Securing Smart Cities Using emSecure

eMudhra provides Smart Cities a high standard security and protects its network communications, Devices and IT from cyber threats

Industry
IT and Infrastructure

Business Matters
The concept of “Smart Cities” revolves around the interconnection of different Information and Communication Technology systems to retrieve, process and exchange data. While the fusion of cyber technology and physical infrastructure introduces cyber security risks into the complete ecosystem. It is important to protect the entire ecosystem from the cyber security risks.

Business Need
This case study proposes a pragmatic approach in deploying security measures that could protect critical assets and ensures security of Information and Communication technology systems.

Approach
The good practices propose a first step toward actionable security and a better protection to the IT and Infrastructure of the smart cities. Bringing in Identity and confidentiality to the data transmitted. Any tampering to the data should be easily identified before accepting the same.

Background
In the approach of the Smart Cities Mission, the objective is to promote cities that provide core infrastructure and give a decent quality of life to its citizens, a clean and sustainable environment and application of Smart solutions.

The merchant boarding timeframe for traditional acquirers takes 3-5 days. The conventional process has following challenges:

- Video crime monitoring
- Energy management
- Intelligent Traffic Management
- Smart parking
- Intelligent waste water treatment
- Smart meters and management
- Water quality management etc.

Smart Cities used Information and Communication Technology to meet public needs and foster development in a multi-stakeholder environment. When ICT is used at a large scale then there is scope for threats, vulnerabilities, risks and challenges.

Business Requirement
As the smart city technologies capture data relating to all forms of privacy and the data collected is also voluminous. Granularity of the data being generated about people and places is more sensitive in nature. There is always a scope for data leakages. Without the data being properly protected with non-breathable technologies and also providing the identity to the source that can be validated at the destination would help to protect privacy of the data by mitigating the risk of data leakage to an unauthorised person

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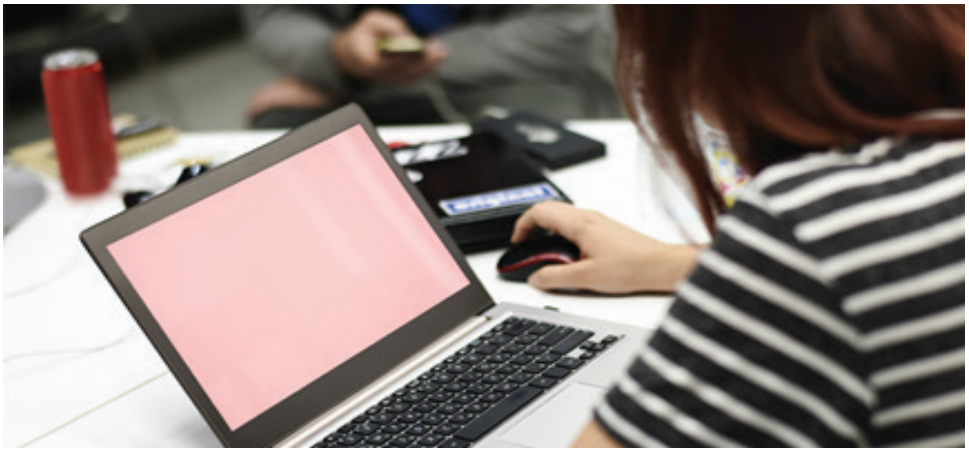
Digital Signature and Encryption Technology

- 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

- Prevents data leakage provides user/device identifiable data
- Provides end-to-end encryption of data thus eliminating the risk of MITM attacks
- User/Device identity is established using digital signature certificates
- Isolation of trusted resources from public resources
- Ensures only authorized personnel has access to sensitive data
- Strengthens and unifies data protection

Solution

Smart City technologies have large attack surfaces that have a number of vulnerabilities. The vulnerabilities include non-availability of end-to-end encryption and weak identity verification. emSecure from eMudhra is the answer to above vulnerabilities. emSecure solution mitigates the risk of data leakages and completely mitigates the risk of Man-in-the-middle attacks. The solution enables users and devices to secure transmit data and also establish user/device identity. The solution addresses key information security principles i.e.

- Confidentiality
- Authenticity
- Non-repudiation
- Integrity

Confidentiality

emSecure's end-to-end encryption component mitigates the risk of data leakages. And also allows only the intended user/device to view the original content. Thus enabling complete confidentiality of sensitive data (example: customer/employee financial details, intellectual property, etc). emSecure employs industry-recognized encryption standards that is unbreakable and efficient to handle voluminous data. Any data that is termed as sensitive can be secured with emSecure end-to-end encryption component.

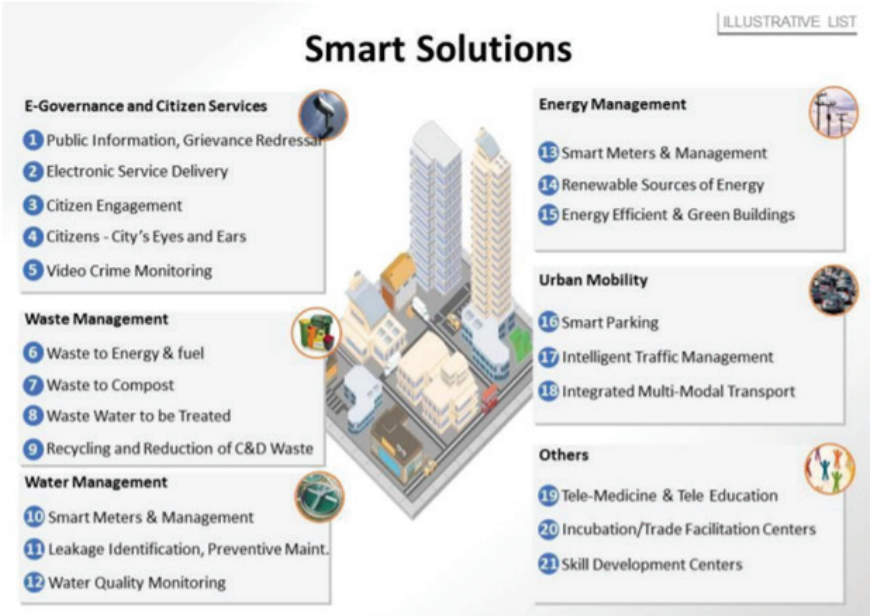
Authenticity and Non-repudiation

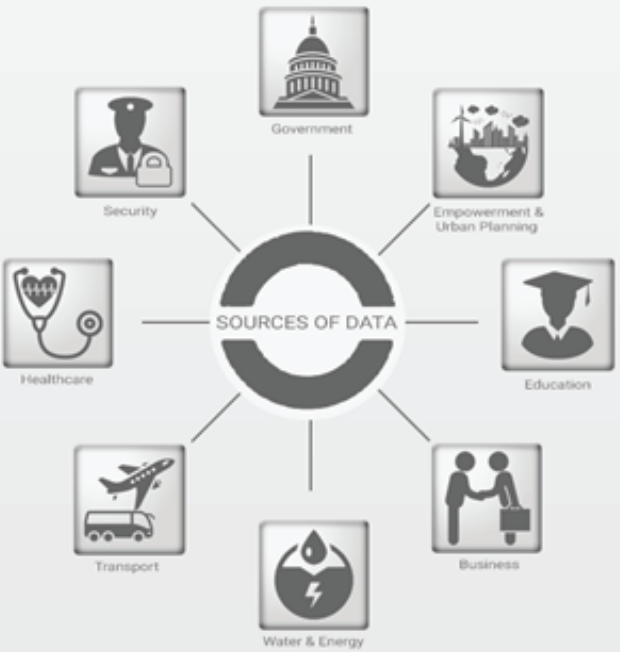
emSecure's PKI based identity management and authentication system provides strong identity and authentication system that enables only authorized individuals with valid digital certificates can access the sensitive data. emSecure also enables individuals / devices to sign and encrypt the data. And the recipient can ascertain authenticity of the data by verifying digital signature using emSecure's digital signature authentication system.

emSecure's authentication systems also provides strong multifactor authentication i.e. two and three factor for confirming that the person seeking access is who they claim to be.

Integrity

emSecure's verification and validation system ensures that the data is not tampered with during transmission. The system allows entities to easily check authenticity of the data.





emSECURE COMPONENTS

- Node to node encryption – includes encryptor and decryptor
- 2 or 3 factor authentication component
- Data signer component
- Digital signature and digital certificate verifier component

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 – AADHAAR to bridge Digital Divide.

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