



## Streamline digital processes

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**280 billion business documents** are exchanged every year between EU 28 countries, for an estimated overall yearly cost of **€1 trillion**. Digital processes could provide saving for 2/3 of this amount. Just for 27 billion BtoB invoices exchange each year, European Commission estimate at €200 billion yearly annual cost savings from electronic processing.

With eIDAS regulation coming into force in EU28 in mid-2016, drastic changes are ongoing, including companies' assets progressively becoming fully digital. Operators handling digital documents (including ERP, CRM...) will bear responsibility for compliance over their own assets.

Requirements for greater agility, mobility and independence currently boosting SaaS applications, will require greater focus over data security policies and procedures to fulfill security breaches. Request for enhanced secured transversal applications will be driven by upcoming cybersecurity assurance policies.

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TRUSTSEED promotes the first **Ternary Telecommunication Framework** to securely and compliantly handle and connect heterogeneous digital document systems from accredited communities. **Penseal**® suite of e-authentication and e-signature services, is an opening set of tools aims to compose this first patented pan-European tripartite cloud architecture eIDAS compliant, to be fully released before eIDAS will come into force.

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**Legal on-demand eSignature application over the Cloud**



**Electronic Authentication set of services upon request**



**Pay-per-transaction basis, regardless of document size\***

\* up to 5 Mo



# SINGING as a SERVICE • WITH PENSEAL e-SIGNATURE •

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Penseal e-Signature is an open and secured electronic signature solution to seamlessly automate electronic signature operations into document processes handled at the client-applications level.

It provides a centralized service-oriented signing platform handling variety of electronic certificate supports – smartcard or software – and configurations, depending of intended process and type of documents handled – either using personal signer's electronic certificate or default server qualified one, as part of delegation of signature.

Penseal e-Signature supports as input document formats **XML** and **PDF**. Option to encapsulate document to be signed with the signatures is available for better preservation over the time; both **opaque and detached signatures** are supported (in the latter case of CAAdES formats of signature).

**X509 certificates** issued by Certification Authorities (CAs) all over Europe are supported.

Penseal **on-demand trusted timestamping** encapsulates results according to industry's standards - RFC 3161 - providing a long term validation and non-repudiation of the time associated with electronic signatures.

**Functions of validation** of electronic signature – cryptographical mechanisms – and electronic certificates to control their validity 'at the time of signing' through a request to their respective revocation lists, are integrated in the solution. An audit data – or validation data – can be associated with electronic signature to subsequently record e-signature validity at the time of signing.

**Key management** allows allocation of resources based on user's credentials; secrets are hosted in a highly secured environment – both logically and physically protected – and are non-exportable.

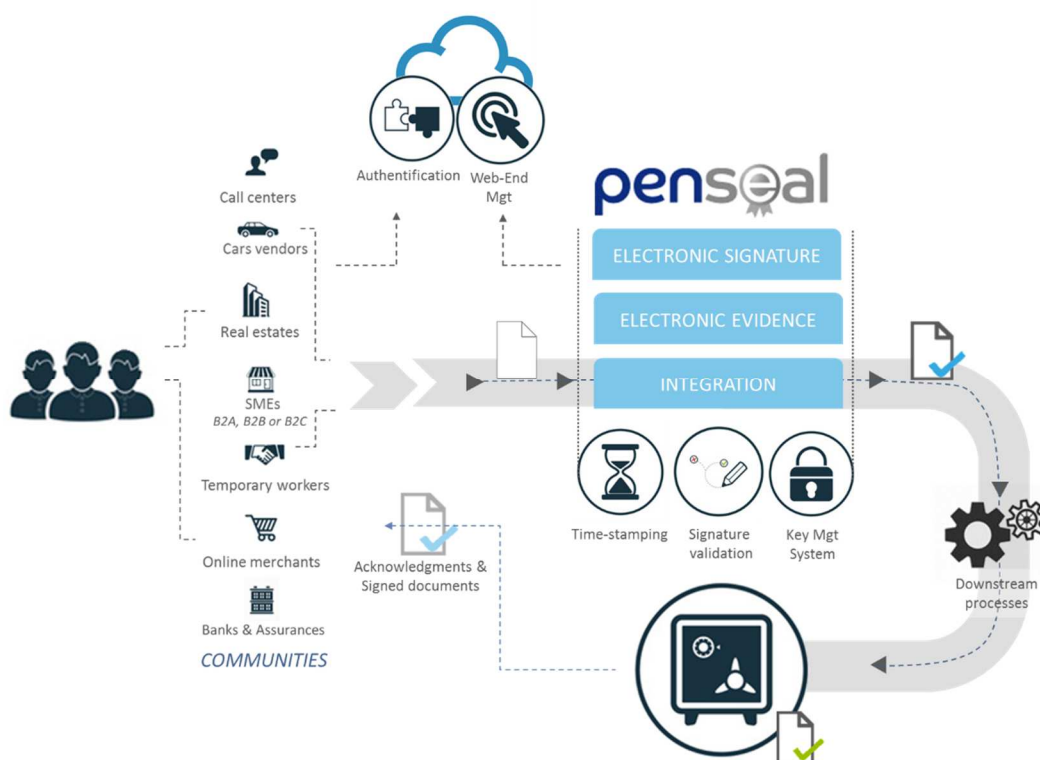
## A THREE STEPS WORKFLOW USAGE:

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- 1 As a substitution process to traditional printed out documents for signature, encrypted signing web-service is requested by issuer, including data to be signed, sender/receiver tags, input data format, and requested output signature format.
- 2 Sender/receiver tags are matched to the available signing policies and associated group of compliant signing certificates.
- 3 Requested output signature format is created and returned to the requester in the web-service signing response for archiving and further processing. For certain signature formats, the signature also contains time-stamped validation data (AdES-A and audit data).

“Business don't have skills to handle with customers' accounts, it is time for ID as a Service, Account Management as a Service”

Kim Cameron, Architect of Identity, Microsoft Corporation, ISSE 2015





# Product features

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“Integration of both Penseal e-Signature and Penseal e-Authentication into GTAC processes was easy and strait forward.”

Daan Velthausz, Maraxis Netherland, integrator of GTAC ATTPS European project <http://www.gtac-attps.eu/>



## Seamless integrated authentication solutions

With unauthorized users, system will become subject to fraudulent transaction. Penseal e-Authentication provides a set of authentication tools to be associated with electronic signature workflows.

Penseal e-Authentication is designed to minimise modification while integration to user' information systems. Authentication methods available through an independent documented REST API can independently be used for providing access to an online service or to authenticate prior to triggering electronic signature, Penseal e-Authentication leveraging Penseal e-Signature. Currently two 3-D Secure compliant & patented methods available:

- One-time passwords (OTP) sent via SMS (text message), which is a convenient way to add security using an out-of-band canal for delivering unique access/authentication/consent code.
- 2 dimensional key card system sent physically to end-users for out-of-band retrieving of a unique access and authentication code (column 5 - line 3, for example; battlefield type card). A personal user path can be added for increased security.



## Configurable workflow

System provides users with a fully configurable control panel web-end to set certificates properties, test APIs, follow up signature operations and access accounting operations.

In addition to web-end user interfaces, Penseal is deliverable with a full set of documentation (user guide and developer configuration manual), independent testing server access, Java client instances for testing SOAP & REST APIs, and a set of PHP and Java exemple. Configuration workflow include as well:

- Single (invoices, payment orders...) or multilateral – parallel or in chain – signatures (contracts...) available.
- Three types of web-service request available (*Signature – Validate – Signature&Validate*).
- Possibility to trigger signature after processing e-authentication (one time code through SMS, patented 2D codes card) and consolidate together various operations (auth. and/or sign.) from a single workflow.

## Interoperability & trans-border recognition



Interoperability at EU level is essential to ensure the ability of the recipient to verify signature of the signed document.

Use of electronic certificates belonging to nationals 'trusted lists' entitle Penseal application for a European wide recognition of signed document, according to European Directive 1999/93/CE.



trustseed.com



## Demonstrated value

The benefits exceed the cost of usage.

Increased transaction completion, reduced chargebacks, speed up signature processes, seamless integration into existing systems, create intuitive user experience, centralized platform for all electronic signatures associated processes (KMS, authentication methods...), etc.

Cost of the system is on a pay-per-transaction basis, with competitive prices according to volumes per quarter and a basic monthly subscription fee. No additional cost charged, regardless of document size – up to 5 Mo.



## Electronic evidences

TrustSeed SAS - through Penseal e-Signature - acts as a Trusted Third Party to securely operate electronic signature and log successive events part of each operation, acting as a signature traceability repository.

- Penseal' e-Signatures legally binding and backed by court-admissible audit trail.
- Presumption of reliability establishes an overturning of the burden of proof for the benefit of the party that uses such an electronic signature.
- Private agreement convention for best practice.
- Data privacy compliant, no end-customers personal data being stored.



## Exemple of cloud based usages

- purchase orders & invoices (French CGI, article 289-V),
- e-contracts,
- Loan applications,
- Electronic votes,
- Online bets,
- Car transactions (rental or sale)...



## Redundancy & high-availability

Penseal is hosted in two physically independent French data-centers, one being certified Tiers III. All infrastructure is completely redundant with database circular replication in real time. Security access provisioning include:

- SSL or X509 mutually authenticated connections,
- Salted Password Hashing,
- IP filtering,
- Access to application exclusively through SSL and HTTPS ports,
- Reversibility with on-demand export of customer data,
- 24/7 service monitoring.

## 2016' new features



With advent of eIDAS regulation, a whole set of new functionalities are underway to sustain Penseal to state of the art on electronic signature.

- e-identity issuance and management module,
- New authentication methods,
- Document archiving and delivery with extended functionalities
- And more, stay tuned.