India Updates

GA-SC Meeting

Bengaluru, India | 27-Nov-2023

Indian Digital Certificate Userbase

1   10 Million+ DSC (Long Lived Certificate) Users

2   450 Million+ eSign (Short Lived Certificate) Users and growing.

3   National Regulator: Controller of Certifying Authorities

4   22+ Certifying Authorities licensed by Government

5   Adopted across the Industry for e-Governance, Banking, Finance, Corporate / Enterprises, etc

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Key Features of eSign

- Regulated common set of APIs by Government Regulator

- Wide implementation with numerous signing applications and use cases.

- Short Lived Key Pair, and Short Lived Certificates (30 minutes validity), LTV with CRL

Enrolment / Authentication / eSign Cost

UIDAI / Aadhaar based: v2	CA/TSP acting as KYC Provider (Since 2019): v3
• 1.38 Billion Enrolments (99%+ Population) • Easy Authentication with Aadhaar (National ID) + OTP / FP / IRIS / FACE • Cost: USD 0.12 per transaction • Used by one-time signers	• 10 Mn+ Enrolments. Seamless online enrolment with 5-10K+ users everyday. • Easy Authentication with PIN + OTP, FIDO, Mobile App, Registered Device, etc • Cost: USD 0.08 per transaction • Used by repeated signers

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Moving towards online signatures

	DSC in USB Token	eSign (v2) - Aadhaar	eSign (v3) - CA KYC
Certificate Type	Individual / Organization Individual	Individuals	Individual / Organization Individual
Enrolment	Online | Paperless | Video	Not Required. Aadhaar.	Online | Paperless | Video
Integration	Client system integration	Online integration (Gateway)	Online integration (Gateway)
Dependency	Desktop OS and crypto token is required	Hardware independent	Hardware independent
Auth / Password	Local Auth. Max 10 failed attempts, certificate reissuance.	Aadhaar OTP Authentication. (needs Mobile seeding)	2FA Online Auth With password reset options
Key Loss	Reissuance if token gets lost.	Not Applicable	Not Applicable
Hardware cost	Yes	No	No
OS Support	Limited OS support by token vendors		
Troubleshooting	Driver and other troubleshooting required	High availability of service	High availability of service
Timestamping and LTV	Signing time from user system	Supported	Supported
Bulk signing	Based on client system configuration	1 documents/transaction	5 documents/transaction
Sign using mobile	No	Yes	Yes
Userbase	10 million+	450 million+	10 million+

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Additional mode of 'Organization' signatures available, (electronic seals).
This can be online or on-premise, mainly for server based automated signing.

India: Major Use Cases

Use Case	Signature	Adoption
GST Return Signing	JSON data signing	3 - 4 Mn / Mandatory
Income Tax Return Signing	Document Hash / Text data signatures	Large use case
MCA Return Signing	PDF Signature	Large / Mandatory
Tax Letters (IT/GST) / Aadhaar	PDF Signature	Less Signers, More Docs
Tendering Portals	Document Hash / Text data signatures	Mandatory
UIDAI (AUA/KUA/etc)	XML Signatures (xml-dsig)	High Volume
Banking Transactions	XML / Text data signatures	More Transactions
G2B / G2C	PDF Signatures	Increasing
B2B / B2C	PDF Signatures	Increasing
Emails	SMIME CMS Signatures	Moderate use

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New initiatives

- eMudhra has launched first public CA trusted to issue SSL/TLS certificates & SMIME certificates, globally. One among the few from Asia, and only one from India. eMudhra today caters to SSL certs in Asia, Africa, LatAm and US markets.

- More CAs from the country would eventually move in this direction.

- India is also exploring way to setup / empanel Indian CAs to issue SSL/TLS certificates, more from data security and avoiding external connections for SSL handshake, etc.

- India now has 2 local auditors licensed by CPA Canada for Webtrust Audits.

New initiatives

- Regulator has expressed vision for moving towards Webtrust as the default compliance scheme

- Innovation underway for rolling out Mobile based Key storage for Digital Signatures, compliant to key protection requirements of the country

- Post Quantum Readiness related study and activities initiated by the Regulator

- Regulator has rolled out proposed Mutual Recognition framework for Digital Signatures and invited countries around the world to move forward together.

- India has also joined a technical pilot with EU and Japan towards Trust List based recognition of countries.

Thank you

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