

PAKISTAN TOBACCO BOARD

Ministry of National Food Security & Research

Government of Pakistan, Peshawar

TENDER NOTICE

OPEN COMPETITIVE BIDDING WITH INTERNATIONAL PARTICIPATION

PROCUREMENT OF END-TO-END DIGITAL TRACK & TRACE SYSTEM FOR THE TOBACCO LEAF SUPPLY CHAIN OF PAKISTAN

Tender/RFP No.: PTB/TTS/2026-27/_____

Date of Advertisement: _____

Closing Date: _____

Estimated Procurement Value: PKR _____ / USD equivalent _____

Contract Period: Five (05) Years, including design, development, deployment, national roll-out, operations, maintenance, support and technology transfer.

Pakistan Tobacco Board (PTB), Ministry of National Food Security & Research, Government of Pakistan, invites sealed/electronic proposals from eligible national and international firms, companies, technology providers, systems integrators and eligible joint ventures/consortia for the: Design, Development/Configuration, Supply, Installation, Integration, Testing, Commissioning, Deployment, Operation, Maintenance and Technology Transfer of an End-to-End Digital Track & Trace System for Tobacco Leaf Supply Chain in Pakistan.

The proposed system shall provide digital visibility and chain-of-custody traceability of tobacco leaf from the registered source/grower and purchase transaction through purchase centres, warehouses/godowns, transportation, Green Leaf Threshing (GLT) units and onward dispatch of processed tobacco to registered manufacturing/export destinations, with integration, where legally and technically feasible and subject to inter-agency approval, with relevant Government systems including FBR's Track & Trace System and PSW.

1. Procurement Method

The procurement shall be undertaken through Open Competitive Bidding with international participation, in accordance with the Public Procurement Rules, 2004, as amended from time to time.

Considering the large-scale, technically complex and technology-neutral nature of the procurement, the bidding shall follow the Two-Stage Bidding Procedure under Rule 36(c), read with Rule 37(b) of the Public Procurement Rules, 2004.

The first stage shall comprise technical proposals without prices. Following evaluation and structured technical discussions, the procuring agency may finalize/revise the technical requirements within the scope permitted under the PPRA Rules. Qualified bidders shall then be invited to submit revised technical proposals together with financial proposals.

2. Eligibility

Participation shall be open to eligible:

- Pakistani companies/firms;
- foreign companies/firms;
- joint ventures/consortia between Pakistani and foreign firms;
- international technology providers partnering with eligible Pakistani firms; and

Participation shall not be restricted on the basis of nationality except to the extent permitted by applicable Federal Government policy.

3. Minimum Qualification/Mandatory Requirements

The bidder, or in case of a consortium the lead member together with the consortium members in accordance with the bidding documents, shall demonstrate:

1. Legal registration/incorporation in the country of establishment.
2. At least ten (10) years of relevant corporate experience in enterprise digital systems, track-and-trace, supply-chain traceability, authentication, excisable goods, logistics or comparable regulatory technology.
3. Successful implementation of at least one (01) comparable large-scale track-and-trace/traceability systems.
4. Demonstrated capability in:
 - enterprise software;
 - mobile applications;
 - IoT/device integration;
 - electronic weighing systems;
 - QR/barcode/Rfid or equivalent secure identification technologies;
 - GIS/GPS;
 - API-based government-system integration;
 - cloud/on-premises/edge computing;
 - cybersecurity;
 - data analytics and dashboards; and
 - national-scale technical support.
 - Already developed an AI-powered system for identifying and reporting irregularities in any supply chain system.
 - To develop an AI-coupled dashboard for reporting the movement in supply chain system.
5. Average annual turnover of not less than USD 3 million or equivalent during the last three audited financial years, subject to final approval by PTB's competent authority and procurement wing.
6. Audited financial statements for the preceding three financial years.
7. Adequate liquid assets/credit facilities to support implementation.
8. No current blacklisting/debarment by PPRA or any competent Pakistani or foreign public procurement authority.

9. Compliance with applicable taxation and corporate laws.
10. ISO/IEC 27001 certification or equivalent demonstrable information-security capability, where applicable to the bidder's scope.

The above qualification requirements shall be applied objectively and proportionately to the procurement and shall not be interpreted to exclude technically capable national or international bidders contrary to PPRA Rules.

4. Bid Security

Bid security shall be required in the amount specified in the Bidding Data Sheet, not exceeding five percent (2%) of the estimated procurement value, in accordance with Rule 25 of the Public Procurement Rules, 2004.

5. Integrity Pact

The successful bidder and PTB shall execute the applicable Integrity Pact in the prescribed form where required under the applicable PPRA provisions.

6. Submission of Bids

Bids shall be submitted through the prescribed EPADS/e-procurement mechanism, together with all required supporting documents, securities and declarations.

Detailed instructions regarding submission, opening, clarification, evaluation and award shall be contained in the bidding documents.

7. Response Time

A minimum response period of thirty (30) days shall be provided for international competitive bidding, calculated in accordance with Rule 13 of the PPRA Rules.

8. Advertisement

The procurement notice shall be published/processed through:

- PPRA/EPADS;
- PTB official website;
- at least two widely circulated national newspapers, ordinarily one English and one Urdu; and
- additional international/electronic dissemination channels considered appropriate by
- PTB to ensure meaningful participation of qualified international firms.

9. Tender Documents

Complete bidding documents, including Instructions to Bidders, Terms of Reference, technical requirements, qualification criteria, evaluation methodology, draft contract, price schedule, securities formats, implementation requirements and other annexures shall be made available through the prescribed procurement mechanism.

10. Reservation of Rights

PTB reserves the right, in accordance with the PPRA Rules and applicable law, to accept or reject bids/proposals, cancel/rebid the procurement or take any other lawful action before award.

11. Mandatory Documents for Bid Submission

Each bidder/firm shall submit, along with its technical proposal, the following mandatory documents. Failure to submit any of the documents listed below, in the required and complete form, shall render the bid/proposal liable to summary rejection and the bidder/firm liable to disqualification from further participation in this procurement, without prejudice to PTB's rights under Section 10 above:

- Bid security in the form and amount specified in the Bidding Data Sheet, valid for the required period, in accordance with Rule 25 of the PPRA Rules, 2004 (see Section 4 above);
- Duly filled and signed Bid Form/covering letter on the bidder's official letterhead;
- Certificate of incorporation/registration (SECP registration certificate, partnership deed, or equivalent proof of legal registration in the country of establishment);
- Valid National Tax Number (NTN) certificate and General Sales Tax (GST)/Sales Tax registration certificate, or the equivalent tax registration for foreign bidders;
- Duly signed Integrity Pact, in the prescribed format, as required under the applicable PPRA provisions (see Section 5 above);
- Affidavit/declaration on the bidder's letterhead confirming that the firm is not currently blacklisted or debarred by PPRA or any other competent Pakistani or foreign public procurement authority;
- Audited financial statements for the preceding three (03) financial years, along with a turnover certificate confirming average annual turnover of not less than USD 3 million or equivalent;
- ISO/IEC 27001 certification or equivalent demonstrable information-security capability, where applicable to the bidder's scope;
- Consortium/Joint Venture Agreement or Memorandum of Understanding, where the bid is submitted by a joint venture or consortium, clearly identifying the lead member and the respective roles and responsibilities of each member;

Bids/proposals submitted without any one or more of the above mandatory documents, or containing any such document that is incomplete, unsigned, unstamped or otherwise not in the prescribed form, shall be considered non-responsive, and the bidder/firm concerned shall stand disqualified from further participation in this procurement, subject to PTB's right to seek clarification strictly in accordance with the applicable PPRA Rules.

DETAILED TERMS OF REFERENCE (TOR)

1. TITLE

Design, Development/Configuration, Supply, Installation, Integration, Testing, Commissioning, Deployment, Operation, Maintenance and Technology Transfer of an End-to-End Digital Track & Trace System for the Tobacco Leaf Supply Chain in Pakistan

2. BACKGROUND

Pakistan's tobacco supply chain extends from tobacco-growing areas and registered growers through curing barns, regulated purchase centres, warehouses/godowns, Green Leaf Threshing (GLT) units, transportation and onward dispatch to registered tobacco manufacturing/export destinations.

PTB maintains regulatory responsibilities relating to tobacco cultivation, marketing procedures, purchase arrangements and associated supply-chain information. The existing upstream information environment involves a combination of registration records, agreements, purchase records, physical documents, company records and periodic reporting.

The draft system is intended to establish a single digital chain-of-custody mechanism through which tobacco leaf and processed tobacco can be digitally identified, recorded, verified and traced across the relevant stages.

The proposed system shall complement, and where legally and technically feasible integrate with, existing Government systems including FBR's Track & Trace System rather than duplicate the functions legally assigned to other government agencies.

The existing PTB draft ToRs identify the principal problem as the absence of unified upstream visibility from purchase through warehousing, threshing and dispatch.

3. OBJECTIVES

The principal objectives are:

3.1 End-to-End Traceability

To establish a digital chain of custody for tobacco leaf from:

Registered Grower/Source → Purchase Centre → Warehouse/Godown → Transport → GLT Unit → Processed Tobacco → Warehouse/Storage → Manufacturing Unit/Export Destination

3.2 Digital Identification

To provide each relevant tobacco lot, bale, consignment or other appropriate unit with a secure and unique digital identity.

3.3 Regulatory Monitoring

To assist PTB in monitoring compliance with applicable tobacco marketing, purchasing, storage, movement and reporting requirements.

3.4 Detection of Leakage

The system shall identify and report anomalies such as:

- unexplained quantity differences;
- purchases exceeding declared/quota limits;
- unregistered purchase activity;
- movement without a valid digital consignment;
- duplicate identifiers;
- stock discrepancies;
- unexplained stock accumulation;
- unauthorized warehouse movements;
- unregistered GLT activity;
- unusual processing yields;
- dispatches to unauthorized destinations; and
- other configurable exceptions.

3.6 Data Integration

The system shall provide secure API-based integration with PTB databases/dashboards/applications and, subject to legal authority, data-sharing arrangements and technical approval, relevant systems of FBR, Pakistan Single Window, provincial departments and other government agencies.

3.7 Evidence and Auditability

Every material transaction shall generate an electronic audit trail capable of establishing:

who → what → when → where → how much → from whom → to whom → through which node.

3.8 Policy and Revenue Data

The system shall generate reliable analytical information for regulatory planning, cess administration, crop assessment, enforcement, policy formulation and inter-agency coordination.

3.9 Inception and System Design

- Conduct a detailed inception study/gap assessment covering all tobacco purchase centers, warehouses/godowns, GLT units, and manufacturing units, mapping current processes, volumes, and existing IT/physical infrastructure.
- Prepare a comprehensive System Requirements Specification (SRS) and Solution Architecture Document, including technology selection (e.g., type of secure marking/tagging — barcode, QR, RFID, or hybrid; weighment integration approach; connectivity strategy for low-connectivity rural areas).
- Prepare a Data Governance and Interoperability Framework defining data ownership, data standards, and APIs for integration with FBR and other systems.
- Submit an Implementation Roadmap with phased rollout plan, risk register, and mitigation strategy, for PTB's review and approval prior to deployment.

4. PRINCIPLES OF THE SYSTEM

The bidder shall design the system according to the following principles:

1. Technology neutrality.
2. Vendor neutrality.
3. Interoperability.
4. Scalability.
5. Security by design.
6. Mobile-first field operations.
7. Offline capability for rural locations.
8. Real-time synchronization where connectivity is available.
9. Immutable/auditable transaction history.
10. Role-based access control.
11. Data ownership by PTB/Government.
12. Open and documented APIs.
13. Avoidance of proprietary lock-in.
14. Maintainability by PTB or a successor contractor.
15. Business continuity and disaster recovery.
16. Measurable service levels.
17. Protection against tampering, duplication and unauthorized alteration.

The technology specification shall not prescribe a particular brand, manufacturer or country of origin. PPRA Rule 10 requires specifications to permit the widest possible competition and be generic in nature.

5. INSTITUTIONAL AND GEOGRAPHICAL COVERAGE

The system shall be capable of national deployment and shall initially prioritize tobacco-growing and high-volume tobacco-processing areas, particularly Khyber Pakhtunkhwa.

It shall cover, at minimum:

5.1 Growers

- registered growers;
- grower identity;
- land/cultivation location;
- acreage;
- crop;
- expected production;
- contract/agreement information;
- linked company/buyer;
- associated curing barn(s).

5.2 Curing Barns

- barn registration;
- geo-location;
- grower linkage;
- declared capacity;
- crop association;
- production estimates;
- inspection/verification history.

5.3 Purchase Centres

- company purchase centres;
- dealer purchase centres;
- purchase agents;
- authorized buying personnel;
- daily opening/closing;
- grower transactions;
- grade;
- weight;
- price;
- lot identification;
- payment-related information;
- cumulative purchase against quota.

5.4 Warehouses/Godowns

- registration;
- ownership/operator;
- geo-location;
- capacity;
- entry;
- stock receipt;

- stock transfer;
- stock balance;
- stock adjustment;
- bale/lot identification;
- dispatch;
- reconciliation.

5.5 GLT Units

All registered and subsequently identified GLT units shall be incorporated.

The system shall record:

- incoming green leaf;
- source;
- quantity;
- lot/bale identity;
- processing date/time;
- processing output;
- wastage/allowable process loss;
- processed tobacco identity;
- destination;
- dispatch;
- stock balance;
- machine/line information where appropriate.

5.6 Manufacturing Units

Registered tobacco manufacturing units receiving processed tobacco shall be digitally registered and linked with incoming consignments.

5.7 Transport

The system shall digitally record the movement of tobacco between controlled nodes.

6. END-TO-END DIGITAL WORKFLOW

The bidder shall propose and implement a complete digital workflow.

Stage 1 — Grower Registration

Each registered grower shall have a unique digital identity.

The system shall capture, where applicable:

- grower identity;
- CNIC/approved identification;
- contact details;

- village;
- district;
- geo-location;
- land/cultivation information;
- crop;
- acreage;
- expected production;
- company agreement;
- registered barn(s).

Stage 2 — Barn Registration

Each curing barn shall receive a unique digital identity linked to the relevant grower and cultivation record.

Stage 3 — Purchase Centre

At the point of purchase, the system shall capture:

- grower;
- buyer/company;
- purchase centre;
- date/time;
- grade;
- weight;
- price;
- lot number;
- unique identifier;
- applicable quota reference;
- operator identity;
- weighing device identity.

The transaction shall automatically update the relevant company, district and crop-level statistics.

Stage 4 — Digital Lot Identification

The system shall generate a secure unique identifier using an approved technology such as:

- QR;
- barcode;
- RFID;
- secure digital identifier;
- tamper-evident label/tag; or
- hybrid technology.

The final technology shall be determined through the approved solution architecture.

Stage 5 — Warehouse Receipt

On arrival at the warehouse/godown:

1. identifier shall be scanned;
2. quantity shall be verified;
3. source shall be authenticated;
4. vehicle/transport details shall be recorded;
5. warehouse location shall be recorded;
6. stock ledger shall be automatically updated.

Stage 6 — Warehouse Stock Management

The system shall maintain real-time digital stock.

It shall prevent or flag:

- duplicate receipts;
- unauthorized transfers;
- unexplained stock adjustments;
- stock exceeding capacity;
- unidentified stock;
- dispatch without authorization.

Stage 7 — Transportation

Every controlled movement shall generate a digital movement/consignment record containing:

- origin;
- destination;
- consignment/lot identity;
- quantity;
- vehicle;
- driver;
- date/time;
- authorized transporter;
- expected route/time;
- dispatch confirmation;
- receipt confirmation.

GPS tracking may be proposed where technically and economically justified.

Stage 8 — GLT Processing

At the GLT:

- incoming lots shall be verified;
- weight shall be recorded;

- processing shall be logged;
- processed output shall receive a linked digital identity;
- source-to-output relationship shall be preserved;
- process loss/yield shall be recorded;
- dispatch shall be digitally authorized.

This shall establish a parent-child relationship between green leaf and processed tobacco.

Stage 9 — Processed Tobacco Warehouse

Processed tobacco entering storage shall be digitally recorded and linked to the GLT batch.

Stage 10 — Manufacturing/Export Dispatch

Before dispatch:

- destination shall be verified;
- quantity shall be reconciled;
- source/GLT batch shall be verified;
- digital consignment shall be generated;
- dispatch shall be recorded.

Stage 11 — Manufacturing/FBR Interface

Where legally and technically approved, the system shall exchange relevant information with FBR systems so that the upstream PTB chain can be connected with downstream tax/track-and-trace information.

The attached ToR already envisages API-based integration with PTB's grower database and, subject to FBR approval and data-sharing arrangements, FBR's TTS.

7. SOFTWARE PLATFORM

The bidder shall develop/configure/integrate/deploy a centralized platform comprising, at minimum:

7.1 Web Portal

To integrate the already developed web portal(s) which have following aspects

- PTB headquarters;
- regional/field offices;
- administrators;
- authorized government users;
- companies;
- purchase centres;
- warehouses;

- GLTs;
- manufacturers.

7.2 Mobile Application

To integrate the already developed mobile application(s) which have following aspects:

- field officers;
- purchase centre operators;
- verification teams;
- enforcement personnel.

The mobile application shall support offline data capture and subsequent synchronization.

7.3 Executive Dashboard

To integrate the already developed dashboard which have following aspects:

- national crop position;
- district-wise crop;
- grower numbers;
- purchase volumes;
- company-wise purchases;
- quota versus actual purchase;
- warehouse stock;
- GLT throughput;
- processed tobacco stock;
- dispatches;
- transport movements;
- exceptions;
- alerts;
- compliance status;
- geographical maps;
- historical trends.

8. GIS AND GEO-SPATIAL COMPONENT

The system shall incorporate GIS capability for:

- growers;
- farms;
- barns;
- purchase centres;
- warehouses;
- GLT units;
- manufacturers;
- transport routes.

The system shall permit spatial visualization and identification of:

- unauthorized facilities;
- concentration of purchases;
- unusual movement patterns;
- production/purchase discrepancies;
- high-risk areas.

9. WEIGHING SYSTEM INTEGRATION

The solution shall integrate electronic weighing equipment at appropriate control points.

The system shall:

- capture weight automatically where feasible;
- associate weight with the digital lot;
- prevent unauthorized manual alteration;
- maintain device/operator logs;
- maintain calibration information;
- identify abnormal transactions.

Where existing weighing systems are available, bidders shall propose integration rather than unnecessary replacement.

10. HARDWARE

The bidder shall supply, install and commission all hardware necessary for the proposed solution, including where required:

- scanning devices;
- handheld devices;
- tablets;
- printers;
- secure tagging equipment;
- edge devices;
- weighing interfaces;
- network equipment;
- GPS/IoT equipment;
- CCTV/monitoring equipment at approved high-risk nodes;
- servers/storage where applicable;
- backup equipment.

All hardware shall be supported for the entire contract period.

11. OFFLINE AND LOW-CONNECTIVITY CAPABILITY

Because many tobacco purchase centres are located in rural areas, the system shall support:

- offline transaction capture;
- local encrypted storage;
- automatic synchronization;
- conflict management;
- transaction queuing;
- secure time stamping;
- device authentication.

No critical field operation shall depend exclusively on continuous internet connectivity.

12. CYBERSECURITY

The system shall incorporate:

- encryption in transit and at rest;
- multi-factor authentication for privileged users;
- role-based access control;
- secure API gateway;
- audit logs;
- intrusion monitoring;
- vulnerability management;
- penetration testing;
- secure software development practices;
- backup;
- disaster recovery;
- incident response;
- privileged-user monitoring;
- security logging/SIEM where appropriate.

The bidder shall provide annual independent security assessments.

The attached ToR requires data hosting in Pakistan unless otherwise approved and requires documented disaster recovery and business continuity arrangements.

13. DATA OWNERSHIP

All data generated, collected or processed through the system shall remain the property of the Government of Pakistan/PTB.

The contractor shall not:

- sell;
- transfer;
- commercialize;
- disclose;
- mine;
- reuse; or
- provide third-party access to

PTB/government data except with prior written authorization.

14. SOURCE CODE AND TECHNOLOGY TRANSFER

The contractor shall provide:

- system architecture;
- database schema;
- API documentation;
- configuration documentation;
- deployment documentation;
- administrator manuals;
- source code or appropriate source-code escrow/contractual access arrangement;
- technical manuals;
- security documentation;
- data dictionary;
- integration documentation.

PTB shall have sufficient rights to continue operating, maintaining and modifying the system after expiry of the contract.

15. INTEROPERABILITY

The platform shall expose documented APIs for integration with:

- PTB databases;
- grower registration;
- quota systems;
- existing PTB dashboards;
- FBR systems, subject to authorization;

- Pakistan Single window, subject to authorization;
- provincial excise/tax systems where approved;
- banking/payment systems where subsequently approved;
- other Government systems.

No integration shall be represented as mandatory where the authority to exchange data rests with another government agency.

16. ANALYTICS AND ARTIFICIAL INTELLIGENCE

The system shall provide configurable analytics for:

- anomaly detection and reporting;
- purchase-versus-quota analysis;
- crop-versus-purchase analysis;
- warehouse reconciliation;
- GLT input/output reconciliation;
- unusual transport patterns and reporting;
- duplicate transactions and reporting;
- unusual price/quantity patterns;
- unexplained stock movements and reporting;
- risk scoring.

Any AI/ML component shall be explainable, auditable and used as a decision-support mechanism rather than as an autonomous regulatory decision-maker.

17. ALERTS AND EXCEPTION MANAGEMENT

The system shall generate configurable alerts including:

- purchase above authorized quota and discrepancy reporting;
- transaction from unregistered grower and discrepancy reporting;
- movement without digital consignment discrepancy reporting;
- duplicate lot and discrepancy reporting;
- warehouse stock discrepancy reporting;
- abnormal GLT yield discrepancy reporting;
- dispatch to unregistered destination discrepancy reporting;
- expired/invalid registration discrepancy reporting;
- inactive facility showing transactions discrepancy reporting;
- unusual geographic movement discrepancy reporting;
- unexplained stock loss discrepancy reporting.

Each alert shall have:

- severity;
- responsible officer;
- status;
- action history;
- resolution;
- evidence;
- audit trail.

18. REPORTING

The system shall automatically generate:

Daily Reports

- purchase;
- company-wise purchase;
- district-wise purchase;
- warehouse stock;
- GLT throughput;
- dispatch;
- exceptions.

Weekly Reports

- supply-chain movement;
- compliance;
- unresolved exceptions;
- stock reconciliation.

Monthly Reports

- company performance;
- district production/purchase;
- quota utilization;
- GLT processing;
- manufacturer dispatch;
- compliance.

Seasonal Reports

- crop production;
- purchases;
- quota;
- prices;
- stocks;
- processing;

- dispatch;
- anomalies.

Executive Reports

The system shall generate one-page executive dashboards for Chairman PTB, Secretary PTB, MNFS&R and authorized Government stakeholders.

19. PILOT

The contractor shall conduct a pilot covering representative:

- UHF RFID Tags on tobacco bales / cartons
- purchase centres;
- warehouses;
- GLT units;
- manufacturing units; and
- transport routes.

The pilot shall test:

1. registration;
2. tagging;
3. purchase;
4. weighing;
5. warehouse receipt;
6. movement;
7. GLT processing;
8. processed tobacco;
9. dispatch;
10. dashboards;
11. alerts;
12. offline operation;
13. integration;
14. cybersecurity;
15. reconciliation.

A Pilot Evaluation Report shall be approved before national deployment.

20. NATIONAL ROLL-OUT

Following successful pilot completion, deployment shall be extended progressively to all relevant tobacco-growing and processing regions.

The bidder shall provide a detailed roll-out plan covering:

- district;
- number of nodes;

- hardware;
- staffing;
- training;
- connectivity;
- deployment date;
- testing;
- go-live criteria;
- post-go-live support.

21. TRAINING AND CHANGE MANAGEMENT

The contractor shall train:

- PTB headquarters;
- field officers;
- inspectors;
- purchase-centre operators;
- warehouse personnel;
- GLT personnel;
- authorized manufacturers;
- system administrators;
- helpdesk personnel.

Training material shall be provided in English and, where required, Urdu.

The contractor shall prepare:

- SOPs;
- user manuals;
- administrator manuals;
- field inspection manuals;
- troubleshooting manuals;
- cybersecurity awareness material.

22. HELP DESK AND SUPPORT

The contractor shall establish a Pakistan-based support mechanism.

Indicative service levels:

Service	Minimum Target
Central platform availability	≥99.5% monthly
Critical incident acknowledgement	≤2 hours
Critical incident resolution/workaround	≤24 hours
Transaction data accuracy	≥99%

Security critical/high findings unresolved beyond agreed period	Zero
Training before relevant go-live	100%

The final SLA matrix shall be incorporated into the contract.

23. BUSINESS CONTINUITY AND DISASTER RECOVERY

The bidder shall provide:

- primary hosting;
- backup;
- disaster recovery environment;
- data replication;
- recovery procedures;
- documented RPO;
- documented RTO;
- annual DR testing;
- restoration testing;
- business continuity plan.

24. IMPLEMENTATION SCHEDULE

The bidder shall propose a detailed schedule. PTB's indicative requirement is:

Deliverable	Target
Inception Report	T0 + 4 weeks
SRS & Solution Architecture	T0 + 8 weeks
Data Governance/Interoperability Framework	T0 + 8 weeks
Implementation Roadmap	T0 + 10 weeks
Pilot infrastructure ready	T0 + 16 weeks
SIT/UAT	T0 + 20 weeks
Pilot Go-Live	T0 + 22 weeks
Pilot Evaluation	T0 + 30 weeks
Priority District Roll-out	T0 + 40 weeks
Remaining Areas	T0 + 60 weeks
Full National Go-Live	T0 + 72 weeks

The bidder may propose an alternative technically justified implementation schedule, subject to PTB's approval.

25. KEY PERSONNEL

The bidder shall propose, at minimum:

1. Project Director/Project Manager;
2. Solution Architect;
3. Track & Trace Specialist;
4. Software Development Lead;
5. Database/Data Architect;
6. GIS/GPS Specialist;
7. Hardware/IoT Deployment Lead;
8. Cybersecurity Specialist;
9. API/Integration Specialist;
10. Data Analytics/AI Specialist;
11. QA/Test Manager;
12. Training/Change Management Specialist;
13. Local Legal/Regulatory Specialist;
14. Pakistan-based Technical Support Team.

Detailed CV requirements shall be included in the bidding document.

26. EXPERIENCE OF BIDDER

The bidder shall demonstrate experience in one or more of:

- tobacco traceability;
- excisable goods;
- agricultural commodities;
- supply-chain traceability;
- tax/excise systems;
- national regulatory systems;
- logistics tracking;
- product authentication;
- government digital transformation.

Experience with tobacco leaf is desirable but shall not be made the sole basis for eligibility where equivalent large-scale traceability experience can objectively demonstrate capability.

27. TECHNICAL EVALUATION

An indicative technical evaluation framework is:

Criterion	Weight
Relevant organizational experience	20
Technical solution and architecture	20
End-to-end track & trace methodology	35

Implementation/roll-out plan	5
Key personnel	5
Cybersecurity/data protection	5
Interoperability/technology transfer	5
Local support and sustainability	5
Total	100

A minimum technical qualifying score shall be 70 marks and weightage given to the technical marks will be 70 %.

Only technically qualified bids shall proceed to financial evaluation in accordance with the adopted two-stage procedure.

28. FINANCIAL EVALUATION

The evaluation shall take into account, as applicable:

- implementation cost;
- hardware;
- software;
- licensing;
- tagging/consumables;
- integration;
- training;
- O&M;
- support;
- upgrades;
- replacement;
- whole-life cost.

Weightage given to the financial bid will be 30%

The final award shall be made to the most advantageous bid in accordance with the evaluation methodology disclosed in the bidding documents and the PPRA Rules.

29. PAYMENT STRUCTURE

Payments shall be linked to measurable deliverables and formal acceptance by PTB.

Indicative structure:

Milestone	Indicative Payment
Mobilization	10% against prescribed security
Inception/SRS/Architecture approval	10%
Pilot hardware/software and UAT	15%

Successful pilot and evaluation	10%
Priority national roll-out	15%
Remaining national roll-out	15%
O&M	Quarterly, against SLA/KPI achievement
Final handover/technology transfer	5%/retention

The final payment schedule shall be approved by the competent authority and incorporated into the contract.

30. PERFORMANCE SECURITY

The successful bidder shall furnish performance security, where required, in an amount not exceeding ten percent (10%) of the contract value, in accordance with Rule 39 of the PPRA Rules.

31. SUBCONTRACTING AND CONSORTIUM

Subcontracting shall be permitted where disclosed in the technical proposal and approved by PTB.

The lead bidder shall remain fully responsible for:

- system performance;
- security;
- integration;
- hardware;
- software;
- subcontractor performance;
- SLA compliance; and
- contractual obligations.

No subcontracting arrangement shall dilute the bidder's ultimate responsibility to PTB.

32. DATA SECURITY AND CONFIDENTIALITY

The contractor shall execute a comprehensive NDA and shall ensure that equivalent obligations bind all:

- employees;
- consultants;
- subcontractors;

- system administrators;
- support personnel.

Any security breach, unauthorized disclosure or material data-integrity incident shall be reported immediately and in any event within the period specified in the SLA.

33. LEGAL AND REGULATORY COMPLIANCE

The contractor shall comply with all applicable laws, rules, regulations, Government policies, taxation requirements, customs requirements, cybersecurity requirements and PTB instructions.

The system shall support PTB's regulatory functions but shall not itself create a regulatory obligation on stakeholders unless such obligation has been validly established through the applicable legal/regulatory mechanism.

Where implementation requires:

- amendments to rules;
- notifications;
- data-sharing agreements;
- inter-agency approvals;
- regulatory directions; or
- additional legal authority,

PTB shall process the same through the competent forum.

This is particularly important because the existing PTB legal review in the attached material concludes that the proposed digital tracking mechanisms are not expressly mandated as such by the existing PTB Service Rules, although the system can support PTB's regulatory and information-gathering functions.

34. PROCUREMENT GOVERNANCE

The procurement shall comply with:

- Public Procurement Regulatory Authority Ordinance, 2002;
- Public Procurement Rules, 2004, as amended;
- applicable PPRA regulations/guidelines;
- applicable EPADS procedures;
- applicable Government financial rules;
- PTB's approved procurement procedures;
- applicable Federal Government policies; and
- any applicable international obligation of the Government of Pakistan.

PPRA Rules require fair, transparent, economical and value-for-money procurement and require competent-authority approval before initiation.

35. BIDDER CLARIFICATIONS

PTB may arrange a pre-bid conference/technical clarification session.

All material clarifications/amendments shall be communicated to all bidders equally and through the prescribed procurement mechanism.

No bidder shall be permitted to alter the substance of its bid after opening except through the specific process legally permitted under the adopted two-stage procedure.

36. EVALUATION AND TRANSPARENCY

PTB shall:

1. evaluate bids only against disclosed criteria;
2. maintain confidentiality during evaluation;
3. document evaluation proceedings;
4. issue required evaluation reports;
5. provide the prescribed grievance mechanism;
6. observe applicable standstill/waiting requirements before award; and
7. maintain the procurement record in accordance with PPRA requirements.

PPRA Rule 29 requires unambiguous evaluation criteria to form part of the bidding documents, while Rule 30 requires bids to be evaluated according to those disclosed criteria.

37. GRIEVANCE REDRESSAL

PTB shall constitute a Grievance Redressal Committee in accordance with the applicable PPRA provisions.

The bidding documents shall specify:

- composition;
- jurisdiction;
- complaint procedure;
- timelines;
- submission method;
- review mechanism.

38. RISK MANAGEMENT

The contractor shall maintain a live risk register covering:

- connectivity;
- hardware failure;
- stakeholder adoption;
- data quality;
- cyber threats;
- device tampering;
- GPS manipulation;
- duplicate tagging;
- unauthorized access;
- system downtime;
- integration delays;
- regulatory changes;
- disaster recovery;
- vendor dependency.

The risk register shall be reviewed periodically with PTB.

39. TECHNOLOGY NEUTRALITY

PTB shall not prescribe a single technology such as RFID, QR, barcode, blockchain, GPS or any particular software platform.

The bidder may propose one or a combination of technologies provided that the proposed solution demonstrates:

- security;
- scalability;
- interoperability;
- affordability;
- rural usability;
- tamper resistance;
- auditability;
- maintainability; and
- whole-life value.

40. NON-PROPRIETARY AND EXIT REQUIREMENTS

The contractor shall ensure that PTB is not locked into the contractor's proprietary technology.

Before expiry:

- complete data shall be transferred to PTB;
- databases shall be handed over;

- APIs shall be documented;
- source-code arrangements shall be fulfilled;
- configurations shall be transferred;
- administrator credentials shall be transferred securely;
- knowledge-transfer sessions shall be completed;
- successor contractor support shall be provided where required.

41. FINAL HANDOVER

The contractor shall submit a Final Handover Package containing:

1. source code/escrow documentation as contracted;
2. database;
3. data dictionary;
4. architecture;
5. APIs;
6. configuration;
7. cybersecurity documentation;
8. asset register;
9. hardware inventory;
10. software licence inventory;
11. SOPs;
12. manuals;
13. training records;
14. DR/BCP documentation;
15. performance history;
16. unresolved issues;
17. warranty information;
18. maintenance documentation; and
19. technology-transfer certificate.