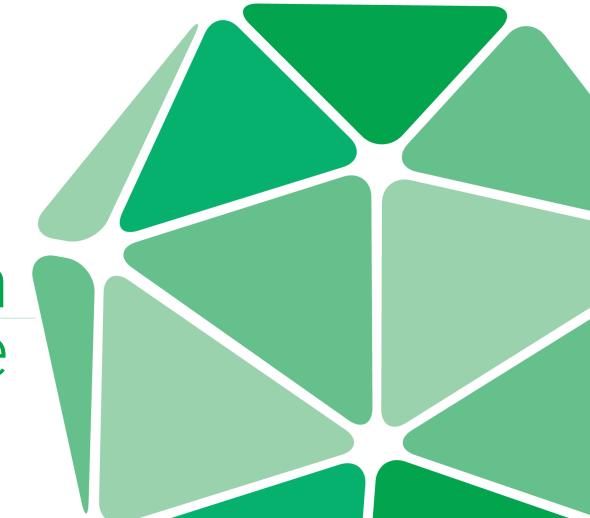


Developer Program On Digital signature



Precision Group | Overview



TECHNOLOGY to enable outcomes that matter

Biometrics | Cloud | Managed Services Internet of Things | Systems Integration 27 +Years in business

Team of **2500+** professionals

Focus on **R&D and IP** creation

Pan India presence

Offices in major metros 250+ support locations

Precision Group | Offerings Spectrum





PATENTED

PATENT PENDING





InnaIT^{Key} WIAM, CIAM, Password-less Authentication Solutions

Hard Token - Biometric + PKI, Touch Sensor + PKI

Soft Token - Native Biometric / OTP / QR Authentication + PKI

InnalT^{Key} Password Manager for Consumer Segment

InnaIT Framework Solutions for Enterprises:

2FA | eSSO, BioNIX, BioAD, EVS, Vault, TAS

Solutions for Aadhaar Ecosystem: STQC Certified FP scanners,

Other Biometric devices

Biometrics

Systems Integration

Hewlett Packard Enterprise Platinum Partner





Data Center Solutions
HPE Platinum Partner
Nutanix Reseller Champion
Networking Solutions

- Aruba, Arista & Cisco

Security Solutions

Fortinet

RedHat

- Premium Partner

Managed Services & Cloud





Cloud Solutions – AWS & Azure

Data Center, Network, EUC & Security Mgt

Cloud Management, End-user support, Remote Infrastructure

Management, Total Outsourcing Services

InsTIL – ITSM & Automation, Consulting & Integration

Internet of Things



PIVOT - Precision's Value Added IoT Framework Solutions: Consumer IoT, Commercial IoT, Industrial IoT, Select Smart City projects

Act, Guidelines



- A perspective on the framework under which we operate.
- Information Technology (IT) Act (2000)
 - Ministry of Corporate Affairs (MCA)
- Office of the CCA
 - https://cca.gov.in
- Guidelines
 - https://cca.gov.in/guidelines.html
- Security Requirements for Crypto Devices (CCA-CRYPTO)
 - Basic set of requirements that a token must meet.
 - Currently based on primary requirement of a FIPS 140-2 certified module.
 - Additional requirements set out based on Indian government needs.
- A cert-in empanelled auditor verifies that the token meets the requirements stipulated in the guideline.

2	Cryp	to device Requirements
	2.1	Functions Prior to User Authentication:
	The fur	nctions that can be performed before user authentication shall:
	2.2	User Authentication:
	User A	uthentication mechanism shall meet the following requirements:
	2.3	Physical Security:
	2.4	Cryptographic Algorithms:
	2.5	Key Entry:
	2.6	Key Output:
	2.7	Key Zeroization:
	2.8	Electromagnetic Interference/Electromagnetic Compatibility (EMI/EMC):
	2.9	Power Up Self-Tests:
	2.10	Interface Specification:
	2.11	Key Management Document:
	2.12	Mitigation of Other Attacks:
	2.13	Operating System Security:
	2.14	Key Storage:
	2.15	Key Zeroization:
	2.16	Application Integrity:
	2.17	Admin Password feature:

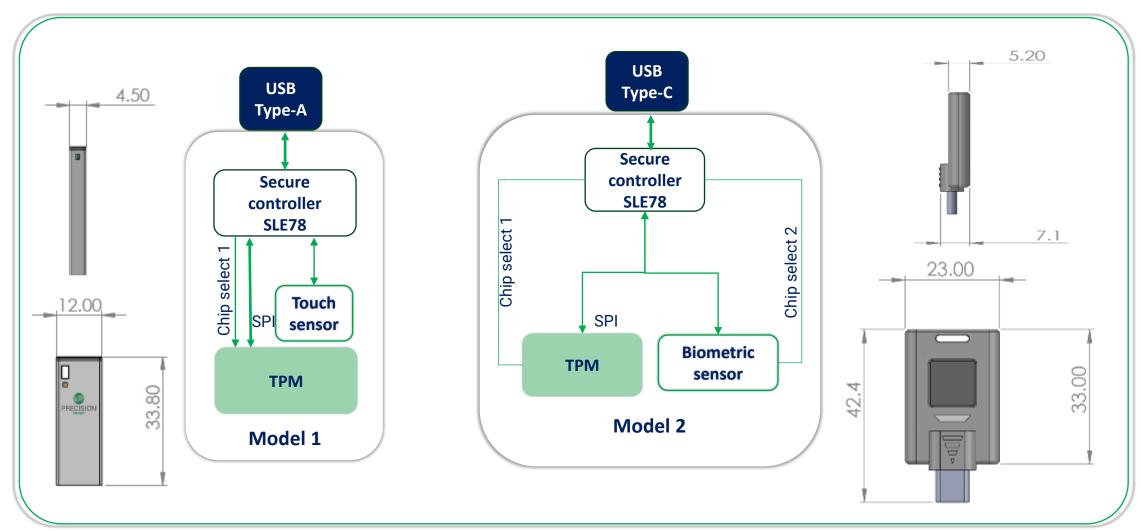
Precision: InnaIT^{Key}-DSC



- Salient features of Precision's DSC product are:
 - No components from border sharing countries.
 - FIPS 140-2 certified TPM2.0 module
 - Infineon TPM 2.0 module SLB 9672.
 - Secure controller, Infineon SLE78, with built in NVM and USB interface to host.
 - Common Evaluation Criteria EAL6+ certified
 - EMVCo certified
 - Combines Digital Signature Certification (DSC) & FIDO2 functionality.
- Two models
 - USB Type A connection with touch sensor
 - USB Type C Connector with Biometric sensor

DSC – Hardware





DSC - Creation







InnalT Server 3.4.0 RC8

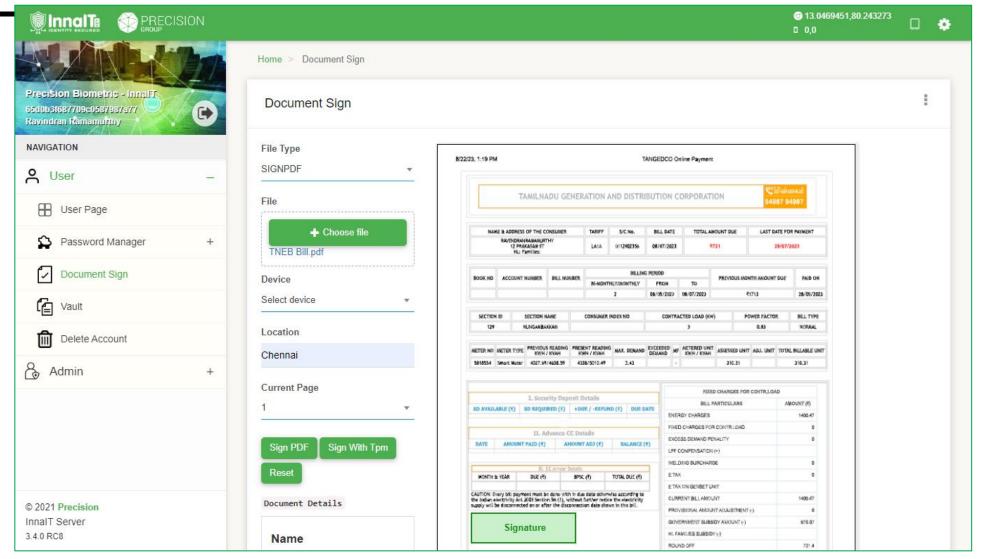
Precision Biometric - InnaIT •

Create Certificate Reference Number ✓ Authenticated successfully 65d097a487709c07f27c8a7b Credential Name Credential Name **(CSR Data** Credential Password JAGANATHAN CHENNAIPPAN CN Credential Password PERSONAL 0 Cancel Show/Hide Steps Manage Credential List OU Reset Completed Step: ERODE L Create Certificate TAMIL NADU S Create Key Pair С i Not Started Get Public Key i Not Started 3 Create Unsigned CSR i Not Started 4 Sign CSR In Device i Not Started 5 Get Certificate From CA Not Started 6 Set Certificate In Device i Not Started Send Response To CA

i Not Started

DSC – Use case – Sign document





PKI with ECC – Known set of devices





ECC Client

Server

- Sign challenge with client private key.
- Create session ECC256 key pair
- send signature & session public key
- Compute session AES256 key using server-session-public key & session-private key
- Encrypt/ Decrypt subsequent communication with session key

signChallenge

issuerLoginECC

connectRequest

- Connects ONLY to known clientsHandshake process establishes
- Handshake process establishes
 AES256 key for every session to
 encrypt sensitive data in
 communication avoiding man-in the-middle attack

- Is client known? (serial# exists?)
- Generate a challenge
- Save client ID and challenge
- · Return challenge

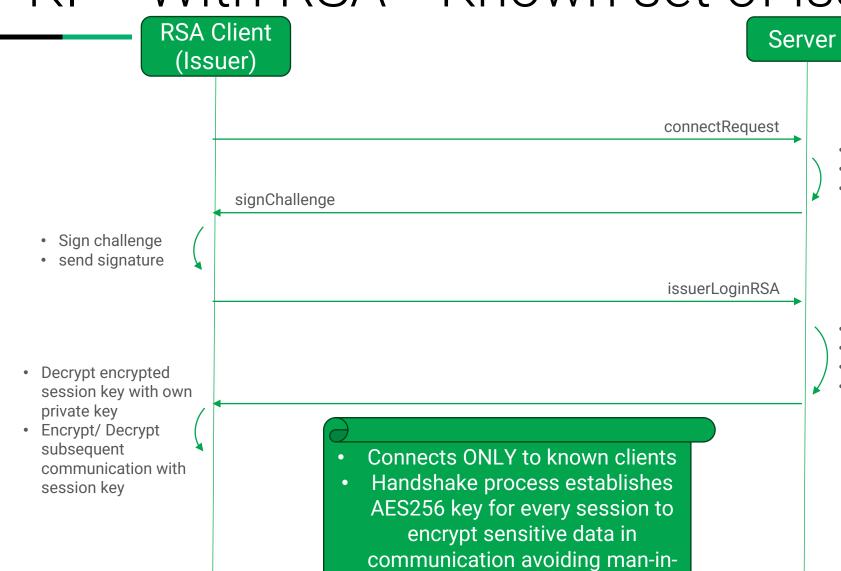
- Verify signature matches client.
- Create Session ECC 256 key pair.
- Compute session AES256 key from client-session-public key and session private key
- Return session public key

PKI – With RSA –Known set of issuers

the-middle attack







- · Generate a challenge
- Save Issuer and challenge
- Return challenge

- Verify signature matches issuer & Challenge
- Create Session AES256 key
- Encrypt session key with Issuer public key
- Return encrypted session key



Thank you

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