Software Asset Management (SAM) Standard

Ver. 4.1

June 18, 2014

SAMAC

Association of SAM Assessment & Certification

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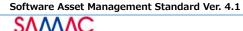
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Introduction

1. About SAMAC and the Software Asset Management (SAM) Standard

The operations of SAMAC, a nonprofit organization established to drive the implementation of proper software asset management practices, are listed below:

- Operations to evaluate the maturity level to which software asset management has been adopted in organizations such as corporations and public institutions (evaluation of maturity level)
- Operations such as providing training, certification criteria, and other services for organizations and consultants that provide support for establishing SAM structures, and development in areas such as the certification and the certification management
- Various operations as needed for the appropriate adoption of software asset management

SAMAC also establishes and operates software asset management standards and assessment criteria for use in evaluation of software asset management. This Software Asset Management (SAM) Standard has been established within the framework of these standards and criteria. SAMAC succeeded activity of the Software Asset Management Consortium (SAMCon), which created SAM Standard originally, and these standards are developing conforming to ISO/IEC19770 and related JIS standard.

2. Members of the working group responsible for establishment of the Software Asset Management (SAM) Standard Ver. 4.1

Software Asset Management (SAM) Standard Ver. 4.1 was established by the SAMAC Standards Working Group. The work of establishing the standard was further divided into two teams: the Editorial Team and the Review Team. Members of each team are listed below.

■   SAMAC Standards Working Group

Working Group Leader	Jinichi Tamura (Deloitte Touche Tohmatsu LLC)
Development Team	Jintaro Shinoda (Cross Beat Co., Ltd.)
	Atsushi Shimada (Deloitte Touche Tohmatsu LLC)
	Hisakazu Tanaka (Uchida Yoko Co., Ltd.)
	Nobuyuki Teshima (Microsoft Japan Co., Ltd.)
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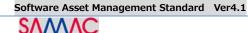# I. About Software Asset Management (SAM) Standard

1. Background

The Software Asset Management Consortium (SAMCon) was launched on May 20, 2002 for the purpose of organizing various issues and confusions in software asset management in Japan and introducing software asset management to enhance a proper IT environment in an organization. Most of organizations have not been introduced appropriate software asset management in place, although the environments surrounding organizations have changed significantly, such as an increase in penetration rates of PCs, increasing use of networks and Open system. One of the reasons for this is that has not been established SAM framework. Therefore, SAMCon has put an effort into establishment of SAM Standard to provide a management guideline for organizations interested in introducing appropriate SAM ("Software Asset Management Standard Ver1.0" on October 31, 2002). After that, Software Asset Management Assessment Criteria was established to know the maturity level of SAM and set SAM goals ("Software Asset Management Assessment Criteria Ver1.0" on November 19, 2013).

In 2006, "ISO/IEC 19770-1," the international standard for SAM, which was established and published jointly by the International Organization for Standardization (ISO) and International Electro technical Commission (IEC) . SAM Standard and Assessment Criteria have been revised by reference to the ISO in 2007 and 2008. ("SAM Standard Ver2.0" on November 27, 2007 and "SAM Evaluation Standard Ver2.0" on April 17, 2008).

In 2010, SAMAC took over SAMCon's activities and SAMCon was dissolved. SAMAC will develop a new software asset management standards and software asset management evaluation criteria with consideration of the environmental changes and the latest circumstances etc. surrounding the software asset management based on the SAMCon's criteria. Since SAMAC succeeded SAMCon's SAM Standard, which had a certain level of market penetration, SAMAC's new standard was named Ver3.0 to avoid confusion. Detailed revisions, Ver3.01 and Ver3.1, were made to Ver3.

Due to the revision and publication of "ISO/IEC19770-1" in June 2012, SAMAC reviewed its standards from the overall perspective, such as consistency with the revised ISO/IEC 19770-1, operation status with Ver3, and current situations of the various environments surrounding SAM, and came up with a revision Ver4.1.

2. Necessity and Objectives of SAM

With the progress of IT development, software assets have become indispensable to the operations of organizations and businesses. Lack of proper management may impact a corporation significantly. In other words, there are a lot of inherent risk factors in terms of software assets in an organization.

In particular, the following are the conceivable risks.

- Accountability cannot be fulfilled.
- Assets may become unavailable if they are not maintained properly.
- Legal issues, such as being sued for copyright infringement, may surface and result in damages such as compensation.
- Legal issues due to the lack of internal management system may surface and result in penalties.
- Public trust may be lost due to the occurrence of legal issues.
- Extra costs may be generated by inefficiencies or by purchasing licenses in excess.
- Appropriate service in terms of the software use cannot be provided and maintained.
- Security issues may be generated due to the use of inappropriate versions and settings of software.
- Competitive advantage may be lost or reduced due to inability to use software effectively.

Given the growing importance of risk management in recent years, it is necessary for an organization to implement SAM from a variety of perspectives in order to respond to various risks.

Although the levels to be achieved at each organization with regard to the management objectives should be considered based on its own factors, objectives in this management standard are organized into 3 main objectives, with an addition of competitive advantage, etc., to the 4 existing objectives, including establishment of accountability, avoidance of legal risks, response to security issues, and TCO reductions, to be consistent with the international standard.

Management Objectives
- Risk management objectives
    - ✓ Accountability
    - ✓ Asset preservation
    - ✓ Avoidance of legal risks
    - ✓ Response to security issues
    - ✓ Ensuring availability, etc.
- Cost management objectives
    - ✓ TCOP Reduction[1], etc.
- Competitive advantage objectives
    - ✓ Effective applications of software, etc.

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[1] TCO (Total Cost of Ownership): The total cost of owning the system throughout its life cycle, including purchasing, introduction, maintenance and management, and disposal.

3. Management Standard System

This management standard is composed of the following 9 management areas. The following areas are classified based on the management objectives necessary for SAM. Each domain is associated with an objective.

(1) Pol   Policy: Establishment of Policy and Regulation

(2) Sys   Systems: Establishment of a Managerial System

(3) Comp   Competence: Establishment and Maintenance of Competence in SAM

(4) Own   Ownership: Confirmation and Verification of Licenses Owned

(5) Imp   Implement: Confirmation of Software and Related Asset Implemented

(6) Cost   Cost Optimization

(7) Sec   Security: Compliance with Security Requirements

(8) OM   Operations Management: SAM Operations Management Processes

(9) LC   Life Cycle Processes and Interfaces

4. Management Standard Structure

The management standard's structure consists of management objectives, management requirements, and management items.

(1) Management objectives

Management objectives are the basic elements of implementing software asset management, indicating the tasks that must be completed in order to implement software asset management. In other words, these management objectives must be implemented in order to carry out proper software asset management.

(2) Management requirements

Management requirements are the items needed in order to achieve the management objectives. A management objective can be said to have been achieved only once all of these management requirements are satisfied. The domain to which each management requirement belongs can be checked in the tables below, which are organized by policy (Policy 1, Policy 2, etc.) and system (Sys 1, Sys 2, etc.).

(3) Management items

Management items indicate the specific content of management for satisfying each management requirement. This Standard shows the best practices that should be implemented in general to satisfy the management requirements. Since there are various conceivable methods by which management requirements can be satisfied, each organization should choose which methods are appropriate in its own case. This Management Standard describes the content that should be implemented in a standard organization as typically conceived.

(4) Corresponding clauses and tiers in ISO/IEC19770-1

This Management Standard was prepared to conform to ISO/IEC19770-1:2012. For this reason, this Management Standard shows the corresponding clauses of the international standard ISO/IEC19770-1:2012 in order to make clear the relationship between this Standard and the international standard, to assist in implementing software asset management in conformance with ISO/IEC19770-1:2012. In addition, based on the tiered approach to evaluation of conformance, ISO/IEC19770-1:2012 groups outcomes related to software asset management processes into four tiers. This Standard shows corresponding tiers together with corresponding clauses, in light of the possibilities for use of tiered evaluation of conformance in the future.

Tiers

> ■ **Tier 1: Trustworthy Data**
> Trustworthy records are kept concerning software asset management.
> ■ **Tier 2: Practical Management**
> Practical management is implemented for software asset management.
> ■ **Tier 3: Operational Integration**
> Various operations related to software asset management are integrated.
> ■ **Tier 4: Full ISO/IEC Software Asset Management Conformance**
> Full conformance to ISO/IEC 19770-1:2012

5. Concepts of the Use of Management Standards

(1) Risk-control balance

   While this Management Standard provides a framework in the form of guidelines as to what kind of software asset management should be employed, each organization needs to decide for itself on its practical content and levels of software asset management, in accordance with its own circumstances. While it is conceivable that decisions on practical content and levels could be based on a variety of factors such as the size of the organization, the complexity of its software use, and organizational policies, basically the organization must implement the most appropriate software asset management based on consideration of the balance between its own risks and controls.

(2) Suitability to purpose

   Although this Management Standard envisions the three objectives of risk management, cost management, and competitive advantage, the necessity and objectives of software asset management can be said to vary by organization. Accordingly, if an organization envisions its own objectives that differ from those covered in this Management Standard, then it will need to revise the standards to fit such objectives and apply them accordingly.

(3) Application of management items by individual organizations

   As described above, this Management Standard describes, as management items, best practices that should be implemented in a standard organization as typically conceived. Accordingly, it can be said that if these management items are implemented then the management requirements are satisfied. However, this is not the only way to implement appropriate management. Appropriate management may be implemented through other reasonable methods as well. However, the management objectives and management requirements are essential items for implementing software asset management, and they must be satisfied in order to achieve the objectives of software asset management.

   In light of the above points, when deciding on practical management items each organization, at a minimum, needs to consider points such as the following:

- Whether the management items of this Management Standard are suitable to the organization
- Whether the management items of this Management Standard are practicable and reasonable
- Whether there are other methods that may be substituted, and whether such substitute methods would satisfy the management requirements

(4) Importance of development of a management structure

   Software asset management tends to be understood from a point of view that says that it is enough to ascertain the actual situation in order to prevent unauthorized copying. However, in fact there are various reasons for implementing software asset management, and effective and efficient management is a very important element in realizing appropriate software asset management. In other words, what is needed is

management focused on processes rather than management focused on results in the form of ascertaining the actual situation.

The quality of the management system itself as a system for preventing problems and self-purification if they do arise, is a major factor behind the success of any type of management. Accordingly, in software asset management it is essential to establish a management structure that effectively allocates the functions of deterrence, prevention, discover, and correction as the basic functions of management.

(5) Hardware management as a precondition for software asset management

By its nature, software operates on a hardware platform. For this reason, hardware management is essential in order to manage use of software appropriately.

While essentially hardware management covers a different management domain than software asset management, the scope of this Management Standard includes particular items related to hardware management that can be considered essential to software asset management.

However, this means that such items need to be implemented thoroughly as part of hardware management for the purpose of appropriate software asset management, rather than as part of software asset management itself.

6. SAM as Management System

This Management Standard envisions the establishment and operation of a management system based on the plan-do-check-act (PDCA) cycle, to properly achieve the objectives of software asset management.

The PDCA cycle for software asset management consists of the following processes:

- Software asset management planning process
- Software asset management adoption process
- Software asset management monitoring and review processes
- Process of continual improvement to software asset management

(1) Software asset management planning process

The objective of the software asset management planning process is to make appropriate preparations and plans for effectively and efficiently achieving the objectives of software asset management.

(2) Software asset management adoption process

The objective of the software asset management adoption process is to achieve the overall software asset management objectives and software asset management plans.

(3) Software asset management monitoring and review processes

The objective of the software asset management monitoring and review processes is to achieve the management objectives of software asset management.

(4) Process of continual improvement to software asset management

The objectives of the process of continual improvement to software asset management are to identify the use of assets subject to software asset management and opportunities for improvements to software asset management and to take related measures when deemed appropriate.

7. Definition of Terms

Term	Definition
Related assets	Assets necessary for the use and management of software, including hardware and other assets
Personnel	Any individual expected to perform duties of the organization, including officers, employees, and contractors
Management	Corporate board or equivalent body, which is person or group of people who assumes legal responsibility for conducting or controlling an organization at the highest level
Decentralized management approach and centralized management approach	Decentralized management approach is a method where management is carried out individually at each site or department. Centralized management approach is a method where management is carried out collectively by an organization as a whole. In general, cost reduction is difficult with the decentralized management approach and the risk of unauthorized license use is higher than with the centralized management approach.
Inventory	Information regarding the assets that are subjected to SAM
Owned license	A license approved by the manufacturer of software for its use as an organization
Installation	Introduction of software to a computer
Uninstallation	Removal of installed software from a computer
Down-grading	Use of previous versions approved within the scope of an owned license
License certificate	A document certifying the ownership of a software license
License agreement	An agreement describing the terms and conditions of a software license
Definitive master version	Software used for installation or duplication for provision
Distribution copy	Duplications of the definitive master version for the purpose of installation onto other hardware, such as servers and physical media
Underlying license	License for software use as originally purchased or procured, and which can typically be linked directly to purchase records * An underlying license may have conditions associated with it, requiring it to be used combination with another license or licenses to create an effective full license.
Effective full license	License right for software which allow one full use of the software * An effective full license consists of one or more underlying licenses.
Service provider	Person responsible for provision or support of an element that supports IT service

8. Establishment and Revision History

■ Software Asset Management Consortium

Date	Revision
October 30, 2002	Software Asset Management (SAM) Standard Ver. 1.0 established
November 27, 2007	Software Asset Management (SAM) Standard Ver. 2.0 established

■ SAMAC

Date	Revision
August 1, 2011	Software Asset Management (SAM) Standard Ver. 3.0 established
September 2, 2011	Software Asset Management (SAM) Standard Ver. 3.01 established
October 1, 2011	Software Asset Management (SAM) Standard Ver. 3.1 established
October 1, 2013	Software Asset Management (SAM) Standard Ver. 4.0 established
June 18, 2014	Software Asset Management (SAM) Standard Ver. 4.1 established

II. Software Asset Management (SAM) Standard

1. Policy: Establishment of Policy and Regulation

[Management Objective] To establish SAM policies, regulations, etc., that are suitable for the organization

Management Requirements	Policy 1 SAM policies, regulations, and procedures of the organization are identified and disseminated.	Corresponding Clauses in ISO/IEC 19770-1	Corresponding Tiers (Tier)			
			1	2	3	4
(1) Policies, regulations, etc., in terms of SAM are established.						
a. The scope of SAM in the organization is defined. · The organization and the scope of assets subjected to SAM are identified in a statement, etc., by the management.		4.2.2.2 a)1)2) 4.3.2.2 b)1)		○		
b. Types of assets subjected to SAM and necessary management items in an organization are defined.		All of 4.4.2.2 a)				○
c. Policies, regulations, and procedures related to SAM, and relevant documents are established.		All of 4.2.4.2 a)c)		○		
d. The following procedures and exceptional procedures when necessary are defined. · Responsibilities for corporate governance in SAM. · Compliance requirements, including copyright and data protection. · Any procurement requirement of assets subjected to SAM. · Any requirement for the use of software. · Disciplinary implications for violation of SAM policies, regulations, etc.						
(2) Policies, regulations, etc., related to SAM are approved by the management.		4.2.4.2 c)		○		
(3) Document control regarding SAM is carried out.						
a. There are procedures for preparation, review, approval, etc., of policies, regulations, procedures, and relevant documents.		4.2.4.2 a)		○		
b. These documents, including the version information, are properly controlled.						
c. Relevant documents can be cross-referenced.		4.2.4.2 b)		○		
(4) Established Policies, regulations, etc., are communicated to all personnel in a way which reaches all new personnel when they start, and continuing personnel at least annually, and are readily accessible at all times to personnel within the scope.		4.2.4.2 d)		○		

Management Requirements	Policy 1 SAM policies, regulations, and procedures of the organization are identified and disseminated.	Corresponding Clauses in ISO/IEC 19770-1	Corresponding Tiers (Tier)			
Management Items			1	2	3	4
(5) Policies, regulations, and procedures, and relevant documents are disseminated to all personnel. * There is a mechanism, such as notification in the case of change, where the latest policies, regulations, procedures, etc., are referenced to by all personnel.		4.2.4.2 d)		○		
(6) Use of assets subjected to SAM are incorporated in corporate governance and guidelines, and documented.						
a. Responsibility for the organization's governance of assets subjected to SAM is formally approved by management.		4.2.2.2 b)		○		
b. Regulations or guidelines relevant to assets subjected to SAM are identified and documented in all countries within the scope of SAM and are reviewed at least annually.		4.2.2.2 c)		○		
(7) A plan is developed for the adoption and implementation of SAM.						
a. A SAM plan is updated at least annually and specifies matters including the scope of SAM and assets subjected to SAM. This plan is examined from the perspective of efficiently implementing SAM.		4.3.2.2 b)		○		
b. The objectives of SAM are established at least annually, and these require the approval of management.		4.2.2.2 e) 4.3.2.2 a)		○		
c. SAM plans are approved by management.		4.3.2.2 c)		○		

Management Requirements	Policy 2 Risks related to SAM are assessed.		Corresponding Clauses in ISO/IEC 19770-1	Corresponding Tiers (Tier)			
Management Items				1	2	3	4
(1) **Procedures are established for assessment of risks related to SAM.**							
a. The risk assessment covers at least the following risks: 　· Risks of regulatory and licensing non-compliance 　· Risk of interruption of operations due to inadequate SAM 　· Risk of excessive spending due to inadequate SAM 　· Risks associated with management methods adopted 　· Risk of violation of security requirements 　· Risks associated with decentralized vs. centralized management approaches 　· Risks associated with operation in different countries			All of 4.2.2.2 d)		○		
(2) **Risks associated with assets subjected to SAM are analyzed and evaluated.** * Risk assessment is conducted at least annually			4.2.2.2 d)		○		
(3) **Risk mitigation measures approved by management are established based on the results of risk analysis and evaluation.** * Results for analysis and evaluation are reflected in SAM.			4.2.2.2 d)		○		

Management Requirements	Policy 3 SAM is subjected to monitoring and auditing.	Corresponding Clauses in ISO/IEC 19770-1	Corresponding Tiers (Tier)			
Management Items			1	2	3	4
(1) Procedures are developed for verification of records related to SAM.		4.5.2.2 a)	○			
(2) Compliance with the requirements of this Standard is verified. * Verification also covers other processes related to SAM and includes verification of whether procedures implemented satisfy the requirements of this Standard.		4.5.5.2 a)	○	○	○	○
(3) Procedures are established for corrective measures until resolution of any issues discovered. * Follow-up measures are taken until completion of corrective measures.		4.5.5.2 b)	○	○	○	○
(4) The process of auditing of SAM calls for implementation at least annually to confirm whether the SAM management items are achieved.		All of 4.3.4.2 a)				○
(5) Revisions based on the results of auditing are prioritized, formally approved by the SAM owner for the entire organization, and reported to organization management.		4.3.4.2 b)				○
(6) A system is in place for regular review of status reports on progress against the annual SAM plan.						
a. Regular status reports (at least quarterly) on progress against the annual SAM plan are reported to management.		4.3.3.2 b)				○
b. Any variances requiring follow-up are identified and documented.		4.3.3.2 c)				○

Management Requirements	Policy 4 SAM policies, regulations, and procedures are reviewed.	Corresponding Clauses in ISO/IEC 19770-1	Corresponding Tiers (Tier)			
Management Items			**1**	**2**	**3**	**4**
(1) A review of policies, regulations, etc. is conducted regularly and in response to any major changes. * This review is conducted at least annually.		All of 4.3.4.2 a)				○
(2) A mechanism is in place to collect and record suggested improvements to SAM policies, regulations, etc. throughout the organization.		4.3.5.2 a)				○
(3) Suggestions for improvement to policies, regulations, etc. are assessed, prioritized, approved, and implemented.		4.3.5.2 b)				○
(4) Mechanisms are in place to collect information on changes, issues, and risks affecting SAM implemented.		4.3.3.2 a)				○

Management Requirements	Policy 5 SAM documents and records are controlled.	Corresponding Clauses in ISO/IEC 19770-1	Corresponding Tiers (Tier)			
Management Items			1	2	3	4
(1) **The SAM owner for the entire organization maintains a Master of Register that can be used to confirm the following items at a minimum:** ・ Assets subjected to management ・ Register of stores and inventories relevant to SAM ・ Documents relevant to SAM ・ Names of persons in charge of managing these information, and locations where these are stored and installed ・ Separation of definitive source and copies ・ Date of updating		4.4.2.2 b)	○			
(2) **Information documenting the requirements of this Standard is controlled to ensure the following:** ・ That the documented information is accessible when and where needed and is in a usable condition ・ That the documented information is protected sufficiently		4.4.2.2 b)	○			
(3) **Control of documented information by the organization includes the following items:** ・ Distribution, access, searching, and use ・ Storage and preservation, including maintaining legibility ・ Control of changes ・ Maintenance and disposal		4.4.2.2 b)	○			
(4) **Documented information from outside the organization determined by the organization to be necessary for planning and management of SAM is identified and controlled as necessary.**		4.4.2.2 b)	○			

2. Systems: Establishment of a Managerial System

[Management objective] Managerial, educational, and auditing systems are established and maintained

Management Requirements	Sys 1 The managerial system and responsibilities for SAM are established.	Corresponding Clauses in ISO/IEC 19770-1	Corresponding Tiers (Tier)			
Management Items			1	2	3	4
(1) Management has established a system for implementing SAM throughout the entire organization.		4.2.3.2 a)5)		○		
(2) The person responsible for SAM throughout the entire organization (SAM owner) is identified.						
a. The SAM owner is responsible for the following: ・ Proposal of SAM management objectives ・ Supervising SAM planning ・ Securing the resources needed to implement the SAM plan ・ Achievement of the SAM plan		All of 4.2.3.2 a)		○		
b. In cases such as where decentralized management is employed, local SAM owners are assigned in accordance with the organization's management structure. ・ Section roles and responsibilities related to corporate governance are documented to ensure that the specified SAM is implemented reliably.		4.2.3.2 a)5)		○		
c. Local SAM owners have the following responsibilities: ・ Obtaining resources for implementing the SAM plan ・ Delivering results against the SAM plan ・ Adoption and implementation of necessary policies, processes, and procedures ・ Maintaining accurate records of software-related assets ・ Ensuring that operational management and technical approval are required for purchase, deployment, and control of software assets ・ Management of contracts and relationships with suppliers and internal customers ・ Identifying the need for and implementing improvements		All of 4.2.3.2 b)		○		
d. All parts of the organization are covered by the SAM owner or local SAM owners, without conflicting overlap.		4.2.3.2 a)5)		○		

Management Requirements	Sys 1 The managerial system and responsibilities for SAM are established.	Corresponding Clauses in ISO/IEC 19770-1	Corresponding Tiers (Tier)			
Management Items			1	2	3	4
(3)	**The roles and responsibilities established are communicated to all subject parts of the organization involved in any way with SAM, in the same way other organization-wide and local policies are communicated.**	4.2.3.2 c）		○		
(4)	**The person responsible for auditing of SAM (SAM auditor) and SAM auditing personnel suited to the organization's managerial system are appointed.**					
	a. The SAM auditor is responsible for the following: ・ Drafting SAM audit plans ・ Securing the resources needed to implement the SAM audit ・ Implementing the SAM audit ・ Reporting to management the results of the SAM audit ・ Following up on issues identified in the SAM audit					
	b. Subjects of SAM audits include the following: ・ Evaluation of achievement of SAM management objectives and the SAM plan ・ Compliance with standards ・ Results on indicators specified in the SAM plan and SAM-related SLAs ・ Confirmation of whether SAM policies approved by the organization are effectively communicated and adopted throughout the entire organization ・ Summary of any exceptions identified as a result of the above process, and relevant necessary measures ・ Identification of opportunities for improvement concerning provision of services relevant to software-related assets ・ Consideration of whether there is a need for review concerning the continual appropriateness, completeness, and accuracy of policies, processes, and procedures ・ Confirmation of whether software is adopted and deployed in the most cost-effective ways	All of 4.2.3.2 a)				○
(5)	**Persons implementing SAM audits are assigned in ways that ensure their independence from the subjects of auditing.**	All of 4.3.4.2 a)				○

Management Requirements	Sys 1 The managerial system and responsibilities for SAM are established.	Corresponding Clauses in ISO/IEC 19770-1	Corresponding Tiers (Tier)			
Management Items			1	2	3	4
(6) A system is in place for organization-wide collection and recording of proposed SAM improvements related to systems.		4.3.5.2 a)				○

Management Requirements	Sys 2 Systems are subjected to review.	Corresponding Clauses in ISO/IEC 19770-1	Corresponding Tiers (Tier)			
Management Items			1	2	3	4
(1) Suggestions for improvement to systems are assessed, prioritized, approved, and implemented.		4.3.5.2 b)				○

3. Competence: Establishment and Maintenance of Competence in SAM

[Management objective] Systems are in place for establishment and maintenance of SAM competence

Management Requirements	Comp 1 SAM abilities for managers and personnel subject to management are defined and training is implemented as necessary.	Corresponding Clauses in ISO/IEC 19770-1	Corresponding Tiers (Tier)			
			1	2	3	4
Management Items						
(1) **SAM abilities for SAM managers and personnel subject to SAM management are defined and training on SAM as a whole and on licensing for software used is implemented for all personnel involved in SAM, including both initial training and continuing education provided annually.**						
a. Content of training 　·　SAM policies, regulation, and procedures 　·　SAM systems 　·　Licensing in general		4.2.5.2 c)		○		
(2) **Management annually reviews the results of education and training implemented.** * The results of this review can be used to confirm the content of education provided and the degree of understanding among participants.		4.2.5.2 a) 1)2)		○		○
(3) **A review is undertaken at least annually to determine the appropriateness of the materials required to verify the fact that the organization holds licenses to software used.**		4.2.5.2 b)				○
(4) **A review is undertaken at least annually to determine whether there have been any changes in the licensing terms of software vendors and the impact of new licensing terms.**		4.2.5.2 d)		○		

Management Requirements	Comp 2 Abilities for SAM auditing personnel are defined and training implemented as necessary.	Corresponding Clauses in ISO/IEC 19770-1	Corresponding Tiers (Tier)			
Management Items			1	2	3	4
(1) **Abilities for SAM auditing personnel are defined, and such personnel are provided annually with education and training on subjects such as the following:** a. Knowledge on SAM auditing b. SAM policies, regulations, and procedures c. SAM systems d. Licensing in general		4.2.5.2 c)		○		
(2) **Management annually reviews the results of education and training implemented.** * The results of this review can be used to confirm the content of education provided and the degree of understanding among participants.		4.2.5.2 a) 1)2)		○		○

4. Ownership: Confirmation and Verification of Licenses Owned

[Management objective] It is verified that software used is licensed, and the types and quantities of owned licenses are ascertained.

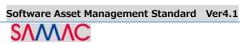| Management Requirements	Own 1 Systems are in place for recording information on changes to licenses	Corresponding Clauses in ISO/IEC 19770-1	Corresponding Tiers (Tier)			
Management Items			**1**	**2**	**3**	**4**
(1) Types of assets subjected to management and necessary management items are identified for owned licenses, and the necessary information is ascertained and recorded.						
a. Policies and procedures are developed, approved, and issued that include the management, maintenance, and storage (including access controls) of inventory lists and physical/electronic assets subjected to management		All of 4.4.3.2 a) All of b)3)c)	○			
b. Items to be managed ・ Licenses including underlying licenses and effective full licenses ・ Proof of license documentation ・ Contracts (including terms and conditions) relating to software assets, including both hard copy and electronic ・ Both physical and electronic stores of the above, as relevant ・ Licensing models		4.4.2.2 a)				○
c. Physical and electronic stores ・ Owned underlying licenses and effective full licenses ・ Contracts (both hard copy and electronic) relating to software assets ・ Proof of license documentation		All of 4.4.3.2 b)3)c)	○			
d. Licenses with additional terms, such as whether down-grading is permitted, whether the software may be transferred for use on other hardware, numbers of simultaneous users, and numbers of processors, are managed appropriately.		4.4.3.2 d)	○			
e. Inventories, or other clearly defined analysis or metric mechanisms exist to determine any licensing usage based on criteria other than software installations.		4.4.3.2 d)	○			

Management Requirements	Own 1 Systems are in place for recording information on changes to licenses	Corresponding Clauses in ISO/IEC 19770-1	Corresponding Tiers (Tier)			
Management Items			**1**	**2**	**3**	**4**
f. When using licenses held outside the organization, all necessary items including the name of the holder of the license are ascertained.		4.4.2.2 a)				○
g. Records exist clarifying which stores and types of information are held, with duplication allowed only if duplicate information can be traced back to the definitive source record.		4.4.2.2 b)	○			
(2) When a license is acquired, its content is confirmed.						
a. Confirmation of physical and electronic content, such as contracts and media		4.7.3.2 d)2)3)			○	
b. Confirmation of terms of use		4.7.3.2 d)2)3)			○	
(3) Information is identified concerning changes to licenses						
a. Content of changes includes the following: ・ Changes in numbers of licenses owned due to introduction of new software, retirement and return of software ・ Changes in contract information due to changes in users, sections, etc. ・ Changes in numbers of licenses owned, media to be managed, etc. due to revision of terms of use		4.4.4.2 a)b)c) All of 4.7.2.2 a)				○
(4) Physical/electronic inventories related to licenses are stored appropriately (including management and maintenance of locations of storage)		All of 4.4.3.2 a), all of b)3) c)	○			
			* Software build and release: Tier 4			
(5) Upgrade licenses are linked to pre-upgrade licenses.		4.4.3.2 b)3) 4.5.2.2 a)7) 4.5.3.2 a)1)	○			
(6) Licenses with additional terms, such as whether down-grading is permitted, whether the software may be transferred for use on other hardware, numbers of simultaneous users, and numbers of processors, are managed appropriately.		4.4.3.2 d) 4.5.3.2 a)1)	○			

Management Requirements	Own 1 Systems are in place for recording information on changes to licenses	Corresponding Clauses in ISO/IEC 19770-1	Corresponding Tiers (Tier)			
Management Items			1	2	3	4
(7) Records are kept of product names and quantities of installation media held and distribution images set up on servers etc.		4.4.2.2 a)b) 4.4.3.2 a)-c)1)	○			
(8) Records are kept of use of media and installation images.						
a. Procedures are established for lending and return of media.		All of 4.4.3.2 c)	○			
b. Records are kept of lending and return of media.		All of 4.4.3.2 c)	○			
(9) All materials such as license agreements certifying licenses held and media are differentiated.		4.4.3.2 c)4)	○			
(10) Ledgers etc. prepared include identification of original data sources and their purposes and details.		4.4.3.2 f)				○

Management Requirements	Own 2 Materials necessary for licenses are stored appropriately.	Corresponding Clauses in ISO/IEC 19770-1	Corresponding Tiers (Tier)			
Management Items			1	2	3	4
(1) License certificates, terms of use, contracts, etc. are stored under the management of the SAM owner.		All of 4.4.3.2 a), c)4)	○			
(2) Materials serving as proof of license are maintained in a state in which they can be used at any time.		4.4.3.2 e)				○
(3) The fact is confirmed that certificates etc. are stored appropriately.						
a. Reconciliation of numbers of licenses owned and terms of use is conducted at least annually.		4.5.2.2 a)7) 4.5.3.2 a)1)-3)	○			
b. Systems are in place for correction of any discrepancies identified in this reconciliation.		4.5.2.2 a)11) 4.5.3.2a)1)-3)				○
c. Supplemental evidence, such as purchase records, delivery statements, and user registration, is stored and managed appropriately to verify that licenses have been obtained formally. * In some cases supplemental evidence may not serve as formal proof of permission to use. In addition, such evidence must be usable for objective confirmation of information on the relevant license.		4.7.3.2 d2)			○	

Management Requirements	**Own 3** The state of management of owned licenses is verified.	Corresponding Clauses in ISO/IEC 19770-1	Corresponding Tiers (Tier)			
Management Items			**1**	**2**	**3**	**4**
(1) Accuracy, comprehensiveness						
a. All licenses held by the organization are verified at least annually using inventory lists, and materials certifying terms of use are verified regularly (at least annually).		4.5.2.2 a)6)7)				○
b. The completeness of contractual documents and license ledgers is verified at least annually for all licenses held by the organization.		4.5.2.2 a)8)9)	○			
c. Inventory of installation media and installation images (build and distribution copies) is conducted regularly at least bi-annually, and consistency between the licensing materials required and the ledgers is verified.		4.5.2.2 a)4)5)				○
d. When a site uses decentralized management, the site's records are reconciled against overall records.		4.5.2.2 a)3)-9)	3) 8) 9): Tier 1 4)-7): Tier 4			
e. There is a periodic review of invoice content to identify incorrect billing and overpayment.		4.5.2.2 a)10)		○		
(2) Timeliness						
a. Information on changes in owned licenses is recorded in a timely manner.		4.4.4.2 a)				○
b. For software for which the license cannot be redistributed, such as in cases of software licenses combined with hardware licenses at time of purchase under terms of use or other terms, the software license is retired at the same time the hardware is retired.		4.7.9.2 a)			○	
c. For licenses with expiration dates, the expiration dates are recorded and the software is not used after the expiration date.		4.4.3.2 d) 4.5.3.2 a)1)	○			
d. Licenses that may be ordered after installation of the software are ordered in a timely manner, and records are kept of such licenses.		4.7.3.2 c)4)			○	
(3) Adequacy						
a. The SAM owner approves license changes and records thereof.		All of 4.7.2.2 a)				○
b. A system is in place for checking whether the content of a change to a license is appropriate in light of the actual facts of the matter.		All of 4.7.2.2 a)				○
c. A system is in place for recording license changes under the approved access authorization and the log of such records is checked.		All of 4.7.2.2 a)				○

Management Requirements	Own 3 The state of management of owned licenses is verified.	Corresponding Clauses in ISO/IEC 19770-1	Corresponding Tiers (Tier)			
Management Items			**1**	**2**	**3**	**4**
d. Procedures are established, approved, and documented for all of the following: license changes including retirement and return, checking actual assets, reconciliation, and recording.		All of 4.7.2.2 a)				○
e. Procedures are established for actions such as application for and approval of copying and disposal of media and preparation and removal of installation images.		All of 4.7.2.2 a)				○
f. Corrective measures are implemented and documented for any discrepancies or issues identified when checking accuracy, comprehensiveness, and timeliness.		4.5.2.2 a)11)	○	○		
g. Systems are in place for management of access authorization and restrictions based on such authorization.		All of 4.4.3.2 a)	○			
h. The adequacy of access authorization to assets subjected to SAM is reviewed periodically.		All of 4.4.3.2 a)	○			

5.　Implement'n: Confirmation of Software and Related Asset Implemented

[Management objective] The physical and logical inventory management of hardware and software are properly implemented.
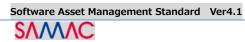
Management Requirements	**Imp 1** The procedure for recording information for changes of hardware and software is properly implemented.	Corresponding Clauses in ISO/IEC	Corresponding Tiers (Tier)			
	Management Items	19770-1	1	2	3	4
(1)	**For the hardware on which software is used and the software installed, the type of assets to be managed, the management items to be required and management objectives are identified, ascertained and recorded.** * All records should be integrated from the perspective of the entire organization, if in case implemented decentralized management system by each sections and/or each branches and so on.	All of 4.4.2.2 a)				○
(2)	**All installed software on hardware is identified and ascertained.**	4.4.2.2 b)	○			
(3)	**All hardware running the software is ascertained, including backups and other hardware not currently deployed or in use.**	4.4.3.2 b)1)2)	○			
(4)	**All installed software can be identified as having been installed を削除 under permission.**					
	a. Installed software and owned licenses are linked in accordance with the terms of use.	4.4.3.2 b)2)3)	○			
	b. As necessary, the hardware to which a license applies (such as hardware with preinstalled software or other cases that individual linkage is required) can be ascertained.					
(5)	**Inventories or other clearly defined analysis or metric mechanisms exist to determine any license usage based on criteria other than software installation.** **Note: These requirements will depend on the licensing models of software being used. For example, they might include metrics such as personnel counts for specified parts of the organization; counts of PCs meeting specified criteria; numbers or users or terminals accessing server resources; numbers of processors; and power processors.**	4.4.3.2 d)	○			
(6)	**Software and hardware change information is recorded.**	4.4.4.2 a)				○

Management Requirements	**Imp 1** The procedure for recording information for changes of hardware and software is properly implemented.	Corresponding Clauses in ISO/IEC	Corresponding Tiers (Tier)			
Management Items		19770-1	1	2	3	4
* Examples include installation, uninstallation, upgrading, down-grading, and users.						
(7) Processes are established concerning hardware and software changes.		All of 4.4.2.2 a)				○
(8) Procedures are established for deployment of hardware and software, including the following items.						
a. Management approves are required for preparation of distribution copies, such as installation images.		4.7.6.2 a)1)			○	
b. Procedures are established for cases in which deployment is failed.		4.7.6.2 a)2)			○	
c. Security requirements are taken into consideration in deployment of hardware and software, and results of deployment are recorded and reviewed.		4.7.6.2 a)3)			○	
(9) The availability of the software environment depend on the necessity is kept.		4.4.3.2 e)				○
(10) Each inventory report or record of SAM produced is clearly described information for identifying the original data source, purpose, and details.		4.4.3.2 f)				○

Management Requirements	Imp 2 The status of management of placed hardware and installed software is verified.	Corresponding Clauses in ISO/IEC 19770-1	Corresponding Tiers (Tier)			
Management Items			1	2	3	4
(1) Accuracy, comprehensiveness						
a. Reconciliation of inventories of software installed in the organization and effective licenses is performed at least quarterly. Corrective actions are performed appropriately for any issues arising in this process.		4.5.2.2 a)1)2)	○			
b. Licenses that can be reported and paid after deployment can be identified.		4.7.3.2 c)4)			○	
c. Verification of hardware used by the organization, including placed locations, is conducted at least semi-annually, and conformance with the hardware control ledger is verified.		4.5.2.2 a)3)				○
d. There is a periodic review of invoice content to identify incorrect billing and overpayment.		4.5.2.2 a)10)		○		
(2) Timeliness						
a. Information on changes in all the software and hardware within the scope of SAM is recorded in a timely manner. * Examples include installation, uninstallation, upgrading, down-grading, and users.		4.4.4.2 a)				○
(3) Adequacy						
a. All hardware and software changes and records are approved by the responsible person.		4.5.2.2 a)1)	○			
b. There are appropriate procedures to confirm the adequacy of the changes related to the content of hardware and software including the records of the changes are based on the facts.		All of 4.7.2.2 a)				○
c. Corrective actions are taken and documented if there are any discrepancies or issues identified when confirming accuracy, comprehensiveness, and timeliness.		4.5.2.2 a)11)	○	○		
d. When installing the software, it should be confirmed that it is within the scope of license.		4.4.3.2 b)2)				○

6. Cost Optimization

[Management objective] Costs related to SAM are subject to optimization

Management Requirements	Cost 1 Consideration is given to optimization of the costs of assets subjected to SAM.	Corresponding Clauses in ISO/IEC 19770-1	Corresponding Tiers (Tier)			
Management Items			**1**	**2**	**3**	**4**
(1) Software usable by the organization, such as standard software configurations, is defined.		4.7.3.2 b)			○	
(2) Standard architectures are defined for hardware including infrastructure for use of software by the organization.		4.7.3.2 a)			○	
(3) Purchasing policies are established that take into consideration the costs of purchase and operation, for example by developing purchasing specifications that include licensing models.		4.6.3.2 f)	Main scope: Tier 3 Basic items that should be improved immediately: Tier 2			
(4) Information can be ascertained for optimization of the costs of assets subjected to SAM. * Frequency of use can be confirmed. Non-standard software can be identified. Procurement costs and book values can be ascertained.		4.6.3.2 f)	Main scope: Tier 3 Basic items that should be improved immediately: Tier 2			
(5) Usable licenses can be identified and used/reused.		4.7.3.2 c)3)			○	
(6) Policies for identical processes are unified (standardized).		4.7.3.2 c)1)			○	
(7) Purchase of assets subjected to SAM is approved following consideration of managerial and technical aspects.		4.7.3.2 c)2)			○	

7. Security: Compliance with Security Requirements

[Management objective] The organization's security requirements relevant to assets subjected to SAM, including security requirements related to SAM policies, are complied with
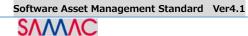
Management Requirements	Sec 1 Security requirements related to assets subjected to SAM are complied with.	Corresponding Clauses in ISO/IEC 19770-1	Corresponding Tiers (Tier)			
			1	2	3	4
Management Items						
(1) The organization's security requirements related to assets subjected to SAM are ascertained.		4.5.4.2 a)b)			○	
(2) Systems are in place for confirming the state of compliance with the organization's security requirements related to assets subjected to SAM.		4.5.4.2 a)b)			○	
(3) Access control policies are established for assets subjected to SAM.		4.6.5.2 a)				○
(4) Physical and logical access controls are designated and recorded.		4.6.5.2 b)c)				○
(5) Review is conducted and recorded at least annually to identify any security policy exceptions. * This review includes verification of access restrictions to installation media etc. and of authorization to use installations and software specified for specific users or user groups.		4.5.4.2 a)b)			○	

8. Operations Management: SAM Operations Management Processes

[Management objective] Various processes and interfaces are adopted for effective and efficient implementation of SAM management functions.

Management Requirements	OM 1 Procedures are established and implemented concerning SAM-related relationships and contract management.	Corresponding Clauses in ISO/IEC 19770-1	Corresponding Tiers (Tier)			
Management Items			**1**	**2**	**3**	**4**
(1) The following matters are specified for management of contracts with internal and external service providers: ・ The persons responsible for management of service providers and their responsibilities ・ Establishment of purchasing specifications for software or related services, with consideration for the requirements of this Standard ・ Review, at least bi-annually, of service provider performance and related issues		4.6.2.2 a)1)-3)			○	
(2) Policies and procedures are established for management of relationships with customers (service recipients). ・ Responsibilities for assets subjected to SAM and provision of related services ・ Review, at least annually, of current and future software requirements of customers (service recipients) ・ Review, at least annually, of results (documents and records) of verification of performance, customer satisfaction, achievements, and issues		4.6.2.2 b)1)-3)				○
(3) Policies and procedures are established for managing contracts. ・ Reliable recording of contractual details in an ongoing contract management system ・ Holding copies of signed contractual documentation security with copies kept in a document management system ・ Review, at least every six months, of contracts related to assets subjected to SAM and related services, and review of results (documents and records) of verification upon contract expiry		4.6.2.2 c)1)-3)			○	

Tier 3
* Limited scope subject to Tier 2 to identify opportunities for immediate improvement

Management Requirements	**OM 2** Systems are in place to make it possible to obtain financial information related to assets subjected to SAM as needed.	Corresponding Clauses in ISO/IEC 19770-1	Corresponding Tiers (Tier)			
Management Items			1	2	3	4
(1) **Financial categories related to management of assets subjected to SAM and SAM asset categories are linked and documented.** * The costs of purchase of assets subjected to SAM can be categorized by SAM asset type.		4.6.3.2 a)			○	
(2) **Costs of purchase and management of assets subjected to SAM are budgeted.**		4.6.3.2 b)			○	
(3) **Expenditures on assets subjected to SAM can be ascertained against the budget.**		4.6.3.2 c)			○	
(4) **The asset values of assets subjected to SAM (including historical cost and depreciated cost) can be obtained as clearly documented information as needed.**		4.6.3.2 d)			○	
(5) **There are formal, documented reviews at least quarterly of actual expenditure against budget, including actions to be taken as necessary.**		4.6.3.2 e)			○	

Management Requirements	OM 3 Service levels related to SAM are defined, recorded, and managed.	Corresponding Clauses in ISO/IEC 19770-1	Corresponding Tiers (Tier)			
Management Items			1	2	3	4
(1) **Service level agreements are developed and approved for services performed within the scope of SAM.** ・ Services related to acquisition and moves of assets subjected to SAM are defined and agreed to with the corresponding service level targets and workload characteristics. ・ Customer and user obligations and responsibilities in relation to SAM are defined and agreed to. ・ Services related to acquisition and moves of assets subjected to SAM are defined and agreed to with the corresponding service level targets and workload characteristics. ・ Customer and user obligations and responsibilities in relation to SAM are defined and agreed to.	4.6.4.2 a)1)2)			○	
(2) **Service levels and actual workloads for achievement of service levels are analyzed and reported regularly (at least quarterly).**	4.6.4.2 b)			○	
(3) **Regular review (at least quarterly) by the relevant parties is conducted to review analysis of service levels and actual workloads for achievement of service levels as necessary, decisions are made on any actions to be taken, and these are documented.**	4.6.4.2 c)			○	

9. Life Cycle Processes and Interfaces

[Management objective] Various processes and interfaces are adopted to carry out effective and efficient life-cycle management of assets subjected to SAM

Management Requirements	LC 1 Procedures are established and implemented to ascertain, manage, and record all changes related to SAM.	Corresponding Clauses in ISO/IEC	Corresponding Tiers (Tier)			
Management Items		19770-1	1	2	3	4
(1) All change requests that affect processes related to assets subjected to SAM are identified and recorded, assessed for possible impacts, prioritized, approved by management, reviewed, and recorded.		4.7.2.2 a)1)2)				○
(2) Processes of changes to assets subjected to SAM are implemented as approved and recorded.		4.7.2.2 a)3)4)				○
(3) The success or failure of changes is documented and periodically reviewed.		4.7.2.2 a)5)				○

Management Requirements	LC 2 Procedures are established and implemented for management of all information obtained related to SAM.	Corresponding Clauses in ISO/IEC	Corresponding Tiers (Tier)			
Management Items		19770-1	1	2	3	4
(1) Standard architectures are defined for the provision of software services.		4.7.3.2 a)			○	
(2) Requirements are defined related to acquisition of assets subjected to SAM.		4.7.3.2 c)			○	
(3) Procedures are established for receipt-processing functions related to acquisition of assets subjected to SAM.		All of 4.7.3.2 d)			○	
(4) Records related to acquisition of assets subjected to SAM are maintained, and the necessary electronic and physical media are subjected to safe-keeping.		4.7.3.2 d)2)3)			○	

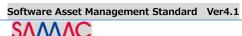| Management Requirements	LC 3 Procedures are established and implemented for software development.	Corresponding Clauses in ISO/IEC 19770-1	Corresponding Tiers (Tier)			
Management Items			1	2	3	4
(1) There is a formal process for software development.						
a. Standard architecture and standard configurations are established for development.		4.7.4.2 a)				○
b. Consideration is given to license constraints and dependencies.						
(2) A process is established for reliable management of prerelease software.		4.7.4.2 b)				○

Management Requirements	LC 4 Procedures are established and implemented for release of assets subjected to SAM.	Corresponding Clauses in ISO/IEC 19770-1	Corresponding Tiers (Tier)			
Management Items			1	2	3	4
(1) There is a release process for assets subjected to SAM.						
a. Development of a controlled acceptance environment for testing prerelease software.		4.7.5.2 a)1)-5)				○
b. The frequency and type of releases are agreed to between the business and customers.						
c. The planned release dates and deliverables are recorded with references to change requests or issues on which the release was based, and these are communicated to incident management.						
d. The release of assets subjected to SAM is subjected to formal approval.						
e. The success or failure of software releases is recorded and periodically reviewed.						

Management Requirements	**LC 5** Procedures are established and implemented for deployment of assets subjected to SAM.	Corresponding Clauses in ISO/IEC 19770-1	Corresponding Tiers (Tier)			
Management Items			**1**	**2**	**3**	**4**
(1) Procedures are established for changes in conditions such as distribution and installation of assets subjected to SAM. In addition, the status of approval is defined for all deployment procedures and an audit trail is kept of changes in conditions.		4.7.6.2 a)4)			○	
(2) There are documented controls to verify that deployed assets subjected to SAM are the same as those authorized to be deployed or there is a difference between deployed assets and those authorized, or to identify a case in which it cannot be verified that the assets were deployed on time. Review of deployment vs. authorization is immediately conducted when authorization has changed. Also, records of any exceptions are documented.		4.7.6.2 a)5)			○	
(3) The success or failure of deployment is recorded and periodically reviewed.		4.7.6.2 a)6)			○	

Management Requirements	**LC 6** Procedures are established and implemented for management of all SAM-related incidents.	Corresponding Clauses in ISO/IEC 19770-1	Corresponding Tiers (Tier)			
Management Items			**1**	**2**	**3**	**4**
(1) All incidents and accidents related to assets subjected to SAM are recorded and resolved in accordance with their priority, and then their resolution measures are documented.		All of 4.7.7.2 a)				○

Management Requirements	**LC 7** Procedures are established and implemented for management of all SAM-related issues.	Corresponding Clauses in ISO/IEC 19770-1	Corresponding Tiers (Tier)			
Management Items			**1**	**2**	**3**	**4**
(1) To prevent and identify the causes of incidents and accidents related to assets subjected to SAM, all such incidents and accidents are recorded, their root causes are documented, and this information is communicated to incident management.		All of 4.7.8.2 a)				○

Management Requirements	LC 8 Procedures are established and implemented for retirement, return, and sale of assets subjected to SAM.	Corresponding Clauses in ISO/IEC 19770-1	Corresponding Tiers (Tier)			
Management Items			1	2	3	4
(1) Systems are established and approved for retirement, return, and sale of assets subjected to SAM.						
a. Software is removed as appropriate from retired or returned hardware. For the purposes of this requirement, retirement refers to hardware being transferred outside the organization, potentially to be used by others. It does not include cases explicitly authorized by management after due consideration of any software licensing and data confidentiality implications.		4.7.9.2 a)1)			○	
b. As necessary, adjustments are made to the numbers of licenses held and licenses available for use in order to reflect the licenses of software removed from hardware.		4.7.9.2 a)2)			○	
c. Software that must be retired together with hardware, such as standard preinstalled software, is identified and retirement procedures are implemented.		4.7.9.2 a)1)			○	
d. The above licenses are processed appropriately at the same time as the retirement or return of the hardware.		4.7.9.2 a)4)			○	
e. When assets subjected to SAM are sold to other related parties, such sale is conducted appropriately in accordance with contractual requirements.		4.7.9.2 a)3)			○	
f. Records are updated to reflect the changes above, and audit trails of the changes are maintained.		4.7.9.2 a)5)			○	