10	
3.1.20.c	Use of External Systems	Permit authorized individuals to use an external system to access the organizational system or to process, store, or transmit CUI only after:	Functional	intersects with	Use of External Information Systems	DCH-13	Mechanisms exist to govern how external parties, systems and services are used to securely store, process and transmit data.	5	
			Functional	intersects with	Limits of Authorized Use	DCH-13.1	Mechanisms exist to prohibit external parties, systems and services from storing, processing and transmitting data unless authorized individuals first: • Verifying the implementation of required security controls; or • Retaining a processing agreement with the entity hosting the external systems or service.	5	
3.1.20.c.1	Use of External Systems	Verification of the implementation of security requirements on the external system as specified in the organization's security plans; and	Functional	intersects with	Sensitive / Regulated Data Protection	DCH-01.2	Mechanisms exist to protect sensitive/regulated data wherever it is stored.	5	
			Functional	intersects with	Use of External Information Systems	DCH-13	Mechanisms exist to govern how external parties, systems and services are used to securely store, process and transmit data.	5	
			Functional	intersects with	Limits of Authorized Use	DCH-13.1	Mechanisms exist to prohibit external parties, systems and services from storing, processing and transmitting data unless authorized individuals first: • Verifying the implementation of required security controls; or • Retaining a processing agreement with the entity hosting the external systems or service.	5	
			Functional	intersects with	Portable Storage Devices	DCH-13.2	Mechanisms exist to restrict or prohibit the use of portable storage devices by users on external systems.	5	
			Functional	intersects with	Protecting Sensitive Data on External Systems	DCH-13.3	Mechanisms exist to ensure that the requirements for the protection of sensitive information processed, stored or transmitted on external systems, are implemented in accordance with applicable statutory, regulatory and contractual obligations.	5	mapping add in version 2024.1
			Functional	intersects with	Non-Organizationally Owned Systems / Components / Devices	DCH-13.4	Mechanisms exist to restrict the use of non-organizationally owned information systems, system components or devices to process, store or transmit organizational information.	5	
			Functional	subset of	Third-Party Management	TPM-01	Mechanisms exist to facilitate the implementation of third-party management controls.	10	
			Functional	intersects with	Third-Party Attestation	TPM-05.8	Mechanisms exist to obtain an attestation from a Third-Party Assessment Organization (3PAO) that provides assurance of compliance with specified statutory, regulatory and contractual obligations for cybersecurity & data privacy controls, including any flow-down requirements to subcontractors.	5	mapping add in version 2024.1
3.1.20.c.2	Use of External Systems	Retention of approved system connection or processing agreements with the organizational entity hosting the external system.	Functional	intersects with	Use of External Information Systems	DCH-13	Mechanisms exist to govern how external parties, systems and services are used to securely store, process and transmit data.	5	
			Functional	intersects with	Limits of Authorized Use	DCH-13.1	Mechanisms exist to prohibit external parties, systems and services from storing, processing and transmitting data unless authorized individuals first: • Verifying the implementation of required security controls; or • Retaining a processing agreement with the entity hosting the external systems or service.	5	
			Functional	intersects with	Data Access Mapping	DCH-14.3	Mechanisms exist to develop a data-specific Access Control List (ACL) or Data Information Sharing Agreement (DISA) to determine the parties with whom sensitive/regulated data is shared.	5	mapping add in version 2024.1
			Functional	intersects with	Media & Data Retention	DCH-18	Mechanisms exist to retain media and data in accordance with applicable statutory, regulatory and contractual obligations.	5	mapping add in version 2024.1
			Functional	subset of	Third-Party Contract Requirements	TPM-05	Mechanisms exist to require contractual requirements for cybersecurity & data privacy requirements with third-parties, reflecting the organization's needs to protect its systems, processes and data.	10	mapping add in version 2024.1
3.1.20.d	Use of External Systems	Restrict the use of organization-controlled portable storage devices by authorized individuals on external systems.	Functional	intersects with	Sensitive / Regulated Data Protection	DCH-01.2	Mechanisms exist to protect sensitive/regulated data wherever it is stored.	5	
			Functional	intersects with	Use of External Information Systems	DCH-13	Mechanisms exist to govern how external parties, systems and services are used to securely store, process and transmit data.	5	
			Functional	intersects with	Limits of Authorized Use	DCH-13.1	Mechanisms exist to prohibit external parties, systems and services from storing, processing and transmitting data unless authorized individuals first: • Verifying the implementation of required security controls; or • Retaining a processing agreement with the entity hosting the external systems or service.	5	
			Functional	intersects with	Portable Storage Devices	DCH-13.2	Mechanisms exist to restrict or prohibit the use of portable storage devices by users on external systems.	5	
			Functional	intersects with	Non-Organizationally Owned Systems / Components / Devices	DCH-13.4	Mechanisms exist to restrict the use of non-organizationally owned information systems, system components or devices to process, store or transmit organizational information.	5	
			Functional	subset of	Third-Party Management	TPM-01	Mechanisms exist to facilitate the implementation of third-party management controls.	10	
3.1.21	Withdrawn	Incorporated into 03.01.20.	Functional	no relationship	N/A	N/A	N/A	N/A	
3.1.22.a	Publicly Accessible Content	Train authorized individuals to ensure that publicly accessible information does not contain CUI.	Functional	intersects with	Disclosure of Information	DCH-03.1	Mechanisms exist to restrict the disclosure of sensitive / regulated data to authorized parties with a need to know.	5	
			Functional	intersects with	Publicly Accessible Content	DCH-15	Mechanisms exist to control publicly-accessible content.	5	
			Functional	intersects with	Roles & Responsibilities	HRS-03	Mechanisms exist to define cybersecurity responsibilities for all personnel.	5	mapping add in version 2024.1
			Functional	intersects with	User Awareness	HRS-03.1	Mechanisms exist to communicate with users about their roles and responsibilities to maintain a safe and secure working environment.	5	mapping add in version 2024.1
			Functional	intersects with	Roles With Special Protection Measures	HRS-04.1	Mechanisms exist to ensure that individuals accessing a system that stores, transmits or processes information requiring special protection satisfy organization-defined personnel screening criteria.	5	mapping add in version 2024.1
			Functional	intersects with	Formal Indoctrination	HRS-04.2	Mechanisms exist to verify that individuals accessing a system processing, storing, or transmitting sensitive information are formally indoctrinated for all the relevant types of information to which they have access on the system.	5	mapping add in version 2024.1
			Functional	intersects with	Terms of Employment	HRS-05	Mechanisms exist to require all employees and contractors to apply cybersecurity & data privacy principles in their daily work.	5	mapping add in version 2024.1
			Functional	intersects with	Rules of Behavior	HRS-05.1	Mechanisms exist to define acceptable and unacceptable rules of behavior for the use of technologies, including consequences for unacceptable behavior.	5	mapping add in version 2024.1
			Functional	intersects with	Cybersecurity & Data Privacy Awareness Training	SAT-02	Mechanisms exist to provide all employees and contractors appropriate awareness education and training that is relevant for their job function.	5	
			Functional	intersects with	Role-Based Cybersecurity & Data Privacy Training	SAT-03	Mechanisms exist to provide role-based cybersecurity & data privacy-related training: • Before authorizing access to the system or performing assigned duties; • When required by system changes; and • Annually thereafter.	5	
			Functional	intersects with	Sensitive Information Storage, Handling & Processing	SAT-03.3	Mechanisms exist to ensure that every user accessing a system processing, storing or transmitting sensitive information is formally trained in data handling requirements.	5	
3.1.22.b	Publicly Accessible Content	Review the content on publicly accessible systems for CUI periodically and remove such information, if discovered.	Functional	intersects with	Publicly Accessible Content	DCH-15	Mechanisms exist to control publicly-accessible content.	5	
			Functional	intersects with	Monitoring For Information Disclosure	MON-11	Mechanisms exist to monitor for evidence of unauthorized exfiltration or disclosure of non-public information.	5	
			Functional	intersects with	Monitoring for Third-Party Information Disclosure	TPM-07	Mechanisms exist to monitor for evidence of unauthorized exfiltration or disclosure of organizational information.	5	
			Functional	intersects with	Publicly Accessible Content Reviews	WEB-14	Mechanisms exist to routinely review the content on publicly accessible systems for sensitive/regulated data and remove such information, if discovered.	5	
			Functional	subset of	Cybersecurity & Data Privacy-Minded Workforce	SAT-01	Mechanisms exist to facilitate the implementation of security workforce development and awareness controls.	10	

FDE #	FDE Name	Focal Document Element (FDE) Description	STRM Rationale	STRM Relationship	SCF Control	SCF #	Secure Controls Framework (SCF) Control Description	Strength of Relationship (optional)	Notes (optional)
3.2.1.a	Literacy Training and Awareness	Provide security literacy training to system users:	Functional	equal	Cybersecurity & Data Privacy Awareness Training	SAT-02	Mechanisms exist to provide all employees and contractors appropriate awareness education and training that is relevant for their job function.	10	
			Functional	intersects with	Privileged Users	SAT-03.5	Mechanisms exist to provide specific training for privileged users to ensure privileged users understand their unique roles and responsibilities	5	mapping add in version 2024.1
3.2.1.a.1	Literacy Training and Awareness	As part of initial training for new users and periodically thereafter;	Functional	intersects with	Cybersecurity & Data Privacy Awareness Training	SAT-02	Mechanisms exist to provide all employees and contractors appropriate awareness education and training that is relevant for their job function.	5	
			Functional	intersects with	Role-Based Cybersecurity & Data Privacy Training	SAT-03	Mechanisms exist to provide role-based cybersecurity & data privacy-related training: ▪ Before authorizing access to the system or performing assigned duties; ▪ When required by system changes; and ▪ Annually thereafter.	5	
			Functional	intersects with	Sensitive Information Storage, Handling & Processing	SAT-03.3	Mechanisms exist to ensure that every user accessing a system processing, storing or transmitting sensitive information is formally trained in data handling requirements.	5	
			Functional	intersects with	Cyber Threat Environment	SAT-03.6	Mechanisms exist to provide role-based cybersecurity & data privacy awareness training that is specific to the cyber threats that the user might encounter the user's specific day-to-day business operations.	5	
3.2.1.a.2	Literacy Training and Awareness	When required by system changes or following [Assignment: organization-defined events]; and	Functional	intersects with	Cybersecurity & Data Privacy Awareness Training	SAT-02	Mechanisms exist to provide all employees and contractors appropriate awareness education and training that is relevant for their job function.	5	
			Functional	intersects with	Cyber Threat Environment	SAT-03.6	Mechanisms exist to provide role-based cybersecurity & data privacy awareness training that is specific to the cyber threats that the user might encounter the user's specific day-to-day business operations.	5	
3.2.1.a.3	Literacy Training and Awareness	On recognizing and reporting indicators of insider threat, social engineering, and social mining.	Functional	intersects with	Cybersecurity & Data Privacy Awareness Training	SAT-02	Mechanisms exist to provide all employees and contractors appropriate awareness education and training that is relevant for their job function.	5	
			Functional	intersects with	Social Engineering & Mining	SAT-02.2	Mechanisms exist to include awareness training on recognizing and reporting potential and actual instances of social engineering and social mining.	5	mapping add in version 2024.1
			Functional	intersects with	Cyber Threat Environment	SAT-03.6	Mechanisms exist to provide role-based cybersecurity & data privacy awareness training that is specific to the cyber threats that the user might encounter the user's specific day-to-day business operations.	5	
			Functional	intersects with	Insider Threat Awareness	THR-05	Mechanisms exist to utilize security awareness training on recognizing and reporting potential indicators of insider threat.	5	
3.2.1.b	Literacy Training and Awareness	Update security literacy training content periodically and following [Assignment: organization- defined events].	Functional	intersects with	Cybersecurity & Data Privacy Awareness Training	SAT-02	Mechanisms exist to provide all employees and contractors appropriate awareness education and training that is relevant for their job function.	5	
			Functional	intersects with	Cyber Threat Environment	SAT-03.6	Mechanisms exist to provide role-based cybersecurity & data privacy awareness training that is specific to the cyber threats that the user might encounter the user's specific day-to-day business operations.	5	
			Functional	intersects with	Threat Intelligence Feeds	THR-03	Mechanisms exist to maintain situational awareness of evolving threats by leveraging the knowledge of attacker tactics, techniques and procedures to facilitate the implementation of preventative and compensating controls.	5	
3.2.2.a	Role-Based Training	Provide role-based security training to organizational personnel:	Functional	intersects with	Role-Based Cybersecurity & Data Privacy Training	SAT-03	Mechanisms exist to provide role-based cybersecurity & data privacy-related training: ▪ Before authorizing access to the system or performing assigned duties; ▪ When required by system changes; and ▪ Annually thereafter.	5	
3.2.2.a.1	Role-Based Training	Before authorizing access to the system or CUI, before performing assigned duties, and periodically thereafter; and	Functional	intersects with	Role-Based Cybersecurity & Data Privacy Training	SAT-03	Mechanisms exist to provide role-based cybersecurity & data privacy-related training: ▪ Before authorizing access to the system or performing assigned duties; ▪ When required by system changes; and ▪ Annually thereafter.	5	
			Functional	intersects with	Sensitive Information Storage, Handling & Processing	SAT-03.3	Mechanisms exist to ensure that every user accessing a system processing, storing or transmitting sensitive information is formally trained in data handling requirements.	5	
			Functional	intersects with	Privileged Users	SAT-03.5	Mechanisms exist to provide specific training for privileged users to ensure privileged users understand their unique roles and responsibilities	5	mapping add in version 2024.1
			Functional	intersects with	Cyber Threat Environment	SAT-03.6	Mechanisms exist to provide role-based cybersecurity & data privacy awareness training that is specific to the cyber threats that the user might encounter the user's specific day-to-day business operations.	5	
3.2.2.a.2	Role-Based Training	When required by system changes or following [Assignment: organization-defined events].	Functional	intersects with	Role-Based Cybersecurity & Data Privacy Training	SAT-03	Mechanisms exist to provide role-based cybersecurity & data privacy-related training: ▪ Before authorizing access to the system or performing assigned duties; ▪ When required by system changes; and ▪ Annually thereafter.	5	
			Functional	intersects with	Sensitive Information Storage, Handling & Processing	SAT-03.3	Mechanisms exist to ensure that every user accessing a system processing, storing or transmitting sensitive information is formally trained in data handling requirements.	5	
			Functional	intersects with	Cyber Threat Environment	SAT-03.6	Mechanisms exist to provide role-based cybersecurity & data privacy awareness training that is specific to the cyber threats that the user might encounter the user's specific day-to-day business operations.	5	
3.2.2.b	Role-Based Training	Update role-based training content periodically and following [Assignment: organization-defined events].	Functional	intersects with	Role-Based Cybersecurity & Data Privacy Training	SAT-03	Mechanisms exist to provide role-based cybersecurity & data privacy-related training: ▪ Before authorizing access to the system or performing assigned duties; ▪ When required by system changes; and ▪ Annually thereafter.	5	
			Functional	intersects with	Sensitive Information Storage, Handling & Processing	SAT-03.3	Mechanisms exist to ensure that every user accessing a system processing, storing or transmitting sensitive information is formally trained in data handling requirements.	5	
			Functional	intersects with	Cyber Threat Environment	SAT-03.6	Mechanisms exist to provide role-based cybersecurity & data privacy awareness training that is specific to the cyber threats that the user might encounter the user's specific day-to-day business operations.	5	
			Functional	intersects with	Threat Intelligence Feeds	THR-03	Mechanisms exist to maintain situational awareness of evolving threats by leveraging the knowledge of attacker tactics, techniques and procedures to facilitate the implementation of preventative and compensating controls.	5	
3.2.3	Withdrawn	Incorporated into 03.02.01.	Functional	no relationship	N/A	N/A	N/A	N/A	
3.3.1.a	Event Logging	Specify the following event types selected for logging within the system: [Assignment: organization-defined event types].	Functional	subset of	Continuous Monitoring	MON-01	Mechanisms exist to facilitate the implementation of enterprise-wide monitoring controls.	10	
			Functional	intersects with	System Generated Alerts	MON-01.4	Mechanisms exist to monitor, correlate and respond to alerts from physical, cybersecurity, data privacy and supply chain activities to achieve integrated situational awareness.	5	
			Functional	intersects with	System-Wide / Time-Correlated Audit Trail	MON-02.7	Automated mechanisms exist to compile audit records into an organization-wide audit trail that is time-correlated.	5	
			Functional	intersects with	Content of Event Logs	MON-03	Mechanisms exist to configure systems to produce event logs that contain sufficient information to, at a minimum: ▪ Establish what type of event occurred; ▪ When (date and time) the event occurred; ▪ Where the event occurred; ▪ The source of the event; ▪ The outcome (success or failure) of the event; and ▪ The identity of any user/subject associated with the event.	5	
			Functional	intersects with	Audit Trails	MON-03.2	Mechanisms exist to link system access to individual users or service accounts.	5	
3.3.1.b	Event Logging	Review and update the event types selected for logging periodically.	Functional	subset of	Continuous Monitoring	MON-01	Mechanisms exist to facilitate the implementation of enterprise-wide monitoring controls.	10	
			Functional	intersects with	Central Review & Analysis	MON-02.2	Automated mechanisms exist to centrally collect, review and analyze audit records from multiple sources.	5	
3.3.2.a	Audit Record Content	Include the following content in audit records:	Functional	intersects with	Content of Event Logs	MON-03	Mechanisms exist to configure systems to produce event logs that contain sufficient information to, at a minimum: ▪ Establish what type of event occurred; ▪ When (date and time) the event occurred; ▪ Where the event occurred; ▪ The source of the event; ▪ The outcome (success or failure) of the event; and ▪ The identity of any user/subject associated with the event.	5	

FDE #	FDE Name	Focal Document Element (FDE) Description	STRM Rationale	STRM Relationship	SCF Control	SCF #	Secure Controls Framework (SCF) Control Description	Strength of Relationship (optional)	Notes (optional)
3.3.2.a.1	Audit Record Content	What type of event occurred;	Functional	intersects with	Content of Event Logs	MON-03	Mechanisms exist to configure systems to produce event logs that contain sufficient information to, at a minimum: • Establish what type of event occurred; • When (date and time) the event occurred; • Where the event occurred; • The source of the event; • The outcome (success or failure) of the event; and • The identity of any user/subject associated with the event.	5	
3.3.2.a.2	Audit Record Content	When the event occurred;	Functional	intersects with	Content of Event Logs	MON-03	Mechanisms exist to configure systems to produce event logs that contain sufficient information to, at a minimum: • Establish what type of event occurred; • When (date and time) the event occurred; • Where the event occurred; • The source of the event; • The outcome (success or failure) of the event; and • The identity of any user/subject associated with the event.	5	
			Functional	intersects with	Time Stamps	MON-07	Mechanisms exist to configure systems to use an authoritative time source to generate time stamps for event logs.	5	
3.3.2.a.3	Audit Record Content	Where the event occurred;	Functional	intersects with	Content of Event Logs	MON-03	Mechanisms exist to configure systems to produce event logs that contain sufficient information to, at a minimum: • Establish what type of event occurred; • When (date and time) the event occurred; • Where the event occurred; • The source of the event; • The outcome (success or failure) of the event; and • The identity of any user/subject associated with the event.	5	
3.3.2.a.4	Audit Record Content	Source of the event;	Functional	intersects with	Content of Event Logs	MON-03	Mechanisms exist to configure systems to produce event logs that contain sufficient information to, at a minimum: • Establish what type of event occurred; • When (date and time) the event occurred; • Where the event occurred; • The source of the event; • The outcome (success or failure) of the event; and • The identity of any user/subject associated with the event.	5	
3.3.2.a.5	Audit Record Content	Outcome of the event; and	Functional	intersects with	Content of Event Logs	MON-03	Mechanisms exist to configure systems to produce event logs that contain sufficient information to, at a minimum: • Establish what type of event occurred; • When (date and time) the event occurred; • Where the event occurred; • The source of the event; • The outcome (success or failure) of the event; and • The identity of any user/subject associated with the event.	5	
3.3.2.a.6	Audit Record Content	Identity of individuals, subjects, objects, or entities associated with the event.	Functional	intersects with	Content of Event Logs	MON-03	Mechanisms exist to configure systems to produce event logs that contain sufficient information to, at a minimum: • Establish what type of event occurred; • When (date and time) the event occurred; • Where the event occurred; • The source of the event; • The outcome (success or failure) of the event; and • The identity of any user/subject associated with the event.	5	
3.3.2.b	Audit Record Content	Provide additional information for audit records, as needed.	Functional	intersects with	Content of Event Logs	MON-03	Mechanisms exist to configure systems to produce event logs that contain sufficient information to, at a minimum: • Establish what type of event occurred; • When (date and time) the event occurred; • Where the event occurred; • The source of the event; • The outcome (success or failure) of the event; and • The identity of any user/subject associated with the event.	5	
3.3.3.a	Audit Record Generation	Generate audit records for the selected event types and audit record content specified in 03.03.01 and 03.03.02.	Functional	intersects with	Content of Event Logs	MON-03	Mechanisms exist to configure systems to produce event logs that contain sufficient information to, at a minimum: • Establish what type of event occurred; • When (date and time) the event occurred; • Where the event occurred; • The source of the event; • The outcome (success or failure) of the event; and • The identity of any user/subject associated with the event.	5	
			Functional	intersects with	Monitoring Reporting	MON-06	Mechanisms exist to provide an event log report generation capability to aid in detecting and assessing anomalous activities.	5	
3.3.3.b	Audit Record Generation	Retain audit records for a time period consistent with records retention policy.	Functional	intersects with	Protection of Event Logs	MON-08	Mechanisms exist to protect event logs and audit tools from unauthorized access, modification and deletion.	5	
			Functional	intersects with	Event Log Retention	MON-10	Mechanisms exist to retain event logs for a time period consistent with records retention requirements to provide support for after-the-fact investigations of security incidents and to meet statutory, regulatory and contractual retention requirements.	5	
3.3.4.a	Response to Audit Logging Process Failures	Alert organizational personnel or roles within [Assignment: organization-defined time period] in the event of an audit logging process failure.	Functional	intersects with	Incident Handling	IRO-02	Mechanisms exist to cover the preparation, automated detection or intake of incident reporting, analysis, containment, eradication and recovery.	5	
			Functional	intersects with	Automated Alerts	MON-01.12	Mechanisms exist to automatically alert incident response personnel to inappropriate or anomalous activities that have potential security incident implications.	5	
			Functional	intersects with	Response To Event Log Processing Failures	MON-05	Mechanisms exist to alert appropriate personnel in the event of a log processing failure and take actions to remedy the disruption.	5	
3.3.4.b	Response to Audit Logging Process Failures	Take the following additional actions: [Assignment: organization-defined additional actions].	Functional	intersects with	Incident Handling	IRO-02	Mechanisms exist to cover the preparation, automated detection or intake of incident reporting, analysis, containment, eradication and recovery.	5	
			Functional	intersects with	Response To Event Log Processing Failures	MON-05	Mechanisms exist to alert appropriate personnel in the event of a log processing failure and take actions to remedy the disruption.	5	
3.3.5.a	Audit Record Review, Analysis, and Reporting	Review and analyze system audit records periodically for indications and potential impact of inappropriate or unusual activity.	Functional	intersects with	Centralized Collection of Security Event Logs	MON-02	Mechanisms exist to utilize a Security Incident Event Manager (SIEM) or similar automated tool, to support the centralized collection of security-related event logs.	5	
			Functional	intersects with	Central Review & Analysis	MON-02.2	Automated mechanisms exist to centrally collect, review and analyze audit records from multiple sources.	5	
			Functional	intersects with	Anomalous Behavior	MON-16	Mechanisms exist to detect and respond to anomalous behavior that could indicate account compromise or other malicious activities.	5	
3.3.5.b	Audit Record Review, Analysis, and Reporting	Report findings to organizational personnel or roles.	Functional	intersects with	Incident Handling	IRO-02	Mechanisms exist to cover the preparation, automated detection or intake of incident reporting, analysis, containment, eradication and recovery.	5	
			Functional	intersects with	Central Review & Analysis	MON-02.2	Automated mechanisms exist to centrally collect, review and analyze audit records from multiple sources.	5	
			Functional	intersects with	Monitoring Reporting	MON-06	Mechanisms exist to provide an event log report generation capability to aid in detecting and assessing anomalous activities.	5	
3.3.5.c	Audit Record Review, Analysis, and Reporting	Analyze and correlate audit records across different repositories to gain organization-wide situational awareness.	Functional	intersects with	Correlate Monitoring Information	MON-02.1	Automated mechanisms exist to correlate both technical and non-technical information from across the enterprise by a Security Incident Event Manager (SIEM) or similar automated tool, to enhance organization-wide situational awareness.	5	
			Functional	intersects with	Central Review & Analysis	MON-02.2	Automated mechanisms exist to centrally collect, review and analyze audit records from multiple sources.	5	
			Functional	intersects with	Integration of Scanning & Other Monitoring Information	MON-02.3	Automated mechanisms exist to integrate the analysis of audit records with analysis of vulnerability scanners, network performance, system monitoring and other sources to further enhance the ability to identify inappropriate or unusual activity.	5	
3.3.6.a	Audit Record Reduction and Report Generation	Implement an audit record reduction and report generation capability that supports audit record review, analysis, reporting requirements, and after-the-fact investigations of incidents.	Functional	intersects with	Monitoring Reporting	MON-06	Mechanisms exist to provide an event log report generation capability to aid in detecting and assessing anomalous activities.	5	
3.3.6.b	Audit Record Reduction and Report Generation	Preserve the original content and time ordering of audit records.	Functional	equal	Protection of Event Logs	MON-08	Mechanisms exist to protect event logs and audit tools from unauthorized access, modification and deletion.	10	
3.3.7.a	Time Stamps	Use internal system clocks to generate time stamps for audit records.	Functional	subset of	Time Stamps	MON-07	Mechanisms exist to configure systems to use an authoritative time source to generate time stamps for event logs.	10	
			Functional	equal	Synchronization With Authoritative Time Source	MON-07.1	Mechanisms exist to synchronize internal system clocks with an authoritative time source.	10	
3.3.7.b	Time Stamps	Record time stamps for audit records that meet [Assignment: organization-defined granularity of time measurement] and that:	Functional	subset of	Time Stamps	MON-07	Mechanisms exist to configure systems to use an authoritative time source to generate time stamps for event logs.	10	
3.3.7.b.1	Time Stamps	Use Coordinated Universal Time (UTC);	Functional	intersects with	Time Stamps	MON-07	Mechanisms exist to configure systems to use an authoritative time source to generate time stamps for event logs.	5	

FDE #	FDE Name	Focal Document Element (FDE) Description	STRM Rationale	STRM Relationship	SCF Control	SCF #	Secure Controls Framework (SCF) Control Description	Strength of Relationship (optional)	Notes (optional)
3.3.7.b.2	Time Stamps	Have a fixed local time offset from UTC; or	Functional	intersects with	Time Stamps	MON-07	Mechanisms exist to configure systems to use an authoritative time source to generate time stamps for event logs.	5	
3.3.7.b.3	Time Stamps	Include the local time offset as part of the time stamp.	Functional	intersects with	Time Stamps	MON-07	Mechanisms exist to configure systems to use an authoritative time source to generate time stamps for event logs.	5	
3.3.8.a	Protection of Audit Information	Protect audit information and audit logging tools from unauthorized access, modification, and deletion.	Functional	intersects with	Protection of Event Logs	MON-08	Mechanisms exist to protect event logs and audit tools from unauthorized access, modification and deletion.	5	
			Functional	intersects with	Event Log Backup on Separate Physical Systems / Components	MON-08.1	Mechanisms exist to back up event logs onto a physically different system or system component than the Security Incident Event Manager (SIEM) or similar automated tool.	5	
			Functional	intersects with	Access by Subset of Privileged Users	MON-08.2	Mechanisms exist to restrict access to the management of event logs to privileged users with a specific business need.	5	
			Functional	intersects with	Cryptographic Protection of Event Log Information	MON-08.3	Cryptographic mechanisms exist to protect the integrity of event logs and audit tools.	5	
3.3.8.b	Protection of Audit Information	Authorize access to management of audit logging functionality to only a subset of privileged users or roles.	Functional	intersects with	Access by Subset of Privileged Users	MON-08.2	Mechanisms exist to restrict access to the management of event logs to privileged users with a specific business need.	5	
3.3.9	Withdrawn	Incorporated into 03.03.08.	Functional	no relationship	N/A	N/A	N/A	N/A	
3.4.1.a	Baseline Configuration	Develop and maintain under configuration control, a current baseline configuration of the system.	Functional	subset of	Configuration Management Program	CFG-01	Mechanisms exist to facilitate the implementation of configuration management controls.	10	
			Functional	intersects with	System Hardening Through Baseline Configurations	CFG-02	Mechanisms exist to develop, document and maintain secure baseline configurations for technology platforms that are consistent with industry-accepted system hardening standards.	5	
			Functional	intersects with	Configure Systems, Components or Services for High-Risk Areas	CFG-02.5	Mechanisms exist to configure systems utilized in high-risk areas with more restrictive baseline configurations.	5	
3.4.1.b	Baseline Configuration	Review and update the baseline configuration of the system periodically and when system components are installed or modified.	Functional	intersects with	Reviews & Updates	CFG-02.1	Mechanisms exist to review and update baseline configurations: • At least annually; • When required due to so; or • As part of system component installations and upgrades.	5	
3.4.2.a	Configuration Settings	Establish, document, and implement the following configuration settings for the system that reflect the most restrictive mode consistent with operational requirements: [Assignment: organization-defined configuration settings].	Functional	intersects with	System Hardening Through Baseline Configurations	CFG-02	Mechanisms exist to develop, document and maintain secure baseline configurations for technology platforms that are consistent with industry-accepted system hardening standards.	5	
			Functional	intersects with	Least Functionality	CFG-03	Mechanisms exist to configure systems to provide only essential capabilities by specifically prohibiting or restricting the use of ports, protocols, and/or services.	5	
			Functional	intersects with	Configuration Enforcement	CFG-06	Automated mechanisms exist to monitor, enforce and report on configurations for endpoint devices.	5	
3.4.2.b	Configuration Settings	Identify, document, and approve any deviations from established configuration settings.	Functional	intersects with	Approved Baseline Deviations	AST-02.4	Mechanisms exist to document and govern instances of approved deviations from established baseline configurations.	5	
			Functional	intersects with	Reviews & Updates	CFG-02.1	Mechanisms exist to review and update baseline configurations: • At least annually; • When required due to so; or • As part of system component installations and upgrades.	5	mapping add in version 2024.1
			Functional	intersects with	Automated Central Management & Verification	CFG-02.2	Automated mechanisms exist to govern and report on baseline configurations of systems through Continuous Diagnostics and Mitigation (CDM), or similar technologies.	5	mapping add in version 2024.1
			Functional	intersects with	Approved Configuration Deviations	CFG-02.7	Mechanisms exist to document, assess risk and approve or deny deviations to standardized configurations.	5	
			Functional	intersects with	Baseline Tailoring	CFG-02.9	Mechanisms exist to allow baseline controls to be specialized or customized by applying a defined set of tailoring actions that are specific to: • Mission / business functions; • Operational environment; • Specific threats or vulnerabilities; or • Other conditions or situations that could affect mission / business success.	5	mapping add in version 2024.1
			Functional	subset of	Change Management Program	CHG-01	Mechanisms exist to facilitate the implementation of a change management program.	10	
			Functional	intersects with	Configuration Change Control	CHG-02	Mechanisms exist to govern the technical configuration change control processes.	5	
			Functional	intersects with	Prohibition Of Changes	CHG-02.1	Mechanisms exist to prohibit unauthorized changes, unless organization-approved change requests are received.	5	
			Functional	intersects with	Access Restriction For Change	CHG-04	Mechanisms exist to enforce configuration restrictions in an effort to restrict the ability of users to conduct unauthorized changes.	5	
3.4.3.a	Configuration Change Control	Define the types of changes to the system that are configuration-controlled.	Functional	intersects with	Configuration Enforcement	CFG-06	Automated mechanisms exist to monitor, enforce and report on configurations for endpoint devices.	5	
			Functional	subset of	Change Management Program	CHG-01	Mechanisms exist to facilitate the implementation of a change management program.	10	
			Functional	intersects with	Configuration Change Control	CHG-02	Mechanisms exist to govern the technical configuration change control processes.	5	
			Functional	intersects with	Prohibition Of Changes	CHG-02.1	Mechanisms exist to prohibit unauthorized changes, unless organization-approved change requests are received.	5	mapping add in version 2024.1
			Functional	intersects with	Automated Central Management & Verification	CFG-02.2	Automated mechanisms exist to govern and report on baseline configurations of systems through Continuous Diagnostics and Mitigation (CDM), or similar technologies.	5	mapping add in version 2024.1
3.4.3.b	Configuration Change Control	Review proposed configuration-controlled changes to the system and approve or disapprove such changes with explicit consideration for security impacts.	Functional	intersects with	Configuration Enforcement	CFG-06	Automated mechanisms exist to monitor, enforce and report on configurations for endpoint devices.	5	
			Functional	subset of	Change Management Program	CHG-01	Mechanisms exist to facilitate the implementation of a change management program.	10	
			Functional	intersects with	Configuration Change Control	CHG-02	Mechanisms exist to govern the technical configuration change control processes.	5	
			Functional	intersects with	Test, Validate & Document Changes	CHG-02.2	Mechanisms exist to appropriately test and document proposed changes in a non-production environment before changes are implemented in a production environment.	5	mapping add in version 2024.1
			Functional	intersects with	Security Impact Analysis for Changes	CHG-03	Mechanisms exist to analyze proposed changes for potential security impacts, prior to the implementation of the change.	5	mapping add in version 2024.1
3.4.3.c	Configuration Change Control	Implement and document approved configuration-controlled changes to the system.	Functional	intersects with	Test, Validate & Document Changes	CHG-02.2	Mechanisms exist to appropriately test and document proposed changes in a non-production environment before changes are implemented in a production environment.	5	mapping add in version 2024.1
			Functional	intersects with	Configuration Enforcement	CFG-06	Automated mechanisms exist to monitor, enforce and report on configurations for endpoint devices.	5	
			Functional	subset of	Change Management Program	CHG-01	Mechanisms exist to facilitate the implementation of a change management program.	10	
			Functional	intersects with	Configuration Change Control	CHG-02	Mechanisms exist to govern the technical configuration change control processes.	5	
3.4.3.d	Configuration Change Control	Monitor and review activities associated with configuration-controlled changes to the system.	Functional	intersects with	Configuration Enforcement	CFG-06	Automated mechanisms exist to monitor, enforce and report on configurations for endpoint devices.	5	
			Functional	subset of	Change Management Program	CHG-01	Mechanisms exist to facilitate the implementation of a change management program.	10	
			Functional	intersects with	Configuration Change Control	CHG-02	Mechanisms exist to govern the technical configuration change control processes.	5	
			Functional	intersects with	Automated Central Management & Verification	CFG-02.2	Automated mechanisms exist to govern and report on baseline configurations of systems through Continuous Diagnostics and Mitigation (CDM), or similar technologies.	5	mapping add in version 2024.1
3.4.4	Impact Analyses	Analyze the security impact of changes to the system prior to implementation.	Functional	intersects with	Cybersecurity & Data Privacy Representative for Asset Lifecycle Changes	CHG-02.3	Mechanisms exist to include a cybersecurity and/or data privacy representative in the configuration change control review process.	5	
			Functional	intersects with	Security Impact Analysis for Changes	CHG-03	Mechanisms exist to analyze proposed changes for potential security impacts, prior to the implementation of the change.	5	
3.4.5	Access Restrictions for Change	Define, document, approve, and enforce physical and logical access restrictions associated with changes to the system.	Functional	intersects with	Access Restriction For Change	CHG-04	Mechanisms exist to enforce configuration restrictions in an effort to restrict the ability of users to conduct unauthorized changes.	5	
			Functional	intersects with	Limit Production / Operational Privileges (Incompatible Roles)	CHG-04.4	Mechanisms exist to limit operational privileges for implementing changes.	5	
			Functional	intersects with	Role-Based Access Control (RBAC)	IAC-08	Mechanisms exist to enforce a Role-Based Access Control (RBAC) policy over users and resources that applies need-to-know and fine-grained access control for sensitive/regulated data access.	5	
			Functional	intersects with	Least Privilege	IAC-21	Mechanisms exist to utilize the concept of least privilege, allowing only authorized access to processes necessary to accomplish assigned tasks in accordance with organizational business functions.	5	
3.4.6.a	Least Functionality	Configure the system to provide only mission-essential capabilities.	Functional	subset of	System Hardening Through Baseline Configurations	CFG-02	Mechanisms exist to develop, document and maintain secure baseline configurations for technology platforms that are consistent with industry-accepted system hardening standards.	10	
			Functional	subset of	Configure Systems, Components or Services for High-Risk Areas	CFG-02.5	Mechanisms exist to configure systems utilized in high-risk areas with more restrictive baseline configurations.	10	mapping add in version 2024.1
			Functional	equal	Least Functionality	CFG-03	Mechanisms exist to configure systems to provide only essential capabilities by specifically prohibiting or restricting the use of ports, protocols, and/or services.	10	

FDE #	FDE Name	Focal Document Element (FDE) Description	STRM Rationale	STRM Relationship	SCF Control	SCF #	Secure Controls Framework (SCF) Control Description	Strength of Relationship (optional)	Notes (optional)
3.4.6.b	Least Functionality	Prohibit or restrict use of the following functions, ports, protocols, connections, and services: [Assignment: organization-defined functions, ports, protocols, connections, and services].	Functional	subset of	System Hardening Through Baseline Configurations	CFG-02	Mechanisms exist to develop, document and maintain secure baseline configurations for technology platforms that are consistent with industry-accepted system hardening standards.	10	
			Functional	subset of	Configure Systems, Components or Services for High-Risk Areas	CFG-02.5	Mechanisms exist to configure systems utilized in high-risk areas with more restrictive baseline configurations.	10	mapping add in version 2024.1
			Functional	equal	Least Functionality	CFG-03	Mechanisms exist to configure systems to provide only essential capabilities by specifically prohibiting or restricting the use of ports, protocols, and/or services.	10	
3.4.6.c	Least Functionality	Review the system periodically to identify unnecessary or nonsecure functions, ports, protocols, connections, and services.	Functional	equal	Periodic Review	CFG-03.1	Mechanisms exist to periodically review system configurations to identify and disable unnecessary and/or non-secure functions, ports, protocols and services.	10	
3.4.6.d	Least Functionality	Disable or remove functions, ports, protocols, connections, and services that are unnecessary or nonsecure.	Functional	subset of	System Hardening Through Baseline Configurations	CFG-02	Mechanisms exist to develop, document and maintain secure baseline configurations for technology platforms that are consistent with industry-accepted system hardening standards.	10	
			Functional	equal	Least Functionality	CFG-03	Mechanisms exist to configure systems to provide only essential capabilities by specifically prohibiting or restricting the use of ports, protocols, and/or services.	10	
3.4.7	Withdrawn	Incorporated into 03.04.06.	Functional	no relationship	N/A	N/A	N/A	N/A	
3.4.8.a	Authorized Software – Allow by Exception	Identify software programs authorized to execute on the system.	Functional	subset of	Asset Inventories	AST-02	Mechanisms exist to perform inventories of technology assets that: • Accurately reflects the current systems, applications and services in use; • Identifies authorized software products, including business justification details; • Is at the level of granularity deemed necessary for tracking and reporting; • Includes organization-defined information deemed necessary to achieve effective property accountability; and • Is available for review and audit by designated organizational personnel.	10	
			Functional	intersects with	Configuration Management Database (CMDB)	AST-02.9	Mechanisms exist to implement and manage a Configuration Management Database (CMDB), or similar technology, to monitor and govern technology asset-specific information.	5	
			Functional	intersects with	Unauthorized or Authorized Software (Blacklisting or Whitelisting)	CFG-03.3	Mechanisms exist to whitelist or blacklist applications in an order to limit what is authorized to execute on systems.	5	
3.4.8.b	Authorized Software – Allow by Exception	Implement a deny-all, allow-by-exception policy for the execution of software programs on the system.	Functional	intersects with	Prevent Unauthorized Software Execution	CFG-03.2	Mechanisms exist to configure systems to prevent the execution of unauthorized software programs.	5	
			Functional	intersects with	Unauthorized or Authorized Software (Blacklisting or Whitelisting)	CFG-03.3	Mechanisms exist to whitelist or blacklist applications in an order to limit what is authorized to execute on systems.	5	
3.4.8.c	Authorized Software – Allow by Exception	Review and update the list of authorized software programs periodically.	Functional	intersects with	Asset Inventories	AST-02	Mechanisms exist to perform inventories of technology assets that: • Accurately reflects the current systems, applications and services in use; • Identifies authorized software products, including business justification details; • Is at the level of granularity deemed necessary for tracking and reporting; • Includes organization-defined information deemed necessary to achieve effective property accountability; and • Is available for review and audit by designated organizational personnel.	5	
3.4.9	Withdrawn	Addressed by 03.01.05, 03.01.06, 03.01.07, and 03.04.08.	Functional	no relationship	N/A	N/A	N/A	N/A	
3.4.10.a	System Component Inventory	Develop and document an inventory of system components.	Functional	intersects with	Asset Inventories	AST-02	Mechanisms exist to perform inventories of technology assets that: • Accurately reflects the current systems, applications and services in use; • Identifies authorized software products, including business justification details; • Is at the level of granularity deemed necessary for tracking and reporting; • Includes organization-defined information deemed necessary to achieve effective property accountability; and • Is available for review and audit by designated organizational personnel.	5	
			Functional	intersects with	Updates During Installations / Removals	AST-02.1	Mechanisms exist to update asset inventories as part of component installations, removals and asset upgrades.	5	mapping add in version 2024.1
			Functional	intersects with	Configuration Management Database (CMDB)	AST-02.9	Mechanisms exist to implement and manage a Configuration Management Database (CMDB), or similar technology, to monitor and govern technology asset-specific information.	5	
3.4.10.b	System Component Inventory	Review and update the system component inventory periodically.	Functional	intersects with	Asset Inventories	AST-02	Mechanisms exist to perform inventories of technology assets that: • Accurately reflects the current systems, applications and services in use; • Identifies authorized software products, including business justification details; • Is at the level of granularity deemed necessary for tracking and reporting; • Includes organization-defined information deemed necessary to achieve effective property accountability; and • Is available for review and audit by designated organizational personnel.	5	
			Functional	intersects with	Updates During Installations / Removals	AST-02.1	Mechanisms exist to update asset inventories as part of component installations, removals and asset upgrades.	5	mapping add in version 2024.1
			Functional	intersects with	Configuration Management Database (CMDB)	AST-02.9	Mechanisms exist to implement and manage a Configuration Management Database (CMDB), or similar technology, to monitor and govern technology asset-specific information.	5	
3.4.10.c	System Component Inventory	Update the system component inventory as part of installations, removals, and system updates.	Functional	intersects with	Updates During Installations / Removals	AST-02.1	Mechanisms exist to update asset inventories as part of component installations, removals and asset upgrades.	5	
			Functional	intersects with	Configuration Management Database (CMDB)	AST-02.9	Mechanisms exist to implement and manage a Configuration Management Database (CMDB), or similar technology, to monitor and govern technology asset-specific information.	5	
3.4.11.a	Information Location	Identify and document the location of CUI and the system components on which the information is processed and stored.	Functional	intersects with	Data Action Mapping	AST-02.8	Mechanisms exist to create and maintain a map of technology assets where sensitive/regulated data is stored, transmitted or processed.	5	
			Functional	intersects with	Network Diagrams & Data Flow Diagrams (DFDs)	AST-04	Mechanisms exist to maintain network architecture diagrams that: • Contain sufficient detail to assess the security of the network's architecture; • Reflect the current architecture of the network environment; and • Document all sensitive/regulated data flows.	5	
			Functional	intersects with	Asset Scope Classification	AST-04.1	Mechanisms exist to determine cybersecurity & data privacy control applicability by identifying, assigning and documenting the appropriate asset scope categorization for all systems, applications, services and personnel (internal and third-parties).	5	
			Functional	intersects with	Control Applicability Boundary Graphical Representation	AST-04.2	Mechanisms exist to ensure control applicability is appropriately-determined for systems, applications, services and third parties by graphically representing applicable boundaries.	5	
			Functional	subset of	Statutory, Regulatory & Contractual Compliance	CPL-01	Mechanisms exist to facilitate the identification and implementation of relevant statutory, regulatory and contractual controls.	10	mapping add in version 2024.1
			Functional	intersects with	Compliance Scope	CPL-01.2	Mechanisms exist to document and validate the scope of cybersecurity & data privacy controls that are determined to meet statutory, regulatory and/or contractual compliance obligations.	5	mapping add in version 2024.1
			Functional	intersects with	Sensitive Data Inventories	DCH-06.2	Mechanisms exist to maintain inventory logs of all sensitive media and conduct sensitive media inventories at least annually.	5	
			Functional	intersects with	Geographic Location of Data	DCH-19	Mechanisms exist to inventory, document and maintain data flows for data that is resident (permanently or temporarily) within a service's geographically distributed applications (physical and virtual), infrastructure, systems components and/or shared with other third-parties.	5	
3.4.11.b	Information Location	Identify and document the users who have access to the system and system components where CUI is processed and stored.	Functional	intersects with	Sensitive Data Inventories	DCH-06.2	Mechanisms exist to maintain inventory logs of all sensitive media and conduct sensitive media inventories at least annually.	5	
			Functional	intersects with	Custodians	DCH-07.1	Mechanisms exist to identify custodians throughout the transport of digital or non-digital media.	5	

FDE #	FDE Name	Focal Document Element (FDE) Description	STRM Rationale	STRM Relationship	SCF Control	SCF #	Secure Controls Framework (SCF) Control Description	Strength of Relationship (optional)	Notes (optional)
3.4.11.c	Information Location	Document changes to the location (i.e., system or system components) where CUI is processed and stored.	Functional	intersects with	Data Action Mapping	AST-02.8	Mechanisms exist to create and maintain a map of technology assets where sensitive/regulated data is stored, transmitted or processed.	5	
			Functional	intersects with	Network Diagrams & Data Flow Diagrams (DFDs)	AST-04	Mechanisms exist to maintain network architecture diagrams that: ▪ Contain sufficient detail to assess the security of the network's architecture; ▪ Reflect the current architecture of the network environment; and ▪ Document all sensitive/regulated data flows.	5	
			Functional	intersects with	Asset Scope Classification	AST-04.1	Mechanisms exist to determine cybersecurity & data privacy control applicability by identifying, assigning and documenting the appropriate asset scope categorization for all systems, applications, services and personnel (internal and third-parties).	5	
			Functional	intersects with	Control Applicability Boundary Graphical Representation	AST-04.2	Mechanisms exist to ensure control applicability is appropriately-determined for systems, applications, services and third parties by graphically representing applicable boundaries.	5	
			Functional	intersects with	Test, Validate & Document Changes	CHG-02.2	Mechanisms exist to appropriately test and document proposed changes in a non-production environment before changes are implemented in a production environment.	5	mapping add in version 2024.1
			Functional	intersects with	Sensitive Data Inventories	DCH-06.2	Mechanisms exist to maintain inventory logs of all sensitive media and conduct sensitive media inventories at least annually.	5	
			Functional	intersects with	Geographic Location of Data	DCH-19	Mechanisms exist to inventory, document and maintain data flows for data that is resident (permanently or temporarily) within a service's geographically distributed applications (physical and virtual), infrastructure, systems components and/or shared with other third-parties.	5	
			Functional	intersects with	System Security & Privacy Plan (SSPP)	IAO-03	Mechanisms exist to generate System Security & Privacy Plans (SSPPs), or similar document repositories, to identify and maintain key architectural information on each critical system, application or service, as well as influence inputs, entities, systems, applications and processes, providing a historical record of the data and its origins.	5	mapping add in version 2024.1
3.4.12.a	System and Component Configuration for High-Risk Areas	Issue systems or system components with the following configurations to individuals traveling to high-risk locations: [Assignment: organization-defined system configurations].	Functional	intersects with	Travel-Only Devices	AST-24	Mechanisms exist to issue personnel travelling overseas with temporary, loaner or "travel-only" end user technology (e.g., laptops and mobile devices) when travelling to authoritarian countries with a higher-than average risk for Intellectual Property (IP) theft or espionage against individuals and private companies.	5	
			Functional	intersects with	Configure Systems, Components or Services for High-Risk Areas	CFG-02.5	Mechanisms exist to configure systems utilized in high-risk areas with more restrictive baseline configurations.	5	
3.4.12.b	System and Component Configuration for High-Risk Areas	Apply the following security requirements to the system or system components when the individuals return from travel: [Assignment: organization-defined security requirements].	Functional	intersects with	Travel-Only Devices	AST-24	Mechanisms exist to issue personnel travelling overseas with temporary, loaner or "travel-only" end user technology (e.g., laptops and mobile devices) when travelling to authoritarian countries with a higher-than average risk for Intellectual Property (IP) theft or espionage against individuals and private companies.	5	
			Functional	intersects with	Re-Imaging Devices After Travel	AST-25	Mechanisms exist to re-image end user technology (e.g., laptops and mobile devices) when returning from overseas travel to an authoritarian country with a higher-than average risk for Intellectual Property (IP) theft or espionage against individuals and private companies.	5	
			Functional	intersects with	Configure Systems, Components or Services for High-Risk Areas	CFG-02.5	Mechanisms exist to configure systems utilized in high-risk areas with more restrictive baseline configurations.	5	
3.5.1.a	User Identification, Authentication, and Re-Authentication	Uniquely identify and authenticate system users and associate that unique identification with processes acting on behalf of those users.	Functional	subset of	Identity & Access Management (IAM)	IAC-01	Mechanisms exist to facilitate the implementation of identification and access management controls.	10	
			Functional	intersects with	Identification & Authentication for Organizational Users	IAC-02	Mechanisms exist to uniquely identify and centrally Authenticate, Authorize and Audit (AAA) organizational users and processes acting on behalf of organizational users.	5	
			Functional	intersects with	Identification & Authentication for Non-Organizational Users	IAC-03	Mechanisms exist to uniquely identify and centrally Authenticate, Authorize and Audit (AAA) third-party users and processes that provide services to the organization.	5	
			Functional	intersects with	Identification & Authentication for Third Party Systems & Services	IAC-05	Mechanisms exist to identify and authenticate third-party systems and services.	5	
3.5.1.b	User Identification, Authentication, and Re-Authentication	Re-authenticate users when [Assignment: organization-defined circumstances or situations requiring re-authentication].	Functional	subset of	Identity & Access Management (IAM)	IAC-01	Mechanisms exist to facilitate the implementation of identification and access management controls.	10	
			Functional	intersects with	Continuous Authentication	IAC-13.3	Automated mechanisms exist to enable continuous re-authentication through the lifecycle of entity interactions.	5	mapping add in version 2024.1
			Functional	intersects with	Re-Authentication	IAC-14	Mechanisms exist to force users and devices to re-authenticate according to organization-defined circumstances that necessitate re-authentication.	5	
3.5.2	Device Identification and Authentication	Uniquely identify and authenticate devices before establishing a system connection.	Functional	intersects with	Identification & Authentication for Devices	IAC-04	Mechanisms exist to uniquely identify and centrally Authenticate, Authorize and Audit (AAA) devices before establishing a connection using bidirectional authentication that is cryptographically- based and replay resistant.	5	
			Functional	intersects with	Identification & Authentication for Third Party Systems & Services	IAC-05	Mechanisms exist to identify and authenticate third-party systems and services.	5	
3.5.3	Multi-Factor Authentication	Implement multi-factor authentication for access to system accounts.	Functional	subset of	Multi-Factor Authentication (MFA)	IAC-06	Automated mechanisms exist to enforce Multi-Factor Authentication (MFA) for: ▪ Remote network access; ▪ Third-party systems, applications and/or services; and/ or ▪ Non-console access to critical systems or systems that store, transmit and/or process sensitive/regulated data.	10	
			Functional	intersects with	Network Access to Privileged Accounts	IAC-06.1	Mechanisms exist to utilize Multi-Factor Authentication (MFA) to authenticate network access for privileged accounts.	5	
			Functional	intersects with	Network Access to Non-Privileged Accounts	IAC-06.2	Mechanisms exist to utilize Multi-Factor Authentication (MFA) to authenticate network access for non-privileged accounts.	5	
			Functional	intersects with	Local Access to Privileged Accounts	IAC-06.3	Mechanisms exist to utilize Multi-Factor Authentication (MFA) to authenticate local access for privileged accounts.	5	
3.5.4	Replay-Resistant Authentication	Implement replay-resistant authentication mechanisms for access to system accounts.	Functional	equal	Replay-Resistant Authentication	IAC-02.2	Automated mechanisms exist to employ replay-resistant authentication.	10	
3.5.5.a	Identifier Management	Receive authorization from organizational personnel or roles to assign an individual, group, role, service, or device identifier.	Functional	subset of	Identity & Access Management (IAM)	IAC-01	Mechanisms exist to facilitate the implementation of identification and access management controls.	10	
			Functional	intersects with	Authenticate, Authorize and Audit (AAA)	IAC-01.2	Mechanisms exist to strictly govern the use of Authenticate, Authorize and Audit (AAA) solutions, both on-premises and those hosted by an External Service Provider (ESP).	5	
			Functional	intersects with	User Provisioning & De-Provisioning	IAC-07	Mechanisms exist to utilize a formal user registration and de-registration process that governs the assignment of access rights.	5	
			Functional	intersects with	Change of Roles & Duties	IAC-07.1	Mechanisms exist to revoke user access rights following changes in personnel roles and duties, if no longer necessary or permitted.	5	
			Functional	intersects with	Identifier Management (User Names)	IAC-09	Mechanisms exist to govern naming standards for usernames and systems.	5	
			Functional	intersects with	Automated System Account Management (Directory Services)	IAC-15.1	Automated mechanisms exist to support the management of system accounts (e.g., directory services).	5	
			Functional	equal	Management Approval For New or Changed Accounts	IAC-28.1	Mechanisms exist to ensure management approvals are required for new accounts or changes in permissions to existing accounts.	10	mapping add in version 2024.1
3.5.5.b	Identifier Management	Select and assign an identifier that identifies an individual, group, role, service, or device.	Functional	intersects with	Authenticate, Authorize and Audit (AAA)	IAC-01.2	Mechanisms exist to strictly govern the use of Authenticate, Authorize and Audit (AAA) solutions, both on-premises and those hosted by an External Service Provider (ESP).	5	
			Functional	intersects with	Change of Roles & Duties	IAC-07.1	Mechanisms exist to revoke user access rights following changes in personnel roles and duties, if no longer necessary or permitted.	5	
			Functional	intersects with	Identifier Management (User Names)	IAC-09	Mechanisms exist to govern naming standards for usernames and systems.	5	
			Functional	intersects with	User Identity (ID) Management	IAC-09.1	Mechanisms exist to ensure proper user identification management for non-consumer users and administrators.	5	
			Functional	intersects with	Automated System Account Management (Directory Services)	IAC-15.1	Automated mechanisms exist to support the management of system accounts (e.g., directory services).	5	
3.5.5.c	Identifier Management	Prevent reuse of identifiers for [Assignment: organization-defined time period].	Functional	intersects with	Authenticate, Authorize and Audit (AAA)	IAC-01.2	Mechanisms exist to strictly govern the use of Authenticate, Authorize and Audit (AAA) solutions, both on-premises and those hosted by an External Service Provider (ESP).	5	
			Functional	intersects with	Identifier Management (User Names)	IAC-09	Mechanisms exist to govern naming standards for usernames and systems.	5	

FDE #	FDE Name	Focal Document Element (FDE) Description	STRM Rationale	STRM Relationship	SCF Control	SCF #	Secure Controls Framework (SCF) Control Description	Strength of Relationship (optional)	Notes (optional)
			Functional	intersects with	Automated System Account Management (Directory Services)	IAC-15.1	Automated mechanisms exist to support the management of system accounts (e.g., directory services).	5	
3.5.5.d	Identifier Management	Uniquely identify the status of each individual with an identifying characteristic.	Functional	intersects with	Authenticate, Authorize and Audit (AAA)	IAC-01.2	Mechanisms exist to strictly govern the use of Authenticate, Authorize and Audit (AAA) solutions, both on-premises and those hosted by an External Service Provider (ESP).	5	
			Functional	intersects with	Change of Roles & Duties	IAC-07.1	Mechanisms exist to revoke user access rights following changes in personnel roles and duties, if no longer necessary or permitted.	5	
			Functional	intersects with	Identifier Management (User Names)	IAC-09	Mechanisms exist to govern naming standards for usernames and systems.	5	
			Functional	intersects with	Identity User Status	IAC-09.2	Mechanisms exist to identify contractors and other third-party users through unique username characteristics.	5	
			Functional	intersects with	Privileged Account Identifiers	IAC-09.5	Mechanisms exist to uniquely manage privileged accounts to identify the account as a privileged user or service.	5	
			Functional	intersects with	Automated System Account Management (Directory Services)	IAC-15.1	Automated mechanisms exist to support the management of system accounts (e.g., directory services).	5	
3.5.6	Withdrawn	Withdrawn - not incorporated into other controls	Functional	no relationship	N/A	N/A	N/A	N/A	
3.5.7.a	Password Management	Maintain a list of commonly-used, expected, or compromised passwords and update the list periodically and when organizational passwords are suspected to have been compromised.	Functional	intersects with	Authenticate, Authorize and Audit (AAA)	IAC-01.2	Mechanisms exist to strictly govern the use of Authenticate, Authorize and Audit (AAA) solutions, both on-premises and those hosted by an External Service Provider (ESP).	5	mapping add in version 2024.1
			Functional	intersects with	Authenticator Management	IAC-10	Mechanisms exist to securely manage authenticators for users and devices.	5	
			Functional	intersects with	Password Managers	IAC-10.11	Mechanisms exist to protect and store passwords via a password manager tool.	5	
			Functional	intersects with	Automated Support For Password Strength	IAC-10.4	Automated mechanisms exist to determine if password authenticators are sufficiently strong enough to satisfy organization-defined password length and complexity requirements.	5	
3.5.7.b	Password Management	Verify, when users create or update passwords, that the passwords are not found on the list of commonly-used, expected, or compromised passwords.	Functional	intersects with	Authenticate, Authorize and Audit (AAA)	IAC-01.2	Mechanisms exist to strictly govern the use of Authenticate, Authorize and Audit (AAA) solutions, both on-premises and those hosted by an External Service Provider (ESP).	5	mapping add in version 2024.1
			Functional	intersects with	Authenticator Management	IAC-10	Mechanisms exist to securely manage authenticators for users and devices.	5	
			Functional	intersects with	Password Managers	IAC-10.11	Mechanisms exist to protect and store passwords via a password manager tool.	5	
			Functional	intersects with	Automated Support For Password Strength	IAC-10.4	Automated mechanisms exist to determine if password authenticators are sufficiently strong enough to satisfy organization-defined password length and complexity requirements.	5	
3.5.7.c	Password Management	Transmit passwords only over cryptographically-protected channels.	Functional	intersects with	Use of Cryptographic Controls	CRY-01	Mechanisms exist to facilitate the implementation of cryptographic protections controls using known public standards and trusted cryptographic technologies.	5	mapping add in version 2024.1
			Functional	intersects with	Authenticate, Authorize and Audit (AAA)	IAC-01.2	Mechanisms exist to strictly govern the use of Authenticate, Authorize and Audit (AAA) solutions, both on-premises and those hosted by an External Service Provider (ESP).	5	mapping add in version 2024.1
			Functional	intersects with	Authenticator Management	IAC-10	Mechanisms exist to securely manage authenticators for users and devices.	5	
			Functional	intersects with	Password Managers	IAC-10.11	Mechanisms exist to protect and store passwords via a password manager tool.	5	
			Functional	intersects with	Protection of Authenticators	IAC-10.5	Mechanisms exist to protect authenticators commensurate with the sensitivity of the information to which use of the authenticator permits access.	5	
			Functional	intersects with	Automated System Account Management (Directory Services)	IAC-15.1	Automated mechanisms exist to support the management of system accounts (e.g., directory services).	5	
3.5.7.d	Password Management	Store passwords in a cryptographically-protected form.	Functional	intersects with	Use of Cryptographic Controls	CRY-01	Mechanisms exist to facilitate the implementation of cryptographic protections controls using known public standards and trusted cryptographic technologies.	5	
			Functional	intersects with	Authenticate, Authorize and Audit (AAA)	IAC-01.2	Mechanisms exist to strictly govern the use of Authenticate, Authorize and Audit (AAA) solutions, both on-premises and those hosted by an External Service Provider (ESP).	5	mapping add in version 2024.1
			Functional	intersects with	Authenticator Management	IAC-10	Mechanisms exist to securely manage authenticators for users and devices.	5	
			Functional	intersects with	Password Managers	IAC-10.11	Mechanisms exist to protect and store passwords via a password manager tool.	5	
			Functional	intersects with	Protection of Authenticators	IAC-10.5	Mechanisms exist to protect authenticators commensurate with the sensitivity of the information to which use of the authenticator permits access.	5	
			Functional	intersects with	No Embedded Unencrypted Static Authenticators	IAC-10.6	Mechanisms exist to ensure that unencrypted, static authenticators are not embedded in applications, scripts or stored on function keys.	5	
			Functional	intersects with	Automated System Account Management (Directory Services)	IAC-15.1	Automated mechanisms exist to support the management of system accounts (e.g., directory services).	5	
3.5.7.e	Password Management	Select a new password upon first use after account recovery.	Functional	intersects with	System Hardening Through Baseline Configurations	CFG-02	Mechanisms exist to develop, document and maintain secure baseline configurations for technology platforms that are consistent with industry-accepted system hardening standards.	5	
			Functional	intersects with	Authenticator Management	IAC-10	Mechanisms exist to securely manage authenticators for users and devices.	5	
			Functional	subset of	Password-Based Authentication	IAC-10.1	Mechanisms exist to enforce complexity, length and lifespan considerations to ensure strong criteria for password-based authentication.	10	
			Functional	intersects with	Password Managers	IAC-10.11	Mechanisms exist to protect and store passwords via a password manager tool.	5	
			Functional	intersects with	Vendor-Supplied Defaults	IAC-10.8	Mechanisms exist to ensure vendor-supplied defaults are changed as part of the installation process.	5	
			Functional	intersects with	Automated System Account Management (Directory Services)	IAC-15.1	Automated mechanisms exist to support the management of system accounts (e.g., directory services).	5	
3.5.7.f	Password Management	Enforce the following composition and complexity rules for passwords: [Assignment: organization-defined composition and complexity rules].	Functional	intersects with	System Hardening Through Baseline Configurations	CFG-02	Mechanisms exist to develop, document and maintain secure baseline configurations for technology platforms that are consistent with industry-accepted system hardening standards.	5	
			Functional	intersects with	Authenticator Management	IAC-10	Mechanisms exist to securely manage authenticators for users and devices.	5	
			Functional	intersects with	Password-Based Authentication	IAC-10.1	Mechanisms exist to enforce complexity, length and lifespan considerations to ensure strong criteria for password-based authentication.	5	
			Functional	intersects with	Password Managers	IAC-10.11	Mechanisms exist to protect and store passwords via a password manager tool.	5	
			Functional	intersects with	Automated System Account Management (Directory Services)	IAC-15.1	Automated mechanisms exist to support the management of system accounts (e.g., directory services).	5	
3.5.8	Withdrawn	Withdrawn - not incorporated into other controls	Functional	no relationship	N/A	N/A	N/A	N/A	
3.5.9	Withdrawn	Incorporated into 03.05.07.	Functional	no relationship	N/A	N/A	N/A	N/A	
3.5.10	Withdrawn	Incorporated into 03.05.07.	Functional	no relationship	N/A	N/A	N/A	N/A	
3.5.11	Authentication Feedback	Obscure feedback of authentication information during the authentication process.	Functional	equal	Authenticator Feedback	IAC-11	Mechanisms exist to obscure the feedback of authentication information during the authentication process to protect the information from possible exploitation/use by unauthorized individuals.	10	
3.5.12.a	Authenticator Management	Verify the identity of the individual, group, role, service, or device receiving the authenticator as part of the initial authenticator distribution.	Functional	intersects with	Group Authentication	IAC-02.1	Mechanisms exist to require individuals to be authenticated with an individual authenticator when a group authenticator is utilized.	5	
			Functional	intersects with	Authenticator Management	IAC-10	Mechanisms exist to securely manage authenticators for users and devices.	5	
			Functional	intersects with	In-Person or Trusted Third-Party Registration	IAC-10.3	Mechanisms exist to conduct in-person or trusted third-party identify verification before user accounts for third-parties are created.	5	
			Functional	intersects with	Identity Proofing (Identity Verification)	IAC-28	Mechanisms exist to verify the identity of a user before modifying any permissions or authentication factor.	5	mapping add in version 2024.1
3.5.12.b	Authenticator Management	Establish initial authenticator content for any authenticators issued by the organization.	Functional	intersects with	Authenticator Management	IAC-10	Mechanisms exist to securely manage authenticators for users and devices.	5	
			Functional	intersects with	Password-Based Authentication	IAC-10.1	Mechanisms exist to enforce complexity, length and lifespan considerations to ensure strong criteria for password-based authentication.	5	
3.5.12.c	Authenticator Management	Establish and implement administrative procedures for initial authenticator distribution, for lost, compromised, or damaged authenticators, and for revoking authenticators.	Functional	intersects with	Authenticator Management	IAC-10	Mechanisms exist to securely manage authenticators for users and devices.	5	
			Functional	intersects with	Password-Based Authentication	IAC-10.1	Mechanisms exist to enforce complexity, length and lifespan considerations to ensure strong criteria for password-based authentication.	5	
			Functional	intersects with	System Hardening Through Baseline Configurations	CFG-02	Mechanisms exist to develop, document and maintain secure baseline configurations for technology platforms that are consistent with industry-accepted system hardening standards.	5	

FDE #	FDE Name	Focal Document Element (FDE) Description	STRM Rationale	STRM Relationship	SCF Control	SCF #	Secure Controls Framework (SCF) Control Description	Strength of Relationship (optional)	Notes (optional)
3.5.12.d	Authenticator Management	Change default authenticators at first use.	Functional	intersects with	Authenticate, Authorize and Audit (AAA)	IAC-01.2	Mechanisms exist to strictly govern the use of Authenticate, Authorize and Audit (AAA) solutions, both on-premises and those hosted by an External Service Provider (ESP).	5	mapping add in version 2024.1
			Functional	intersects with	Authenticator Management	IAC-10	Mechanisms exist to securely manage authenticators for users and devices.	5	
			Functional	intersects with	Password-Based Authentication	IAC-10.1	Mechanisms exist to enforce complexity, length and lifespan considerations to ensure strong criteria for password-based authentication.	5	
			Functional	intersects with	Vendor-Supplied Defaults	IAC-10.8	Mechanisms exist to ensure vendor-supplied defaults are changed as part of the installation process.	5	
			Functional	intersects with	Automated System Account Management (Directory Services)	IAC-15.1	Automated mechanisms exist to support the management of system accounts (e.g., directory services).	5	
3.5.12.e	Authenticator Management	Change or refresh authenticators periodically or when the following events occur: [Assignment: organization-defined events].	Functional	intersects with	Authenticate, Authorize and Audit (AAA)	IAC-01.2	Mechanisms exist to strictly govern the use of Authenticate, Authorize and Audit (AAA) solutions, both on-premises and those hosted by an External Service Provider (ESP).	5	mapping add in version 2024.1
			Functional	intersects with	Authenticator Management	IAC-10	Mechanisms exist to securely manage authenticators for users and devices.	5	
			Functional	intersects with	Password-Based Authentication	IAC-10.1	Mechanisms exist to enforce complexity, length and lifespan considerations to ensure strong criteria for password-based authentication.	5	
			Functional	intersects with	Automated System Account Management (Directory Services)	IAC-15.1	Automated mechanisms exist to support the management of system accounts (e.g., directory services).	5	
3.5.12.f	Authenticator Management	Protect authenticator content from unauthorized disclosure and modification.	Functional	intersects with	Authenticate, Authorize and Audit (AAA)	IAC-01.2	Mechanisms exist to strictly govern the use of Authenticate, Authorize and Audit (AAA) solutions, both on-premises and those hosted by an External Service Provider (ESP).	5	mapping add in version 2024.1
			Functional	intersects with	Authenticator Management	IAC-10	Mechanisms exist to securely manage authenticators for users and devices.	5	
			Functional	intersects with	Password-Based Authentication	IAC-10.1	Mechanisms exist to enforce complexity, length and lifespan considerations to ensure strong criteria for password-based authentication.	5	
			Functional	intersects with	Protection of Authenticators	IAC-10.5	Mechanisms exist to protect authenticators commensurate with the sensitivity of the information to which use of the authenticator permits access.	5	
			Functional	intersects with	Automated System Account Management (Directory Services)	IAC-15.1	Automated mechanisms exist to support the management of system accounts (e.g., directory services).	5	
3.6.1.a	Incident Response Plan and Handling	Develop an incident response plan that provides the organization with a roadmap for implementing its incident response capability.	Functional	equal	Incident Response Plan (IRP)	IRO-04	Mechanisms exist to maintain and make available a current and viable Incident Response Plan (IRP) to all stakeholders.	10	
			Functional	intersects with	Information Spillage Response	IRO-12	Mechanisms exist to respond to sensitive information spills.	5	
3.6.1.b	Incident Response Plan and Handling	Implement an incident-handling capability for incidents that is consistent with the incident response plan and includes preparation, detection and analysis, containment, eradication, and recovery.	Functional	subset of	Incident Response Operations	IRO-01	Mechanisms exist to implement and govern processes and documentation to facilitate an organization-wide response capability for cybersecurity & data privacy-related incidents.	10	
			Functional	equal	Incident Handling	IRO-02	Mechanisms exist to cover the preparation, automated detection or intake of incident reporting, analysis, containment, eradication and recovery.	10	
			Functional	intersects with	Incident Response Plan (IRP)	IRO-04	Mechanisms exist to maintain and make available a current and viable Incident Response Plan (IRP) to all stakeholders.	5	
			Functional	intersects with	Information Spillage Response	IRO-12	Mechanisms exist to respond to sensitive information spills.	5	
3.6.1.c	Incident Response Plan and Handling	Update the incident response plan to address system and organizational changes or problems encountered during plan implementation, execution, or testing.	Functional	intersects with	IRP Update	IRO-04.2	Mechanisms exist to regularly review and modify incident response practices to incorporate lessons learned, business process changes and industry developments, as necessary.	5	
			Functional	intersects with	Continuous Incident Response Improvements	IRO-04.3	Mechanisms exist to use qualitative and quantitative data from incident response testing to: ▪Determine the effectiveness of incident response processes; ▪Continuously improve incident response processes; and ▪Provide incident response measures and metrics that are accurate, consistent, and in a reproducible format.	5	
3.6.2.a	Incident Monitoring, Reporting, and Response Assistance	Track and document system security incidents.	Functional	subset of	Incident Response Operations	IRO-01	Mechanisms exist to implement and govern processes and documentation to facilitate an organization-wide response capability for cybersecurity & data privacy-related incidents.	10	
			Functional	subset of	Incident Handling	IRO-02	Mechanisms exist to cover the preparation, automated detection or intake of incident reporting, analysis, containment, eradication and recovery.	10	
			Functional	intersects with	Situational Awareness For Incidents	IRO-09	Mechanisms exist to document, monitor and report the status of cybersecurity & data privacy incidents to internal stakeholders all the way through the resolution of the incident.	5	
3.6.2.b	Incident Monitoring, Reporting, and Response Assistance	Report suspected incidents to the organizational incident response capability within [Assignment: organization-defined time period].	Functional	subset of	Incident Response Operations	IRO-01	Mechanisms exist to implement and govern processes and documentation to facilitate an organization-wide response capability for cybersecurity & data privacy-related incidents.	10	
			Functional	subset of	Incident Handling	IRO-02	Mechanisms exist to cover the preparation, automated detection or intake of incident reporting, analysis, containment, eradication and recovery.	10	
			Functional	intersects with	Situational Awareness For Incidents	IRO-09	Mechanisms exist to document, monitor and report the status of cybersecurity & data privacy incidents to internal stakeholders all the way through the resolution of the incident.	5	
			Functional	intersects with	Incident Stakeholder Reporting	IRO-10	Mechanisms exist to timely-report incidents to applicable: ▪ Internal stakeholders; ▪ Affected clients & third-parties; and ▪ Regulatory authorities.	5	
			Functional	intersects with	Cyber Incident Reporting for Sensitive Data	IRO-10.2	Mechanisms exist to report sensitive/regulated data incidents in a timely manner.	5	
3.6.2.c	Incident Monitoring, Reporting, and Response Assistance	Report incident information to [Assignment: organization-defined authorities].	Functional	intersects with	Contacts With Authorities	GOV-06	Mechanisms exist to identify and document appropriate contacts with relevant law enforcement and regulatory bodies.	5	mapping add in version 2024.1
			Functional	subset of	Incident Response Operations	IRO-01	Mechanisms exist to implement and govern processes and documentation to facilitate an organization-wide response capability for cybersecurity & data privacy-related incidents.	10	
			Functional	subset of	Incident Handling	IRO-02	Mechanisms exist to cover the preparation, automated detection or intake of incident reporting, analysis, containment, eradication and recovery.	10	
			Functional	intersects with	Situational Awareness For Incidents	IRO-09	Mechanisms exist to document, monitor and report the status of cybersecurity & data privacy incidents to internal stakeholders all the way through the resolution of the incident.	5	
			Functional	intersects with	Incident Stakeholder Reporting	IRO-10	Mechanisms exist to timely-report incidents to applicable: ▪ Internal stakeholders; ▪ Affected clients & third-parties; and ▪ Regulatory authorities.	5	
			Functional	intersects with	Cyber Incident Reporting for Sensitive Data	IRO-10.2	Mechanisms exist to report sensitive/regulated data incidents in a timely manner.	5	
3.6.2.d	Incident Monitoring, Reporting, and Response Assistance	Provide an incident response support resource that offers advice and assistance to users of the system for the handling and reporting of incidents.	Functional	subset of	Incident Response Operations	IRO-01	Mechanisms exist to implement and govern processes and documentation to facilitate an organization-wide response capability for cybersecurity & data privacy-related incidents.	10	
			Functional	subset of	Incident Handling	IRO-02	Mechanisms exist to cover the preparation, automated detection or intake of incident reporting, analysis, containment, eradication and recovery.	10	
			Functional	intersects with	Incident Reporting Assistance	IRO-11	Mechanisms exist to provide incident response advice and assistance to users of systems for the handling and reporting of actual and potential cybersecurity & data privacy incidents.	5	
3.6.3	Incident Response Testing	Test the effectiveness of the incident response capability periodically.	Functional	intersects with	Incident Response Testing	IRO-06	Mechanisms exist to formally test incident response capabilities through realistic exercises to determine the operational effectiveness of those capabilities.	5	
3.6.4.a	Incident Response Training	Provide incident response training to system users consistent with assigned roles and responsibilities:	Functional	intersects with	Incident Response Training	IRO-05	Mechanisms exist to train personnel in their incident response roles and responsibilities.	5	
			Functional	intersects with	Role-Based Cybersecurity & Data Privacy Training	SAT-03	Mechanisms exist to provide role-based cybersecurity & data privacy-related training: ▪ Before authorizing access to the system or performing assigned duties; ▪ When required by system changes; and ▪ Annually thereafter.	5	mapping add in version 2024.1
3.6.4.a.1	Incident Response Training	Within [Assignment: organization-defined time period] of assuming an incident response role or responsibility or acquiring system access;	Functional	intersects with	Incident Response Training	IRO-05	Mechanisms exist to train personnel in their incident response roles and responsibilities.	5	
			Functional	intersects with	Role-Based Cybersecurity & Data Privacy Training	SAT-03	Mechanisms exist to provide role-based cybersecurity & data privacy-related training: ▪ Before authorizing access to the system or performing assigned duties; ▪ When required by system changes; and ▪ Annually thereafter.	5	mapping add in version 2024.1
3.6.4.a.2	Incident Response Training	When required by system changes; and	Functional	intersects with	Incident Response Training	IRO-05	Mechanisms exist to train personnel in their incident response roles and responsibilities.	5	
			Functional	intersects with	Cybersecurity & Data Privacy Awareness Training	SAT-02	Mechanisms exist to provide all employees and contractors appropriate awareness education and training that is relevant for their job function.	5	mapping add in version 2024.1

FDE #	FDE Name	Focal Document Element (FDE) Description	STRM Rationale	STRM Relationship	SCF Control	SCF #	Secure Controls Framework (SCF) Control Description	Strength of Relationship (optional)	Notes (optional)
3.6.4.a.3	Incident Response Training	Periodically thereafter.	Functional	intersects with	Incident Response Training	IRO-05	Mechanisms exist to train personnel in their incident response roles and responsibilities.	5	
			Functional	intersects with	Cybersecurity & Data Privacy Awareness Training	SAT-02	Mechanisms exist to provide all employees and contractors appropriate awareness education and training that is relevant for their job function.	5	mapping add in version 2024.1
3.6.4.b	Incident Response Training	Review and update incident response training content periodically and following [Assignment: organization-defined events].	Functional	intersects with	IRP Update	IRO-04.2	Mechanisms exist to regularly review and modify incident response practices to incorporate lessons learned, business process changes and industry developments, as necessary.	5	
			Functional	intersects with	Continuous Incident Response Improvements	IRO-04.3	Mechanisms exist to use qualitative and quantitative data from incident response testing to: ▪Determine the effectiveness of incident response processes; ▪Continuously improve incident response processes; and ▪Provide incident response measures and metrics that are accurate, consistent, and in a reproducible format.	5	
			Functional	intersects with	Incident Response Training	IRO-05	Mechanisms exist to train personnel in their incident response roles and responsibilities.	5	mapping add in version 2024.1
3.7.1	Withdrawn	Recategorized as NCO.	Functional	no relationship	N/A	N/A	N/A	N/A	
3.7.2	Withdrawn	Incorporated into 03.07.04 and 03.07.06.	Functional	no relationship	N/A	N/A	N/A	N/A	
3.7.3	Withdrawn	Incorporated into 03.08.03.	Functional	no relationship	N/A	N/A	N/A	N/A	
3.7.4.a	Maintenance Tools	Approve, control, and monitor the use of system maintenance tools.	Functional	intersects with	Asset Governance	AST-01	Mechanisms exist to facilitate an IT Asset Management (ITAM) program to implement and manage asset management controls.	5	mapping add in version 2024.1
			Functional	intersects with	Security of Assets & Media	AST-05	Mechanisms exist to maintain strict control over the internal or external distribution of any kind of sensitive/regulated media.	5	
			Functional	subset of	Maintenance Operations	MNT-01	Mechanisms exist to develop, disseminate, review & update procedures to facilitate the implementation of maintenance controls across the enterprise.	10	
			Functional	intersects with	Controlled Maintenance	MNT-02	Mechanisms exist to conduct controlled maintenance activities throughout the lifecycle of the system, application or service.	5	
			Functional	intersects with	Timely Maintenance	MNT-03	Mechanisms exist to obtain maintenance support and/or spare parts for systems within a defined Recovery Time Objective (RTO).	5	mapping add in version 2024.1
			Functional	intersects with	Preventative Maintenance	MNT-03.1	Mechanisms exist to perform preventive maintenance on critical systems, applications and services.	5	mapping add in version 2024.1
			Functional	intersects with	Maintenance Tools	MNT-04	Mechanisms exist to control and monitor the use of system maintenance tools.	5	
			Functional	intersects with	Off-Site Maintenance	MNT-09	Mechanisms exist to ensure off-site maintenance activities are conducted securely and the asset(s) undergoing maintenance actions are secured during physical transfer and storage while off-site.	5	
3.7.4.b	Maintenance Tools	Inspect the maintenance tools for improper or unauthorized modifications.	Functional	equal	Inspect Tools	MNT-04.1	Mechanisms exist to inspect maintenance tools carried into a facility by maintenance personnel for improper or unauthorized modifications.	10	
3.7.4.c	Maintenance Tools	Check media containing diagnostic and test programs for malicious code before the media are used in the system.	Functional	equal	Inspect Tools	MNT-04.1	Mechanisms exist to inspect maintenance tools carried into a facility by maintenance personnel for improper or unauthorized modifications.	10	
3.7.4.d	Maintenance Tools	Prevent the removal of system maintenance equipment containing CUI by:	Functional	subset of	Removal of Assets	AST-11	Mechanisms exist to authorize, control and track technology assets entering and exiting organizational facilities.	10	mapping add in version 2024.1
			Functional	intersects with	System Media Sanitization	DCH-09	Mechanisms exist to sanitize system media with the strength and integrity commensurate with the classification or sensitivity of the information prior to disposal, release out of organizational control or release for reuse.	5	
			Functional	intersects with	Maintenance Tools	MNT-04	Mechanisms exist to control and monitor the use of system maintenance tools.	5	
			Functional	intersects with	Prevent Unauthorized Removal	MNT-04.3	Mechanisms exist to prevent or control the removal of equipment undergoing maintenance that containing organizational information.	5	
3.7.4.d.1	Maintenance Tools	Verifying that there is no CUI on the equipment;	Functional	intersects with	Security of Assets & Media	AST-05	Mechanisms exist to maintain strict control over the internal or external distribution of any kind of sensitive/regulated media.	5	
			Functional	intersects with	Secure Disposal, Destruction or Re-Use of Equipment	AST-09	Mechanisms exist to securely dispose of, destroy or repurpose system components using organization-defined techniques and methods to prevent information being recovered from these components.	5	
3.7.4.d.2	Maintenance Tools	Sanitizing or destroying the equipment; or	Functional	intersects with	Secure Disposal, Destruction or Re-Use of Equipment	AST-09	Mechanisms exist to securely dispose of, destroy or repurpose system components using organization-defined techniques and methods to prevent information being recovered from these components.	5	
			Functional	intersects with	System Media Sanitization	DCH-09	Mechanisms exist to sanitize system media with the strength and integrity commensurate with the classification or sensitivity of the information prior to disposal, release out of organizational control or release for reuse.	5	
3.7.4.d.3	Maintenance Tools	Retaining the equipment within the facility.	Functional	intersects with	Security of Assets & Media	AST-05	Mechanisms exist to maintain strict control over the internal or external distribution of any kind of sensitive/regulated media.	5	
			Functional	intersects with	Secure Disposal, Destruction or Re-Use of Equipment	AST-09	Mechanisms exist to securely dispose of, destroy or repurpose system components using organization-defined techniques and methods to prevent information being recovered from these components.	5	
			Functional	intersects with	Prevent Unauthorized Removal	MNT-04.3	Mechanisms exist to prevent or control the removal of equipment undergoing maintenance that containing organizational information.	5	
3.7.5.a	Nonlocal Maintenance	Approve and monitor nonlocal maintenance and diagnostic activities.	Functional	intersects with	Identification & Authentication for Non-Organizational Users	IAC-03	Mechanisms exist to uniquely identify and centrally Authenticate, Authorize and Audit (AAA) third-party users and processes that provide services to the organization.	5	
			Functional	intersects with	Privileged Access by Non-Organizational Users	IAC-05.2	Mechanisms exist to prohibit privileged access by non-organizational users.	5	
			Functional	intersects with	Remote Maintenance	MNT-05	Mechanisms exist to authorize, monitor and control remote, non-local maintenance and diagnostic activities.	5	
			Functional	intersects with	Remote Maintenance Pre-Approval	MNT-05.5	Mechanisms exist to require maintenance personnel to obtain pre-approval and scheduling for remote, non-local maintenance sessions.	5	
3.7.5.b	Nonlocal Maintenance	Implement multi-factor authentication and replay resistance in the establishment of nonlocal maintenance and diagnostic sessions.	Functional	intersects with	Replay-Resistant Authentication	IAC-02.2	Automated mechanisms exist to employ replay-resistant authentication.	5	
			Functional	intersects with	Multi-Factor Authentication (MFA)	IAC-06	Automated mechanisms exist to enforce Multi-Factor Authentication (MFA) for: ▪ Remote network access; ▪ Third-party systems, applications and/or services; and/ or ▪ Non-console access to critical systems or systems that store, transmit and/or process sensitive/regulated data.	5	
			Functional	intersects with	Network Access to Privileged Accounts	IAC-06.1	Mechanisms exist to utilize Multi-Factor Authentication (MFA) to authenticate network access for privileged accounts.	5	
			Functional	intersects with	Remote Maintenance	MNT-05	Mechanisms exist to authorize, monitor and control remote, non-local maintenance and diagnostic activities.	5	
			Functional	intersects with	Remote Maintenance Cryptographic Protection	MNT-05.3	Cryptographic mechanisms exist to protect the integrity and confidentiality of remote, non-local maintenance and diagnostic communications.	5	
3.7.5.c	Nonlocal Maintenance	Terminate session and network connections when nonlocal maintenance is completed.	Functional	intersects with	Session Termination	IAC-25	Automated mechanisms exist to log out users, both locally on the network and for remote sessions, at the end of the session or after an organization-defined period of inactivity.	5	mapping add in version 2024.1
			Functional	intersects with	Remote Maintenance	MNT-05	Mechanisms exist to authorize, monitor and control remote, non-local maintenance and diagnostic activities.	5	
			Functional	intersects with	Remote Maintenance Disconnect Verification	MNT-05.4	Mechanisms exist to provide remote disconnect verification to ensure remote, non-local maintenance and diagnostic sessions are properly terminated.	5	
3.7.6.a	Maintenance Personnel	Establish a process for maintenance personnel authorization.	Functional	subset of	Maintenance Operations	MNT-01	Mechanisms exist to develop, disseminate, review & update procedures to facilitate the implementation of maintenance controls across the enterprise.	10	
			Functional	intersects with	Authorized Maintenance Personnel	MNT-06	Mechanisms exist to maintain a current list of authorized maintenance organizations or personnel.	5	
			Functional	intersects with	Maintenance Personnel Without Appropriate Access	MNT-06.1	Mechanisms exist to ensure the risks associated with maintenance personnel who do not have appropriate access authorizations, clearances or formal access approvals are appropriately mitigated.	5	
			Functional	intersects with	Non-System Related Maintenance	MNT-06.2	Mechanisms exist to ensure that non-escorted personnel performing non-IT maintenance activities in the physical proximity of IT systems have required access authorizations.	5	
3.7.6.b	Maintenance Personnel	Maintain a list of authorized maintenance organizations or personnel.	Functional	equal	Authorized Maintenance Personnel	MNT-06	Mechanisms exist to maintain a current list of authorized maintenance organizations or personnel.	10	
			Functional	intersects with	Maintenance Personnel Without Appropriate Access	MNT-06.1	Mechanisms exist to ensure the risks associated with maintenance personnel who do not have appropriate access authorizations, clearances or formal access approvals are appropriately mitigated.	5	
			Functional	intersects with	Non-System Related Maintenance	MNT-06.2	Mechanisms exist to ensure that non-escorted personnel performing non-IT maintenance activities in the physical proximity of IT systems have required access authorizations.	5	

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			Functional	intersects with	Third-Party Inventories	TPM-01.1	Mechanisms exist to maintain a current, accurate and complete list of External Service Providers (ESPs) that can potentially impact the Confidentiality, Integrity, Availability and/or Safety (CIAS) of the organization's systems, applications, services and data.	5	
3.7.6.c	Maintenance Personnel	Verify that non-escorted personnel who perform maintenance on the system possess the required access authorizations.	Functional	intersects with	Authorized Maintenance Personnel	MNT-06	Mechanisms exist to maintain a current list of authorized maintenance organizations or personnel.	5	
			Functional	subset of	Maintenance Personnel Without Appropriate Access	MNT-06.1	Mechanisms exist to ensure the risks associated with maintenance personnel who do not have appropriate access authorizations, clearances or formal access approvals are appropriately mitigated.	10	
			Functional	intersects with	Non-System Related Maintenance	MNT-06.2	Mechanisms exist to ensure that non-escorted personnel performing non-IT maintenance activities in the physical proximity of IT systems have required access authorizations.	5	
3.7.6.d	Maintenance Personnel	Designate organizational personnel with required access authorizations and technical competence to supervise the maintenance activities of personnel who do not possess the required access authorizations.	Functional	intersects with	Competency Requirements for Security-Related Positions	HRS-03.2	Mechanisms exist to ensure that all security-related positions are staffed by qualified individuals who have the necessary skill set.	5	
			Functional	intersects with	Authorized Maintenance Personnel	MNT-06	Mechanisms exist to maintain a current list of authorized maintenance organizations or personnel.	5	
			Functional	intersects with	Maintenance Personnel Without Appropriate Access	MNT-06.1	Mechanisms exist to ensure the risks associated with maintenance personnel who do not have appropriate access authorizations, clearances or formal access approvals are appropriately mitigated.	5	
3.8.1	Media Storage	Physically control and securely store system media containing CUI until the media are destroyed or sanitized using approved equipment, techniques, and procedures.	Functional	intersects with	Alternate Physical Protection	CRY-01.1	Cryptographic mechanisms exist to prevent unauthorized disclosure of information as an alternative to physical safeguards.	5	mapping add in version 2024.1
			Functional	subset of	Data Protection	DCH-01	Mechanisms exist to facilitate the implementation of data protection controls.	10	
			Functional	intersects with	Data Stewardship	DCH-01.1	Mechanisms exist to ensure data stewardship is assigned, documented and communicated.	5	
			Functional	intersects with	Sensitive / Regulated Data Protection	DCH-01.2	Mechanisms exist to protect sensitive/regulated data wherever it is stored.	5	
			Functional	intersects with	Media Storage	DCH-06	Mechanisms exist to: ▪ Physically control and securely store digital and non-digital media within controlled areas using organization-defined security measures; and ▪ Protect system media until the media are destroyed or sanitized using approved equipment, techniques and procedures.	5	
			Functional	intersects with	Physically Secure All Media	DCH-06.1	Mechanisms exist to physically secure all media that contains sensitive information.	5	
3.8.2	Media Access	Restrict access to CUI on system media.	Functional	intersects with	Sensitive / Regulated Data Protection	DCH-01.2	Mechanisms exist to protect sensitive/regulated data wherever it is stored.	5	mapping add in version 2024.1
			Functional	subset of	Media Access	DCH-03	Mechanisms exist to control and restrict access to digital and non-digital media to authorized individuals.	10	
3.8.3	Media Sanitization	Sanitize system media containing CUI prior to disposal, release out of organizational control, or release for reuse.	Functional	intersects with	Secure Disposal, Destruction or Re-Use of Equipment	AST-09	Mechanisms exist to securely dispose of, destroy or repurpose system components using organization-defined techniques and methods to prevent information being recovered from these components.	5	
			Functional	intersects with	Physical Media Disposal	DCH-08	Mechanisms exist to securely dispose of media when it is no longer required, using formal procedures.	5	
			Functional	intersects with	System Media Sanitization	DCH-09	Mechanisms exist to sanitize system media with the strength and integrity commensurate with the classification or sensitivity of the information prior to disposal, release out of organizational control or release for reuse.	5	
			Functional	intersects with	Information Disposal	DCH-21	Mechanisms exist to securely dispose of, destroy or erase information.	5	
3.8.4	Media Marking	Mark system media containing CUI to indicate distribution limitations, handling caveats, and security markings.	Functional	intersects with	Data & Asset Classification	DCH-02	Mechanisms exist to ensure data and assets are categorized in accordance with applicable statutory, regulatory and contractual requirements.	5	
			Functional	intersects with	Media Marking	DCH-04	Mechanisms exist to mark media in accordance with data protection requirements so that personnel are alerted to distribution limitations, handling caveats and applicable security requirements.	5	
			Functional	intersects with	Limitations on Use	DCH-10.1	Mechanisms exist to restrict the use and distribution of sensitive / regulated data.	5	
3.8.5.a	Media Transport	Protect and control system media containing CUI during transport outside of controlled areas.	Functional	intersects with	Media Transportation	DCH-07	Mechanisms exist to protect and control digital and non-digital media during transport outside of controlled areas using appropriate security measures.	5	
			Functional	intersects with	Encrypting Data In Storage Media	DCH-07.2	Cryptographic mechanisms exist to protect the confidentiality and integrity of information stored on digital media during transport outside of controlled areas.	5	
3.8.5.b	Media Transport	Maintain accountability of system media containing CUI during transport outside of controlled areas.	Functional	intersects with	Media Transportation	DCH-07	Mechanisms exist to protect and control digital and non-digital media during transport outside of controlled areas using appropriate security measures.	5	
			Functional	intersects with	Custodians	DCH-07.1	Mechanisms exist to identify custodians throughout the transport of digital or non-digital media.	5	
3.8.6	Withdrawn	Incorporated into 03.08.05.	Functional	no relationship	N/A	N/A	N/A	N/A	
3.8.7.a	Media Use	Restrict or prohibit the use of [Assignment: organization-defined types of system media].	Functional	subset of	Media Use	DCH-10	Mechanisms exist to restrict the use of types of digital media on systems or system components.	10	
3.8.7.b	Media Use	Prohibit the use of removable system media without an identifiable owner.	Functional	intersects with	Media Use	DCH-10	Mechanisms exist to restrict the use of types of digital media on systems or system components.	5	
			Functional	equal	Prohibit Use Without Owner	DCH-10.2	Mechanisms exist to prohibit the use of portable storage devices in organizational information systems when such devices have no identifiable owner.	10	
			Functional	intersects with	Removable Media Security	DCH-12	Mechanisms exist to restrict removable media in accordance with data handling and acceptable usage parameters.	5	
			Functional	intersects with	Portable Storage Devices	DCH-13.2	Mechanisms exist to restrict or prohibit the use of portable storage devices by users on external systems.	5	
3.8.8	Withdrawn	Incorporated into 03.08.07.	Functional	no relationship	N/A	N/A	N/A	N/A	
3.8.9	System Backup – Cryptographic Protection	Implement cryptographic mechanisms to prevent the unauthorized disclosure of CUI at backup storage locations.	Functional	intersects with	Data Backups	BCD-11	Mechanisms exist to create recurring backups of data, software and/or system images, as well as verify the integrity of these backups, to ensure the availability of the data to satisfying Recovery Time Objectives (RTOs) and Recovery Point Objectives (RPOs).	5	
			Functional	equal	Cryptographic Protection	BCD-11.4	Cryptographic mechanisms exist to prevent the unauthorized disclosure and/or modification of backup information.	10	
3.9.1.a	Personnel Screening	Screen individuals prior to authorizing access to the system.	Functional	subset of	Personnel Screening	HRS-04	Mechanisms exist to manage personnel security risk by screening individuals prior to authorizing access.	10	
			Functional	intersects with	Roles With Special Protection Measures	HRS-04.1	Mechanisms exist to ensure that individuals accessing a system that stores, transmits or processes information requiring special protection satisfy organization-defined personnel screening criteria.	5	
3.9.1.b	Personnel Screening	Rescreen individuals in accordance with [Assignment: organization-defined conditions requiring rescreening].	Functional	intersects with	Personnel Screening	HRS-04	Mechanisms exist to manage personnel security risk by screening individuals prior to authorizing access.	5	
			Functional	intersects with	Roles With Special Protection Measures	HRS-04.1	Mechanisms exist to ensure that individuals accessing a system that stores, transmits or processes information requiring special protection satisfy organization-defined personnel screening criteria.	5	
3.9.2.a	Personnel Termination and Transfer	When individual employment is terminated:	Functional	intersects with	Personnel Termination	HRS-09	Mechanisms exist to govern the termination of individual employment.	5	
3.9.2.a.1	Personnel Termination and Transfer	Disable system access within [Assignment: organization-defined time period];	Functional	intersects with	Personnel Termination	HRS-09	Mechanisms exist to govern the termination of individual employment.	5	
			Functional	intersects with	High-Risk Terminations	HRS-09.2	Mechanisms exist to expedite the process of removing "high risk" individual's access to systems and applications upon termination, as determined by management.	5	
			Functional	intersects with	User Provisioning & De-Provisioning	IAC-07	Mechanisms exist to utilize a formal user registration and de-registration process that governs the assignment of access rights.	5	mapping add in version 2024.1
			Functional	equal	Termination of Employment	IAC-07.2	Mechanisms exist to revoke user access rights in a timely manner, upon termination of employment or contract.	10	mapping add in version 2024.1
3.9.2.a.2	Personnel Termination and Transfer	Terminate or revoke authenticators and credentials associated with the individual; and	Functional	intersects with	Personnel Termination	HRS-09	Mechanisms exist to govern the termination of individual employment.	5	
			Functional	intersects with	High-Risk Terminations	HRS-09.2	Mechanisms exist to expedite the process of removing "high risk" individual's access to systems and applications upon termination, as determined by management.	5	
			Functional	intersects with	User Provisioning & De-Provisioning	IAC-07	Mechanisms exist to utilize a formal user registration and de-registration process that governs the assignment of access rights.	5	mapping add in version 2024.1
			Functional	intersects with	Termination of Employment	IAC-07.2	Mechanisms exist to revoke user access rights in a timely manner, upon termination of employment or contract.	5	mapping add in version 2024.1

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3.9.2.a.3	Personnel Termination and Transfer	Retrieve security-related system property.	Functional	intersects with	Asset Ownership Assignment	AST-03	Mechanisms exist to ensure asset ownership responsibilities are assigned, tracked and managed at a team, individual, or responsible organization level to establish a common understanding of requirements for asset protection.	5	mapping add in version 2024.1
			Functional	intersects with	Accountability Information	AST-03.1	Mechanisms exist to include capturing the name, position and/or role of individuals responsible/accountable for administering assets as part of the technology asset inventory process.	5	mapping add in version 2024.1
			Functional	subset of	Return of Assets	AST-10	Mechanisms exist to ensure that employees and third-party users return all organizational assets in their possession upon termination of employment, contract or agreement.	10	mapping add in version 2024.1
			Functional	intersects with	Personnel Termination	HRS-09	Mechanisms exist to govern the termination of individual employment.	5	
			Functional	intersects with	Asset Collection	HRS-09.1	Mechanisms exist to retrieve organization-owned assets upon termination of an individual's employment.	5	mapping add in version 2024.1
			Functional	intersects with	High-Risk Terminations	HRS-09.2	Mechanisms exist to expedite the process of removing "high risk" individual’s access to systems and applications upon termination, as determined by management.	5	
3.9.2.b	Personnel Termination and Transfer	When individuals are reassigned or transferred to other positions in the organization:	Functional	intersects with	Personnel Transfer	HRS-08	Mechanisms exist to adjust logical and physical access authorizations to systems and facilities upon personnel reassignment or transfer, in a timely manner.	5	
3.9.2.b.1	Personnel Termination and Transfer	Review and confirm the ongoing operational need for current logical and physical access authorizations to the system and facility;	Functional	intersects with	Change of Roles & Duties	IAC-07.1	Mechanisms exist to revoke user access rights following changes in personnel roles and duties, if no longer necessary or permitted.	5	mapping add in version 2024.1
3.9.2.b.2	Personnel Termination and Transfer	Initiate [Assignment: organization-defined transfer or reassignment actions] within [Assignment: organization-defined time period following the transfer or reassignment action]; and	Functional	intersects with	Change of Roles & Duties	IAC-07.1	Mechanisms exist to revoke user access rights following changes in personnel roles and duties, if no longer necessary or permitted.	5	mapping add in version 2024.1
3.9.2.b.3	Personnel Termination and Transfer	Modify access authorization to correspond with any changes in operational need.	Functional	intersects with	Change of Roles & Duties	IAC-07.1	Mechanisms exist to revoke user access rights following changes in personnel roles and duties, if no longer necessary or permitted.	5	mapping add in version 2024.1
			Functional	intersects with	Access Enforcement	IAC-20	Mechanisms exist to enforce Logical Access Control (LAC) permissions that conform to the principle of "least privilege."	5	mapping add in version 2024.1