

**NIST IR 8477-Based Set Theory Relationship Mapping (STRM)**

Reference document Secure Controls Framework (SCF) version 2026.1

STRM Guidance: <https://securecontrolsframework.com/set-theory-relationship-mapping-strm/>

**Focal Document: NIST SP 800-82 R3 Guide to Operational Technology (OT) Security**

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FDE #	FDE Name	Focal Document Element (FDE) Description	STRM Rationale	STRM Relationship	SCF Control	SCF #	Secure Controls Framework (SCF) Control Description	Strength of Relationship	Notes
AC-01	Policy and Procedures	Executive orders, directives, regulations, policies, standards, and guidelines; and2. Procedures to facilitate the implementation of the access control policy and the associated access controls;b. Designate	Functional	Intersects With	Publishing Security, Compliance & Resilience Documentation	GOV-02	maintain and disseminate policies, standards and procedures necessary for secure, compliant and resilient	5	
AC-01	Policy and Procedures	Executive orders, directives, regulations, policies, standards, and guidelines; and2. Procedures to facilitate the implementation of the access control policy and the associated access controls;b. Designate	Functional	Intersects With	Periodic Review & Update of Security, Compliance & Resilience Program	GOV-03	Mechanisms exist to review the Security, Compliance & Resilience Program (SCR), including policies, standards and	5	
AC-01	Policy and Procedures	Executive orders, directives, regulations, policies, standards, and guidelines; and2. Procedures to facilitate the implementation of the access control policy and the associated access controls;b. Designate	Functional	Subset Of	Identity & Access Management (IAM)	IAC-01	Mechanisms exist to facilitate the implementation of identification and access management controls.	10	
AC-02	Account Management	of accounts, or non-physical identifiers, and [Assignment: organization-defined personnel or roles] within:1. [Assignment: organization-defined time period] when accounts are no longer required;2.	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	
AC-02	Account Management	of accounts, or non-physical identifiers, and [Assignment: organization-defined personnel or roles] within:1. [Assignment: organization-defined time period] when accounts are no longer required;2.	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	
AC-02	Account Management	of accounts, or non-physical identifiers, and [Assignment: organization-defined personnel or roles] within:1. [Assignment: organization-defined time period] when accounts are no longer required;2.	Functional	Intersects With	Input Data Validation	TDA-18	Mechanisms exist to check the validity of information inputs.	5	
AC-02	Account Management	of accounts, or non-physical identifiers, and [Assignment: organization-defined personnel or roles] within:1. [Assignment: organization-defined time period] when accounts are no longer required;2.	Functional	Intersects With	Safeguarding Data Over Open Networks	NET-12	to implement strong cryptography and security protocols to safeguard sensitive/regulatory data during transmission over open, public	5	
AC-03	Access Enforcement	Enforce approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	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	
AC-03	Access Enforcement	Enforce approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	Functional	Intersects With	Safeguarding Data Over Open Networks	NET-12	to implement strong cryptography and security protocols to safeguard sensitive/regulatory data during transmission over open, public	5	
AC-03	Access Enforcement	Enforce approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	Functional	Intersects With	Input Data Validation	TDA-18	Mechanisms exist to check the validity of information inputs.	5	
AC-07	Unsuccessful Logon Attempts	lock the account or node for an [Assignment: organization-defined time period]; lock the account or node until released by an administrator; delay next logon prompt per [Assignment: organization-defined	Functional	Equal	Account Lockout	IAC-22	attempts by a user during an organization-defined time period and automatically locks the account when the maximum	10	
AC-08	System Use Notification	the system indicates consent to monitoring and recording;b. Retain the notification message or banner on the screen until users acknowledge the usage	Functional	Equal	System Use Notification (Logon Banner)	SEA-18	banners that display an approved system use notification message or banner before granting access to Technology Assets.	10	
AC-14	Permitted Actions Without Identification or Authentication	actions that can be performed on the system without identification or authentication consistent with organizational mission and business functions; andb. Document and provide supporting rationale in the	Functional	Equal	Permitted Actions Without Identification or Authorization	IAC-26	document the supporting rationale for specific user actions that can be performed on a system without identification or	10	
AC-17	Remote Access	configuration/connection requirements, and implementation guidance for each type of remote access allowed; andb. Authorize each type of remote access to the system prior to allowing such	Functional	Intersects With	Remote Access	NET-14	Mechanisms exist to define, control and review organization-approved, secure remote access methods.	5	
AC-17(09)	Remote Access   Disconnect or Disable Access	Provide the capability to disconnect or disable remote access to the system within [Assignment: organization-defined time period].	Functional	Equal	Expeditious Disconnect / Disable Capability	NET-14.8	Mechanisms exist to provide the capability to expeditiously disconnect or disable a user's remote access session.	10	
AC-18	Wireless Access	a. Establish configuration requirements, connection requirements, and implementation guidance for each type of wireless access; andb. Authorize each type of wireless access to the system prior to allowing such	Functional	Intersects With	Wireless Networking	NET-15	Mechanisms exist to control authorized wireless usage and monitor for unauthorized wireless access.	5	
AC-18	Wireless Access	a. Establish configuration requirements, connection requirements, and implementation guidance for each type of wireless access; andb. Authorize each type of wireless access to the system prior to allowing such	Functional	Intersects With	Wireless Access Authentication & Encryption	CRY-07	Mechanisms exist to protect the confidentiality and integrity of wireless networking technologies by implementing authentication	5	
AC-19	Access Control For Mobile Devices	requirements, and implementation guidance for organization-controlled mobile devices, to include when such devices are outside of controlled areas; andb. Authorize the connection of mobile devices to	Functional	Equal	Access Control For Mobile Devices	MDM-02	Mechanisms exist to enforce access control requirements for the connection of mobile devices to organizational Technology	10	
AC-20	Use of External Systems	the trust relationships established with other organizations owning, operating, and/or maintaining external systems, allowing authorized individuals to:1. Access the system from external systems; and2.	Functional	Equal	Use of External Technology Assets, Applications and/or Services (TAAS)	DCH-13	Mechanisms exist to govern how external parties, including Technology Assets, Applications and/or Services (TAAS), are used	10	
AC-22	Publicly Accessible Content	information does not contain nonpublic information;c. Review the proposed content of information prior to posting onto the publicly accessible system to ensure that nonpublic information is not included; andd.	Functional	Equal	Publicly Accessible Content	DCH-15	Mechanisms exist to control publicly-accessible content.	10	
AT-01	Policy and Procedures	regulations, policies, standards, and guidelines; and2. Procedures to facilitate the implementation of the awareness and training policy and the associated awareness and training controls;b. Designate an	Functional	Intersects With	Publishing Security, Compliance & Resilience Documentation	GOV-02	maintain and disseminate policies, standards and procedures necessary for secure, compliant and resilient	5	
AT-02	Literacy Training and Awareness	changes or training [Assignment: organization-defined events];b. Employ the following techniques to increase the security and privacy awareness of system users [Assignment: organization-defined awareness techniques];c. Update literacy training and awareness	Functional	Equal	Security, Compliance & Resilience Awareness Training	SAT-02	Mechanisms exist to provide all employees and contractors appropriate security, compliance and resilience awareness	10	
AT-02(02)	Literacy Training and Awareness   Insider Threat	Provide literacy training on recognizing and reporting potential indicators of insider threat.	Functional	Equal	Insider Threat Awareness	THR-05	Mechanisms exist to utilize security awareness training on recognizing and reporting potential indicators of insider	10	
AT-03	Role-based Training	system, information, or performing assigned duties, and [Assignment: organization-defined frequency] thereafter; and2. When required by system changes;b. Update role-based training content [Assignment:	Functional	Intersects With	Role-Based Security, Compliance & Resilience Training	SAT-03	before authorizing access to the system or performing assigned duties; (2) When security, compliance and resilience awareness	5	
AT-04	Training Records	privacy training activities, including security and privacy awareness training and specific role-based security and privacy training; andb. Retain individual training records for [Assignment: organization-defined	Functional	Equal	Security, Compliance & Resilience Training Records	SAT-04	and recurring awareness training; and	10	
AU-01	Policy and Procedures	standards, and guidelines; and2. Procedures to facilitate the implementation of the audit and accountability policy and the associated audit and accountability controls;b. Designate an [Assignment:	Functional	Intersects With	Periodic Review & Update of Security, Compliance & Resilience Program	GOV-03	Mechanisms exist to review the Security, Compliance & Resilience Program (SCR), including policies, standards and	5	
AU-01	Policy and Procedures	standards, and guidelines; and2. Procedures to facilitate the implementation of the audit and accountability policy and the associated audit and accountability controls;b. Designate an [Assignment:	Functional	Intersects With	Publishing Security, Compliance & Resilience Documentation	GOV-02	maintain and disseminate policies, standards and procedures necessary for secure, compliant and resilient	5	
AU-01	Policy and Procedures	standards, and guidelines; and2. Procedures to facilitate the implementation of the audit and accountability policy and the associated audit and accountability controls;b. Designate an [Assignment:	Functional	Subset Of	Continuous Monitoring	MON-01	Mechanisms exist to facilitate the implementation of enterprise-wide monitoring 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	Notes
AU-02	Event Logging	the selection criteria for events to be logged;c. Specify the following event types for logging within the system: [Assignment: organization-defined event types (subset of the event types defined in AU-02a.) along with the selection criteria for events to be logged.]	Functional	Intersects With	Security Event Monitoring	MON-01.8	Mechanisms exist to review event logs on an ongoing basis and escalate incidents in accordance with established	5	
AU-02	Event Logging	the selection criteria for events to be logged;c. Specify the following event types for logging within the system: [Assignment: organization-defined event types (subset of the event types defined in AU-02a.) along with the selection criteria for events to be logged.]	Functional	Intersects With	Centralized Collection of Security Event Logs	MON-02	Security Incident Event Manager (SIEM), or similar automated tool, to support the centralized collection of security-related	5	
AU-03	Content of Audit Records	the frequency of the situation requiring incident response; the following:a. What type of event occurred;b. When the event occurred;c. Where the event occurred;d. Source of the event;e. Outcome of the event; andf. Identity of any individuals, subjects, or	Functional	Equal	Content of Event Logs	MON-03	Mechanisms exist to configure Technology Assets, Applications and/or Services (TAAS) to produce event logs that contain	10	
AU-04	Audit Log Storage Capacity	Allocate audit log storage capacity to accommodate [Assignment: organization-defined audit log retention requirements].	Functional	Equal	Event Log Storage Capacity	MON-04	Mechanisms exist to allocate and proactively manage sufficient event log storage capacity to reduce the likelihood of such	10	
AU-04(01)	Audit Log Storage Capacity   Transfer to Alternate Storage	Transfer audit logs [Assignment: organization-defined frequency] to a different system, system component, or media other than the system or system component conducting the logging.	Functional	Intersects With	Event Log Backup on Separate Physical Systems / Components	MON-08.1	event logs onto a physically different system or system component than the Security Incident Event Manager (SIEM) or	5	
AU-05	Response to Audit Logging Process Failures	a. Alert [Assignment: organization-defined personnel or roles] within [Assignment: organization-defined time period] in the event of an audit logging process failure; andb. Take the following additional actions:	Functional	Equal	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	10	
AU-06	Audit Record Review, Analysis, and Reporting	inappropriate or unusual activity and the potential impact of the inappropriate or unusual activity;b. Report findings to [Assignment: organization-defined personnel or roles]; andc. Adjust the level of audit	Functional	Intersects With	Centralized Collection of Security Event Logs	MON-02	Security Incident Event Manager (SIEM), or similar automated tool, to support the centralized collection of security-related	5	
AU-06	Audit Record Review, Analysis, and Reporting	inappropriate or unusual activity and the potential impact of the inappropriate or unusual activity;b. Report findings to [Assignment: organization-defined personnel or roles]; andc. Adjust the level of audit	Functional	Intersects With	Audit Level Adjustments	MON-02.6	level of audit review, analysis and reporting based on evolving threat information from law enforcement, industry	5	
AU-08	Time Stamps	for audit records as a basis. Records must be audit records that meet [Assignment: organization-defined granularity of time measurement] and that use	Functional	Intersects With	Clock Synchronization	SEA-20	Mechanisms exist to utilize time-synchronization technology to synchronize all critical system	5	
AU-08	Time Stamps	for audit records as a basis. Records must be audit records that meet [Assignment: organization-defined granularity of time measurement] and that use	Functional	Intersects With	Time Stamps	MON-07	Mechanisms exist to configure Technology Assets, Applications and/or Services (TAAS) to use an	5	
AU-09	Protection of Audit Information	from unauthorized access, modification, and deletion; andb. Alert [Assignment: organization-defined personnel or roles] upon detection of unauthorized	Functional	Equal	Protection of Event Logs	MON-08	Mechanisms exist to protect event logs and audit tools from unauthorized access, modification and deletion.	10	
AU-11	Audit Record Retention	retain audit records for [Assignment: organization-defined time period consistent with records retention policy] to provide support for after-the-fact	Functional	Equal	Event Log Retention	MON-10	requirements to provide support for after-the-fact investigations of security incidents and to meet	10	
AU-12	Audit Record Generation	defined in AU-02a for [Assignment: organization-defined system components];b. Allow [Assignment: organization-defined personnel or roles] to select the event types that are to be logged by specific	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	
CA-01	Policy and Procedures	standards, and guidelines; and2. Procedures to facilitate the implementation of the assessment, authorization, and monitoring policy and the associated assessment, authorization, and monitoring	Functional	Subset Of	Information Assurance (IA) Operations	IAO-01	implementation of security, compliance and resilience assessment and authorization	10	
CA-01	Policy and Procedures	standards, and guidelines; and2. Procedures to facilitate the implementation of the assessment, authorization, and monitoring policy and the associated assessment, authorization, and monitoring	Functional	Intersects With	Periodic Review & Update of Security, Compliance & Resilience Program	GOV-03	Mechanisms exist to review the Security, Compliance & Resilience Program (SCR), including policies, standards and	5	
CA-01	Policy and Procedures	standards, and guidelines; and2. Procedures to facilitate the implementation of the assessment, authorization, and monitoring policy and the associated assessment, authorization, and monitoring	Functional	Intersects With	Publishing Security, Compliance & Resilience Documentation	GOV-02	maintain and disseminate policies, standards and procedures necessary for secure, compliant and resilient	5	
CA-02	Control Assessments	is reviewed and approved by the authorizing official or designated representative prior to conducting the assessment;d. Assess the controls in the system and its environment of operation [Assignment:	Functional	Intersects With	Functional Review Of Security, Compliance & Resilience Controls	CPL-03.2	Mechanisms exist to regularly review Technology Assets, Applications and/or Services (TAAS) for adherence to the	5	
CA-02	Control Assessments	is reviewed and approved by the authorizing official or designated representative prior to conducting the assessment;d. Assess the controls in the system and its environment of operation [Assignment:	Functional	Intersects With	Technical Verification	IAO-06	Information Assurance Program (IAP) activities to evaluate the design, implementation and effectiveness of technical	5	
CA-02	Control Assessments	is reviewed and approved by the authorizing official or designated representative prior to conducting the assessment;d. Assess the controls in the system and its environment of operation [Assignment:	Functional	Intersects With	Security, Compliance & Resilience In Project Management	PRM-04	security, compliance and project development to determine the extent to which the controls are implemented	5	
CA-02	Control Assessments	is reviewed and approved by the authorizing official or designated representative prior to conducting the assessment;d. Assess the controls in the system and its environment of operation [Assignment:	Functional	Intersects With	Assessments	IAO-02	Mechanisms exist to formally assess the security, compliance and resilience controls in Technology Assets, Applications	5	
CA-02	Control Assessments	is reviewed and approved by the authorizing official or designated representative prior to conducting the assessment;d. Assess the controls in the system and its environment of operation [Assignment:	Functional	Intersects With	Security, Compliance & Resilience Assessments	CPL-03	Mechanisms exist to regularly review processes and documented procedures to ensure conformity with the	5	
CA-03	Information Exchange	agreement; service level agreements; user agreements; nondisclosure agreements; [Assignment: organization-defined type of agreement];b. Document, as part of each exchange agreement, the interface	Functional	Intersects With	Interconnection Security Agreements (ISAs)	NET-05	Agreements (ISAs), or similar methods, that document, for each interconnection:	5	
CA-05	Plan of Action and Milestones	deficiencies noted during the assessment of the controls and to reduce or eliminate known vulnerabilities in the system; andb. Update existing plan of action and milestones [Assignment:	Functional	Intersects With	Capabilities Deficiency Tracking	IAO-05	(4) Risk associated with the deficiency(ies); (5) Source deficiency identification/detection;	5	
CA-06	Authorization	authorizing official for the system, before commencing operations:1. Accepts the use of common controls inherited by the system; and2. Authorizes the system to operate;d. Ensure that the authorizing official for	Functional	Equal	Security Authorization	IAO-07	Mechanisms exist to ensure Technology Assets, Applications and/or Services (TAAS) are officially authorized prior to "go	10	
CA-07	Continuous Monitoring	organization-defined frequencies] for assessment of control effectiveness;c. Ongoing control assessments in accordance with the continuous monitoring strategy;d. Ongoing monitoring of system and	Functional	Intersects With	Security, Compliance & Resilience Controls Oversight	CPL-02	security, compliance and resilience controls oversight function that reports to the organization's executive	5	
CA-07(04)	Continuous Monitoring   Risk Monitoring	Ensure risk monitoring is an integral part of the continuous monitoring strategy that includes the following:a. Effectiveness monitoring;b. Compliance monitoring; andc. Change monitoring.	Functional	Equal	Risk Monitoring	RSK-11	the continuous monitoring strategy that includes monitoring the effectiveness of security, compliance and resilience	10	
CA-09	Internal System Connections	internal connection, the interface characteristics, security and privacy requirements, and the nature of the information communicated;c. Terminate internal system connections after [Assignment: organization-	Functional	Equal	Internal System Connections	NET-05.2	through automating internal connections of systems and documenting, for each internal connection, the interface	10	
CM-01	Policy and Procedures	regulations, policies, standards, and guidelines; and2. Procedures to facilitate the implementation of the configuration management policy and the associated configuration management controls;b. Designate an	Functional	Subset Of	Configuration Management Program	CFG-01	Mechanisms exist to facilitate the implementation of configuration management controls.	10	
CM-01	Policy and Procedures	regulations, policies, standards, and guidelines; and2. Procedures to facilitate the implementation of the configuration management policy and the associated configuration management controls;b. Designate an	Functional	Intersects With	Periodic Review & Update of Security, Compliance & Resilience Program	GOV-03	Mechanisms exist to review the Security, Compliance & Resilience Program (SCR), including policies, standards and	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	Notes
IA-02	Identification and Authentication (organizational Users)	Uniquely identify and authenticate organizational users and associate that unique identification with processes acting on behalf of those users.	Functional	Equal	Identification & Authentication for Organizational Users	IA-02	Identify and centrally Authenticate, Authorize and Audit (AAA) organizational users and processes acting on behalf of	10	
IA-02(01)	Authentication (organizational Users)   Multi-factor Authentication to	Implement multi-factor authentication for access to privileged accounts.	Functional	Intersects With	Multi-Factor Authentication (MFA)	IA-06	Automated mechanisms exist to enforce Multi-Factor Authentication (MFA) for: (1) Remote network access;	5	
IA-02(01)	Authentication (organizational Users)   Multi-factor Authentication to	Implement multi-factor authentication for access to privileged accounts.	Functional	Intersects With	Local Access to Privileged Accounts	IA-06.3	Mechanisms exist to utilize Multi-Factor Authentication (MFA) to authenticate local access for privileged accounts.	5	
IA-02(01)	Authentication (organizational Users)   Multi-factor Authentication to	Implement multi-factor authentication for access to privileged accounts.	Functional	Intersects With	Information Assurance Enabled Products	TDA-02.2	Information Assurance Enabled Products to those products that have been successfully evaluated against a National Information Assurance Partnership (NIAP) approved	5	
IA-02(01)	Authentication (organizational Users)   Multi-factor Authentication to	Implement multi-factor authentication for access to privileged accounts.	Functional	Intersects With	Out-of-Band Multi-Factor Authentication	IA-06.4	Mechanisms exist to utilize Multi-Factor Authentication (MFA) to authenticate network access for privileged accounts.	5	
IA-02(01)	Authentication (organizational Users)   Multi-factor Authentication to	Implement multi-factor authentication for access to privileged accounts.	Functional	Intersects With	Network Access to Privileged Accounts	IA-06.1	Mechanisms exist to utilize Multi-Factor Authentication (MFA) to authenticate network access for privileged accounts.	5	
IA-02(01)	Authentication (organizational Users)   Multi-factor Authentication to	Implement multi-factor authentication for access to privileged accounts.	Functional	Intersects With	Network Access to Non-Privileged Accounts	IA-06.2	Mechanisms exist to utilize Multi-Factor Authentication (MFA) to authenticate network access for non-privileged accounts.	5	
IA-02(01)	Authentication (organizational Users)   Multi-factor Authentication to	Implement multi-factor authentication for access to privileged accounts.	Functional	Intersects With	Hardware Token-Based Authentication	IA-10.7	Automated mechanisms exist to ensure organization-defined token quality requirements are satisfied for hardware token-based authentication.	5	
IA-02(02)	Authentication (organizational Users)   Multi-factor Authentication to	Implement multi-factor authentication for access to non-privileged accounts.	Functional	Intersects With	Information Assurance Enabled Products	TDA-02.2	Information Assurance Enabled Products to those products that have been successfully evaluated against a National Information Assurance Partnership (NIAP) approved	5	
IA-02(02)	Authentication (organizational Users)   Multi-factor Authentication to	Implement multi-factor authentication for access to non-privileged accounts.	Functional	Intersects With	Network Access to Non-Privileged Accounts	IA-06.2	Mechanisms exist to utilize Multi-Factor Authentication (MFA) to authenticate network access for non-privileged accounts.	5	
IA-02(02)	Authentication (organizational Users)   Multi-factor Authentication to	Implement multi-factor authentication for access to non-privileged accounts.	Functional	Intersects With	Out-of-Band Multi-Factor Authentication	IA-06.4	for access to privileged and non-privileged accounts such that one of the factors is independently provided by a	5	
IA-02(02)	Authentication (organizational Users)   Multi-factor Authentication to	Implement multi-factor authentication for access to non-privileged accounts.	Functional	Intersects With	Hardware Token-Based Authentication	IA-10.7	Automated mechanisms exist to ensure organization-defined token quality requirements are satisfied for hardware token-based authentication.	5	
IA-02(02)	Authentication (organizational Users)   Multi-factor Authentication to	Implement multi-factor authentication for access to non-privileged accounts.	Functional	Intersects With	Network Access to Privileged Accounts	IA-06.1	Mechanisms exist to utilize Multi-Factor Authentication (MFA) to authenticate network access for privileged accounts.	5	
IA-02(02)	Authentication (organizational Users)   Multi-factor Authentication to	Implement multi-factor authentication for access to non-privileged accounts.	Functional	Intersects With	Multi-Factor Authentication (MFA)	IA-06	Automated mechanisms exist to enforce Multi-Factor Authentication (MFA) for: (1) Remote network access;	5	
IA-02(02)	Authentication (organizational Users)   Multi-factor Authentication to	Implement multi-factor authentication for access to non-privileged accounts.	Functional	Intersects With	Local Access to Privileged Accounts	IA-06.3	Mechanisms exist to utilize Multi-Factor Authentication (MFA) to authenticate local access for privileged accounts.	5	
IA-02(08)	Authentication (organizational Users)   Access to Non-Privileged Accounts — Replay Protection and	Implement replay-resistant authentication mechanisms for access to [Selection (one or more): privileged accounts; non-privileged accounts].	Functional	Equal	Replay-Resistant Authentication	IA-02.2	Automated mechanisms exist to employ replay-resistant authentication.	10	
IA-02(12)	Authentication (organizational Users)   Acceptance of PIV Credentials	Accept and electronically verify Personal Identity Verification (PIV) credentials.	Functional	Intersects With	Acceptance of PIV Credentials	IA-02.3	Mechanisms exist to accept and electronically verify organizational Personal Identity Verification (PIV) credentials.	5	
IA-03	Device Identification and Authentication	Uniquely identify and authenticate [Assignment: organization-defined devices and/or types of devices] before establishing a [Selection (one or more): local; remote; network] connection.	Functional	Intersects With	Identification & Authentication for Devices	IA-04	Authenticate, Authorize and Audit (AAA) devices before establishing a connection using bidirectional authentication that govern the use of Authenticate, Authorize and Audit (AAA) solutions, both on-premises and those hosted by an External	5	
IA-04	Identifier Management	Implement mechanisms for authentication to a cryptographic module that meet the requirements of applicable laws, executive orders, directives, policies, regulations, standards, and guidelines for such authentication.	Functional	Intersects With	Authenticate, Authorize and Audit (AAA)	IA-01.2	Authenticate, Authorize and Audit (AAA) solutions, both on-premises and those hosted by an External	5	
IA-04	Identifier Management	Implement mechanisms for authentication to a cryptographic module that meet the requirements of applicable laws, executive orders, directives, policies, regulations, standards, and guidelines for such authentication.	Functional	Intersects With	Identifier Management (User Names)	IA-09	Mechanisms exist to govern naming standards for usernames and Technology Assets, Applications and/or Services	5	
IA-05	Authenticator Management	Implement mechanisms for authentication to a cryptographic module that meet the requirements of applicable laws, executive orders, directives, policies, regulations, standards, and guidelines for such authentication.	Functional	Intersects With	Authenticator Management	IA-10	Mechanisms exist to: (1) Securely manage authenticators for users and devices; and	5	
IA-05	Authenticator Management	Implement mechanisms for authentication to a cryptographic module that meet the requirements of applicable laws, executive orders, directives, policies, regulations, standards, and guidelines for such authentication.	Functional	Intersects With	Default Authenticators	IA-10.8	Mechanisms exist to ensure default authenticators are changed as part of account creation or system installation.	5	
IA-05(01)	Authenticator Management   Password-based Authentication	Implement mechanisms for authentication to a cryptographic module that meet the requirements of applicable laws, executive orders, directives, policies, regulations, standards, and guidelines for such authentication.	Functional	Intersects With	Automated Support For Password Strength	IA-10.4	Automated mechanisms exist to determine if password authenticators are sufficiently strong enough to satisfy organization-defined password strength criteria.	5	
IA-05(01)	Authenticator Management   Password-based Authentication	Implement mechanisms for authentication to a cryptographic module that meet the requirements of applicable laws, executive orders, directives, policies, regulations, standards, and guidelines for such authentication.	Functional	Intersects With	Password-Based Authentication	IA-10.1	Automated mechanisms exist to enforce password complexity, length and lifespan considerations to ensure strong criteria for password-based authentication.	5	
IA-05(01)	Authenticator Management   Password-based Authentication	Implement mechanisms for authentication to a cryptographic module that meet the requirements of applicable laws, executive orders, directives, policies, regulations, standards, and guidelines for such authentication.	Functional	Intersects With	Authenticator Management	IA-10	Mechanisms exist to: (1) Securely manage authenticators for users and devices; and	5	
IA-06	Authentication Feedback	Implement mechanisms for authentication to a cryptographic module that meet the requirements of applicable laws, executive orders, directives, policies, regulations, standards, and guidelines for such authentication.	Functional	Equal	Authenticator Feedback	IA-11	Mechanisms exist to ensure information during the authentication process to protect the information from possible exploitation and use by unauthorized individuals.	10	
IA-07	Cryptographic Module Authentication	Implement mechanisms for authentication to a cryptographic module that meet the requirements of applicable laws, executive orders, directives, policies, regulations, standards, and guidelines for such authentication.	Functional	Intersects With	Cryptographic Module Authentication	IA-12	Mechanisms exist to ensure cryptographic modules adhere to applicable statutory, regulatory and contractual requirements for security strength.	5	
IA-07	Cryptographic Module Authentication	Implement mechanisms for authentication to a cryptographic module that meet the requirements of applicable laws, executive orders, directives, policies, regulations, standards, and guidelines for such authentication.	Functional	Intersects With	Automated Authentication Through Cryptographic Modules	CRY-02	Automated mechanisms exist to enable systems to authenticate to a cryptographic module.	5	
IA-08	Identification and Authentication (non-organizational Users)	Uniquely identify and authenticate non-organizational users or processes acting on behalf of non-organizational users.	Functional	Equal	Identification & Authentication for Non-Organizational Users	IA-03	Identify and centrally Authenticate, Authorize and Audit (AAA) third-party users and processes that provide 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	Notes
IA-08(01)	Authentication (non-organizational Users)   Acceptance of PIV Credentials	Accept and electronically verify Personal Identity Verification-compliant credentials from other federal agencies.	Functional	Equal	Acceptance of PIV Credentials from Other Organizations	IAC-03.1	Mechanisms exist to accept and electronically verify Personal Identity Verification (PIV) credentials from third-parties.	10	
IA-08(02)	Authentication (non-organizational Users)   Acceptance of External Credentials	a. Accept only external authenticators that are NIST-compliant; andb. Document and maintain a list of accepted external authenticators.	Functional	Equal	Acceptance of Third-Party Credentials	IAC-03.2	Automated mechanisms exist to accept Federal Identity, Credential and Access Management (FICAM)-approved mechanisms, except to conform systems to Federal Identity, Credential and Access Management (FICAM)-issued	10	
IA-08(04)	Authentication and Authentication (non-organizational Users)   Use of Defined Profiles	Conform to the following profiles for identity management [Assignment: organization-defined identity management profiles].	Functional	Equal	Use of FICAM-Issued Profiles	IAC-03.3	Mechanisms exist to conform systems to Federal Identity, Credential and Access Management (FICAM)-issued	10	
IA-11	Re-authentication	Require users to re-authenticate when [Assignment: organization-defined circumstances or situations requiring re-authentication].	Functional	Equal	Re-Authentication	IAC-14	Mechanisms exist to force users and devices to re-authenticate according to organization-defined circumstances that necessitate re-authentication.	10	
IR-01	Policy and Procedures	Executive orders, directives, regulations, policies, standards, and guidelines; and2. Procedures to facilitate the implementation of the incident response policy and the associated incident response controls;b. Designate an [Assignment: organization-defined	Functional	Intersects With	Publishing Security, Compliance & Resilience Documentation	GOV-02	maintain and disseminate policies, standards and procedures necessary for secure, compliant and resilient	5	
IR-01	Policy and Procedures	Executive orders, directives, regulations, policies, standards, and guidelines; and2. Procedures to facilitate the implementation of the incident response policy and the associated incident response controls;b. Designate an [Assignment: organization-defined	Functional	Subset Of	Incident Response Operations	IRO-01	and govern processes and documentation to facilitate an organization-wide response capability for cybersecurity and	10	
IR-01	Policy and Procedures	Executive orders, directives, regulations, policies, standards, and guidelines; and2. Procedures to facilitate the implementation of the incident response policy and the associated incident response controls;b. Designate an [Assignment: organization-defined	Functional	Intersects With	IRP Update	IRO-04.2	review and modify incident response practices to incorporate lessons learned, business process changes and industry	5	
IR-01	Policy and Procedures	Executive orders, directives, regulations, policies, standards, and guidelines; and2. Procedures to facilitate the implementation of the incident response policy and the associated incident response controls;b. Designate an [Assignment: organization-defined	Functional	Intersects With	Root Cause Analysis (RCA) & Lessons Learned	IRO-13	lessons learned from analyzing and resolving cybersecurity and data protection incidents to reduce the likelihood or impact of	5	
IR-01	Policy and Procedures	Executive orders, directives, regulations, policies, standards, and guidelines; and2. Procedures to facilitate the implementation of the incident response policy and the associated incident response controls;b. Designate an [Assignment: organization-defined	Functional	Intersects With	Periodic Review & Update of Security, Compliance & Resilience Program	GOV-03	Mechanisms exist to review the Security, Compliance & Resilience Program (SCRPR), including policies, standards and	5	
IR-02	Incident Response Training	of assuming an incident response role or responsibility or acquiring system access;2. When required by system changes; and3. [Assignment: organization-defined frequency] thereafter; andb. Review and	Functional	Intersects With	Incident Response Training	IRO-05	Mechanisms exist to train personnel in their incident response roles and responsibilities.	5	
IR-04	Incident Handling	incident handling activities with contingency planning activities;c. Incorporate lessons learned from ongoing incident handling activities into incident response procedures, training, and testing, and implement the	Functional	Equal	Incident Handling	IRO-02	(2) Automated event detection or manual incident report intake; (3) Analysis; (4) Containment;	10	
IR-05	Incident Monitoring	Track and document incidents.	Functional	Equal	Situational Awareness For Incidents	IRO-09	monitor and report the status of cybersecurity and data protection incidents to internal stakeholders all the way through	10	
IR-06	Incident Reporting	a. Require personnel to report suspected incidents to the organizational incident response capability within [Assignment: organization-defined time period]; andb. Report incident information to [Assignment: organization-defined authorities].	Functional	Intersects With	Incident Stakeholder Reporting	IRO-10	report incidents to applicable: (1) Internal stakeholders; (2) Affected clients & third-parties; and	5	
IR-06	Incident Reporting	a. Require personnel to report suspected incidents to the organizational incident response capability within [Assignment: organization-defined time period]; andb. Report incident information to [Assignment: organization-defined authorities].	Functional	Intersects With	Regulatory & Law Enforcement Contacts	IRO-14	Mechanisms exist to maintain incident response contacts with applicable regulatory and law enforcement agencies.	5	
IR-06	Incident Reporting	a. Require personnel to report suspected incidents to the organizational incident response capability within [Assignment: organization-defined time period]; andb. 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	
IR-07	Incident Response Assistance	Provide an incident response support resource, integral to the organizational incident response capability, that offers advice and assistance to users of the system for the handling and reporting of incidents.	Functional	Equal	Incident Reporting Assistance	IRO-11	Mechanisms exist to provide incident response advice and assistance to users of Technology Assets, Applications	10	
IR-08	Incident Response Plan	addresses the sharing of incident information;9. Is reviewed and approved by [Assignment: organization-defined personnel or roles] [Assignment: organization-defined frequency], and10. Explicitly designates responsible personnel; and	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	
MA-01	Policy and Procedures	Executive orders, directives, regulations, policies, standards, and guidelines; and2. Procedures to facilitate the implementation of the maintenance policy and the associated maintenance controls;b. Designate an [Assignment: organization-defined	Functional	Subset Of	Maintenance Operations	MNT-01	Mechanisms exist to develop, disseminate, review & update procedures to facilitate the implementation of maintenance	10	
MA-01	Policy and Procedures	Executive orders, directives, regulations, policies, standards, and guidelines; and2. Procedures to facilitate the implementation of the maintenance policy and the associated maintenance controls;b. Designate an [Assignment: organization-defined	Functional	Intersects With	Remote Maintenance Notifications	MNT-05.2	Mechanisms exist to require maintenance personnel to notify affected stakeholders when remote, non-local maintenance is planned (e.g. date/time)	5	
MA-01	Policy and Procedures	Executive orders, directives, regulations, policies, standards, and guidelines; and2. Procedures to facilitate the implementation of the maintenance policy and the associated maintenance controls;b. Designate an [Assignment: organization-defined	Functional	Intersects With	Auditing Remote Maintenance	MNT-05.1	remote, non-local maintenance and diagnostic sessions, as well as review the maintenance action performed during remote	5	
MA-01	Policy and Procedures	Executive orders, directives, regulations, policies, standards, and guidelines; and2. Procedures to facilitate the implementation of the maintenance policy and the associated maintenance controls;b. Designate an [Assignment: organization-defined	Functional	Intersects With	Periodic Review & Update of Security, Compliance & Resilience Program	GOV-03	Mechanisms exist to review the Security, Compliance & Resilience Program (SCRPR), including policies, standards and	5	
MA-01	Policy and Procedures	Executive orders, directives, regulations, policies, standards, and guidelines; and2. Procedures to facilitate the implementation of the maintenance policy and the associated maintenance controls;b. Designate an [Assignment: organization-defined	Functional	Intersects With	Publishing Security, Compliance & Resilience Documentation	GOV-02	maintain and disseminate policies, standards and procedures necessary for secure, compliant and resilient	5	
MA-02	Controlled Maintenance	Personnel on the system explicitly approved to remove or the system or system components from organizational facilities for off-site maintenance, repair, or replacement;d. Sanitize equipment to remove the following information from associated media prior to	Functional	Equal	Controlled Maintenance	MNT-02	Mechanisms exist to conduct controlled maintenance activities throughout the lifecycle of the Technology Asset, Application	10	
MA-04	Nonlocal Maintenance	with organizational policy and documented in the security plan for the system;c. Employ strong authentication in the establishment of nonlocal maintenance and diagnostic sessions;d. Maintain	Functional	Intersects With	Remote Maintenance	MNT-05	Mechanisms exist to authorize, monitor and control remote, non-local maintenance and diagnostic activities.	5	
MA-04	Nonlocal Maintenance	with organizational policy and documented in the security plan for the system;c. Employ strong authentication in the establishment of nonlocal maintenance and diagnostic sessions;d. Maintain	Functional	Intersects With	Remote Maintenance Notifications	MNT-05.2	Mechanisms exist to require maintenance personnel to notify affected stakeholders when remote, non-local maintenance is planned (e.g. date/time)	5	
MA-04	Nonlocal Maintenance	with organizational policy and documented in the security plan for the system;c. Employ strong authentication in the establishment of nonlocal maintenance and diagnostic sessions;d. Maintain	Functional	Intersects With	Auditing Remote Maintenance	MNT-05.1	remote, non-local maintenance and diagnostic sessions, as well as review the maintenance action performed during remote	5	
MA-05	Maintenance Personnel	maintainance organizations or personnel; verify that non-escorted personnel performing maintenance on the system possess the required access authorizations; andc. Designate organizational personnel with required access authorizations and technical competence to	Functional	Equal	Authorized Maintenance Personnel	MNT-06	Mechanisms exist to maintain a current list of authorized maintenance organizations or personnel.	10	
MA-07	Field Maintenance	Restrict or prohibit field maintenance on [Assignment: organization-defined systems or system components] to [Assignment: organization-defined trusted maintenance facilities].	Functional	Equal	Field Maintenance	MNT-08	Mechanisms exist to securely conduct field maintenance on geographically deployed assets.	10	
MP-01	Policy and Procedures	Executive orders, directives, regulations, policies, standards, and guidelines; and2. Procedures to facilitate the implementation of the media protection policy and the associated media protection controls;b. Designate an [Assignment: organization-defined	Functional	Intersects With	Periodic Review & Update of Security, Compliance & Resilience Program	GOV-03	Mechanisms exist to review the Security, Compliance & Resilience Program (SCRPR), including policies, standards and	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	Notes
PL-04	Rules of Behavior	indicating that they have read, understand, and agree to abide by the rules of behavior, before authorizing access to information and the system;c. Review and update the rules of behavior [Assignment: ...]	Functional	Intersects With	Terms of Employment	HRS-05	employees and contractors to apply cybersecurity and data protection principles in their daily work to enable secure, compliant	5	
PL-04	Rules of Behavior	indicating that they have read, understand, and agree to abide by the rules of behavior, before authorizing access to information and the system;c. Review and update the rules of behavior [Assignment: ...]	Functional	Intersects With	Rules of Behavior	HRS-05.1	acceptable and unacceptable rules of behavior for the use of technologies, including consequences for unacceptable	5	
PL-04	Rules of Behavior	indicating that they have read, understand, and agree to abide by the rules of behavior, before authorizing access to information and the system;c. Review and update the rules of behavior [Assignment: ...]	Functional	Intersects With	Technology Use Restrictions	HRS-05.3	Mechanisms exist to establish usage restrictions and implementation guidance for organizational technologies	5	
PL-04(01)	Rules of Behavior   Social Media and External Site/application Usage Restrictions	of social media, social networking sites, and external sites/applications;b. Posting organizational information on public websites; andc. Use of organization-provided identifiers (e.g., email addresses) and authentication secrets (e.g., passwords) for creating accounts on	Functional	Equal	Social Media & Social Networking Restrictions	HRS-05.2	or behavior that contain explicit restrictions on the use of social media and networking sites, posting information on	10	
PL-10	Baseline Selection	Select a control baseline for the system.	Functional	Equal	Secure Baseline Configurations	CFG-02	commercial websites, and sharing	10	
PL-11	Baseline Tailoring	Tailor the selected control baseline by applying specified tailoring actions.	Functional	Equal	Baseline Tailoring	CFG-02.9	Mechanisms exist to develop, document and maintain secure baseline configurations for Technology Assets, Applications	10	
PM-01	Information Security Program Plan	organizational entities, and compliance;3. Reflects the coordination among organizational entities responsible for information security; and4. Is approved by a senior official with responsibility and accountability for the	Functional	Subset Of	Security, Compliance & Resilience Program (SCRP)	GOV-01	actions that are specific to: (1) Mission / business functions; (2) Operational environment; (3) Specific threats or	10	
PM-01	Information Security Program Plan	organizational entities, and compliance;3. Reflects the coordination among organizational entities responsible for information security; and4. Is approved by a senior official with responsibility and accountability for the	Functional	Intersects With	Periodic Review & Update of Security, Compliance & Resilience Program	GOV-03	the implementation of security, compliance and resilience governance controls.	5	
PM-01	Information Security Program Plan	organizational entities, and compliance;3. Reflects the coordination among organizational entities responsible for information security; and4. Is approved by a senior official with responsibility and accountability for the	Functional	Intersects With	Publishing Security, Compliance & Resilience Documentation	GOV-02	Mechanisms exist to review the Security, Compliance & Resilience Program (SCRP), including policies, standards and	5	
PM-02	Information Security Program Leadership Role	Appoint a senior agency information security officer with the mission and resources to coordinate, develop, implement, and maintain an organization-wide information security program.	Functional	Intersects With	Assigned Security, Compliance & Resilience Responsibilities	GOV-04	maintain and disseminate policies, standards and procedures necessary for secure, compliant and resilient	5	
PM-03	Information Security and Privacy Resources	exceptions to this requirement;b. Prepare documentation required for addressing information security and privacy programs in capital planning and investment requests in accordance with applicable and maintained;2. Document the remedial information	Functional	Equal	Security, Compliance & Resilience Resource Management	PRM-02	the mission and resources to centrally-manage, coordinate, develop, implement and maintain an enterprise-wide	10	
PM-04	Plan of Action and Milestones Process	security, privacy, and supply chain risk management actions to adequately respond to risk to organizational operations and assets, individuals, other organizations, and the Nation;2. Document the remedial information	Functional	Intersects With	Vulnerability Remediation Process	VPM-02	requests, including the resources needed to implement the Security, Compliance & Resilience Program (SCRP) and	5	
PM-04	Plan of Action and Milestones Process	security, privacy, and supply chain risk management actions to adequately respond to risk to organizational operations and assets, individuals, other organizations, and the Nation;2. Document the remedial information	Functional	Intersects With	Capabilities Deficiency Tracking	IAO-05	Mechanisms exist to ensure that vulnerabilities are properly identified, tracked and remediated.	5	
PM-05	System Inventory	Develop and update [Assignment: organization-defined frequency] an inventory of organizational systems.	Functional	Intersects With	Asset Governance	AST-01	(4) Risk associated with the deficiency(ies); (5) Source deficiency identification/detection;	5	
PM-05	System Inventory	Develop and update [Assignment: organization-defined frequency] an inventory of organizational systems.	Functional	Intersects With	Asset Inventories	AST-02	Mechanisms exist to facilitate an IT Asset Management (ITAM) program to implement and manage asset management	5	
PM-06	Measures of Performance	Develop, monitor, and report on the results of information security and privacy measures of performance.	Functional	Intersects With	Assigned Security, Compliance & Resilience Responsibilities	GOV-04	Mechanisms exist to perform inventories of Technology Assets, Applications, Services and/or Data (TAASD) that:	5	
PM-06	Measures of Performance	Develop, monitor, and report on the results of information security and privacy measures of performance.	Functional	Intersects With	Measures of Performance	GOV-05	the mission and resources to centrally-manage, coordinate, develop, implement and maintain an enterprise-wide	5	
PM-07	Enterprise Architecture	Develop and maintain an enterprise architecture with consideration for information security, privacy, and the resulting risk to organizational operations and assets, individuals, other organizations, and the Nation.	Functional	Intersects With	Alignment With Enterprise Architecture	SEA-02	Mechanisms exist to develop, report and monitor Security, Compliance & Resilience Program (SCRP) measures of	5	
PM-08	Critical Infrastructure Plan	Address information security and privacy issues in the development, documentation, and updating of a critical infrastructure and key resources protection plan.	Functional	Intersects With	Business Continuity Management System (BCMS)	BCD-01	With industry-recognized leading practices, with consideration for security, compliance and resilience principles that address specific risk to organizational	5	
PM-08	Critical Infrastructure Plan	Address information security and privacy issues in the development, documentation, and updating of a critical infrastructure and key resources protection plan.	Functional	Intersects With	Statutory, Regulatory & Contractual Compliance	CPL-01	Mechanisms exist to facilitate the implementation of contingency planning controls to help ensure resilient Technology Assets.	5	
PM-09	Risk Management Strategy	systems; and2. Privacy risk to individuals resulting from the authorized processing of personally identifiable information;b. Implement the risk management strategy consistently across the	Functional	Equal	Risk Management Program	RSK-01	Mechanisms exist to facilitate the identification and implementation of relevant statutory, regulatory and contractual controls.	10	
PM-10	Authorization Process	those systems operate through authorization processes;b. Designate individuals to fulfill specific roles and responsibilities within the organizational risk management process; andc. Integrate the	Functional	Equal	Information Assurance (IA) Operations	IAO-01	Mechanisms exist to facilitate the implementation of strategic, operational and tactical risk management controls.	10	
PM-11	Mission and Business Process Definition	operations, organizational assets, individuals, other organizations, and the Nation; andb. Determine information protection and personally identifiable information processing needs arising from the defined	Functional	Equal	Business Process Definition	PRM-06	Mechanisms exist to facilitate the implementation of security, compliance and resilience assessment and authorization	10	
PM-12	Insider Threat Program	Implement an insider threat program that includes a cross-discipline insider threat incident handling team.	Functional	Equal	Insider Threat Program	THR-04	(2) Information protection needs.	10	
PM-13	Security and Privacy Workforce	Establish a security and privacy workforce development and improvement program.	Functional	Intersects With	Defined Roles & Responsibilities	HRS-03	Mechanisms exist to implement an insider threat program that includes a cross-discipline insider threat incident handling team.	5	
PM-13	Security and Privacy Workforce	Establish a security and privacy workforce development and improvement program.	Functional	Intersects With	Security, Compliance & Resilience-Minded Workforce	SAT-01	Mechanisms exist to define cybersecurity roles & responsibilities for all personnel.	5	
PM-14	Testing, Training, and Monitoring	privacy testing, training, and monitoring activities associated with organizational systems;1. Are developed and maintained; and2. Continue to be executed; andb. Review testing, training, and	Functional	Intersects With	Personal Data (PD) Control Testing, Training & Monitoring	PRI-08	Mechanisms exist to facilitate the implementation of security, compliance and resilience controls.	5	
PM-14	Testing, Training, and Monitoring	privacy testing, training, and monitoring activities associated with organizational systems;1. Are developed and maintained; and2. Continue to be executed; andb. Review testing, training, and	Functional	Intersects With	Security, Compliance & Resilience Controls Oversight	CPL-02	Mechanisms exist to conduct testing, training and monitoring activities for Personal Data (PD) controls.	5	
PM-15	Security and Privacy Groups and Associations	privacy testing, training, and monitoring activities associated with organizational systems;1. Are developed and maintained; and2. Continue to be executed; andb. Review testing, training, and	Functional	Intersects With	Threat Intelligence Program	THR-01	security, compliance and resilience controls oversight function that reports to the organization's executive	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	Notes
PM-15	Security and Privacy Groups and Associations	privacy communities.a. To facilitate ongoing security and privacy education and training for organizational personnel;b. To maintain currency with recommended security and privacy practices, techniques, and technologies; andc. To share current security and	Functional	Intersects With	Contacts With Groups & Associations	GOV-07	protection education and training for organizational personnel; (2) Maintain currency with recommended cybersecurity and	5	
PM-16	Threat Awareness Program	Implement a threat awareness program that includes a cross-organization information-sharing capability for threat intelligence.	Functional	Intersects With	Threat Intelligence Program	THR-01	information-sharing capability that can influence the development of the system and security architectures, selection	5	
PM-17	Protecting Controlled Unclassified Information on External Systems	unclassified information that is processed, stored or transmitted on external systems, are implemented in accordance with applicable laws, executive orders, directives, policies, regulations, and standards; andb. or other privacy officials and staff and their responsibilities;4. Describes management commitment, compliance, and the strategic goals and objectives of the privacy program;5. Reflects	Functional	Equal	/ Regulated Data on External Technology Assets, Applications and/or	DCH-13.3	Mechanisms exist to ensure that the requirements for the protection of sensitive/regulated data processed, stored or	10	
PM-18	Privacy Program Plan	1. Describes the organization's privacy mission, authority, mission, accountability, and resources to coordinate, develop, and implement, applicable privacy requirements and manage privacy risks through the organization-wide privacy program	Functional	Equal	Data Privacy Program	PRI-01	Mechanisms exist to facilitate the implementation and operation of data protection controls throughout the data lifecycle to	10	
PM-19	Privacy Program Leadership Role	1. Describes the organization's privacy mission, authority, mission, accountability, and resources to coordinate, develop, and implement, applicable privacy requirements and manage privacy risks through the organization-wide privacy program	Functional	Equal	Chief Privacy Officer (CPO)	PRI-01.1	Mechanisms exist to coordinate, develop and implement, applicable data privacy requirements and publicly available through	10	
PM-20	Dissemination of Privacy Program Information	1. Describes the organization's privacy mission, authority, mission, accountability, and resources to coordinate, develop, and implement, applicable privacy requirements and manage privacy risks through the organization-wide privacy program	Functional	Equal	Dissemination of Data Privacy Program Information	PRI-01.3	organizational websites or document repositories; (3) Utilize publicly facing email	10	
PM-20(01)	Privacy Program Information   Privacy Policies on Websites, Applications, and	1. Describes the organization's privacy mission, authority, mission, accountability, and resources to coordinate, develop, and implement, applicable privacy requirements and manage privacy risks through the organization-wide privacy program	Functional	Equal	Data Privacy Notice	PRI-02	Mechanisms exist to	10	
PM-21	Accounting of Disclosures	1. Describes the organization's privacy mission, authority, mission, accountability, and resources to coordinate, develop, and implement, applicable privacy requirements and manage privacy risks through the organization-wide privacy program	Functional	Equal	Accounting of Disclosures	PRI-14.1	Mechanisms exist to provide data subjects with an accounting of disclosures of their Personal Data (PD) controlled by:	10	
PM-22	Personally Identifiable Information Quality Management	1. Describes the organization's privacy mission, authority, mission, accountability, and resources to coordinate, develop, and implement, applicable privacy requirements and manage privacy risks through the organization-wide privacy program	Functional	Intersects With	Data Quality Management	PRI-10	quantity, timeliness, accuracy, integrity and impact determination and de-identification of	5	
PM-22	Personally Identifiable Information Quality Management	1. Describes the organization's privacy mission, authority, mission, accountability, and resources to coordinate, develop, and implement, applicable privacy requirements and manage privacy risks through the organization-wide privacy program	Functional	Intersects With	Data Quality Operations	DCH-22	Toxic or Trivial (ROTT) data access to ensure the accuracy, relevance, timeliness, impact, completeness and de-identification of	5	
PM-23	Data Governance Body	1. Describes the organization's privacy mission, authority, mission, accountability, and resources to coordinate, develop, and implement, applicable privacy requirements and manage privacy risks through the organization-wide privacy program	Functional	Intersects With	Data Management Board	PRI-13	Mechanisms exist to establish a written charter for a Data Management Board (DMB) and assigned organization-defined	5	
PM-23	Data Governance Body	1. Describes the organization's privacy mission, authority, mission, accountability, and resources to coordinate, develop, and implement, applicable privacy requirements and manage privacy risks through the organization-wide privacy program	Functional	Intersects With	Data Quality Management	PRI-10	quantity, timeliness, accuracy, integrity and impact determination and de-identification of	5	
PM-23	Data Governance Body	1. Describes the organization's privacy mission, authority, mission, accountability, and resources to coordinate, develop, and implement, applicable privacy requirements and manage privacy risks through the organization-wide privacy program	Functional	Intersects With	Data Governance	GOV-10	organization's policies, standards and procedures so that sensitive/regulated data is effectively managed and	5	
PM-24	Data Integrity Board	1. Describes the organization's privacy mission, authority, mission, accountability, and resources to coordinate, develop, and implement, applicable privacy requirements and manage privacy risks through the organization-wide privacy program	Functional	Intersects With	Data Governance	GOV-10	organization's policies, standards and procedures so that sensitive/regulated data is effectively managed and	5	
PM-24	Data Integrity Board	1. Describes the organization's privacy mission, authority, mission, accountability, and resources to coordinate, develop, and implement, applicable privacy requirements and manage privacy risks through the organization-wide privacy program	Functional	Intersects With	Data Management Board	PRI-13	Mechanisms exist to establish a written charter for a Data Management Board (DMB) and assigned organization-defined	5	
PM-24	Data Integrity Board	1. Describes the organization's privacy mission, authority, mission, accountability, and resources to coordinate, develop, and implement, applicable privacy requirements and manage privacy risks through the organization-wide privacy program	Functional	Intersects With	Data Quality Management	PRI-10	quantity, timeliness, accuracy, integrity and impact determination and de-identification of	5	
PM-24	Data Integrity Board	1. Describes the organization's privacy mission, authority, mission, accountability, and resources to coordinate, develop, and implement, applicable privacy requirements and manage privacy risks through the organization-wide privacy program	Functional	Intersects With	Personal Data (PD) Accuracy & Integrity	PRI-05.2	Mechanisms exist to ensure the accuracy and relevance of Personal Data (PD) throughout the information lifecycle by:	5	
PM-24	Data Integrity Board	1. Describes the organization's privacy mission, authority, mission, accountability, and resources to coordinate, develop, and implement, applicable privacy requirements and manage privacy risks through the organization-wide privacy program	Functional	Intersects With	Computer Matching Agreements (CMA)	PRI-02.1	Mechanisms exist to publish Computer Matching Agreements (CMA) on the organization's public website(s).	5	
PM-24	Data Integrity Board	1. Describes the organization's privacy mission, authority, mission, accountability, and resources to coordinate, develop, and implement, applicable privacy requirements and manage privacy risks through the organization-wide privacy program	Functional	Intersects With	Automated Data Management Processes	PRI-02.2	Automated mechanisms exist to adjust data that is able to be collected, received, processed, stored, transmitted, shared,	5	
PM-25	Personally Identifiable Information Used in Testing, Training,	1. Describes the organization's privacy mission, authority, mission, accountability, and resources to coordinate, develop, and implement, applicable privacy requirements and manage privacy risks through the organization-wide privacy program	Functional	Intersects With	Usage Restrictions of Personal Data (PD)	PRI-05.4	Mechanisms exist to restrict collecting, receiving, processing, storing, transmitting, sharing and/or updating Personal Data	5	
PM-25	Personally Identifiable Information Used in Testing, Training,	1. Describes the organization's privacy mission, authority, mission, accountability, and resources to coordinate, develop, and implement, applicable privacy requirements and manage privacy risks through the organization-wide privacy program	Functional	Intersects With	Collection Minimization	END-13.3	Mechanisms exist to utilize sensors that are configured to minimize the collection of information about individuals.	5	
PM-25	Personally Identifiable Information Used in Testing, Training,	1. Describes the organization's privacy mission, authority, mission, accountability, and resources to coordinate, develop, and implement, applicable privacy requirements and manage privacy risks through the organization-wide privacy program	Functional	Intersects With	Minimize Visitor Personal Data (PD)	PES-06.5	Mechanisms exist to minimize the collection of Personal Data (PD) contained in visitor access records.	5	
PM-25	Personally Identifiable Information Used in Testing, Training,	1. Describes the organization's privacy mission, authority, mission, accountability, and resources to coordinate, develop, and implement, applicable privacy requirements and manage privacy risks through the organization-wide privacy program	Functional	Intersects With	Internal Use of Personal Data (PD) For Testing, Training and Research	PRI-05.1	Mechanisms exist to address the use of Personal Data (PD) for internal testing, training and research that:	5	
PM-25	Personally Identifiable Information Used in Testing, Training,	1. Describes the organization's privacy mission, authority, mission, accountability, and resources to coordinate, develop, and implement, applicable privacy requirements and manage privacy risks through the organization-wide privacy program	Functional	Intersects With	Limit Sensitive / Regulated Data In Testing, Training & Research	DCH-18.2	the use of sensitive/regulated data for research, testing, or training, in accordance with authorized, legitimate business	5	
PM-26	Complaint Management	1. Describes the organization's privacy mission, authority, mission, accountability, and resources to coordinate, develop, and implement, applicable privacy requirements and manage privacy risks through the organization-wide privacy program	Functional	Intersects With	User Feedback Management	PRI-06.4	Mechanisms exist to maintain a process to efficiently and effectively respond to requests, complaints, concerns or	5	
PM-26	Complaint Management	1. Describes the organization's privacy mission, authority, mission, accountability, and resources to coordinate, develop, and implement, applicable privacy requirements and manage privacy risks through the organization-wide privacy program	Functional	Intersects With	Appeal Adverse Decision	PRI-06.3	Mechanisms exist to maintain a process for data subjects to appeal an adverse decision.	5	
PM-27	Privacy Reporting	1. Describes the organization's privacy mission, authority, mission, accountability, and resources to coordinate, develop, and implement, applicable privacy requirements and manage privacy risks through the organization-wide privacy program	Functional	Equal	Documenting Data Processing Activities	PRI-14	Mechanisms exist to document Personal Data (PD) processing activities that covers collection, receiving, processing, storage,	10	
PM-28	Risk Framing	1. Describes the organization's privacy mission, authority, mission, accountability, and resources to coordinate, develop, and implement, applicable privacy requirements and manage privacy risks through the organization-wide privacy program	Functional	Equal	Risk Framing	RSK-01.1	(2) Constraints affecting risk assessments, risk response and risk monitoring; (3) The organizational risk	10	
PM-29	Risk Management Program Leadership Roles	1. Describes the organization's privacy mission, authority, mission, accountability, and resources to coordinate, develop, and implement, applicable privacy requirements and manage privacy risks through the organization-wide privacy program	Functional	Intersects With	Supply Chain Risk Management (SCRM) Plan	RSK-09	Mechanisms exist to develop a plan for Supply Chain Risk Management (SCRM) associated with the development,	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	Notes
PM-29	Risk Management Program Leadership Roles	security and privacy management processes with strategic, operational, and budgetary planning processes; andb. Establish a Risk Executive (function) to view and analyze risk from an organization-wide	Functional	Intersects With	Assigned Security, Compliance & Resilience Responsibilities	GOV-04	the mission and resources to centrally-manage, coordinate, develop, implement and maintain an enterprise-wide	5	
PM-29	Risk Management Program Leadership Roles	security and privacy management processes with strategic, operational, and budgetary planning processes; andb. Establish a Risk Executive (function) to view and analyze risk from an organization-wide	Functional	Intersects With	Risk Management Program	RSK-01	Mechanisms exist to facilitate the implementation of strategic, operational and tactical risk management controls.	5	
PM-30	Supply Chain Risk Management Strategy	acquisition, maintenance, and disposal of systems, system components, and system services;b. Implement the supply chain risk management strategy consistently across the organization; andc. Review and update the supply chain risk management strategy on	Functional	Equal	Supply Chain Risk Management (SCRM) Plan	RSK-09	Mechanisms exist to develop a plan for Supply Chain Risk Management (SCRM) associated with the development,	10	
PM-30(01)	Management Strategy   Suppliers of Critical or Mission-essential	Identify, prioritize, and assess suppliers of critical or mission-essential technologies, products, and services.	Functional	Intersects With	Customized Development of Critical Components	TDA-12	mechanisms exist to custom-develop critical system components, when Commercial Off The Shelf (COTS) solutions	5	
PM-30(01)	Management Strategy   Suppliers of Critical or Mission-essential	Identify, prioritize, and assess suppliers of critical or mission-essential technologies, products, and services.	Functional	Intersects With	Criticality Analysis During Development	TDA-06.1	Mechanisms exist to require the developer of the Technology Asset, Application and/or Service (TAAS) to perform a criticality	5	
PM-30(01)	Management Strategy   Suppliers of Critical or Mission-essential	Identify, prioritize, and assess suppliers of critical or mission-essential technologies, products, and services.	Functional	Intersects With	Third-Party Criticality Assessments	TPM-02	Mechanisms exist to identify, prioritize and assess suppliers and partners of critical Technology Assets, Applications	5	
PM-31	Continuous Monitoring Strategy	organization-defined assessment frequencies] for control effectiveness; c. Ongoing monitoring of organizationally-defined metrics in accordance with the continuous monitoring strategy;d. Correlation and	Functional	Subset Of	Continuous Monitoring	MON-01	Mechanisms exist to facilitate the implementation of enterprise-wide monitoring controls.	10	
PM-32	Purposing	Analyze [Assignment: organization-defined systems or systems components] supporting mission essential services or functions to ensure that the information resources are being used consistent with their intended purpose	Functional	Equal	Purpose Validation	GOV-11	Mechanisms exist to monitor mission/business-critical Technology Assets, Applications and/or Services (TAAS) to ensure	10	
PS-01	Policy and Procedures	regulations, policies, standards, and guidelines; and2. Procedures to facilitate the implementation of the personnel security policy and the associated personnel security controls;b. Designate an [Assignment:	Functional	Intersects With	Publishing Security, Compliance & Resilience Documentation	GOV-02	maintain and disseminate policies, standards and procedures necessary for secure, compliant and resilient	5	
PS-01	Policy and Procedures	regulations, policies, standards, and guidelines; and2. Procedures to facilitate the implementation of the personnel security policy and the associated personnel security controls;b. Designate an [Assignment:	Functional	Intersects With	Periodic Review & Update of Security, Compliance & Resilience Program	GOV-03	Mechanisms exist to review the Security, Compliance & Resilience Program (SCR), including policies, standards and	5	
PS-01	Policy and Procedures	regulations, policies, standards, and guidelines; and2. Procedures to facilitate the implementation of the personnel security policy and the associated personnel security controls;b. Designate an [Assignment:	Functional	Subset Of	Human Resources Security Management	HRS-01	Mechanisms exist to facilitate the implementation of personnel security controls.	10	
PS-02	Position Risk Designation	a. Assign a risk designation to an organizational position;b. Establish screening criteria for individuals filling those positions; andc. Review and update position risk designations [Assignment: organization-	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	
PS-02	Position Risk Designation	a. Assign a risk designation to an organizational position;b. Establish screening criteria for individuals filling those positions; andc. Review and update position risk designations [Assignment: organization-	Functional	Intersects With	Position Categorization	HRS-02	personnel security risk by assigning a risk designation to all positions and establishing screening criteria for individuals	5	
PS-03	Personnel Screening	d. Screen individuals prior to authorizing access to the system; andb. Rescreen individuals in accordance with [Assignment: organization-defined conditions requiring rescreening and, where rescreening is so indicated, the frequency of rescreening]	Functional	Equal	Personnel Screening	HRS-04	Mechanisms exist to manage personnel security risk by screening individuals prior to authorizing access.	10	
PS-04	Personnel Termination	authenticators and credentials associated with the individual;c. Conduct exit interviews that include a discussion of [Assignment: organization-defined information security topics];d. Retrieve all security-	Functional	Equal	Personnel Termination	HRS-09	Mechanisms exist to govern the termination of individual employment.	10	
PS-05	Personnel Transfer	organization;b. Initiate [Assignment: organization-defined transfer or reassignment actions] within [Assignment: organization-defined time period following the formal transfer action];c. Modify access authorizations as needed; and	Functional	Equal	Personnel Transfer	HRS-08	Mechanisms exist to adjust logical and physical access authorizations to Technology Assets, Applications and/or	10	
PS-06	Access Agreements	frequency); andc. Verify that individuals requiring access to organizational information and systems:1. Sign appropriate access agreements prior to being granted access; and2. Re-sign access agreements to	Functional	Intersects With	Confidentiality Agreements	HRS-06.1	similar confidentiality agreements that reflect the needs to protect data and	5	
PS-06	Access Agreements	frequency); andc. Verify that individuals requiring access to organizational information and systems:1. Sign appropriate access agreements prior to being granted access; and2. Re-sign access agreements to	Functional	Intersects With	Access Agreements	HRS-06	mechanisms exist to inform the internal and third-party users to sign appropriate access agreements prior to being granted access	5	
PS-07	External Personnel Security	by the organization;c. Document personnel security requirements;d. Require external providers to notify [Assignment: organization-defined personnel or roles] of any personnel transfers or terminations of external	Functional	Equal	Third-Party Personnel	HRS-10	third-party personnel by reviewing and monitoring third-party security, compliance and/or resilience roles and	10	
PS-08	Personnel Sanctions	and privacy policies and procedures; andb. Notify [Assignment: organization-defined personnel or roles] within [Assignment: organization-defined time period] when a formal employee sanctions process is initiated,	Functional	Equal	Personnel Sanctions	HRS-07	Mechanisms exist to sanction personnel failing to comply with established security policies, standards and procedures.	10	
PS-09	Position Descriptions	incorporate security and privacy roles and responsibilities into organizational position descriptions.	Functional	Equal	Defined Roles & Responsibilities	HRS-03	Mechanisms exist to define cybersecurity roles & responsibilities for all personnel.	10	
RA-01	Policy and Procedures	executive orders, directives, regulations, policies, standards, and guidelines; and2. Procedures to facilitate the implementation of the risk assessment policy and the associated risk assessment controls;b.	Functional	Intersects With	Periodic Review & Update of Security, Compliance & Resilience Program	GOV-03	Mechanisms exist to review the Security, Compliance & Resilience Program (SCR), including policies, standards and	5	
RA-01	Policy and Procedures	Designate an [Assignment: organization-defined, standards, and guidelines; and2. Procedures to facilitate the implementation of the risk assessment policy and the associated risk assessment controls;b.	Functional	Subset Of	Risk Management Program	RSK-01	Mechanisms exist to facilitate the implementation of strategic, operational and tactical risk management controls.	10	
RA-01	Policy and Procedures	Designate an [Assignment: organization-defined, standards, and guidelines; and2. Procedures to facilitate the implementation of the risk assessment policy and the associated risk assessment controls;b.	Functional	Intersects With	Publishing Security, Compliance & Resilience Documentation	GOV-02	maintain and disseminate policies, standards and procedures necessary for secure, compliant and resilient	5	
RA-02	Security Categorization	Series and a. Assign a risk designation to the system; categorization results, including supporting rationale, in the security plan for the system; andc. Verify that the authorizing official or authorizing official	Functional	Equal	Risk-Based Security Categorization	RSK-02	Mechanisms exist to categorize Technology Assets, Applications, Services and/or Data (TAASD) in accordance with applicable laws,	10	
RA-03	Risk Assessment	designated representative reviews and approves the risk management decisions from the organization and mission or business process perspectives with system-level risk assessments;c. Document risk assessment results in [Selection (one): security and privacy plans;	Functional	Intersects With	Functional Review Of Security, Compliance & Resilience Controls	CPL-03.2	Mechanisms exist to regularly review Technology Assets, Applications and/or Services (TAAS) for adherence to the	5	
RA-03	Risk Assessment	risk management decisions from the organization and mission or business process perspectives with system-level risk assessments;c. Document risk assessment results in [Selection (one): security and privacy plans;	Functional	Intersects With	Risk Assessment	RSK-04	Mechanisms exist to conduct recurring assessments of risk that includes the likelihood and magnitude of harm, from	5	
RA-03(01)	Risk Assessment   Supply Chain Risk Assessment	components; and system services); andb. Update the supply chain risk assessment [Assignment: organization-defined frequency], when there are significant changes to the relevant supply chain, or when changes to the custom environments of	Functional	Equal	Supply Chain Risk Assessment	RSK-09.1	Mechanisms exist to periodically assess supply chain risks associated with Technology Assets, Applications and/or	10	
RA-05	Vulnerability Monitoring and Scanning	improper configurations;2. Formatting checklists and test procedures; and3. Measuring vulnerability impact;c. Analyze vulnerability scan reports and results from vulnerability monitoring;d. Remediate legitimate	Functional	Intersects With	Vulnerability Scanning	VPM-06	mechanisms exist to detect vulnerabilities and configuration errors by routine vulnerability scanning of systems and applications	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	Notes
SC-01	Policy and Procedures	guidelines; and2. Procedures to facilitate the implementation of the system and communications protection policy and the associated system and communications protection controls;b. Designate an the following types of denial-of-service events: [Assignment: organization-defined types of denial-of-service events]; andb. Employ the following controls to achieve the denial-of-service objective: [Assignment: organization-defined types of controls to achieve the denial-of-service objective]; andc. Connect to external networks or systems only through managed interfaces consisting of	Functional	Intersects With	Periodic Review & Update of Security, Compliance & Resilience Program	GOV-03	Mechanisms exist to review the Security, Compliance & Resilience Program (SCR), including policies, standards and	5	
SC-05	Denial-of-service Protection	[Assignment: organization-defined types of denial-of-service events]; andb. Employ the following controls to achieve the denial-of-service objective: [Assignment: organization-defined types of controls to achieve the denial-of-service objective]; andc. Connect to external networks or systems only through managed interfaces consisting of	Functional	Intersects With	Resource Priority	CAP-02	Mechanisms exist to control resource utilization of Technology Assets, Applications and/or Services (TAAS) that are capacity planning so that necessary capacity for information processing, telecommunications and environmental support will exist	5	
SC-05	Denial-of-service Protection	[Assignment: organization-defined types of denial-of-service events]; andb. Employ the following controls to achieve the denial-of-service objective: [Assignment: organization-defined types of controls to achieve the denial-of-service objective]; andc. Connect to external networks or systems only through managed interfaces consisting of	Functional	Intersects With	Capacity Planning	CAP-03	Implementation of capacity management controls to ensure optimal system performance to meet expected and anticipated	5	
SC-05	Denial-of-service Protection	[Assignment: organization-defined types of denial-of-service events]; andb. Employ the following controls to achieve the denial-of-service objective: [Assignment: organization-defined types of controls to achieve the denial-of-service objective]; andc. Connect to external networks or systems only through managed interfaces consisting of	Functional	Intersects With	Capacity & Performance Management	CAP-01	Automated mechanisms exist to protect against or limit the effects of denial of service attacks.	5	
SC-05	Denial-of-service Protection	[Assignment: organization-defined types of denial-of-service events]; andb. Employ the following controls to achieve the denial-of-service objective: [Assignment: organization-defined types of controls to achieve the denial-of-service objective]; andc. Connect to external networks or systems only through managed interfaces consisting of	Functional	Intersects With	Denial of Service (DoS) Protection	NET-02.1	Mechanisms exist to monitor and control communications at the external network boundary and at key internal boundaries within the network.	5	
SC-07	Boundary Protection	components that are [Selection (one): physically; logically] separated from internal organizational networks; andc. Connect to external networks or systems only through managed interfaces consisting of	Functional	Intersects With	Boundary Protection	NET-03	Mechanisms exist to prohibit, or strictly-control, Internet access from sensitive/regulated data enclaves (secure zones).	5	
SC-07(28)	Boundary Protection   Connections to Public Networks	Prohibit the direct connection of [Assignment: organization-defined system] to a public network.	Functional	Equal	Direct Internet Access Restrictions	NET-06.5	Mechanisms exist to host security-specific technologies in a dedicated subnet.	10	
SC-07(29)	Boundary Protection   Separate Subnets to Isolate Functions	Implement [Selection (one): physically; logically] separate subnetworks to isolate the following critical system components and functions: [Assignment: organization-defined critical system components and functions]	Functional	Intersects With	Cloud Infrastructure Security Subnet	CLD-03	Mechanisms exist to securely implement an internal Public Key Infrastructure (PKI) infrastructure or obtain PKI services from a reputable PKI service provider.	5	
SC-12	Cryptographic Key Establishment and Management	cryptography is employed within the system in accordance with the following key management requirements: [Assignment: organization-defined requirements for key generation, distribution, storage, cryptographic uses]; andb. Implement the following types of cryptography required for each specified cryptographic use: [Assignment: organization-defined types of cryptography for each specified cryptographic	Functional	Intersects With	Public Key Infrastructure (PKI)	CRY-08	Cryptographic mechanisms exist to prevent unauthorized disclosure of data at rest.	5	
SC-13	Cryptographic Protection	cryptographic uses); andb. Implement the following types of cryptography required for each specified cryptographic use: [Assignment: organization-defined types of cryptography for each specified cryptographic	Functional	Intersects With	Encrypting Data At Rest	CRY-05	Mechanisms exist to address the exporting of cryptographic technologies in compliance with relevant statutory and regulatory	5	
SC-13	Cryptographic Protection	cryptographic uses); andb. Implement the following types of cryptography required for each specified cryptographic use: [Assignment: organization-defined types of cryptography for each specified cryptographic	Functional	Intersects With	Export-Controlled Cryptography	CRY-01.2	Mechanisms exist to facilitate the implementation of cryptographic protections controls using known public standards and trusted cryptographic technologies.	5	
SC-13	Cryptographic Protection	cryptographic uses); andb. Implement the following types of cryptography required for each specified cryptographic use: [Assignment: organization-defined types of cryptography for each specified cryptographic	Functional	Intersects With	Use of Cryptographic Controls	CRY-01	collaborative computing devices with the following exceptions: (1) Networked whiteboards; (2) Video teleconference	5	
SC-15	Collaborative Computing Devices and Applications	computing devices and applications with the following exceptions: [Assignment: organization-defined exceptions where remote activation is to be allowed]; andb. Provide an explicit indication of use to users	Functional	Intersects With	Collaborative Computing Devices	END-14	Domain Name Service (DNS) resolution is designed, implemented and managed to protect the security of name / data origin authentication and data integrity verification on the Domain Name Service (DNS) resolution responses received from authoritative sources upon systems that collectively provide	5	
SC-20	Name/address Resolution Service (authoritative)	in response to external name/address resolution queries; andb. Provide the means to indicate the security status of child zones and (if the child supports secure resolution services) to enable verification of a	Functional	Intersects With	Domain Name Service (DNS) Resolution	NET-10	Domain Name Service (DNS) resolution is designed, implemented and managed to protect the security of name / data origin authentication and data integrity verification on the Domain Name Service (DNS) resolution responses received from authoritative sources upon systems that collectively provide	5	
SC-21	Name/address Resolution Service (recursive or Caching Resolvers)	Request and perform data origin authentication and data integrity verification on the name/address resolution responses the system receives from authoritative sources.	Functional	Equal	Secure name / Address Resolution Service (Recursive or Caching Resolvers)	NET-10.2	Domain Name Service (DNS) resolution is designed, implemented and managed to protect the security of name / data origin authentication and data integrity verification on the Domain Name Service (DNS) resolution responses received from authoritative sources upon systems that collectively provide	10	
SC-22	Architecture and Provisioning for Name/address Resolution Service	Ensure the systems that collectively provide name/address resolution service for an organization are fault-tolerant and implement internal and external role separation.	Functional	Equal	Architecture & Provisioning for Name / Address Resolution Service	NET-10.1	Domain Name Service (DNS) resolution service are fault-tolerant and implement	10	
SC-39	Process Isolation	Maintain a separate execution domain for each executing system process.	Functional	Equal	Process Isolation	SEA-04	Mechanisms exist to implement a separate execution domain for each executing process.	10	
SC-41	Port and I/O Device Access	[Selection (one): physically; logically] disable or remove [Assignment: organization-defined connection ports or input/output devices] on the following systems or system components: [Assignment: organization-defined systems or system components]	Functional	Equal	Port & Input / Output (I/O) Device Access	END-12	Mechanisms exist to physically disable or remove unnecessary connection ports or input/output devices from sensitive systems.	10	
SC-45	System Time Synchronization	Synchronize system clocks within and between systems and system components.	Functional	Intersects With	Synchronization With Authoritative Time Source	MON-07.1	Mechanisms exist to synchronize internal system clocks with an authoritative time source.	5	
SI-01	Policy and Procedures	regulations, policies, standards, and guidelines; and2. Procedures to facilitate the implementation of the system and information integrity policy and the associated system and information integrity controls;b. Designate an [Assignment: organization-defined	Functional	Intersects With	Periodic Review & Update of Security, Compliance & Resilience Program	GOV-03	Mechanisms exist to review the Security, Compliance & Resilience Program (SCR), including policies, standards and	5	
SI-01	Policy and Procedures	regulations, policies, standards, and guidelines; and2. Procedures to facilitate the implementation of the system and information integrity policy and the associated system and information integrity controls;b. Designate an [Assignment: organization-defined	Functional	Subset Of	Secure Engineering Principles	SEA-01	Mechanisms exist to facilitate the implementation of industry-recognized security, compliance and resilience practices in the	10	
SI-01	Policy and Procedures	regulations, policies, standards, and guidelines; and2. Procedures to facilitate the implementation of the system and information integrity policy and the associated system and information integrity controls;b. Designate an [Assignment: organization-defined	Functional	Intersects With	Publishing Security, Compliance & Resilience Documentation	GOV-02	maintain and disseminate policies, standards and procedures necessary for secure, compliant and resilient	5	
SI-02	Flaw Remediation	remediation for effectiveness and potential side effects before installation;c. Install security-relevant software and firmware updates within [Assignment: organization-defined time period] of the release of the	Functional	Intersects With	Vulnerability & Patch Management Program (VPM)	VPM-01	Mechanisms exist to facilitate the implementation and monitoring of vulnerability management controls.	5	
SI-02	Flaw Remediation	remediation for effectiveness and potential side effects before installation;c. Install security-relevant software and firmware updates within [Assignment: organization-defined time period] of the release of the	Functional	Intersects With	Software & Firmware Patching	VPM-05	Mechanisms exist to conduct software patching for all deployed Technology Assets, Applications and/or Services	5	
SI-02	Flaw Remediation	remediation for effectiveness and potential side effects before installation;c. Install security-relevant software and firmware updates within [Assignment: organization-defined time period] of the release of the	Functional	Intersects With	Automatic Antimalware Signature Updates	END-04.1	Automated mechanisms exist to update antimalware technologies, including signature definitions.	5	
SI-03	Malicious Code Protection	organization-defined frequency) and real-time scans of files from external sources at [Selection (one or more): endpoint; network entry and exit points] as the files are downloaded, opened, or executed in accordance	Functional	Intersects With	Software & Firmware Patching	VPM-05	Mechanisms exist to facilitate the implementation and monitoring of vulnerability management controls.	5	
SI-03	Malicious Code Protection	organization-defined frequency) and real-time scans of files from external sources at [Selection (one or more): endpoint; network entry and exit points] as the files are downloaded, opened, or executed in accordance	Functional	Intersects With	Vulnerability & Patch Management Program (VPM)	VPM-01	Mechanisms exist to utilize antimalware technologies to detect and eradicate malicious code.	5	
SI-03	Malicious Code Protection	organization-defined frequency) and real-time scans of files from external sources at [Selection (one or more): endpoint; network entry and exit points] as the files are downloaded, opened, or executed in accordance	Functional	Intersects With	Malicious Code Protection (Anti-Malware)	END-04	Mechanisms exist to utilize heuristic / nonsignature-based antimalware detection capabilities.	5	
SI-03	Malicious Code Protection	organization-defined frequency) and real-time scans of files from external sources at [Selection (one or more): endpoint; network entry and exit points] as the files are downloaded, opened, or executed in accordance	Functional	Intersects With	Heuristic / Nonsignature-Based Detection	END-04.4		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	Notes
SI-03	Malicious Code Protection	organization-defined frequency) and real-time scans of files from external sources at [Selection (one or more): endpoint; network entry and exit points] as the files are downloaded, opened, or executed in accordance	Functional	Intersects With	Safeguarding Data Over Open Networks	NET-12	to implement strong cryptography and security protocols to safeguard sensitive/regulated data during transmission over open public	5	
SI-03	Malicious Code Protection	organization-defined frequency) and real-time scans of files from external sources at [Selection (one or more): endpoint; network entry and exit points] as the files are downloaded, opened, or executed in accordance	Functional	Intersects With	Automatic Antimalware Signature Updates	END-04.1	Automated mechanisms exist to update antimalware technologies, including signature definitions.	5	
SI-03	Malicious Code Protection	organization-defined frequency) and real-time scans of files from external sources at [Selection (one or more): endpoint; network entry and exit points] as the files are downloaded, opened, or executed in accordance	Functional	Intersects With	Input Data Validation	TDA-18	Mechanisms exist to check the validity of information inputs.	5	
SI-04	System Monitoring	organization-defined frequency) and real-time scans of files from external sources at [Selection (one or more): endpoint; network entry and exit points] as the files are downloaded, opened, or executed in accordance	Functional	Intersects With	Input Data Validation	TDA-18	Mechanisms exist to check the validity of information inputs.	5	
SI-04	System Monitoring	organization-defined frequency) and real-time scans of files from external sources at [Selection (one or more): endpoint; network entry and exit points] as the files are downloaded, opened, or executed in accordance	Functional	Intersects With	Centralized Collection of Security Event Logs	MON-02	Security Incident Event Manager (SIEM), or similar automated tool, to support the centralized collection of security-related	5	
SI-04	System Monitoring	organization-defined frequency) and real-time scans of files from external sources at [Selection (one or more): endpoint; network entry and exit points] as the files are downloaded, opened, or executed in accordance	Functional	Intersects With	Safeguarding Data Over Open Networks	NET-12	to implement strong cryptography and security protocols to safeguard sensitive/regulated data during transmission over open public	5	
SI-04	System Monitoring	organization-defined frequency) and real-time scans of files from external sources at [Selection (one or more): endpoint; network entry and exit points] as the files are downloaded, opened, or executed in accordance	Functional	Intersects With	Continuous Monitoring	MON-01	Mechanisms exist to facilitate the implementation of enterprise-wide monitoring controls.	5	
SI-05	Security Alerts, Advisories, and Directives	organization-defined frequency) and real-time scans of files from external sources at [Selection (one or more): endpoint; network entry and exit points] as the files are downloaded, opened, or executed in accordance	Functional	Intersects With	Input Data Validation	TDA-18	Mechanisms exist to check the validity of information inputs.	5	
SI-05	Security Alerts, Advisories, and Directives	organization-defined frequency) and real-time scans of files from external sources at [Selection (one or more): endpoint; network entry and exit points] as the files are downloaded, opened, or executed in accordance	Functional	Intersects With	Threat Intelligence Feeds	THR-03	vulnerabilities and evolving threats by leveraging the knowledge of attacker tactics, techniques and procedures to	5	
SI-05	Security Alerts, Advisories, and Directives	organization-defined frequency) and real-time scans of files from external sources at [Selection (one or more): endpoint; network entry and exit points] as the files are downloaded, opened, or executed in accordance	Functional	Intersects With	Safeguarding Data Over Open Networks	NET-12	to implement strong cryptography and security protocols to safeguard sensitive/regulated data during transmission over open public	5	
SI-12	Information Management and Retention	organization-defined frequency) and real-time scans of files from external sources at [Selection (one or more): endpoint; network entry and exit points] as the files are downloaded, opened, or executed in accordance	Functional	Intersects With	Personal Data (PD) Retention & Disposal	PRI-05	Mechanisms exist to: (1) Retain Personal Data (PD), including metadata, for an organization-defined time period	5	
SI-17	Fail-safe Procedures	organization-defined frequency) and real-time scans of files from external sources at [Selection (one or more): endpoint; network entry and exit points] as the files are downloaded, opened, or executed in accordance	Functional	Equal	Fail Safe	SEA-07.3	Mechanisms exist to implement fail-safe procedures when failure conditions occur.	10	
SR-01	Policy and Procedures	organization-defined frequency) and real-time scans of files from external sources at [Selection (one or more): endpoint; network entry and exit points] as the files are downloaded, opened, or executed in accordance	Functional	Intersects With	Periodic Review & Update of Security, Compliance & Resilience Program	GOV-03	Mechanisms exist to review the Security, Compliance & Resilience Program (SCR), including policies, standards and	5	
SR-01	Policy and Procedures	organization-defined frequency) and real-time scans of files from external sources at [Selection (one or more): endpoint; network entry and exit points] as the files are downloaded, opened, or executed in accordance	Functional	Intersects With	Publishing Security, Compliance & Resilience Documentation	GOV-02	maintain and disseminate policies, standards and procedures necessary for secure, compliant and resilient	5	
SR-01	Policy and Procedures	organization-defined frequency) and real-time scans of files from external sources at [Selection (one or more): endpoint; network entry and exit points] as the files are downloaded, opened, or executed in accordance	Functional	Subset Of	Third-Party Management	TPM-01	Mechanisms exist to facilitate the implementation of third-party management controls.	10	
SR-02	Supply Chain Risk Management Plan	organization-defined frequency) and real-time scans of files from external sources at [Selection (one or more): endpoint; network entry and exit points] as the files are downloaded, opened, or executed in accordance	Functional	Intersects With	Supply Chain Risk Management (SCRM) Plan	RSK-09	Mechanisms exist to develop a plan for Supply Chain Risk Management (SCRM) associated with the development,	5	
SR-02	Supply Chain Risk Management Plan	organization-defined frequency) and real-time scans of files from external sources at [Selection (one or more): endpoint; network entry and exit points] as the files are downloaded, opened, or executed in accordance	Functional	Intersects With	Supply Chain Risk Management (SCRM)	TPM-03	Mechanisms exist to: (1) Evaluate security risks and threats associated with Technology Assets, Applications	5	
SR-02(01)	Supply Chain Risk Management Plan   Establish SCRM Team	organization-defined frequency) and real-time scans of files from external sources at [Selection (one or more): endpoint; network entry and exit points] as the files are downloaded, opened, or executed in accordance	Functional	Intersects With	Supply Chain Risk Management (SCRM)	TPM-03	Mechanisms exist to: (1) Evaluate security risks and threats associated with Technology Assets, Applications	5	
SR-03	Supply Chain Controls and Processes	organization-defined frequency) and real-time scans of files from external sources at [Selection (one or more): endpoint; network entry and exit points] as the files are downloaded, opened, or executed in accordance	Functional	Equal	Processes To Address Weaknesses or Deficiencies	TPM-03.3	Mechanisms exist to address identified weaknesses or deficiencies in the security of the supply chain	10	
SR-05	Acquisition Strategies, Tools, and Methods	organization-defined frequency) and real-time scans of files from external sources at [Selection (one or more): endpoint; network entry and exit points] as the files are downloaded, opened, or executed in accordance	Functional	Intersects With	Acquisition Strategies, Tools & Methods	TPM-03.1	Mechanisms exist to utilize tailored acquisition strategies, contract tools and procurement methods for the purchase of	5	
SR-08	Notification Agreements	organization-defined frequency) and real-time scans of files from external sources at [Selection (one or more): endpoint; network entry and exit points] as the files are downloaded, opened, or executed in accordance	Functional	Equal	Security Compromise Notification Agreements	TPM-05.1	Mechanisms exist to compel External Service Providers (ESPs) to provide notification of actual or potential compromises in the	10	
SR-10	Inspection of Systems or Components	organization-defined frequency) and real-time scans of files from external sources at [Selection (one or more): endpoint; network entry and exit points] as the files are downloaded, opened, or executed in accordance	Functional	Intersects With	Product Tampering and Counterfeiting (PTC)	TDA-11	authenticity by developing and implementing Product Tampering and Counterfeiting (PTC) practices that include the means	5	
SR-10	Inspection of Systems or Components	organization-defined frequency) and real-time scans of files from external sources at [Selection (one or more): endpoint; network entry and exit points] as the files are downloaded, opened, or executed in accordance	Functional	Intersects With	Technology Asset Inspections	AST-15.1	Mechanisms exist to physically and logically inspect critical technology assets to detect evidence of tampering.	5	
SR-11	Component Authenticity	organization-defined frequency) and real-time scans of files from external sources at [Selection (one or more): endpoint; network entry and exit points] as the files are downloaded, opened, or executed in accordance	Functional	Intersects With	Product Tampering and Counterfeiting (PTC)	TDA-11	authenticity by developing and implementing Product Tampering and Counterfeiting (PTC) practices that include the means	5	
SR-11(01)	Component Authenticity   Anti-counterfeit Training	organization-defined frequency) and real-time scans of files from external sources at [Selection (one or more): endpoint; network entry and exit points] as the files are downloaded, opened, or executed in accordance	Functional	Equal	Anti-Counterfeit Training	TDA-11.1	Mechanisms exist to train personnel to detect counterfeit system components, including hardware, software and	10	
SR-11(02)	Component Authenticity   Configuration Control for Component Service	organization-defined frequency) and real-time scans of files from external sources at [Selection (one or more): endpoint; network entry and exit points] as the files are downloaded, opened, or executed in accordance	Functional	Equal	Maintain Configuration Control During Maintenance	MNT-07	Mechanisms exist to maintain proper physical security and configuration control over technology assets awaiting	10	
SR-12	Component Disposal	organization-defined frequency) and real-time scans of files from external sources at [Selection (one or more): endpoint; network entry and exit points] as the files are downloaded, opened, or executed in accordance	Functional	Intersects With	Secure Disposal, Destruction or Re-Use of Equipment	AST-09	Mechanisms exist to prevent information being recovered	5	