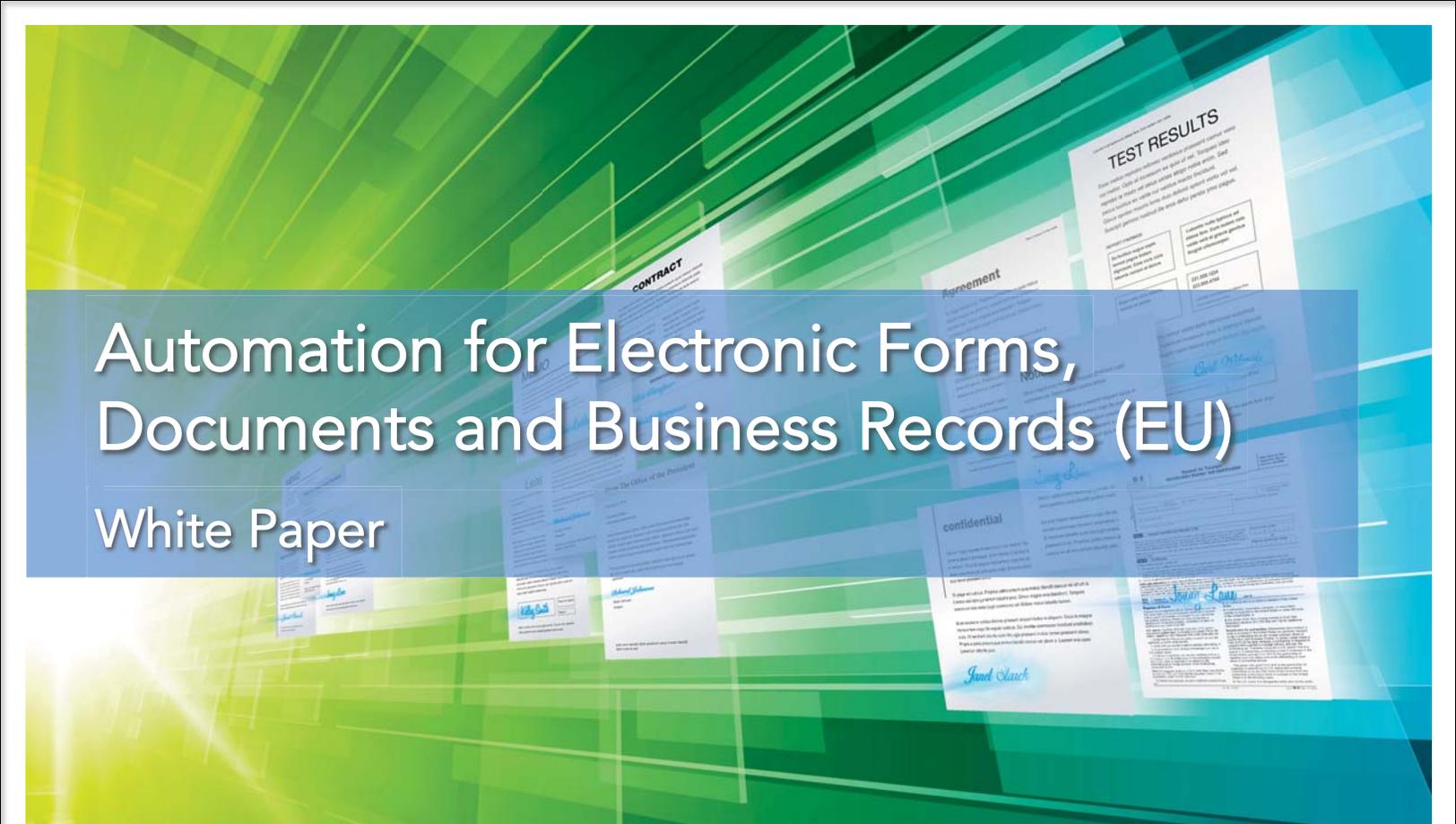


Automation for Electronic Forms, Documents and Business Records (EU)

White Paper





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About AlphaTrust

We pioneered electronic signature solutions in 1998, and since then our solutions have processed millions of critical business transactions each year for satisfied customers in banking, insurance, financial services, and other industries. We are trusted by some of the largest enterprise, technology service provider, and consulting services companies globally.

Our solutions easily integrate with existing applications enabling high volume, digital transaction management to reduce costs and dramatically improve the overall customer experience while adhering to strict regulatory and compliance requirements.

Through continuous innovation we are delivering the most advanced and cost effective eSignature workflow orchestration solutions on the market.

To learn more, visit www.alphatrust.com and follow us on Twitter, LinkedIn and Facebook.

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Executive Summary

Electronic forms, documents, and business records executed with electronic signatures today have the legal and commercial equivalence of paper records and handwritten signatures in most of the developed world. These online processes are decreasing the cost of business, increasing the speed at which business is done, and adding needed security to electronic business transactions. Due to the unique business requirements placed on permanent business records and signatures, business managers find that they must properly marry technology with sound processes and practices to achieve effective results.

An effective electronic record and signature solution must address these business issues:

- 1) Does the technology deliver the needed technical security requirements (authentication, data integrity, and technical non-repudiation)?
- 2) Does the solution address the business requirements for:
 - a. Compliance with laws and regulations (i.e. eIDAS)?
 - b. Enforceability of transactions (legal recourse)?
 - c. Acceptance by users of the solution?
 - d. Using proven technology?
 - e. Viability as a long term solution?
- 3) Does the solution provide for growth / easy scalability as the organization identifies future potential for electronic documents and records?
- 4) Can the solution integrate and work with existing electronic workflow and security solutions?

This white paper discusses electronic workflow in general and discusses how the AlphaTrust PRONTOSign™ product family offers superior solutions for reducing cost and capturing increased business by keeping workflow electronic and avoiding paper processes requiring manual signature or approval.

Within the European Union (EU), national legislation is in place in most member countries implementing the EU Community Framework for Electronic Signatures (Directive 1999/93/EC) and the superseding EU Regulation (EU) N°910/2014, also known as eIDAS, will take effect July 1, 2016. All solutions must meet these baseline requirements after that date. In addition to basic legal requirements, it is also important to look at the bigger picture. While you want a solution that meets legal requirements, the introduction of electronic records and signatures introduces a shift in business processes that may affect other business applications. Your electronic solution should not merely address the needs of one eSignature application, but be capable of easily extending to other applications and areas to meet the growing needs of your enterprise, supply chain, industry, and governmental requirements.

Many companies think about eliminating manual signatures and therefore look for eSignature vendors to help solve their problem. There are many vendors of eSignature solutions on the market. AlphaTrust's strength and difference is on our focus on the full needs of paperwork automation for the enterprise, not just eSignature. We offer:

- An enterprise-grade software platform for automating paperwork processes, including robust eSignature capabilities.

- Deployment flexibility: host the solution internally or use a cloud deployment, fully managed by AlphaTrust with fully IT resource and data segregation.
- Fully customizable workflows, language, and user experience to meet your exact needs.
- Management and control of your documents throughout their lifecycle so you can maintain the all-important "chain of custody" including full audit trail details. It is not enough just to have electronically signed document files produced by an eSignature system. You need to be able to prove them, often years down the line.
- Ease of integration with other business processes and document management systems.
- Advice, consulting, and best practices as applied to your particular needs.
- A 15-year history of serving diverse needs across some of the largest enterprise and technology service provider customers worldwide.

AlphaTrust's PRONTOSign™ product family of software products and services address the full requirements of paperwork automation, ensuring successful projects. Our software platforms have been in production use since 2001 with a wide variety of applications.

Electronic Document Workflow

Electronic document workflow processes generally fall into two specific types:

Type 1 – Static: static workflow starts with static documents (typically forms and applications such as new accounts applications, forms and customer service requests). Data from static documents usually end up in databases while the documents themselves become part of a file or archive.

Type 2 – Dynamic: dynamic documents typically start from templates but are customized for each requirement (e.g. contracts). Dynamic documents typically go through multiple draft and revision cycles before being ready for execution or approval.

Type 1 - Static Document Workflow Example

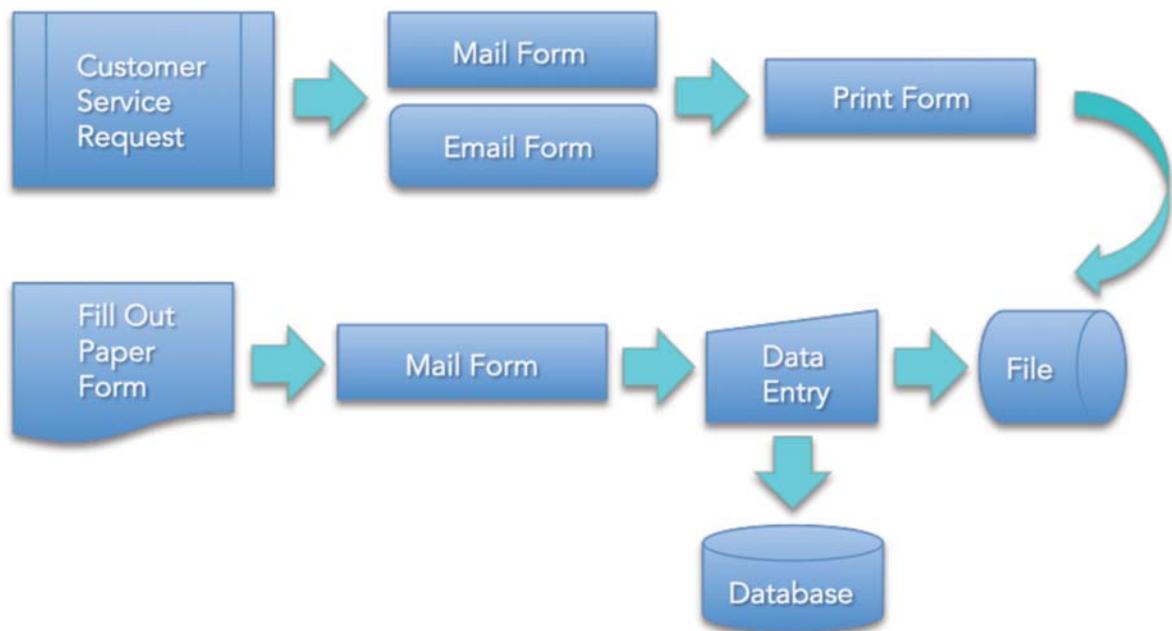


Figure 1: Static Document Workflow Example

Whether paperwork is driven from mail, telephone or web channels, paper forms are sent to the customer for completion, signature, and return. This process can take seven to fourteen days and have direct costs of € 5.00 to € 50.00 per document. Non-response rates vary with the application, but result in lost business opportunity.

Type 2 - Dynamic Document Workflow Example

Contracts require a fair amount of documentation and collaboration. The documents themselves typically go through several draft and revision cycles. These documents are often sent via email.

Using PRONTOSign™, you can design a web-based workflow that dynamically creates documents and presents them for acceptance and signature, while maintaining a full audit trail, central control and archiving of completed and signed documents.

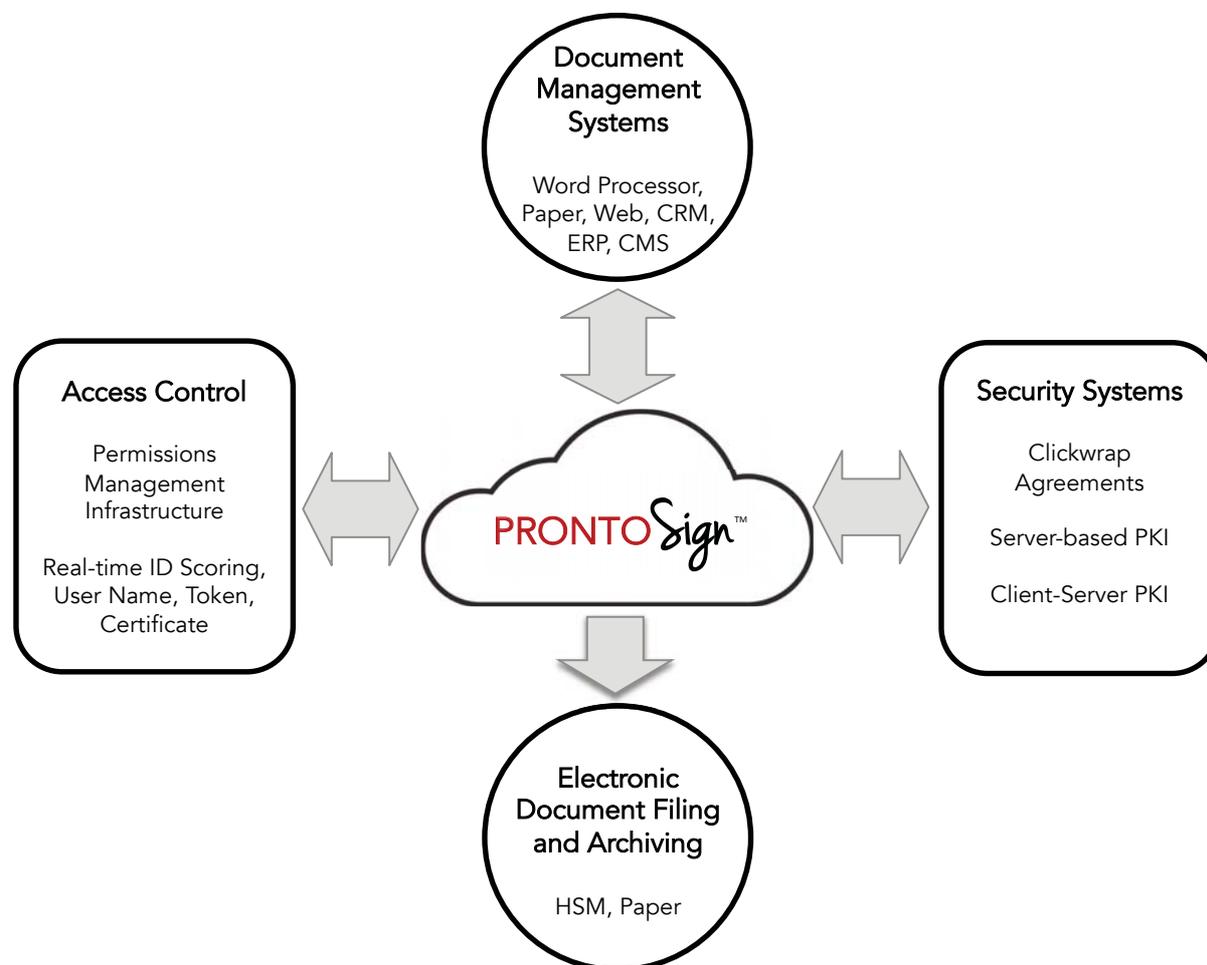


Figure 2 - Dynamic Document Workflow Example

PRONTOSign™ manages the completion / execution phase of document processes, whether a single document, single-signer transaction or a complex closing involving multiple documents and multiple signers. PRONTOSign™ uses web and email processes to manage the complete execution cycle for a transaction. The result is a completed document set for the transaction in fully electronic form. Completed documents may be transmitted, filed and archived electronically or printed for paper filing.

PRONTOSign™ supports multiple user authentication methods to identify signers and jurisdictional rules management to deal with the various requirements imposed by special regulations or state rules, especially in the area of consumer consent and disclosure.

PRONTOSign™ is an essential part of an e-business infrastructure and can integrate and interoperate with document management systems and security systems (see technical overview).

PRONTOSign™ Architecture

PRONTOSign™ software is an application server-based transaction system. It is available as a cloud service or for on-premise installation where it can be easily embedded within an existing business application or workflow. PRONTOSign™ is designed to address three important classes of use cases:

- 1) Straight Through Processing, referred to as “STP” below,
- 2) General Business Process Workflow, referred to as “Workflow” below, and,
- 3) Ad-hoc or on-demand work, referred to as “Ad-hoc” below

Straight Through Processing (“STP”)

STP use cases have these characteristics:

- Process control is critical
- Focus is on system generated documents
- Direct integration with upstream document generation systems
- Direct integration with downstream operations and archival systems
- Achieves “no touch” end to end paperwork automation - STP
- Very high process quality and large reduction in human processing and intervention
- Requires a formal project: analysis, integration, deployment
- Owned by IT or Operations

For STP use cases, your applications communicate with PRONTOSign™ via industry standard web services.

General Business Process Workflow

Workflow use cases have these characteristics:

- Process control is important
- Differs from a core process in that it does not justify a formal integration project (needs a “no code” approach)
- May or may not connect to upstream and downstream systems
- May use system generated, process generated, or user generated documents
- Achieves “low touch” end to end paperwork automation
- High process quality and good elimination of human processing and intervention
- Typically uses an informal project: analysis, process creation (using tools), deployment to end users
- Implemented typically by a business analyst or process engineer using design tools and configuration

The principal difference between an STP approach and a general Workflow approach is that you don’t need integration and developer / IT resources for a Workflow use case. PRONTOSign™ provides the tools, access via a web browser, for designing, testing, and publishing workflows for other users to use.

Ad-Hoc Work

Ad-Hoc work use cases have these characteristics:

- Process control is less important, or managed elsewhere
- User defined and controlled (i.e. send a desktop document for signature)
- Relies on end user to define a template or use a one-off ad hoc approach
- Uses user generated or managed documents
- No or minimal data collection required, no or low data validation, no processing rules
- Not integrated with other systems
- Achieves avoidance of direct handling of paper (fax, mail) but low elimination of human processing and intervention
- fast to deploy

The Ad-hoc approach is what most people have had exposure to if they have used eSignature tools at all. The approach here typically is to upload a document you would like to send for signature, tag signature locations, enter recipient names and email address, and send for signature. This approach has its place but it only achieves the tactical benefit of getting a document signed faster, and depends on the tool user to get everything right (no process control).

The strength of PRONTOSign™ is in the power to address all of these use cases along with the flexibility to deploy in house or be consumed as a cloud service.

Transactions in PRONTOSign™

The basic unit of work for PRONTOSign™ is a transaction. Each transaction is defined as one or more participants that need to perform tasks against one or more documents. These tasks may include review, approval without signature, eSignature (including initials were needed), form completion, or secure delivery and receipt.

Each participant is authenticated using one of a number of access control methods before being allowed to perform tasks. PRONTOSign™ communicates with signers via web and e-mail interactions. PRONTOSign™ users are defined as either registered or unregistered users. Examples of registered users are employees, vendors and existing customers. Registered users may be authenticated using single sign on via federated authentication or with a defined user name and password. Examples of unregistered users are new customers and one-time transactional users.

Additionally, registered users have a signature profile, may use an image of their handwritten signature, have access to documents they have signed in the PRONTOSign™ archive and have access to other features not available to unregistered users. Unregistered users may either be unauthenticated, be authenticated with a one-time transactional password, or use challenge-response knowledge-based authentication (KBA) via third party providers.

Documents processed by PRONTOSign™ are typically stored and managed as HTML documents or as PDF documents. Even though some documents may originate in proprietary formats such as Microsoft Word, it is more effective to convert them to a native HTML or PDF format prior to execution, which can be done automatically. Industry groups have studied their long term requirements and concluded that the open, standard HTML or

PDF formatted documents best meets the need for permanent electronic documents. The reasons are many. Both HTML and PDF:

- 1) Are open standards.
- 2) Will be long lived and supported.
- 3) Support data embedding and mining.

For example, the mortgage industry has a 37.5 year archive requirement. There is concern with using proprietary formats such as Word files as to whether old file versions will be supported more than a few years out. Additionally, such formats often use “active content” technologies (which means the documents are programmable), which can cause them to be unenforceable. PRONTOSign™ natively supports and is designed with the requirements of HTML and PDF documents in mind. Additionally, the trend in government applications, such as online filing, is to accept only open document standards including text, HTML and PDF (including PDF/A). So, while other document formats are very useful for document creation, they can have serious drawbacks as permanent document formats.

Document integrity – once a document is signed, the signer’s electronic signature in the form of a signature block is inserted into the document, and the document is “sealed” with a digital signature. The digital signature provides evidence of document tampering or alteration after signing. This is an essential security requirement for any enforceable digital document. Digital data can be easily and undetectably changed. Digital data protected with a digital signature has a tamper evident seal. If the data is changed after signing, it can be easily detected.

When deployed on customer premises, PRONTOSign™ is provided as server-based software running on Windows Server 2008 R2, 2012, or 2012 R2. It easily integrates with Web processes operating on UNIX, Linux, or mainframe applications using a Web services programming interface (WS-*).

PRONTOSign™ is also available as a cloud service hosted by AlphaTrust. Customers may use our standard multi-tenant Software-as-a-Service (SaaS) offering, or may subscribe to a dedicated managed service (single-tenant SaaS). With either cloud service there is no software to purchase and AlphaTrust will manage the entire process for you. If you choose the single-tenant SaaS option, you may choose to migrate from the cloud to your own on-premise deployment whenever needed.

Electronic and Digital Signatures

You have likely heard these terms used interchangeably. In reality, they are very different, and the fact that both terms use the word “signature” has caused confusion.

An electronic signature is a legal concept for using an electronic symbol to represent a person's volitional consent to be bound to the terms of a document. What you must achieve with any business process that requires an enforceable document, is to obtain a legally-valid electronic signature for that document using the proper processes. This is what the PRONTOSign™ is designed to do.

A digital signature is a technical security concept for a data integrity process using cryptographic data hashing and encryption. Simply applying a digital signature process to the data of a document will generally not result in an enforceable electronic signature. Digital signatures are a very important security tool and PRONTOSign™ uses digital signature technology in its electronic signature processes.

PRONTOSign™ uses cryptographic security technology. In its standard configuration, PRONTOSign™ uses its own server cryptographic signing keys to apply the required digital signatures (“digital seals”) to documents. In this configuration there is no requirement for a public key infrastructure. PRONTOSign™ may be integrated into a PKI, if required (for example to support EU Advanced or Qualified Electronic Signatures). PRONTOSign™ can support both software key sets and hardware key sets. PRONTOSign™ manages all documents securely on the server during the signing process. There is no opportunity for a signer to alter a document presented to them for signature. Once a signer has indicated their consent to sign, by clicking in appropriate locations in a document, PRONTOSign™ software will insert their signature block into the document, seal the document with a cryptographic digital signature and records the details in an audit trail.

DISPUTE RESOLUTION AND ADMISSIBILITY

Electronic signature laws do not require the use of the processes and security measures employed by PRONTOSign™, but they are invaluable in establishing best practices, data integrity, and chain of custody. In the event an electronically signed document is disputed the most likely challenges to the document will be one of these:

1. It wasn't me. I did not sign that document.
2. I signed a document, but that is not the one I signed. It was changed.

PRONTOSign™ will provide the following information to assist in refuting these claims:

- A time-stamped audit trail of document review and signing.
- A record of the Internet IP address of the signer.
- Authentication methods used to identify the signer.
- The actual signed document with cryptographic verification that the document has not been altered since it was signed. This is accomplished by verifying the cryptographic, time-stamped, digital signature of the document.

In addition to this information, your business process will also have additional evidence that weighs on the case. Examples include user authentication employed, for example by a customer portal application, and “course of dealing” history, i.e. how the parties acted before and after the transaction.

DOCUMENT DATA INTEGRITY

One of the key security elements of a document processed by PRONTOSign™ is the digital signature computed for each signed document. In a standard deployment of PRONTOSign™ each document, whether in HTML or PDF format, is hashed and digitally signed including a time stamp. The data comprising the digital signature is stored in the database used by PRONTOSign™. Web links are also embedded each document that, when clicked, will link to a web page that produces the audit trail and verification information for the digital signature. In addition, copies of signed documents not stored within PRONTOSign™ may also be verified using programming interfaces provided by the software.

As an optional step, and only for PDF formatted documents, an additional cryptographic digital signature may be embedded in the PDF document itself. This PDF digital signature may then be independently verified by products such as Adobe® Reader or Adobe® Acrobat on a standalone basis, without any link to the original PRONTOSign™ database. Key audit trail data is also embedded as metadata in the PDF document.

No End User Software Requirements

One of the strengths of the PRONTOSign™ architecture is that the only user software requirement is a web browser for both a mobile and a desktop environment. PRONTOSign™ does not use any client side software, plug-ins, Java code, ActiveX controls, or similar technology. It supports wireless touch devices such as smartphones and tablets (Apple iOS, Android, Windows and Blackberry OS), as well as standard PC and Mac desktop and laptop computers. When using the optional client-side digital certificate capability, PRONTOSign™ requires Internet Explorer v9.0 or higher on the desktop. Adobe Acrobat® Reader v7.0 or higher is required for viewing signed Adobe® PDF documents, but is not required for the review and signing process.

Typical Uses

PRONTOSign™ is typically integrated into web-based business process workflows to perform the function of creating legally enforceable documents including the proper gathering of electronic signatures from all parties to a transaction. The software is broadly applicable to any business process requiring documents or records in permanent form.

Summary

AlphaTrust's PRONTOSign™ is designed from the ground up to meet the requirements for technical security, transaction enforceability, legal and regulatory compliance.

AlphaTrust offers a clear solution for meeting the challenge of EU eIDAS, VAT invoicing, ETSI technical requirements as well as other electronic record and electronic signature issues. We welcome the opportunity to work with you to meet your specific business needs.

Thank you for your interest in AlphaTrust products and services. For further information, visit www.alphatrust.com, call us at +1.214.234.9200, option 1, or send us an email at info@alphatrust.com.

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