



## Digital Signature and Encryption 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.

Efficient and unbreakable encryption algorithms that can handle voluminous data and mitigate the risk of unauthorized access to sensitive data



### Benefits

- PKI is an open standard, free to be adopted, implemented, customized etc.
- Even with low computational power and memory, cryptographic algorithms can often still be computed
- Has the capability to address the security needs of at-rest and in-transit data
- User/Device identity is established using digital signature certificates
- Ensures only authorized personnel has access to sensitive data
- Strengthens and unifies data protection
- Ensures the integrity of data in-transit or at-rest.

### Solution

PKI has been the backbone of internet security since its inception through the use of digital certificates.

eMudhra has the experience of working with various industries to issue digital certificates using varied signature algorithms, public key sizes, standards and cryptographic properties to meet specific needs. eMudhra specializes in IoT security solutions.

### Digital Certificate Management Lifecycle

eMudhra's emCA product is designed to assist manage lifecycle of certificates used in thousands or even millions of devices connected in IoT ecosystem. emCA is flexible and customisable to fit the needs of digital certificate in IoT security requirements.

emCA can scale to accommodate changes for thousand to millions of certificates. The solution is equipped to handle mass digital certificate issuance, reissuance, suspension or revocation that is critical to ensure continuous integrity of devices.

There is no IoT deployment too large or small to fit the emCA. Digital certificate requests can be automated through globally renowned standards and protocols such as REST, SOAP, SCEP, SAML etc.

The digital certificates issued through emCA addresses key information security principles i.e.

- Confidentiality
- Authenticity
- Non-repudiation
- Integrity

### Encryption and Authentication in IoT ecosystem

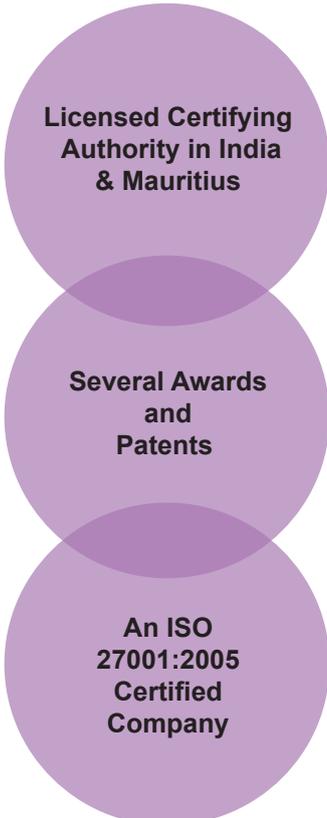
eMudhra's solutions bring in Trust and control to devices connected in IoT. eMudhra's authentication solution i.e. emAS helps in securely establishing identity and authenticating one device to another with the help of digital certificates embedded in the devices. Thus ensuring that only trusted devices are allowed to connect to a nearby server and also enabling trusted communication between devices.

In short, eMudhra solution enables large-scale authorization and reliable encryption for ultimate trust and control. The solution makes it the right choice for securing connected devices. It ensures the integrity of data through the following:

**Encryption:** Disguising of data in transit and at rest.

**Authentication:** Identifying trust amongst users/devices in network information exchange.

**Signing:** It helps in verification of untampered data and also making sure that device has received data from a trusted source.



**Licensed Certifying  
Authority in India  
& Mauritius**

**Several Awards  
and  
Patents**

**An ISO  
27001:2005  
Certified  
Company**

### **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 – AAD-HAAR to bridge Digital Divide.