CASE STUDY

EMCA · BANKING & FINANCIAL SERVICES · INDIA

A Banking Research Institution in India Achieves Independent Certificate Issuance for India's Banking Sector with eMudhra emCA and emRA

SECTOR	REGION	SOLUTION
Banking & financial services	India	emCA

CLIENT OVERVIEW

The A Banking Research Institution in India (A Banking Research Institution in India) is a premier research and technology institution established by the national banking regulator, dedicated to developing and deploying technology solutions for India's banking and financial sector. Headquartered in India, A Banking Research Institution in India functions as the technology arm of the Indian banking ecosystem — providing the secure networking backbone for the sector, digital banking standards, cybersecurity research, and PKI services that underpin the operations of banks, financial institutions, and payment systems across the country. As the nodal agency for banking technology in India, A Banking Research Institution in India's mandate to serve as a trusted, self-sufficient digital trust authority for the sector carries both operational and strategic significance at a national scale.

THE CHALLENGE

Despite its central role as the technology backbone of Indian banking, A Banking Research Institution in India had long depended on third-party Certificate Authority service providers for the issuance of digital certificates to banks, financial institutions, and their personnel. This dependency created a structural vulnerability at the heart of India's banking PKI ecosystem: the institution mandated to provide trusted digital infrastructure for the sector was itself reliant on external providers for one of the most foundational elements of that infrastructure — the certificates that authenticate identities, secure communications, and enable digital transactions across the national banking network.

The operational consequences of this dependency were significant. Certificate issuance timelines were governed by third-party SLAs rather than A Banking Research Institution in India's own operational requirements, introducing delays that cascaded to the banks and financial institutions relying on A Banking Research Institution in India for timely certificate provisioning. Policy control was similarly constrained: the certificate profiles, issuance rules, and governance frameworks applicable to banking-sector certificates were defined within the external provider's

> *"As the institution entrusted with providing digital trust infrastructure to Indian banking, depending on a third-party provider for certificate issuance was fundamentally at odds with our mandate. We needed the capability to issue, govern, and be accountable for certificates entirely within our own infrastructure. "*
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> **Director, A Banking Research Institution in India**

CA policy architecture, limiting A Banking Research Institution in India's ability to tailor certificate management precisely to the regulatory and operational standards of the Indian banking environment.

From a compliance and governance perspective, the third-party dependency also complicated A Banking Research Institution in India's ability to maintain full audit traceability over the certificates issued in its name to banking-sector entities. Audit records, issuance logs, and certificate event histories resided within external systems, limiting A Banking Research Institution in India's capacity to respond rapidly to regulatory inquiries, conduct internal reviews, or demonstrate compliance with the Controller of Certifying Authorities (CCA) India's PKI framework requirements — under which A Banking Research Institution in India operates as a Sub-CA within India's national PKI hierarchy. Establishing independent CA and RA capability was not merely an operational preference; it was a prerequisite for A Banking Research Institution in India to fully discharge its responsibilities as a trusted PKI authority for Indian banking.

THE SOLUTION

A Banking Research Institution in India selected eMudhra's emCA platform — deploying both the CA (Certificate Authority) and RA (Registration Authority) modules — to establish fully independent, in-house certificate issuance capability under A Banking Research Institution in India's direct governance, aligned with CCA India's PKI framework and the specific trust requirements of the Indian banking sector.

The emCA deployment established A Banking Research Institution in India's own CA infrastructure: a governed certificate authority hierarchy under which A Banking Research Institution in India can independently issue, manage, renew, suspend, and revoke digital certificates for banks, financial

institutions, and banking personnel across its subscriber base. The CA module was configured with certificate profiles and issuance policies tailored to A Banking Research Institution in India's role within India's national PKI hierarchy and the operational requirements of its banking-sector subscribers — including the Digital Signature Certificate (DSC) classes applicable to financial sector use cases and the cryptographic standards mandated by CCA India.

Alongside the CA module, eMudhra's emRA (Registration Authority) module was deployed to provide A Banking Research Institution in India with an integrated, end-to-end subscriber management capability. The emRA handles the complete applicant lifecycle: identity verification and vetting of certificate applicants, request validation against A Banking Research Institution in India's subscriber policies, approval workflow management, and the formal registration of subscribers prior to certificate issuance by the CA. This CA-RA integration — both modules operating under A Banking Research Institution in India's own infrastructure — eliminated the organisational and technical seams that had previously separated registration from issuance when third-party providers were involved, compressing turnaround times and placing the full certificate provisioning workflow under A Banking Research Institution in India's unified operational control.

eMudhra's implementation team worked closely with A Banking Research Institution in India's technical and compliance leadership to configure the CA and RA modules in strict alignment with CCA India's Interoperability Guidelines and A Banking Research Institution in India's own Certification Practice Statement (CPS). Role-based access controls govern operator functions across both modules, with dual-control procedures enforced for sensitive CA operations. A comprehensive, internally maintained audit trail — spanning every registration event, certificate issuance, renewal, revocation, and key operation — provides A Banking Research Institution in India's compliance team with the full accountability record required under CCA India oversight and internal governance standards. The platform was delivered with structured knowledge transfer, enabling A Banking Research Institution in India's team to independently operate, audit, and scale its certificate issuance operations as demand across India's banking sector grows.

RESULTS

The deployment of eMudhra emCA and emRA transformed A Banking Research Institution in India from a dependent subscriber of third-party certificate services into a self-sufficient, independently operating Certificate Authority for India's banking sector — fully aligned with CCA India's national PKI framework and directly accountable for every certificate issued under its authority.

METRIC	BEFORE	AFTER
Certificate Issuance Capability	Fully dependent on third-party providers	Independent issuance via in-house emCA & emRA
CA & RA Infrastructure Ownership	None; outsourced	Dedicated CA and RA modules deployed and operational

METRIC	BEFORE	AFTER
Certificate Policy Control	Governed by external provider policies	Fully A Banking Research Institution in India-governed policy framework
Issuance Turnaround Time Audit Trail & Compliance Visibility	Subject to third-party SLAs and delays Limited; records held externally	Reduced; on-demand issuance under A Banking Research Institution in India control Complete internal audit trail across CA and RA modules
Operational Dependency Risk	High; vulnerable to provider disruption	Eliminated; self-sufficient certificate operations
Alignment with CCA India Mandate	Partial; reliant on third-party CA licence	Full compliance with CCA-India PKI framework

With independent CA and RA infrastructure now operational, A Banking Research Institution in India eliminated its structural dependency on external providers — gaining direct control over certificate issuance timelines, subscriber management, policy governance, and compliance reporting. The integrated emCA and emRA deployment compressed certificate provisioning turnaround by removing the hand-off delays inherent in outsourced workflows, while A Banking Research Institution in India's internally maintained audit trail provides the complete, on-demand accountability record required under CCA India oversight. Most significantly, A Banking Research Institution in India now fulfils its mandate as a trusted PKI authority for Indian banking with full institutional integrity — issuing, governing, and being directly accountable for the digital certificates that secure banking operations across the country.

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.