

Deploying PKI for eSign

eMudhra - first licensed eSign Service Provider as well as first to implement entire PKI ecosystem for National ID based signing in a most secure and efficient way.

Industry

All

Business Matters

Government of India's Government of India's vision of making India a Digital India has led to creation of an ecosystem where in 1.2 bn Indians can use their Aadhaar (National ID) based signing system to sign documents from anywhere and anytime. Digital signature which is considered to be most secure can now be used for signing documents online without having to print and apply ink signature. Digital Signatures provides authenticity and legal non-repudiation as per IT Act 2000/2008.

Business Need

eSign which is an online electronic signature service that can be integrated with service delivery application via secure APIs to facility Aadhaar holders to digitally sign documents based on Aadhaar verification.

Approach

Digital signatures and Aadhaar based electronic signatures are gaining momentum in India. Governments are also pushing organisations to go paperless. This move would also help organisations to improve transparency and accountability.



Background

In India most of the Government departments and corporate use large volume of paper for day to day activities and a good part of it used for mundane and routine signature approvals. Though there are applications that help organisations to automate the work but the last mile activity of legal approvals were all done by taking printout and then physically signing on it. Physical signatures increase the need for use of paper that led to significant increase in usage of paper.

As part of Digital India vision, the Government was looking forward for a solution that is cost effective, more secure and easy to use that could eliminate the usage of paper and make the entire ecosystem pure paperless.

Business Requirement

There is a requirement of a secure, robust, efficient and simple to use system that can be used by 1.2 bn Aadhaar holders to seamlessly digitally sign documents on any service delivery channels. Any Aadhaar holder should be able to digitally sign document by just doing Aadhaar verification. In contrast to token based digital signatures, the eSign should work on all types of devices such desktop, laptop, mobile phone, tablet etc.

The digital signing ecosystem i.e. eSign should help service delivery applications such as Bank account opening, Loan processing application, Lending and even for vendor and employee on-boarding applications to go paperless and help users to electronically sign a document online without much of a hassle.

Digital Signature Technology

The Digital Signature Technology works on the Public Key Infrastructure framework which uses a Cryptographic Key Pair – Private and Public Key for secure access and transmission of Information.

Digital signature makes a transaction immutable and legally valid as per IT Act 2000/2008

Benefits

- **Easy and secure way to digitally sign information anywhere, anytime**
- **Facilitates legally valid signatures** in accordance with the provisions of the Information Technology (IT) Act, 2000.
- **Flexible and easy to implement** - eSign provides configurable authentication options in line with Aadhaar e-KYC service
- **Respecting privacy** - eSign ensures privacy of the signer by requiring that only the thumbprint (hash) of the document be submitted for signature function instead of the whole document.
- **Secure online service** - The eSign Service is governed by e-authentication guidelines published by Government of India



Solution

eSign services from eMudhra allow easy, efficient and secure signing of the documents. This service allows any Aadhaar holder to digitally sign an electronic document without having to obtain a physical digital signature certificate (in USB Crypto Token).

Application Service Providers (ASP) can integrate this service within their application to offer Aadhaar holders a way to sign electronic forms and documents. eMudhra eSign service, offers applications a mechanism to replace manual paper based signatures by integrating this service within their applications.

eMudhra’s eSign facilitates digitally signing a document by an Aadhaar holder using an Online Service. eSign is designed for applying Digital Signature using authentication of consumer through Aadhaar eKYC service. The eSign is an integrated service that facilitates issuing a Signature Certificate and performing Signing of requested data by authenticating Aadhaar holder. Aadhaar id is mandatory for availing eSign Service

eMudhra provides three models of eSign services. This includes:

- eMudhra eSign Gateway Model
- PreKYC based eSign Model
- eMudhra’s Signer Gateway model

Various models supported

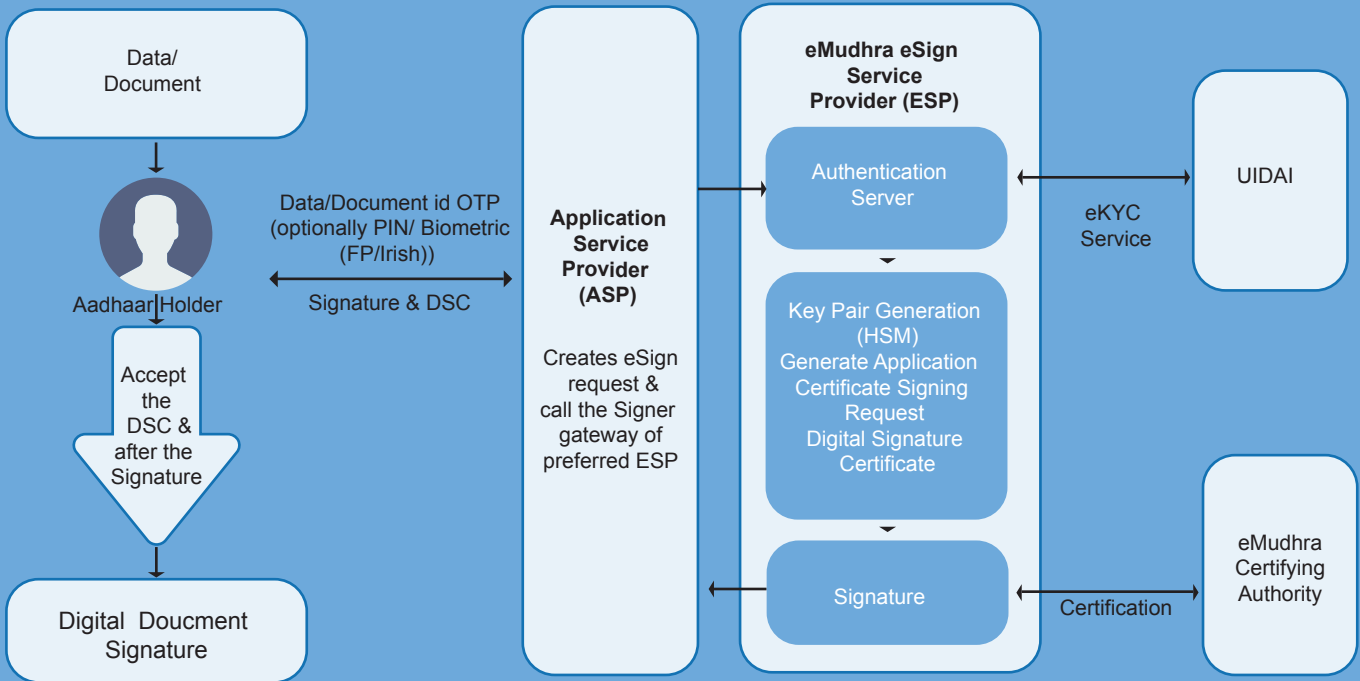
Model	Description
Pre-KYC Model	<ul style="list-style-type: none"> • ASP On boarding is mandatory • eKYC is performed using organisation’s KUA license • eKYC response is provided as input to ESP for eSign
eSign Gateway Model	<ul style="list-style-type: none"> • ASP On boarding is mandatory • Post document hash to eSign Gateway using HTTPS Post methodology • ESP takes care of eKYC as well as eSign of the document hash
eMudhra’s Signer Gateway Model	<ul style="list-style-type: none"> • ASP on boarding is not required • eMudhra’s Signer Gateway works similar to Payment gateway model where in signing request will be redirected to Signer gateway. • Signer gateway receives document as input and gives back the digitally signed document as a response after Aadhaar verification of the user.

Statistics

- eMudhra is cruising with a run rate of approx. 2 lac eSigns per day
- Providing good customer experience of eSigning the document within 4 Seconds.
- More than 100 organisations from across industry verticals are using eSign services. This includes Banks, Insurance, Automotive, IT/ITES and Government departments.
- As on August 2017, around 25 million eSigns issued.



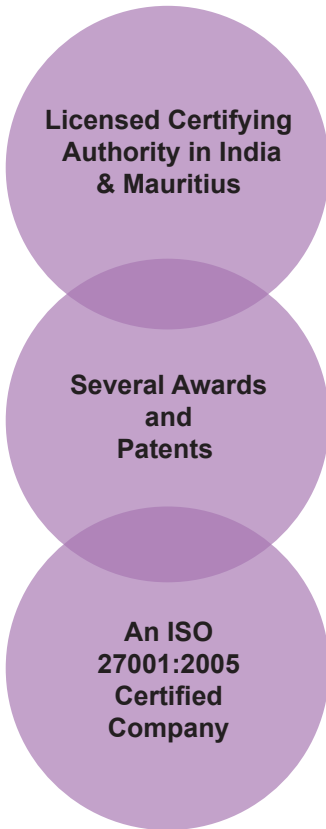
eSign Overview



HSM - Hardware Security Module
OTP - One Time Password

ASP - Application Service Provider
eKYC- electronic Know Your Customer

FP - Finger Print
UIDAI - Unique Identification Authority of India



About eMudhra

eMudhra is a technology and digital identity and transaction management company providing solutions which ease financial and statutory needs of consumers. eMudhra was established in 2008 and is a Certifying Authority in India and Mauritius to issue Digital Signature Certificates.

eMudhra's current enterprise and consumer solutions include Digital Signature Certificates, emSigner – Paperless Office Solution, emAS – secure multifactor authentication for banks, emCA for Digital Signature issuance and management and Prism – Voice of Customer Analytics using Semantics.

eMudhra is a market leader in India and has worked with large Banks, Financial Services companies and several Government agencies in India to implement Digital Signature based solutions which include secure access and paperless workflows.

eMudhra won the e-Asia award, an award given by AFACT (A United Nations body) for implementing Digital Signatures based on India's National ID – AADHAAR to bridge Digital Divide.