FISCAL YEAR 2021 AUDIT OF THE FEDERAL TRADE COMMISSION INFORMATION SECURITY PROGRAM AND PRACTICES

Office of Inspector General
Federal Trade Commission

OIG Report No. A-22-04
January 10, 2022

FINAL REPORT—REDACTED—FOR PUBLIC RELEASE

Sensitive information on the FTC's information technology (IT) security systems, policies, and practices determined to be restricted from public release has been redacted from this document.

UNITED STATES OF AMERICA
FEDERAL TRADE COMMISSION
WASHINGTON, D.C. 20580

Office of Inspector General

January 10, 2022

MEMORANDUM

FROM: Andrew Katsaros
Inspector General

TO: Lina M. Khan, Chair

SUBJECT: Fiscal Year 2021 Audit of the FTC's Information Security Program and Practices

As required by the Federal Information Security Modernization Act of 2014 (P.L. 113-283) (FISMA), attached is the annual independent evaluation of the Federal Trade Commission's (FTC) Information Security Program and Practices for Fiscal Year (FY) 2021.

The Office of Inspector General (OIG) contracted with RMA Associates, LLC (RMA) to conduct an independent audit to meet the FY 2021 FISMA requirements. The objective of the audit was to evaluate the status of the FTC's overall information technology security program and practices. The contract required that the audit be performed in accordance with U.S. generally accepted government auditing standards, applicable FISMA requirements, Office of Management and Budget (OMB) policy and guidance, and National Institute of Standards and Technology (NIST) standards and guidelines. RMA concluded that the FTC's information security program and practices were effective.

RMA is responsible for the attached auditor's report dated January 10, 2022, and the conclusions expressed therein. We do not express an opinion on the FTC's compliance with FISMA or conclusions on other matters.

In summary, RMA found the FTC's information security program and practices were effective for the period October 1, 2020, to September 30, 2021.

The FTC's response to the draft report is included as appendix A.

A public version of this report will be posted on the OIG's website pursuant to sections 4 and 8M of the Inspector General Act of 1978, as amended (5 U.S.C. App., §§ 4 and 8M).

Pursuant to FISMA and implementation guidance from OMB, the FTC will submit its annual FISMA reports to the Chairperson and Ranking Member of the following Congressional committees:

- House Committee on Energy and Commerce
- House Committee on Homeland Security
- House Committee on the Judiciary
- House Committee on Oversight and Reform
- House Committee on Science, Space, and Technology
- Senate Committee on Commerce, Science, and Transportation
- Senate Committee on Homeland Security and Governmental Affairs
- Senate Committee on the Judiciary
- The appropriate authorization and appropriations committees of the House and Senate

The OIG greatly appreciates the cooperation and courtesies extended to RMA and to us by the Office of the Chief Information Officer, Chief Privacy Officer, Financial Management Office, and Office of the Executive Director throughout the FISMA audit.

If you have any questions or concerns regarding this report, please contact me at (202) 326-3527.

RMA | Associates
Auditors. Consultants. Advisors.

Federal Trade Commission

Federal Information Security Modernization Act of 2014

Audit Report for Fiscal Year 2021

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January 10, 2022

Andrew Katsaros
Inspector General
Federal Trade Commission
Office of Inspector General
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Ref: Federal Trade Commission (FTC) Federal Information Security Modernization Act of 2014 (FISMA) Audit Report for Fiscal Year (FY) 2021

Dear Mr. Katsaros:

RMA Associates, LLC is pleased to submit our FTC FISMA audit report for FY 2021. We conducted the audit in accordance with the *Government Auditing Standards*, issued by the Comptroller General of the United States, and relevant information security standards established by the Office of Management and Budget, the Department of Homeland Security, and the National Institute of Standards and Technology (NIST). We have also prepared the *FY 2021 Inspector General FISMA Reporting Metrics Version 1.1* (May 12, 2021), as shown in Appendix B. These metrics provide reporting requirements across the NIST cybersecurity framework functional areas which are to be addressed in the independent assessment of agencies' information security programs. The objective of this audit was to evaluate the effectiveness of the FTC's information security program and practices for the period of October 1, 2020, to September 30, 2021.

In summary, we found the FTC's information security program and practices were effective for the period October 1, 2020, to September 30, 2021.

We very much appreciate the opportunity to serve your organization and will be pleased to discuss any questions you may have.

Sincerely,

RMA Associates

RMA Associates, LLC
Arlington, VA

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Introduction

This report presents the results of our independent audit of the Federal Trade Commission's (FTC) information security program and practices. The *Federal Information Security Modernization Act of 2014* (FISMA) requires Federal agencies to have an annual independent audit performed of their information security program and practices to determine the effectiveness of such program and practices, and to report the results of the audits to the Office of Management and Budget (OMB). OMB delegated its responsibility to the Department of Homeland Security (DHS) for the collection of annual FISMA responses. DHS prepared the FISMA questionnaire to collect the responses, which is provided in Appendix B: *FY 2021 Inspector General Federal Information Security Modernization Act of 2014 Reporting Metrics* (FISMA Reporting Metrics). We also considered applicable OMB and the National Institute of Standards and Technology (NIST) policies, standards, and guidelines to perform the audit.

FISMA requires the agency Inspector General (IG) or an independent external auditor, as determined by the IG, to perform the annual audit. Consequently, the FTC Office of Inspector General (OIG) engaged RMA Associates LLC (RMA) to conduct an annual audit of the FTC's information security program and practices in support of the FISMA requirements. The objective of the audit was to evaluate the effectiveness of the FTC's information security program and practices for the period of October 1, 2020, to September 30, 2021.

Summary Evaluation Results

We concluded, consistent with applicable FISMA requirements, OMB policy and guidance, and NIST standards and guidelines, the FTC's information security program and practices were established and maintained for the five NIST Cybersecurity Framework Functions[1] and nine FISMA Metric Domains.[2] The overall maturity level of the FTC's information security program was determined as Managed and Measurable, as described in this report. Accordingly, we found the FTC's information security program and practices were effective for the period October 1, 2020, to September 30, 2021.

We provided the FTC a draft of this report for comment; however, there was no internal control weakness noted. In a written response, management concurs with the results of our audit. See *Management's Response* in Appendix A for the FTC's response in its entirety.

[1] Office of Management and Budget (OMB), Department of Homeland Security (DHS), and the Council of the Inspectors General on Integrity and Efficiency (CIGIE) developed the FISMA Reporting Metrics in consultation with the Federal Chief Information Officers Council. The nine FISMA Metric Domains were aligned with the five functions: (1) identify, (2) protect, (3) detect, (4) respond, and (5) recover as defined in the National Institute of Standards and Technology (NIST) *Framework for Improving Critical Infrastructure Cybersecurity*.

[2] As described in the FISMA Reporting Metrics, the nine FISMA Metric Domains are: (1) risk management, (2) supply chain risk management (3) configuration management, (4) identity and access management, (5) data protection and privacy, (6) security training, (7) information security continuous monitoring, (8) incident response, and (9) contingency planning.

Background

Federal Trade Commission

The FTC is a bipartisan Federal agency with a unique dual mission to protect consumers and promote competition. Moreover, the agency is dedicated to advancing consumer interests while encouraging innovation and competition in a dynamic, global economy.

The FTC develops policy and research tools through hearings, workshops, and conferences. Additionally, the FTC collaborates with law enforcement partners across the country and around the world to advance consumer protection and competition missions. Furthermore, the FTC cooperates with international agencies and organizations to protect consumers in the global marketplace.

As it relates to information technology (IT), the FTC relies extensively on information systems and the sharing of information to accomplish its mission. Information systems with effective security controls reduce risk and strengthen management's oversight of information, property, and finances to protect information systems and the data shared between them. Improving the overall management and security of IT resources and stakeholder information must be a top priority for the FTC. While technology enables and enhances the ability to share information instantaneously among stakeholders through computers and networks, increased connectivity also makes an organization's networks and IT resources vulnerable to malicious activity and exploitation by internal and external sources. Insiders with malicious intent, recreational and institutional hackers, and attacks by foreign intelligence organizations are significant threats to the FTC's critical systems. Therefore, the operational effectiveness of security controls must be periodically assessed to make certain those controls are operating as intended to safeguard the confidentiality, integrity, and availability (CIA) of information.

Key Changes to the Fiscal Year (FY) 2021 IG FISMA Metrics

One of the goals of the annual FISMA evaluations is to assess agencies' progress toward achieving outcomes that strengthen Federal cybersecurity, including implementing the Administration's priorities and best practices. One such area is increasing the maturity of the Federal government's Supply Chain Risk Management (SCRM) practices. As noted in the Federal Acquisition Supply Chain Security Act of 2018, agencies are required to assess, avoid, mitigate, accept, or transfer supply chain risks. The FY 2021 IG FISMA Reporting Metrics includes a new domain on SCRM within the Identify function. This new domain focuses on the maturity of agency SCRM strategies, policies and procedures, plans, and processes to ensure that external providers' products, system components, systems, and services are consistent with the organization's cybersecurity and supply chain risk management requirements. The new domain references SCRM criteria in NIST Special Publication (SP) 800-53, Revision 5*, Security and Privacy Controls for Information Systems and Organizations*. To provide agencies with sufficient time to fully implement NIST SP 800-53, Revision 5 in accordance with OMB A-130, these new metrics should not be considered for the purposes of the Identify framework function rating.

Also, within the Identify function, specific metric questions have been reorganized and reworded to focus on the degree to which cyber risk management processes are integrated with enterprise risk management (ERM) processes. As an example, IGs are directed to evaluate how cybersecurity risk registers are used to communicate information at the information system, mission/business process, and organizational levels. These changes are consistent with NIST Interagency Report 8286, *Integrating Cybersecurity and Enterprise Risk Management (ERM),* which provides guidance to help organizations improve the cybersecurity risk information they provide as inputs to their enterprise ERM programs.[3]

Furthermore, OMB has issued guidance on improving vulnerability identification, management, and remediation. Specifically, Memorandum M-20-32, *Improving Vulnerability Identification, Management, and Remediation*, September 2, 2020, provides guidance to federal agencies on collaborating with members of the public to find and report vulnerabilities on federal information systems. In addition, DHS Binding Operational Directive 20-01, *Develop and Publish a Vulnerability Disclosure Policy*, September 2, 2020, provides guidance on the development and publishing of an agency's vulnerability disclosure policy and supporting handling procedures. The IG FISMA Reporting Metrics include a new question (#24) to measure the extent to which agencies utilize a vulnerability disclosure policy as part of their vulnerability management program for internet-accessible federal systems.

In addition, the IG metric questions related to the implementation of policies and procedures have been reorganized and streamlined to reduce duplication and redundancies. Furthermore, a new Frequently Asked Question section provides additional guidance to IGs.

Federal Information Security Modernization Act of 2014

Title III of the *E-Government Act*, entitled the *Federal Information Security Management Act of 2002*, requires each Federal agency to develop, document, and implement an agency-wide program to provide information security for the information and systems that support the operations and assets of the agency, including those provided or managed by another agency, contractor, or other sources. FISMA amended the *Federal Information Security Management Act of 2002* and provided several modifications that modernize Federal security practices to address evolving security concerns. These changes result in less overall reporting, strengthened use of continuous monitoring in systems, and increased focus on the agencies for compliance and reporting that is more focused on the issues caused by security incidents.

FISMA, along with the *Paperwork Reduction Act of 1995* and the *Information Technology Management Reform Act of 1996* (known as the Clinger-Cohen Act), explicitly emphasizes a risk-based policy for cost-effective security. In support of this legislation, OMB, through Circular No. A-130, *Managing Federal Information as a Strategic Resource*, requires executive agencies within the Federal government to:

[3] NISTIR 8286, *Integrating Cybersecurity and Enterprise Risk Management (ERM)*, October 2020.

- Plan for security;
- Ensure appropriate officials are assigned security responsibility;
- Periodically review the security controls in their systems; and
- Authorize system processing prior to operations and periodically thereafter.

These management responsibilities presume responsible agency officials understand the risks and other factors that could adversely affect their missions. Moreover, these officials must understand the current status of their security programs and the security controls planned or in place to protect their information and systems to make informed judgments and investments that appropriately mitigate risk to an acceptable level. The ultimate objective is to conduct the day-to-day operations of the agency and to accomplish the agency's stated missions with adequate security, or security commensurate with risk, including the magnitude of harm resulting from the unauthorized access, use, disclosure, disruption, modification, or destruction of information.

NIST is responsible for developing information security standards and guidelines, including minimum requirements for federal systems, but such standards and guidelines shall not apply to national security systems without the express approval of appropriate federal officials exercising policy authority over such systems.

NIST also developed an integrated Risk Management Framework that effectively brings together all FISMA-related security standards and guidance to promote the development of comprehensive and balanced information security programs by agencies.

FISMA Reporting Metrics

We evaluated the effectiveness of the information security program and practices on a maturity model spectrum in which the foundation levels ensure the development of sound policies and procedures. The FISMA Reporting Metrics classify information security programs and practices into five maturity model levels: Ad Hoc, Defined, Consistently Implemented, Managed and Measurable, and Optimized. Within the context of the maturity model, Level 4, Managed and Measurable, represents an effective level of security:

Table 1: IG Evaluation Maturity Levels

Maturity Level	Maturity Level Description
Level 1: Ad Hoc	Policies, procedures, and strategies were not formalized; activities were performed in an ad hoc, reactive manner.
Level 2: Defined	Policies, procedures, and strategies were formalized and documented but not consistently implemented.
Level 3: Consistently Implemented	Policies, procedures, and strategies were consistently implemented, but quantitative and qualitative effectiveness measures were lacking.

Maturity Level	Maturity Level Description
Level 4: Managed and Measurable	Quantitative and qualitative measures on the effectiveness of policies, procedures, and strategies were collected across the organization and used to assess them and make necessary changes.
Level 5: Optimized	Policies, procedures, and strategies were fully institutionalized, repeatable, self-generating, consistently implemented, and regularly updated based on a changing threat and technology landscape and business/mission needs.

Objective

The objective of this audit was to evaluate the status of the FTC's overall IT security program and practices by evaluating the five NIST Cybersecurity Framework Functions:

- **Identify**, which includes questions pertaining to risk management and SCRM[4];
- **Protect,** which includes questions pertaining to configuration management, identity and access management (ICAM), data protection and privacy, and security training;
- **Detect,** which includes questions pertaining to information security continuous monitoring (ISCM);
- **Respond,** which includes questions pertaining to incident response; and
- **Recover,** which includes questions pertaining to contingency planning.

The answers to the 66 FISMA Reporting Metrics in Appendix B reflect the results of our testing of the FTC's information security program and practices.

This audit also had an objective to review corrective actions taken by the Office of the Chief Information Officer to implement OIG's prior audit recommendations. FTC has implemented all OIG's prior audit recommendations.

Audit Results

We determined the maturity level for each FISMA domain based on the responses to the questions contained in the FISMA Reporting Metrics and testing for each domain. We determined the FTC's overall maturity level for its security program as Managed and Measurable based upon a simple

[4] The FISMA Reporting Metrics included a new domain, Supply Chain Risk Management (SCRM), within the Identify function. This new domain focused on the maturity of agency SCRM strategies, policies and procedures, plans, and processes to ensure that products, system components, systems, and services of external providers are consistent with the organization's cybersecurity and supply chain risk management requirements. The new domain references SCRM criteria in NIST Special Publication (SP) 800-53, Revision, *Security and Privacy Controls for Information Systems and Organizations*. To provide agencies with sufficient time to fully implement NIST SP 800-53, Revision. 5, in accordance with OMB Circular No. A-130, these new metrics were not considered for the purposes of calculating the Identify framework function rating in FY 2021.

majority of the component scores for each domain's maturity level. Our testing of the information security program found no significant control issues and concluded the FTC's security program controls in place were effective.

Below is the maturity level for each domain.

Risk Management

Managing information system-related security risks is a complex, multifaceted undertaking that requires the involvement of the entire organization from senior leaders providing the strategic vision, top-level goals, and objectives for the organization to mid-level leaders planning and managing projects, to individuals on the front lines developing, implementing, and operating the systems supporting the organization's core missions and business processes. Federal guidance views risk management as a holistic activity fully integrated into every aspect of the organization.

The FTC uses performance measures as a management tool in its internal improvement efforts and links the implementation of its information security program to agency-level strategic planning efforts. Information security measures facilitate decision-making and improve performance and accountability by collecting, analyzing, and reporting relevant performance-related data. The measures also provide the means for assessing the efficiency and effectiveness of security controls.

We determined the FTC's overall maturity level for the risk management program is Managed and Measurable. The FTC defined the priority levels for its IT systems and implemented continuous monitoring processes that considered risks from the supporting business functions and mission impacts to help its leadership make informed risk management decisions. Additionally, the agency has risk management policies, procedures, and strategies, including methodologies for categorizing risk, developing a risk profile, assessing risk, risk appetite/tolerance levels, responding to risk, and monitoring risk. Furthermore, the FTC maintained comprehensive and accurate hardware and software inventories. Lastly, the agency evaluated risks associated with its assets and determined it had no high-value asset.[5]

The FTC has a process for identifying and prioritizing internal and external threats using a common vulnerability scoring system that identifies network vulnerabilities and the potential likelihood of business impacts of threats. The agency consistently manages its Plans of Action & Milestones to identify and track weaknesses at the enterprise level and monitor system-specific weaknesses at the system level.

Although we found an area where the FTC can improve its program, the risk management controls were operating as intended. We concluded the FTC's risk management program controls in place were effective.

[5] A high-value asset is information or an information system that is so critical to an organization that the loss or corruption of this information or loss of access to this system would have serious impact on the organization's ability to perform its mission or conduct business.

Area of Improvement 1: To increase the cybersecurity maturity level for FISMA DHS Question 5[6] to Managed and Measurable (Level 4), the FTC should capture and document lessons learned in the risk management policies and processes and update the program accordingly.

If lessons learned are performed, FTC can enforce the methodology in the policies and procedures, capture information from previous practice and actual risk events to strengthen the FTC's security posture.

Supply Chain Risk Management

The supply chain infrastructure is the integrated set of components (hardware, software, and processes) within the organizational boundary that composes the environment in which a system is developed or manufactured, tested, deployed, maintained, and retired/decommissioned. The supply chain consists of multiple layers of system integrators, external service providers, and suppliers. The supply chain risks include insertion of counterfeits, unauthorized production, tampering, theft, insertion of malicious software and hardware (e.g., global positioning system tracking devices, computer chips, etc.), and poor manufacturing and development practices in the supply chain.

We determined the FTC's overall maturity level for the Supply Chain Risk Management program is Ad Hoc. FTC did not document and implement policies, procedures, and strategies to address supply chain risk management upply chain risk management is a new domain in the FY 2021 IG FISMA Reporting Metrics, and required controls were stated in the NIST SP 800-53 Revision 5, *Security and Privacy Controls for Information Systems and Organizations* published in September 2020. FTC has one year to implement supply chain risk management-related controls to be compliant.

Without supply chain risk management policies, procedures, and strategies, FTC may not adequately consider security and privacy risks associated with the development, acquisition, maintenance, and disposal of systems, system components, and system services. The supply chain risk management strategy can be incorporated into the organization's overarching risk management strategy. It can guide and inform supply chain policies and system-level supply chain risk management plans.

Configuration Management

Configuration management comprises a collection of activities focused on establishing and maintaining the integrity of software and hardware systems, through control of the processes for installing, initializing, changing, and monitoring the configurations of those systems. Procedures cover employee roles and responsibilities, change control and system documentation requirements, the establishment of a decision-making structure, and configuration management training.

[6] *FY 2021 IG FISMA Reporting Metrics v 1.1* May 12, 2021.

We determined the FTC's overall maturity level for the configuration management program is Managed and Measurable. The FTC consistently implemented an organization-wide configuration management plan, and the plan was integrated into risk management and continuous monitoring processes. The FTC identified configuration management roles and responsibilities that described specific functions to be performed by officials and established an Enterprise Change Advisory Board to approve and manage all configuration changes. The FTC monitors, analyze and reports qualitative and quantitative performance measures on the effectiveness of its change control activities, and documented lessons learned on the effectiveness of its change control activities.

The FTC applied standard baselines to control hardware and software configurations and centrally managed its flaw remediation process and applied software patches. The FTC employed Security Content Automation Protocol enabled scanners to detect network vulnerabilities and maintain an up-to-date, complete, accurate, and readily available view of the security configuration for all system components connected to its network. The FTC utilizes various automated mechanisms to detect unauthorized hardware, software, and firmware on its network and take immediate actions to limit any security impact.

Although we found an area where the FTC can improve its program, the configuration management controls were operating as intended. We concluded the FTC's configuration management program controls in place were effective.

Area of Improvement 2: To increase the cybersecurity maturity level for FISMA DHS Question [redacted][7] to Managed and Measurable (Level 4), FTC should [redacted]

[redacted]

Identity and Access Management

ICAM is the means of verifying the identity of a user or device, typically as a prerequisite for granting access to resources in an information system. For most systems, identification and authentication are the first lines of defense. Identification and authentication are technical measures that prevent unauthorized individuals or devices from entering a system. These defenses are critical building blocks of information security since it is the basis for most types of access control and for establishing user accountability. Access control often requires the system to be able to identify and differentiate between users. For example, access control is usually based on least privilege, which refers to granting users only those accesses required to perform their duties. User accountability requires linking activities on a system to specific individuals and, therefore,

[7] *FY 2021 IG FISMA Reporting Metrics v 1.1* May 12, 2021.

requires the system to identify users. If the user is identified and authenticated through security controls, the user may then be granted access related to the user's permissions settings.

We determined the FTC's overall maturity level for the ICAM program is Managed and Measurable. The FTC established an identification and authentication policy[8] that defines processes of managing, monitoring, and securing access to protected resources. In addition, the FTC's access control policy[9] assigns responsibilities and defines requirements pertaining to developing and managing system access controls. Also, FTC holds stakeholders accountable for carrying out their roles and responsibilities effectively by having its employees adhere to the two ICAM policies referenced above, and by having its managers use task orders and gather lessons learned from its processes, to hold employees accountable.

The FTC uses automation to manage and review user access agreements for privileged and non-privileged users. Additionally, FTC conducts [redacted] reviews of privileged user access.

Our testing found no exceptions, and the controls were operating as intended. We concluded the FTC's ICAM program controls in place were effective.

Data Protection and Privacy

Data Protection and Privacy refer to a collection of activities focused on the security objective of confidentiality, restrictions on information access, and protection of personal privacy and proprietary information. Individual trust in the privacy and security of Personally Identifiable Information (PII) is strengthened through the effective implementation of information security controls. PII can range from an individual's name or email address to an individual's financial and medical records or criminal history. Unauthorized access, use, or disclosure of PII can seriously harm individuals and organizations, by contributing to identity theft, blackmail, or embarrassment. Organizations must identify and protect PII located within an organization's environment, assign PII impact levels, and select safeguards, respectively.

We determined the FTC's overall maturity level for the data protection and privacy program is Managed and Measurable. The FTC protects PII through a combination of measures, including operational safeguards, privacy-specific safeguards, and security controls. The FTC uses a risk-based approach for protecting the confidentiality of PII. The FTC's Privacy Program Plan[10] requires a Privacy Steering Committee and a Chief Privacy Officer (CPO). The Privacy Steering Committee comprises an internal agency advisory group of representatives from bureaus and offices within the FTC. Its mission is to help implement an effective agency-wide privacy program and ensure sound practices and controls are integrated into the FTC's operations. The committee also acts as a consulting board for the agency and offers solutions and feedback on privacy matters across the organization.

[8] [redacted]
[9] [redacted]
[10] [redacted]

The CPO advises the Chair and other senior officials on internal privacy issues, including the protection of PII. The CPO duties include overseeing the agency's privacy compliance efforts, reviewing all agency privacy policies, performing assessments and monitoring, directing privacy training for all the FTC employees and contractors, and promoting privacy awareness amongst the FTC staff.

Moreover, the FTC dedicated significant resources to its privacy program. It maintained an inventory of the collection and use of PII, conducted, and maintained privacy impact assessments and system of record notices for all applicable systems.

The FTC has defined and communicated its data breach response plan, including its processes and procedures for data breach notification. The breach response team participates in tabletop exercises and uses lessons learned to make improvements to the plan. In addition, FTC monitored and analyzed quantitative and qualitative performance measures on the effectiveness of its privacy activities.

Our testing found no exceptions, and the controls were operating as intended. We concluded the FTC's data protection and privacy program controls in place were effective.

Security Awareness Training

A successful IT security program consists of 1) developing IT security policy that reflects the business needs to be tempered by known risks; 2) informing users of their IT security responsibilities, as documented in agency security policy and procedures; and 3) establishing processes for monitoring and reviewing the program. Security awareness and training should be focused on the organization's entire user population. Management should set an example of proper IT security behavior within an organization and an awareness program aimed at all levels of the organization, including senior and executive managers. The effectiveness of this effort will usually determine the effectiveness of the awareness and training program.

We determined the FTC's overall maturity level for the security training program is Managed and Measurable. The FTC developed, documented, and disseminated comprehensive policies and procedures[11] for security awareness and specialized security training. The FTC defined the roles and responsibilities of individuals executing duties serving the security awareness and training program.

In addition, the FTC's security training program has three main parts. The first is mandatory, annual training for every current employee and new hire, to gain or maintain access to the FTC information systems. The second part is auditing that training for all employees, through fake phishing emails delivered into their accounts to test their application of training concepts during their everyday job. Finally, the third part is role-based/specialized training, which is deployed to individuals in specific roles or duties (system owners, authorizing officials, etc.) to enhance their

[11] [redacted]

understanding of the challenges faced during their roles/duties.

Our testing of the security training program found no exceptions and concluded the FTC's security training program controls in place were effective.

Information Security Continuous Monitoring

ISCM is defined as maintaining ongoing awareness of information security, vulnerabilities, and threats to support organizational risk management decisions. An ISCM program is established to collect information in accordance with pre-established metrics, using information readily available in part through implemented security controls. Organizational officials gather and analyze the data regularly and as often as needed to manage risks appropriate for each organizational tier. This process involves the entire organization, from senior leaders providing governance and strategic vision to individuals developing, implementing, and operating individual systems supporting the organization's core missions and business processes. Subsequently, determinations are made from an organizational perspective on whether to conduct mitigation activities or reject, transfer, or accept risk.

We determined the FTC's overall maturity level for the ISCM program is Managed and Measurable. The FTC's ISCM strategy[12] established a general approach to maintain awareness of the FTC's cybersecurity posture to support risk management decisions and establish guidelines for granting ongoing authorizations. In addition to the ISCM strategy, FTC has updated ISCM policies that cover the areas related to FTC's overall ISCM program

Additionally, FTC analyzed quantitative and quantitative performance measures on the effectiveness of its ISCM policies and procedures through [redacted] continuous monitoring reports. FTC used the results of security control assessments and monitoring to maintain ongoing authorizations of information systems.

Our testing of the ISCM program found no exceptions and concluded the FTC's ISCM program controls in place were effective.

Incident Response

Computer security incident response has become an essential component of IT programs. Cybersecurity-related attacks have become not only more numerous and diverse but also more damaging and disruptive. New types of security-related incidents emerge frequently. Preventive activities based on the results of risk assessments can lower the number of incidents, but not all incidents can be prevented. Therefore, an incident response capability is necessary for rapidly detecting incidents, minimizing loss and destruction, mitigating the exploited weaknesses, and restoring IT services.

[12] [redacted]

We determined the FTC's overall maturity level for the Incident Response program is Managed and Measurable. The FTC has published Incident Response policies and procedures[13] that establish the FTC level of its Incident Response program, which outlines containment strategies, consideration for potential damage to and theft of resources, evidence preservation, service availability, time, resources, and duration of the solution. Also, the FTC centralized its incident response function by establishing the Computer Security Incident Response Team (CSIRT), which is comprised of incident handlers within the Continuous Assurance Branch and other agency security officials.

We found the FTC personnel reported potential incidents to the CSIRT, which handled reported incidents in accordance with the plan. In addition, the FTC used several software tools to detect suspected incidences and uses a ticketing system to track incidences, mitigate the threat, and determine whether the threat affected other systems. Also, the ticketing system keeps track of reported incident response activities sent to the United States Computer Emergency Response Team (US-CERT).

The FTC utilizes Tenable security center dashboards to measure and manage the timely reporting of incident information to organizational officials and external stakeholders.

Moreover, the FTC uses [redacted] for intrusion detection/prevention capabilities for traffic entering and leaving the FTC's networks. The FTC uses the incident detection and prevention services provided by [redacted]. Through this capability, the FTC was able to detect and prevent potential compromises.

Our testing of the incident response program found no exceptions and concluded the FTC's incident response program controls in place were effective.

Contingency Planning

Information system contingency planning refers to a coordinated strategy involving plans, procedures, and technical measures that enable the recovery of information systems, operations, and data after a disruption. Contingency planning generally includes one or more of the following approaches to restore disrupted services:

- Restoring information systems using alternate equipment;
- Performing some or all the affected business processes using alternate processing (manual) means (typically acceptable for only short-term disruptions);
- Recovering information systems operations at an alternate location (usually acceptable for only long-term disruptions or those physically impacting the facility); and
- Implementing appropriate contingency planning controls based on the information system's security impact level.

[13] [redacted]

We determined the FTC's overall maturity level for the contingency planning program is Managed and Measurable. The FTC developed, maintained, and integrated system contingency planning[14] through policies, procedures, and strategies. The policies and procedures defined roles and responsibilities of stakeholders involved in information systems contingency planning.

Additionally, the FTC allocated people, processes, and technology in a risk-based manner to effectively implement system contingency planning activities. The FTC prepared a Business Impact Assessment and used the results to guide contingency planning efforts and inform senior-level decision making. Moreover, our testing noted that FTC conducted backups of information appropriately and maintained this information's confidentiality, integrity, and availability. Further, the FTC performed an annual tabletop exercise of its information system contingency planning processes and adequately documented lessons learned to improve the plan. The information system contingency plans and performance of recovery activities were disseminated and communicated to relevant stakeholders via the utilization of the [redacted] system.

Although we found areas where the FTC could improve its program, the contingency planning controls were operating as intended. We concluded the FTC's contingency planning program controls in place were effective.

Area of Improvement 3: To increase the cybersecurity maturity level for FISMA DHS Question [redacted][15] to Managed and Measurable (Level 4), FTC should [redacted]

[redacted]

Area of Improvement 4: To increase the cybersecurity maturity level for FISMA DHS Question [redacted][16] to Managed and Measurable (Level 4), FTC should [redacted].

[redacted]

Overall Conclusion

We concluded, consistent with applicable FISMA requirements, OMB policy and guidance, and NIST standards and guidelines, the FTC's information security program and practices were established and have been maintained for the five Cybersecurity Functions and nine FISMA Metric Domains. Additionally, we found the FTC's information security program and practices were

[14] [redacted]
[15] *FY 2021 IG FISMA Reporting Metrics v 1.1* May 12, 2021.
[16] *FY 2021 IG FISMA Reporting Metrics v 1.1* May 12, 2021

effective for the period October 1, 2020, to September 30, 2021, and the overall maturity level of the FTC's information security program was Managed and Measurable.

Scope and Methodology

Scope

The scope of the FISMA audit evaluated the overall information security program and practices of the FTC's unclassified systems to determine the effectiveness of such programs and practices for FY 2021. RMA answered the 66 IG FISMA Reporting Metrics issued by DHS. Our audit tested the effectiveness of the agency's information security policies, procedures, and practices of the FTC information systems to ascertain if it enabled the protection of the CIA of information.

Methodology

We conducted this audit in accordance with Government Auditing Standards. The audit is designed to determine whether the FTC implemented selected security controls for selected information systems in support of FISMA.

We also conducted this audit in accordance with Generally Accepted Government Auditing Standards (also known as the Yellow Book)[17] issued by the Comptroller General of the United States. These standards require we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We obtained evidence that provided a reasonable basis for our findings and conclusions based on our audit objectives.

The overall strategy of our audit considered the NIST SP 800-53 Revision 4, *Security and Privacy Controls for Federal Information Systems and Organizations*, NIST SP 800-53 Revision 5, *Security and Privacy Controls for Federal Information Systems and Organizations,* NIST SP 800-53A Revision 4, *Assessing Security and Privacy Controls in Federal Information Systems and Organizations,* the FISMA Reporting Metrics from the Council of the Inspectors General on Integrity and Efficiency (CIGIE), OMB, and DHS, and the Council's policies and procedures. Our testing procedures were developed from NIST SP 800-53A. We determined the overall maturity level of each of the nine domains by a simple majority of the competent scores of the maturity level of each question within the domain, in accordance with the FISMA Reporting Metrics.

For testing the operating effectiveness of the security controls, we exercised statistical analysis and methods in determining the number of items to select for testing and the method to be used to select items. We also considered the relative risk and the significance or criticality of the specific items in achieving the related control objectives along with the severity of a deficiency related to the control activity.

[17] Government Accountability Office Government Audit Standards (2021 Revision).

Criteria

We focused our FISMA audit approach on Federal information security guidelines developed by NIST, OMB, DHS, and the FTC. NIST SPs provide guidelines that were considered essential to developing and implementing the FTC's security programs. The following is a listing of the criteria used in the performance of the FY 2021 FISMA audit:

NIST Federal Information Processing Standards (FIPS) and Special Publications

- FIPS Publication 199*, Standards for Security Categorization of Federal Information and Information Systems*
- FIPS Publication 200*, Minimum Security Requirements for Federal Information and Information Systems*
- FIPS Publication 201-2, *Personal Identity Verification (PIV) of Federal Employees and Contractors*
- NIST SP 800-30, Revision 1, *Guide for Conducting Risk Assessments*
- NIST SP 800-34, Revision 1, *Contingency Planning Guide for Federal Information Systems*
- NIST SP 800-37, Revision 1, *Guide for Applying the Risk Management Framework to Federal Information Systems: A Security Life Cycle Approach*
- NIST SP 800-39, *Managing Information Security Risk: Organization, Mission, and Information System View*
- NIST SP 800-40, Revision 3, *Guide to Enterprise Patch Management Technologies*
- NIST SP 800-50, *Building an Information Technology Security Awareness and Training Program*
- NIST SP 800-53 Revision 4, *Security and Privacy Controls for Federal Information Systems and Organizations*
- NIST SP 800-53 Revision 5, Security and Privacy Controls for Federal Information Systems and Organizations
- NIST SP 800-53A Revision 4, *Assessing Security and Privacy Controls in Federal Information Systems and Organizations: Building Effective Assessment Plans*
- NIST SP 800-60, Revision 1, *Volume I: Guide for Mapping Types of Information and Information Systems to Security Categories*
- NIST SP 800-61 Revision 2, *Computer Security Incident Handling Guide*
- NIST SP 800-63, *Digital Identity Guidelines*
- NIST SP 800-83, Revision 1, *Guide to Malware Prevention and Handling for Desktops and Laptops*
- NIST SP 800-84, *Guide to Test, Training, and Exercise Programs for IT Plans and Capabilities*
- NIST SP 800-86, *Guide to Integrating Forensic Techniques into Incident Response*
- NIST SP 800-128, *Guide for Security-Focused Configuration Management of Information Systems*
- NIST SP 800-137, *Information Security Continuous Monitoring (ISCM) for Federal Information Systems and Organizations*

- NIST SP 800-161, *Supply Chain Risk Management Practices for Federal Information Systems, and Organizations*
- NIST SP 800-181, Revision 1 *National Initiative for Cybersecurity Education (NICE) Cybersecurity Workforce Framework*
- NIST Interagency Report 8286, Integrating Cybersecurity and Enterprise Risk Management (ERM)

OMB Policy Directives

- OMB Memorandum M-22-01, Improving Detection of Cybersecurity Vulnerabilities and Incidents on Federal Government Systems through Endpoint Detection and Response
- OMB Memorandum M-21-02, Fiscal Year 2020-2021 Guidance on Federal Information Security and Privacy Management Requirements
- OMB Memorandum M-20-32, Improving Vulnerability Identification, Management, and Remediation
- OMB Memorandum M-19-26, Update to the Trusted Internet Connections (TIC) Initiative
- OMB Memorandum M-19-03, Strengthening the Cybersecurity of Federal Agencies by Enhancing the High Value Asset Program
- OMB Memorandum M-17-09, Management of Federal High Value Assets
- OMB Memorandum M-16-04, Cybersecurity Strategy and Implementation Plan (CSIP) for the Federal Civilian Government
- OMB Memorandum M-17-26, Reducing Burden for Federal Agencies by Rescinding and Modifying OMB Memoranda
- OMB Circular No. A-123, Management Responsibility for Internal Control
- OMB Circular No. A-130, Managing Information as a Strategic Resource

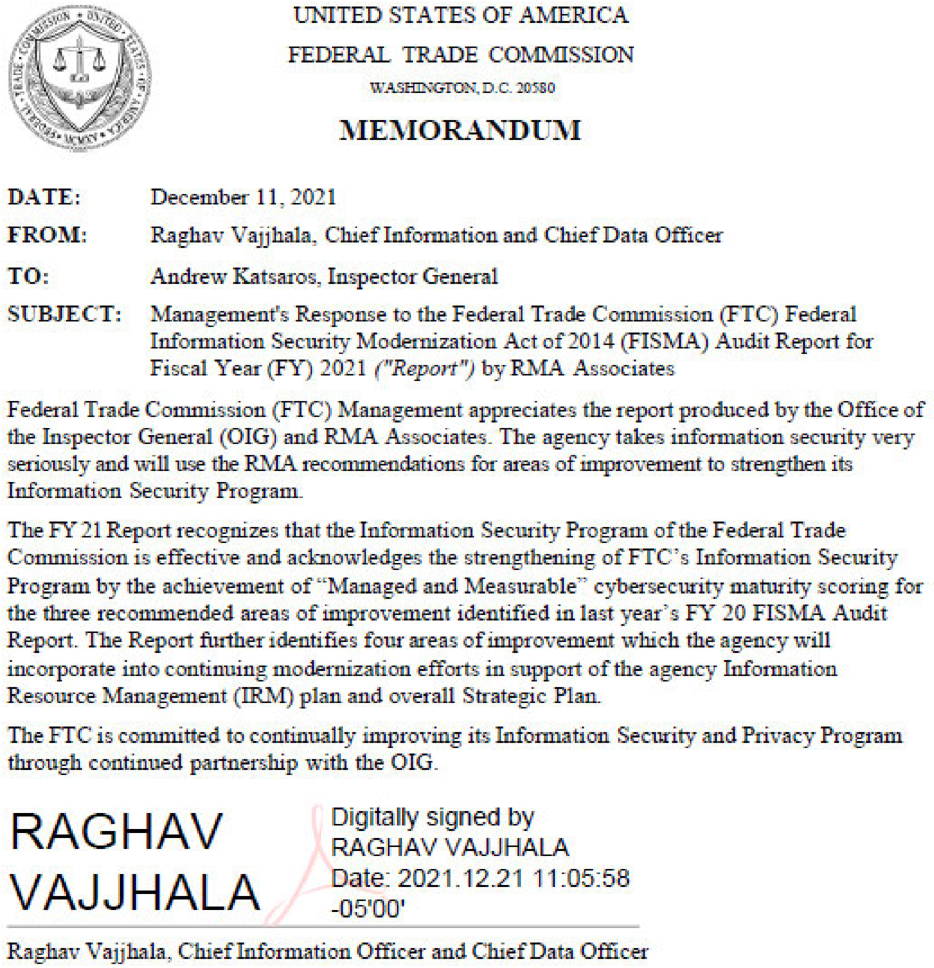
Department of Homeland Security

- *FY 2021 Inspector General Federal Information Security Modernization Act of 2014 (FISMA) Reporting Metrics Version 1.1* May 12, 2021

Acronyms

CIA	Confidentiality, Integrity, and Availability
CIGIE	Council of the Inspectors General on Integrity and Efficiency
CPO	Chief Privacy Officer
CSIRT	Computer Security Incident Response Team
DHS	Department of Homeland Security
ERM	Enterprise Risk Management
FIPS	Federal Information Processing Standards
FISMA	Federal Information Security Modernization Act of 2014
FTC	Federal Trade Commission
FY	Fiscal Year
ICAM	Identity and Access Management
IG	Inspector General
ISCM	Information Security Continuous Monitoring
IT	Information Technology
NIST	National Institute of Standards and Technology
OIG	Office of Inspector General
OMB	Office of Management and Budget
PII	Personally Identifiable Information
RMA	RMA Associates LLC
SCRM	Supply Chain Risk Management
SP	Special Publication
US-CERT	United States Computer Emergency Readiness Team

Appendix A – Management’s Response



UNITED STATES OF AMERICA
FEDERAL TRADE COMMISSION
WASHINGTON, D.C. 20580

MEMORANDUM

DATE: December 11, 2021

FROM: Raghav Vajjhala, Chief Information and Chief Data Officer

TO: Andrew Katsaros, Inspector General

SUBJECT: Management's Response to the Federal Trade Commission (FTC) Federal Information Security Modernization Act of 2014 (FISMA) Audit Report for Fiscal Year (FY) 2021 *("Report")* by RMA Associates

Federal Trade Commission (FTC) Management appreciates the report produced by the Office of the Inspector General (OIG) and RMA Associates. The agency takes information security very seriously and will use the RMA recommendations for areas of improvement to strengthen its Information Security Program.

The FY 21 Report recognizes that the Information Security Program of the Federal Trade Commission is effective and acknowledges the strengthening of FTC’s Information Security Program by the achievement of “Managed and Measurable” cybersecurity maturity scoring for the three recommended areas of improvement identified in last year’s FY 20 FISMA Audit Report. The Report further identifies four areas of improvement which the agency will incorporate into continuing modernization efforts in support of the agency Information Resource Management (IRM) plan and overall Strategic Plan.

The FTC is committed to continually improving its Information Security and Privacy Program through continued partnership with the OIG.

RAGHAV VAJJHALA

Digitally signed by RAGHAV VAJJHALA
Date: 2021.12.21 11:05:58 -05'00'

Raghav Vajjhala, Chief Information Officer and Chief Data Officer

Appendix B – FY 2021 IG FISMA Reporting Metrics

The subsequent section of the report "Appendix B" is not being publicly released due to the sensitive security content