



**GOVERNMENT OF INDIA**  
 Ministry of Communications & Information Technology  
 Department of Electronics & Information Technology  
 Controller of Certifying Authorities

# eSign – Online Electronic Signature Service

## Introduction

For creating electronic signatures, the signer is required to obtain a Digital Signature Certificate (DSC) from a Certifying Authority (CA) licensed by the Controller of Certifying Authorities (CCA) under the Information Technology (IT) Act, 2000. Before a CA issues a DSC, the identity and address of the signer must be verified. The private key used for creating the electronic signature is stored in hardware cryptographic token which is secured with a password/pin. This current scheme of in-person physical presence, paper document based identity & address verification and issuance of hardware cryptographic tokens does not scale to a billion people. For offering fully paperless citizen services, mass adoption of digital signature is necessary. A simple to use online service is required to allow everyone to have the ability to digitally sign electronic documents.

## eSign

eSign is an online electronic signature service which can be integrated with service delivery applications via an open API to facilitate an Aadhaar holder to digitally sign a document. Using authentication of the Aadhaar holder through Aadhaar e-KYC service, online electronic signature service is facilitated.

### Salient Features of eSign

❖ Save cost and time	❖ Aadhaar e-KYC based authentication
❖ Improve user convenience	❖ Mandatory Aadhaar ID
❖ Easily apply Digital Signature	❖ Biometric or OTP based authentication
❖ Verifiable Signatures and Signatory	❖ Flexible and fast integration with application
❖ Legally recognized	❖ Suitable for individual, business and Government
❖ Managed by Licensed CAs	❖ API subscription Model
❖ Privacy concerns addressed	❖ Assured Integrity with complete audit trail
❖ Simple Signature verification	❖ Immediate destruction of keys after usage
❖ Short validity certificates	❖ No concerns regarding key storage and key protection

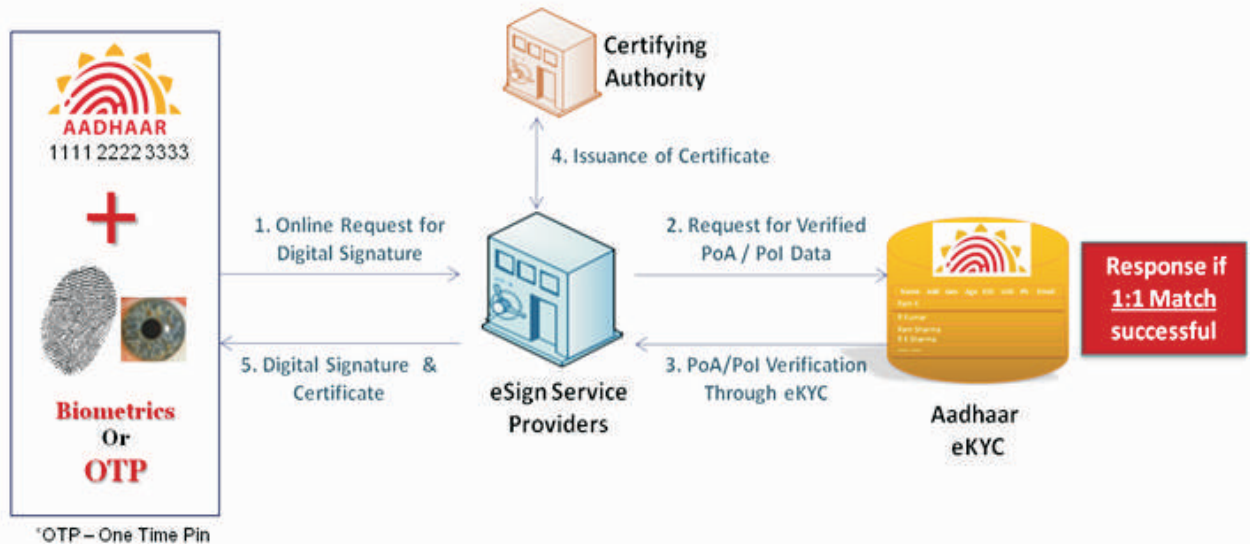
- **Easy and secure way to digitally sign information anywhere, anytime** - eSign is an online service for electronic signatures without using physical hardware tokens. Application service providers use Aadhaar e-KYC service to authenticate signers and facilitate digital signing of documents.
- **Facilitates legally valid signatures** - eSign process includes signer consent, Digital Signature Certificate issuance request, Digital Signature creation and affixing as well as Digital Signature Certificate acceptance in accordance with provisions of Information Technology Act. It enforces compliance through API specification and licensing model of APIs. Comprehensive digital audit trail, in-built to confirm the validity of transactions, is also preserved.
- **Flexible and easy to implement** - eSign provides configurable authentication options in line with Aadhaar e-KYC service and also records the Aadhaar ID used to verify the identity of the signer. The authentication options for eKYC include biometric (fingerprint or iris scan) or OTP (through the registered mobile in the Aadhaar database). eSign enables millions of Aadhaar holders easy access to legally valid Digital Signature service.



eSign

- **Respecting privacy** - eSign ensures the 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. While authentication of the signer is carried out using Aadhaar e-KYC services, the signature on the document is carried out on a backend server of the e-Sign provider. eSign services are facilitated by trusted third party service providers - currently Certifying Authorities (CA) licensed under the IT Act. To enhance security and prevent misuse, Aadhaar holders private keys are created on Hardware Security Module (HSM) and destroyed immediately after one time use.

## How eSign Works



**eSign API** - eSign Application Programming Interfaces (API) specification defines the major architectural components and also the format and elements of communication among the eSign stake holders including Application Service Provider, Certifying Authorities, Trusted Third Party eSign Service Providers and Aadhaar e-KYC service. This eSign API enables Application Service Providers to integrate eSign service in their application. The system is designed to integrate Application Gateway too.

**Who can use eSign and where** - Only Aadhaar holders can use eSign online electronic signature service. The eSign service can be used by individuals, businesses and Government departments for electronically signing a document based on OTP or Biometric (Fingerprint/Iris) authentication through Aadhaar e-KYC service.

### Use Cases- eSign online Electronic Signature in Applications

eSign online electronic signature service can be effectively used in scenarios where signed documents are required to be submitted to Service Providers, Government, Public or Private sector. The agencies which stand to benefit from offering eSign online electronic signatures are those that accept large number of documents from users. Some applications which can use eSign for enhancing services delivery are the following:-

Use Case - eSign online Electronic Signature in Applications	
Digital Locker	✓ Self attestation
Tax	✓ Application for Tax ID, e-filing
Financial Sector	✓ Application for account opening in banks and post office
Transport Department	✓ Application for driving licence renewal, vehicle registration
Various Certificates	✓ Application for birth, caste, marriage, income certificate etc
Passport	✓ Application for issuance, reissue
Telecom	✓ Application for new connection
Educational	✓ Application forms for course enrolment and exams
Member of Parliament	✓ Submission of parliament questions