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The Federal Managers' Financial Integrity Act of 1982 (FMFIA) (31 U.S.C. 3512(c), (d)) requires the General Accounting Office (GAO) to issue government internal control standards and guidelines. As part of our responsibility under FMFIA and because of our commitment to improving financial management in government, we are updating our guidance related to controls over employee time and attendance activities to (1) provide agencies with the flexibility needed to streamline time and attendance (T&A) reporting systems, (2) allow agencies to reduce their costs while maintaining adequate internal control, and (3) update the requirements on electronic signature control.

This document relates solely to the internal control environment for a time and attendance reporting system. The functional requirements for human resources and payroll systems for civilian personnel are defined in the Joint Financial Management Improvement Program's April 1999 *Human Resources & Payroll Systems Requirements (JFMIP-SR-99-5)*, Office of Management and Budget (OMB) Circular A-127, *Financial Management Systems*, and OMB's *Implementation Guidance for the Federal Financial Management Improvement Act (FFMIA) of 1996*, issued September 9, 1997. In March 2000, GAO issued a checklist, *Human Resources and Payroll Systems Requirements (GAO/AIMD-00-21.2.3)*, based on the JFMIP requirements document.

Additional copies of this document can be obtained from the U.S. General Accounting Office, 700 4th Street NW, Room 1100, Washington, DC 20548, or by calling (202) 512-6000 or TDD (202) 512-2537. It is also available on the Internet on GAO's Home Page (www.gao.gov) under "Other Publications." Please send comments by March 31, 2001, to Bruce K. Michelson, Assistant Director at

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GAO

Internal Control

Exposure Draft

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Maintaining Effective Control Over Employee Time and Attendance Reporting

GAO-01-186G

CONTENTS

Abbreviations

FMFIA	Federal Managers' Financial Integrity Act
GPEA	Government Paperwork Elimination Act
OMB	Office of Management and Budget
OPM	Office of Personnel Management
T&A	time and attendance

INTRODUCTION

In recent years significant changes in work place habits and technological advances have affected the manner in which time and attendance (T&A) reporting is accomplished. For example, more flexible work schedules and places, and the trend in government to streamline operations have provided a major impetus for changes in T&A systems. However, perhaps the most significant influence on these changes is advancing technology and the increased use of automation. The Government Paperwork Elimination Act (GPEA) encourages the movement toward paperless applications and the use of electronic signatures. Although GPEA focuses on electronic systems regarding information obtained from and provided to sources outside the government, it provides an additional impetus to agencies to seek further applications of paperless systems and use of electronic signatures.

Trends toward increased automation and workplace flexibility have changed the operating environment. However, the need for good internal control continues to exist. To keep abreast of the changes, especially those in automation, we have revised this document to emphasize the attention that should remain regarding effective internal control in T&A systems. This document offers suggestions for taking advantage of the advancements in automated T&A systems and updates the previous guidance to incorporate guidance offered in response to agency requests.[1]

As advancing technologies continue, managers have greater flexibility in designing and implementing T&A systems best suited for their agencies. In designing and implementing new T&A systems or components of existing systems, management should strive for cost-beneficial systems and related internal control.

The traditional work schedule followed by civilian employees differs from those generally followed by members on active duty of the armed services. Because traditional work schedules influence internal control in T&A systems, this document contains two major parts, the first dealing with civilian employees who are expected to be "working," usually during certain times and the second part dealing with members of the active duty armed services who are expected to be in a "duty status" and thus on call 24 hours a day. Part I, civilian employees, provides guidance for civilian employees, and part II, military service members, provides guidance for military service members. Employees who are paid regardless of their presence or absence and who do not accrue leave under 5 U.S.C. 6301 et seq. (e.g., certain political appointees) are exempt from the provisions of this document.[2]

Questions on or interpretations of any material in this document may be submitted to the Managing Director, Financial Management and Assurance, U.S. General Accounting Office, 441 G Street NW, Washington, DC 20548.

[1]When issued in final, this document will replace our 1996 revision to Title 6, "Pay, Leave, and Allowances," of the GAO *Policy and Procedures Manual for Guidance of Federal Agencies*.
[2]See Comptroller General Decision B-123698 (May 10, 1978).

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PART I: CIVILIAN EMPLOYEES

INTERNAL CONTROL OBJECTIVES IN T&A SYSTEMS

The primary objective of a T&A system is to ensure that hours worked, hours in pay status, and hours absent are properly reported. Reliable data are important to accurately compute and account for computed pay, leave, and allowances. To achieve this objective, management should have in place an internal control system that provides reasonable assurance that (1) T&A transactions are properly authorized and approved and (2) T&A data are completely and accurately recorded and retained.

T&A Transactions Are Properly Authorized and Approved

The nature and extent of T&A transaction approvals and controls can vary among T&A systems. Fully automated systems, for example, may require fewer approvals than manual systems because of automated edits and controls, and the use of automated signatures. Nevertheless, the nature and extent of T&A approvals must be such that management has assurance that supervisors or other officials know they are accountable for the approvals of an employee's work time and absences. This helps ensure that accurate T&A information is recorded and reported for the purposes of computing pay and allowances.

Primary responsibility for authorizing and approving T&A transactions rests with the employee's supervisor, who approves the employee's T&A reports. Timekeepers[3] and supervisors must be aware of the work time and absence of employees for whom they are responsible to ensure the reliability of T&A data. To the extent practical, changes to an employee's normal work schedule should generally be approved prior to the change actually occurring. Unanticipated changes should be reviewed for approval or disapproval as soon as reasonably possible.

T&A Data Are Complete and Accurate

Because most federal civilian employees are paid on an hourly basis (or fractions of an hour) and earn and charge leave on that basis, a complete and accurate record of the time an employee works must be retained as an official agency record available for review or inspection. To provide a basis for pay, leave, and benefits, the records must include aggregate hours of regular time, other time (e.g., overtime, credit hours, or compensatory time), and leave.[4] To help ensure accuracy, the completed records must be reviewed and approved by the supervisor (or other equivalent official). In an automated environment, system edits and other automated tests can

[3]The traditional T&A system normally involved a timekeeper who was responsible for assisting supervisors in recording and verifying employees' work time and absences. New T&A systems can reduce or even eliminate timekeepers' duties and shift the responsibilities to employees or supervisors. Regardless of the changes made, recording accurate T&A information remains the primary control objective.

[4]Traditionally, daily arrival and departure times were required to be recorded. Although it is not required that daily records be maintained, agency management may choose to do so by using sign-in/sign-out sheets or other means.

assist the supervisor in his or her review and verify that recorded work time is accurate and allowable.

RELIANCE ON INTERNAL CONTROLS IN A T&A SYSTEM

As T&A systems evolve toward increasingly automated methods of recording and reporting employee work and leave times, it is important to implement and maintain a well-defined system that provides management with the confidence that controls are working as designed. This can be done by:

- Having a well-defined organizational structure and flow of T&A data with clearly written policies and procedures setting forth the responsibilities of employees, timekeepers (if applicable), and supervisors regarding recording, examining, and approving T&A transactions.

- Effectively applying available technology and concepts to achieve efficient and effective T&A system processes in accordance with applicable requirements and the environment in which the agency operates.

- Having the ability to record payroll costs by appropriation, organizational code, and work activity to facilitate application of required cost accounting for financial and program management.

- Reviewing and testing all aspects of the T&A systems' processing procedures and controls in sufficient scope, depth, and frequency to provide reasonable assurance that key procedures and controls are working and effective and that data integrity is maintained.

Agencies' T&A systems are subject to periodic review under the Federal Managers' Financial Integrity Act of 1982 (FMFIA) (31 U.S.C. 3512(c), (d)).[5]

RECORDING AND MAINTAINING COMPLETE AND ACCURATE T&A RECORDS

Required T&A Information

The following T&A information and documentation should be recorded and maintained for each employee for each pay period:

1. employee name and unique identifying number (e.g., a social security number),

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[5] *Standards for Internal Control in the Federal Government* (GAO/AIMD-00-21.3.1) was revised in November 1999, and is available on the Internet, GAO home page (*www.gao.gov*) under "Other Publications." It is also available in hard copy by calling (202) 512-6000 or at the U.S. General Accounting Office, 700 4th Street NW, Room 1100, Washington, D.C. In addition, the Office of Management and Budget (OMB) requirements for evaluating financial systems and controls are in OMB Circular A-123, *Internal Control Systems* (June 1995) and OMB Circular A-127, *Financial Management Systems* (July 1993). These OMB and GAO issuances establish the criteria and rules for assessing and reporting annually on the status of agency systems and controls.

2. pay period number or dates,
3. hours worked,
4. hours of premium pay, by type, to which the employee is entitled,
5. dates and number of hours of leave (by type), credit hours, and compensatory hours earned and used,[6]
6. evidence of approval by an authorized official (usually the supervisor),
7. any required supporting documentation or records for absences, and
8. other information agencies believe necessary.

A T&A record containing all required data elements can be (1) a manually completed hard copy document, (2) an automated file retained electronically, or (3) a combination of automated and manual records. The T&A information can be obtained using a number of different methods, including but not limited to preprinted or designed T&A forms; other standard forms; internal memorandums; e-mails; employee, timekeeper, or supervisor notations (for example, that might result from phone conversations); or other formats so long as the documents are controlled and retained as the official T&A record of employees. The data contained in the T&A records should be linked to accounting records and provide the necessary support for financial reporting and allocation of costs.

Recording T&A Data

Agency policy must affix accountability for recording the T&A data referred to in the previous section. The data may be recorded by the

1. individual employee,
2. timekeeper,
3. supervisor, or
4. a combination of the three.

Agency policy must assign accountability for recording and maintaining T&A data referred to in the previous section. If the employee is not recording his or her T&A data, the basis for recording the data could be (1) the timekeeper's or supervisor's observation, (2) time clocks, or other automated timekeeping devices, where not prohibited by law, or (3) other applicable techniques. The person recording the T&A data acknowledges responsibility for the accuracy of the recorded data.

The point at which T&A data are recorded can vary among different T&A systems. For example, T&A data may be recorded (1) daily, (2) when deviations occur from an individual's or agency's established work schedule, or (3) at the end of the pay period. Regardless of the timing of recording T&A data, management must have in place a system of control techniques that gives reasonable assurance that the recorded information reflects time worked, leave taken, or other absences.

[6]Cumulative balances of available leave by type per employee are required to be maintained on record. Agencies may maintain these cumulative balances on biweekly or pay period T&A records which show the available balances for the pay period ending. Examples of the types of leave on such T&A records include, but are not limited to, annual, sick, and family friendly leave.

Supplementary T&A Records

Supplementary T&A records, containing information not previously discussed, shall be completed and maintained. Examples of such records include those for establishing (1) work schedules,[7] (2) flexiplace arrangements,[8] (3) cumulative leave balances available for use by type, (4) overtime, (5) compensatory time earned and used, (6) credit hours earned and used under an alternative work schedule, and (7) number of unscheduled duty hours. The records must show (1) an employee's pay period schedules indicating planned start and stop work times and hours per day for an established work schedule, (2) the aggregate hours (or fractions of hours) and days the employees worked regular hours, worked overtime, took leave, or used earned compensatory time or credit hours, and (3) the supervisor's approval. In order for the agency to properly document and calculate an employee's overtime pay entitlements under 5 U.S.C. chapters 55 and 61 and 29 U.S.C. 201 et seq., the records must distinguish between regular overtime and irregular or occasional overtime.

Employees Temporarily Assigned to Another Agency

When an employee is on temporary assignment to another agency, the agency to which the employee is detailed must record T&A data for the employee in accordance with these requirements. It must also report the information to the employee's home agency promptly to facilitate disbursement of pay by the home agency.

Access to T&A Information

Access to T&A information should be limited to those authorized to access the information.

AUTHORIZING AND APPROVING T&A TRANSACTIONS

Attestations, Verifications, and Approvals

This section (1) defines attestations, verifications, and approvals and (2) discusses how attestations, verifications, and approvals can be achieved in a manual or automated T&A system environment.

Attestation refers to an employee affirming T&A data to be true, correct, and accurate. Verification is a confirmation, usually by the timekeeper or supervisor, that recorded information is true, correct, and accurate to the best of his/her knowledge. Approval is the supervisor's, other equivalent official's, or higher level manager's agreement, ratification, or concurrence to (1) a planned work schedule and leave of employee or (2) actual T&A data. Such approvals represent that the actual work schedule recorded by the employee or timekeeper is to the best of

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[7]Federal agencies can allow employees to vary their daily arrival and departure times and, under some options, to vary the length of their workday or workweek. In all cases, full-time employees are required to work or otherwise account for 80 hours each biweekly pay period (5 U.S.C. 6120 et seq.).

[8]See Office of Personnel Management's (OPM) Memorandum for Personnel Directors on the subject of Alternative Workplace Arrangements, October 21, 1993.

the approving official's knowledge true, correct, and accurate, and in accordance with applicable laws, regulations, and legal decisions. The approving official acknowledges awareness and understanding of his/her responsibility when approving T&A data.

The evidence of attestations, verifications, and approvals will of necessity differ between manual and automated systems. In manual systems, attestations, verifications, and approvals are usually shown by a signature or initial of an individual on a hard copy document. In automated systems, they are represented by what can be referred to generically as electronic signatures.[9] There are many types of electronic signature technologies offering different degrees of confidence, control, and security. In selecting and/or developing, and implementing a particular electronic signature technology for an automated T&A application, management must assess the risks associated with the loss, misuse, or compromise of the electronic T&A information and signatures compared to the benefits, costs, and effort associated with selecting and/or developing and managing the automated systems and electronic signatures.[10] See the appendix for a further explanation about electronic signatures and GAO's review of such applications.

Authorizing an Employee's Work Schedule

When (1) an employee's work schedule differs from the agencywide schedule established by management or (2) reflects a flexible work program, an employee's work schedule should be approved by the supervisor or the official most knowledgeable of the employee's schedule in advance of the period when the plan takes effect. If the schedule is not approved in advance, the plan should be approved as soon after the start of the pay period as possible.

Approval must be granted for overtime before the work has been performed when feasible and, when not feasible, as soon as possible after the work has been performed. Care must be taken to distinguish between regular overtime and irregular overtime or occasional overtime (or compensatory time in lieu of overtime, where allowed) in order for the agency to properly document and calculate an employee's overtime pay entitlements under 5 U.S.C. chapters 55 and 61 and 29 U.S.C. 201 et seq.

Approval of Leave

Approval of leave should be made by the employee's supervisor before the leave is taken. If leave is not approved in advance, it should be reviewed for approval or disapproval as soon as reasonably possible after taken.

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[9]The GPEA defines "electronic signature" as a method of signing an electronic message that (1) identifies and authenticates a particular person as the source of the electronic message and (2) indicates such person's approval of the information contained in the message.

[10]GPEA requires agencies to comply with the guidance issued by OMB regarding automated systems that maintain electronic information as a substitute for paper and use of electronic signatures. OMB issued the guidance in Memorandum M-00-10, dated April 25, 2000. A 29-page attachment to the memorandum contains the details of the guidance. Also, as part of the OMB guidance, the Department of Justice was charged with developing practical guidance on legal considerations related to agencies' use of electronic filing and record keeping. The department issued *Legal Considerations in Designing and Implementing Electronic Processes: A Guide for Federal Agencies* in November 2000.

Attestation and Verification by Employees and Timekeepers

The employee and timekeeper, if any, are not required to attest or verify T&A reports and related documents. However, if management requires such attestations and/or verifications, they should be performed as close to the end of the pay period as possible. When not possible until after the end of the pay period, a copy of the T&A report and related documents, when applicable, should be provided to the employee promptly for attestation and to the timekeeper promptly for verification. The employee and/or timekeeper should promptly disclose any discrepancies to the supervisor. The supervisor should promptly resolve such discrepancies.

Approval of T&A Reports and Related Records

All T&A reports and related supporting documents (e.g., overtime pay authorizations) must be reviewed and approved by an authorized official. Review and approval should be made by the official, normally the immediate supervisor, most knowledgeable of the time worked and absence of the employee involved. Approval of T&A reports and related documents should be based on personal observation, work output, timekeeper verification, checking data against other independent sources, reliance on other controls, or a combination of these methods.

The official most knowledgeable of the time worked should approve any overtime or compensatory time. Care should be taken (1) to ensure that the overtime was approved, preferably in advance, and (2) that the amount and type of overtime (regular or irregular), credit hours, and compensatory time is accurately recorded.

If practical, T&A data must be approved at the end of the last day of the pay period or later. When this is not feasible because of payroll processing requirements to meet established paydays, T&A data must be prepared and approved as close to the end of the pay period as possible to still allow processing of the payroll by payday.

Adjustment or Corrections After the T&A Period Ends

Adjustments or corrections required because of changes after T&A data were approved must be made in the payroll system and reflected in pay for the pay period to which the changes apply, when possible. When not possible, adjustments must be made as soon after discovery as practical. Any changes must be approved by an authorizing official before being entered into the payroll system.

Self-Approval of T&A Reports

In general, employees may not approve their own T&A data. However, the head of an agency (or designee) may authorize particular individuals to approve their own T&A data in certain situations or if the individual is a high level manager (such as the head of a large unit within the agency). In these situations, an official authorized by the agency head (or designee) must grant advance authority in writing, and the agency must ensure that effective controls are in place to ensure the proper reporting of T&A data.

Exceptions to the general prohibition of employees approving their own T&A data are intended to apply when it is not feasible to have T&A data approved by a supervisor. These exceptions

include but are not necessarily limited to (1) employees working alone at a remote site for long periods and (2) employees based at the same duty station as their supervisors or timekeepers but frequently at work sites away from the duty station. In other situations when it is not practical for the supervisor to approve T&A data promptly, the employee may be paid and the supervisor may subsequently review and approve the data.

TRANSMITTING T&A INFORMATION TO PAYROLL

T&A information must be transmitted to the payroll system for all employees or, under exception-based systems, for employees who have changes to their normal work schedules. While the choice of methods used to transmit the T&A data may be based on cost-effectiveness and management information needs, the system used to transmit the information must protect T&A data from unauthorized change or alteration and must generate a record of any change made. Any change to previously attested to and approved data must be reviewed by and attested to by the employee whose data was changed. The changed data must also be reviewed by and approved by an authorized official.

EXCEPTION-BASED SYSTEMS

Exception-based T&A systems, as the name implies, require pay period recording of arrival and departure times only if material variances[11] from pre-established work schedules occur. Employees' schedules are established, either through management designated work schedules or by mutual agreement between employees and management. When employees' arrival and departure times for a pay period are established, these schedules become the basis for recorded T&A data unless material variances or deviations occur. As previously noted, if no material variances occur, arrival and departure times and hours worked per day need not be recorded.

Material variances or deviations must be approved by the supervisor before the change occurs, if feasible, or promptly after occurring, if not feasible. As part of their approval of the change, supervisors or designees must verify that the dates and amounts of material changes have been recorded in the appropriate T&A record. However, in either case (material variance or no variance) each employee's T&A record must be approved by the supervisor or comparable official.

Several alternatives exist for recording changes to established schedules. Changes can be noted by recording arrival and departure times directly on an employee's time sheet, recording arrival and departure times on a centrally maintained time-in/time-out log used by many employees, or noting the number of hours and minutes of the deviation in a record that the supervisor maintains. The method selected by management to record the deviations should be the most efficient and effective one under the circumstances.

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[11]Unless otherwise designated by management, material variances or deviations from an established schedule for recording purposes are those that differ by 1 hour or more during a planned workday or flex day. However, if leave is used, a deviation of less than 1 hour could be considered material. For example, if an employee arrives 30 minutes late, but works 30 minutes past the planned departure time, this would be considered an immaterial variation and need not be recorded. On the other hand, if the employee chooses to request annual or sick leave rather than to work for the time absent, then a material deviation for recording purposes has occurred.

ALTERNATIVE WORKPLACE ARRANGEMENTS

Alternative workplace arrangements[12] involve working at locations other than the traditional government office. Locations of alternative workplaces are usually the employee's home or telecenters.[13] Although numerous benefits exist for both the agency and employees participating in alternative workplaces (such as employee moral and lower commuting costs), flexible workplace is a management option, not an employee benefit. Employees who work at alternative work sites should have a written agreement with their supervisors stipulating, among other items, the period of time the agreement is in effect, days in which the employee will work at the alternative site, work assignments and performance, work schedule, and time and attendance.

As a basis for approving T&A data, supervisors are required to obtain reasonable assurance that employees working at remote sites are working when scheduled and that T&A information accurately reflects time worked and absences from scheduled tours of duty. Numerous techniques are available to the supervisor to obtain this assurance. For example, reviewing the work output of the employee and occasional phone call or visits to the employee.

[12]Other terms used to refer to alternative workplace arrangements or locations of work are "flexible workplace," "flexiplace," and "telecommuting."

[13]Telecenters are facilities away from the traditional government office that are equipped with workstations, telephones, and computers among other items that are shared by employees of multiple agencies.

PART II: MILITARY SERVICE MEMBERS

ACTIVE MILITARY PERSONNEL

Active military personnel are considered to be on duty 24 hours a day. Because the nature of some military assignments makes a confirmation of the presence at duty stations difficult, if not impossible, the recording of presence for duty and of specific hours during which duty is performed each day is not required. This is similar to exception-based T&A systems explained earlier in this document. Most active duty military personnel follow exception-based systems. However, superiors are expected to be aware of the presence and absence of service members for whom they are responsible. When a service member is on temporary assignment to another component of the armed services or to a civilian agency, the entity to which the service member is detailed must provide time and attendance recording for the service member and report the information to his or her home component promptly to facilitate payment of basic pay and allowances by (or through) the home component.

Absence reports must be maintained daily to indicate those service members who are to be charged leave and those who are not present for duty but who should be. Examples of reports that might contain such data are "morning" or "day" reports, strength reports, unit diaries, and other similar reports.

Information on absences which affect pay should be compiled each pay period and be transmitted to the payroll system. Without such information, the payroll system may mistakenly pay the member for unauthorized pay and allowances. The following requirements for review and approval must be met:

1. Reports of such information and related supporting documents must be reviewed and approved by a designated authorizing official. The official must be aware of the responsibilities he or she is taking regarding the accuracy of the reports.

2. Approvals of such reports will be made at the end of the last day of the pay period whenever possible. When this is not possible because of payroll processing requirements to meet established paydays, documents must be approved as close to the end of the pay period as possible.

3. Approval must be done in accordance with guidance found in the subsection "Attestations, Verifications, and Approvals" of section "Authorizing and Approving T&A Transactions" of this document.

4. Any adjustments required because of changes in reported absences after the reports were approved and transmitted to the payroll system must be made and reflected in the pay period to which the changes apply, when possible, or when not possible, adjusted as soon as possible, preferably in the next pay period.

Any changes must be approved by the authorizing official prior to being entered into the payroll system. Service members may not approve their own absence reports unless prior authority to do so is granted in writing by an authorized official.

When feasible (as in an office setting or environment), cost-effective, and applicable, attendance reporting and related internal controls set forth in "Part I: Civilian Employees" should be instituted for service members to the extent management deems appropriate.

MILITARY RESERVISTS

T&A controls for military reservists depend largely on the nature of the work. If they have defined work schedules and are not expected to be available for duty on a round-the-clock basis, the T&A requirements for civilian employees are operative and should be used. If however they are employed similar to those who are on active duty or are actually on active duty, then the controls in the subsection "Active Military Personnel" are operative and should be used.

APPENDIX I: GAO'S REVIEW OF ELECTRONIC SIGNATURES APPLICATIONS

GAO has been asked by several federal agencies to review electronic signature systems used in financial management systems and to discuss how such systems should be evaluated. Because of some of the unique risks associated with highly automated environments, traditional data integrity techniques, such as password and user identification based systems, used to authenticate an individual may not provide the same degree of assurance as that provided by paper-based systems. For example, in a paper-based system, an individual's signature on the paper document is a time-tested method of showing that an individual intended to be bound by the terms and conditions in the paper document. However, in an electronic world, where adequate controls have not been implemented, the similar approach of having an individual's name appended to a data record does not provide the same assurance because, for example, the terms and conditions can be changed without obtaining the individual's approval of the changes made.

When reviewing electronic signature systems, we evaluate whether a system generates electronic signatures that represent an individual's or an entity's intent to be bound. To do this, we determine whether the electronic signature system provides reasonable assurance that the signature produced by the system is (1) unique to the signer, (2) under the signer's sole control, (3) capable of being verified, and (4) linked to the data in such a manner that, if the data are changed, the signature is invalidated. Adopting these criteria facilitates our evaluation of how well the electronic signature system addresses its threats and helps identify vulnerabilities that may be present in the system. We have also found these criteria useful since they are technology neutral (can be used regardless of the technology used to produce the signature) and allow for a variety of implementation methods, depending of the degree of risk associated with a given application.

When deciding on an electronic signature system for T&A data, agencies should identify and/or develop and document the criteria used in the selection of the signature system and how the criteria and the selected system complies with the GPEA definition of an electronic signature. In addition, the agency's risk assessment process (as called for in the OMB guidance[14]) should disclose the risks considered that would prevent the system from successfully complying with the criteria selected by the agency. Without developing the criteria that the system should meet and then effectively assessing the risks, agencies could adopt signature systems that will not provide the necessary data integrity.[15]

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[14] See footnote 10.

[15] A recently issued GAO report (*Information Security: Serious and Widespread Weaknesses Persist at Federal Agencies*. GAO/AIMD-00-295, September 6, 2000) showed that in 24 agencies, physical and logical access controls were not effective in preventing or detecting system intrusions or misuse. These weaknesses have a significant adverse impact on the ability of automated systems to ensure the necessary data integrity.

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