

13. Key Technical Requirements Coverage

13.1 APIs for Compliance Artifacts

- **Invoice Reference Number (IRN):** Generated automatically by <BluelightSmartAPI> as part of clearance cycle.
- **QR Codes:** Embedded in invoice PDF or XML, returned as base64 image and stored in archive.
- **Digital Signatures:** PKCS#7 signatures created for every payload, ensuring non-repudiation and integrity.
- **API Endpoints:** RESTful APIs available for submission, status retrieval, archive fetch, and reconciliation.

<diagram: SmartAPI services — submit invoice → signature + QR generation → FIRS clearance → archive → retrieval API>

13.2 Data Resource Libraries

- **Product Library:** Client product catalog mapped to HS (Harmonized System) codes as per FIRS reference tables.
 - **Customer Library:** Stores customer master data with validated TINs, synchronized with FIRS registry.
 - **Tax Code Library:** Maps client ERP tax codes (e.g., SAP condition records) to FIRS tax codes.
 - **Service Codes:** Configurable library for industry-specific service codes, aligned to regulator references.
 - **Reference Synchronization:** Automatic refresh from FIRS resource APIs (where available), with client override controls.
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13.3 Hosting and Residency Options

- **Default:** Services hosted in NG OPCO server when regulator mandates local residency.
 - **Bluelight Managed Cloud:** Private tenants on AWS, Azure, or GCP with region lock to Nigeria.
 - **Dedicated VPC:** Available for Platinum tier clients needing isolation, network controls, and BYO (Bring Your Own) security stack.
 - **Disaster Recovery:** Active-passive failover across regions within Nigeria, with RPO 15 minutes and RTO 2 hours.
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13.4 Performance and Throughput Targets

- Median processing latency < 500 ms within SmartAPI.
 - P95 latency < 1.5s excluding regulator response time.
 - Autoscaling to handle > 500,000 invoices per day per tenant.
 - Webhook callbacks delivered in < 2s median after clearance event.
 - Batch file processing supports up to 50,000 invoices per batch with checksum validation.
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13.5 High Availability and Reliability

- Platform SLA: 99.9% uptime for Gold/Platinum tiers, 99.5% for Silver, 99.0% for Bronze.
 - SmartAPI endpoints load balanced and geo-redundant.
 - Daily health checks and synthetic monitoring from multiple regions.
 - Queuing and replay mechanisms ensure zero invoice loss during regulator downtime.
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13.6 Security Controls (Summary)

- Transport: TLS 1.3 with mTLS or OAuth2.
 - Authentication: OAuth2 JWT, client certificates, or both.
 - Authorization: RBAC and MFA for dashboard access.
 - Data: AES-256 encryption at rest, tamper-evident logs, immutable WORM archive.
 - Monitoring: SIEM integration, anomaly detection, real-time alerts.
 - Governance: Certificate expiry monitoring, quarterly security audits, semi-annual penetration testing.
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13.7 Integration Readiness

- **SAP ECC 6.0:** IDoc INVOIC02 via PI/PO integration templates.
- **SAP S4/HANA:** CPI iFlows using Billing Document API.
- **Oracle:** XML adapters for EBS, REST for Fusion.
- **Microsoft Dynamics:** OData integration and CSV batch support.
- **Legacy ERPs:** BlueBox capture from print spool, folders, or network ports.
- **No ERP Environments:** BlueInvoice SaaS or Email Connector plug-and-play.

<diagram: Integration decision tree — ERP type → recommended integration path → SmartAPI core → FIRS>

13.8 Reconciliation and Reporting

- Daily and intraday reconciliation across ERP, SmartAPI, and FIRS.
- Exception queues for mismatches with Finance workflows for correction.
- Digitally signed reconciliation reports archived alongside invoice evidence.
- Dashboards for Finance, IT, and Compliance with drill-down and export options.

13.9 Regulatory Change Absorption

- Schema versioning and backward compatibility built into SmartAPI.
- Feature flags enable rapid rollout of regulator changes without ERP disruption.
- Hotfix deployment pipeline ensures compliance updates within days, not months.
- Client systems continue submitting canonical payloads unaffected.

13.10 Why Clients Benefit

- **No gaps** — every regulator requirement is covered, down to HS codes and QR codes.
- **No rework** — SmartAPI absorbs regulator changes centrally.
- **No disruption** — works with ECC today, S4 tomorrow, and legacy forever.
- **Audit ready** — evidence bundles and signed reports at the click of a button.