DIGITAL COMMERCIAL BANK LTD.

ISO 20022

Direct Settlement Infrastructure — Technical Document

INDA Mode | ISO 20022 | DAES 256 | API-Driven Financial Messaging & Execution

Date: March 27, 2026

Rev. R3 | Classification: CONFIDENTIAL

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1. EXECUTIVE SUMMARY

Digital Commercial Bank Ltd (DCB) operates a proprietary settlement infrastructure designed to enable direct, point-to-point (P2P) interbank transfers without reliance on legacy systems such as SWIFT messaging, IBAN routing, or correspondent banking chains. The system leverages API-first architecture, ISO 20022 messaging compatibility, Direct Agent Settlement (INDA model), and cryptographic verification layers. This framework enables real-time or near real-time M1 fund transfers with full auditability and security.

2. INSTITUTION DETAILS

Institution	Digital Commercial Bank Ltd.
LEI	**254900KLR17QIS1G6I63**
Global Server IP	**185.229.57.76**
Global Server Port	**443 (TLS 1.3)**
Platform	DAES — Digital Asset & Electronic Services
Website	https://digcommbank.com
Platform	https://luxliqdaes.cloud
Contact	operations@digcommbank.com
Settlement Engine	DAES 256 — Data & Exchange Settlement Engine
Standards	ISO 20022 | ISO 27001 | PCI-DSS Level 1 | FATF AML/CFT

3. CORE ARCHITECTURE (DAES LAYER)

DAES 256 Components:

Transaction Orchestrator	Handles initiation, routing, and lifecycle management
Validation Engine	JSON schema + ISO 20022 pacs.008.001.08 validation
Settlement Engine	Executes INDA direct settlement — M1 immediate funds
Security Layer	HMAC-SHA256 (LAU) | RSA-2048 (PKI) | AES-256-GCM
Certification Module	Generates 6-document post-settlement verification package

4. CONNECTIVITY LAYER

4.1 Supported Channels

API-to-API (A2A)	REST / Webhook-based execution — Real-time bidirectional
IP-to-IP (IP2IP / IP-ID)	Direct network-level connectivity — Point-to-point
SSH / SFTP	Secure asynchronous file exchange — Encrypted channel
Webhook Direct	HTTP POST with HMAC signature — Instant delivery

4.2 Active Endpoints

DCB Global	**185.229.57.76:443 (TLS 1.3)**
DAES Cloud	**luxliqdaes.cloud/api/webhooks/receive**

4.3 Network Security

TLS	1.2 / 1.3
IP Whitelisting	Enabled
mTLS	Optional mutual authentication
Firewall	IP-restricted access per endpoint

5. MESSAGING FRAMEWORK

5.1 JSON (Primary for API)

Format	application/json; charset=UTF-8
Schema	Schema-validated, lightweight, real-time execution
Signature	HMAC-SHA256 (header: X-Signature + embedded in body)

5.2 ISO 20022 XML

Message Type	pacs.008.001.08 — FI-to-FI Customer Credit Transfer
Namespace	urn:iso:std:iso:20022:tech:xsd:pacs.008.001.08
Compatibility	Full institutional standard compliance

5.3 JSON to ISO 20022 Mapping

transfer_id	MsgId / EndToEndId / InstrId
sender.account	DbtrAcct > Id > IBAN
beneficiary.account	CdtrAcct > Id > IBAN
amount	IntrBkSttlmAmt (value)
currency	IntrBkSttlmAmt (Ccy)
sender.bic	DbtrAgt > FinInstnId > BICFI
beneficiary.swift	CdtrAgt > FinInstnId > BICFI
reference	RmtInf > Ustrd
timestamp	GrpHdr > CreDtTm

6. SETTLEMENT MODEL — INDA

Model	INDA — Instructed by Direct Agent
Execution	Directly by debtor's agent bank, no intermediaries
Dependencies	No SWIFT dependency, no IBAN routing, no correspondent banks
Fund Type	M1 — Immediate Liquidity (Direct Funds)
Settlement Speed	Real-time or near real-time

7. TRANSACTION LIFECYCLE

1. Initiation	Counterparty sends JSON/XML via API, IP, or SFTP
2. Validation	Schema validation (JSON / ISO 20022) + Signature verification
3. Authorization	INDA instruction validated, settlement conditions confirmed
4. Execution	Direct debit/credit via DAES — no intermediary routing
5. Confirmation	Transaction status returned via API/Webhook (real_transaction: true)
6. Certification	Cryptographic and settlement documents generated (6-document package)

8. SECURITY FRAMEWORK

8.1 Integrity

HMAC-SHA256 (LAU)	Payload signing and verification
Payload Hashing	SHA-256 body hash + byte count

8.2 Authentication

API Keys / Tokens	Per-endpoint key management

IP Validation	Whitelist-based access control
mTLS	Optional mutual TLS authentication

8.3 Cryptographic Proof

PKI Digital Signature	RSA-2048 / SHA-256
Bilateral MAC	HMAC-SHA256
Encryption	AES-256-GCM (PIN-locked fund packages)

9. POST-SETTLEMENT CERTIFICATION

1.	ISO 20022 Transfer Statement (PDF)
2.	pacs.008.001.08 Settlement Certificate
3.	HMAC-SHA256 LAU Integrity Proof
4.	SwiftNet PKI Digital Signature Certificate (RSA-2048)
5.	Interbank Settlement Confirmation
6.	Bilateral MAC Verification Certificate
Delivery	PIN-secured access + optional SFTP/SSH transmission

10. JSON PAYLOAD SAMPLE


```
{
  "transfer_id": "TX-45823901",
  "amount": 1000000.00,
  "currency": "USD",
  "real_transaction": true,
  "settlement_type": "FIAT_DEPOSIT",
  "status": "received",
  "source": "bank",
  "timestamp": "2026-03-27T10:45:00Z",
  "hash": "0x7af0c4c77f3d8790710...",
  "sender": {
    "name": "SENDER ENTITY",
    "bank": "Digital Commercial Bank Ltd.",
    "bic": "GEEIGB22XXX",
    "iban": "GB49GEEI04276701099100",
    "lei": "254900KLR17QIS1G6I63"
  },
  "beneficiary": {
    "name": "COUNTERPARTY BANK",
    "account": "ACC-998877",
    "swift": "COUNTERPARTY_BIC"
  },
  "deposit_credit": {
    "depositId": "TX-45823901",
    "txId": "0x7af0c4c77f3d8790710...",
    "coin": "USDT",
    "amount": "1000000.00",
    "status": 1,
    "confirmTimes": "1/1"
  },
  "signature": {
    "method": "HMAC-SHA256",
    "value": "abc123...",
    "body_hash": "def456..."
  }
}
```


11. ISO 20022 XML SAMPLE (pacs.008.001.08)

```
<?xml version="1.0" encoding="UTF-8"?>
<Document xmlns="urn:iso:std:iso:20022:tech:xsd:pacs.008.001.08">
  <FIToFICstmrCdtTrf>
    <GrpHdr>
      <MsgId>TX-45823901</MsgId>
      <CreDtTm>2026-03-27T10:45:00Z</CreDtTm>
      <NbOfTxs>1</NbOfTxs>
      <SttlmInf>
        <SttlmMtd>INDA</SttlmMtd>
        <SttlmAcct><Id><IBAN>GB49GEEI04276701099100</IBAN></Id></SttlmAcct>
      </SttlmInf>
      <InstgAgt><FinInstnId>
        <BICFI>GEEIGB22XXX</BICFI>
        <Nm>Digital Commercial Bank Ltd.</Nm>
        <LEI>254900KLR17QIS1G6I63</LEI>
      </FinInstnId></InstgAgt>
    </GrpHdr>
    <CdtTrfTxInf>
      <PmtId><InstrId>TX-45823901</InstrId>
        <EndToEndId>TX-45823901</EndToEndId></PmtId>
      <IntrBkSttlmAmt Ccy="USD">1000000.00</IntrBkSttlmAmt>
      <ChrgBr>SHAR</ChrgBr>
      <Dbtr><Nm>SENDER ENTITY</Nm></Dbtr>
      <DbtrAcct><Id><IBAN>GB49GEEI04276701099100</IBAN></Id></DbtrAcct>
      <DbtrAgt><FinInstnId><BICFI>GEEIGB22XXX</BICFI></FinInstnId></DbtrAgt>
      <Cdtr><Nm>COUNTERPARTY BANK</Nm></Cdtr>
      <CdtrAcct><Id><Othr><Id>ACC-998877</Id></Othr></Id></CdtrAcct>
      <RmtInf><Ustrd>Direct Settlement INDA | TX-45823901</Ustrd></RmtInf>
    </CdtTrfTxInf>
  </FIToFICstmrCdtTrf>
</Document>
```

12. OPERATIONAL ADVANTAGES

Real-time Settlement	Near real-time M1 fund transfers with full auditability
Cryptographic Security	End-to-end HMAC-SHA256, RSA-2048, AES-256-GCM verification
No Intermediaries	Direct P2P settlement eliminating correspondent banking chains
Flexible Integration	API / Webhook / IP-ID / SSH-SFTP — multiple channels
Full Audit Trail	Compliance-ready 6-document certification package per transaction
ISO 20022 Native	Full pacs.008.001.08 compatibility with JSON mapping layer

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