FIRS Nigeria E-Invoicing Enablement for Enterprises

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Document Status: Draft for Client Review

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1. Executive Summary

1.1 Objective and Scope

The Federal Inland Revenue Service (FIRS) has mandated e-invoicing through the Merchant Buyer Solution (MBS), requiring every enterprise to submit invoices electronically for clearance and compliance. The objective of this proposal is to present Softrust and Bluelight Systems' comprehensive solutions that allow enterprises of all sizes to become compliant quickly, securely, and without disruption to existing operations.

This proposal outlines our technology suite, integration approaches, onboarding process, and operational support framework. It covers multiple deployment options, ensuring that whether a client is running a Tier-1 ERP system such as SAP or Oracle, a mid-market application, or a custom-built billing system, they can achieve compliance in weeks rather than months.

1.2 What the Client Gains

- **Immediate Compliance** – Every invoice cleared through FIRS MBS with IRN, QR code, and signature automatically generated.
- **Minimal Change to ERP** – SmartAPI, BlueBox, and Email Connector provide non-invasive methods that avoid costly ERP upgrades.

- **Audit Readiness** – Evidence bundles created for every transaction, with exportable receipts, logs, signatures, and QR codes.
- **Future-Proofing** – Our canonical SmartAPI contract isolates client systems from FIRS schema changes, eliminating rework.
- **Flexibility of Choice** – API, SaaS, Email, and Capture-based solutions fit all levels of technical maturity.
- **Enterprise Rigor** – Delivered through structured methodology, governance, risk management, and SLA-backed operations.

1.3 Solution Options Overview

Our solution suite provides four entry points into compliance, tailored to different client contexts:

1. **SmartAPI** – A full-featured REST API that integrates directly with ERP or billing systems. Handles transformation, signing, QR generation, submission to FIRS, archiving, monitoring, and reconciliation.
2. **BlueInvoice** – A secure SaaS web application for creating, managing, and submitting invoices without ERP dependency. Ideal for subsidiaries, smaller entities, or rapid pilots.
3. **Email Connector** – The simplest integration option. Clients send invoices as email attachments to a dedicated address. Invoices are automatically processed, submitted, and returned with acknowledgements and receipts.
4. **BlueBox** – Capture technology that intercepts invoices at print, folder, or network port level. Processes them automatically into compliant submissions, requiring zero modification to legacy ERP systems.

<diagram: One-page solution landscape showing SmartAPI, BlueInvoice, Email Connector, BlueBox, and FIRS MBS>

1.4 Why Softrust and Bluelight

- **Accredited by FIRS** – Qualified Access Provider and System Integrator in Nigeria.
- **Proven Technology** – <BluelightSmartAPI> is already production-ready, tested, and handling full compliance lifecycle.
- **End-to-End Coverage** – From requirements gathering to steady-state support, with methodology aligned to global best practices.
- **Enterprise Security and Compliance** – TLS 1.3, mTLS, PKI signing, WORM archiving, SIEM integration, and audit-ready logs.
- **Scalable Delivery** – Supports single company operations as well as multi-entity, multi-country groups with high transaction volumes.

- **Migration Ready** – Works seamlessly with both SAP ECC and S4/HANA, as well as other ERP platforms, ensuring future safety.
- **Support and SLA Assurance** – 24x7 coverage with service credits, RPO of 15 minutes, RTO of 2 hours, and quarterly service reviews.

1.5 Summary Statement

With Softrust and Bluelight, enterprises are not just buying compliance technology — they are investing in resilience, audit confidence, and future readiness. Our suite of SmartAPI, BlueInvoice, Email Connector, and BlueBox ensures that every type of enterprise, regardless of its ERP maturity, can achieve compliance rapidly and sustain it effortlessly.

2. Product Suite Overview

Our solutions are designed to meet enterprises wherever they are on their digital journey. Whether a client runs a Tier-1 ERP, a mid-market accounting platform, or legacy on-premise applications, Softrust and Bluelight provide a path to FIRS e-invoicing compliance that is fast, safe, and future-proof.

2.1 SmartAPI – Enterprise Integration Backbone

SmartAPI is a fully featured REST API that connects ERP and billing systems directly to FIRS MBS. It is the recommended option for enterprises with IT capacity or integration partners.

Core Capabilities

- **Transformation** – Converts ERP invoice data into the canonical format and maps it automatically to FIRS MBS schema.
- **Compliance Services** – Generates IRN, QR codes, and digital signatures using PKI.
- **Submission** – Securely transmits invoices to FIRS in real time, handles acknowledgements, rejections, and pending statuses.
- **Archiving** – Stores evidence bundles (canonical payload, signed copy, QR, receipts, and logs) in WORM storage with 10-year retention.
- **Monitoring** – Provides dashboards for IT, Finance, and Compliance teams with full observability.
- **Resilience** – Includes retries, replay queues, and idempotency keys to eliminate duplication.

Integration Patterns

- SAP ECC (IDoc INVOIC02 via PI/PO)
- SAP S4/HANA (CPI iFlows via Billing Document API)
- Oracle, Dynamics, Sage, or custom systems (REST, SFTP, or flat file adapters)
- Non-ERP systems (direct REST calls with JSON payloads)

<diagram: SmartAPI integration pattern from ERP to SmartAPI to FIRS with archive and dashboards>

2.2 BlueInvoice – SaaS Web Invoicing Application

BlueInvoice is a fully online, browser-based invoicing platform. It allows enterprises, subsidiaries, or partners without ERP integration capability to generate, submit, and manage e-invoices quickly and independently.

Core Capabilities

- Create invoices with customer, product, and tax data, mapped to FIRS schema.
- Maintain master data for customers, products, HS codes, and tax codes.
- Generate IRNs, QR codes, and signed invoices automatically.
- Manage incoming invoices, acknowledgements, and rejections.
- Access dashboards showing submission volume, clearance status, and audit logs.
- Multi-user roles with approval workflows.

Benefits

- No installation required – fully SaaS.
- Rapid onboarding – live within days.
- Ideal for entities outside the main ERP or for pilot projects.

<diagram: BlueInvoice SaaS flow showing web entry, SmartAPI processing, and FIRS clearance>

2.3 Email Connector – Simplicity at Scale

The Email Connector is the most lightweight option for compliance. Enterprises simply send invoices as email attachments to a dedicated address.

Core Capabilities

- Accepts common formats (PDF, XML, CSV).
- Processes invoices automatically via SmartAPI engine.
- Generates IRN, QR, and signature, submits to FIRS, and archives.
- Sends acknowledgement or rejection responses back by email.
- Handles inbound invoices in the same workflow, delivering them to client mailboxes.

Benefits

- Zero integration effort – plug and play.
- Works even with legacy systems without APIs.
- Simple for small subsidiaries, third-party contractors, or business units with minimal IT support.

<diagram: Email Connector flow from client email → SmartAPI → FIRS → return email with receipt>

2.4 BlueBox – Non-Invasive Capture Technology

BlueBox enables enterprises with legacy or inflexible ERP systems to achieve compliance without any system modifications. It captures invoices at the point of output (print or batch), converts them into the required format, and processes them automatically.

Core Capabilities

- Capture invoices at print spooler, folder, or network port level.
- Transform captured files into SmartAPI canonical schema.
- Submit securely to FIRS with IRN, QR, and signature.
- Archive evidence bundles and deliver receipts back into ERP or email.
- Monitor and reconcile captured invoices through dashboards.

Benefits

- Zero change to ERP or billing systems.
- Works in highly restricted environments where APIs are not available.
- Fast path to compliance for legacy environments.

<diagram: BlueBox capture flow showing ERP print spool → BlueBox → SmartAPI → FIRS → archive and dashboards>

2.5 Product Fit by Client Context

Client Context	Recommended Solution	Rationale
Large enterprise with SAP, Oracle, or Dynamics	SmartAPI	Deep ERP integration, automation, scalability
Subsidiary or standalone entity without ERP	BlueInvoice	SaaS invoicing, rapid go-live, low IT requirement
Small or distributed business units	Email Connector	Simplest method, no integration effort
Legacy ERP with no APIs or locked down systems	BlueBox	Capture at source, no ERP changes needed

<diagram: Product capability matrix by use case and client profile>

2.6 Why Multiple Options Matter

Enterprises often have a mixed environment: SAP at headquarters, legacy systems in regional offices, small subsidiaries, and vendors without ERP. With Softrust and Bluelight, a single provider covers all scenarios through SmartAPI, BlueInvoice, Email Connector, and BlueBox. This eliminates the need to engage multiple vendors, reduces compliance risk, and simplifies governance.

3. Regulatory Context and Compliance Assurance

3.1 The Nigerian E-Invoicing Mandate

The Federal Inland Revenue Service (FIRS) has introduced the Merchant Buyer Solution (MBS) framework as the central mechanism for e-invoicing compliance in Nigeria. Unlike federated networks such as PEPPOL, MBS establishes FIRS as the **single national clearance authority**, requiring all invoices to be submitted, validated, and cleared before recognition in financial systems.

The mandate requires that:

- Every invoice submitted for clearance generates an **Invoice Reference Number (IRN)** and a **QR code** that links directly to the FIRS record.
- Submission must be real-time or near real-time, eliminating batch-only reporting.

- Enterprises must retain evidence of clearance, including signed payloads and regulator receipts, for audit periods that extend up to 10 years.
- Compliance is mandatory across all industries, with penalties and enforcement mechanisms for non-compliance.

<diagram: Nigerian e-invoicing clearance model showing client → SmartAPI → FIRS → IRN/QR/receipt → archive>

3.2 Implications for Enterprises

The MBS framework shifts compliance from a **back-office reporting activity** to a **front-line operational control**. This has three key implications:

1. **ERP Integration is no longer optional** – systems must either integrate natively or connect through an intermediary platform.
2. **Data accuracy and tax coding must be exact** – errors are rejected in real time, halting downstream processes.
3. **Audit defense must be proactive** – regulators expect instant evidence retrieval, not manual reconciliations.

Enterprises that fail to adapt risk delayed collections, compliance penalties, and reputational harm.

3.3 Our Compliance Assurance Model

Softrust and Bluelight provide a compliance assurance model that abstracts the complexity of the FIRS mandate and guarantees that clients remain continuously aligned.

Key Elements

- **Canonical Schema** – A single, stable schema within SmartAPI that insulates client systems from FIRS changes.
- **Version Management** – SmartAPI implements versioned payloads, feature flags, and hotfixes so that regulatory changes are absorbed centrally.
- **Evidence Bundles** – Each invoice archived with canonical JSON, FIRS submission, signed hash, QR, and regulator receipt, ensuring full audit defense.
- **Resilience** – Automated retries, replay queues, and idempotency keys prevent financial loss or duplication.
- **Security** – End-to-end encryption, PKI signing, and tamper-evident logs meet regulatory and internal audit standards.

- **Audit Readiness** – Compliance dashboards and export features enable retrieval in seconds, not days.

<diagram: Compliance assurance lifecycle – submission, clearance, archive, retrieval, audit>

3.4 Conformance with FIRS Requirements

Our solutions address each requirement of the MBS mandate:

FIRS Requirement	Coverage by Softrust and Bluelight
Real-time submission of invoices	SmartAPI submits in <1 second median; BlueInvoice and BlueBox feed through same engine
IRN and QR generation	<BluelightSmartAPI> generates IRN and QR as part of clearance process
Digital signature of payload	PKI signing embedded in SmartAPI compliance engine
Error handling and rejections	Errors returned in structured format to ERP, Email, or SaaS interface
Evidence and archival	WORM storage with 10-year retention, indexed for retrieval
Secure transmission	TLS 1.3, mTLS or OAuth 2.0, role-based access
Reconciliation	Daily and intraday reconciliation across ERP, SmartAPI, and FIRS
Audit	Evidence bundles exportable for regulators and internal auditors

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3.5 Future-Proofing Beyond Initial Compliance

The regulatory landscape in Nigeria is dynamic. FIRS continues to refine rules, adjust data field requirements, and expand scope. Our architecture is designed to:

- **Absorb schema changes centrally** in SmartAPI, eliminating client-side rework.
- **Extend beyond invoices** to other tax-relevant documents such as credit notes, debit notes, or even potential future filings.
- **Scale transaction volumes** as clients grow, with autoscaling infrastructure and tiered subscription models.
- **Adapt to global standards** by maintaining alignment with frameworks like PEPPOL and UBL, ensuring Nigerian compliance also positions enterprises for regional and international requirements.

3.6 Competitive Advantage

Where competitors typically offer either a middleware adapter or a lightweight SaaS tool, Softrust and Bluelight deliver:

- **End-to-end coverage** across API, SaaS, email, and capture.
- **Enterprise-grade monitoring** with dashboards for Finance, IT, and Compliance.
- **Audit defense by design**, not as an afterthought.
- **Seamless migration readiness** from ECC to S4 or from legacy to modern ERPs.

This holistic compliance assurance is the reason our clients can go live faster, avoid regulatory risk, and operate with confidence.

4. Systems Requirements and Compatibility

4.1 Supported Integration Endpoints and Formats

Our platform is designed to integrate with a wide range of enterprise systems, from Tier-1 ERPs to homegrown billing solutions. All methods converge on <BluelightSmartAPI>, which provides a canonical compliance layer.

Supported Input Formats

- **Structured Data**: JSON, XML, CSV
- **ERP Documents**: SAP IDoc INVOIC02, Oracle EBS XML, Microsoft Dynamics export formats
- **Unstructured Documents**: PDF (via BlueBox or Email Connector parsing)
- **Hybrid**: Mixed batch files, compressed packages (ZIP), or direct email attachments

Output to FIRS

- Fully aligned with FIRS MBS schema, including all mandatory fields, signatures, and QR payloads.
- Submission over HTTPS with TLS 1.3, with fallback retry mechanisms for FIRS outages.

<diagram: Input formats from ERP → SmartAPI canonical → FIRS MBS>

4.2 ERP and Billing System Compatibility

SAP

- ECC 6.0 (IDoc INVOIC02 via PI/PO)

- S4/HANA (Integration Suite CPI iFlows via Billing Document API)
- Compatibility tested in hybrid dual-stack environments (ECC for Finance, S4 for Logistics).

Oracle

- E-Business Suite (XML/flat file adapters)
- Fusion Applications via REST and SOAP APIs

Microsoft Dynamics

- AX and NAV via batch exports
- Dynamics 365 Finance & Operations via OData/REST

Others

- Sage, QuickBooks, Tally, or custom systems via JSON REST, CSV, SFTP, or BlueBox capture at print/file level

Legacy Environments

- BlueBox ensures compliance without upgrades or invasive modifications. It intercepts print jobs or folder drops and transforms them automatically.

<diagram: Compatibility matrix ERP vs SmartAPI vs BlueInvoice vs BlueBox>

4.3 Network and Hosting Considerations

Connectivity Options

- Direct HTTPS over internet with mTLS (client certificates)
- VPN tunnel into SmartAPI endpoints
- Dedicated leased line or private interconnect (for Tier-1 clients with higher security policies)

Hosting and Residency

- Default hosting within NG OPCO server when mandated
- Option for Bluelight-managed secure cloud tenancy (AWS, Azure, GCP) with region lock to Nigeria
- Dedicated VPC (Virtual Private Cloud) available for Platinum tier clients

Latency and Throughput

- Median submission latency: < 500 ms inside SmartAPI
- P95 latency: < 1.5s excluding FIRS response time
- Scale tested for > 500,000 invoices per day per tenant

<diagram: Hosting topology – client ERP on-prem/cloud → SmartAPI tenancy → FIRS MBS>

4.4 Customer Prerequisites and System Readiness

Minimum Client Requirements

- Active ERP or billing system with export capability (file, API, print, or email)
- Network connectivity to SmartAPI endpoints (whitelisted IPs, open ports 443)
- Valid digital certificate or key pair (client-provided PKI or Bluelight-issued PKI)
- Service account for integration (SAP RFC user, Oracle integration user, etc.)
- Test data set with valid TINs, HS codes, and tax codes for SIT and UAT

Optional Enhancements

- SAP CPI tenant for future S4/HANA migrations
- SIEM integration for security teams
- SFTP server access for batch fallback scenarios

<diagram: Prerequisites checklist mapped to ERP, Network, Security, and Data readiness>

4.5 Integration Options by Client Profile

Client Profile	Recommended Integration Path	Notes
Large enterprise on SAP ECC	SmartAPI via PI/PO with IDoc INVOIC02	Future-safe, minimal ECC disruption
Large enterprise on SAP S4	SmartAPI via CPI iFlows with Billing Document API	Migration ready, native API support
Oracle EBS or Fusion	SmartAPI via XML/REST adapter	Direct mapping, proven flows
Dynamics AX/NAV	SmartAPI via OData or batch CSV	Mid-market ERP compatibility
Legacy ERP with no APIs	BlueBox capture at print or file output	Zero system modification required
Small business unit / standalone	BlueInvoice SaaS or Email Connector	Fastest path to compliance

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4.6 Why This Matters to IT Leaders

Where competitors might tell clients “we support SAP,” we demonstrate in detail exactly how the integration occurs, what formats are accepted, what hosting constraints apply, and what prerequisites the client must meet. This eliminates hidden costs, reduces risk, and allows CIOs and CTOs to sign off with confidence.

5. Security Architecture

Security is the foundation of our e-invoicing solutions. With sensitive financial and tax data flowing through client systems, <BluelightSmartAPI>, and FIRS MBS, we implement **end-to-end protection** that is aligned with international standards, regulator requirements, and enterprise audit expectations.

<diagram: Security layers from client ERP → SmartAPI → FIRS → Archive, with encryption, signing, monitoring>

5.1 Transport Security

- **TLS 1.3** for all traffic between client systems, SmartAPI, and FIRS MBS.
- **Mutual TLS (mTLS)** with client certificates for sensitive ERP integrations, ensuring both parties authenticate each other.
- **IP allowlisting and VPN options** for clients requiring stricter connectivity controls.
- **HSTS (HTTP Strict Transport Security)** enabled on all endpoints to prevent downgrade or man-in-the-middle attacks.

5.2 Authentication and Authorization

- **OAuth 2.0 with JWT tokens** signed by our PKI for API access.
- **mTLS-based client authentication** as an alternative for clients who prefer certificate-based identity.
- **Role-Based Access Control (RBAC)** ensures least privilege access across Finance, Compliance, and IT.
- **Multi-factor authentication (MFA)** for BlueInvoice SaaS and SmartAPI dashboards.
- **Audit logging of all authentication events**, shipped to SIEM for monitoring and anomaly detection.

5.3 Data Protection and Privacy

- **Encryption in transit** with TLS 1.3 and strong cipher suites.
- **Encryption at rest** with AES-256 for all databases and archives.
- **Key Management** via HSM-backed PKI (Hardware Security Module) or client-provided PKI.
- **Tamper-evident logs** with hash chaining and immutable WORM (Write Once, Read Many) storage for invoice evidence.
- **Data minimization** – only required invoice data is processed, no unnecessary fields are persisted.

5.4 Non-Repudiation and Integrity

- Every invoice payload is digitally signed (PKCS#7) before submission.
- Signatures ensure **origin authenticity** (the invoice came from the right client), **integrity** (no changes after signing), and **non-repudiation** (the sender cannot deny submission).
- QR codes generated embed a secure reference back to the signed record, enabling external verification.

<diagram: Signature and QR integrity chain from invoice payload → signature → QR verification → audit log>

5.5 Logging, Monitoring, and Threat Detection

- **Comprehensive audit logging** for all API calls, submissions, responses, and user actions.
- Logs include correlation IDs, timestamps in UTC, user IDs, and event outcomes.
- **SIEM integration** (Splunk, ELK, Azure Sentinel) for real-time analysis.
- **Threat detection rules** for:
    - Repeated failed authentications
    - Abnormal IPs or geographies
    - Large volume spikes outside of configured limits
    - Suspicious payload patterns (e.g., injection attempts)
- **Alerts routed in real time** to Bluelight Ops and client SOC (Security Operations Center).

5.6 Compliance and Certifications

- Designed to align with **ISO 27001** (Information Security Management).
- Logging aligned to **NIST 800-92** and **OWASP API Security Top 10**.
- GDPR-equivalent data protection principles applied where personal data exists.
- **Regular penetration testing** conducted in UAT and pre-production environments.
- Regulatory **conformance tests with FIRS** to validate schema, signature, and transmission security.

5.7 Business Continuity and Disaster Recovery

- **RPO 15 minutes** (Recovery Point Objective) with database replication.
- **RTO 2 hours** (Recovery Time Objective) with active-passive failover across data centers.
- **Semi-annual DR drills** with full evidence reports provided to client compliance teams.
- **Geo-redundant backups** encrypted and stored in multiple secure locations within Nigerian regulatory jurisdiction.

5.8 Security Governance

- Security reviewed as part of every design decision by a **dedicated Security Architect**.
- **Quarterly security audits** with results reported to client leadership.
- **Certificate expiry management** – automatic monitoring with alerts at T-30, T-7, T-1 days.
- **Emergency response playbooks** for breach scenarios, aligned to international incident response standards.

5.9 Why Our Security is Different

While many providers claim to secure traffic with HTTPS, Softrust and Bluelight go far beyond:

- **Defense in depth** – layered protection from endpoint to archive.
- **Audit-grade evidence** – tamper-evident logs and immutable archives.
- **Proactive monitoring** – integrated SIEM, anomaly detection, and SOC escalation.
- **Regulator alignment** – proven against FIRS security protocols and continuously updated.

Our security is not an afterthought; it is the bedrock of our compliance solutions.

6. Data Mapping and Schema

6.1 The Challenge of Data Alignment

The FIRS MBS platform enforces strict validation on invoice payloads. Every header, line item, tax code, and reference must align precisely with regulator specifications. Enterprises often face mismatches: ERP fields named differently, optional fields in ERP that are mandatory for FIRS, or tax code libraries that don't align with regulator codes.

Failure to map correctly results in rejected invoices, delayed collections, and compliance risk.

6.2 Our Canonical Data Model

To solve this, Softrust and Bluelight enforce a **canonical schema** within <BluelightSmartAPI>. This schema is stable, versioned, and designed to remain constant even as FIRS updates its rules.

Canonical Model Features

- **Header Section** – document ID, invoice number, supplier TIN, buyer TIN, company code, issue date, plant, currency, totals.
- **Line Items** – line number, description, quantity, unit price, tax code, line amount.
- **Taxation** – VAT, zero-rated, exempt codes, mapped consistently to regulator taxonomy.
- **References** – order numbers, delivery notes, customer IDs.
- **Metadata** – source system identifier, correlation ID, IDoc number or API request ID.

<diagram: Canonical schema model showing ERP field → canonical JSON → FIRS schema mapping>

6.3 Mapping from ERP and Billing Systems

SAP ECC

- IDoc INVOIC02 segments (E1EDK01, E1EDK14, E1EDP01, etc.) mapped to canonical fields.
- TIN captured from master data and validated against regulator database.
- Tax codes mapped using SAP condition records to FIRS equivalents.

SAP S4/HANA

- API_BILLINGDOCUMENT_SRV entities mapped directly.

- Company codes and plants resolved into canonical invoice header.
- Customer master and product master cross-mapped to regulator TIN and HS code libraries.

Other ERPs

- Oracle EBS XML nodes, Dynamics OData entities, and CSV exports handled by mapping templates.
- Legacy systems handled through BlueBox capture with rules-based parsing.

6.4 Mapping to FIRS MBS Schema

<BluelightSmartAPI> transforms the canonical JSON to FIRS-required schema in real time.

Key Features

- **Mandatory field enforcement** – missing buyer TIN or invoice date rejected at SmartAPI layer before reaching FIRS.
- **Normalization** – formats normalized (e.g., dates converted to ISO 8601).
- **Validation rules** – numeric fields validated, tax codes checked, HS codes cross-referenced.
- **Error messages** – structured error returned to ERP or Email Connector with root cause for correction.

6.5 Resource Library and Reference Data

Compliance requires external data sources beyond invoices. Our system includes a **reference data library**:

- **HS Code Library** – product mapping to correct HS classification.
- **Customer Master** – client-provided mapping of customer IDs to TINs and regulator IDs.
- **Tax Code Library** – mapping of ERP tax codes to regulator codes.
- **Service Codes** – library maintained and updated centrally, synced with FIRS resources.

This ensures Finance and Compliance teams do not waste time remapping master data repeatedly.

<diagram: Reference library architecture – master data from client + regulator codes → SmartAPI cache → invoice mapping>

6.6 Version Management and Change Absorption

FIRS regularly updates schema specifications. Most vendors pass these changes back to the client ERP, causing expensive rework. Our model avoids this:

- **Versioned Schemas** – SmartAPI maintains multiple schema versions in parallel.
- **Feature Flags** – changes can be enabled or disabled without disrupting ERP integration.
- **Backward Compatibility** – client ERP continues submitting in canonical schema, even as SmartAPI adapts to new FIRS rules.
- **Hotfix Pipeline** – regulatory changes implemented in SmartAPI and deployed rapidly, without ERP modification.

6.7 Error Handling and Guided Correction

- Validation rejects returned in structured JSON or as email notifications.
- Errors logged with correlation IDs for quick traceability.
- Finance users guided with reason codes (e.g., “Invalid TIN format,” “HS code mismatch”).
- Corrected invoices automatically resubmitted through the same pipeline.

6.8 Why This Matters

By insulating client ERPs from schema churn and automating mapping through libraries and canonical modeling, Softrust and Bluelight deliver:

- **Fewer rejections** and faster clearance.
- **Reduced IT workload** during regulatory changes.
- **Continuous compliance** without costly ERP customization.
- **Confidence for Finance and Compliance** that tax codes, HS codes, and TINs are always correctly aligned.

7. Integration Capabilities and Methods

7.1 The Principle of Flexible Integration

Every enterprise is unique. Some operate modern APIs, others rely on batch files or legacy systems, and many have subsidiaries with little to no IT capability. Softrust and Bluelight

provide a **multi-channel integration approach** that ensures all client environments can comply without costly ERP changes.

<diagram: Integration wheel with four entry points — API, File/SFTP, Email, BlueBox capture — all converging into SmartAPI → FIRS MBS>

7.2 SmartAPI Integration

The flagship method for modern ERPs and billing systems.

Features

- REST endpoints exposed for invoice submission, status checks, and archive retrieval.
- Secure authentication via OAuth2 with JWT or mTLS.
- Webhooks push clearance and rejection responses back to ERP.
- Polling fallback for environments that cannot expose inbound endpoints.
- Idempotency and replay queues ensure zero duplicates and no data loss.

ERP Examples

- **SAP ECC**: IDoc INVOIC02 routed through PI/PO to SmartAPI.
- **SAP S4**: CPI iFlows using Billing Document API.
- **Oracle**: EBS XML exports or Fusion REST APIs.
- **Dynamics**: OData integration or CSV exports ingested into SmartAPI.

7.3 File and Batch Integration

For clients accustomed to batch jobs or constrained environments.

Features

- SFTP or secure object storage endpoints for file drop.
- Supported formats: JSON, XML, CSV, TXT.
- Checksum validation ensures integrity of files before processing.
- Batch results returned with success/failure per invoice.
- Configurable schedules (hourly, daily, or ad hoc).

Use Cases

- Nightly batch runs from mid-market ERPs.
- High-volume clearing where ERP cannot push real time.

- Transitional approach for clients modernizing their ERP stack.

<diagram: File batch flow — ERP export → SFTP drop → SmartAPI → FIRS → return batch result>

7.4 Email Connector

The simplest integration option, designed for subsidiaries or contractors.

Features

- Client sends invoices as email attachments to a dedicated address.
- Supported attachments: PDF, XML, CSV.
- Invoices parsed, validated, signed, and submitted via SmartAPI.
- Response returned to sender by email with clearance or rejection details.
- Inbound invoices also supported — clients can receive validated invoices through the same channel.

Benefits

- Zero technical integration effort.
- Works with any system capable of sending email.
- Ideal for small subsidiaries, external vendors, or distributed teams.

<diagram: Email Connector flow — Client email → SmartAPI → FIRS → return email with receipt>

7.5 BlueBox Capture Technology

For legacy environments where system changes are not feasible.

Features

- Captures invoices directly from print spool, file folder, or network port.
- Converts captured documents into SmartAPI canonical schema.
- Automatically submits to FIRS and archives results.
- Works without touching ERP source code.
- Returns receipts into ERP or email for Finance validation.

Benefits

- Zero ERP modification required.
- Fastest path to compliance in locked-down systems.
- Ensures even outdated or unsupported systems can comply with FIRS mandates.

<diagram: BlueBox flow — ERP print spool → BlueBox → SmartAPI → FIRS → archive + dashboards>

7.6 Hybrid Integration

Large enterprises often require more than one method:

- Headquarters using **SmartAPI** for SAP,
- Regional subsidiaries on **BlueInvoice**,
- Contractors submitting via **Email Connector**,
- Legacy systems managed through **BlueBox**.

All methods converge into the same compliance core — SmartAPI — ensuring unified monitoring, reconciliation, and audit evidence across the enterprise.

7.7 Benefits of Multi-Channel Integration

- **Flexibility** – No system is left behind, from SAP to spreadsheets.
- **Risk Reduction** – Multiple fallback paths (API, file, email, capture).
- **Scalability** – Handle both high-volume automated submissions and ad-hoc manual entries.
- **Unified Compliance** – Regardless of channel, every invoice flows through SmartAPI for signing, QR, submission, and archiving.
- **Future Proofing** – As clients modernize their systems, they can migrate from Email or BlueBox to SmartAPI without disruption.

8. Methods of Receipt Processing and Submission to FIRS

8.1 Overview

FIRS MBS operates as a clearance model: every invoice must be received, validated, and acknowledged before it is legally recognized. Softrust and Bluelight ensure that this process is

automated, reliable, and auditable across all entry channels — SmartAPI, file, email, and BlueBox.

<diagram: End-to-end flow — ERP/BlueInvoice/Email/BlueBox → SmartAPI compliance engine → FIRS MBS → response → archive + dashboards>

8.2 Supported Document Types

- **Invoices** – standard sales and service invoices.
- **Credit Notes** – negative invoices reducing liability.
- **Debit Notes** – adjustments for additional charges.
- **Future Expansion** – designed to support regulator extension to other tax documents (e.g., withholding tax certificates).

8.3 Pre-Submission Processing

Before an invoice is transmitted to FIRS, SmartAPI performs several safeguards:

- **Schema Validation** – invoice checked against canonical schema and regulator schema.
- **Mandatory Field Checks** – e.g., Buyer TIN, issue date, line totals.
- **Normalization** – consistent formatting of dates, currencies, numeric precision.
- **Master Data Cross-Check** – HS codes, tax codes, and TINs validated against SmartAPI's reference libraries.
- **Digital Signature Preparation** – payload hash signed with PKI for non-repudiation.

If validation fails, the invoice is rejected at SmartAPI layer, with structured error messages returned to ERP, Email Connector, or BlueInvoice user interface.

8.4 Submission to FIRS MBS

- **Transport** – invoices transmitted over TLS 1.3 via HTTPS.
- **Security** – signed payload with client certificate or OAuth token.
- **Idempotency** – each submission carries a unique ID to prevent duplicates.
- **Response Handling** – SmartAPI manages synchronous and asynchronous FIRS responses.

Response Types

1. **Acknowledged** – FIRS has received the invoice, processing pending.

2. **Cleared** – Invoice successfully validated, IRN and QR returned.
3. **Rejected** – Invoice invalid, reason code provided.
4. **Pending** – FIRS temporary status; SmartAPI queues for automatic retry.

8.5 Error Handling and Correction

- Errors returned include structured error code, field name, and description.
- Errors logged with correlation ID and timestamp for traceability.
- Finance teams notified via dashboards, emails, or ERP error queues.
- Corrected invoices resubmitted automatically once fixed.

Examples of common errors

- Invalid or missing Buyer TIN.
- Incorrect tax code mapping.
- Inconsistent line totals vs header totals.
- Invalid HS code reference.

8.6 Post-Submission Processing

Every successfully submitted invoice is enriched and archived:

- **Clearance Receipt** – IRN, QR code, timestamp from FIRS.
- **Digital Signature** – proof of authenticity and integrity.
- **Audit Log Entry** – full trace of submission and response cycle.
- **Archival** – bundled into WORM storage for 10+ years.

Invoices are also updated in client ERP (via SmartAPI callback or polling) or sent back by email acknowledgement.

<diagram: Evidence lifecycle — canonical invoice → FIRS submission → receipt/QR → evidence bundle archived>

8.7 Monitoring and Reconciliation

- **Dashboards** show real-time clearance rates, rejections by reason, and pending items.
- **Daily reconciliation** automatically compares ERP, SmartAPI, and FIRS counts.
- **Exception queues** flag mismatches for Finance review.
- **Audit-ready exports** allow retrieval of receipts and evidence bundles at any time.

8.8 Failover and Resilience

If FIRS MBS is unavailable or unstable:

- SmartAPI retries submissions with exponential backoff.
- Pending invoices are queued safely until FIRS becomes available.
- Clients are notified through dashboards and alerts, but no invoices are lost.
- Optional fallback paths (SFTP or batch submission) can be enabled if required.

8.9 Why Clients Trust This Process

- **Zero invoice loss** – everything queued and tracked with correlation IDs.
- **Proactive error handling** – rejects caught early, corrected quickly.
- **Audit defense** – every submission tied to receipts, signatures, and evidence bundles.
- **Operational visibility** – dashboards for Finance, IT, and Compliance ensure transparency.

Softrust and Bluelight don't just "send invoices" — we engineer an **industrial-grade compliance pipeline** that ensures every invoice is validated, cleared, and audit-ready.

9. Tracking, Monitoring, and Audit

9.1 The Importance of Visibility

In a clearance regime like FIRS MBS, compliance does not end when an invoice is submitted. Enterprises must be able to **prove** that every invoice was submitted, cleared, and archived, while also detecting issues in real time. Softrust and Bluelight provide unified tracking and monitoring that gives Finance, IT, and Compliance stakeholders confidence at all times.

<diagram: Three-pane dashboard — Finance (status), IT (infrastructure), Compliance (audit evidence)>

9.2 Real-Time Tracking

- **Status Views** – every invoice visible from submission through clearance or rejection.

- **Search and Filter** – by invoice number, TIN, clearance ID, company code, or date range.
- **Drill-Downs** – see full payload, response, and evidence bundle per invoice.
- **Correlation IDs** – unique identifiers link SAP/ERP entries to FIRS receipts, ensuring traceability.

9.3 Monitoring for IT Teams

- **Platform Metrics** – throughput, latency, error rates, queue sizes.
- **Alerting** – configurable thresholds for SLA breaches (e.g., clearance delay > 30 min).
- **Infrastructure Health** – CPU, memory, and certificate expiry alerts.
- **Integration Monitoring** – webhooks, callbacks, and SFTP channels monitored with retries and alerts.

<diagram: IT monitoring dashboard showing latency graphs, error spikes, and alert indicators>

9.4 Compliance Dashboards

- **Clearance Rates** – percentage cleared vs submitted in real time.
- **Rejection Reasons** – categorized by missing TINs, tax codes, HS codes, or formatting issues.
- **Reconciliation Reports** – SAP vs SmartAPI vs FIRS counts, with exception queues.
- **Audit Trails** – logs of who submitted, when, what response was received, and how corrections were handled.

9.5 Evidence Bundles

Every cleared invoice generates a **complete audit package**, including:

- Canonical JSON payload
- Signed submission file
- Clearance receipt from FIRS (IRN, QR, timestamp)
- PKI digital signature for integrity
- QR code image for verification
- Audit log extract with all events and correlation IDs

These bundles are **immutable** and stored in WORM (Write Once, Read Many) archives for a minimum of 10 years.

9.6 Daily and Intraday Reconciliation

- **Daily Jobs** – reconcile invoice counts across ERP, SmartAPI, and FIRS.
- **Intraday Spot Checks** – random checks on high-value invoices.
- **Exception Queues** – flagged mismatches reviewed by Finance before day end.
- **Signed Reports** – reconciliation reports digitally signed and stored alongside evidence bundles.

<diagram: Reconciliation flow — ERP totals vs SmartAPI vs FIRS → exception queue → signed report>

9.7 Alerting and Notifications

- **Finance Alerts** – invoice rejected, immediate email or dashboard alert.
- **Compliance Alerts** – daily reconciliation mismatches.
- **IT Alerts** – integration or infrastructure errors, certificate expiry, queue backlogs.
- **Custom Channels** – alerts can be pushed into ServiceNow, Jira, or Microsoft Teams.

9.8 Audit Readiness

- **One-Click Retrieval** – auditors can request evidence for any invoice via dashboard or API.
- **Bulk Export** – monthly or quarterly ZIP bundles for external regulators.
- **Immutable Logs** – all submissions, responses, and corrections preserved.
- **Proactive Audits** – quarterly mock audits performed jointly with client Compliance teams.

9.9 Why This Matters to the Client

- **Finance Teams** get real-time visibility and assurance that invoices are cleared.
- **IT Teams** get dashboards, alerts, and control over integration health.
- **Compliance and Audit** get legally defensible evidence with zero effort.

Together, these capabilities transform compliance from a **risk exposure** into a **controlled and monitored process**.

10. Onboarding Support

10.1 Our Onboarding Philosophy

Onboarding is not a technical exercise alone — it is a business-critical transition. Softrust and Bluelight's approach ensures **speed without shortcuts**. Every client is guided by dedicated technical and project managers, with a structured playbook covering discovery, connectivity, testing, and stabilization.

<diagram: Onboarding journey timeline — Kickoff → Setup → Testing → Pilot → Go-Live → Hypercare>

10.2 Step-by-Step Onboarding Plan

Step 1 – Kickoff and Alignment

- Project kickoff workshop with Finance, IT, and Compliance.
- Review scope, success criteria, and delivery timeline.
- Assign roles, responsibilities, and escalation matrix.

Step 2 – Environment Setup

- Provision SmartAPI tenant and client environments (UAT and Production).
- Configure connectivity (VPN, HTTPS, mTLS certificates).
- Enable dashboards and monitoring access for client teams.

Step 3 – Schema and Data Readiness

- Confirm canonical schema against client ERP or billing exports.
- Validate master data (TINs, HS codes, tax codes) against regulator resources.
- Upload or sync initial product and customer reference libraries.

Step 4 – Pilot Testing (Sandbox Mode)

- Submit first set of test invoices via ERP, BlueInvoice, Email, or BlueBox.
- Validate end-to-end flow with FIRS sandbox.
- Correct mapping issues, refine tax code and master data alignment.

Step 5 – User Acceptance Testing (UAT)

- Client Finance and Compliance test real scenarios: rejections, corrections, duplicates, and reconciliations.

- Sign-off once clearance rates and reconciliation match targets.

Step 6 – Go-Live Preparation

- Dry-run cutover with readiness checklist (connectivity, monitoring, alerts, rollback plan).
- Freeze changes in ERP integration until after go-live.
- Executive sign-off to proceed.

Step 7 – Go-Live and Hypercare

- Enable production connectivity.
- Submit pilot batch of live invoices, validate clearances.
- Scale to full production submission.
- Hypercare period with 24x7 monitoring, daily check-ins, and immediate defect resolution.

Step 8 – Transition to Steady State

- Handover to client IT and Finance operations.
- Confirm runbooks, knowledge base, and playbooks are in use.
- Close hypercare once stability confirmed for three consecutive days.

10.3 Dedicated Technical Support

- **Onboarding Manager** – single point of contact for client PMO.
- **Solution Architect** – ensures ERP-to-SmartAPI mappings and security alignment.
- **Integration Engineers** – configure SAP PI/PO, CPI, or BlueBox capture.
- **Finance Liaison** – guides Finance team through reconciliation and correction flows.
- **Compliance Lead** – ensures regulator alignment, evidence bundles, and audit readiness.

10.4 Testing and Troubleshooting Support

- **Structured Test Scripts** – covering happy path, rejection handling, duplicate prevention, and reconciliation.
- **Guided Troubleshooting** – SmartAPI provides root cause error messages (e.g., invalid TIN format, tax code mismatch).
- **Support Channels** – email, ticketing portal, hotline for critical issues.
- **Service Levels** – response and resolution targets aligned to client's chosen SLA tier (Silver, Gold, or Platinum).

<diagram: Testing and troubleshooting loop — submission → validation → rejection → correction → resubmission → clearance>

10.5 Client Responsibilities

To ensure smooth onboarding, clients are asked to:

- Provide ERP integration access (IDoc export, API credentials, or file drop location).
- Supply test data sets with valid customer and product master data.
- Nominate Finance and Compliance testers for UAT.
- Ensure internal IT support is available for network/firewall configuration.

10.6 Why Our Onboarding is Different

- **Predictable** – every step rehearsed, no surprises at go-live.
- **Comprehensive** – covers IT, Finance, and Compliance, not just ERP integration.
- **Supported** – dedicated experts on-call throughout onboarding.
- **Accelerated** – typical go-live in 10 to 12 weeks, compared to industry average of 16 to 20 weeks.

11. Delivery and Implementation Methodology

11.1 Our Delivery Philosophy

Compliance projects succeed when technology, process, and people are aligned. Softrust and Bluelight apply a **phased, milestone-driven methodology** that balances speed with enterprise rigor. We adapt proven delivery frameworks (agile where integration requires iteration, waterfall where regulatory deadlines demand predictability) to ensure every phase is executed with precision.

<diagram: Delivery lifecycle timeline — Discovery → Design → Build & SIT → UAT → Cutover → Go-Live → Hypercare → Steady State>

11.2 Project Phases

Phase 1 – Discovery and Blueprint

- Requirements gathering across Finance, IT, and Compliance.
- Current-state system landscape assessment.
- Gap analysis vs FIRS MBS requirements.
- Architecture blueprint: integration patterns, security controls, monitoring model.
- Deliverable: **Blueprint Document and High-Level Architecture Diagram**.

Phase 2 – Solution Design

- Mapping specification (ERP fields to canonical schema).
- Interface Control Document (ICD) with endpoint, payload, and error handling details.
- Security design: authentication, encryption, PKI, and certificate lifecycle plan.
- Deliverable: **Detailed Design Package and Data Mapping Specification**.

Phase 3 – Build and System Integration Testing (SIT)

- Configure SmartAPI tenant(s).
- Develop ERP integration (IDoc, API, or BlueBox capture).
- Unit testing of mappings, transformation, and validation rules.
- SIT with both client ERP and FIRS sandbox environments.
- Deliverable: **SIT Completion Report with Traceability Matrix**.

Phase 4 – User Acceptance Testing (UAT)

- Client Finance and Compliance test end-to-end scenarios.
- Error handling validated: rejection, correction, resubmission.
- Daily reconciliation validated against ERP totals.
- Deliverable: **UAT Sign-Off**.

Phase 5 – Cutover and Go-Live

- Dry-run of cutover steps.
- Go/no-go checkpoint with Steering Committee.
- Controlled switch to production with rollback readiness.
- Initial live invoices submitted and validated with FIRS clearance.
- Deliverable: **Cutover Execution Record**.

Phase 6 – Hypercare

- Intensive support for two weeks post go-live.
- Daily operational stand-ups with Finance, IT, and Compliance.
- Monitoring and incident response teams on standby 24x7.
- Deliverable: **Hypercare Closure Report**.

Phase 7 – Transition to Steady State

- Knowledge transfer to client IT and Finance teams.
- Runbook and playbook handover.
- Quarterly governance review cadence established.
- Deliverable: **Handover Document and Operations Sign-Off**.

11.3 Implementation Accelerators

- **Pre-Built Templates** – SAP PI/PO channel templates, CPI iFlows, data mapping libraries.
- **SmartAPI Sandbox** – allows safe end-to-end testing without FIRS dependency.
- **Automated Test Packs** – Postman collections and reconciliation scripts accelerate SIT/UAT.
- **Predefined Runbooks and Playbooks** – ensure fast operational readiness.

11.4 Governance Model

- **Steering Committee** – client executives + Softrust + Bluelight leadership, meets bi-weekly.
- **Project Management Office (PMO)** – tracks milestones, risks, issues, and deliverables.
- **Technical Design Authority** – ensures architectural consistency and security compliance.
- **Change Advisory Board (CAB)** – reviews scope and change requests.

<diagram: Governance structure with Steering Committee at top, PMO + TDA + CAB below>

11.5 Benefits of Our Approach

- **Predictability** – every phase with clear entry/exit criteria.
- **Speed** – accelerated templates and sandbox reduce timeline to 10–12 weeks.
- **Risk Control** – governance model ensures issues are tracked and escalated early.
- **Future-Readiness** – design accommodates ECC now, S4 tomorrow, and other ERPs as needed.
- **Stakeholder Confidence** – Finance, IT, and Compliance engaged throughout, no surprises at go-live.

12. Scope of Work

12.1 Overview

Softrust and Bluelight will provide a **turnkey e-invoicing integration and compliance solution** that delivers end-to-end coverage: from requirements gathering to ongoing support. The scope has been carefully defined to address FIRS MBS requirements, enterprise IT standards, and Finance/Compliance needs.

<diagram: Scope pyramid — foundation (requirements/design) → build/test → deployment → operations/support>

12.2 Requirements Gathering and Analysis

- Conduct workshops with Finance, IT, and Compliance stakeholders.
- Document current ERP, billing, and legacy system landscape.
- Identify data sources, master data quality issues, and integration constraints.
- Define business and compliance requirements traceable to FIRS specifications.
- Deliverable: **Requirements Specification and Traceability Matrix**.

12.3 Solution Design

- Develop target architecture (integration, security, monitoring).
- Select integration method(s): SmartAPI, BlueBox, BlueInvoice, Email Connector.
- Define data mapping specification (ERP fields → canonical schema → FIRS schema).
- Define security model (TLS, mTLS/OAuth2, PKI signing, certificate lifecycle).
- Deliverable: **Solution Architecture Document and Interface Control Document (ICD)**.

12.4 Development of Integration Services

- Configure and deploy <BluelightSmartAPI> tenant(s).
- Build ERP adapters (SAP IDoc → API, CPI iFlows, Oracle XML, Dynamics OData).
- Deploy BlueBox where required for print/folder capture.
- Enable Email Connector accounts and routing.
- Implement validation, signing, QR generation, and submission pipelines.
- Deliverable: **Configured Environments and Integration Services Ready for Testing**.

12.5 Testing

- **Unit Testing** – confirm individual mappings and API endpoints.
- **System Integration Testing (SIT)** – validate end-to-end flow with FIRS sandbox.
- **User Acceptance Testing (UAT)** – Finance and Compliance validate rejection handling, reconciliation, and audit exports.
- **Performance Testing** – verify throughput, latency, and resilience under load.
- **Security Testing** – penetration test, certificate validation, and role-based access verification.
- Deliverable: **Test Reports and UAT Sign-Off**.

<diagram: Testing cycle — Unit → SIT → UAT → Performance → Security>

12.6 Deployment and Configuration

- Cutover rehearsal with rollback procedures.
- Deploy into production environments (ERP, SmartAPI, BlueBox, Email Connector).
- Configure monitoring dashboards, reconciliation jobs, and alerting.
- Deliverable: **Go-Live Deployment Record**.

12.7 Monitoring and Management Setup

- Provision dashboards for Finance, IT, and Compliance.
- Configure reconciliation jobs (daily and intraday).
- Set alert thresholds and notification routes.
- Connect logs to client SIEM and monitoring tools (optional).
- Deliverable: **Operational Dashboards and Monitoring in Production**.

12.8 Training and Knowledge Transfer

- Conduct training sessions for Finance users (reconciliation, error handling, audit exports).
- Conduct training sessions for IT users (integration health, monitoring, incident response).
- Deliver runbooks, playbooks, and knowledge base documentation.
- Deliverable: **Trained Teams and Signed Knowledge Transfer Acknowledgement**.

12.9 Post-Implementation Support and Maintenance

- Hypercare support for two weeks post go-live, with daily stand-ups and 24x7 monitoring.
- Transition to steady state support (SLA-based, as defined in Section 17).
- Ongoing compliance updates — schema changes, new regulator requirements absorbed by SmartAPI.
- Regular service reviews and continuous improvement plan.
- Deliverable: **Steady State Operations with SLA Monitoring and Quarterly Reviews**.

12.10 Out of Scope (for Clarity)

- Functional reengineering of ERP or billing systems.
- Master data cleanup or enrichment beyond mapping and validation.
- Development of custom ABAP, Oracle PL/SQL, or Dynamics extensions not directly related to e-invoicing integration.
- Non-FIRS modules (e.g., VAT filings, payroll compliance).
- Third-party penetration testing (can be arranged as an option).

12.11 Why This Scope Wins Confidence

- **Complete Coverage** – all FIRS requirements are addressed, end-to-end.
- **Clear Boundaries** – clients know exactly what is included, avoiding hidden costs.
- **Enterprise Discipline** – requirements traceability, design artifacts, test reports, and governance are all delivered.
- **Post-Go-Live Continuity** – clients are not left unsupported; SmartAPI evolves with regulatory changes.

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.

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.

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.

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.

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.

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.

14. Systems Requirements by Option

14.1 SmartAPI Integration Requirements

ERP/Client System Prerequisites

- Ability to export invoice data in one of the supported formats (JSON, XML, CSV, IDoc).
- SAP ECC: PI/PO middleware with IDoc INVOIC02 adapter enabled.
- SAP S4/HANA: CPI tenant with access to Billing Document API (`API_BILLINGDOCUMENT_SRV`).
- Oracle, Dynamics, Sage: export APIs, batch jobs, or file interfaces.

Network & Security

- HTTPS (port 443) connectivity to SmartAPI endpoints.
- Mutual TLS (client certificate) or OAuth 2.0 credentials.
- Firewall/IP allowlisting configured for SmartAPI IP ranges.
- VPN or private interconnect optional for high-security clients.

Operational Requirements

- Service account credentials provisioned in ERP for integration.
- Access for Finance/IT users to SmartAPI dashboards.
- Log forwarding integration (optional) to client SIEM.

14.2 BlueInvoice Requirements

User Environment

- Browser compatibility: latest versions of Chrome, Edge, or Firefox.
- Stable internet connection with HTTPS access.
- Corporate SSO (optional) via SAML or OAuth.

Data Requirements

- Initial master data upload:
  - Customer list with TINs
  - Product catalog with HS codes
  - Tax codes and mapping to FIRS equivalents
- Ability to export/import invoices (CSV/Excel) if bulk entry required.

Operational Requirements

- Finance users provisioned with accounts (Admin, Approver, Operator roles).
- Training session scheduled with Finance/Compliance teams.
- Optional integration to ERP for reconciliation via CSV/API.

14.3 Email Connector Requirements

User Environment

- Valid email client or ERP email integration.
- Allowed sender domain(s) whitelisted.
- DKIM/SPF alignment for corporate mail servers (recommended).

Invoice Format Support

- Attachments accepted: PDF, XML, CSV.
- File size limit: 5MB per attachment (configurable).
- Multiple invoices supported per email, with ZIP bundles allowed.

Operational Requirements

- Client-provided email addresses configured as authorized senders.
- Distribution list for receiving acknowledgements and cleared invoices.
- Optional integration of incoming cleared invoices into ERP mailboxes.

14.4 BlueBox Capture Requirements

System Environment

- Windows Server or Linux server to host BlueBox capture agent.
- Access to ERP print spooler, file drop folder, or network port.
- Minimum hardware: 4 CPU, 8GB RAM, 100GB storage.

Integration Setup

- Printer redirection or file watcher configured.
- Rules defined for invoice recognition (document type, format, folder path).
- Secure connection to SmartAPI for submission.

Operational Requirements

- Service account with permissions to read print spooler or folder.
- Firewall rules opened for SmartAPI submission channel (HTTPS).
- Dashboard access for monitoring captured invoices.

14.5 Compatibility Matrix

Option	ERP Dependency	Integration Effort	Best Fit Use Case
SmartAPI	High (ERP API or middleware)	Medium to High	Large enterprises with SAP, Oracle, Dynamics
BlueInvoice	None	Low	Subsidiaries, standalone entities, quick pilots
Email Connector	None	Very Low	Small business units, contractors, distributed teams
BlueBox	Legacy ERP print/file	Medium	Legacy or inflexible ERPs where no API is possible

<diagram: Compatibility matrix with four products mapped against ERP maturity and IT capacity>

14.6 Why Clients Benefit from This Clarity

- **No surprises** — requirements are transparent before onboarding.
- **Tailored fit** — each option matches client maturity and ERP environment.
- **Risk control** — firewall, certificate, and data readiness addressed upfront.
- **Flexibility** — clients can start with Email Connector or BlueBox and later migrate to SmartAPI or BlueInvoice seamlessly.

15. Risk Management Approach

15.1 Our Risk Philosophy

E-invoicing compliance is not just a technology integration — it is a regulated process where delays or failures can directly impact revenue, reputation, and legal standing. Softrust and Bluelight treat risk management as an **active discipline**, built into every phase of delivery and ongoing operations.

<diagram: Risk management cycle — Identify → Assess → Mitigate → Monitor → Review → Improve>

15.2 Risk Identification

We proactively identify risks across three dimensions:

- **Technology Risks** – ERP integration complexity, regulator changes, infrastructure failures.
- **Process Risks** – incorrect data mapping, reconciliation errors, insufficient testing.
- **People Risks** – lack of user adoption, inadequate training, unclear accountability.

15.3 Risk Assessment Framework

- **Likelihood Scale**: Rare, Unlikely, Possible, Likely, Almost Certain.
- **Impact Scale**: Low (minor operational issue), Medium (business disruption), High (financial penalty or compliance breach), Critical (regulatory non-compliance).
- Risks are scored as **Likelihood x Impact**, then plotted on a heat map for visibility.

<diagram: Heat map grid showing risks plotted by likelihood vs impact>

15.4 Top Compliance Project Risks and Mitigations

Risk 1: FIRS Specification Changes During Project

- *Impact*: Could require ERP rework and delay go-live.
- *Mitigation*: SmartAPI absorbs schema changes centrally via versioning and feature flags. No ERP modification required.

Risk 2: Poor Master Data Quality (TINs, HS Codes, Tax Codes)

- *Impact*: Rejected invoices, compliance gaps.
- *Mitigation*: Early master data validation, resource library sync with FIRS, Finance workshops for data cleanup.

Risk 3: ERP Integration Delays

- *Impact*: Slippage in SIT/UAT timelines.
- *Mitigation*: Pre-built templates for SAP PI/PO and CPI iFlows, dedicated integration engineers, fallback via Email Connector.

Risk 4: System Downtime at Go-Live

- *Impact*: Invoice submissions blocked, revenue recognition delayed.
- *Mitigation*: Cutover rehearsals, rollback plan, hypercare with 24x7 monitoring, autoscaling SmartAPI.

Risk 5: Security Incidents (Certificate Expiry, Unauthorized Access)

- *Impact*: Compliance breach, reputational damage.
- *Mitigation*: Certificate expiry alerts at T-30, T-7, T-1; RBAC; MFA; SIEM integration; quarterly access reviews.

Risk 6: User Adoption Resistance

- *Impact*: Manual workarounds, compliance bypass.
- *Mitigation*: Training sessions, knowledge transfer, Finance liaison support, dashboards to reduce manual effort.

15.5 Risk Governance Model

- **Risk Register** maintained from project kickoff, updated weekly by PMO.
- **Steering Committee** reviews top risks and mitigation actions bi-weekly.
- **Early Warning Indicators** monitored (rejection rates, queue backlogs, latency spikes).

- **Playbooks** activated for high-impact risks (e.g., regulator outage, mass rejection event).

15.6 Example Risk Heat Map

Likelihood \ Impact	Low	Medium	High	Critical
Rare	Minor UI bug	–	–	–
Possible	User training gap	Data mapping error	–	–
Likely	ERP delay	FIRS spec change	Downtime risk	–
Almost Certain	–	–	–	Security incident if no certificate monitoring

<diagram: Risk heat map visual showing risks grouped into red, amber, green zones>

15.7 Continuous Risk Monitoring

- Dashboards show live risk indicators: clearance rate drops, abnormal latency, rising rejection codes.
- Daily stand-ups in project phase include risk review.
- In steady state, risks reviewed quarterly with KPI trends.
- Lessons learned feed into continuous improvement backlog.

15.8 Why Our Risk Management Wins

- **Proactive, not reactive** – risks managed from day zero.
- **Comprehensive coverage** – technical, process, and people risks included.
- **Playbooks in place** – no scrambling during incidents.
- **Board-ready reporting** – risk registers, heat maps, and RCA reports suitable for executive and audit committees.

16. Delivery and Cutover Plan

16.1 Cutover Philosophy

Cutover is not a single event — it is a carefully orchestrated sequence of steps designed to move an organization from old processes to new compliance workflows without disruption. Softrust and Bluelight approach cutover with the rigor of a **mission control operation**: rehearsed, monitored, reversible, and supported in real time.

<diagram: Cutover timeline — Pre-cutover readiness → Dry-run → Go-live window → Validation → Hypercare>

16.2 Pre-Cutover Readiness

- **Cutover Runbook** prepared with task-by-task activities, owners, and timings.
- **Dry-Run Rehearsal** conducted in UAT, simulating real invoice flow and clearance.
- **Rollback Plan** defined and tested — ERP can continue using existing invoice processes if a critical issue arises.
- **Approval Gate**: Steering Committee reviews readiness checklist and authorizes go-live.

16.3 Cutover Execution Steps

1. **Freeze Window** – ERP integration changes frozen 48 hours before go-live.
2. **Final Data Validation** – confirm master data (TINs, HS codes, tax codes) loaded and reconciled.
3. **Switch Integration** – reroute ERP outputs to SmartAPI production tenant.
4. **Pilot Batch** – submit first set of live invoices (typically 50–100), validate clearance with FIRS.
5. **Validation** – confirm IRNs and QRs received, archive entries created, Finance reconciliation matches.
6. **Scale-Up** – expand to full invoice volume.
7. **Monitoring** – real-time dashboards, IT, and Finance on standby during first 48 hours.

16.4 Hypercare Support

- **Duration**: two weeks post go-live (extendable by client request).
- **Coverage**: 24x7 incident response, daily checkpoint calls with Finance, IT, and Compliance.
- **Focus Areas**: clearance rate monitoring, rejection handling, reconciliation, and system performance.

- **Exit Criteria**: three consecutive business days of stable operations (clearance rates > 99%, no Sev-1 incidents).

16.5 Rollback Plan

- **Trigger Points**: clearance rates drop below threshold, critical ERP disruption, FIRS outage lasting > 12 hours.
- **Rollback Actions**:
  - ERP outputs redirected to legacy invoice processes.
  - SmartAPI queues paused (no data loss).
  - Pending invoices replayed once issues resolved.
- **Communication**: incident declared, Steering Committee notified, Finance advised to continue with fallback until resumption.

16.6 Transition to Steady State

- **Knowledge Transfer**: runbooks, playbooks, and dashboards handed over to client IT and Finance.
- **Governance Setup**: quarterly service review cadence initiated.
- **Continuous Improvement**: improvement backlog from hypercare fed into roadmap.

16.7 Benefits of Our Approach

- **No Surprises** – rehearsals eliminate uncertainty.
- **No Downtime** – rollback safety net protects Finance operations.
- **No Invoice Loss** – SmartAPI queues guarantee delivery once FIRS resumes.
- **Confidence** – CFOs and CIOs can sign off knowing every risk has been mitigated.

17. Operations Runbook

17.1 Purpose of the Runbook

The Operations Runbook provides the **step-by-step guide for running e-invoicing operations in steady state**. It defines monitoring activities, incident handling, reconciliation, and escalation

paths. This ensures Finance, IT, and Compliance teams operate seamlessly without dependence on ad hoc support.

<diagram: Operations cycle — Monitor → Detect → Respond → Resolve → Reconcile → Review>

17.2 Daily Operations Checklist

Finance Team

- Review previous day's clearance report.
- Address any rejected invoices (guided error messages provided).
- Confirm reconciliation counts between ERP, SmartAPI, and FIRS.

IT Team

- Check SmartAPI dashboard for latency and error rates.
- Verify ERP → SmartAPI → FIRS submission queue status.
- Monitor certificate expiry alerts.

Compliance Team

- Review evidence bundles uploaded to archive.
- Confirm audit trail integrity (sample checks).
- Run daily compliance export for regulators if required.

Deliverable: **Signed Daily Operational Report** stored in archive.

17.3 Incident Management

Severity Classification

- **Sev-1**: Complete outage or clearance blockage.
- **Sev-2**: High error rate or major latency.
- **Sev-3**: Functional defect with limited scope.
- **Sev-4**: Cosmetic or informational issues.

Response Actions

1. Incident ticket raised automatically or by user.
2. Severity assigned and acknowledged within SLA target.

3. SmartAPI correlation ID used to trace and triage issue.
4. Resolution team engaged (Finance, IT, or Bluelight Ops).
5. Post-mortem Root Cause Analysis (RCA) delivered within 5 business days for Sev-1/2.

<diagram: Incident workflow — Detect → Ticket → Classify → Resolve → RCA → Close>

17.4 Monitoring and Alerts

Dashboards

- Invoice clearance rate by company code, TIN, or product.
- Top rejection reasons.
- System health (CPU, memory, latency, throughput).

Alerts

- Finance: rejection > 5% in one day.
- IT: latency breach (>1.5s P95) or queue backlog.
- Compliance: evidence bundle mismatch or archive sync failure.

Alerts are routed into ServiceNow, Jira, Teams, or client-preferred systems.

17.5 Reconciliation Procedures

Daily Reconciliation

- Compare ERP invoice counts vs SmartAPI counts vs FIRS receipts.
- Exception queue automatically flagged for mismatches.
- Finance resolves mismatches (e.g., resubmission of rejected invoices).

Intraday Spot Checks

- High-value invoices reconciled immediately on clearance.
- Random audits run every 4 hours during business day.

Monthly Sign-off

- Finance and Compliance issue a signed reconciliation report archived for 10 years.

<diagram: Reconciliation loop — ERP → SmartAPI → FIRS → Exception Queue → Report>

17.6 Escalation Matrix

- **Level 1 (Ops)**: Client IT and Finance analysts (ticket creation).
- **Level 2 (Integration)**: Softrust engineers for ERP mapping or SmartAPI troubleshooting.
- **Level 3 (Platform)**: Bluelight Ops team for SmartAPI infrastructure.
- **Level 4 (Regulator)**: Escalation to FIRS technical desk if regulator endpoint outage.

Escalations are time-bound and tracked to SLA targets.

17.7 Knowledge Base and Playbooks

Playbooks Available

- Rejected invoice handling.
- FIRS outage fallback (queue and replay).
- Certificate expiry renewal.
- Network connectivity failure recovery.
- Audit evidence export process.

Knowledge Base

- User guides for Finance, IT, and Compliance.
- Troubleshooting FAQs.
- Step-by-step guides for monitoring dashboards.

17.8 Continuous Improvement

- Quarterly service reviews with KPI analysis.
- Top 5 rejection reasons analyzed and corrected via data mapping updates.
- Latency trends monitored and scaling tuned proactively.
- Regulatory updates absorbed centrally and pushed as feature-flagged upgrades.

17.9 Why Clients Can Trust Our Operations

- **Predictable** – every action defined and rehearsed.
- **Defensible** – audit evidence available on demand.

- **Responsive** – incidents handled within SLA, with RCA transparency.
- **Evolving** – continuous improvements ensure long-term compliance and efficiency.

18. Case Studies

18.1 Global Footprint

Softrust and Bluelight bring unmatched experience in building and operating e-invoicing systems across multiple jurisdictions. Our solutions are live in **Saudi Arabia, UAE, Kenya, Tanzania, Malawi, Zimbabwe, Egypt, and Nigeria**, giving us first-hand expertise with diverse tax authorities, industries, and compliance frameworks.

<diagram: Global map highlighting these countries with arrows pointing to FIRS Nigeria as latest deployment>

18.2 National-Scale Implementations

We have successfully enabled **National E-Invoicing Systems at the Revenue Authority level**, supporting **hundreds of thousands of taxpayers**. These platforms manage massive volumes of transactions daily while maintaining compliance, security, and stability under regulator oversight.

Highlights

- Real-time invoice clearance for entire countries.
- Secure transmission and validation pipelines at national scale.
- Integration with regulator portals, taxpayer ERPs, and financial institutions.

18.3 Enterprise-Grade Deployments

Our solutions power compliance for enterprises across multiple industries, including:

- **Manufacturing** – integrating with SAP ECC and Oracle EBS for high-volume invoicing.
- **Hospitality** – enabling distributed hotels and restaurants to comply with national mandates via SaaS invoicing tools.
- **Distribution and Retail** – BlueBox deployed to capture and process invoices from legacy POS and ERP systems.
- **Utilities** – large transaction volumes processed with strict SLA guarantees.

- **Financial and Telecom** – millisecond-level processing for millions of monthly transactions, with high availability and 24x7 monitoring.

18.4 High-Throughput and Performance Cases

Some of our clients operate with **extreme transaction volumes** — tens of millions of invoices per month. We have consistently met and exceeded demanding SLAs, including:

- **Millisecond-Level Processing** – SmartAPI handles transformations and compliance artifacts (IRN, QR, signature) in sub-second timescales.
- **24x7 Global Operations** – continuous monitoring and incident response for mission-critical clients.
- **Scalable Architecture** – proven ability to autoscale during seasonal or market-driven transaction spikes.

<diagram: Performance case diagram — high-volume invoices flowing through SmartAPI → millisecond clearance → dashboards>

18.5 Why These Case Studies Matter

- **Regulator-Trusted** – we don't just serve enterprises, we have built systems trusted by national tax authorities.
- **Cross-Sector Experience** – manufacturing, telecom, hospitality, and utilities — each with unique ERP challenges — all successfully integrated.
- **Proven Under Pressure** – millisecond SLAs, hundreds of thousands of taxpayers, millions of transactions.
- **Nigeria Focused** – all this global expertise is now applied directly to FIRS MBS, making our solution locally compliant but globally battle-tested.

19. Proposal Requirements Mapping

19.1 Overview

To simplify evaluation, we have mapped each standard proposal requirement against the sections of this document. This ensures full transparency and demonstrates that **no requirement has been overlooked**.

<diagram: Traceability table visual — client requirements in left column, our proposal sections on right column with checkmarks>

19.2 Requirement Coverage Matrix

Client Requirement	Where Addressed in Proposal	Highlights
Company Profile	Section 1 (Executive Summary), Section 18 (Case Studies)	Accredited Access Provider & SI in Nigeria; deployments in 8+ countries
Project Team & Key Personnel Qualifications	Section 10 (Onboarding Support), Section 11 (Delivery Methodology)	Dedicated Solution Architect, Integration Engineers, Finance Liaison, Compliance Lead
Detailed Project Approach & Methodology	Section 11 (Delivery and Implementation Methodology)	Phased, milestone-driven, with accelerators and governance model
Integration Architecture Diagram	Section 7 (Integration Capabilities) & Section 8 (Submission Methods)	Multi-channel architecture converging into SmartAPI; diagrams provided
Project Plan, Timeline & Milestones	Section 11 (Delivery Methodology) & Section 16 (Cutover Plan)	10–12 week delivery, rehearsed cutover, 2-week hypercare
Risk Management Approach	Section 15 (Risk Management)	Heat map, top risks, mitigations, playbooks
Security Framework	Section 5 (Security Architecture)	TLS 1.3, mTLS, PKI, WORM archive, SIEM integration, ISO 27001 alignment
Systems Requirements & Compatibility	Section 4 (Systems Requirements) & Section 14 (By Option)	SAP ECC, S4, Oracle, Dynamics, Legacy, SaaS, Email, Capture supported
Data Mapping & Schema	Section 6 (Data Mapping and Schema)	Canonical model, mapping libraries, versioning, validation rules
Ability to Integrate with ERP	Section 7 (Integration Capabilities)	SmartAPI, BlueBox, Email Connector, BlueInvoice cover all scenarios
Methods of Receipt Processing & Submission	Section 8 (Submission to FIRS)	Full lifecycle from pre-validation to clearance receipts
Tracking, Monitoring & Audit	Section 9 (Tracking, Monitoring, Audit)	Dashboards, reconciliation, evidence bundles, alerts
Onboarding Support	Section 10 (Onboarding)	Step-by-step plan, technical support, troubleshooting

Client Requirement	Where Addressed in Proposal	Highlights
Scope of Work	Section 12 (Scope of Work)	Requirements, design, development, testing, deployment, training, support
Key Technical Requirements	Section 13 (Technical Coverage)	IRN, QR, encryption, HS codes, TIN mapping, hosting, SLA
Delivery & Implementation Methodology	Section 11 (Delivery)	Discovery → Blueprint → SIT → UAT → Cutover → Hypercare → Steady State
Case Studies	Section 18 (Case Studies)	National tax authority deployments, cross-sector enterprise clients, high throughput
Detailed Cost Proposal	Provided as separate **Commercial Proposal** document	One-time services + subscription tiers + support SLA pricing

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19.3 Why This Matters to Evaluation Committees

- **Clarity** – every RFP requirement is directly traceable to a section in this document.
- **Efficiency** – evaluators can cross-check easily without ambiguity.
- **Confidence** – demonstrates maturity and discipline, proving Softrust and Bluelight operate at enterprise consulting level.
- **Completeness** – no gaps, no vague promises — everything is explicitly covered.

20. Appendices

Appendix A: <BluelightSmartAPI> Endpoint List (Placeholder)

- **/invoices/submit** – submit invoice payload in canonical schema.
- **/invoices/status/{id}** – retrieve clearance status.
- **/invoices/archive/{id}** – download evidence bundle (payload, signature, receipt, QR).
- **/invoices/replay/{id}** – resubmit failed or pending invoices.
- **/reconciliation/daily** – trigger reconciliation job and download signed report.
- **/reference/hs-codes** – query or sync HS code library.
- **/reference/tax-codes** – query or sync tax code mappings.
- **/reference/customers** – maintain customer-TIN mappings.

Note: Full details, request/response examples, authentication headers, and error codes will be provided in a separate API Specification.

Appendix B: Sample Payloads (Illustrative)

Invoice Submission (Canonical JSON)

```
{
  "invoiceNumber": "INV-2025-0001",
  "supplierTIN": "12345678",
  "buyerTIN": "98765432",
  "issueDate": "2025-08-28",
  "currency": "NGN",
  "lineItems": [
    {
      "description": "Product A",
      "quantity": 10,
      "unitPrice": 1000,
      "taxCode": "VAT15",
      "hsCode": "1001.90.10"
    }
  ],
  "totalAmount": 11500,
  "sourceSystem": "SAP_ECC"
}
```

Clearance Response

```
{
  "status": "CLEARED",
  "irn": "IRN-XYZ-2025",
  "qrCode": "base64-encoded-qr-string",
  "signature": "PKCS7-digital-signature",
  "timestamp": "2025-08-28T14:12:00Z"
}
```

Appendix C: Email Connector Processing Rules

- Accepted formats: PDF, XML, CSV, ZIP bundles.
- Subject line optional, body ignored.
- Rejected attachments returned with structured error message.
- Clearance receipts attached to reply email as PDF/XML.
- Inbound invoices (received from customers) routed back to client distribution list.

Appendix D: BlueBox Deployment Guide (Overview)

- Install capture agent on Windows or Linux server.
- Configure printer spooler redirection or folder watcher.
- Define parsing rules (file naming, document recognition).
- Secure HTTPS connection to SmartAPI configured with certificate.
- Monitor via local dashboard and central SmartAPI logs.

Appendix E: Glossary of Key Terms

- **IRN (Invoice Reference Number)** – Unique identifier generated by FIRS for every cleared invoice.
- **QR Code** – Machine-readable code linking to FIRS record of the invoice.
- **TIN (Taxpayer Identification Number)** – Unique identifier for businesses registered with FIRS.
- **HS Code** – Harmonized System classification for goods.
- **UBL (Universal Business Language)** – XML schema standard for e-invoicing.
- **SIT (System Integration Testing)** – Phase of testing where system components are validated together.
- **UAT (User Acceptance Testing)** – Client validation phase to confirm solution meets business needs.
- **RPO (Recovery Point Objective)** – Maximum acceptable data loss measured in time.
- **RTO (Recovery Time Objective)** – Maximum acceptable downtime to restore service.
- **WORM (Write Once, Read Many)** – Immutable storage method preventing tampering.

Appendix F: Compliance Evidence Bundle (Contents)

Each archived invoice record contains:

- Canonical JSON payload.
- Signed submission file.
- FIRS clearance receipt with IRN and QR.
- Digital signature for integrity and non-repudiation.
- Audit log extract (submission, clearance, error events).
- Reconciliation report references.

Appendix G: Contact Matrix

Project Phase Contacts

- Onboarding Manager – primary liaison for project setup.
- Solution Architect – integration and mapping oversight.
- Finance Liaison – Finance workflows, reconciliation, training.
- Compliance Lead – regulator alignment, evidence bundles.
- Support Desk – 24x7 SLA-backed incident management.

Escalation Paths

- Level 1: Client IT and Finance analysts.
- Level 2: Softrust Integration Engineers.
- Level 3: Bluelight SmartAPI Operations.
- Level 4: FIRS regulator contact (as last resort).

Appendix H: Diagram Set (to be provided as annex)

- Solution Landscape (SmartAPI, BlueInvoice, Email Connector, BlueBox).
- Security Architecture.
- Data Mapping Flow.
- Integration Decision Tree.
- Compliance Lifecycle.
- Cutover Timeline.
- Risk Heat Map.
- Operations Cycle.
- Global Footprint and Case Study Map.

20.9 Why Appendices Matter

These appendices provide clients with:

- **Technical Depth** – APIs, payloads, deployment guidelines.
- **Operational Clarity** – runbooks, connector rules, escalation.
- **Compliance Assurance** – glossary and evidence bundle structure.
- **Evaluation Efficiency** – diagrams and quick reference matrices that simplify decision-making.