



## 21 CFR Part 11 Challenges and Solutions

### NextDocs Product Compliance

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### Introduction

Many sponsors are concerned with the risks and costs involved in ensuring that their electronic systems comply with the FDA's ruling on acceptance of Electronic Records and Electronic Signatures in place of their paper equivalents (21 CFR Part 11). Although the ruling has been in place since 1997, there is often a lack of clarity concerning what characteristics and features a software solution must have to comply with 21 CFR Part 11. Even when a solution meets all of its requirements, ensuring that procedural requirements are met may be a bigger challenge.

Although sponsors' concerns are certainly valid, Part 11 compliance also provides an opportunity. Sponsors and the FDA share a common goal of ensuring the integrity of their data, documentation and computer systems. If Part 11 compliance can be achieved by software configured to represent the sponsor's desired business process, the burden on both system users and IT administrators can be minimal. The sponsor can then achieve benefits around both process automation and process transparency.

The intent of this paper is to describe how NextDocs products provide a built-in platform for 21 CFR Part 11 compliance while providing capabilities that allow sponsors to automate, monitor and control their processes.

### 21 CFR PART 11 Background

#### 21 CFR Part 11 Definitions

The FDA provides the following definitions in 21 CFR Part 11 for Electronic Records and Electronic Signatures:

“Electronic record means any combination of text, graphics, data, audio, pictorial, or other information representation in digital form that is created, modified, maintained, archived, retrieved, or distributed by a computer system.”

“Electronic signature means a computer data compilation of any symbol or series of symbols executed, adopted, or authorized by an individual to be the legally binding equivalent of the individual's handwritten signature.”

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### Scope of 21 CFR Part 11

The Code of Federal Regulations <sup>[1]</sup> statement of scope regarding Part 11 clarifies what Part 11 applies to:

The regulations in this part set forth the criteria under which the agency considers electronic records, electronic signatures, and handwritten signatures executed to electronic records to be trustworthy, reliable, and generally equivalent to paper records and handwritten signatures executed on paper.

- a. This part applies to records in electronic form that are created, modified, maintained, archived, retrieved, or transmitted, under any records requirements set forth in agency regulations. This part also applies to electronic records submitted to the agency under requirements of the Federal Food, Drug, and Cosmetic Act and the Public Health Service Act, even if such records are not specifically identified in agency regulations. However, this part does not apply to paper records that are, or have been, transmitted by electronic means.
- b. Where electronic signatures and their associated electronic records meet the requirements of this part, the agency will consider the electronic signatures to be equivalent to full handwritten signatures, initials, and other general signings as required by agency regulations, unless specifically excepted by regulation(s) effective on or after August 20, 1997.
- c. Electronic records that meet the requirements of this part may be used in lieu of paper records, in accordance with Sec. 11.2, unless paper records are specifically required.
- d. Computer systems (including hardware and software), controls, and attendant documentation maintained under this part shall be readily available for, and subject to, FDA inspection.

In August 2003, FDA provided non-binding clarification pertaining to the scope of Part 11 and their intentions related to enforcing the provisions of Part 11 in the document entitled “Guidance for Industry Part 11, Electronic Records; Electronic Signatures — Scope and Application” (published 8/28/2003).<sup>[2]</sup> Important comments on scope included the following:

“Under the narrow interpretation of the scope of Part 11, with respect to records required to be maintained under predicate rules or submitted to FDA, when persons choose to use records in electronic format in place of paper format, Part 11 would apply. On the other hand, when persons use computers to generate paper printouts of electronic records, and those paper records meet all the requirements of the applicable predicate rules and persons rely on the paper records to perform their regulated activities, FDA would generally not consider persons to be “using electronic records in lieu of paper records” under §§ 11.2(a) and 11.2(b). In these instances, the use of computer systems in the generation of paper records would not trigger Part 11.”

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Under this narrow interpretation, FDA considers Part 11 to be applicable to the following records or signatures in electronic format:

- Records that are required to be maintained under predicate rule requirements and that are maintained in electronic format in place of paper format.
- Records that are required to be maintained under predicate rules, that are maintained in electronic format in addition to paper format, and that are relied on to perform regulated activities.
- Records submitted to FDA, under predicate rules (even if such records are not specifically identified in Agency regulations) in electronic format (assuming the records have been identified in docket number 92S-0251 as the types of submissions the Agency accepts in electronic format).
- Electronic signatures that are intended to be the equivalent of handwritten signatures, initials, and other general signings required by predicate rules.

Further FDA guidance states: “Electronic documents that bypass the controls for electronic files described in 21 CFR 11 are not considered official documents for review.” <sup>[3]</sup>

Based upon this guidance, it is clear that document management systems used to create, review, approve and archive documentation produced in support of predicate rules such as (but not limited to) Good Laboratory Practice, Good Clinical Practice, and Good Manufacturing Practice are subject to 21 CFR Part 11.

### Open vs. Closed Systems

An important consideration in evaluating the impact of 21 CFR Part 11 on NextDocs applications is whether the specific system implementation is considered a closed or open system.

The FDA provides the following definitions in 21 CFR Part 11 for closed and open systems.

“Closed system means an environment in which system access is controlled by persons who are responsible for the content of electronic records that are on the system.”

“Open system means an environment in which system access is not controlled by persons who are responsible for the content of electronic records that are on the system.”

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### Electronic Record Functionality and Issues for NextDocs

The following table describes the functionality that NextDocs provides in support of 21 CFR Part 11.

21 CFR 11 Requirement <sup>[1]</sup>	Supporting NextDocs Functionality	Notes and References	Potential Business Benefits
<b>§ 11.10 CONTROLS FOR CLOSED SYSTEMS.</b>			
(a) Validation of systems to ensure accuracy, reliability, consistent intended performance, and the ability to discern invalid or altered records.	<p>Validation is ultimately the responsibility of the client as validation can only be performed in the environment in which the software will be used, and against specifications defined by system users.</p> <p>NextDocs offers a validation toolkit to streamline the validation process. The toolkit includes a sample validation master plan and traceability matrix, ready-to-run scripts for IQ and OQ, summary report templates, and sample PQ scripts.</p> <p>NextDocs also has standard professional services packages that include assistance with validation planning, PQ script preparation, and managing PQ script execution and documentation activities.</p>	<p>“The Agency intends to exercise enforcement discretion regarding specific Part 11 requirements for validation of computerized systems (§ 11.10(a) and corresponding requirements in § 11.30). Although persons must still comply with all applicable predicate rule requirements for validation (e.g., 21 CFR 820.70(i)), this guidance should not be read to impose any additional requirements for validation.” <sup>[2]</sup></p> <p>“We suggest that your decision to validate computerized systems, and the extent of the validation, take into account the impact the systems have on your ability to meet predicate rule requirements. You should also consider the impact those systems might have on the accuracy, reliability, integrity, availability, and authenticity of required records and signatures. Even if there is no predicate rule requirement to validate a system, in some instances it may still be important to validate the system. We recommend that you base your approach on a justified and documented risk assessment and a determination of the potential of the system to affect product quality and safety, and record integrity. For instance, validation would not be important for a word processor used only to generate SOPs.” <sup>[2]</sup></p>	<p>Most of our clients’ implementations require validation under a strict interpretation of part 11. In addition, validation of any computer system that manages essential records is highly recommended. Only execution of a sound validation program ensures that a computerized system has been properly installed and will function as expected, both under normal operations and when stressed to its expected limits.</p> <p>NextDocs’ validation toolkit and expert advice significantly decrease time and effort in implementing a validated system. Our configuration-only approach avoids the high risk associated with deploying custom software.</p> <p>NextDocs provides in-place software upgrades that ensure lower cost of ownership for the system over time. With each software release, NextDocs updates the relevant portions of the validation toolkit to further simplify the work required by our clients. Clients can then use the updated toolkit as the basis for their re-validation.</p>

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21 CFR 11 Requirement <sup>[1]</sup>	Supporting NextDocs Functionality	Notes and References	Potential Business Benefits
			<p>Many of our clients upgrade the underlying software themselves without NextDocs' involvement.</p> <p>With a business-critical system such as electronic document management, an investment in validation yields a return after go-live in the form of decreased problem reports and clarity on how the system meets user requirements.</p>
<p>(b) The ability to generate accurate and complete copies of records in both human readable and electronic form suitable for inspection, review, and copying by the agency. Persons should contact the agency if there are any questions regarding the ability of the agency to perform such review and copying of the electronic records.</p>	<p>Actual generation of records is a client responsibility. NextDocs facilitates generating copies of records by:</p> <ul style="list-style-type: none"> <li>Viewing records in native electronic format with any computer running one of several supported browsers.</li> <li>Allowing records to be exported by dragging and dropping to any desired file system location</li> <li>Providing sophisticated controlled, uncontrolled and clean copy printing capabilities</li> </ul>	<p>"The Agency intends to exercise enforcement discretion with regard to specific Part 11 requirements for generating copies of records (§ 11.10 (b) and any corresponding requirement in §11.30)." <sup>[2]</sup></p> <p>"We recommend that you supply copies of electronic records by:</p> <ul style="list-style-type: none"> <li>Producing copies of records held in common portable formats when records are maintained in these formats . . .</li> <li>Using established automated conversion or export methods, where available, to make copies in a more common format (examples of such formats include, but are not limited to, PDF, XML, or SGML)" <sup>[2]</sup></li> </ul>	<p>Since the document management system automatically manages properties that indicate the status, nature and scope of each document, it is easy for an authorized user to locate records needed by a regulatory authority (or internal auditor). Therefore, the time to respond to a request for records is decreased and confidence in the ability to supply the correct records is increased.</p>

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21 CFR 11 Requirement <sup>[1]</sup>	Supporting NextDocs Functionality	Notes and References	Potential Business Benefits
<p>(c) Protection of records to enable their accurate and ready retrieval throughout the records retention period.</p>	<p>NextDocs systems automatically “lock down” official versions of documents so that they cannot be deleted or modified without following system configurable change control procedures.</p>	<p>“The Agency intends to exercise enforcement discretion with regard to the Part 11 requirements for the protection of records to enable their accurate and ready retrieval throughout the records retention period (§ 11.10 (c) and any corresponding requirement in §11.30).”<sup>[2]</sup></p> <p>“FDA does not intend to object if you decide to archive required records in electronic format to non-electronic, media such as microfilm, microfiche, and paper, or to a standard electronic file format (examples of such formats include, but are not limited to, PDF, XML, or SGML).” <sup>[2]</sup></p> <p>Archiving of documents and eventual destruction should be controlled by a records management policy and an SOP. This is generally a legal and corporate policy issue rather than a technology issue.</p>	<p>Measures are put in place to protect documents against accidental deletion or modification, such as might occur on a file system.</p> <p>Flexible support for archiving electronic records enables NextDocs clients to support multiple scenarios, including but not limited to:</p> <ul style="list-style-type: none"> <li>• Maintaining electronic records in the production NextDocs system.</li> <li>• Moving electronic records to other media formats.</li> </ul>

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21 CFR 11 Requirement <sup>[1]</sup>	Supporting NextDocs Functionality	Notes and References	Potential Business Benefits
<p>(d) Limiting system access to authorized individuals.</p>	<p>Access to NextDocs can be controlled by configuration. Security can be configured to use Active Directory or Active Directory Lightweight Directory Services accounts or accounts created within SharePoint.</p> <p>Internal users with on-premises deployments can access NextDocs applications through single sign-on without requiring additional system login unless performing a signature related action in the system. Alternatively, if a client's Part 11 interpretation requires explicit sign-on to access the system, single sign-on can be disabled.</p> <p>Internal users with hosted deployments access NextDocs applications by providing a user name and password.</p> <p>External users access NextDocs applications by providing a user name and password. Depending on a client's security set-up, Virtual Private Network (VPN) access may be required as well.</p>	<p>In general, an SOP is needed on establishing and maintaining user access to the system and/or network.</p>	<p>Access can be controlled at the site or sub-site level. For example, a repository can be created for documents associated with a single product, clinical study or clinical or manufacturing site if desired, and system access limited to users having a need to access those documents.</p> <p>Access can also be controlled at the library, list or individual document level.</p> <p>The use of Active Directory means that enabling access is fast and easy. Access can even be granted by non-administrators using NextDocs workflows to approve access requests. Requests can be expedited by configuring electronic forms that include only essential information needed to confirm and activate a user account.</p> <p>The resulting benefit is the ability to grant fast, targeted access to users both within and outside the organization. For example, external investigators can be granted clinical portal access in minutes, without the need for any hard copy paperwork, but with an electronic record and corresponding audit trail instead.</p>

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21 CFR 11 Requirement <sup>[1]</sup>	Supporting NextDocs Functionality	Notes and References	Potential Business Benefits
<p>(e) Use of secure, computer-generated, timestamped audit trails to independently record the date and time of operator entries and actions that create, modify, or delete electronic records. Record changes shall not obscure previously recorded information. Such audit trail documentation shall be retained for a period at least as long as that required for the subject electronic records and shall be available for agency review and copying.</p>	<p>NextDocs records:</p> <ul style="list-style-type: none"> <li>• Record modification events including check-in and check-out.</li> <li>• Move, copy, delete and undelete events.</li> <li>• Electronic/Digital Signature events.</li> <li>• Lifecycle promotions and demotions</li> <li>• Workflow events</li> <li>• Permission changes</li> <li>• Record viewing (configurable).</li> </ul> <p>Audit trail entries include event, user name and server-based time/date stamp. Local time/date stamps can also be configured if desired.</p> <p>Audit trail records are retained indefinitely unless manually purged from the system.</p> <p>NextDocs also provides access to and copying of the audit trail. The audit trail can be saved to Excel with a single click for advanced sorting, filtering and analysis.</p>	<p>An SOP may be needed to govern retention and archiving of audit trail items.</p>	<p>Audit trails have value not only in fulfilling the requirements of Part 11, but also in providing transparency into document management processes. For example:</p> <ul style="list-style-type: none"> <li>• If a defined process was not followed, the audit trail provides insight into the discrepancy occurred.</li> <li>• If a question arises over who participated in the approval of a document, the audit trail will provide names and dates for all involved.</li> <li>• If defined timelines are not being met, audit trails can uncover if this was due to delayed review or approval, multiple review cycles, or inexpertly long times in preparing drafts.</li> </ul> <p>Audit trails are supplemented by detailed workflow histories providing even more insight into the actions taken on a document.</p>

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21 CFR 11 Requirement <sup>[1]</sup>	Supporting NextDocs Functionality	Notes and References	Potential Business Benefits
<p>(f) Use of operational system checks to enforce permitted sequencing of steps and events, as appropriate.</p>	<p>These checks are implemented in a number of areas. Some examples include:</p> <ul style="list-style-type: none"> <li>• Ensuring that documents follow a defined lifecycle</li> <li>• Ensuring that workflows are used when needed to move a document through its lifecycle</li> <li>• Ensuring that documents are properly set up to display digital signatures before they can be signed</li> <li>• Ensuring that all required signatures are collected before a document is approved</li> <li>• Ensuring that documents meet requirements such as having a valid PDF rendition before becoming approved or effective</li> <li>• Ensuring that all required metadata is entered for a document</li> <li>• Enforcing the use of approved templates for authoring</li> <li>• Limiting pick lists to appropriate values when creating or modifying document properties</li> </ul>	<p>Since these operational checks are configurable, NextDocs works with the client during the requirements phase of a project to define the specific checks that add value in the client's environment.</p>	<p>A NextDocs system guides a user through the creation, review, approval and release of a document in accordance with a series of defined steps. Benefits include:</p> <ul style="list-style-type: none"> <li>• Decreased training time, since a user is prompted to follow steps rather than having to memorize them or consult documentation</li> <li>• Decreased remediation time for IT and business administrators to repair flawed documents that were not created or managed in accordance with standards</li> <li>• Increased standardization, making documents easier to find and work with</li> </ul>

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21 CFR 11 Requirement <sup>[1]</sup>	Supporting NextDocs Functionality	Notes and References	Potential Business Benefits
<p>(g) Use of authority checks to ensure that only authorized individuals can use the system, electronically sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.</p>	<p>These checks are implemented in a number of areas. Some examples include limiting the following to authorized users:</p> <ul style="list-style-type: none"> <li>• Modifying a document's content or properties</li> <li>• Initiating or participating in workflows</li> <li>• Applying digital/electronic signatures</li> <li>• Modifying system configurations</li> <li>• Generating controlled or uncontrolled copy prints</li> <li>• Modifying essential information, such as study investigators</li> <li>• Approving requests for system access</li> </ul>	<p>Generally, a client will need an SOP on system security and/or SOP on physical security to prevent access to system by unauthorized users.</p>	<p>As with operational checks, authority checks result in decreased training time (since users will not be able to perform operations in which they have not been trained) and decreased need for document remediation.</p>
<p>(h) Use of device (e.g., terminal) checks to determine, as appropriate, the validity of the source of data input or operational instruction.</p>	<p>This requirement does not apply to NextDocs since the system does not have any functionality where information is valid only when entered from specific terminals.</p>		

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21 CFR 11 Requirement <sup>[1]</sup>	Supporting NextDocs Functionality	Notes and References	Potential Business Benefits
<p>(i) Determination that persons who develop, maintain, or use electronic record/electronic signature systems have the education, training, and experience to perform their assigned tasks.</p>	<p>NextDocs maintains resumes and training records to provide evidence that our employees who develop and deploy our software are trained and qualified to do so.</p> <p>NextDocs also provides client-specific training documentation to help our clients comply with this requirement. We also offer end user training, train-the-trainer training and administrator training.</p>	<p>Much of the burden of meeting this requirement falls on the client. The client will need an SOP on training for users and administrators, and must maintain applicable training records in accordance with those SOPs.</p> <p>The client can arrange an audit where NextDocs will present our methodology and practices.</p>	<p>NextDocs also provides built-in support for maintaining training records within the system. Users can be assigned to roles, and those roles can be assigned a training curriculum. The users then receive notifications containing the details of the training to be completed. A training administrator can manage the ongoing training and monitor progress of a user in completing assigned training. The training status of users for a specific document can also be monitored and, if desired, used to control document effectivity.</p>
<p>(j) The establishment of, and adherence to, written policies that hold individuals accountable and responsible for actions initiated under their electronic signatures, in order to deter record and signature falsification.</p>	<p>Client responsibility</p>		

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21 CFR 11 Requirement <sup>[1]</sup>	Supporting NextDocs Functionality	Notes and References	Potential Business Benefits
<p>(k) Use of appropriate controls over systems documentation including:</p> <p>Adequate controls over the distribution of, access to, and use of documentation for system operation and maintenance.</p> <p>Revision and change control procedures to maintain an audit trail that documents time sequenced development and modification of systems documentation.</p>	<p>NextDocs's documentation is maintained in our configuration management system and available for review during audits.</p> <p>However, ultimately it is the client's responsibility to control system documentation in their environment.</p> <p>NextDocs' release notes describe the names and versions of documentation that apply to each product release. In addition, each client receives documentation specific to their NextDocs implementation.</p>	<p>The client will need SOPs on document control applied to system operation and maintenance documentation (i.e. SOPs on use, operation and maintenance, user guides and manuals, etc.).</p> <p>The client will need SOPs on document change control applied to system operation and maintenance documentation.</p>	<p>If desired, a client can maintain system documentation within their NextDocs system. This will provide the necessary control over the documentation in terms of change control and availability.</p>
<p><b>§ 11.10 CONTROLS FOR CLOSED SYSTEMS.</b></p>			
<p>§ 11.30 Controls for Open Systems. Same as § 11.10 plus document encryption and use of appropriate digital signature standards to ensure, as necessary under the circumstances, record authenticity, integrity, and confidentiality.</p>	<p>NextDocs systems that are hosted may be considered open based on the specific circumstances and the client's 21 CFR Part 11 interpretation. The use of digital signature is available in all NextDocs products to fulfill the additional requirements imposed on open systems.</p>	<p>The client and validation team must determine if the system is closed or open.</p>	<p>The ability to meet open systems requirements means that our clients can achieve benefits associated with application hosting if this is the most appropriate solution for them.</p>

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### Electronic Signature Functionality and Issues for NextDocs

NextDocs clients have reported significant benefits in implementing electronic signature including:

- Decreased time to complete the approval process, especially when approvers are located in different buildings, different sites, or different countries
- Increased transparency into the review and approval process, as it's always clear which approvers have completed a task and which have yet to complete it
- Decreased cost and complexity of handling and retrieving official paper copies

The following table describes the electronic signature functionality that NextDocs provides in support of 21 CFR Part 11.

21 CFR 11 Requirement <sup>[1]</sup>	Supporting NextDocs Functionality	Notes and References
§ 11.50 Signature manifestations.		
(a) Signed electronic records shall contain information associated with the signing that clearly indicates all of the following:  (1) The printed name of the signer;  (2) The date and time when the signature was executed; and  (3) The meaning (such as review, approval, responsibility, or authorship) associated with the signature.	Signatures can be applied directly against a document or within a workflow task.  Meaning of signature must be selected by the signer from a list that is configured by an administrator. The available meanings of signatures are based on what type of task is being performed. For example, the meanings available in the list might be different for a QA Approval task and a Regulatory Approval task. If appropriate for the business process, it's possible to configure the system to allow the signer to enter a custom meaning.  NextDocs validates the signature and captures the user name, local date and time and GMT/UTC offset, server date and time, and meaning for signature. Local date and time or server date and time can be displayed in the manifestation as desired. This information is recorded in the audit trail.	

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<p>b) The items identified in paragraphs (a)(1), (a)(2), and (a)(3) of this section shall be subject to the same controls as for electronic records and shall be included as part of any human readable form of the electronic record (such as electronic display or printout).</p>	<p>A document must have predefined locations for digital signature to be manifested. The digital signature appears in the preconfigured location, generally with a facsimile of the hard copy signature. The digital signature manifests in various document formats including MS Office and PDF.</p>	<p>By using digital signature technology, NextDocs clients benefit from a standard that goes beyond the requirements of 21 CFR Part 11 including:</p> <ul style="list-style-type: none"><li>• Document modifications after signing will physically change the appearance of the signature to indicate it is no longer valid.</li><li>• Signatures are portable outside the NextDocs system in which they were signed and universally accepted.</li><li>• Signatures meet the more stringent requirements of some European countries.</li></ul>

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<p>Electronic signatures and handwritten signatures executed to electronic records shall be linked to their respective electronic records to ensure that the signatures cannot be excised, copied, or otherwise transferred to falsify an electronic record by ordinary means.</p>	<p>Signatures are bound directly to a specific version of a document.</p> <p>NextDocs digital signatures are based on Public Key Infrastructure (PKI) and are a result of a cryptographic operation that guarantees signer authenticity, data integrity and non-repudiation of signed documents. The digital signature cannot be copied, tampered or altered.</p> <p>Digital signatures appearing in a document automatically appear as invalid when the document changes in any way.</p> <p>During change control the signature is removed for the draft version in anticipation of future approval and signing.</p>	<p>The advantage of a digital signature is that the signature remains verifiable as valid even when the document is removed from the SharePoint repository (such as when it is removed for submission publishing, archiving, or transfer via email).</p>
<p><b>§ 11.100 General requirements.</b></p>		
<p>(a) Each electronic signature shall be unique to one individual and shall not be reused by, or reassigned to, anyone else.</p>	<p>Since NextDocs is generally implemented such that user credentials are supplied via Active Directory (or Active Directory Lightweight Directory Services), compliance is built in.</p> <p>Active Directory will ensure that a user name cannot be re-used within a given domain, and provide the ability to disable (rather than delete) users who are removed from the system. By maintaining a record of previous users, reuse of user IDs will not be possible.</p> <p>NextDocs signatures authenticate the content of documents by attributing the signer to the signed document. Every signer is identified by an issued certificate (or by that of an external trusted entity). This identification is based on the fact that the user is a recognized employee in the organization.</p>	<p>The client will need an SOP on establishing and maintaining user accounts – generally something that is already needed in order to access the network.</p> <p>Clients will benefit from NextDocs seamlessly integrating into their existing infrastructure and policies around credential management as opposed to deploying and managing a wholly separate system.</p>

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21 CFR 11 Requirement <sup>[1]</sup>	Supporting NextDocs Functionality	Notes and References
(b) Before an organization establishes, assigns, certifies, or otherwise sanctions an individual's electronic signature, or any element of such electronic signature, the organization shall verify the identity of the individual.	Client responsibility.	The client will need a policy on verifying user identity – generally something that is already needed for employment and network access.
(c) Persons using electronic signatures shall, prior to or at the time of such use, certify to the agency that the electronic signatures in their system, used on or after August 20, 1997, are intended to be the legally binding equivalent of traditional handwritten signatures. (1) The certification shall be submitted in paper form and signed with a traditional handwritten signature, to the Office of Regional Operations (HFC-100), 5600 Fishers Lane, Rockville, MD 20857. (2) Persons using electronic signatures shall, upon agency request, provide additional certification or testimony that a specific electronic signature is the legally binding equivalent of the signer's handwritten signature.	Client responsibility.	

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21 CFR 11 Requirement <sup>[1]</sup>	Supporting NextDocs Functionality	Notes and References
<p>(a) Electronic signatures that are not based upon biometrics shall:</p> <p>(1) Employ at least two distinct identification components such as an identification code and password.</p> <ul style="list-style-type: none"> <li>(i) When an individual executes a series of signings during a single, continuous period of controlled system access, the first signing shall be executed using all electronic signature components; subsequent signings shall be executed using at least one electronic signature component that is only executable by, and designed to be used only by, the individual.</li> <li>(ii) When an individual executes one or more signings not performed during a single, continuous period of controlled system access, each signing shall be executed using all of the electronic signature components.</li> </ul> <p>(2) Be used only by their genuine owners; and</p> <p>(3) Be administered and executed to ensure that attempted use of an individual's electronic signature by anyone other than its genuine owner requires collaboration of two or more individuals.</p>	<p>Each time a signature is applied, both a user name and password are required.</p> <p>NextDocs supports a configurable automatic time-out during periods of system inactivity. This time-out will also end a user's continuous and controlled access to the system.</p>	
<p>(b) Electronic signatures based upon biometrics shall be designed to ensure that they cannot be used by anyone other than their genuine owners.</p>	<p>NA – Biometrics are not used by NextDocs.</p>	

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## NextDocs Product Compliance

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21 CFR 11 Requirement <sup>[1]</sup>	Supporting NextDocs Functionality	Notes and References
<p>§ 11.300 Controls for identification codes/ passwords. Persons who use electronic signatures based upon use of identification codes in combination with passwords shall employ controls to ensure their security and integrity. Such controls shall include:</p>		
<p>(a) Maintaining the uniqueness of each combined identification code and password, such that no two individuals have the same combination of identification code and password.</p>	<p>See item § 11.100 (a).</p>	
<p>(b) Ensuring that identification code and password issuances are periodically checked, recalled, or revised (e.g., to cover such events as password aging).</p>	<p>This is a client responsibility, generally achieved through settings in Active Directory. Windows and Active Directory infrastructure can enforce password policy for complexity and expiration. Windows integrated authentication and Basic authentication can leverage this automatically.</p>	
<p>(c) Following loss management procedures to electronically deauthorize lost, stolen, missing, or otherwise potentially compromised tokens, cards, and other devices that bear or generate identification code or password information, and to issue temporary or permanent replacements using suitable, rigorous controls.</p>	<p>NextDocs does not make use of tokens, cards, and other devices that bear or generate identification code or password information.</p> <p>Windows and Active Directory administrators can deactivate users, change users' passwords, or require users to change passwords after issuing a temporary password. Windows integrated authentication and Basic authentication can leverage this automatically</p>	
<p>(d) Use of transaction safeguards to prevent unauthorized use of passwords and/or identification codes, and to detect and report in an immediate and urgent manner any attempts at their unauthorized use to the system security unit, and, as appropriate, to organizational management.</p>	<p>This is a client responsibility, generally achieved through settings in Active Directory.</p> <p>The Microsoft Windows family of products can audit logon changes and failed attempts. Group policy can enforce account lockout policy to help to prevent brute force password guessing. Lockout policy is based on failed attempts for a time window and users can be locked out for specified times before they can attempt again (or not).</p>	
<p>(e) Initial and periodic testing of devices, such as tokens or cards, that bear or generate identification code or password information to ensure that they function properly and have not been altered in an unauthorized manner.</p>	<p>NextDocs does not make use of tokens, cards, and other devices that bear or generate identification code or password information.</p>	

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### Summary

NextDocs solutions are packaged products deployed widely throughout the life sciences industry by configuring, not customizing, to meet user requirements. Our client base ranges from small start-ups to top ten Biopharmaceutical, Medical Device, CRO and technology companies. Nearly all of NextDocs clients require validated, Part 11 compliant software. We have worked with our clients to enable them to gain and demonstrate Part 11 compliance – and associated business benefits – as quickly and easily as possible.

Our recommended approach for clients creating a plan to deploy NextDocs products in a regulated environment is:

- Review this position paper and work with us to address any questions or concerns.
- Map out the activities and deliverables needed to achieve Part 11 compliance for your specific implementation.
- Determine how NextDocs can best support you by providing templates, creating plans and scripts, augmenting your staff to perform validation activities, or simply providing advice.

### References

- <sup>[1]</sup> [Code of Federal Regulations, Title 21 - Food and Drugs, Part 11 - Electronic Records; Electronic Signatures](#)
- <sup>[2]</sup> [Guidance for Industry, Part 11, Electronic Records; Electronic Signatures - Scope and Application](#) (FDA, August 2003)
- <sup>[3]</sup> [Guidance for Industry: Providing Regulatory Submissions in Electronic Format — General Considerations](#) (FDA, January 1999)



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NextDocs is the leading provider of regulatory document and quality management software solutions based on SharePoint 2007. Our products are purpose-built for businesses in highly regulated environments. By improving on Microsoft's dynamic SharePoint platform, NextDocs document management solutions are cost-effective, intuitive, flexible and scalable.

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