



State of Arizona Accounting Manual

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INTRODUCTION

Questions frequently arise whether and under what circumstances alternatives to handwritten or wet signatures may be used to initiate or approve certain accounting transactions. This section of SAAM answers many of those questions.

BACKGROUND AND SCOPE

Documents are signed to demonstrate that the signer understands and consents to the contents of the writing or transaction which is signed. The functional requirements of a signature, whatever its format, include:

- Confirming the origin and authenticity of a document.
- Demonstrating a document has not been altered.
- Indicating a signer's understanding and/or approval.
- Signaling a signer's authorization.
- Identifying a signer and ensuring non-repudiation of a document or transaction.

A signature fulfilling these functional requirements as well as other conditions and limitations set forth herein may be valid for statewide internal accounting processes.

Unless otherwise required by law, A.R.S. § 18-106 allows agencies to accept electronic and digital signatures; A.R.S. §§ 44-7007, 44-7012 and 44-7042 deal principally with the use of electronic signatures in trade and commerce but also allow State agencies to promulgate policies involving electronic signatures. The types of electronic signatures described by A.R.S. § 18-106 include both electronic and digital signatures.

Digital signatures rely on a mathematical scheme for demonstrating the authenticity of a digital message or document and use a combination of private and public keys, generally issued by an independent source known as a certificate authority, as part of the identification process. This requires that the signer has subscribed to a service provided by a certificate authority.

Digital signatures are but one type of a variety of electronic signatures. The term "electronic signature" is not technology-specific; it does not require the use of any particular hardware or software application, but allows for any technology that can properly authenticate the signer and the signed document. It can include the use of such technologies as email (using a personal identification number), faxes and imaging, or more advanced or exotic technologies like biometrics (such as fingerprints or retinal scans). Common forms of electronic signature used by many automated systems

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include a combination of a unique personal identification number and a password or the selection of a button or check box signifying consent. The term “electronic signature” can also include a simulacrum of a human signature generated by a software product.

For electronic signatures—whatever their type—to be effective, they must fulfill the same functions as written signatures and provide appropriate levels of authentication, integrity and non-repudiation.

The scope of this section of SAAM is much more limited than that of the statute and applies only to certain accounting and accounting-related documents used within and between agencies of the State of Arizona government. The requirements established herein, while somewhat less rigorous than those contained in statute, are sufficiently robust to accomplish their purpose.

This policy sets forth when an electronic signature will be acceptable for internal accounting and accounting-related processes and the necessary supporting conditions for their acceptance.

The use of electronic signatures to make agreements with entities not part of State of Arizona Government is not authorized or otherwise addressed by this policy.

POLICY

1. In order to increase the speed and efficiency of intrastate accounting and accounting-related processes (i.e., those processes conducted within or between State agencies or certain processes between State employees and an agency), electronic signatures, subject to the limitations outlined below, may be used in place of written signatures.
2. Any signature meeting the standards established by A.R.S. § 18-106 is an acceptable alternative to a handwritten or wet signature.
 - 2.1. It is, however, recognized that most agencies do not subscribe to the services provided by a certificate authority and, hence, cannot meet the standards proposed by statute for a digital signature.
 - 2.2. Nevertheless, for internal accounting processes, various mechanisms can enable the creation, transmission and retention of a trustworthy record.
 - 2.3. For a record with an electronic signature to remain trustworthy over the record’s life cycle, it is necessary to preserve its content, context, and sometimes its structure. This implies that electronic signatures are created and maintained in a secure environment that protects records from unauthorized alteration or destruction.

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- 2.3.1. *Content.* Content includes the electronic signature and any associated date or other identifiers, such as organization or title. It provides evidence of a document's reliability and authenticity.
- 2.3.2. *Context.* Context includes individual identifiers that are not embedded in the content of the record but are used to create and verify the validity of an electronic signature. It provides additional evidence to support the reliability and authenticity of the record.
- 2.3.3. *Structure.* Structure includes the physical and logical format of the record and the relationships between data elements comprising the record. The systems used to create and store the record must either retain the structure of the electronic signature or retain the processes used to create it from what is retained.
- 2.4. A trustworthy record can provide reasonable assurance that it is from the person the signature represents and that the document to which it applies has not been altered. According to the National Archives and Records Administration (NARA), a trustworthy record features the following characteristics:
- 2.4.1. *Reliability.* The content of the record can be accepted as a complete and accurate representation of the transactions, activities and facts to which it attests.
- 2.4.2. *Authenticity.* A record can be proven to be what it claims to be and to have been created or sent by the person who claims to have created or sent it; assurance of identity.
- 2.4.3. *Integrity.* Evidence that a record is complete and has not been altered.
- 2.4.4. *Usability.* A record can be located, retrieved, presented, and interpreted in connection with the transaction that created it.
- 2.4.5. *Signatory Intent.* The process used to obtain the electronic signature must demonstrate that the user intended to sign the record. Establishing intent includes being able to demonstrate with reasonable certainty that the signer knows:
- 2.4.5.1. His identity will be applied to or associated with an electronic record.
- 2.4.5.2. To which electronic record his identity will be applied.
- 2.4.5.3. The purpose of the electronic record with which his identity will be associated; this may be apparent within the context of the transaction.
- 2.4.6. *Trustworthiness of the Process.* The process used to conduct electronic transactions must be documented and followed consistently.

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2.4.7. *Trustworthiness of the System.* The transactions created, transmitted and stored by the system and/or the system itself must exhibit the following characteristics:

2.4.7.1. Consistent. The system processes information in a manner that assures the records it creates are credible.

2.4.7.2. Complete. The transactions retain their content, structure and context.

2.4.7.3. Accurate. Information in the system correctly reflects what was to be communicated in the transactions.

2.4.7.4. Preserved. Information continues to preserve its content, structure and context within any system by which records are retained over time.

2.4.7.5. Non-repudiable. This important property protects against an individual or entity from denying having performed a particular action related to the data. Non-repudiation protects the reliability, authenticity, integrity, usability, confidentiality, and legitimate use of electronically signed information. Essential elements of non-repudiable electronic signature relating to an electronic message or transaction include:

2.4.7.5.1. Evidence of the origin of the message or transaction.

2.4.7.5.2. Evidence of the message's having been sent or the transaction's having been entered.

2.4.7.5.3. Evidence of the message's having been received or the transaction's having been accepted by the system.

2.4.7.5.4. Timestamps at the point of origin and receipt.

2.4.7.5.5. Tamperproof and retrievable long-term storage.

3. A number of statewide accounting or accounting-related systems have built-in acceptable alternatives to handwritten signatures. These include:

3.1. AFIS (including its subsystems), APP, HRIS, ETE, and TRIRIGA.

3.2. Access to these systems is managed by the ADOA.

3.3. Access to these systems requires the entry of a password.

3.4. Transaction entry, transaction approval and other activity by a user of these systems is recorded.

4. Scanned images of handwritten documents and forms may be accepted in lieu of originals if the following conditions are met:

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- 4.1. There is no legal requirement that prohibits it.
- 4.2. There is no operational factor that requires a paper document or a handwritten or wet signature.
- 4.3. If the document is attached to an email:
 - 4.3.1. The email address of the originator must be a valid State of Arizona Government assigned email address assigned by and through an email service operated by a State agency.
 - 4.3.2. The document must be of a form that cannot be altered by the recipient or during transmission.
- 4.4. If faxed, the document must be faxed from a fax machine controlled by—that is to say, owned or leased by and located on the premises of—a State agency.
 - 4.4.1. The fax's point of origin must be clearly displayed on the faxed materials and the transmission traceable to a fax machine controlled by the State.
 - 4.4.2. A fax machine situated in a location from which an employee telecommutes or sited in the home of an employee whose home is his primary, permanent or temporary duty post is not located on the premises of and is not controlled by a State agency
- 4.5. The original document must be retained in a secure environment by the sender for the length of time prescribed by LAPR.
5. Responsibility for authorizations made by scanned signature remains with the signature's author unless the person using the signature is acting maliciously, fraudulently or negligently. (This implies that the author must limit access to those systems that can be used to transmit scanned documents.)
6. A typewritten signature from a State of Arizona email account can be used as an equivalent of a written signature for internal purposes when it meets the appropriate requirements related to functionality and trustworthiness; however, given the ease with which emails may be manipulated, this is not recommended for anything other than low risk transactions.
7. Those using electronic signatures are responsible for the security of their accounts. Passwords must not be revealed to any other person. Computers that are logged into any system—including computers used to access systems remotely---must be secured when left unattended.

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8. An electronic signature may not be used to execute, acknowledge, authorize or approve documents or transactions with respect to which a legal requirement for a written signature exists.
9. Electronic signatures apply exclusively to individuals and not to roles, positions, titles or organizations.
10. The fact that an individual has signed a record electronically using an approved electronic signature method does not mean that the record has been signed by a person authorized to sign or approve that record. Appropriate procedures must be used to confirm that the person signing the record has the appropriate authority and intent to sign the record.
11. The GAO may limit or revoke the use of electronic signatures or electronic signature methods with respect to particular electronic records, particular classes of electronic records, particular processes, particular individuals, particular agencies or specified amounts. An electronic signature used outside of its authorized uses will not be considered valid.