EMCA · CENTRAL BANKING · MIDDLE EAST

A Central Bank in a Middle Eastern Country Secures 1.25 Billion Monthly Card Transactions Through a Sovereign Payment CA Infrastructure Powered by eMudhra emCA

SECTOR	REGION	SOLUTION
Central banking	Middle East	emCA

CLIENT OVERVIEW

A Central Bank in a Middle Eastern Country (A Central Bank in a Middle Eastern Country) is the apex financial regulatory authority of the country, responsible for monetary policy, financial system stability, licensing and oversight of banks and financial institutions, and the regulation of payment systems and services across the country. As the country advanced its national digital transformation agenda, A Central Bank in a Middle Eastern Country identified the establishment of a sovereign domestic payment scheme — independent of international card network infrastructure — as a strategic priority. This initiative was central to the country's ambitions for financial sovereignty, data localisation, and the long-term resilience of the national payments ecosystem in a rapidly evolving global digital economy.

THE CHALLENGE

The country's domestic card payment ecosystem had historically depended on the Certificate Authority (CA) infrastructure operated by international card networks — Visa and Mastercard — to secure the cryptographic trust underpinning card transactions. While functionally effective, this dependency presented a strategic limitation of growing concern to A Central Bank in a Middle Eastern Country: the certificates securing the country's domestic payment transactions were issued and governed under CA frameworks controlled by foreign commercial entities, outside the direct regulatory authority and policy jurisdiction of the country's national institutions.

For A Central Bank in a Middle Eastern Country, this represented a multi-dimensional challenge. From a data and digital sovereignty perspective, the absence of a nationally governed CA infrastructure meant that the cryptographic trust layer securing approximately 1.25 billion card transactions processed monthly across the country's payment ecosystem was anchored in infrastructure that A Central Bank in a Middle Eastern Country did not own, could not directly audit, and could not govern according to country-specific regulatory policy. In an environment of intensifying global focus on data localisation and financial sovereignty, this dependency was

> *"The scale of the country's domestic payment activity — over a billion transactions every month — made the absence of a sovereign CA infrastructure a strategic vulnerability, not merely a technical gap. Our domestic payment scheme had to stand on a trust foundation that the country owns and controls."*
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> **Executive Director, Payment Systems, A Central Bank in a Middle Eastern Country**

increasingly at odds with A Central Bank in a Middle Eastern Country's mandate to ensure the resilience and national control of the country's critical financial infrastructure.

Beyond sovereignty, A Central Bank in a Middle Eastern Country's ambition to establish a domestic payment scheme — enabling card transactions to be processed entirely within the country's national infrastructure without routing through international network systems — required a purpose-built, high-throughput CA capability that could issue and manage payment certificates at national scale. This demanded a Certificate Manager capable of operating as a fully governed Root and Issuing CA hierarchy, integrated with payment system infrastructure, and designed to meet the stringent performance, availability, and compliance requirements of a national payment authority. No such capability existed within the country's domestic financial ecosystem before this initiative.

THE SOLUTION

A Central Bank in a Middle Eastern Country selected eMudhra's emCA — a purpose-built, enterprise-grade Certificate Manager — to design, deploy, and operationalise a sovereign CA infrastructure capable of securing the country's domestic payment scheme entirely within A Central Bank in a Middle Eastern Country's governance and regulatory framework.

eMudhra architected a dedicated PKI hierarchy for A Central Bank in a Middle Eastern Country's domestic payment scheme, comprising a sovereign Root CA and subordinate Issuing CAs configured specifically for payment certificate issuance in accordance with international payment industry standards and A Central Bank in a Middle Eastern Country's own regulatory policy framework. emCA's Certificate Manager served as the central platform governing the full

certificate lifecycle across this hierarchy — from certificate request intake and policy validation through to issuance, distribution, renewal, revocation, and audit — all managed under A Central Bank in a Middle Eastern Country's direct operational control and within the country's national data boundaries.

The emCA platform was engineered to meet the performance demands of a national payment CA: high-throughput certificate issuance pipelines, automated lifecycle workflows, and high-availability architecture designed to support the uninterrupted operation of payment infrastructure processing over 1.25 billion transactions per month. Certificate profiles were configured to align with EMVCo and domestic payment scheme specifications, ensuring that certificates issued by A Central Bank in a Middle Eastern Country's sovereign CA infrastructure were fully interoperable with the card payment ecosystem across the country's banking and retail network.

A Central Bank in a Middle Eastern Country's regulatory and compliance requirements were embedded throughout the emCA configuration: policy-driven certificate issuance controls, role-based operator access management, enforced key custody procedures aligned with international PKI standards, and a comprehensive audit trail covering every certificate and key event within the CA hierarchy. The platform's governance dashboard provided A Central Bank in a Middle Eastern Country's payment systems and compliance teams with real-time visibility into CA operations, certificate inventory, and issuance activity — enabling the kind of direct oversight and regulatory accountability that had been impossible under a dependency on internationally operated CA infrastructure. eMudhra's implementation team provided full knowledge transfer, enabling A Central Bank in a Middle Eastern Country to independently operate, audit, and evolve the sovereign payment CA as the country's domestic payments ecosystem grows.

RESULTS

The deployment of eMudhra emCA as A Central Bank in a Middle Eastern Country's sovereign Certificate Manager delivered a transformation of national strategic significance — establishing, for the first time, a fully the country-governed cryptographic trust foundation for the country's domestic payment scheme and the 1.25 billion monthly card transactions it secures.

METRIC	BEFORE	AFTER
Monthly Card Transactions Secured	Dependent on Visa/Mastercard CA infrastructure	~1.25 billion transactions secured via sovereign emCA
Domestic Payment Scheme Sovereignty Certificate Authority Infrastructure	Absent; reliant on international network CAs None under national control	Fully sovereign CA infrastructure under A Central Bank in a Middle Eastern Country governance Dedicated emCA-powered Root & Issuing CAs operational

METRIC	BEFORE	AFTER
Certificate Issuance & Management	Outsourced to international networks	End-to-end managed domestically via emCA Certificate Manager
Regulatory & Data Sovereignty PKI Scalability for Payment Growth	Limited; governed by third-party CA policies Constrained by external dependencies	Full control; A Central Bank in a Middle Eastern Country-governed policy framework and audit trail Elastic, high-throughput CA infrastructure built for scale
Compliance with National Mandates	Partial; gap in sovereign trust framework	Fully aligned with the national vision and A Central Bank in a Middle Eastern Country directives

With emCA operational, the country's domestic payment scheme is now secured by a CA infrastructure that A Central Bank in a Middle Eastern Country owns, governs, and audits directly — eliminating the strategic dependency on international card network CAs that had constrained the country's financial sovereignty. The sovereign PKI hierarchy processes certificate operations at the scale and availability demanded by national payment infrastructure, providing the cryptographic foundation for domestic card transactions without reliance on foreign commercial entities or external data routing. A Central Bank in a Middle Eastern Country's compliance and regulatory teams have direct, on-demand access to comprehensive CA audit trails, certificate inventories, and issuance records — a level of governance visibility and accountability that positions the country's payment infrastructure to meet current and future national and international regulatory standards.

About eMudhra. eMudhra is a globally trusted provider of digital trust services, offering eSignatures, PKI, Certificate Lifecycle Management, Multi-Factor Authentication and Identity & Access Management solutions. Licensed by the Controller of Certifying Authorities (CCA), India, eMudhra serves 1,000+ enterprises across 40+ countries, helping organisations build secure, compliant and paperless digital ecosystems.

Customer name withheld for confidentiality.