

DIGITAL TRANSFORMATION WITH **ENGINEERS NOVA SCOTIA** DIGITAL SIGNATURES

June 2023





Agenda

- **Why do engineering/geoscientists associations issue wet seals?**
- **Why does Engineers Nova Scotia issue digital signatures?**
- **3 types of electronic signatures**
- **What does a signed PDF look like?**
- **What does a modified PDF look like?**
- **Demo**
- **Why Notarius?**
- **Pricing**
- **Help**
- **Next Steps**
- **Questions?**

5 reasons that motivate clients to digitally sign documents



MOTIVATIONS

ENVIRONMENT



SECURITY



PRODUCTIVITY



QUALITY



FINANCIAL





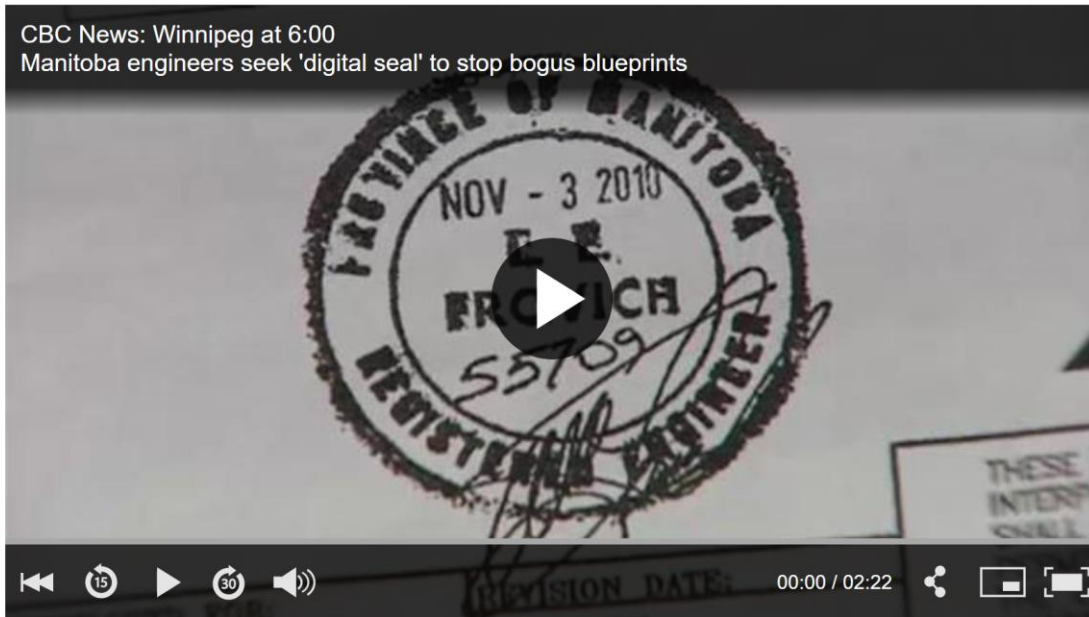
It can't happen to me?

Engineers push 'digital seal' to stop bogus blueprints

APEGM joins investigation of counterfeit seals on home plans

CBC News · Posted: Feb 26, 2013 6:38 PM CT | Last Updated: February 26, 2013

CBC News: Winnipeg at 6:00
Manitoba engineers seek 'digital seal' to stop bogus blueprints



The association representing professional engineers in Manitoba has joined the City of Winnipeg in trying to discover who used a counterfeit seal blueprints used to build three houses. CBC's Katie Nicholson reports.
2:22

<http://www.cbc.ca/news/canada/manitoba/engineers-push-digital-seal-to-stop-bogus-blueprints-1.1359641>

New article - Forged inspection documents shine light on Ontario's troubled building department practices

<https://www.cbc.ca/news/canada/kitchener-waterloo/engineering-building-inspectors-ontario-1.5676977>

More Examples & Illegal Practice



«Professional Engineers Ontario had revoked Cook's licence in 2014 ... He had surrendered his seal, but made a duplicate and had used it on plans... A building official who received the building documents checked the status of the engineering licence and realized the problem.»

Ontario contractor fined \$5,000 for unauthorized use of professional engineer's seal

Dole Contracting Inc. of Woodbridge, Ontario, was convicted of breaching the Professional Engineers Act by the Ontario Court of Justice.

Toronto-area man convicted for illegal use of "professional engineer" title

Individual was fined \$15,625 (including a 25% victim fine surcharge of \$3,125) after his guilty plea to four counts of breaching the Professional Engineers Act.

Former engineer made duplicate of surrendered seal

Pickering man fined \$10,000 for illegal use of P.Eng.

Working as a "construction superintendent" the individual used the title "P.Eng." in 40 emails between May, 2016 and June 2017.

Sources

- <https://www.canadianconsultingengineer.com/companies-people/ontario-contractor-fined-5000-unauthorized-use-professional-engineers-seal/1003406122/>
- <https://www.canadianconsultingengineer.com/business-professional/former-engineer-made-duplicate-of-surrendered-seal/1003401653/#>
- <https://www.canadianconsultingengineer.com/business-professional/toronto-area-man-convicted-illegal-use-professional-engineer-title/1003407082/>
- <https://www.canadianconsultingengineer.com/companies-people/pickering-man-fined-10000-for-illegal-use-of-p-eng/1003409049/>

**Why do engineers use
a seal to authenticate
official
documents/drawings?**



Sealing & Signing a Paper Document

Paper documents must meet 4 guiding principles to be considered official.

- 1) Identity & Authorization:** Seal confirms identity of trusted issuer, unique identifier (member number), professional designation, personal identity.
- 2) Authenticity:** Engineer's signature confirms the authenticity that it is associated with the identity of seal.
- 3) Integrity:** By sealing and signing, the integrity of the document is confirmed and dated to a particular moment in time.
- 4) Longevity:** Paper selected for ease of use and long term archiving. Replaced blue prints.



Why are engineering/geoscientist associations issuing digital signatures in Canada?



12 of 12 Engineering/Geoscientist Associations Manage Digital Signatures

- Control over use of seal
- Best Practices in Cyber Security
- Government Recognition
- Address authentication evolution of engineering practice (BIM)
- Provide a base level of trust
- Add value to the profession
- Align with increased authentication requirements
- Provides technological leadership and removes guesswork

**How does Engineers NS
issue digital
signatures?**



Engineers Nova Scotia Guidelines

Most Canadian engineering/geoscientist bodies have guidelines that require issuance of wet seal and digital seal/signature by the association AND require both image and digital signature certificate.

For example, Engineers Nova Scotia has chosen to control use of seal for digital authentication, in the same manner as the wet stamp for paper authentication.

Guideline for Use of the Professional Stamp





Other Atlantic Associations That Issue Digital Signatures



Architects' Association
of New Brunswick

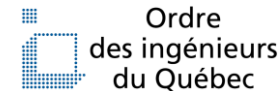
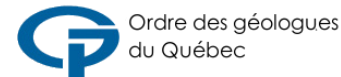
Association des architectes
du Nouveau-Brunswick



Appraisal Institute of Canada
Institut canadien des évaluateurs



54 Regulators Across 16 Professions in Canada



What is a digital signature?



Terminology

Signature	Electronic Signature	Digital Signature
<p><i>Permanent marks bonded to static documents that are traceable, exclusive and personal to persons. They constitute evidence of implicit or explicit intent.</i></p> <p><i>Permanent – Binding – Static Traceable – Exclusive – Intent</i></p>	<p><i>Signatures in the electronic medium. They cover a vast array of use cases and are of varying reliability.</i></p>	<p><i>Electronic signatures in which reliability characteristics have been reinforced with cryptography to augment document reliability.</i></p>
	Digital Signing Certificate	Certificate Authority (“CA”)
	<p><i>Cryptographically protected information in which the veracity of the certificate details is certified by a Certificate Authority</i></p>	<p><i>Organization operating one (or several) Public Key Infrastructure(s) and managing the lifecycle of digital certificates</i></p>



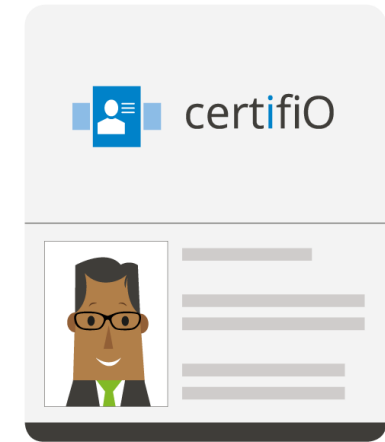
3 TYPES OF SIGNATURES



ELECTRONIC SIGNATURE



TRUSTED ELECTRONIC SIGNATURE



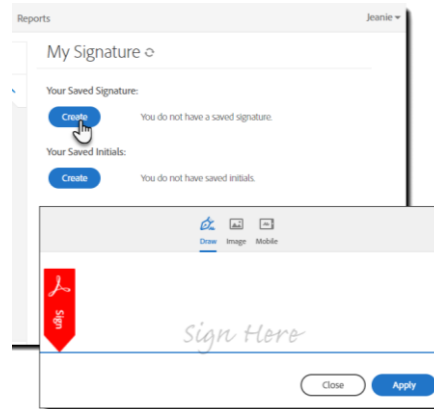
DIGITAL SIGNATURE

Varying Levels of Reliability

Electronic Signatures

Trusted Electronic Signatures

Digital Signatures

A handwritten signature of Oprah Winfrey in black ink.

signaturely



HELLOSIGN
a Dropbox Company



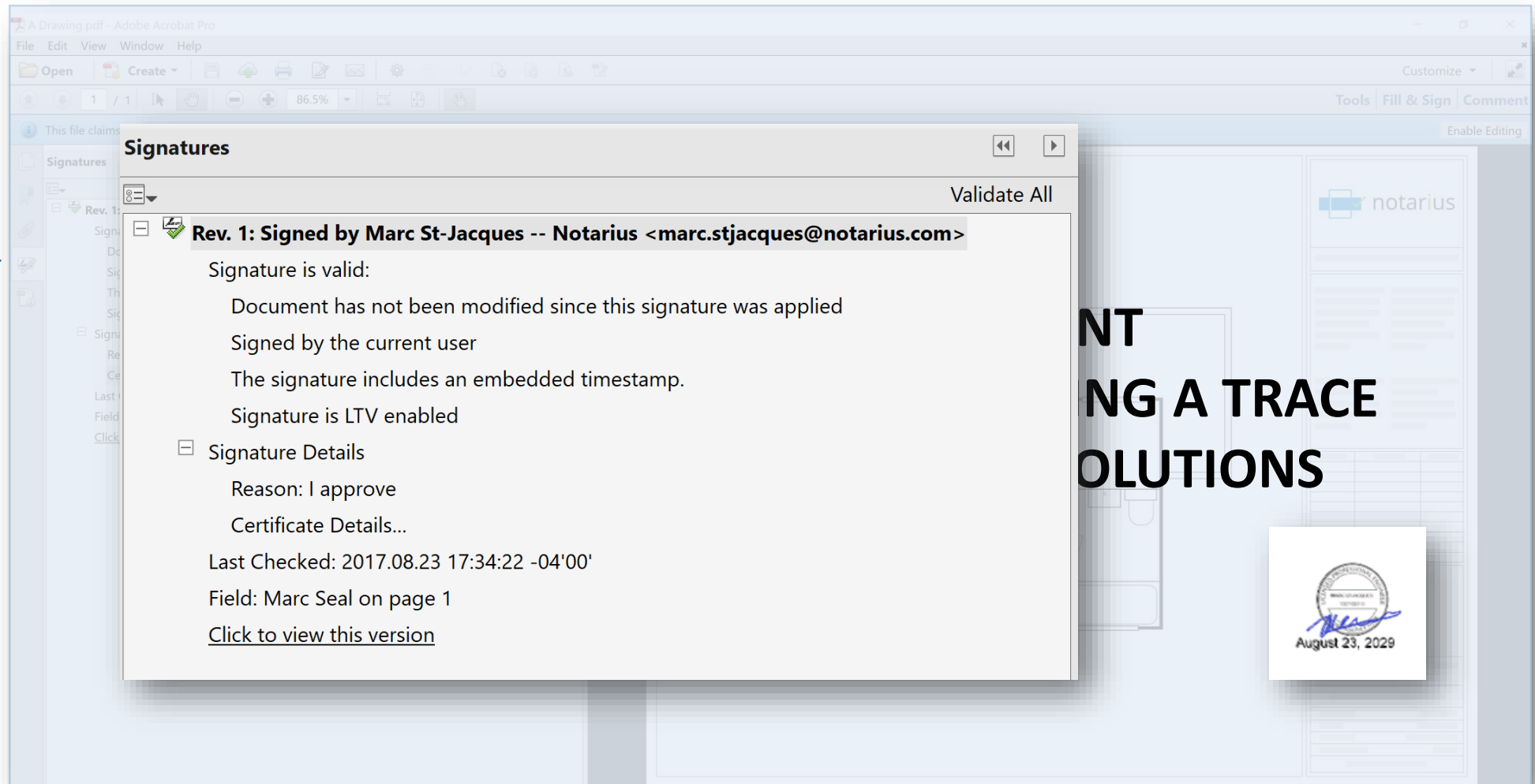
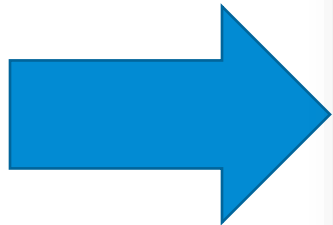
Higher Legal Value / Higher Legal Reliability



What does a signed PDF look like?

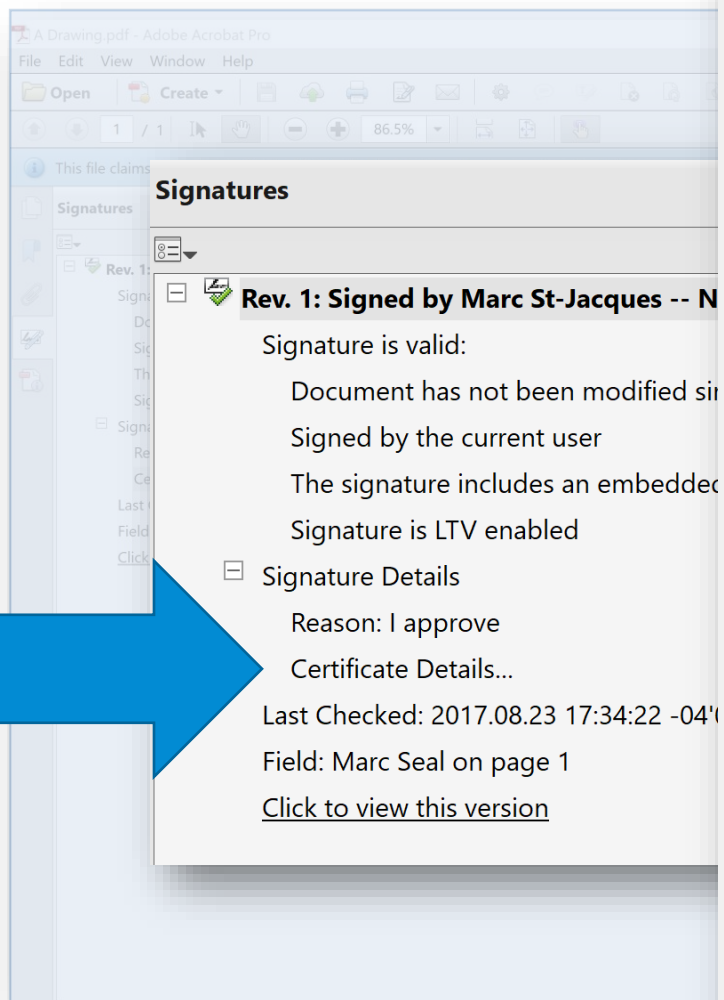


What Does a Digitally Sealed/Signed PDF Look Like?



NT
NG A TRACE
OLUTIONS

What Does a Digitally



Certificate Viewer

This dialog allows you to view the details of a certificate and its entire issuance chain. The details correspond to the selected entry.

☐ Show all certification paths found

Notarius Certificate Authority
Marc St-Jacques -- Notarius

Summary Details Revocation Trust Policies Legal Notice

Certificate data:

Name	Value
Version	3
Signature algorithm	SHA256 RSA
Subject	0.9.2342.19200300.100.1.1=marc.stjacqu...
Issuer	cn=Notarius Certificate Authority, o=Not...
Serial number	37 DE AB 8A 00 00 00 00 54 92 53 01
Validity starts	2017/02/02 14:43:16 -04'00'
Validity ends	2019/02/02 15:13:16 -04'00'
Subject key identi	<see details>

0.9.2342.19200300.100.1.1=marc.stjacques@notarius.com
cn=Marc St-Jacques -- Notarius
ou=Solutions Notarius
o=CertifiO - Empl. - AATL
c=CA

The selected certificate path is valid.

The path validation and revocation checks were done as of the secure (timestamp) time:
2017/08/23 17:34:00 -04'00'
Validation Model: Shell

OK

What is trust in a digital environment?

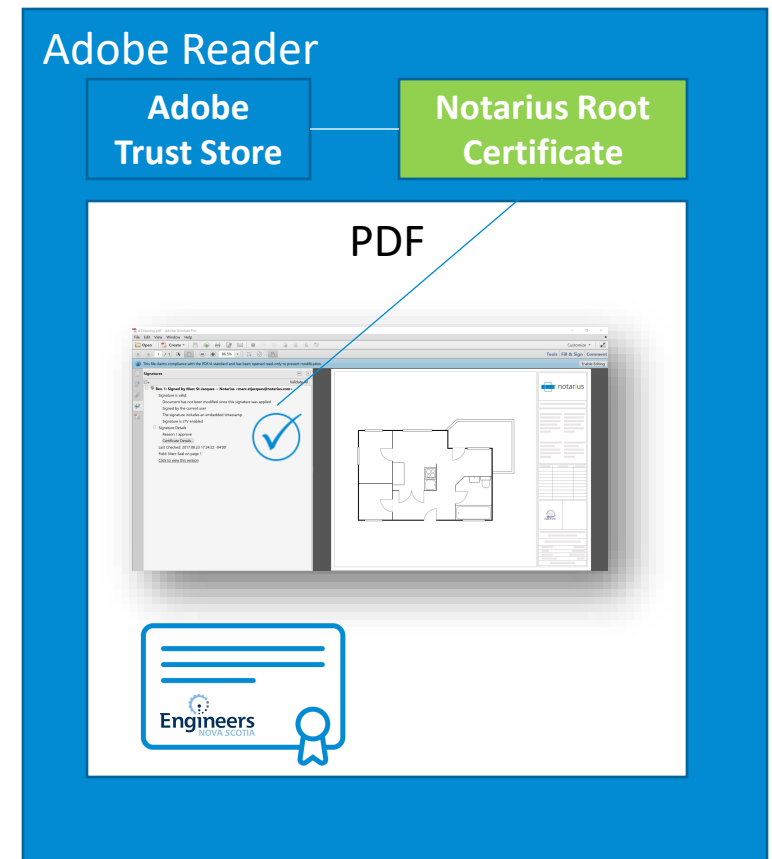
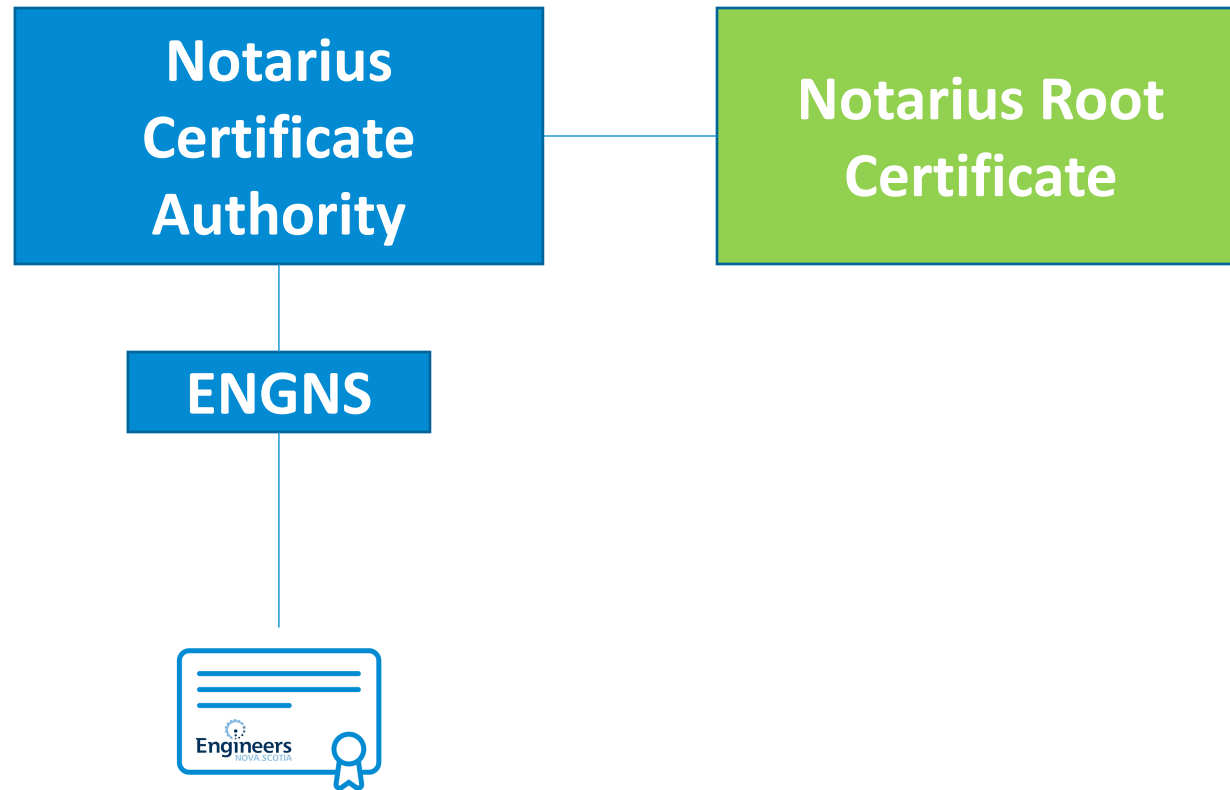


What is Trust?

Technology	Issuer	User Authenticity	Trust	Capable of Verification	Control Use of Seal
Electronic Signature	None	None	None	None	None
Adobe Acrobat Password or Self-issued Digital signature	None	None	None	None	None
Adobe Sign/DocuSign Online signing platform	Corporate Server	Server signature Audit based	Low if 1 factor Medium if 2 factor	Medium	None
Corporate Digital signature	Active Directory	Password Optional	Low if 1 factor Medium if 2 factor	Limited	None
3 rd party Digital signature provider	3 rd party	Password Optional	Low if 1 factor High if 2 factor	Medium-High	None
ENGNS Digital signature	ENGNS	Password Required	High	High	High



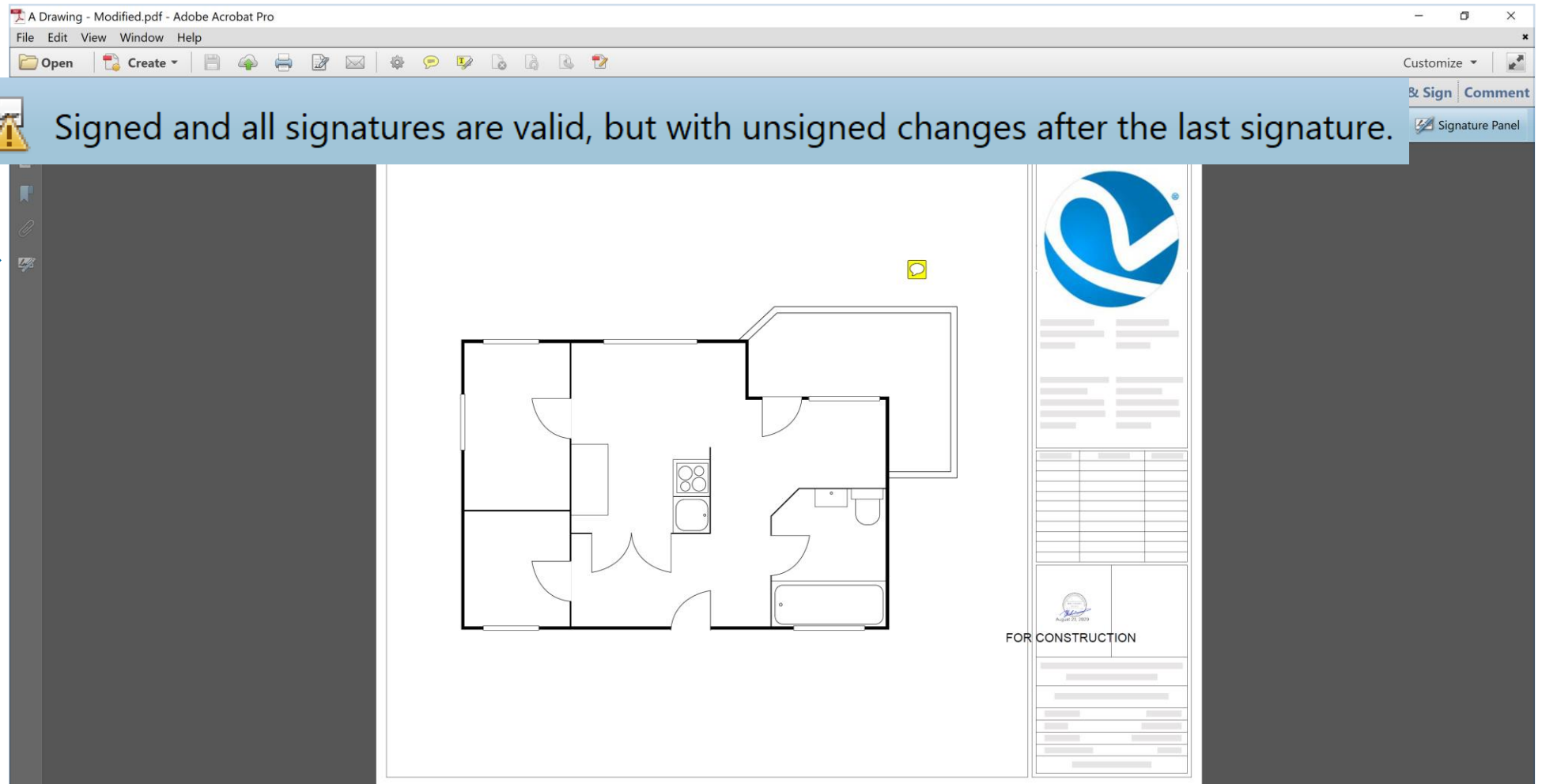
How Can Customer Trust CertifiO Digital Signatures?



**What does a modified
PDF look like, if digitally
sealed?**




Digitally Signed PDF That Was Tampered

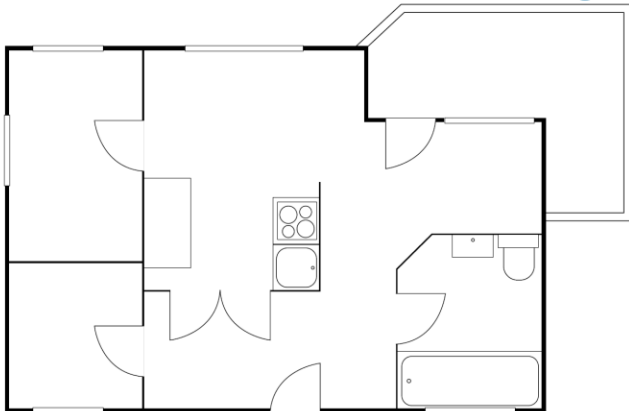






Digitally Signed PDF That Was Tampered

 Signed and all signatures are valid, but with unsigned changes after the last signature.

Rev. 1: Signed by Marc St-Jacques -- Notarius <marc.stjacques@notarius.c>
Validate All
Signature is valid:
This revision of the document has not been altered
There have been subsequent changes to the document
Signed by the current user
The signature includes an embedded timestamp.
Signature is LTV enabled
Signature Details
Last Checked: 2017.11.12 12:11:54 -05'00'
Field: Signature1 on page 1
[Click to view this version](#)
Annotations Created
FreeText annot on page 1
Text annot on page 1
Stamp annot on page 1



Digitally Signed PDF That Was Tampered

Signed and

Rev. 1: Signed by Marc St-Jacques -- Notarius <marc.stjacques@notarius.com>

Signature is valid:
This revision of the document has not been modified since this signature was applied.
Signed by the current user.
The signature includes an embedded timestamp.
Signature is LTV enabled.

Annotations Created

- FreeText annot on page 1
- Text annot on page 1**
- Stamp annot on page 1

Signatures

Rev. 1: Signed by Marc St-Jacques -- Notarius <marc.stjacques@notarius.com>

Signature is valid:
Document has not been modified since this signature was applied.
Signed by the current user.
The signature includes an embedded timestamp.
Signature is LTV enabled.

Signature Details

Reason: August 23, 2029
Certificate Details...
Last Checked: 2017.11.12 12:20:02 -05'00'
Field: Signature1 on page 1

notarius

August 23, 2029

Demo



Our Solutions



certifiO

Identity



consignO

Productivity

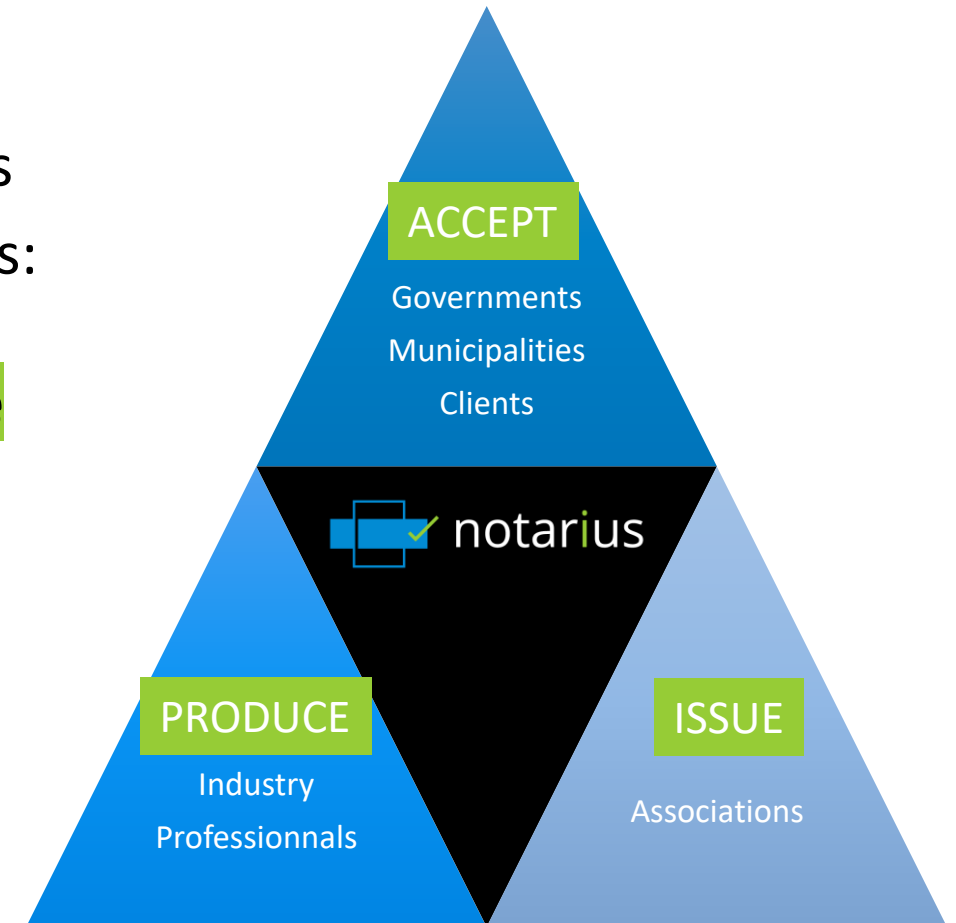




Digital Ecosystem

Digital signatures are secure and recognized as a best practice method of authentication for electronic records
For this ecosystem to thrive, it requires 3 key ingredients:

- A governing body (ENGNS) that controls the **issuance** of digital signatures.
- A customer that **accepts** digitally authenticated documents.
- Industry Professionals **produce** electronic originals with association issued digital signatures to ensure trust, reliability authorization to seal documents destined to customers/government agencies.



What Impacts Have We Seen

Impacts for Professionals



Use of the digital signature

- ✓ +50% use digital signature once a week (10% every day)
- ✓ +40% sign more than a dozen documents per month
- ✓ 97% customer satisfaction (Product and Services)
- ✓ 92% renewal rate (most non renewals are retirements)

Key Benefits listed by our customers

- ✓ Security and integrity of document (94%)
- ✓ Better environmental practice vs paper (92%)
- ✓ Increased productivity (86%)
- ✓ Improved visual quality of PDF (81%)
- ✓ Cost reduction (76%)

Impacts for Businesses



- Enabler of digital Transformation;
E-document reliability vs document management
- Digital document lifecycle management
- Business continuity
- More efficient use of human resources
- Time savings
- Money savings
- Reduced liability and cyber risk

Impacts for Relying Parties



- Automation of document management processes
- Moving away from paper management (printing, scanning, courier, handling, archiving etc.)
Ex: NB Power, Transport NB, ALTO, Transport Alberta & Quebec, local governments etc.
- Security with document reliability
- Avoiding document forgery
- Benefits of instant validation
- PDF/A ISO 19005 archive standard for long term retention



Costs of the service

Engineers Nova Scotia's Digital Signature

The digital signature held by members of Engineers Nova Scotia confirms the civic identity and professional designation of its members at the time of signing. It serves as proof that the signer is in good standing and has the right to practice in Nova Scotia, in addition to ensuring the integrity of the signed documents and preventing their falsification.



Pricing and Subscription

\$99 One time sign-up fee	\$195 Yearly subscription	Subscribe
-------------------------------------	-------------------------------------	---------------------------

Practicing in More Than One Province?

Get a digital signature for an additional jurisdiction at a discounted price once you hold an approved and activated Professional Signature.*

*Signatures must bear the same name. The discount applies to the lower-priced signature.

\$0 Sign-up fee	\$99 Yearly subscription	Subscribe
---------------------------	------------------------------------	---------------------------

Volume discounts available for groups of 50 or more subscribers

**Can I test these
different types of
digital signatures?**

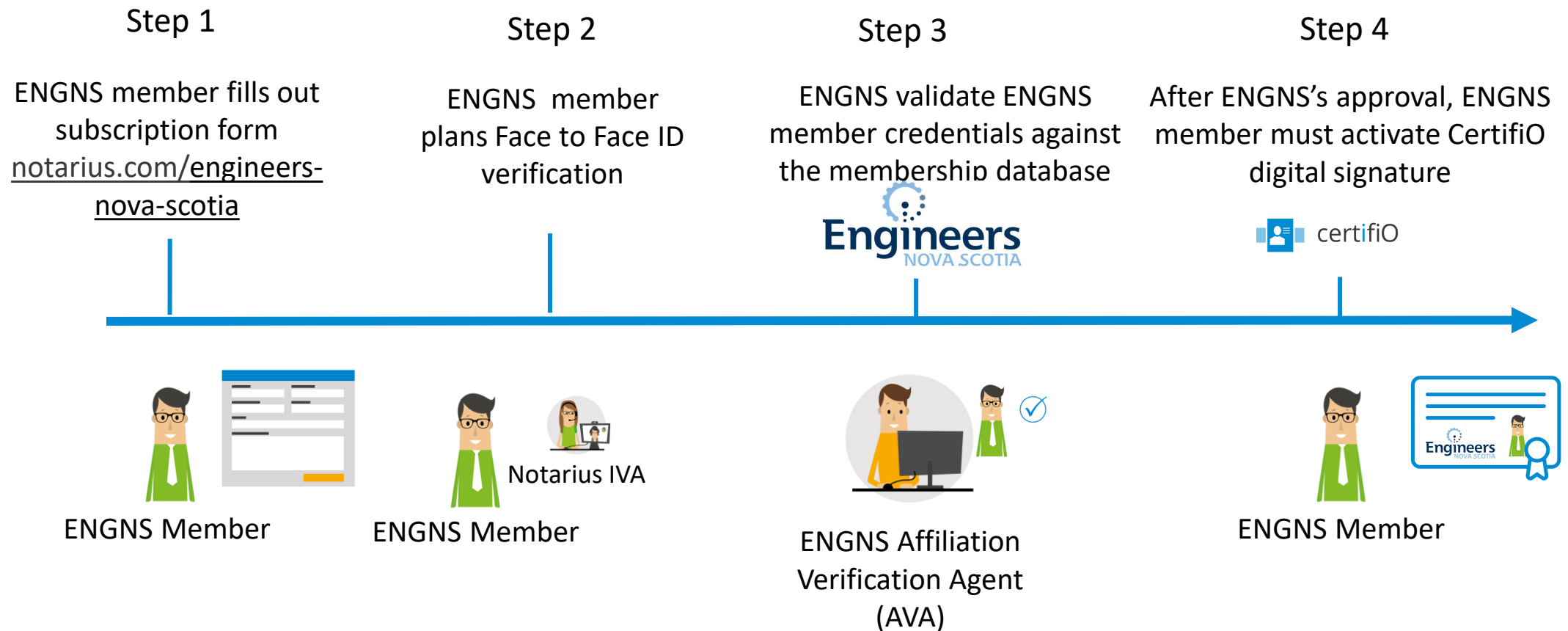


Evaluate the certifiO Suite

- **Create a test digital signature**
 - <https://notarius.com/en/evaluate-certifio-suite/>
 - Digital identity is linked to a person
 - Download certifiO Suite: CertifiO and ConsignO
 - Evaluate free: 60 days



Digital Signature Subscription Process





Need Help?



Notarius
Customer Care

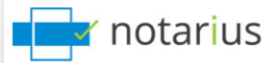
Notarius presently services a large community of users from coast to coast. As such, our digital signature services include a variety of training tools and assistance, free of charge.

- **Help/FAQ Section:** <https://notarius.com/help>
- **ConsignO Desktop Training Videos:** <https://notarius.com/videos>
- **ConsignO Desktop User Guide:** <https://notarius.com/guide>
- **Live Webinar every Wednesday at 1PM Eastern Time:** <https://notarius.com/webinars>
- **Support via Email:** support@notarius.com
- **Support via Phone:** 1-855-505-7272
- **Online Chat Service.** <https://notarius.com>



www.notarius.com/resources

This web page is filled with numerous documents to assist firms that may have questions about digital signatures from a legal, security, technology or application perspective. It is meant as a compliment to www.mydigitalseal.com



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Notarius

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[Who is Notarius](#)

The 3 Types of Electronic Signatures

[The 3 Types of Electronic Signatures](#)

The Digital Last Mile

[Notarius – The Digital Last Mile](#)

Legal Framework for Electronic Signatures

[Legal framework for electronic signatures](#)

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Common Questions About Digital Signatures

Notarius is a government-grade digital signature solution with over 20 years of experience serving many associations in a range of industries, including field, architecture and land surveying. While digital transformation, many departments' reliability, compliancy, security, technology and more. This document aims to answer some common questions that arise when evaluating Notarius' solutions.

LEGAL

Q Why do professional associations choose to issue digital signatures to their members?

A Controlling the use of seals and protecting the public is an integral part of an association's responsibilities. In paper form, this is accomplished by placing a seal that embeds the name, member number and designation as a member and is made official by hand signing and dating the document. But how can associations securely seal official documents in a digital world where a seal can easily be replicated and copied from one document to another? Associations that offer digital signatures choose to centralize use of seals in a digital world to ensure that only members in good standing can sign official documents. It also allows clients and government agencies to instantly verify that the document has been signed by a professional with the authority to do so.

DRAFTING GOES DIGITAL A Drafter's Perspective



We met with a drafter who works for an international engineering and construction firm and uses ConsignO Desktop at work. When she started working with the firm, it was going through a complete digital transformation and was just beginning to use ConsignO Desktop to prepare and sign their electronic documents. During the interview, she described how she experienced the implementation of ConsignO Desktop in her work environment and how it rapidly became a daily essential tool.

How long have you been using ConsignO Desktop?

I have been using it on a regular basis for approximately three years.

"Prior to using ConsignO Desktop, the handling of documents was a loss of a day's work."

Prior to using ConsignO Desktop to create original documents, what process were you using and what part of it was the most time consuming?

We had to print the original plans, have them signed, and then scan them one by one. And using large format scanners can be complicated because we must make sure that the documents are precisely positioned, etc.

NOTE: The revocation of a signature does not invalidate previously applied signatures (since they were in good standing at the time). It only prevents individuals from signing new documents.

Once the documents were in PDF format, they had to be converted to PDF/A before they could be sent. Furthermore, engineers are extremely busy, so it wasn't always easy to find time when we were both available, and that would increase the length of the process even more. Therefore, prior to using ConsignO Desktop, the handling of documents when sending original copies was a loss of a day's work.

How long would it take to produce a series of certified plans for a project?

In paper format, sometimes up to an entire day! But with the digital seal, for the same number of plans, between 20 and 30 minutes. We're saving an incredible amount of time!



What aspects of the document creation presented more difficulties (duration of the process, scanning, document delivery, image quality)?

The process had numerous wait times, steps and verifications at the end of each step. Sometimes, there were printing mistakes: the plans were not printed correctly, they had run out of ink, or the seal had not been applied properly and

OPERATION



Include signing drawings, delivering them to construction sites, as well as archiving them for a period of more than 100 years. Furthermore, it only works with original documents.

The organization to reduce:

Printing, transportation and archiving costs.

* The risk of error (sending a copy of the drawing rather than its original version).

RESULTS

- Reduced timeframe**
Entire process time cut from 7-10 days to mere minutes.
- More money**
Savings of over \$1,000,000 per year with regard to printing, transportation, archiving and related costs.
- Easier**
Signing and stamping original digital drawings is easier thanks to ConsignO™ Signing Solutions.
- Enhanced reliability**
Signer's identity, professional status and document integrity are ensured by the digital signature. The document's sustainability is guaranteed through its PDF/A format.

For More Information

notarius.com | 1-888-586-0011 | info@notarius.com



CHAT WITH US



Next Steps?

- What documents should be digitally signed? Drawings/Reports/Project Updates
- Who should have a digital signature versus an electronic signature?
Engineers/Geoscientists or administrative staff
- Who should lead this project? IT/Document Control/Project Management
- What documents require signatures from outside parties? Clients/Suppliers
- Where do you begin the digital transformation? Drawings or Administrative Documents
- When do you start?

Contact

Eric Croteau

Account Director

1 888-588-0011, #1283

eric.croteau@notarius.com

Mélanie Carrière

Digital Transformation Advisor

438.508.3606

melanie.carriere@notarius.com