Set Theory Relationship Mapping (STRM)

Reference Document : Secure Controls Framework (SCF) version 2024.3
Focal Document: NIST SP 800-66 R2
Focal Document URL: https://csrc.nist.gov/pubs/sp/800/66/r2/final
STRM URL: https://securecontrolsframework.com/content/strm/scf-2024-3-nist-800-66r2.pdf

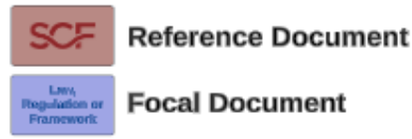
Set Theory Relationship Mapping (STRM) is well-suited for mapping between sets of elements that exist in two distinct concepts that are mostly the same as each other (e.g., cybersecurity & data privacy requirements). STRM also allows the strength of the mapping to be captured.

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

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

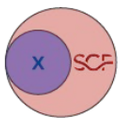
Based on NIST IR 8477, STRM supports five (5) five relationship types to describe the logical similarity between two distinct concepts:

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

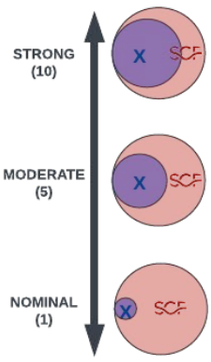


Relationship Type #1: SUBSET OF

Focal Document Element is a subset of SCF control. In other words, SCF control contains everything that Focal Document Element does and more.

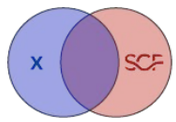


SUBSET OF
Relative Relationship Strength (control versus control)

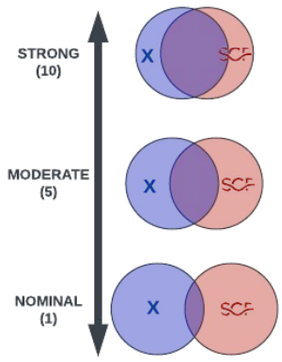


Relationship Type #2: INTERSECTS WITH

SCF control has some overlap with Focal Document Element, but each includes content that the other does not.

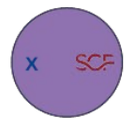


INTERSECTS WITH
Relative Relationship Strength (control versus control)

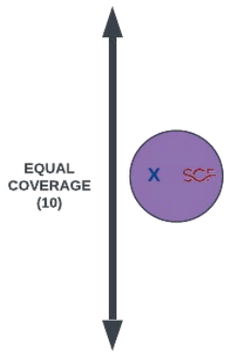


Relationship Type #3: EQUAL

SCF control and Focal Document Element are the same, although not necessarily identical.

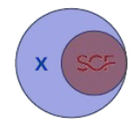


EQUAL
Relative Relationship Strength (control versus control)

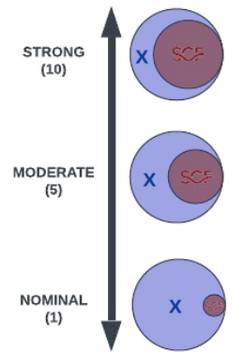


Relationship Type #4: SUPERSET OF

Focal Document Element is a superset of SCF control. In other words, Focal Document Element contains everything that SCF control does and more.

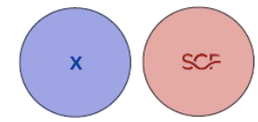


SUPERSET OF
Relative Relationship Strength (control versus control)

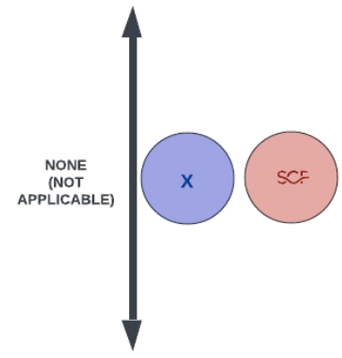


Relationship Type #5: NO RELATIONSHIP

SCF control and Focal Document Element are unrelated; their content does not overlap.



NO RELATIONSHIP
Relative Relationship Strength (control versus control)



FDE #	FDE Name	Focal Document Element (FDE) Description	STRM Rationale	STRM Relationship	SCF Control	SCF #	Secure Controls Framework (SCF) Control Description	Strength of Relationship (optional)	Notes (optional)
164.308	Administrative Safeguards	Defined in the Security Rule as the “administrative actions and policies, and procedures to manage the selection, development, implementation, and maintenance of security measures to protect electronic protected health information and to manage the conduct of the covered entity's workforce in relation to the protection of that information.”	Functional	Subset Of	Cybersecurity & Data Protection Governance Program	GOV-01	Mechanisms exist to facilitate the implementation of cybersecurity & data protection governance controls.	10	
			Functional	Intersects With	Publishing Cybersecurity & Data Protection Documentation	GOV-02	Mechanisms exist to establish, maintain and disseminate cybersecurity & data protection policies, standards and procedures.	5	
164.308(a)(1)	Security Management Process	Implement policies and procedures to prevent, detect, contain, and correct security violations.	Functional	Intersects With	Publishing Cybersecurity & Data Protection Documentation	GOV-02	Mechanisms exist to establish, maintain and disseminate cybersecurity & data protection policies, standards and procedures.	5	
			Functional	Subset Of	Human Resources Security Management	HRS-01	Mechanisms exist to facilitate the implementation of personnel security controls.	10	
			Functional	Subset Of	Incident Response Operations	IRO-01	Mechanisms exist to implement and govern processes and documentation to facilitate an organization-wide response capability for cybersecurity & data privacy-related incidents.	10	
			Functional	Intersects With	Standardized Operating Procedures (SOP)	OPS-01.1	Mechanisms exist to identify and document Standardized Operating Procedures (SOP), or similar documentation, to enable the proper execution of day-to-day / assigned tasks.	5	
164.308(a)(2)	Assigned Security Responsibility	Identify the security official who is responsible for the development and implementation of the policies and procedures required by this subpart for the covered entity or business associate.	Functional	Intersects With	Assigned Cybersecurity & Data Protection Responsibilities	GOV-04	Mechanisms exist to assign one or more qualified individuals with the mission and resources to centrally-manage, coordinate, develop, implement and maintain an enterprise-wide cybersecurity & data protection program.	5	
			Functional	Intersects With	Stakeholder Accountability Structure	GOV-04.1	Mechanisms exist to enforce an accountability structure so that appropriate teams and individuals are empowered, responsible and trained for mapping, measuring and managing data and technology-related risks.	3	
			Functional	Intersects With	Authoritative Chain of Command	GOV-04.2	Mechanisms exist to establish an authoritative chain of command with clear lines of communication to remove ambiguity from individuals and teams related to managing data and technology-related risks.	3	
			Functional	Intersects With	Defined Roles & Responsibilities	HRS-03	Mechanisms exist to define cybersecurity roles & responsibilities for all personnel.	5	
164.308(a)(3)	Workforce Security	Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health information, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	Functional	Intersects With	Publishing Cybersecurity & Data Protection Documentation	GOV-02	Mechanisms exist to establish, maintain and disseminate cybersecurity & data protection policies, standards and procedures.	5	
			Functional	Intersects With	Operationalizing Cybersecurity & Data Protection Practices	GOV-15	Mechanisms exist to compel data and/or process owners to operationalize cybersecurity & data privacy practices for each system, application and/or service under their control.	8	
			Functional	Intersects With	Select Controls	GOV-15.1	Mechanisms exist to compel data and/or process owners to select required cybersecurity & data privacy controls for each system, application and/or service under their control.	8	
			Functional	Intersects With	Implement Controls	GOV-15.2	Mechanisms exist to compel data and/or process owners to implement required cybersecurity & data privacy controls for each system, application and/or service under their control.	8	
			Functional	Intersects With	Assess Controls	GOV-15.3	Mechanisms exist to compel data and/or process owners to assess if required cybersecurity & data privacy controls for each system, application and/or service under their control are implemented correctly and are operating as intended.	3	
			Functional	Subset Of	Identity & Access Management (IAM)	IAC-01	Mechanisms exist to facilitate the implementation of identification and access management controls.	10	
			Functional	Intersects With	Authenticate, Authorize and Audit (AAA)	IAC-01.2	Mechanisms exist to strictly govern the use of Authenticate, Authorize and Audit (AAA) solutions, both on-premises and those hosted by an External Service Provider (ESP).	5	
			Functional	Intersects With	User Provisioning & De-Provisioning	IAC-07	Mechanisms exist to utilize a formal user registration and de-registration process that governs the assignment of access rights.	5	
			Functional	Intersects With	Change of Roles & Duties	IAC-07.1	Mechanisms exist to revoke user access rights following changes in personnel roles and duties, if no longer necessary or permitted.	5	
			Functional	Intersects With	Termination of Employment	IAC-07.2	Mechanisms exist to revoke user access rights in a timely manner, upon termination of employment or contract.	5	
			Functional	Intersects With	Role-Based Access Control (RBAC)	IAC-08	Mechanisms exist to enforce a Role-Based Access Control (RBAC) policy over users and resources that applies need-to-know and fine-grained access control for sensitive/regulated data access.	5	
			Functional	Intersects With	Account Management	IAC-15	Mechanisms exist to proactively govern account management of individual, group, system, service, application, guest and temporary accounts.	5	
			Functional	Intersects With	Privileged Account Management (PAM)	IAC-16	Mechanisms exist to restrict and control privileged access rights for users and services.	5	
			Functional	Intersects With	Access Enforcement	IAC-20	Mechanisms exist to enforce Logical Access Control (LAC) permissions that conform to the principle of "least privilege."	5	
			Functional	Intersects With	Access To Sensitive / Regulated Data	IAC-20.1	Mechanisms exist to limit access to sensitive/regulated data to only those individuals whose job requires such access.	5	
			Functional	Intersects With	Least Privilege	IAC-21	Mechanisms exist to utilize the concept of least privilege, allowing only authorized access to processes necessary to accomplish assigned tasks in accordance with organizational business functions.	5	
			Functional	Intersects With	Standardized Operating Procedures (SOP)	OPS-01.1	Mechanisms exist to identify and document Standardized Operating Procedures (SOP), or similar documentation, to enable the proper execution of day-to-day / assigned tasks.	5	
164.308(a)(4)	Information Access Management	Implement policies and procedures for authorizing access to electronic protected health information that are consistent with the applicable requirements of subpart E of this part.	Functional	Intersects With	Publishing Cybersecurity & Data Protection Documentation	GOV-02	Mechanisms exist to establish, maintain and disseminate cybersecurity & data protection policies, standards and procedures.	5	
			Functional	Intersects With	Data Protection	DCH-01	Mechanisms exist to facilitate the implementation of data protection controls.	5	
			Functional	Intersects With	Data Stewardship	DCH-01.1	Mechanisms exist to ensure data stewardship is assigned, documented and communicated.	5	
			Functional	Intersects With	Sensitive / Regulated Data Protection	DCH-01.2	Mechanisms exist to protect sensitive/regulated data wherever it is stored.	5	
			Functional	Intersects With	Sensitive / Regulated Media Records	DCH-01.3	Mechanisms exist to ensure media records for sensitive/regulated data contain sufficient information to determine the potential impact in the event of a data loss incident.	5	
			Functional	Intersects With	Defining Access Authorizations for Sensitive/Regulated Data	DCH-01.4	Mechanisms exist to explicitly define authorizations for specific individuals and/or roles for logical and /or physical access to sensitive/regulated data.	5	
			Functional	Intersects With	Data & Asset Classification	DCH-02	Mechanisms exist to ensure data and assets are categorized in accordance with applicable statutory, regulatory and contractual requirements.	5	
			Functional	Subset Of	Human Resources Security Management	HRS-01	Mechanisms exist to facilitate the implementation of personnel security controls.	10	
			Functional	Subset Of	Identity & Access Management (IAM)	IAC-01	Mechanisms exist to facilitate the implementation of identification and access management controls.	10	
			Functional	Intersects With	Identification & Authentication for Organizational Users	IAC-02	Mechanisms exist to uniquely identify and centrally Authenticate, Authorize and Audit (AAA) organizational users and processes acting on behalf of organizational users.	5	
			Functional	Intersects With	Role-Based Access Control (RBAC)	IAC-08	Mechanisms exist to enforce a Role-Based Access Control (RBAC) policy over users and resources that applies need-to-know and fine-grained access control for sensitive/regulated data access.	5	
			Functional	Intersects With	Access Enforcement	IAC-20	Mechanisms exist to enforce Logical Access Control (LAC) permissions that conform to the principle of "least privilege."	5	
			Functional	Intersects With	Access To Sensitive / Regulated Data	IAC-20.1	Mechanisms exist to limit access to sensitive/regulated data to only those individuals whose job requires such access.	5	
			Functional	Intersects With	Least Privilege	IAC-21	Mechanisms exist to utilize the concept of least privilege, allowing only authorized access to processes necessary to accomplish assigned tasks in accordance with organizational business functions.	5	
			Functional	Subset Of	Incident Response Operations	IRO-01	Mechanisms exist to implement and govern processes and documentation to facilitate an organization-wide response capability for cybersecurity & data privacy-related incidents.	10	
			Functional	Intersects With	Incident Handling	IRO-02	Mechanisms exist to cover the preparation, automated detection or intake of incident reporting, analysis, containment, eradication and recovery.	5	
			Functional	Intersects With	Standardized Operating Procedures (SOP)	OPS-01.1	Mechanisms exist to identify and document Standardized Operating Procedures (SOP), or similar documentation, to enable the proper execution of day-to-day / assigned tasks.	5	
			Functional	Subset Of	Cybersecurity & Data Privacy-Minded Workforce	SAT-01	Mechanisms exist to facilitate the implementation of security workforce development and awareness controls.	10	
164.308(a)(5)	Security Awareness and Training	Implement a security awareness and training program for all members of its workforce (including management).	Functional	Intersects With	Defined Roles & Responsibilities	HRS-03	Mechanisms exist to define cybersecurity roles & responsibilities for all personnel.	5	
			Functional	Intersects With	Defined Roles & Responsibilities	HRS-03	Mechanisms exist to define cybersecurity roles & responsibilities for all personnel.	5	
			Functional	Subset Of	Cybersecurity & Data Privacy-Minded Workforce	SAT-01	Mechanisms exist to facilitate the implementation of security workforce development and awareness controls.	10	

FDE #	FDE Name	Focal Document Element (FDE) Description	STRM Rationale	STRM Relationship	SCF Control	SCF #	Secure Controls Framework (SCF) Control Description	Strength of Relationship (optional)	Notes (optional)
			Functional	Intersects With	Cybersecurity & Data Privacy Awareness Training	SAT-02	Mechanisms exist to provide all employees and contractors appropriate awareness education and training that is relevant for their job function.	5	
164.308(a)(6)	Security Incident Procedures	Implement policies and procedures to address security incidents.	Functional	Intersects With	Publishing Cybersecurity & Data Protection Documentation	GOV-02	Mechanisms exist to establish, maintain and disseminate cybersecurity & data protection policies, standards and procedures.	5	
			Functional	Subset Of	Incident Response Operations	IRO-01	Mechanisms exist to implement and govern processes and documentation to facilitate an organization-wide response capability for cybersecurity & data privacy-related incidents.	10	
			Functional	Intersects With	Incident Handling	IRO-02	Mechanisms exist to cover the preparation, automated detection or intake of incident reporting, analysis, containment, eradication and recovery.	5	
			Functional	Intersects With	Incident Response Plan (IRP)	IRO-04	Mechanisms exist to maintain and make available a current and viable Incident Response Plan (IRP) to all stakeholders.	5	
			Functional	Intersects With	Standardized Operating Procedures (SOP)	OPS-01.1	Mechanisms exist to identify and document Standardized Operating Procedures (SOP), or similar documentation, to enable the proper execution of day-to-day / assigned tasks.	5	
164.308(a)(7)	Contingency Plan	Establish (and implement as needed) policies and procedures for responding to an emergency or other occurrence (for example, fire, vandalism, system failure, and natural disaster) that damages systems that contain electronic protected health information	Functional	Intersects With	Publishing Cybersecurity & Data Protection Documentation	GOV-02	Mechanisms exist to establish, maintain and disseminate cybersecurity & data protection policies, standards and procedures.	5	
			Functional	Subset Of	Business Continuity Management System (BCMS)	BCD-01	Mechanisms exist to facilitate the implementation of contingency planning controls to help ensure resilient assets and services (e.g., Continuity of Operations Plan (COOP) or Business Continuity & Disaster Recovery (BC/DR) playbooks).	10	
			Functional	Subset Of	Incident Response Operations	IRO-01	Mechanisms exist to implement and govern processes and documentation to facilitate an organization-wide response capability for cybersecurity & data privacy-related incidents.	10	
			Functional	Intersects With	Standardized Operating Procedures (SOP)	OPS-01.1	Mechanisms exist to identify and document Standardized Operating Procedures (SOP), or similar documentation, to enable the proper execution of day-to-day / assigned tasks.	5	
164.308(a)(8)	Evaluation	Perform a periodic technical and nontechnical evaluation, based initially upon the standards implemented under this rule and subsequently, in response to environmental or operational changes affecting the security of electronic protected health information, that establishes the extent to which a covered entity's or business associate's security policies and procedures meet the requirements of this subpart.	Functional	Intersects With	Cybersecurity & Data Protection Controls Oversight	CPL-02	Mechanisms exist to provide a cybersecurity & data protection controls oversight function that reports to the organization's executive leadership.	5	
			Functional	Intersects With	Cybersecurity & Data Protection Assessments	CPL-03	Mechanisms exist to ensure managers regularly review the processes and documented procedures within their area of responsibility to adhere to appropriate cybersecurity & data protection policies, standards and other applicable requirements.	5	
164.308(b)(1)	Business Associate Contracts and Other Arrangements	A covered entity may permit a business associate to create, receive, maintain, or transmit electronic protected health information on the covered entity's behalf only if the covered entity obtains satisfactory assurances, in accordance with § 164.314(a), that the business associate will appropriately safeguard the information. A covered entity is not required to obtain such satisfactory assurances from a business associate that is a subcontractor.	Functional	Subset Of	Third-Party Management	TPM-01	Mechanisms exist to facilitate the implementation of third-party management controls.	10	
			Functional	Intersects With	First-Party Declaration (1PD)	TPM-05.6	Mechanisms exist to obtain a First-Party Declaration (1PD) from applicable External Service Providers (ESPs) that provides assurance of compliance with specified statutory, regulatory and contractual obligations for cybersecurity & data privacy controls, including any flow-down requirements to subcontractors.	8	
164.310	Physical Safeguards	Defined as the "physical measures, policies, and procedures to protect a covered entity's electronic information systems and related buildings and equipment, from natural and environmental hazards, and unauthorized intrusion."	Functional	Intersects With	Defining Access Authorizations for Sensitive/Regulated Data	DCH-01.4	Mechanisms exist to explicitly define authorizations for specific individuals and/or roles for logical and /or physical access to sensitive/regulated data.	5	
			Functional	Intersects With	Media Storage	DCH-06	Mechanisms exist to: ▪ Physically control and securely store digital and non-digital media within controlled areas using organization-defined security measures; and ▪ Protect system media until the media are destroyed or sanitized using approved equipment, techniques and procedures.	5	
			Functional	Intersects With	Physically Secure All Media	DCH-06.1	Mechanisms exist to physically secure all media that contains sensitive information.	5	
			Functional	Intersects With	Publishing Cybersecurity & Data Protection Documentation	GOV-02	Mechanisms exist to establish, maintain and disseminate cybersecurity & data protection policies, standards and procedures.	5	
			Functional	Intersects With	Standardized Operating Procedures (SOP)	OPS-01.1	Mechanisms exist to identify and document Standardized Operating Procedures (SOP), or similar documentation, to enable the proper execution of day-to-day / assigned tasks.	5	
			Functional	Intersects With	Physical Access Authorizations	PES-02	Physical access control mechanisms exist to maintain a current list of personnel with authorized access to organizational facilities (except for those areas within the facility officially designated as publicly accessible).	5	
			Functional	Intersects With	Physical Access Control	PES-03	Physical access control mechanisms exist to enforce physical access authorizations for all physical access points (including designated entry/exit points) to facilities (excluding those areas within the facility officially designated as publicly accessible).	5	
			Functional	Intersects With	Supporting Utilities	PES-07	Facility security mechanisms exist to protect power equipment and power cabling for the system from damage and destruction.	5	
			Functional	Intersects With	Water Damage Protection	PES-07.5	Facility security mechanisms exist to protect systems from damage resulting from water leakage by providing master shutoff valves that are accessible, working properly and known to key personnel.	5	
			Functional	Intersects With	Fire Protection	PES-08	Facility security mechanisms exist to utilize and maintain fire suppression and detection devices/systems for the system that are supported by an independent energy source.	5	
164.310(a)	Facility Access Controls	Implement policies and procedures to limit physical access to its electronic information systems and the facility or facilities in which they are housed, while ensuring that properly authorized access is allowed.	Functional	Intersects With	Publishing Cybersecurity & Data Protection Documentation	GOV-02	Mechanisms exist to establish, maintain and disseminate cybersecurity & data protection policies, standards and procedures.	5	
			Functional	Intersects With	Standardized Operating Procedures (SOP)	OPS-01.1	Mechanisms exist to identify and document Standardized Operating Procedures (SOP), or similar documentation, to enable the proper execution of day-to-day / assigned tasks.	5	
			Functional	Subset Of	Physical & Environmental Protections	PES-01	Mechanisms exist to facilitate the operation of physical and environmental protection controls.	10	
			Functional	Intersects With	Physical Access Authorizations	PES-02	Physical access control mechanisms exist to maintain a current list of personnel with authorized access to organizational facilities (except for those areas within the facility officially designated as publicly accessible).	5	
			Functional	Intersects With	Physical Access Control	PES-03	Physical access control mechanisms exist to enforce physical access authorizations for all physical access points (including designated entry/exit points) to facilities (excluding those areas within the facility officially designated as publicly accessible).	5	
164.310(b)	Workstation Use	Implement policies and procedures that specify the proper functions to be performed, the manner in which those functions are to be performed, and the physical attributes of the surroundings of a specific workstation or class of workstation that can access electronic protected health information.	Functional	Subset Of	Business Continuity Management System (BCMS)	BCD-01	Mechanisms exist to facilitate the implementation of contingency planning controls to help ensure resilient assets and services (e.g., Continuity of Operations Plan (COOP) or Business Continuity & Disaster Recovery (BC/DR) playbooks).	10	
			Functional	Intersects With	System Hardening Through Baseline Configurations	CFG-02	Mechanisms exist to develop, document and maintain secure baseline configurations for technology platforms that are consistent with industry-accepted system hardening standards.	8	
			Functional	Intersects With	Least Functionality	CFG-03	Mechanisms exist to configure systems to provide only essential capabilities by specifically prohibiting or restricting the use of ports, protocols, and/or services.	5	
			Functional	Intersects With	Data Protection	DCH-01	Mechanisms exist to facilitate the implementation of data protection controls.	5	
			Functional	Intersects With	Sensitive / Regulated Data Protection	DCH-01.2	Mechanisms exist to protect sensitive/regulated data wherever it is stored.	5	
			Functional	Intersects With	Defining Access Authorizations for Sensitive/Regulated Data	DCH-01.4	Mechanisms exist to explicitly define authorizations for specific individuals and/or roles for logical and /or physical access to sensitive/regulated data.	5	
			Functional	Intersects With	Data & Asset Classification	DCH-02	Mechanisms exist to ensure data and assets are categorized in accordance with applicable statutory, regulatory and contractual requirements.	5	
			Functional	Intersects With	Endpoint Security	END-01	Mechanisms exist to facilitate the implementation of endpoint security controls.	5	
			Functional	Intersects With	Endpoint Protection Measures	END-02	Mechanisms exist to protect the confidentiality, integrity, availability and safety of endpoint devices.	5	
			Functional	Intersects With	Terms of Employment	HRS-05	Mechanisms exist to require all employees and contractors to apply cybersecurity & data privacy principles in their daily work.	5	
			Functional	Intersects With	Rules of Behavior	HRS-05.1	Mechanisms exist to define acceptable and unacceptable rules of behavior for the use of technologies, including consequences for unacceptable behavior.	5	
			Functional	Intersects With	Use of Communications Technology	HRS-05.3	Mechanisms exist to establish usage restrictions and implementation guidance for communications technologies based on the potential to cause damage to systems, if used maliciously.	5	
			Functional	Intersects With	Role-Based Access Control (RBAC)	IAC-08	Mechanisms exist to enforce a Role-Based Access Control (RBAC) policy over users and resources that applies need-to-know and fine-grained access control for sensitive/regulated data access.	5	
			Functional	Intersects With	Standardized Operating Procedures (SOP)	OPS-01.1	Mechanisms exist to identify and document Standardized Operating Procedures (SOP), or similar documentation, to enable the proper execution of day-to-day / assigned tasks.	5	

FDE #	FDE Name	Focal Document Element (FDE) Description	STRM Rationale	STRM Relationship	SCF Control	SCF #	Secure Controls Framework (SCF) Control Description	Strength of Relationship (optional)	Notes (optional)
			Functional	Intersects With	Physical Security of Offices, Rooms & Facilities	PES-04	Mechanisms exist to identify systems, equipment and respective operating environments that require limited physical access so that appropriate physical access controls are designed and implemented for offices, rooms and facilities.	5	
			Functional	Intersects With	Working in Secure Areas	PES-04.1	Physical security mechanisms exist to allow only authorized personnel access to secure areas.	5	
164.310(c)	Workstation Security	Implement physical safeguards for all workstations that access electronic protected health information, to restrict access to authorized users.	Functional	Intersects With	Physical Access Authorizations	PES-02	Physical access control mechanisms exist to maintain a current list of personnel with authorized access to organizational facilities (except for those areas within the facility officially designated as publicly accessible).	5	
			Functional	Intersects With	Physical Access Control	PES-03	Physical access control mechanisms exist to enforce physical access authorizations for all physical access points (including designated entry/exit points) to facilities (excluding those areas within the facility officially designated as publicly accessible).	5	
			Functional	Intersects With	Physical Security of Offices, Rooms & Facilities	PES-04	Mechanisms exist to identify systems, equipment and respective operating environments that require limited physical access so that appropriate physical access controls are designed and implemented for offices, rooms and facilities.	5	
			Functional	Intersects With	Working in Secure Areas	PES-04.1	Physical security mechanisms exist to allow only authorized personnel access to secure areas.	5	
164.310(d)	Device and Media Controls	Implement policies and procedures that govern the receipt and removal of hardware and electronic media that contain electronic protected health information into and out of a facility, and the movement of these items within the facility.	Functional	Intersects With	Publishing Cybersecurity & Data Protection Documentation	GOV-02	Mechanisms exist to establish, maintain and disseminate cybersecurity & data protection policies, standards and procedures.	5	
			Functional	Intersects With	Security of Assets & Media	AST-05	Mechanisms exist to maintain strict control over the internal or external distribution of any kind of sensitive/regulated media.	5	
			Functional	Intersects With	Data Protection	DCH-01	Mechanisms exist to facilitate the implementation of data protection controls.	5	
			Functional	Intersects With	Data Stewardship	DCH-01.1	Mechanisms exist to ensure data stewardship is assigned, documented and communicated.	5	
			Functional	Intersects With	Sensitive / Regulated Data Protection	DCH-01.2	Mechanisms exist to protect sensitive/regulated data wherever it is stored.	5	
			Functional	Intersects With	Standardized Operating Procedures (SOP)	OPS-01.1	Mechanisms exist to identify and document Standardized Operating Procedures (SOP), or similar documentation, to enable the proper execution of day-to-day / assigned tasks.	5	
164.312	Technical Safeguards	Defined as the “the technology and the policy and procedures for its use that protect electronic protected health information and control access to it.”	Functional	Intersects With	Publishing Cybersecurity & Data Protection Documentation	GOV-02	Mechanisms exist to establish, maintain and disseminate cybersecurity & data protection policies, standards and procedures.	5	
			Functional	Intersects With	Configuration Management Program	CFG-01	Mechanisms exist to facilitate the implementation of configuration management controls.	5	
			Functional	Intersects With	System Hardening Through Baseline Configurations	CFG-02	Mechanisms exist to develop, document and maintain secure baseline configurations for technology platforms that are consistent with industry-accepted system hardening standards.	5	
			Functional	Intersects With	Least Functionality	CFG-03	Mechanisms exist to configure systems to provide only essential capabilities by specifically prohibiting or restricting the use of ports, protocols, and/or services.	5	
			Functional	Intersects With	Standardized Operating Procedures (SOP)	OPS-01.1	Mechanisms exist to identify and document Standardized Operating Procedures (SOP), or similar documentation, to enable the proper execution of day-to-day / assigned tasks.	5	
			Functional	Intersects With	Identity & Access Management (IAM)	IAC-01	Mechanisms exist to facilitate the implementation of identification and access management controls.	5	
			Functional	Intersects With	Authenticate, Authorize and Audit (AAA)	IAC-01.2	Mechanisms exist to strictly govern the use of Authenticate, Authorize and Audit (AAA) solutions, both on-premises and those hosted by an External Service Provider (ESP).	5	
			Functional	Intersects With	Role-Based Access Control (RBAC)	IAC-08	Mechanisms exist to enforce a Role-Based Access Control (RBAC) policy over users and resources that applies need-to-know and fine-grained access control for sensitive/regulated data access.	5	
			Functional	Subset Of	Secure Engineering Principles	SEA-01	Mechanisms exist to facilitate the implementation of industry-recognized cybersecurity & data privacy practices in the specification, design, development, implementation and modification of systems and services.	10	
			Functional	Intersects With	Alignment With Enterprise Architecture	SEA-02	Mechanisms exist to develop an enterprise architecture, aligned with industry-recognized leading practices, with consideration for cybersecurity & data privacy principles that addresses risk to organizational operations, assets, individuals, other organizations.	5	
			Functional	Intersects With	Defense-In-Depth (DiD) Architecture	SEA-03	Mechanisms exist to implement security functions as a layered structure minimizing interactions between layers of the design and avoiding any dependence by lower layers on the functionality or correctness of higher layers.	5	
164.312(a)	Access Control	Implement technical policies and procedures for electronic information systems that maintain electronic protected health information to allow access only to those persons or software programs that have been granted access rights as specified in § 164.308(a)(4).	Functional	Intersects With	System Hardening Through Baseline Configurations	CFG-02	Mechanisms exist to develop, document and maintain secure baseline configurations for technology platforms that are consistent with industry-accepted system hardening standards.	3	
			Functional	Intersects With	Publishing Cybersecurity & Data Protection Documentation	GOV-02	Mechanisms exist to establish, maintain and disseminate cybersecurity & data protection policies, standards and procedures.	5	
			Functional	Subset Of	Identity & Access Management (IAM)	IAC-01	Mechanisms exist to facilitate the implementation of identification and access management controls.	10	
			Functional	Intersects With	Role-Based Access Control (RBAC)	IAC-08	Mechanisms exist to enforce a Role-Based Access Control (RBAC) policy over users and resources that applies need-to-know and fine-grained access control for sensitive/regulated data access.	5	
			Functional	Intersects With	Standardized Operating Procedures (SOP)	OPS-01.1	Mechanisms exist to identify and document Standardized Operating Procedures (SOP), or similar documentation, to enable the proper execution of day-to-day / assigned tasks.	5	
164.312(b)	Audit Controls	Implement hardware, software, and/or procedural mechanisms that record and examine activity in information systems that contain or use electronic protected health information.	Functional	Intersects With	Internal Audit Function	CPL-02.1	Mechanisms exist to implement an internal audit function that is capable of providing senior organization management with insights into the appropriateness of the organization's technology and information governance processes.	5	
			Functional	Intersects With	Session Audit	MON-12	Mechanisms exist to provide session audit capabilities that can: ▪ Capture and log all content related to a user session; and ▪ Remotely view all content related to an established user session in real time.	5	
164.312(c)	Integrity	Implement policies and procedures to protect electronic protected health information from improper alteration or destruction.	Functional	Intersects With	Data Source Integrity	AAT-12.2	Mechanisms exist to protect the integrity of source data to prevent accidental contamination or malicious corruption (e.g., data poisoning) that could compromise the performance of Artificial Intelligence and Autonomous Technologies (AAT).	3	
			Functional	Intersects With	Data Backups	BCD-11	Mechanisms exist to create recurring backups of data, software and/or system images, as well as verify the integrity of these backups, to ensure the availability of the data to satisfying Recovery Time Objectives (RTOs) and Recovery Point Objectives (RPOs).	8	
			Functional	Intersects With	Testing for Reliability & Integrity	BCD-11.1	Mechanisms exist to routinely test backups that verify the reliability of the backup process, as well as the integrity and availability of the data.	5	
			Functional	Intersects With	Configuration Management Program	CFG-01	Mechanisms exist to facilitate the implementation of configuration management controls.	5	
			Functional	Intersects With	System Hardening Through Baseline Configurations	CFG-02	Mechanisms exist to develop, document and maintain secure baseline configurations for technology platforms that are consistent with industry-accepted system hardening standards.	5	
			Functional	Intersects With	Identity & Access Management (IAM)	IAC-01	Mechanisms exist to facilitate the implementation of identification and access management controls.	8	
			Functional	Intersects With	Role-Based Access Control (RBAC)	IAC-08	Mechanisms exist to enforce a Role-Based Access Control (RBAC) policy over users and resources that applies need-to-know and fine-grained access control for sensitive/regulated data access.	8	
			Functional	Intersects With	Data Protection	DCH-01	Mechanisms exist to facilitate the implementation of data protection controls.	5	
			Functional	Intersects With	Media Access	DCH-03	Mechanisms exist to control and restrict access to digital and non-digital media to authorized individuals.	5	
			Functional	Intersects With	Publishing Cybersecurity & Data Protection Documentation	GOV-02	Mechanisms exist to establish, maintain and disseminate cybersecurity & data protection policies, standards and procedures.	5	
			Functional	Intersects With	Standardized Operating Procedures (SOP)	OPS-01.1	Mechanisms exist to identify and document Standardized Operating Procedures (SOP), or similar documentation, to enable the proper execution of day-to-day / assigned tasks.	5	
			Functional	Intersects With	Publishing Cybersecurity & Data Protection Documentation	GOV-02	Mechanisms exist to establish, maintain and disseminate cybersecurity & data protection policies, standards and procedures.	5	
			Functional	Subset Of	Identity & Access Management (IAM)	IAC-01	Mechanisms exist to facilitate the implementation of identification and access management controls.	10	
			Functional	Intersects With	Authenticate, Authorize and Audit (AAA)	IAC-01.2	Mechanisms exist to strictly govern the use of Authenticate, Authorize and Audit (AAA) solutions, both on-premises and those hosted by an External Service Provider (ESP).	8	

FDE #	FDE Name	Focal Document Element (FDE) Description	STRM Rationale	STRM Relationship	SCF Control	SCF #	Secure Controls Framework (SCF) Control Description	Strength of Relationship (optional)	Notes (optional)
164.312(d)	Person or Entity Authentication	Implement procedures to verify that a person or entity seeking access to electronic protected health information is the one claimed.	Functional	Intersects With	Multi-Factor Authentication (MFA)	IAC-06	Automated mechanisms exist to enforce Multi-Factor Authentication (MFA) for: ▪ Remote network access; ▪ Third-party systems, applications and/or services; and/ or ▪ Non-console access to critical systems or systems that store, transmit and/or process sensitive/regulated data.	5	
			Functional	Intersects With	Identity Proofing (Identity Verification)	IAC-28	Mechanisms exist to verify the identity of a user before issuing authenticators or modifying access permissions.	5	
			Functional	Intersects With	Standardized Operating Procedures (SOP)	OPS-01.1	Mechanisms exist to identify and document Standardized Operating Procedures (SOP), or similar documentation, to enable the proper execution of day-to-day / assigned tasks.	5	
164.312(e)(1)	Transmission Security	Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	Functional	Intersects With	Transmission Confidentiality	CRY-03	Cryptographic mechanisms exist to protect the confidentiality of data being transmitted.	5	
			Functional	Intersects With	Transmission Integrity	CRY-04	Cryptographic mechanisms exist to protect the integrity of data being transmitted.	5	
			Functional	Intersects With	Session Integrity	NET-09	Mechanisms exist to protect the authenticity and integrity of communications sessions.	5	
164.314	Organizational Requirements	Includes standards for business associate contracts and other arrangements between a covered entity and a business associate and between a business associate and a subcontractor, as well as requirements for group health plans.	Functional	Intersects With	Third-Party Contract Requirements	TPM-05	Mechanisms exist to require contractual requirements for cybersecurity & data privacy requirements with third-parties, reflecting the organization's needs to protect its systems, processes and data.	5	
164.314(a)	Business Associate Contracts or Other Arrangements	(i) The contract or other arrangement between the covered entity and its business associate required by § 164.308(b)(3) must meet the requirements of paragraph (a)(2)(i), (a)(2)(ii), or (a)(2)(iii) of this section, as applicable. (ii) A covered entity is in compliance with paragraph (a)(1) of this section if it has another arrangement in place that meets the requirements of § 164.504(e)(3). (iii) The requirements of paragraphs (a)(2)(i) and (a)(2)(ii) of this section apply to the contract or other arrangement between a business associate and a subcontractor required by § 164.308(b)(4) in the same manner as such requirements apply to contracts or other arrangements between a covered entity and business associate.	Functional	Intersects With	Third-Party Contract Requirements	TPM-05	Mechanisms exist to require contractual requirements for cybersecurity & data privacy requirements with third-parties, reflecting the organization's needs to protect its systems, processes and data.	5	
164.314(b)	Requirements for Group Health Plans	Except when the only electronic protected health information disclosed to a plan sponsor is disclosed pursuant to § 164.504(f)(1)(ii) or (iii), or as authorized under § 164.508, a group health plan must ensure that its plan documents provide that the plan sponsor will reasonably and appropriately safeguard electronic protected health information created, received, maintained, or transmitted to or by the plan sponsor on behalf of the group health plan.	Functional	Intersects With	Third-Party Contract Requirements	TPM-05	Mechanisms exist to require contractual requirements for cybersecurity & data privacy requirements with third-parties, reflecting the organization's needs to protect its systems, processes and data.	5	
164.316	Policies and Procedures and Documentation Requirements	Requires the implementation of reasonable and appropriate policies and procedures to comply with the standards, implementation specifications, and other requirements of the Security Rule; the maintenance of written (may be electronic) documentation and/or records that include the policies, procedures, actions, activities, or assessments required by the Security Rule; and retention, availability, and update requirements related to the documentation.	Functional	Subset Of	Cybersecurity & Data Protection Governance Program	GOV-01	Mechanisms exist to facilitate the implementation of cybersecurity & data protection governance controls.	10	
			Functional	Intersects With	Publishing Cybersecurity & Data Protection Documentation	GOV-02	Mechanisms exist to establish, maintain and disseminate cybersecurity & data protection policies, standards and procedures.	8	
			Functional	Intersects With	Operationalizing Cybersecurity & Data Protection Practices	GOV-15	Mechanisms exist to compel data and/or process owners to operationalize cybersecurity & data privacy practices for each system, application and/or service under their control.	8	
			Functional	Intersects With	Standardized Operating Procedures (SOP)	OPS-01.1	Mechanisms exist to identify and document Standardized Operating Procedures (SOP), or similar documentation, to enable the proper execution of day-to-day / assigned tasks.	8	
164.316(a)	Policies and Procedures	Implement reasonable and appropriate policies and procedures to comply with the standards, implementation specifications, or other requirements of this subpart, taking into account those factors specified in § 164.306(b)(2)(i), (ii), (iii), and (iv). This standard is not to be construed to permit or excuse an action that violates any other standard, implementation specification, or other requirements of this subpart. A covered entity or business associate may change its policies and procedures at any time, provided that the changes are documented and are implemented in accordance with this subpart.	Functional	Subset Of	Cybersecurity & Data Protection Governance Program	GOV-01	Mechanisms exist to facilitate the implementation of cybersecurity & data protection governance controls.	10	
			Functional	Intersects With	Publishing Cybersecurity & Data Protection Documentation	GOV-02	Mechanisms exist to establish, maintain and disseminate cybersecurity & data protection policies, standards and procedures.	8	
			Functional	Intersects With	Standardized Operating Procedures (SOP)	OPS-01.1	Mechanisms exist to identify and document Standardized Operating Procedures (SOP), or similar documentation, to enable the proper execution of day-to-day / assigned tasks.	8	
164.316(b)	Documentation	(i) Maintain the policies and procedures implemented to comply with this subpart in written (which may be electronic) form; and (ii) if an action, activity or assessment is required by this subpart to be documented, maintain a written (which may be electronic) record of the action, activity, or assessment.	Functional	Subset Of	Cybersecurity & Data Protection Governance Program	GOV-01	Mechanisms exist to facilitate the implementation of cybersecurity & data protection governance controls.	10	
			Functional	Intersects With	Publishing Cybersecurity & Data Protection Documentation	GOV-02	Mechanisms exist to establish, maintain and disseminate cybersecurity & data protection policies, standards and procedures.	8	
			Functional	Intersects With	Standardized Operating Procedures (SOP)	OPS-01.1	Mechanisms exist to identify and document Standardized Operating Procedures (SOP), or similar documentation, to enable the proper execution of day-to-day / assigned tasks.	8	