

Risk Management

2021.1

This policy establishes the scope, objectives, and procedures of MiCT's information security risk management process. The risk management process is intended to support and protect the organization and its ability to fulfill its mission.

Policy Statements

MiCT policy requires that:

- (a) A thorough risk assessment must be conducted to evaluate the potential threats and vulnerabilities to the confidentiality, integrity, and availability of sensitive, confidential and proprietary electronic information it stores, transmits, and/or processes.
- (b) Risk assessments must be performed with any major change to MiCT's business or technical operations and/or supporting infrastructure, no less than once per year.
- (c) Strategies shall be developed to mitigate or accept the risks identified in the risk assessment process.
- (d) Maintain documentation of all risk assessment, risk management, and risk mitigation efforts for a minimum of seven years.

Controls and Procedures

Risk Management Objectives

MiCT has established formal risk analysis and risk management processes to

- identify risks that may impact its business operations or the confidentiality, integrity and availability of its critical data; and
- reduce risk to an acceptable level by implementation of mitigation controls.

Unmitigated risk above the pre-defined acceptable level must be reviewed, approved and accepted by senior management.

Acceptable Risk Levels Risks that are either low impact or low probability, based on the scoring mechanism defined in risk assessment process, are generally considered acceptable.

All other risks must be individually reviewed and managed according to the risk management process.

Risk Management Process

Risk analysis and risk management are recognized as important components of MiCT's corporate compliance and information security program.

MiCT's risk management process is developed in accordance with the Risk Analysis and Risk Management implementation specifications within the Security Management standard and the evaluation standards set forth in the HIPAA Security Rule, 45 CFR 164.308(a)(1)(ii)(A), 164.308(a)(1)(ii)(B), 164.308(a)(1)(i), and 164.308(a)(8).

Risk assessments are done throughout product life cycles:

- Before the integration of new system technologies and before changes are made to MiCT physical and technical safeguards; and (Note that these changes do not include routine updates to existing systems, deployments of new systems created based on previously configured systems, deployments of new Customers, or new code developed for operations and management of the MiCT Platform)
- While making changes to MiCT physical equipment and facilities that introduce new, untested configurations.

MiCT performs periodic technical and non-technical assessments of the security rule requirements as well as in response to environmental or operational changes affecting the security of sensitive data.

MiCT implements security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to:

1. Ensure the confidentiality, integrity, and availability of all sensitive data MiCT receives, maintains, processes, and/or transmits for its Customers;
2. Protect against any reasonably anticipated threats or hazards to the security or integrity of Customer data and/or sensitive data;
3. Protect against any reasonably anticipated uses or disclosures of Customer data and/or sensitive data that are not permitted or required; and
4. Ensure compliance by all workforce members.

In addition, MiCT risk management process requires that:

1. Any risk remaining (residual) after other risk controls have been applied, requires sign off by the senior management and MiCT's Security Officer.
2. All MiCT workforce members are expected to fully cooperate with all persons charged with doing risk management work, including contractors and audit personnel. Any workforce member that violates this policy will be subject to disciplinary action based on the severity of the violation, as outlined in the MiCT Roles Policy.
3. The implementation, execution, and maintenance of the information security risk analysis and risk management process is the responsibility of

MiCT's Security Officer (or other designated employee), and the identified Risk Management Team.

4. All risk management efforts, including decisions made on what controls to put in place as well as those to not put into place, are documented and the documentation is maintained for six years.
5. The details of the Risk Management Process, including risk assessment, discovery, and mitigation, are outlined in detail below. The process is tracked, measured, and monitored using the following procedures:
 1. The Security Officer or the Privacy Officer initiates the Risk Management Procedures by creating an Issue in the Github Security Project.
 2. The Security Officer or the Privacy Officer is assigned to carry out the Risk Management Procedures.
 3. All findings are documented and linked to the Issue.
 4. Once the Risk Assessment steps are complete, along with corresponding documentation, the Security Officer approves or rejects the Issue. If the Issue is rejected, it goes back for further review and documentation.
 5. If the review is approved, the Security Officer then marks the Issue as Done, adding any pertinent notes required.
6. The Risk Management Procedure is monitored on a quarterly basis using Github reporting to assess compliance with above policy.

Third party risk management details including procurement and systems acquisition can be found in §vendor.

Risk Management Schedule The two principle components of the risk management process - risk assessment and risk mitigation - will be carried out according to the following schedule to ensure the continued adequacy and continuous improvement of MiCT's information security program:

- Scheduled Basis - an overall risk assessment of MiCT's information system infrastructure will be conducted annually. The assessment process should be completed in a timely fashion so that risk mitigation strategies can be determined and included in the corporate budgeting process.
- Throughout a System's Development Life Cycle - from the time that a need for a new, untested information system configuration and/or application is identified through the time it is disposed of, ongoing assessments of the potential threats to a system and its vulnerabilities should be undertaken as a part of the maintenance of the system.
- As Needed - the Security Officer (or other designated employee) or Risk Management Team may call for a full or partial risk assessment in response to changes in business strategies, information technology, information sensitivity, threats, legal liabilities, or other significant factors that affect

MiCT's Platform.

Risk Assessment and Analysis

The intent of completing a risk assessment is to determine potential threats and vulnerabilities and the likelihood and impact should they occur. The output of this process helps to identify appropriate controls for reducing or eliminating risk.

- Step 1. System Characterization
 - The first step in assessing risk is to define the scope of the effort. To do this, identify where sensitive data is received, maintained, processed, or transmitted. Using information-gathering techniques, the MiCT Platform boundaries are identified.
 - Output - Characterization of the MiCT Platform system assessed, a good picture of the Platform environment, and delineation of Platform boundaries.
- Step 2. Threat Identification
 - Potential threats (the potential for threat-sources to successfully exercise a particular vulnerability) are identified and documented. All potential threat-sources through the review of historical incidents and data from intelligence agencies, the government, etc., to help generate a list of potential threats.
 - Output - A threat list containing a list of threat-sources that could exploit Platform vulnerabilities.
- Step 3. Vulnerability Identification
 - Develop a list of technical and non-technical Platform vulnerabilities that could be exploited or triggered by potential threat-sources. Vulnerabilities can range from incomplete or conflicting policies that govern an organization's computer usage to insufficient safeguards to protect facilities that house computer equipment to any number of software, hardware, or other deficiencies that comprise an organization's computer network.
 - Output - A list of the Platform vulnerabilities (observations) that could be exercised by potential threat-sources.
- Step 4. Control Analysis
 - Document and assess the effectiveness of technical and non-technical controls that have been or will be implemented by MiCT to minimize or eliminate the likelihood / probability of a threat-source exploiting a Platform vulnerability.

- Output - List of current or planned controls (policies, procedures, training, technical mechanisms, insurance, etc.) used for the Platform to mitigate the likelihood of a vulnerability being exercised and reduce the impact of such an adverse event.
- Step 5. Likelihood Determination
 - Determine the overall likelihood rating that indicates the probability that a vulnerability could be exploited by a threat-source given the existing or planned security controls.
 - Output - Likelihood rating of low (.1), medium (.5), or high (1). Refer to the NIST SP 800-30 definitions of low, medium, and high.
- Step 6. Impact Analysis
 - Determine the level of adverse impact that would result from a threat successfully exploiting a vulnerability. Factors of the data and systems to consider should include the importance to MiCT's mission; sensitivity and criticality (value or importance); costs associated; loss of confidentiality, integrity, and availability of systems and data.
 - Output - Magnitude of impact rating of low (10), medium (50), or high (100). Refer to the NIST SP 800-30 definitions of low, medium, and high.
- Step 7. Risk Determination
 - Establish a risk level. By multiplying the ratings from the likelihood determination and impact analysis, a risk level is determined. This represents the degree or level of risk to which an IT system, facility, or procedure might be exposed if a given vulnerability were exercised. The risk rating also presents actions that senior management must take for each risk level.
 - Output - Risk level of low (1-10), medium (>10-50) or high (>50-100). Refer to the NIST SP 800-30 definitions of low, medium, and high.
- Step 8. Control Recommendations
 - Identify controls that could reduce or eliminate the identified risks, as appropriate to the organization's operations to an acceptable level. Factors to consider when developing controls may include effectiveness of recommended options (i.e., system compatibility), legislation and regulation, organizational policy, operational impact, and safety and reliability. Control recommendations provide input to the risk mitigation process, during which the recommended procedural and technical security controls are evaluated, prioritized, and implemented.

- Output - Recommendation of control(s) and alternative solutions to mitigate risk.
- Step 9. Results Documentation
 - Results of the risk assessment are documented in an official report, spreadsheet, or briefing and provided to senior management to make decisions on policy, procedure, budget, and Platform operational and management changes.
 - Output - A risk assessment report that describes the threats and vulnerabilities, measures the risk, and provides recommendations for control implementation.

Risk Mitigation and Monitoring

Risk mitigation involves prioritizing, evaluating, and implementing the appropriate risk-reducing controls recommended from the Risk Assessment process to ensure the confidentiality, integrity and availability of MiCT Platform data. Determination of appropriate controls to reduce risk is dependent upon the risk tolerance of the organization consistent with its goals and mission.

- Step 1. Prioritize Actions
 - Using results from Step 7 of the Risk Assessment, sort the threat and vulnerability pairs according to their risk-levels in descending order. This establishes a prioritized list of actions needing to be taken, with the pairs at the top of the list getting/requiring the most immediate attention and top priority in allocating resources
 - Output - Actions ranked from high to low
- Step 2. Evaluate Recommended Control Options
 - Although possible controls for each threat and vulnerability pair are arrived at in Step 8 of the Risk Assessment, review the recommended control(s) and alternative solutions for reasonableness and appropriateness. The feasibility (e.g., compatibility, user acceptance, etc.) and effectiveness (e.g., degree of protection and level of risk mitigation) of the recommended controls should be analyzed. In the end, select a “most appropriate” control option for each threat and vulnerability pair.
 - Output - list of feasible controls
- Step 3. Conduct Cost-Benefit Analysis
 - Determine the extent to which a control is cost-effective. Compare the benefit (e.g., risk reduction) of applying a control with its subsequent cost of application. Controls that are not cost-effective are also identified during this step. Analyzing each control or set of controls

in this manner, and prioritizing across all controls being considered, can greatly aid in the decision-making process.

- Output - Documented cost-benefit analysis of either implementing or not implementing each specific control
- Step 4. Select Control(s)
 - Taking into account the information and results from previous steps, MiCT's mission, and other important criteria, the Risk Management Team determines the best control(s) for reducing risks to the information systems and to data confidentiality, integrity, and availability. These controls may consist of a mix of administrative, physical, and/or technical safeguards.
 - Output - Selected control(s)
- Step 5. Assign Responsibility
 - Identify the workforce members with the skills necessary to implement each of the specific controls outlined in the previous step, and assign their responsibilities. Also identify the equipment, training and other resources needed for the successful implementation of controls. Resources may include time, money, equipment, etc.
 - Output - List of resources, responsible persons and their assignments
- Step 6. Develop Safeguard Implementation Plan
 - Develop an overall implementation or action plan and individual project plans needed to implement the safeguards and controls identified. The Implementation Plan should contain the following information:
 - * Each risk or vulnerability/threat pair and risk level;
 - * Prioritized actions;
 - * The recommended feasible control(s) for each identified risk;
 - * Required resources for implementation of selected controls;
 - * Team member responsible for implementation of each control;
 - * Start date for implementation
 - * Target date for completion of implementation;
 - * Maintenance requirements.
 - The overall implementation plan provides a broad overview of the safeguard implementation, identifying important milestones and timeframes, resource requirements (staff and other individuals' time, budget, etc.), interrelationships between projects, and any other relevant information. Regular status reporting of the plan, along with key metrics and success indicators should be reported to MiCT Senior Management.

- Individual project plans for safeguard implementation may be developed and contain detailed steps that resources assigned carry out to meet implementation timeframe and expectations. Additionally, consider including items in individual project plans such as a project scope, a list deliverables, key assumptions, objectives, task completion dates and project requirements.
- Output - Safeguard Implementation Plan
- Step 7. Implement Selected Controls
 - As controls are implemented, monitor the affected system(s) to verify that the implemented controls continue to meet expectations. Elimination of all risk is not practical. Depending on individual situations, implemented controls may lower a risk level but not completely eliminate the risk.
 - Continually and consistently communicate expectations to all Risk Management Team members, as well as senior management and other key people throughout the risk mitigation process. Identify when new risks are identified and when controls lower or offset risk rather than eliminate it.
 - Additional monitoring is especially crucial during times of major environmental changes, organizational or process changes, or major facilities changes.
 - If risk reduction expectations are not met, then repeat all or a part of the risk management process so that additional controls needed to lower risk to an acceptable level can be identified.
 - Output - Residual Risk documentation

Risk Registry

MiCT Security team maintains a registry of risks, captured and kept updated

- in a document on company SharePoint; and/or
- in the security operations tool/database.

The risk registry includes all risks and threats identified during annual risk assessment and all interim reviews.

Cyber Liability Insurance

MiCT holds cyber liability insurance with sufficient coverage based on the organization's risk profile.

Our current cyber policy is covered by .

Fraud Risks

Due to its transparent culture, team size and operating model, including separation of duties, comprehensive controls, continuous monitoring and auditing, MiCT considers its fraud-related risk to be very low.

MiCT hires to perform accounting services and annual financial audits.

Fraud risk is re-evaluated as part of the organization's annual risk assessment. The assessment considers the following aspects of fraud:

- Pressures and/or incentives
- Opportunities
- Rationalities

Financial-related fraud assessment is led by the COO/CFO.

IT-related fraud assessment is led by the Compliance Officer or CISO.

Potential Frauds and Likelihood

Fraud Risk	Likelihood	In Place Controls/Monitors
Fraudulent Financial Reporting	Low	Monthly executive team reviews of business plan and revenue; Financial review by external accounting firm
Misappropriation of Assets	Low	Expense reporting and asset tracking in place
Regulatory and Legal Misconduct	Low	Audit and compliance policies and processes, including whistleblower procedures; engage external law firm to review legal conduct
Payroll Fraud	Low	Payroll is reviewed by at least two people internally as well as by external accounting firm
Kickbacks / Conflict of Interest	Low	Team-based vendor review and selection process
Misuse of Cloud Resources	Low	Continuous resource monitoring for all cloud accounts and regions and expense monitoring
Other IT Fraud	Low	IT assets and resources tracking